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Draft Offer Document
Dated March 17, 2026
Book Built Issue

CUBE HIGHWAYS TRUST

Settled in the Republic of India as an irrevocable trust by way of the trust deed dated December 7, 2021, entered into between the Settlor, Cube Highways and Infrastructure Pte. Ltd., Cube Highways and Infrastructure III Pte. Ltd. and the Trustee, as amended and restated on July 8, 2022, and March 11, 2024, respectively, read with the deed of adherence dated February 20, 2026, executed by the Sponsor under the Indian Trusts Act, 1882 and registered as an infrastructure investment trust under the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended on April 5, 2022, having registration number IN/InvIT/22-23/0022. The Trust's units were initially listed on BSE Limited and National Stock Exchange of India Limited on a private placement basis on April 19, 2023

Principal place of business: B-376, Upper Ground Floor, Nirman Vihar, New Delhi 110 092
Tel: + 91 120 4868300; **Compliance Officer**: Richa Gupta Rohatgi
E-mail: compliance.officer@cubehighways.com; **Website**: www.cubehighwaystrust.com

Sponsor **Cube Highways and Infrastructure V Pte. Ltd.**	**Investment Manager** **Cube Highways Fund Advisors Private Limited**	**Trustee** **Axis Trustee Services Limited**

Cube Highways Trust (the "**Trust**") is a privately listed infrastructure investment trust and is proposing conversion from a privately listed infrastructure investment trust to a public InvIT through an Offer for Sale of up to [●] units of the Trust ("**Units**") aggregating up to ₹ 50,000 million, consisting of, up to [●] Units by BCI IRR India Holdings Inc. aggregating up to ₹ 10,725.00 million, up to [●] Units by BCI IRR India Holdings Limited Partnership aggregating up to ₹ 275.00 million, up to [●] Units by Cube Highways and Infrastructure II Pte. Ltd. aggregating up to ₹ 15,098.70 million, up to [●] Units by Cube Highways and Infrastructure III Pte. Ltd. aggregating up to ₹ 6,055.70 million, up to [●] Units by Cube Mobility Investments Pte. Ltd. aggregating up to ₹ 12,908.40 million, and up to [●] Units by Seventy Second Investment Company LLC aggregating up to ₹ 4,937.20 million (collectively, the "**Selling Unitholders**") at a price of ₹ [●] per Unit (the "**Offer Price**") (collectively, the "**Offer**").

The Offer Price is ₹ [●] per Unit.

THIS OFFER IS BEING MADE IN RELIANCE UPON REGULATION 14(6) READ WITH REGULATION 14(4) OF THE SECURITIES AND EXCHANGE BOARD OF INDIA (INFRASTRUCTURE INVESTMENT TRUSTS) REGULATIONS, 2014, AS AMENDED AND CHAPTER 14 OF THE INVIT MASTER CIRCULAR, AS AMENDED (AS DEFINED BELOW)

The Units are privately listed on BSE Limited (the "**BSE**") and National Stock Exchange of India Limited (the "**NSE**") (BSE and NSE, collectively referred to as "**Stock Exchanges**"). The Trust is now proposing to convert from a privately listed InvIT to a public InvIT in accordance with Regulation 14(6) read with Regulation 14(4) of the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended, and Chapter 14 of the InvIT Master Circular (as defined below). In-principle approvals for public listing of the Units have been received from the BSE and NSE on [●] and [●], respectively. [●] is the Designated Stock Exchange.

The Price Band and the Minimum Bid Size (as determined by the Investment Manager in consultation with the Book Running Lead Managers) will be announced on the websites of the Trust, the Sponsor, the Investment Manager, and the Stock Exchanges, as well as advertised in all editions of **[●]** (a widely circulated English national daily newspaper), in all editions of **[●]** (a widely circulated Hindi national daily newspaper) and [**[●]** (a widely circulated regional daily newspaper, where the registered office of the Investment Manager is located)] at least two Working Days prior to the Bid/Offer Opening Date. The announcement/ advertisement shall contain relevant financial ratios computed for both the upper and lower end of the Price Band. For further information, please see the section entitled "*Basis of Offer Price*" on page 141.

In case of any revision to the Price Band, the Bid/Offer Period will be extended by at least one Working Day, subject to the total Bid/Offer Period not exceeding 30 days, provided that there shall not be more than two revisions to the Price Band during the Bid/Offer Period. Any revision to the Price Band and the revised Bid/Offer Period, if applicable, will be widely disseminated by notification to the Stock Exchanges during the Bid/Offer Period and by indicating the change on the respective websites of the Trust, the Sponsor, the Investment Manager and Stock Exchanges. In case of force majeure, banking strike or similar circumstances, the Bid/Offer Period may, for reasons to be recorded in writing, be extended by a minimum period of three Working Days, subject to the total Bid/Offer Period not exceeding 30 days.

The Offer is being made through the Book Building Process and in compliance with the InvIT Regulations and the InvIT Master Circular, wherein not more than 75% of the Offer (excluding Strategic Investor Portion) shall be available for allocation on a proportionate basis to Institutional Investors, provided that the Investment Manager may, in consultation with the Book Running Lead Managers, allocate up to 60% of the Institutional Investor Portion to Anchor Investors on a discretionary basis in accordance with the InvIT Regulations and the InvIT Master Circular. Further, not less than 25% of the Offer (excluding Strategic Investor Portion) shall be available for allocation on a proportionate basis to Non-Institutional Investors, in accordance with the InvIT Regulations and the InvIT Master Circular, subject to valid Bids being received at or above the Offer Price. The Offer may also include participation by Strategic Investors (*as defined hereafter*) in accordance with the InvIT Regulations and the InvIT Master Circular. All Bidders, (except Strategic Investors and Anchor Investors), are required to utilise the Application Supported by Blocked Amount ("**ASBA**") process by providing details of their respective ASBA accounts and UPI ID (in case of individual Non-Institutional Investors using the UPI Mechanism Bidding with a Bid Amount of ₹ 0.5 million or less), in which case the corresponding Bid Amounts will be blocked by the Self Certified Syndicate Banks ("**SCSBs**") or under the UPI Mechanism, as applicable, to participate in this Offer. For details, please see the section entitled "*Offer Information"* on page 467.

The Units have not been and will not be registered under the United States Securities Act of 1933, as amended (the "***Securities Act***") and may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and applicable U.S. state securities laws. Accordingly, the Units are only being offered and sold outside the United States in "offshore transactions" as defined in, and in reliance on, Regulation S under the Securities Act ("***Regulation S***") and the applicable law of the jurisdictions where such offers and sales occur.

RISKS IN RELATION TO THE OFFER

This is a public offer of Units by the Trust. The Offer Price (determined by the Investment Manager (on behalf of the Trust) in consultation with the Book Running Lead Managers) should not be taken to be indicative of the market price of the Units. No assurance can be given regarding an active or sustained market for trading in the Units or regarding the price at which the Units will be traded after listing of Units pursuant to the Offer

GENERAL RISKS

INVESTMENTS IN UNITS INVOLVE A DEGREE OF RISK, AND BIDDERS SHOULD NOT INVEST ANY FUNDS IN THIS OFFER UNLESS THEY CAN AFFORD TO TAKE THE RISK OF LOSING THEIR ENTIRE INVESTMENT. FOR TAKING AN INVESTMENT DECISION, BIDDERS MUST RELY ON THEIR OWN EXAMINATION OF THE TRUST, THE UNITS AND THIS OFFER. BIDDERS ARE ADVISED TO CAREFULLY READ THIS DRAFT OFFER DOCUMENT AND THE OFFER DOCUMENT, INCLUDING THE SECTIONS ENTITLED "*RISK FACTORS*" AND "*RIGHTS OF UNITHOLDERS*" ON PAGES 87 AND 460, RESPECTIVELY. BEFORE MAKING AN INVESTMENT DECISION RELATING TO THIS OFFER. FOR TAKING SUCH INVESTMENT DECISIONS, PROSPECTIVE INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF THE TRUST AND THE OFFER, INCLUDING THE RISKS INVOLVED. EACH PROSPECTIVE INVESTOR IS ADVISED TO CONSULT ITS OWN ADVISORS IN RESPECT OF THE CONSEQUENCES OF AN INVESTMENT IN THE UNITS BEING OFFERED PURSUANT TO THE OFFER DOCUMENT. THIS DRAFT OFFER DOCUMENT HAS BEEN PREPARED BY THE INVESTMENT MANAGER SOLELY FOR PROVIDING INFORMATION IN CONNECTION WITH THIS OFFER AND A COPY OF THIS DRAFT OFFER DOCUMENT HAS BEEN DELIVERED TO THE SECURITIES AND EXCHANGE BOARD OF INDIA ("SEBI") AND THE STOCK EXCHANGES. SEBI AND THE STOCK EXCHANGES ASSUME NO RESPONSIBILITY FOR OR GUARANTEE THE CORRECTNESS OR ACCURACY OR ADEQUACY OF ANY STATEMENTS MADE, OPINIONS EXPRESSED OR REPORTS CONTAINED HEREIN AND THE UNITS HAVE NOT BEEN RECOMMENDED OR APPROVED BY SEBI AND THE STOCK EXCHANGES. ADMISSION OF THE UNITS AS PUBLIC INVIT TO BE OFFERED PURSUANT TO THIS OFFER FOR TRADING ON THE STOCK EXCHANGES SHOULD NOT BE TAKEN AS AN INDICATION OF THE MERITS OF THE TRUST OR OF THE UNITS.

INVESTMENT MANAGER'S, SPONSOR'S AND SELLING UNITHOLDERS' ABSOLUTE RESPONSIBILITY

The Investment Manager and the Sponsor, severally, having made all reasonable inquiries, accept responsibility for, and confirm that this Draft Offer Document contains all information with regard to the Trust and this Offer, which is material in the context of this Offer, that the information contained in this Draft Offer Document is true and correct in all material respects and is not misleading in any material respect, that the opinions and intentions expressed herein are honestly held and that there are no other facts, the omission of which makes this Draft Offer Document as a whole or any of such information or the expression of any such opinions or intentions misleading in any material respect. Each of the Selling Unitholders, severally and not jointly, accepts responsibility for and confirms only the statements specifically made or confirmed by such Selling Unitholder and information pertaining to them and their respective portion of the Offered Units being sold in the Offer for Sale, and assumes responsibility that such statements are true and correct in all material respects and not misleading in any material respect. No Selling Unitholder, either severally or jointly, assumes responsibility for any other statements, disclosures and undertakings in this Draft Offer Document, including without limitation, any of the statements, disclosures or undertakings made or confirmed by or in relation to, or to the business of, the Trust, the Investment Manager or the Sponsor, or by any other Selling Unitholder or any other person(s).

BOOK RUNNING LEAD MANAGERS				REGISTRAR TO THE OFFER
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BID OFFER/PROGRAM #

BID/OFFER OPENS ON: [●]*	**BID/OFFER CLOSES ON: [●]****

**The Investment Manager may, in consultation with the Book Running Lead Managers, consider participation by Anchor Investors and Strategic Investors in accordance with the InvIT Regulations and InvIT Master Circular. The Anchor Investor Bidding Date shall be one Working Day prior to the Bid/Offer Opening Date.*
***The Investment Manager may, in consultation with the Book Running Lead Managers, consider closing the Bid/ Offer Period for QIBs one Working Day prior to the Bid/ Offer Closing Date in accordance with the InvIT Regulations and the InvIT Master Circular.*
 # The Offer may also include participation by Strategic Investors in accordance with the InvIT Master Circular and the InvIT Regulations.

TABLE OF CONTENTS

NOTICE TO INVESTORS 1
DEFINITIONS AND ABBREVIATIONS 5
PRESENTATION OF FINANCIAL DATA AND OTHER INFORMATION 20
PAST MARKET PERFORMANCE 30
FORWARD-LOOKING STATEMENTS 31
THE OFFER 33
OVERVIEW OF THE TRUST 36
DESCRIPTION OF THE PORTFOLIO ASSETS 40
SUMMARY AUDITED CONSOLIDATED FINANCIAL INFORMATION OF THE TRUST 58
SUMMARY FINANCIAL INFORMATION OF THE SPONSOR 63
SUMMARY FINANCIAL INFORMATION OF THE INVESTMENT MANAGER 67
SUMMARY OF INDUSTRY 74
SUMMARY OF BUSINESS 79
RISK FACTORS 87
GENERAL INFORMATION 134
BASIS OF OFFER PRICE 141
PARTIES TO THE TRUST 143
OTHER PARTIES INVOLVED IN THE TRUST 175
CORPORATE GOVERNANCE 179
INDUSTRY OVERVIEW 196
OUR BUSINESS 280
SUMMARY OF KEY AGREEMENTS 343
INFORMATION CONCERNING THE UNITS 359
USE OF PROCEEDS 362
FINANCIAL INDEBTEDNESS AND DEFERRED PAYMENTS 364
PERFORMANCE OF THE TRUST VIS-À-VIS THE PROJECTIONS AT THE TIME OF INITIAL OFFER 383
CAPITALISATION STATEMENT 384
DISTRIBUTION 385
MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS 389
RELATED PARTY TRANSACTIONS 410
REGULATIONS AND POLICIES 425
REGULATORY APPROVALS 437
LEGAL AND OTHER INFORMATION 448
SECURITIES MARKET OF INDIA 458
RIGHTS OF UNITHOLDERS 460
DILUTION 463
OFFER STRUCTURE 464
OFFER INFORMATION 467
STATEMENT OF POSSIBLE DIRECT TAX BENEFITS 490
LEGAL MATTERS 501
INDEPENDENT ACCOUNTANTS 502
MATERIAL CONTRACTS AND DOCUMENTS FOR INSPECTION 503
DECLARATION 506
ANNEXURE A –VALUATION REPORTS
ANNEXURE B –TECHNICAL REPORTS
ANNEXURE C – TRAFFIC REPORTS
ANNEXURE D – AUDITED CONSOLIDATED FINANCIAL STATEMENTS
ANNEXURE E -PROJECTIONS OF REVENUE FROM OPERATIONS AND CASH FLOW FROM OPERATING ACTIVITIES OF THE PROPOSED PORTFOLIO ASSETS
ANNEXURE F - CONSOLIDATED UNAUDITED FINANCIAL INFORMATION
ANNEXURE G – FINANCIAL STATEMENTS OF THE PROPOSED PORTFOLIO ASSETS

NOTICE TO INVESTORS

The statements contained in this Draft Offer Document relating to the Trust and the Units are, in all material respects, true and accurate, not misleading, and adequate to enable the investors to make an informed decision. The opinions and intentions expressed in this Draft Offer Document with regard to the Trust and the Units are honestly held, have been reached after considering all relevant circumstances and are based on reasonable assumptions and information presently available to the Investment Manager, the Trustee, the Sponsor and the Selling Unitholders, as applicable. There are no other facts in relation to the Trust and the Units, the omission of which would, in the context of the Offer, make any statement in this Draft Offer Document misleading in any material respect. Further, each of the Investment Manager and the Sponsor has made all reasonable enquiries to ascertain such facts and to verify the accuracy of all such information and statements disclosed in this Draft Offer Document in all material respects. Each of the Selling Unitholders has made all reasonable enquiries to ascertain such facts and to verify the accuracy of all such information and statements disclosed in this Draft Offer Document in relation to themselves and their respective Units offered in the Offer.

The Book Running Lead Managers have not separately verified all information (financial, legal or otherwise) contained in this Draft Offer Document. Accordingly, the Book Running Lead Managers, any of its shareholders, employees, counsel, officers, directors, representatives, agents, associates or affiliates do not make any express or implied representation, warranty or undertaking, and accept no responsibility or liability as to the accuracy or completeness of the information contained in this Draft Offer Document or any other information supplied in connection with the Offer or the distribution of the Units, other than in relation to themselves. Bidders acknowledge that they have neither relied on the Book Running Lead Managers nor any of its shareholders, employees, counsel, officers, directors, representatives, agents or affiliates in connection with such person's investigation of the accuracy of such information or such person's investment decision, and each such person must rely on his/her own examination of the Trust and the merits and risks involved in investing in the Units. Bidders should not construe the contents of this Draft Offer Document as legal, business, tax, accounting or investment advice. Each Bidder acknowledges that in making an investment decision, such investor will rely on the information contained in the Offer Document and the Final Offer Document and not on any other disclosure or representation by the Investment Manager, the Project Manager, the Trustee, the Sponsor, the Selling Unitholders, the Book Running Lead Managers or any other party. Save as expressly stated in this Draft Offer Document, nothing contained herein is, or may be relied upon as, a promise or representation as to the future performance of the Trust.

No person is authorized to give any information or to make any representation not contained in this Draft Offer Document, and any information or representation not so contained must not be relied upon as having been authorized by or on behalf of the Trust or by, or on behalf of the Sponsor, the Investment Manager or by or on behalf of the Book Running Lead Managers.

This Draft Offer Document shall not be relied upon by, and the Investment Manager, the Trustee, the Sponsor, the Project Manager, and/or the Book Running Lead Managers shall not be liable to, any subsequent acquirer, transferee or investor of the Units.

The Offer is being made in accordance with the InvIT Regulations and the InvIT Master Circular. However, Bidders from jurisdictions outside India should take note of the below:

Notice to Prospective Investors in the United States

The Units have not been recommended by any U.S. federal or state securities commission or regulatory authority. Furthermore, the foregoing authorities have not confirmed the accuracy or determined the adequacy of this Draft Offer Document or approved or disapproved the Units. Any representation to the contrary is a criminal offence in the United States. In making an investment decision, investors must rely on their own examination of the Trust and the terms of the Offer, including the merits and risks involved. The Units have not been and will not be registered under the U.S. Securities Act or any other applicable law of the United States and, unless so registered, may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the U.S. Securities Act and applicable state securities laws in the United States. Accordingly, the Units are being offered and sold only outside the United States in "offshore transactions" as defined in, and reliance on, Regulation S under the U.S. Securities Act and, in each case, in compliance with the applicable laws of the jurisdictions where those offers and sales occur.

The Units have not been and will not be registered, listed or otherwise qualified in any other jurisdiction outside India and may not be offered or sold, and Bids may not be made, by persons in any such jurisdiction except in compliance with the applicable laws of such jurisdiction.

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area (each a "**Relevant State**"), no Units have been offered or will be offered pursuant to the Offer to the public in that Relevant State prior to the publication of a prospectus in relation to the Units which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that the Units may be offered to the public in that Relevant State at any time:

a. to any legal entity which is a qualified investor as defined under Article 2 of the Prospectus Regulation;

b. to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the Prospectus Regulation), subject to obtaining the prior consent of Book Running Lead Managers for any such offer; or

c. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of the Units shall require the Investment Manager or any Book Running Lead Manager to publish a prospectus pursuant to Article 3 of the Prospectus Regulation, supplement a prospectus pursuant to Article 23 of the Prospectus Regulation or publish an Annex IX document pursuant to Article 1(4) of the Prospectus Regulation. For the purposes of this provision, the expression an "**offer to the public**" in relation to the Units in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the Offer and any Units to be offered so as to enable an investor to decide to purchase or subscribe for any Units, and the expression "**Prospectus Regulation**" means Regulation (EU) 2017/1129, as amended.

Information to EEA Distributors

Solely for the purposes of the product governance requirements contained within: (a) EU Directive 2014/65/EU on markets in financial instruments, as amended ("**MiFID II**"); (b) Articles 9 and 10 of Commission Delegated Directive (EU) 2017/593 supplementing MiFID II; and (c) local implementing measures (together, the "**MiFID II Product Governance Requirements**"), and disclaiming all and any liability, whether arising in tort, contract or otherwise, which any "manufacturer" (for the purposes of the MiFID II Product Governance Requirements) may otherwise have with respect thereto, the Units have been subject to a product approval process, which has determined that such Units are: (i) compatible with an end target market of retail investors and investors who meet the criteria of professional clients and eligible counterparties, each as defined in MiFID II; and (ii) eligible for distribution through all distribution channels as are permitted by MiFID II (the "**EEA Target Market Assessment**"). Notwithstanding the EEA Target Market Assessment, "distributors" (for the purposes of the MiFID II Product Governance Requirements) ("**EEA Distributors**") should note that: the price of the Units may decline and investors could lose all or part of their investment; the Units offer no guaranteed income and no capital protection; and an investment in the Units is compatible only with investors who do not need a guaranteed income or capital protection, who (either alone or in conjunction with an appropriate financial or other adviser) are capable of evaluating the merits and risks of such an investment and who have sufficient resources to be able to bear any losses that may result therefrom. The EEA Target Market Assessment is without prejudice to the requirements of any contractual, legal or regulatory selling restrictions in relation to the Offer. Furthermore, it is noted that, notwithstanding the EEA Target Market Assessment, the Book Running Lead Managers will only procure investors who meet the criteria of professional clients and eligible counterparties.

For the avoidance of doubt, the EEA Target Market Assessment does not constitute: (a) an assessment of suitability or appropriateness for the purposes of MiFID II; or (b) a recommendation to any investor or group of investors to invest in, purchase, or take any other action whatsoever with respect to the Units. Each EEA Distributor is responsible for undertaking its own target market assessment in respect of the Units and determining appropriate distribution channels.

Notice to Prospective Investors in the United Kingdom

No Units have been offered or will be offered pursuant to the Offer to the public in the United Kingdom except that the Units may be offered to the public in the United Kingdom at any time in accordance with the exceptions from the prohibition on offers to the public set out in Schedule 1 of the POATR which include (but are not limited to) where the offer is:

a. conditional on the admission of the Units to trading on the London Stock Exchange plc's main market (in reliance on the exception in paragraph 6(a) of Schedule 1 of the POATR);

b. to any qualified investor as defined under paragraph 15 of Schedule 1 of the POATR;

c. to fewer than 150 persons (other than qualified investors as defined under paragraph 15 of Schedule 1 of the POATR), subject to obtaining the prior consent of the Book Running Lead Managers for any such offer; or

d. in any other circumstances falling within Part 1 of Schedule 1 of the POATR.

For the purposes of this provision, the expression an "**offer to the public**" in relation to the Units in the United Kingdom means the communication to any person which presents sufficient information on: (a) the Units to be offered; and (b) the terms on which they are to be offered, to enable an investor to decide to buy or subscribe for the Units, and the expression "**POATR**" means the Public Offers and Admissions to Trading Regulations 2024.

The communication of this Draft Offer Document and any other document or materials relating to the offer of Units is not being made, and this Draft Offer Document and such other documents and/or materials have not been approved, by an authorized person for the purposes of section 21 of the Financial Services and Markets Act 2000, as amended. Accordingly, this Draft Offer Document and such other documents and/or materials are only being distributed to, and must not be passed on to, the general public in the United Kingdom. This Draft Offer Document and such other documents and/or materials are for distribution only to persons who (a) have professional experience in matters relating to investments and who fall within the definition of investment professionals (as defined in Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "**Financial Promotion Order**")), (b) fall within Article 49(2)(a) to (d) of the Financial Promotion Order, (c) are outside the United Kingdom, or (d) are other persons to whom it may otherwise lawfully be communicated or

distributed under the Financial Promotion Order (all such persons together being referred to as "**relevant persons**"). This Draft Offer Document and any such other documents and/or materials are directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this Draft Offer Document and any such other documents and/or materials relate will be engaged in only with relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this Draft Offer Document or any other documents and/or materials relating to the offer of the Units or any of their contents.

Persons into whose possession this Draft Offer Document may come are required by the Investment Manager and the Book Running Lead Managers to inform themselves about and to observe such restrictions.

Information to UK Distributors

Solely for the purposes of the product governance requirements of Chapter 3 of the FCA Handbook Product Intervention and Product Governance Sourcebook (the "**UK Product Governance Requirements**"), and disclaiming all and any liability, whether arising in tort, contract or otherwise, which any "manufacturer" (for the purposes of the UK Product Governance Requirements) may otherwise have with respect thereto, the Units have been subject to a product approval process, which has determined that such Units are: (i) compatible with an end target market of retail clients and investors who meet the criteria of professional clients and eligible counterparties, each as defined in Chapter 3 of the FCA Handbook Conduct of Business Sourcebook ("**COBS**"); and (ii) eligible for distribution through all permitted distribution channels (the "**UK Target Market Assessment**"). Notwithstanding the UK Target Market Assessment, distributors (for the purposes of the UK Product Governance Requirements) ("**UK Distributors**") should note that: the price of the Units may decline and investors could lose all or part of their investment; the Units offer no guaranteed income and no capital protection; and an investment in the Units is compatible only with investors who do not need a guaranteed income or capital protection, who (either alone or in conjunction with an appropriate financial or other adviser) are capable of evaluating the merits and risks of such an investment and who have sufficient resources to be able to bear any losses that may result therefrom. The UK Target Market Assessment is without prejudice to the requirements of any contractual, legal or regulatory selling restrictions in relation to the Offer.

Furthermore, it is noted that, notwithstanding the UK Target Market Assessment, the Book Running Lead Managers will only procure investors who meet the criteria of professional clients and eligible counterparties.

For the avoidance of doubt, the UK Target Market Assessment does not constitute: (a) an assessment of suitability or appropriateness for the purposes of Chapters 9A or 10A, respectively, of the COBS; or (b) a recommendation to any investor or group of investors to invest in, or purchase or take any other action whatsoever with respect to the Units. Each UK Distributor is responsible for undertaking its own target market assessment in respect of the Units and determining appropriate distribution channels.

IMPORTANT NOTICE

THE VALUE OF THE UNITS PURSUANT TO THE OFFER AND THE INCOME DERIVED FROM THEM MAY FLUCTUATE. THE UNITS PURSUANT TO THE OFFER ARE NOT OBLIGATIONS OF, DEPOSITS IN, OR GUARANTEED BY THE TRUST, THE TRUSTEE, THE SPONSOR, THE INVESTMENT MANAGER, THE BOOK RUNNING LEAD MANAGERS OR ANY OF THEIR RESPECTIVE SHAREHOLDERS, EMPLOYEES, COUNSEL, OFFICERS, DIRECTORS, REPRESENTATIVES, AGENTS, ASSOCIATES OR AFFILIATES. AN INVESTMENT IN THE UNITS PURSUANT TO THE OFFER IS SUBJECT TO INVESTMENT RISKS, INCLUDING THE POSSIBLE LOSS OF THE PRINCIPAL AMOUNT INVESTED. FURTHER, THE PUBLIC LISTING OF THE UNITS PURSUANT TO THE OFFER ON THE STOCK EXCHANGES DOES NOT GUARANTEE A LIQUID MARKET FOR THE UNITS PURSUANT TO THE OFFER. INVESTORS HAVE NO RIGHT TO REQUEST THE TRUST, THE TRUSTEE, THE SPONSOR, THE INVESTMENT MANAGER, THE SELLING UNITHOLDERS OR ANY OF THEIR RESPECTIVE SHAREHOLDERS, EMPLOYEES, COUNSEL, OFFICERS, DIRECTORS, REPRESENTATIVES, AGENTS, ASSOCIATES OR AFFILIATES TO REDEEM THEIR UNITS PURSUANT TO THE OFFER WHILE THE UNITS PURSUANT TO THE OFFER ARE LISTED, UNLESS OTHERWISE PERMITTED BY APPLICABLE LAW. THE PERFORMANCE OF ANY OF THE LISTED UNITS PURSUANT TO THE OFFER OF THE TRUST IS NOT NECESSARILY INDICATIVE OF THE FUTURE PERFORMANCE OF THE UNITS.

Available Information

The Investment Manager agrees to comply with any undertakings given by it from time to time in connection with the Units pursuant to the Offer and, without prejudice to the generality of the foregoing, shall furnish to the Unitholders all such information as may be required under the InvIT Regulations and InvIT Master Circular.

Disclaimer

This Draft Offer Document does not, directly or indirectly, relate to any invitation, offer or sale of any securities, instruments or loans (including listed non-convertible debentures or bonds, if any) that may be offered by the Trust after the commencement of trading of Units offered pursuant to the Offer. Any person or entity investing in such an offer or transaction by the Trust

should consult its own advisors. Neither the Book Running Lead Managers, nor their associates or affiliates, have any responsibility or liability for such offer or transaction by the Trust.

DEFINITIONS AND ABBREVIATIONS

This Draft Offer Document uses the definitions and abbreviations provided below, which you should consider when reading the information contained herein.

References to any legislation, act, regulations, rules, guidelines or policies shall be to such legislation, act, regulations, rules, guidelines or policies as amended, supplemented, or re-enacted from time to time, and any reference to a statutory provision shall include any subordinate legislation made under that provision.

The words and expressions used in this Draft Offer Document, but not defined, herein, shall have the meaning ascribed to such terms under the InvIT Regulations, the SEBI Act, the SCRA, the Depositories Act, and the rules and regulations made thereunder.

Notwithstanding the foregoing, the terms not defined but used in section entitled "Summary Audited Consolidated Financial Information of the Trust", "Summary Financial Information of the Sponsor", "Summary Financial Information of the Investment Manager", "Statement of Tax Benefits", "Regulations and Policies", and "Legal and Other Information" on pages 58, 63, 67, 490, 425, and 448, respectively, and "Valuation Reports", "Technical Reports", "Traffic Reports", "Audited Consolidated Financial Statements", "Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets", "Consolidated Unaudited Financial Information", "Financial Statements of the Proposed Portfolio Assets" in Annexure A, Annexure B, Annexure C, Annexure D, Annexure E, Annexure F and Annexure G, respectively, shall have the meanings ascribed to such terms in those respective sections/ annexures.

In this Draft Offer Document, unless the context otherwise requires, a reference to "we", "us" and "our" refers to the Trust and the Portfolio Assets on a consolidated basis. For the sole purpose of the Audited Consolidated Financial Statements and Consolidated Unaudited Financial Information, reference to "we", "us" and "our" refers to the Existing Portfolio Assets on a consolidated basis.

Trust Related Terms

Term	Description
Annuity SPVs Concession Agreements	Certain Portfolio Assets, being, APEPL, JUHPL, QEPL, and CNTL (collectively, the "**Annuity SPVs**") hold projects which are based on the BOT and DBFOT Annuity model and accordingly, have entered into concession agreements with NHAI
APEPL	Andhra Pradesh Expressway Private Limited
Associate	Associate shall have the meaning under Regulation 2(1)(b) of the InvIT Regulations
Audit Committee	The audit committee of the Investment Manager constituted by the board of directors of the Investment Manager in accordance with applicable laws
Audited Consolidated Financial Statements	The Consolidated Financial Statements of the Trust Group comprising of the Consolidated Balance Sheet as at September 30, 2025, the Consolidated Statement of Profit and Loss (including Other Comprehensive Income), the Consolidated Statement of Cash Flows, the Consolidated Statement of Changes in Unitholders' Equity, the Statement of Net Distributable Cash Flows (NDCFs) of the Trust and each of its subsidiaries for the half year then ended on that date and a summary of material accounting policies and other explanatory notes to the Audited Consolidated Financial Statements. The Audited Consolidated Financial Statements also include the following comparative information: a) Consolidated Balance Sheet as at September 30, 2024, March 31, 2025, March 31, 2024, and March 31, 2023; b) Consolidated Statement of Profit and Loss (including Other Comprehensive Income) for the half year ended September 30, 2024, and for the years ended March 31, 2025, March 31, 2024, and March 31, 2023; c) Consolidated Statement of Cash Flows for the half year ended September 30, 2024, and for the years ended March 31, 2025, March 31, 2024, and March 31, 2023; and d) Consolidated Statement of Net Distributable Cash Flows (NDCF) of the Trust and its subsidiaries for the half year ended September 30, 2024, and for the years ended March 31, 2025, and March 31, 2024 *Note: As the Trust issued its initial units and acquired its initial SPVs on April 17, 2023, the financial statements of the Trust for the period ended March 31, 2023, are on a standalone basis.*
Audited Standalone Financial Statements	The Standalone Financial Statements of the Trust which comprise the balance sheet as at September 30, 2025, the Standalone Statement of Profit and Loss (including Other Comprehensive Income), the Standalone Statement of Cash Flows and the Standalone Statement of Changes in Unitholders' Equity, the Statement of Net Distributable Cash Flows of the Trust for the half year ended on that date, a summary of material accounting policies and other explanatory notes to the Audited Standalone Financial Statements. The Audited Standalone Financial Statements also include the following comparative information: (a) Standalone Balance Sheet as at September 30, 2024, March 31, 2025, March 31, 2024, and March 31, 2023;

Term	Description
	(b) Standalone Statement of Profit and Loss (including other comprehensive income) for the half year ended September 30, 2024, and for the years ended March 31, 2025, March 31, 2024, and March 31, 2023; (c) Standalone Statement of Cash Flows for the half year ended September 30, 2024, and for the years ended March 31, 2025, March 31, 2024, and March 31, 2023; and (d) (d) Standalone Statement of Net Distributable Cash Flows (NDCF) of the Trust for the half year ended September 30, 2024, and for the years ended March 31, 2025, and March 31, 2024
Auditors	S.B. Billimoria & Co. LLP, Chartered Accountants, the statutory auditors of the Trust
BFHL	Baharampore-Farakka Highways Limited
BFHL Concession Agreement	The concession agreement executed between BFHL and NHAI dated June 28, 2010, as amended from time to time, read with the relevant supplementary agreement, for four-laning of the Baharampore Farakka section of NH-34 from 191.416 km to 294.684 km in the state of West Bengal under NHDP Phase III on a DBFOT basis
BOT/DBFOT SPVs	Portfolio assets which hold projects based on the build, operate, transfer and design, build, finance, operate, transfer model
BWHPL	Borgaon Watambare Highways Private Limited
BWHPL Concession Agreement	The concession agreement executed between BWHPL and NHAI dated May 10, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of Sangli-Solapur section of NH-166 from design chainage Km. 224.000 to Km. 276.000 existing Ch. 219.956 to Ch. 272.394 – (Package – II: Borgaon to Watambare of length 52 km) in the state of Maharashtra on Hybrid Annuity Model
CH-I	Cube Highways and Infrastructure Pte. Ltd.
CH-ID	Cube Highways and Infrastructure I-D Pte. Ltd.
CH-II	Cube Highways and Infrastructure II Pte. Ltd.
CH-III	Cube Highways and Infrastructure III Pte. Ltd.
CH-V	Cube Highways and Infrastructure V Pte. Ltd.
CNTL	Chenani Nashri Tunnelway Limited
Commitment Letter	The binding commitment letter entered into by the Trust, CH-V, CH-II, BFHL, CNTL, WTPL and DTPL on March 17, 2026. For further details please see the section entitled "*Related Party Transactions*" on page 410
Compliance Officer	The compliance officer of the Trust, i.e., Richa Gupta Rohatgi
Concession Agreements	Collectively, the concession agreements entered between the Portfolio Assets and the relevant concessioning authorities. For details, please see the section entitled "*Summary of Key Agreements*" on page 343
Consolidated Unaudited Financial Information	The Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025, comprises of the Consolidated Unaudited Statement of Profit and Loss, Statement of Net Distributable Cash Flows of the Trust and its subsidiaries, explanatory notes thereto and the additional disclosures contained in Chapter 4 of the InvIT Master Circular of Cube Highways Trust. The Consolidated Unaudited Financial Information has been prepared by Cube Highways Fund Advisors Private Limited in accordance with recognition and measurement principles laid down in the Indian Accounting Standard as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended, and other accounting principles generally accepted in India to the extent not inconsistent with the InvIT Regulations
Credit Rating Agencies	CRISIL Ratings Limited, ICRA Limited and India Ratings & Research Private Limited
Cube Tech/ Expert Service Provider	Cube Highways Technologies Private Limited
DATRPL	DA Toll Road Private Limited
DATRPL Concession Agreement	The concession agreement executed between DATRPL and NHAI dated July 16, 2010, as amended from time to time, read with the relevant supplementary agreement, for six-laning of the Delhi-Agra section of NH-2 from 20.500 km to 200.00 km (179.500 km length) in the state of Haryana/ Uttar Pradesh under NHDP Phase V on a BOT basis
DTPL	Devanahalli Tollway Private Limited
DTPL Concession Agreement	The concession agreement executed between DTPL and NHAI dated April 30, 2010, as amended from time to time, read with the relevant supplementary agreement, for upgradation, operation and maintenance of 534.720 km to 556.840 km of the Hyderabad Bangalore section of NH-7 in Karnataka under NHDP Phase VII on DBFOT basis
Erstwhile SPAs	The share purchase agreements entered into for the Sponsor's prior acquisition of certain Proposed Portfolio Assets, comprising of: (i) The amended and restated share purchase agreement dated February 13, 2024, executed amongst the Sponsor, Express Way Developers Limited, and WMTPL

Term	Description
	(ii) The share purchase agreement dated February 15, 2023, read with the amendment dated March 24, 2023, executed amongst the Sponsor, HCC Concessions Limited, Hindustan Construction Company Limited, HCC Infrastructure Company Limited, and BFHL (iii) The share purchase agreement dated February 7, 2025, read with the amendment dated June 4, 2025, executed amongst the Sponsor, National Infrastructure Fund acting through its investment manager National Investment and Infrastructure Fund Limited, Athaang Infrastructure Private Limited, and DTPL
Existing Portfolio Assets/ Project SPV(s)	The Trust's existing portfolio of assets comprises of (i) Andhra Pradesh Expressway Private Limited; (ii) Borgaon Watambare Highways Private Limited; (iii) DA Toll Road Private Limited; (iv) Farakka-Raiganj Highways Private Limited; (v) Ghaziabad Aligarh Expressway Private Limited; (vi) Hazaribagh Tollway Private Limited; (vii) Jaipur-Mahua Tollway Private Limited; (viii) Jammu Udhampur Highway Private Limited; (ix) Jhansi-Lalitpur Tollway Private Limited; (x) Jhansi-Vigakhet Tollway Private Limited; (xi) Kanyakumari–Etturavattam Tollway Private Limited; (xii) Kotwa–Muzaffarpur Tollway Private Limited; (xiii) Lucknow–Raebareli Tollway Private Limited; (xiv) Madurai-Kanyakumari Tollway Private Limited; (xv) Mahua Bharatpur Expressways Limited; (xvi) Mangalwedha-Solapur Highways Private Limited; (xvii) Mangloor Highways Private Limited; (xviii) N.A.M. Expressway Private Limited; (xix) Nanguneri-Kanyakumari Tollway Private Limited; (xx) Nelamangala Devihalli Expressway Private Limited; (xxi) Quazigund Expressway Private Limited; (xxii) Salaipudhur-Madurai Tollway Private Limited; (xxiii) Shankarampet Projects Private Limited; (xxiv) Srirangam Infra Private Limited; (xxv) Tirumala Highways Private Limited; (xxvi) Walayar Vadakkencherry Expressways Private Limited; and (xxvii) Western UP Tollway Private Limited
Existing Related Party SPAs	The share purchase agreements entered into between CH-I, CH-III, CH-II, CH-ID and Cube Mobility Investments Pte Ltd., the Trustee, the Investment Manager and the Existing Portfolio Assets pursuant to which the Trust has purchased the entire issued, subscribed and paid-up share capital of the Existing Portfolio Assets* * *In case of MBEL, Madhucon Infra Limited holds 0.03% of the shares and a letter agreement in accordance with the InvIT Regulations has been entered into.*
Existing Third-Party SPAs	Share purchase agreements entered into between National Investment and Infrastructure Fund acting through its investment manager, the Trust acting through the Investment Manager, JUHPL, and QEPL, pursuant to which the Trust has purchased the entire issued, subscribed and paid-up share capital of JUHPL and QEPL
Financial Statements of the Proposed Portfolio Assets	The Financial Statements of the Proposed Portfolio Assets include the financial statements of: (iv) DTPL, BFHL, and WMTPL, comprising Balance Sheet as at March 31, 2025, March 31, 2024, and March 31, 2023, along with the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Cash Flows and the Statement of Changes in Equity for the respective years ended on such date, and notes to the financial statements, including a summary of material accounting policies and other explanatory information (v) CNTL*, comprising Balance Sheet as at November 20, 2025, July 31, 2025, March 31, 2025, March 31, 2024, and March 31, 2023, along with the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Cash Flows and the Statement of Changes in Equity for the respective years ended on such date, and notes to the financial statements, and for other than the period ended November 20, 2025, a summary of material accounting policies and other explanatory information * *The financial statements drawn for the periods ended November 20, 2025, and July 31, 2025, are special purpose financial statements*
FRHPL	Farakka-Raiganj Highways Private Limited
FRHPL Concession Agreement	The concession agreement executed between FRHPL and NHAI dated July 19, 2010, as amended from time to time, read with the relevant supplementary agreement, for four-laning of the Farakka-Raiganj section of NH-34 from 295.00 km to 398.00 km in the state of West Bengal under NHDP Phase III on a DBFOT toll basis
GAEPL	Ghaziabad Aligarh Expressway Private Limited
GAEPL Concession Agreement	The concession agreement executed between GAEPL and NHAI dated May 20, 2010, as amended from time to time, read with the relevant supplementary agreement, for the design, engineering, construction, development, finance, operation and maintenance of the Ghaziabad Aligarh section of NH-91 from km 23.600 to km 140.200 in the state of Uttar Pradesh under NHDP Phase III on a BOT basis
HAM SPVs	Borgaon Watambare Highways Private Limited, Mangloor Highways Private Limited, Srirangam Infra Private Limited, Mangalwedha Solapur Highways Private Limited, Shankarampet Projects Private Limited and Tirumala Highways Private Limited
Holding Company/Holdco	A holding company, as defined under Regulation 2(1)(sb) of the InvIT Regulations, as amended
HTPL	Hazaribagh Tollway Private Limited
HTPL Concession Agreement	The concession agreement executed between HTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management,

Term	Description
	maintenance and transfer of the existing road comprising of the Hazaribagh Ranchi stretch in the state of Jharkhand from km 41+500 to 115+290 km for a total length of 73+790 km for a concession fee of ₹ 9,378,502,000
IM Board	The board of directors of the Investment Manager
Industry Expert	CRISIL Intelligence, a division of CRISIL Limited
Industry Report	The report titled "*Assessment of the Indian roads sector*" dated February 2026, prepared by CRISIL Intelligence
Investment Committee	The investment committee of the Investment Manager constituted by the board of directors of the Investment Manager
Investment Management Agreement	The amended and restated investment management agreement dated July 24, 2024, entered into between the Trustee, the Investment Manager, and the Existing Portfolio Assets read with the deed of adherence entered into by BWHPL, JUHPL, SIPL, SPPL, THPL, MHPL, MSHPL, NAMEPL, QEPL and the Investment Manager, along with any further deed of adherence to be further executed in relation to the Proposed Portfolio Assets
Investment Manager/IM	Cube Highways Fund Advisors Private Limited
Investment Objectives	The investment objectives of the Trust, as provided under the section entitled "*Overview of the Trust*" on page 36
InvIT Documents	The Trust Deed, the Investment Management Agreement, the Project Implementation and Management Agreement, Existing Related Party SPAs, Existing-Third Party SPAs, Share Purchase Agreements, policies adopted by the Investment Manager, Trust Loan Agreements, Commitment Letter or any other document, letter or agreement entered into or to be entered into by the Investment Manager or Trustee on behalf of the Trust, with respect to the Trust or the Units or executed or to be executed in connection with the Trust, the offer documents and such other documents in connection therewith, as originally executed and amended, modified, supplemented or restated from time to time, together with the respective annexures, schedules and exhibits, if any
InvIT Loans	The loans availed by the Trust, principal terms of which are set out in the section entitled "*Financial Indebtedness and Deferred Payments*" on page 364
JLTPL	Jhansi-Lalitpur Tollway Private Limited
JLTPL Concession Agreement	The concession agreement executed between JLTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Jhansi Lalitpur Package 1 stretch in the state of Uttar Pradesh from km 00+000 to 49+700 km for a total length of 49.700 km for a concession fee of ₹ 4,537,128,000
JMTPL	Jaipur-Mahua Tollway Private Limited
JMTPL Concession Agreement	The concession agreement executed between JMTPL and NHAI dated September 23, 2005, as amended from time to time, read with the relevant supplementary agreement, for improvement, operation and maintenance, rehabilitation and strengthening of the existing 2-lane road and widening to a 4-lane divided highway of the Mahua-Jaipur section of NH-11 from km 120.000 to km 228.000 in the state of Rajasthan on a BOT basis under NHDP Phase - IIIA
JUHPL	Jammu Udhampur Highway Private Limited
JVTPL	Jhansi-Vigakhet Tollway Private Limited
JVTPL Concession Agreement	The concession agreement executed between JVTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Jhansi Lalitpur Package 2 stretch in the state of Uttar Pradesh from 49+700 km to 99+005 km for a total length of 49.305 km for a concession fee of ₹ 2,729,795,000
KETPL	Kanyakumari-Etturavattam Tollway Private Limited
KETPL Concession Agreement	The concession agreement executed between KETPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 2 stretch in the state of Tamil Nadu from 52+300 km to 116+500 for a total length of 64.200 km for a concession fee of ₹ 4,609,806,000
KMTPL	Kotwa - Muzaffarpur Tollway Private Limited
KMTPL Concession Agreement	The concession agreement executed between KMTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Kotwa Muzzaffarpur stretch in the state of Bihar from km 440.000 to 520.000 km for a total length of 80.000 km for a concession fee of ₹ 6,881,478,000
LRTPL	Lucknow-Raebareli Tollway Private Limited
LRTPL Concession Agreement	The concession agreement executed between LRTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the stretch in the state of Uttar Pradesh from

Term	Description
	12.70 km to 82.70 km for a total length of 70 km and all project assets for a concession fee of ₹ 4,305,660,000
MBEL	Mahua Bharatpur Expressways Limited
MBEL Concession Agreement	The concession agreement executed between MBEL and NHAI dated October 13, 2005, as amended from time to time, read with the relevant supplementary agreement, for design, engineering, financing, procurement, construction, completion, operation and maintenance of existing 2 lane road and widening to 4 lane divided highway of km 63.000 to km 120.000 of NH-11 (Bharatpur-Mahua section) in the state of Rajasthan on a BOT basis under NHDP Phase IIIA
MHPL	Mangloor Highways Private Limited
MHPL Concession Agreement	The concession agreement executed between MHPL and NHAI dated May 9, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of NH-161 from Mangloor (Design Km. 86.788/Existing Km. 91.350) to Telangana/Maharashtra Border (Design Km. 135.751 / Existing Km. 140.873) (Design Length = 48.963 Km) in the state of Telangana under Bharatmala Pariyojana on Hybrid Annuity Model
MKTPL	Madurai-Kanyakumari Tollway Private Limited
MKTPL Concession Agreement	The concession agreement executed between MKTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 1 stretch in the state of Tamil Nadu from 00+000 km to 52+300 km for a total length of 52.300 km for a concession fee of ₹ 6,667,151,000
MSHPL	Mangalwedha Solapur Highways Private Limited
MSHPL Concession Agreement	The concession agreement executed between MSHPL and NHAI dated May 10, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of Sangli- Solapur (Package IV: Mangalwedha to Solapur) Section of NH-166 from existing Ch.Km. 314.969 to Ch. 370.452 (Design Ch. Km. 321.600 to Km. 378.100) of length 56.500 Km in the state of Maharashtra on Hybrid Annuity Model
NAMEPL	N.A.M. Expressway Private Limited
NAMEPL Concession Agreement	The concession agreement executed between NAMEPL and the relevant state authorities in Andhra Pradesh dated July 23, 2010, as amended from time to time between NAMEPL and the relevant state authorities in Andhra Pradesh and Telangana, for the design, construction, finance, operation and maintenance of the Narketpally-Addanki-Medarametla Road (SH-2) from Km. 0.000 to 212.500 in the State of Telangana and Andhra Pradesh under Public Private Partnership on DBFOT (Toll) basis
NDEPL	Nelamangala Devihalli Expressway Private Limited
NDEPL Concession Agreement	The concession agreement executed between Lanco Devihalli Highways Limited and NHAI dated July 9, 2007, and endorsed in favour of NDEPL pursuant to the endorsement agreement dated January 11, 2021, entered into between NDEPL and NHAI, as amended from time to time, read with the relevant supplementary agreement, for design, engineering, construction, development, finance, operation and maintenance of Nelamangala Junction on NH-4 with NH-48 to Devihalli from 28.200 km to 110.000 km of NH-48 in the state of Karnataka under NHDP Phase IIIA on a BOT basis
New PIMA	The project implementation and management agreement proposed to be entered into amongst the Trustee, Cube Highways Asset & Project Advisory Private Limited, the Investment Manager and the relevant Portfolio Assets
NIIF SPVs	Jammu Udhampur Highway Private Limited and Quazigund Expressway Private Limited
NKTPL	Nanguneri-Kanyakumari Tollway Private Limited
NKTPL Concession Agreement	The concession agreement executed between NKTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 4 stretch in the state of Tamil Nadu from km 180+000 to km 243+470 for a total length of 63.470 km for a concession fee of ₹ 6,194,192,000
Nomination and Remuneration Committee	The nomination and remuneration committee of the Investment Manager constituted by the board of directors of the Investment Manager in accordance with applicable laws.
Operations Committee	The operations committee constituted by the board of directors of the Investment Manager.
Original Trust Deed	The trust deed of Cube Highways Trust dated December 7, 2021, entered into between the Settlor, CH-I, CH-III and the Trustee
Parties to the Trust	Collectively, the Sponsor, the Sponsor Group, the Trustee, the Investment Manager and the Project Manager* * *Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager of the Trust and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from the relevant concessioning authorities of the Portfolio Assets and subsequent to the receipt of the approvals, the New PIMA will be executed. The aforesaid change has not been completed as of the date of this Draft Offer*

Term	Description
	Document. For further details, please see the section entitled "Parties to the Trust - The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited" on page 168.
Portfolio Assets	Collectively, the Existing Portfolio Assets and Proposed Portfolio Assets
Project Implementation and Management Agreement	The project implementation and management agreement dated January 2, 2023, entered into amongst the Trustee, the Project Manager*, the Investment Manager and the relevant Portfolio Assets, as amended from time to time read with the deed of adherence to the project implementation and management agreement entered into by the Trustee, the Investment Manager, BWHPL, JUHPL, SIPL, SPPL, THPL, MHPL, MSHPL, NAMEPL, QEPL and the Project Manager along with any further deed of adherence to be further executed in relation to the Proposed Portfolio Assets * *Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager of the Trust and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from the relevant concessioning authorities of the Portfolio Assets and subsequent to the receipt of the approvals, the New PIMA will be executed. The aforesaid change has not been completed as of the date of this Draft Offer Document. For further details, please see the section entitled "Parties to the Trust - The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited" on page 168.*
Project Manager	Cube Highways and Transportation Assets Advisors Private Limited
Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets	Projections of revenue from operations and cash flows from operating activities of the Proposed Portfolio Assets for the years ending March 31, 2026, March 31, 2027, March 31, 2028, and March 31, 2029, along with the underlying assumptions and other explanatory information has been prepared based on the accounting policies used for preparation of the historical financial statements of the proposed subsidiary as required by the InvIT Regulations, which are prepared in accordance with accounting principles of Indian Accounting Standards ("Ind AS") as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended prescribed under Section 133 of the Companies Act, 2013 read with InvIT Regulations and the Guidance Note issued by the Institute of Chartered Accountants of India. Projected cash flow from operating activities has been calculated using the direct method under Ind AS 7 - Statement of Cash Flows and is computed by deducting the projected expenses and income taxes from the projected revenue from operations and adjusted for working capital changes and projected non-cash expenses (if any). Projected cash flow from operating activities do not include any items pertaining to financing or investing in nature. Though the aforesaid Projections are prepared under the Ind AS framework, they do not provide for all the detailed disclosures as required under Ind AS
Proposed Portfolio Assets	(i) Baharampore-Farakka Highways Limited; (ii)Western MP Infrastructure & Toll Roads Private Limited; (iii) Chenani Nashri Tunnelway Limited; and (iv) Devanahalli Tollway Private Limited
QEPL	Quazigund Expressway Private Limited
Related Parties	Related parties, as defined under Regulation 2(1)(zv) of the InvIT Regulations
Risk Management Committee	The risk management committee of the Investment Manager constituted by the board of directors of the Investment Manager in accordance with applicable laws
ROFO Agreement	Right of First Offer agreement dated March 17, 2026, entered into amongst the Investment Manager (on behalf of the Trust) and the Sponsor
ROFO Assets	Eligible road infrastructure projects acquired and/or developed by special purpose vehicles that are proposed to be acquired by the Trust in accordance with the ROFO Agreement which include (i) Kokhraj Handia Expressway Pvt. Ltd.; (ii) Delhi Hapur Meerut Expressway Pvt. Ltd.; and (iii) Malayagiri Highways Pvt. Ltd.
Selling Unitholders	The Unitholders offering their Units in the Offer, i.e.: (i) BCI IRR India Holdings Inc.; (ii) BCI IRR India Holdings Limited Partnership; (iii) Cube Highways and Infrastructure II Pte. Ltd.; (iv) Cube Highways and Infrastructure III Pte. Ltd.; (v) Cube Mobility Investments Pte. Ltd.; and (vi) Seventy Second Investment Company LLC
Settlor	Cube Highways and Transportation Assets Advisors Private Limited
Share Purchase Agreements/SPAs	The share purchase agreements to be entered into amongst Cube Highways and Infrastructure II Pte. Ltd., Cube Highways and Infrastructure V Pte. Ltd., the Trustee, the Investment Manager and the Proposed Portfolio Assets, pursuant to which the Trust will purchase the entire issued, subscribed and paid-up share capital of the Proposed Portfolio Assets* * *The Trust proposes to acquire at least 95% of the equity shares of WMTPL. As on date of this Draft Offer Document, 5% of WMTPL's shareholding is held by Express Way Developers Limited. The acquisition of equity shares of WMTPL is subject to the satisfaction of certain conditions precedent specified in the Commitment Letter. For further details, please see "Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust" and "Related Party Transactions - Commitment Letter" on pages 56 and 417, respectively.*
Shared Services Agreement or SSA	The shared services agreement dated September 7, 2022, as amended on January 18, 2023, and September 26, 2023, entered into between the Investment Manager and the Project Manager

Term	Description
SIPL	Srirangam Infra Private Limited
SIPL Concession Agreement	The concession agreement executed between SIPL and NHAI dated April 11, 2018, as amended from time to time, read with the relevant supplementary agreement, construction, O&M of the project at the site, comprising Km. 311.516 (existing chainage of NH 45) to Km. 39.100 (existing chainage of NH 227), Design chainage from Km. 0.000 to Km. 38.70, of Thiruchirapalli to Kallagam Section of NH 227, Total Design Length = 38.700 Km, in the State of Tamil Nadu under NHDP Phase-IV
SMTPL	Salaipudhur-Madurai Tollway Private Limited
SMTPL Concession Agreement	The concession agreement executed between SMTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 3 stretch in the state of Tamil Nadu from km 116+500 to km 180+000 for a total length of 63.500 km for a concession fee of ₹ 4,806,288,000
Sponsor	Cube Highways and Infrastructure V Pte. Ltd.
Sponsor Group/Cube Group	The Sponsor and the following entities: (i) Cube Highways and Infrastructure Pte. Ltd. (ii) Cube Highways and Infrastructure II Pte. Ltd. (iii) Cube Highways and Infrastructure III Pte. Ltd. (iv) Cube Highways and Infrastructure I-D Pte. Ltd. and (v) Cube Mobility Investments Pte Ltd.
Sponsor Group Selling Unitholders	The Sponsor Group entities offering their units in the Offer for Sale which include: (i) Cube Highways and Infrastructure II Pte. Ltd., (ii) Cube Highways and Infrastructure III Pte. Ltd. and (iii) Cube Mobility Investments Pte Ltd.
SPPL	Shankarampet Projects Private Limited
SPPL Concession Agreement	The concession agreement executed between SPPL and NHAI dated May 9, 2018, as amended from time to time for construction, O&M of the project at the site, comprising of NH-161 from Ramsanpalle village, Design Km. 39.980/ Existing Km. 44.757, to Mangloor village, Design Km. 86.788/ Existing Km. 91.350, Design Length = 46.808 Km, in the State of Telangana under the Bharatmala Pariyojana on Hybrid Annuity Model
SPV(s)	Special purpose vehicles, as defined under Regulation 2(l)(zy) of the InvIT Regulations
Stakeholders Relationship Committee	The stakeholders relationship committee of the Investment Manager constituted by the board of directors of the Investment Manager in accordance with applicable laws.
Technical Consultants	Knight Frank (India) Private Limited and FP India Project Management Consultancy Services Private Limited
Technical Reports	Collectively, the technical reports prepared by the Technical Consultants
THPL	Tirumala Highways Private Limited
THPL Concession Agreement	The concession agreement executed between THPL and NHAI dated May 9, 2018, as amended from time to time for construction, O&M of the project at the site, comprising of NH-140 from Chittor (Design Km. 0.000/Existing Km 158.000 of NH-4) to Mallavaram (Design Km. 61.128/Existing Km 41.800 of NH-140) (Design Length = 61.128 Km) in the State of Andhra Pradesh under Bharatmala Pariyojana on Hybrid Annuity Model
TOT SPVs	Portfolio Assets, holding projects based on the toll, operate and transfer model
Traffic Consultants	Steer Davies Gleave India Private Limited and CRISIL Intelligence
Traffic Reports	Collectively, the traffic reports prepared by the Traffic Consultants
Trust	Cube Highways Trust
Trust Deed	The Original Trust Deed of Cube Highways Trust as amended and restated on July 8, 2022, which was subsequently amended and restated on March 11, 2024, entered into between the Settlor, CH-I, CH-III and the Trustee and shall include the deed of adherence dated February 20, 2026, entered into by the Sponsor.
Trust Group	As defined under note 1 of the notes forming part of the Audited Consolidated Financial Statements.
Trust Loan Agreements	Trust loan agreements and ancillary financing documents entered into amongst the Trustee, the Investment Manager and the Existing Portfolio Assets
Trustee	Axis Trustee Services Limited
Unitholder	Any person who owns Units of the Trust
Units	An undivided beneficial interest in the units of the Trust, and such units together represent the entire beneficial interest in the Trust

Term	Description
Valuation Reports	The valuation reports issued by the Valuer, which set out its opinion as to the fair enterprise value of the Existing Portfolio Assets as on December 31, 2025, and September 30, 2025, along with the fair enterprise value of the Proposed Portfolio Assets as on March 31, 2026.
Valuer	Ernst & Young Merchant Banking Services LLP
WMTPL	Western MP Infrastructure & Toll Roads Private Limited
WMTPL Concession Agreement	The concession agreement executed between WMTPL and Madhya Pradesh Road Development Corporation dated August 30, 2007, as amended from time to time for four-laning of Lebad-Jaora, a section of SH-31 from 0 km to 125 km in the state of Madhya Pradesh on a BOT basis
WUPTPL	Western UP Tollway Private Limited
WUPTPL Concession Agreement	The concession agreement executed between WUPTPL and NHAI dated September 9, 2005, as amended from time to time, read with the relevant supplementary agreement for design, engineering, financing, procurement, construction, completion, operation and maintenance of existing 2 lane road and widening to 4 lane divided highway of Meerut Muzaffarnagar section of NH 58 from km 52.250 to km 131 in the State of Uttar Pradesh on a BOT basis under NHDP Phase – IIIA
WVEPL	Walayar Vadakkencherry Expressways Private Limited
WVEPL Concession Agreement	The concession agreement executed between WVEPL and NHAI dated September 17, 2012, as amended from time to time, read with the relevant supplementary agreement, for four-laning of Walayar-Vadakkancherry section in Kerala (182.250 km to 240.000 km of NH-47) – package NS-2/BOT/KL-2 on DBFOT (Toll) basis under NHDP Phase II in the state of Kerala

Offer Related Terms

Term	Description
Acknowledgement Slip	The slip or document issued by the Designated Intermediary to a Bidder as proof of registration of the Bid cum Application Form
Allocated/ Allocation	Allocation of Units, following the determination of the Offer Price by the Investment Manager, in consultation with the Book Running Lead Managers, to Bidders on the basis of the Application Form submitted by the Bidder
Allot/ Allotment/ Allotted	Unless the context otherwise requires, and allotment of Units pursuant to the transfer of the Offered Units to successful Bidders, pursuant to the Offer
Allotment Advice	Note, advice or intimation of Allotment sent to the Bidders who have been or are to be Allotted Units after the Basis of Allotment has been approved by the Designated Stock Exchange
Allottees	Successful bidders to whom Units are Allotted pursuant to the Offer
Anchor Investor	An Institutional Investor, making an application of a value of at least ₹ 100 million, applying under the Anchor Investor Portion in accordance with the requirements specified in the InvIT Regulations, in terms of the Offer Document
Anchor Investor Allocation Price	Price at which Units will be allocated to Anchor Investors in terms of the Offer Document, as decided by the Investment Manager in consultation with the Book Running Lead Managers
Anchor Investor Application Form	The form used by an Anchor Investor to make a Bid in the Anchor Investor Portion and which will be considered as an application for Allotment in terms of the Offer Document
Anchor Investor Bidding Date	One Working Day prior to the Bid/Offer Opening Date, on which Bids by Anchor Investors are to be submitted and allocation to Anchor Investors shall be completed
Anchor Investor Offer Price	Final price at which Units will be Allotted to Anchor Investors in terms of the Offer Document and the Final Offer Document, which price will be equal to or higher than the Offer Price but not higher than the Cap Price The Anchor Investor Offer Price will be decided by the Investment Manager in consultation with the Book Running Lead Managers
Anchor Investor Portion	Up to 60% of the portion available for allocation to Institutional Investor Portion, which may be allocated by the Investment Manager in consultation with the Book Running Lead Managers on a discretionary basis
Application Supported by Blocked Amount or ASBA	An application, whether physical or electronic, used by ASBA Bidders to make a Bid by authorizing an SCSB to block the Bid Amount in the ASBA Account and will include applications made by individual Non-Institutional Investors using the UPI Mechanism, where the Bid Amount was blocked upon acceptance of UPI Mandate Request by individual Non-Institutional Investors using the UPI Mechanism
ASBA Account	A bank account maintained with an SCSB and specified in the ASBA Form for blocking the Bid Amount mentioned in the ASBA Form and includes the account of individual Non-Institutional Investors which was blocked upon acceptance of a UPI Mandate Request made by the individual Non-Institutional Investors using the UPI Mechanism
ASBA Bid	A Bid made by an ASBA Bidder including all revisions and modifications thereto as permitted under the InvIT Regulations and InvIT Master Circular
ASBA Bidder	All Bidders other than Anchor Investors and Strategic Investors

Term	Description
ASBA Form	An application form, whether physical or electronic, used by ASBA Bidders which will be considered as the application for Allotment in terms of the Offer Document and the Final Offer Document
Banker(s) to the Offer	Collectively, the Escrow Collection Bank(s), the Public Offer Account Bank(s), the Sponsor Bank(s) and the Refund Bank(s), as the case may be
Basis of Allotment	The basis on which Units will be Allotted to successful Bidders under the Offer and which is described in '*Offer Information'* on page 467
Bid Amount	The highest value of optional Bids indicated in the Bid cum Application Form and payable by the Bidder or blocked in the ASBA Account of the ASBA Bidder, or the amount payable by any Anchor Investor or Strategic Investors, as the case may be, upon submission of the Bid in the Offer
Bid cum Application Form	The Anchor Investor Application Form or the ASBA Form, as the context requires
Bid Lot	A minimum of such a number of Units that the Bid Amount is not less than ₹ [●], and in multiples of [●] Units thereafter
Bid(s)	An indication to make an offer during the Bid/Offer Period by an ASBA Bidder pursuant to submission of the ASBA Form, or on the Anchor Investor Bidding Date by an Anchor Investor pursuant to submission of the Anchor Investor Application Form, to subscribe to or purchase Units of the Trust at a price within the Price Band, including all revisions and modifications thereto as permitted and including any participation by Strategic Investors under the InvIT Regulations and InvIT Master Circular. The term "Bidding" shall be construed accordingly.
Bid/Offer Closing Date	Except in relation to any Bids received from the Anchor Investors and Strategic Investors, the date after which the Designated Intermediaries will not accept any Bids, being [●], which will be advertised in all editions of **[●]** (a widely circulated English national daily newspaper), in all editions of **[●]** (a widely circulated Hindi national daily newspaper) and **[●]** (a widely circulated regional daily newspaper, where the registered office of the Investment Manager is located)
Bid/Offer Opening Date	Except in relation to any Bids received from the Anchor Investors and Strategic Investors, the date on which the Designated Intermediaries shall start accepting Bids, being [●], which will be advertised in all editions of **[●]** (a widely circulated English national daily newspaper), in all editions of **[●]** (a widely circulated Hindi national daily newspaper) and **[●]** (a widely circulated regional daily newspaper, where the registered office of the Investment Manager is located)
Bid/Offer Period	Period between the Bid/Offer Opening Date and the Bid/ Offer Closing Date, inclusive of both days, during which Bidders, other than Anchor Investors and Strategic Investors can submit their Bids, including any revisions thereof
Bidder(s)	Any prospective investor who makes a Bid pursuant to the terms of the Offer Document and the Bid cum Application Form and for a Strategic Investor in terms of the Strategic Investor Unit Subscription Agreement with such investor and unless otherwise stated or implied, includes an Anchor Investor and a Strategic Investor
Bidding Centres	Centres at which the Designated Intermediaries shall accept ASBA Forms, i.e. Designated SCSB Branch for SCSBs, Specified Locations for Syndicate, Broker Centres for Registered Brokers, Designated RTA Locations for RTAs and Designated CDP Locations for CDPs
Body Corporate	Body Corporate / Bodies corporate as defined in Regulation 2(1)(d) of the InvIT Regulations
Book Building Process	The book building process, as provided in Part A of Schedule XIII of the SEBI ICDR Regulations
Book Running Lead Managers or BRLMs	Kotak Mahindra Capital Company Limited, HDFC Bank Limited, HSBC Securities and Capital Markets (India) Private Limited and JM Financial Limited
Business Day	Any day from Monday to Friday, excluding any public holiday
Cap Price	The higher end of the Price Band, being ₹ [●] per Unit, above which the Offer Price will not be finalized and above which no Bids will be accepted
Cash Escrow and Sponsor Agreement	The cash escrow and sponsor agreement to be entered into amongst the Trust (acting through the Trustee), the Trustee, the Sponsor, the Investment Manager, the Book Running Lead Managers, the Selling Unitholders, the Registrar to the Offer and the Bankers to the Offer for, collection of the Bid Amounts and for remitting refunds, if any, of the amounts collected, to the Bidders
Client ID	Client identification number maintained with one of the Depositories in relation to a demat account
Closing Date	The date on which Allotment of the Units pursuant to the Offer shall be made, i.e. on or about [●]
Collecting Depository Participant or CDP	A depository participant as defined under the Depositories Act, registered with SEBI and who is eligible to procure Bids at the Designated CDP Locations in terms of circular no. CIR/CFD/POLICYCELL/11/2015 dated November 10, 2015, issued by SEBI, as amended
Confirmation of Allocation Note or CAN	Notice or intimation of allocation of Units sent to Anchor Investors and Strategic Investors who have been allocated Units, after the Anchor Investor Bidding Date
Demographic Details	Details of the Bidders, including the Bidder's address, investor status, occupation and bank account details PAN, DP ID and Client ID.
Depository Participant or DP	A depository participant as defined under the Depositories Act, 1996, as amended
Designated Date	The date on which funds are transferred from the Escrow Accounts and the amounts blocked by the SCSBs (in case of individual Non-Institutional Investors using the UPI Mechanism, instructions issued through

Term	Description
	the Sponsor Bank) are transferred from the ASBA Accounts, as the case may be, to the Public Offer Account or the Refund Account, as appropriate
Designated Intermediaries	Syndicate, sub-syndicate/agents, SCSBs, Registered Brokers, CDPs and RTAs, who are authorized to collect ASBA Forms from the ASBA Bidders, in relation to the Offer.
Designated RTA Locations	Such locations of the RTAs where Bidders can submit ASBA Forms. The details of such Designated RTA Locations, along with names and contact details of the RTAs eligible to accept Bid cum Application Forms are available on the respective websites of the Stock Exchanges (www.bseindia.com and www.nseindia.com)
Designated Stock Exchange	[●]
DP ID	Depository Participant's Identification
Draft Offer Document	This Draft Offer Document dated March 17, 2026, in relation to the Offer, filed with SEBI and the Stock Exchanges, issued in accordance with the InvIT Regulations and the InvIT Master Circular, which does not contain the complete particulars of the Offer, including any modifications, amendments, supplements, notices, corrections or corrigenda thereto
Eligible NRI(s)	NRI(s) from jurisdictions outside India where it is not unlawful to make an offer or invitation under the Offer and in relation to whom the ASBA Form and the Offer Document will constitute an invitation to subscribe to the Units
Escrow Accounts	'No-lien' and 'non-interest bearing' account opened with the Escrow Collection Bank and in whose favour Anchor Investors and Strategic Investors should transfer money through direct credit/NEFT/NACH/RTGS in respect of the Bid Amount when submitting a Bid
Escrow Collection Bank	Bank which is a clearing member and registered with SEBI as banker(s) to an offer, under the Securities and Exchange Board of India (Bankers to an Issue) Regulations, 1994, and with whom the Escrow Account(s), have been opened, in this case being [●]
Final Offer Document	The Final Offer Document dated [●] filed with SEBI and the Stock Exchanges after the Pricing Date in accordance with the InvIT Regulations and the InvIT Master Circular containing, amongst other things, the Offer Price that is determined at the end of the Book Building Process, the size of the Offer and certain other information, including any addenda or corrigenda thereto
First Bidder	Bidder whose name shall be mentioned first in the Bid cum Application Form or the Revision Form and in case of joint Bids, whose name shall also appear as the first holder of the beneficiary account held in joint names
Floor Price	The lower end of the Price Band, subject to any revision thereto, in this case being ₹ [●] at or above which the Offer Price and the Anchor Investor Offer Price and Strategic Investor Offer Price will be finalised and below which no Bids will be accepted
Institutional Investor Portion	Portion of the Offer (including the Anchor Investor Portion) being not more than 75% of the Offer Size, comprising not more than [●] Units which shall be available for allocation to Institutional Investors (including Anchor Investors), subject to valid Bids being received at or above the Offer Price, and as may be permitted by SEBI
Institutional Investors	Institutional investor as defined in Regulation 2(1)(ya) of the InvIT Regulations
Listing Agreements	The listing agreement dated April 19, 2023, and April 19, 2023, entered into with the BSE and NSE, respectively by the Trust, in line with the format as specified under the Securities and Exchange Board of India circular number CIR/CFD/CMD/6/2015 dated October 13, 2015, on "Format of uniform Listing Agreement"
Listing Date	The date on which the units of the Trust were initially listed on BSE and NSE, i.e. April 19, 2023, pursuant to the private placement of the Trust
Minimum Bid Size	Minimum of [●] Units and in multiples of [●] Units thereafter by Bidders, for Bidders other than Anchor Investors and Strategic Investors, ₹100 million for Anchor Investors and 5% of the total Offer Size (either jointly or severally) for Strategic Investors
Mutual Funds	Mutual funds registered with SEBI under the Securities and Exchange Board of India (Mutual Funds) Regulations, 1996, as amended
Non-Institutional Investor Portion	Portion of the Offer being not less than 25% of the Offer Size, comprising at least [●] Units, which shall be available for allocation on a proportionate basis to Non-Institutional Investors, subject to valid Bids being received at or above the Offer Price, and as may be permitted by SEBI
Non-Institutional Investors	All Bidders, that are not Institutional Investors (including Anchor Investors and Strategic Investors), who have Bid for Units in the Offer
Non-Resident Indian/ Non-Resident or NRI(s)	An individual resident outside India who is a citizen or is an 'overseas citizen of India' cardholder within the meaning of Section 7A of the Citizenship Act, 1955 and includes a Non-Resident Indian, FVCIs, FIIs and FPIs
NPCI	National Payment Corporation of India
Offer	The conversion of the trust from a privately listed infrastructure investment trust to a publicly listed infrastructure investment trust through an Offer for Sale of [●] Units of the Trust at an Offer Price of ₹ [●] per Unit, aggregating up to ₹ 50,000 million

Term	Description
Offer Agreement	The offer agreement dated March 17, 2026, entered into among the Trustee (acting on behalf of, and in its capacity as a trustee to, the Trust), the Investment Manager, the Sponsor, the Project Manager, Cube Highways Asset & Project Advisory Private Limited, the Selling Unitholders and the Book Running Lead Managers
Offer Document	The Offer Document to be issued in relation to this filed with SEBI and the Stock Exchanges, issued in accordance with the InvIT Regulations and the InvIT Master Circular, which does not contain the complete particulars of the Offer, including any modifications, amendments, supplements, notices, corrections or corrigenda thereto.
Offer for Sale	The offer for sale of up to [●] Units aggregating up to ₹50,000 million by the Selling Unitholders, comprising up to [●] Units aggregating up to ₹10,725.00 million by BCI IRR India Holdings Inc., up to [●] Units aggregating up to ₹275.00 million by BCI IRR India Holdings Limited Partnership, up to [●] Units aggregating up to ₹15,098.70 million by Cube Highways and Infrastructure II Pte. Ltd., up to [●] Units aggregating up to ₹6,055.70 million by Cube Highways and Infrastructure III Pte. Ltd., up to [●] Units aggregating up to ₹12,908.40 million by Cube Mobility Investments Pte. Ltd. and up to [●] Units aggregating up to ₹4,937.20 million by Seventy Second Investment Company LLC, in the Offer
Offer Price	₹ [●] per Unit, being the price at which Units pursuant to the Offer will be Allotted to successful Bidders in terms of this Offer
Offer Size	The Offer of up to [●] Units pursuant to the Offer aggregating up to ₹ 50,000 million
Offered Units	Up to [●] Units aggregating up to ₹50,000 million being offered for sale, comprising up to [●] Units aggregating up to ₹10,725.00 million by BCI IRR India Holdings Inc., up to [●] Units aggregating up to ₹275.00 million by BCI IRR India Holdings Limited Partnership, up to [●] Units aggregating up to ₹15,098.70 million by Cube Highways and Infrastructure II Pte. Ltd., up to [●] Units aggregating up to ₹6,055.70 million by Cube Highways and Infrastructure III Pte. Ltd., up to [●] Units aggregating up to ₹12,908.40 million by Cube Mobility Investments Pte. Ltd. and up to [●] Units aggregating up to ₹4,937.20 million by Seventy Second Investment Company LLC, in the Offer
Pay-in Date	The last date specified in the CAN for payment of application monies by the Anchor Investors and Strategic Investors, which shall be no later than two Working Days from the Bid/Offer Closing Date/Pricing Date, as applicable
Price Band	Price band between the minimum price of ₹ [●] per Unit (Floor Price) and the maximum price of ₹ [●] per Unit (Cap Price) including any revision thereof. The Price Band will be decided by the Investment Manager in consultation with the Book Running Lead Managers, and will be announced at least two Working Days prior to the Bid/ Offer Opening Date, on the websites of the Trust, the Sponsor and the Investment Manager, and shall be made available to the Stock Exchanges for the purpose of uploading on their respective websites
Pricing Date	The date on which the Investment Manager in consultation with the Book Running Lead Managers, finalizes the Offer Price in accordance with the Book Building Process and in terms of the Offer Document and the Final Offer Document.
Proposed Transfer /Swap Transaction	This term shall have the meaning ascribed to it under the section entitled "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" on page 56
Public InvIT	An InvIT that has issued units in terms of Regulation 14(4) of the InvIT Regulations
Public Listing Date	The date on which the Units of the Trust will be listed on Stock Exchanges pursuant to the conversion process from privately listed InvIT into public InvIT
Public Offer Account	'No-lien and 'non-interest bearing' bank account opened to receive monies from the Escrow Accounts and from the ASBA Accounts on the Designated Date
Public Offer Account Bank	The bank that is a clearing member and registered with SEBI under the Securities and Exchange Board of India (Bankers to an Issue) Regulations, 1994, as a banker to an issue and with which the Public Offer Account was opened, in this case being [●]
Qualified Institutional Buyers or QIB(s)	A qualified institutional buyer as defined under Regulation 2(1)(zs) of the InvIT Regulations
Refund Account(s)	'No-lien' and 'non-interest bearing' account(s) opened with the Refund Bank(s), from which refunds, if any, of the whole or part of the Bid Amount to Anchor Investors and Strategic Investors shall be made.
Refund Bank	Bank which is a clearing member and registered with SEBI as a banker to an issue, under the Securities and Exchange Board of India (Bankers to an Issue) Regulations, 1994, and with whom the Refund Account(s), was/were opened, in this case being [●]
Registered Brokers	Stock brokers registered with the stock exchanges having nationwide terminals, other than the Lead Manager and the Syndicate Members, eligible to procure Bids in terms of the Master Circular No. SEBI/HO/MIRSD/MIRSD-PoD/P/CIR/2025/90, 'Master circular for stock brokers', dated June 17, 2025, issued by SEBI
Registrar Agreement	The agreement dated March 17, 2026, entered into between the Trustee (on behalf of the Trust), the Investment Manager, and the Registrar to the Offer in relation to the responsibilities and obligations of the Registrar to the Offer

Term	Description
Registrar and Unit Transfer Agent or Registrar	Registrar and share transfer agents registered with SEBI and eligible to procure RTAs Bids at the Designated RTA Locations in terms of Master Circular No. HO/38/13/(4)2026-MIRSD-POD/I/4298/2026 dated February 06, 2026, issued by SEBI
Registrar to the Offer	KFin Technologies Limited
Revision Form	Form used by the Bidders to modify the quantity of Units or the Bid Amount in any of their ASBA Forms or any previous Revision Forms. Bidders are not allowed to withdraw or lower their Bids (in terms of number of Units or the Bid Amount) at any stage
SCSB Branches	Such branches of the SCSBs that shall collect the ASBA Forms, a list of which is available on the website of SEBI at https://www.sebi.gov.in/sebiweb/other/OtherAction.do?doRecognised=yes or at such other website as may be prescribed by SEBI from time to time
Self-Certified Syndicate Bank(s) or SCSB(s)	Banks registered with SEBI, offering services in relation to ASBA, a list of which is available on the website of SEBI at https://www.sebi.gov.in/sebiweb/other/OtherAction.do?doRecognisedFpi=yes&intmId=34 or https://www.sebi.gov.in/sebiweb/other/OtherAction.do?doRecognisedFpi=yes&intmId=35, as applicable, or such other website as updated from time to time, and updated from time to time
Specified Locations	Bidding centres where the Syndicate shall accept ASBA Forms from Bidders
Sponsor Bank(s)	[●], being Banker(s) to the Offer, appointed to act as a conduit between the Stock Exchanges and NPCI in order to push the mandate collect requests and/or payment instructions of the individual Non-Institutional Investors using the UPI Mechanism and carry out other responsibilities, in terms of the UPI circulars
Strategic Investor Allocation Price	Price at which Units will be allocated to Strategic Investors in terms of the Offer Document and the relevant unit subscription agreement, decided by the Investment Manager in consultation with the Book Running Lead Managers
Strategic Investor Offer Price	Final price at which Units will be Allotted to Strategic Investors in terms of the Offer Document and the Final Offer Document, which price will be equal to or higher than the Offer Price. The Strategic Investor Offer Price will be decided by the Investment Manager in consultation with the Book Running Lead Managers
Strategic Investor Portion	Portion of the Offer being up to [●] Units aggregating up to ₹ [●] million, subject to a maximum of 25% of the Offer which shall be available for allocation to Strategic Investors
Strategic Investor Unit Subscription Agreement	Strategic Investor Unit Subscription Agreements as described in the section entitled "*The Offer*" on page 33
Strategic Investor(s)	A strategic investor as defined under Regulation 2(1)(zza) of the InvIT Regulations.
Syndicate Agreement	The agreement, to be entered into between the Trustee (on behalf of the Trust), the Investment Manager, the Book Running Lead Managers, the Syndicate Member and the Selling Unitholders in relation to collection of Bid cum Application Forms by the Syndicate
Syndicate Member(s)	Intermediaries, registered with SEBI who are permitted to carry out activities as an underwriter, being, [●]
Underwriters	[●]
Underwriting Agreement	The agreement, to be entered into between the Trustee (on behalf of the Trust), the Underwriters, the Investment Manager, Selling Unitholders and the Sponsor
Unit Escrow Agent	[●]
Unit Escrow Agreement	The unit escrow agreement to be entered into among the Investment Manager, the Trustee (acting on behalf of, and in its capacity as a trustee to, the Trust), the Selling Unitholders and the Unit Escrow Agent, dated [●], in relation to, inter alia, the deposit of our Units issued pursuant to the Offer.
UPI	Unified Payments Interface, which is an instant payment mechanism, developed by NPCI
UPI Bidder(s)	Individual Non-Institutional Investors with an application size of up to ₹ 500,000 in the Non-Institutional Category, and Bidding under the UPI Mechanism through ASBA Form(s) submitted with Syndicate Member, Registered Brokers, Collecting Depository Participants and Registrar and Share Transfer Agents
UPI ID	ID created on the UPI for single-window mobile payment system developed by the NPCI
UPI Mandate Request	A request (intimating the UPI Bidders, by way of a notification on the UPI linked mobile application and by way of an SMS directing the UPI Bidders to such UPI linked mobile application) to the UPI Bidders using the UPI Mechanism initiated by the Sponsor Bank(s) to authorise blocking of funds equivalent to the Bid Amount in the relevant ASBA Account through the UPI linked mobile application, and the subsequent debit of funds in case of Allotment
UPI Mechanism	The Bidding mechanism that may be used by UPI Bidders to make Bids in the Offer in accordance with the InvIT Regulations
Working Day	Working Day, with reference to (a) announcement of Price Band; (b) Bid/Offer Period, shall mean all days, excluding Saturdays, Sundays and public holidays, on which commercial banks in Mumbai are open for business; and (c) the time period between the Bid/Offer Closing Date and the listing of the Units pursuant to the Offer on the Stock Exchanges, shall mean all trading days of Stock Exchanges, excluding Sundays and bank holidays as per circulars issued by SEBI

Technical and Industry Related Terms

Term	Description
2A	2 Axle
3A	3 Axle
AI	Artificial intelligence
ANPR	Automatic Number Plate Recognition System
ATMS	Advanced Traffic Management System
BOT	Build, operate and transfer
BTKM	Billion tonne kilometers
CAGR	Compound Annual Growth Rate
CCPR	Cold Central Plant Recycling
CJV	Cars/ Jeeps/ Vans
COS	Change of scope
DBFOT	Design, build, finance, operate and transfer
DPU	Distributions per unit
ETC	Electronic toll collection
Fee Rules	National Highways Fee (Determination of Rates and Collection) Rules, 2008
FVTPL	Fair value through profit or loss
HAM	Hybrid Annuity Model
HiMA	Highly modified asphalt
LGV/ LCV	Light Goods Vehicle/ Light Commercial Vehicles
MAV	Multi Axle Vehicle
MCA	Model Concession Agreement
MM	Major maintenance
MMR	Maximum marginal rate
MNC	Multinational company
NCR	National Capital Region
NHDP	National Highways Development Project
NIP	National Infrastructure Pipeline
O&M	Operation and maintenance
OCI	Other comprehensive income
PCU	Passenger Car Units
PMB	Polymer modified bitumen
PPP	Public-private partnership
PPPAC	Public Private Partnership Appraisal Committee
RFID	Radio-frequency identification device
ROU	Right-of-use
RPV	Route Patrol Vehicle
SCA	Service Concession Arrangement
SLB	Sustainability-linked bond
TMS	Toll management system
Toll Roads	The toll-based road projects operated by the Portfolio Assets
TOT	Toll, operate and transfer
VGF	Viability Gap Funding
WPI	Wholesale price index

Abbreviations

Term	Description
AIF	Alternative Investment Fund as defined in and registered with SEBI under the SEBI AIF Regulations
ASBA	Application Supported by Blocked Amount
Big 4 Accounting Firms	Collectively, Deloitte Touche Tohmatsu Limited, Ernst & Young Global Limited, PricewaterhouseCoopers and KPMG International Limited
BSE	BSE Limited
Calendar Year	Unless the context otherwise requires, shall mean the 12 months period ending December 31
CAN	Confirmation of Allocation Note
CCEA	Cabinet Committee on Economic Affairs
CCI	The Competition Commission of India
CDSL	Central Depository Services (India) Limited
CEO	Chief Executive Officer
CFO	Chief Financial Officer
Companies Act	Companies Act, 1956 and/or the Companies Act, 2013 as applicable, as amended

Term	Description
Companies Act, 1956	The erstwhile Companies Act, 1956 read with the rules, regulations, clarifications and modifications thereunder
Companies Act, 2013	Companies Act 2013, as amended read with rules, regulations, clarifications and modifications thereunder, as amended
Competition Act	The Competition Act, 2002, as amended
Depositories Act	Depositories Act, 1996, as amended
Depository	A depository registered with SEBI under the Securities and Exchange Board of India (Depositories and Participants) Regulations, 2018, as amended
Depository Participant	A depository participant as defined under the Depositories Act, as amended
DIN	Director Identification Number
EPC	Engineering, Procuring and Construction
ESDD Policy	Environmental and Social Due Diligence Policy
ESG	Environmental, Social and Governance
FEMA	Foreign Exchange Management Act, 1999, read with rules and regulations thereunder, as amended
FEMA Rules	Foreign Exchange Management (Non-debt Instruments) Rules, 2019, as amended
Financial Year or Fiscal Year or Fiscal	Period of 12 months ended March 31 of that particular year, unless otherwise stated
FVCI	Foreign venture capital investors, as defined under the SEBI FVCI Regulations
GAAR	General Anti-Avoidance Rules
GDP	Gross Domestic Product
GoI or Government	Government of India
GST	Goods and Services Tax
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
Income Tax Act/ IT Act	Income Tax Act, 1961 as amended and read with rules, regulations, clarifications and modifications thereunder
Ind AS	Companies (Indian Accounting Standards) Rules, 2015, notified on February 19, 2015 by the MCA, including any amendments or modifications thereto
Indian GAAP	Accounting principles generally accepted in India, including the Accounting Standards as prescribed under Section 133 of the Companies Act, 2013 read with Companies (Accounting Standards) Rules, 2006, as amended or Companies (Indian Accounting Standard) Rules, 2015, as amended
Information Technology Act	Information Technology Act, 2000 as amended and read with rules, regulations, clarifications and modifications thereunder
InvIT	InvIT as defined under Regulation 2(1)(za) of the InvIT Regulations.
InvIT Master Circular	SEBI Master Circular no. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, including any amendments or modifications thereto
InvIT Regulations	Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014 as amended and other notifications, circulars, guidelines, clarifications issued by the Securities and Exchange Board of India including the InvIT Master Circular
IRDAI	Insurance Regulatory and Development Authority of India
IRR	Internal rate of return
Kms	Kilometres
LODR Regulations	Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015, as amended
MAT	Minimum alternate tax
MCA	Ministry of Corporate Affairs
MoEF	Ministry of Environment, Forest and Climate Change
MoRTH	Ministry of Road Transport and Highways
MPRDC	Madhya Pradesh Road Development Corporation Limited
NAV	Net Asset Value
NEFT	National Electronic Funds Transfer
NHAI	National Highways Authority of India
NIIF	National Investment and Infrastructure Fund
NITI	National Institution for Transforming India

Term	Description
NSDL	National Securities Depository Limited
NSE	National Stock Exchange of India Limited
OCD	Optionally Convertible Debenture
PAN	Permanent Account Number
RBI	Reserve Bank of India
Regulation S	Regulation S under the Securities Act
REITs	Real estate investment trust
ROFO	Right of First Offer
Rs./ Rupees/ INR/ ₹	Indian Rupees
RTGS	Real Time Gross Settlement
SCR (SECC) Regulations	Securities Contract (Regulation) (Stock Exchanges and Clearing Corporations) Regulations, 2018, as amended
SCRA	Securities Contracts (Regulation) Act, 1956 as amended read with rules, regulations, clarifications and modifications thereunder, as amended
SCRR	Securities Contracts (Regulation) Rules, 1957, as amended
SEBI	Securities and Exchange Board of India
SEBI Act	The Securities and Exchange Board of India Act, 1992, as amended read with rules, regulations, clarifications and modifications thereunder, as amended
SEBI AIF Regulations	Securities and Exchange Board of India (Alternative Investment Funds) Regulations, 2012, as amended
SEBI FPI Regulations	Securities and Exchange Board of India (Foreign Portfolio Investors) Regulations, 2019 as amended
SEBI FVCI Regulations	Securities and Exchange Board of India (Foreign Venture Capital Investors) Regulations, 2000 as amended
SEBI ICDR Regulations	Securities and Exchange Board of India (Issue of Capital and Disclosure Requirements) Regulations, 2018 as amended
SEBI Intermediary Regulations	Securities and Exchange Board of India (Intermediaries) Regulations, 2008 as amended
SEBI VCF Regulations	Securities and Exchange Board of India (Venture Capital Funds) Regulations, 1996 as amended
Securities Act	U.S. Securities Act of 1933, as amended
Stock Exchanges	BSE and NSE
STT	Securities transaction tax
Tax	All forms of direct and indirect taxes, duties, charges, levies, including without limitation corporate income tax, withholding tax, minimum alternate tax, sales tax, goods & services tax, value added tax, customs and excise duties, service tax, capital gains tax and all charges, interest, penalties and fines incidental or relating to any taxation falling within the aforesaid or which arise as a result of the failure to pay any taxes on the due date or to comply with any obligation relating to tax
"U.K." or "UK"	United Kingdom
U.S. GAAP	Generally Accepted Accounting Principles in the United States
U.S./USA/United States	United States of America
USD/US$	United States Dollar
VCF	Venture capital funds as defined under the SEBI VCF Regulations

PRESENTATION OF FINANCIAL DATA AND OTHER INFORMATION

Certain Conventions

All references in this Draft Offer Document to "India" are to the Republic of India and its territories and possessions and all references herein to the "Government", "Indian Government", "GoI", "Central Government" or the "State Government" are to the Government of India or the relevant state government, as applicable and all references to the "U.S.", or the "United States" are to the United States of America.

Unless stated otherwise, all references to page numbers in this Draft Offer Document are to the page numbers of this Draft Offer Document.

Financial Data

Unless stated otherwise, the financial information in this Draft Offer Document is derived from the Audited Consolidated Financial Statements. The Audited Consolidated Financial Statements have been prepared in accordance with the Indian Accounting Standard (Ind AS) -34 "Interim Financial Reporting", prescribed under Section 133 of the Companies Act, 2013 (the "**Act**") to the extent not inconsistent with the InvIT Regulations (Refer note 19(a)(v) of the Audited Consolidated Financial Statements on presentation of "Unit capital" as "Equity" instead of compound financial instruments under Ind AS 32- Financial Instruments: Presentation), other relevant provisions relating to disclosures required as per the InvIT Regulations, including Chapter 3 of the InvIT Master Circular and other accounting principles generally accepted in India. For further details, please refer to "*Audited Consolidated Financial Statements*" in Annexure D.

For the financial information of the Trust for the period ending December 31, 2025, disclosed in this Draft Offer Document, please refer to "*Consolidated Unaudited Financial Information"* in Annexure F and "*Management's Discussion and Analysis of Financial Conditions and Results of Operations*" on page 389, which sets out the financial information of the Trust as at and for the period ended December 31, 2025, along with comparison as at and for the period ended December 31, 2024. The Consolidated Unaudited Financial Information has been prepared in accordance with recognition and measurement principles laid down in the Indian Accounting Standard as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended, and other accounting principles generally accepted in India to the extent not inconsistent with the Securities Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014 (as amended) including any guidelines and circulars issued thereunder.

The Audited Standalone Financial Statements of the Trust for the half year ended September 30, 2025 have been prepared in accordance with the Indian Accounting Standard (Ind AS) -34 "**Interim Financial Reporting**", prescribed under Section 133 of the Companies Act, 2013 to the extent not inconsistent with the InvIT Regulations, other relevant provisions relating to disclosures required as per of the InvIT Regulations, including chapter 3 of the InvIT Master Circular and other accounting principles generally accepted in India. The Audited Standalone Financial Statements, along with the auditor's report, are available at the following link: https://www.cubehighwaystrust.com/uploads/SFS-_DOD.pdf

This Draft Offer Document also includes statements of Projections of Revenue from Operations and Cash Flows from Operating Activities of the Proposed Portfolio Assets for the years ending March 31, 2026, March 31, 2027, March 31, 2028, and March 31, 2029 along with the underlying assumptions and other explanatory information, which have been prepared based on the accounting policies used for preparation of the historical financial statements of the proposed subsidiary as required by the InvIT Regulations, which are prepared in accordance with accounting principles of Indian Accounting Standards ("**Ind AS**") as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended prescribed under Section 133 of the Companies Act, 2013 read with the InvIT Regulations and the Guidance Note issued by the Institute of Chartered Accountants of India. Projected cash flow from operating activities has been calculated using the direct method under Ind AS 7 - Statement of Cash Flows and is computed by deducting the projected expenses and income taxes from the projected revenue from operations and adjusted for working capital changes and projected non-cash expenses (if any). Projected cash flow from operating activities does not include any items pertaining to financing or investing in nature. Though the aforesaid Projections are prepared under the Ind AS framework, they do not include all the detailed disclosures required under Ind AS. For further details, please see "*Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets*" in Annexure E and "*Risk Factors - The Proposed Portfolio Assets' actual results may be different from the expectations set out in the Projections of Revenue from Operations and Cash Flows from Operating Activities of the Proposed Portfolio Assets included in this Draft Offer Document.*" on page 114.

Further, the Financial Statements of the Proposed Portfolio Assets, namely DTPL, BFHL, CNTL and WMTPL, have been prepared in accordance with the Indian Accounting Standards ("**Ind AS**") prescribed under Section 133 of the Companies Act, 2013 (the "**Act**") read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, the presentation and disclosure requirements of Division II of Schedule III to the Companies Act, 2013, and other accounting principles generally accepted in India. For further details, please see "*Financial Statements of the Proposed Portfolio Assets*" in Annexure G.

The financial year for the Trust, the Investment Manager and the Portfolio Assets commences on April 1 and ends on March 31 of the next year, and accordingly, all references to a particular financial year or fiscal year, unless stated otherwise, are to the 12-month period ended on March 31 of that year.

Further, this Draft Offer Document includes summaries of the audited financial statements of the (i) Sponsor, as of and for the years ended December 31, 2024, December 31, 2023, and December 31, 2022, prepared in accordance with IFRS; and (ii) Investment Manager, as of and for the years ended March 31, 2025, March 31, 2024, and March 31, 2023, prepared in accordance with generally accepted accounting principles in India, including the Accounting Standards as prescribed under Section 133 of the Companies Act, 2013 read with Companies (Accounting Standards) Rules, 2006, under the historical cost convention on accrual basis, derived from the financial statements of the Investment Manager for the relevant period. For further details, please see the sections entitled "*Summary Financial Information of the Sponsor*" and "*Summary Financial Information of the Investment Manager*" on pages 63 and 67, respectively. Additionally, please note that for the Sponsor, the financial year commences on January 1 and ends on December 31 of the same year.

The degree to which the financial information included in this Draft Offer Document will provide meaningful information is entirely dependent on the reader's level of familiarity with Indian accounting policies and practices, the Companies Act, the Indian GAAP, Ind AS and the InvIT Regulations. The Investment Manager has not attempted to explain these differences or quantify their impact on the financial data included in this Draft Offer Document, and it is urged that you consult your own advisors regarding such differences and their impact on our financial data. Any reliance by persons not familiar with Indian accounting policies and practices on the financial disclosures presented in this Draft Offer Document should accordingly be limited.

In this Draft Offer Document, any discrepancies in any table between the totals and the sums of the amounts listed are due to rounding. All figures and percentages have been rounded to two decimal places. However, where any figures are sourced from third-party industry sources, they may be rounded to the number of decimal places provided in those sources. In certain instances, (i) the sum or percentage change of such numbers may not conform exactly to the total figure given; and (ii) the sum of the numbers in a column or row in certain tables may not conform exactly to the total figure given for that column or row.

Certain Non-GAAP Financial Measures

In addition to our results determined in accordance with Ind AS, we believe the following Non-GAAP measures are useful to investors in evaluating our operating performance. We use the following Non-GAAP financial information to evaluate our ongoing operations and for internal planning and forecasting purposes. We believe that Non-GAAP financial information, when taken collectively with financial measures prepared in accordance with Ind AS, may be helpful to investors because it provides an additional tool for investors to use in evaluating our ongoing operating results and trends and in comparing our financial results with other companies in our industry, as it provides consistency and comparability with past financial performance. However, our management does not consider these Non-GAAP measures in isolation or as an alternative to financial measures determined in accordance with Ind AS.

Non-GAAP financial information is presented for supplemental informational purposes only, has limitations as an analytical tool and should not be considered in isolation or as a substitute for financial information presented in accordance with Ind AS. Non-GAAP financial information may be different from similarly titled Non-GAAP measures used by other organisations. The principal limitation of these Non-GAAP financial measures is that they exclude significant expenses and income that are required by Ind AS to be recorded in our financial statements, as further detailed below. In addition, they are subject to inherent limitations as they reflect the exercise of judgement by management about which expenses and income are excluded or included in determining these Non-GAAP financial measures. Investors are encouraged to review the related Ind AS financial measures and the reconciliation of Non-GAAP financial measures to their most directly identifiable Ind AS financial measures included below, and not to rely on any single financial measure to evaluate our business. For further details, please see the section entitled "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" on page 389.

Reconciliation of Non-GAAP Measures

A. Net Borrowings Ratio

(Amount in ₹ million)

S. No.	Particulars	As at September 30, 2025 #	As at March 31, 2025
A	Borrowings (refer note 1)*	179,923.44	152,063.65
B	Deferred Payments (refer note 2)	568.25	485.00
C	Cash and Cash Equivalents (refer note 3)	7,501.28	8,467.08
D	Aggregate Borrowings and Deferred Payments net of Cash and Cash Equivalents (A+B-C)	172,990.41	144,081.57
E	Value of InvIT assets / Enterprise Value (refer note 4)	365,199.18	322,657.15
F	Net Borrowings Ratio (D/E)	47.37%	44.65%
G	Total Debt headroom as per SEBI regulations	70.00%	70.00%
H	Additional Debt headroom (G-F)	22.63%	25.35%

* *Borrowings numbers are on an undiscounted basis and include accrued interest on borrowings.*

\# *The requirement to disclose the Net Borrowings Ratio as part of the financial results was introduced pursuant to the SEBI Circular dated May 7, 2025 (superseded by the InvIT Master Circular), on "Review of (a) disclosure of financial information in offer document/placement memorandum, and (b) continuous disclosures and compliances by Infrastructure Investment Trusts (InvITs)". Accordingly, the Net Borrowings Ratio has not been presented for prior periods, as the requirement was not applicable for those reporting periods.*

Note 1: Lender wise and entity wise details of borrowings (undiscounted) are as follows:-

(Amount in ₹ million)

Name of Lender	Name of Entity	As at September 30, 2025	As at March 31, 2025
State Bank of India	Trust	69,402.77	65,584.46
HDFC Bank Limited	Trust	16,940.00	11,132.83
ICICI Bank Limited	Trust	1,783.51	13,316.90
Axis Bank Limited	Trust	14,669.48	8,817.52
National Bank for financing Infrastructure and Development	Trust	25,501.83	20,843.29
KNR Constructions Limited	WVEPL	150.99	150.99
Rated, listed and redeemable Non - Convertible Debentures	MBEL	1,050.00	1,250.00
Rated, listed and redeemable Non - Convertible Debt Securities	Trust	50,145.20	30,686.00
Unsecured Non-Convertible Debentures-Reliance Infrastructure Ltd.	DATRPL	100.00	100.00
Unsecured Non-Convertible Debentures-National Investment and Infrastructure fund	QEPL	15.92	-
Accrued Interest	Trust; MBEL and QEPL	163.74	181.66
Total Borrowings		**179,923.44**	**152,063.65**

Note 2: Deferred Payments pertain to contingent consideration of assets acquired included by an independent valuer while calculating the value of InvIT Assets / Enterprise Value.

Note 3: Entity wise breakup of cash and cash equivalents is as follows:

(Amount in ₹ million)

Name of Entity	As at September 30, 2025	As at March 31, 2025
JUHPL	180.34	-
APEPL	155.19	400.49
BWHPL	100.29	738.41
DATRPL	166.25	106.00
FRHPL	136.23	144.01
GAEPL	446.47	602.54
HTPL	145.51	303.12
JLTPL	134.08	266.91
JMTPL	138.70	537.10
JVTPL	69.95	225.10
KETPL	136.36	154.56
KMTPL	69.22	126.58
LRTPL	96.31	293.46
MBEL	409.93	621.32
MHPL	240.60	461.78
MKTPL	89.12	120.14
MSHPL	82.99	213.15
NAMEPL	145.69	455.67
NDEPL	54.88	63.13
NKTPL	358.67	1,137.14
QEPL	2,337.81	-
SIPL	78.75	208.32
SMTPL	156.85	105.38
SPPL	236.92	291.95
THPL	88.67	200.63
Trust	391.87	165.30
WUPTPL	790.63	482.22
WVEPL	63.00	42.67
Grand Total	**7,501.28**	**8,467.08**

Note 4: Enterprise Value of InvIT assets is based on the valuation done by an independent valuer appointed by the Trust. Entity-wise breakup is as follows**:**

(Amount in ₹ million)

Name of Entity	As at September 30, 2025	As at March 31, 2025
JUHPL	12,173.00	-
APEPL	1,001.35	1,315.71
BWHPL	3,799.00	3,579.87
DATRPL	76,804.93	74,916.86
FRHPL	27,240.00	26,853.11
GAEPL	35,502.00	32,781.86

Name of Entity	As at September 30, 2025	As at March 31, 2025
HTPL	20,546.00	18,223.96
JLTPL	12,687.00	12,260.61
JMTPL	7,890.00	9,493.15
JVTPL	7,926.00	7,738.00
KETPL	10,558.50	9,526.96
KMTPL	14,341.00	13,261.16
LRTPL	8,403.15	7,709.62
MBEL	3,984.00	4,319.70
MHPL	2,818.00	2,939.71
MKTPL	16,275.00	14,168.25
MSHPL	4,114.85	4,207.50
NAMEPL	27,312.00	27,676.30
NDEPL	4,859.00	5,076.11
NKTPL	14,474.60	12,913.44
QEPL	18,837.80	-
SIPL	3,765.00	4,011.89
SMTPL	11,404.00	10,344.93
SPPL	4,177.00	4,432.32
THPL	4,926.00	5,330.37
WUPTPL	31.00	165.39
WVEPL	9,349.00	9,410.37
Grand Total	**365,199.18**	**322,657.15**

For details in relation to the valuation of the Existing Portfolio Assets and the Trust as on December 31, 2025, please see "*Valuation Reports*" in Annexure A.

B. Growth of AUM/Value of InvIT Asset / Enterprise Value

Particulars	A (As at September 30, 2025) (Amount in ₹ million)	B (As at September 30, 2024) (Amount in ₹ million)	C=(A-B) Increase from September 30, 2024 (Amount in ₹ million)	D=C/B Increase %
AUM/Value of InvIT assets/ Enterprise Value	365,199.18	291,624.00	73,575.18	25.23%

C. Growth of NAV per unit

Particulars	A (As at September 30, 2025) (in ₹)	B (As at April 19, 2023) (in ₹)	C=(A-B) Increase from April 19, 2023 (in ₹)	D=C/B Increase %	E =A-B Total no. of days	F=E/365 in years	(A/B)^(1/G)-1 CAGR
NAV Per Unit	143.00	100.00	43.00	43.00%	895	2.45	15.70%

D. EBITDA and its related ratios

(Amount in ₹ million)

S. No.	Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the Fiscal ended March 31, 2025	For the Fiscal ended March 31, 2024	For the Fiscal ended March 31, 2023
A	Profit/(loss) before tax	560.34	(127.31)	(503.13)	(6,868.45)	(277.88)
B	Impairment of intangible assets	-	-	-	5,871.87	-
C	Depreciation and amortisation expense	7,084.72	6,397.72	13,129.12	11,825.72	-
D	Finance costs	7,471.31	5,372.68	11,171.01	8,731.29	-
E	**EBITDA (A+C+D)**	**15,116.37**	**11,643.09**	**23,797.00**	**13,688.56**	**(277.88)**
E1	**Adjusted EBITDA (A+B+C+D)**	**15,116.37**	**11,643.09**	**23,797.00**	**19,560.43**	**(277.88)**
F	Interest expense on term loan	5,112.96	4,406.61	9,123.24	7,672.86	-
G	Interest expense on non-convertible debentures	1,654.27	647.48	1,475.60	655.03	-
H	Interest expense on optionally convertible debentures	-	0.35	0.78	98.00	-
I	Interest expense on commercial papers	207.13	-	-	-	-
J	Interest expense capitalised in IAUD	-	8.20	8.20	26.22	-
J1	Interest expense capitalised in intangible assets	-	-	-	151.84	-

S. No.	Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the Fiscal ended March 31, 2025	For the Fiscal ended March 31, 2024	For the Fiscal ended March 31, 2023
K	**Total Interest expense (F+G+H+I+J+J1)**	**6,974.36**	**5,062.64**	**10,607.82**	**8,603.95**	-
L	**Interest Service Coverage Ratio (in times) (E1/K)**	**2.17**	**2.30**	**2.24**	**2.27**	-
M	Repayment of Debt (Net of refinancing)	3,322.22	2315.787	4,913.85	3,139.92	-
N	**Debt Service Coverage Ratio (in times) {E1/(K+M)}**	**1.47**	**1.58**	**1.53**	**1.67**	-
O	Borrowings* (including current maturity of non-current borrowings)	178,975.05	127,001.69	151,146.85	107,352.73	-
P	**Debt to EBITDA ratio (times) (O/E)**	11.84	10.91	6.35	7.84	-
P1	**Debt to Adjusted EBITDA ratio (times) (O/E1)**	11.84	10.91	6.35	5.49	-
Q	Total income	20,651.59	16,890.55	34,531.52	30,741.05	-
R	**EBITDA Margin (%) (E/Q)**	**73.20%**	**68.93%**	**68.91%**	**44.53%**	-
S	**Adjusted EBITDA Margin (%) (E1/Q)**	**73.20%**	**68.93%**	**68.91%**	**63.63%**	-

* *Borrowings numbers are on a discounted basis.*

E. EBITDA reconciliation

(*Amount in ₹ million*)

S. No.	Particulars	For the nine-month period ended December 31, 2025	For the nine-month period ended December 31, 2024
A	Profit/(loss) before tax	1,077.15	154.31
B	Impairment of intangible assets	-	-
C	Depreciation and amortisation expense	10,853.83	9,738.77
D	Finance costs	11,132.70	8,176.13
E	**EBITDA (A+C+D)**	**23,063.68**	**18,069.21**

Currency and Units of Presentation

All references to:

- "Rupees" or "₹" or "INR" or "Rs." are to Indian Rupee, the official currency of the Republic of India; and
- "USD" or "US$" or "$" or "U.S. dollars" are to the United States Dollar, the official currency of the United States.

Except as otherwise specified, certain numerical information in this Draft Offer Document has been presented in "million" units. One million represents 1,000,000 and one billion represents 1,000,000,000.

Unless the context requires otherwise, any percentage amounts, as set forth in this Draft Offer Document, have been calculated on the basis of the Audited Consolidated Financial Statements, Consolidated Unaudited Financial Information, Financial Statements of the Proposed Portfolio Assets, and the summary financial statements of (i) the Sponsor; and (ii) the Investment Manager.

Exchange Rates

This Draft Offer Document contains the conversion of certain other currency amounts into Indian Rupees. These conversions should not be construed as a representation that these currency amounts could have been, or can be converted into Indian Rupees, at any particular rate.

The following table sets forth, for the periods indicated, information with respect to the exchange rate between the Rupee and the US$:

(in ₹ per US$)

Currency	As of December 31, 2025	As of September 30, 2025	As of March 31, 2025	As of September 30, 2024	As of March 31, 2024	As of March 31, 2023
1 US$	89.92	88.79	85.58	83.79	83.37	82.22

Source: www.fbil.org.in

Note: If the RBI reference rate is not available on a particular date due to a public holiday, the exchange rates for the previous working day have been disclosed. The reference rates are rounded off to two decimal places.

Industry and Market Data

Unless stated otherwise, industry and market data used in this Draft Offer Document has been obtained or derived from the Industry Report with respect to the assessment of the roads sector in India. The Investment Manager has commissioned the Industry Report for an agreed fee to provide an independent estimation of the assessment of the roads sector in India, which is based on historical data and certain assumptions. The Investment Manager has appointed the Industry Expert pursuant to an engagement letter dated June 26, 2025. The Industry Report is issued by the Industry Expert and is subject to the following disclaimer:

*"**About Crisil Intelligence***

Crisil Intelligence, a division of Crisil Limited, provides independent research, consulting, risk solutions, and data & analytics to its clients. Crisil Intelligence operates independently of Crisil's other divisions and subsidiaries, including, Crisil Ratings Limited. Crisil Intelligence's informed insights and opinions on the economy, industry, capital markets and companies drive impactful decisions for clients across diverse sectors and geographies.

*For the preparation of this report, Crisil Intelligence has relied on third party data and information obtained from sources which in its opinion are considered reliable. Any forward-looking statements contained in this report are based on certain assumptions, which in its opinion are true as on the date of this Report and could fluctuate due to changes in factors underlying such assumptions or events that cannot be reasonably foreseen. This Report does not consist of any investment advice and nothing contained in this report should be construed as a recommendation to invest/disinvest in any entity. This industry report is intended for use only within India except to the extent of the Report being quoted, reproduced, extracted or utilised, in part or whole of, in the draft offer document ("**DOD**") to be filed by the Trust with the Securities and Exchange Board of India ("**SEBI**") and the stock exchanges where the Units are proposed to be listed ("**Stock Exchanges**"), offer document, and the final offer document to be filed with SEBI and the Stock Exchanges or any other governmental or regulatory authority, as applicable, or any other document to be issued or filed in relation to the Offer such as publicity or other materials, research reports, presentations and media releases, preliminary or final international offering document or any international supplement of the foregoing for distribution to investors outside India and any other corporate or investor presentations or press releases and research reports prepared by the Trust (through the Trustee or Investment Manager on behalf of the Trust) or the Sponsor or BRLMs, including their affiliates in connection to the Offer, and in any subsequent communication with any person."*

Industry publications generally state that the information contained in such publications has been obtained from various sources believed to be reliable but that their accuracy and completeness are not guaranteed and their reliability cannot be assured. Accordingly, no investment decisions should be based solely on such information. The data used in these sources may have been re-classified for the purposes of presentation. Data from these sources may also not be comparable. Such data involves risks, uncertainties and numerous assumptions and is subject to change based on various factors, including those disclosed in the section entitled "*Risk Factors - We have relied on data derived from third party reports, which are based on certain estimates and assumptions and are subject to the limitations set out therein.*" on page 115. Accordingly, investment decisions should not be based solely on such information.

The extent to which the market and industry data used in this Draft Offer Document is meaningful depends on the reader's familiarity with and understanding of the methodologies used in compiling such data. There are no standard data gathering methodologies in the industry in which the business of the Trust is conducted, and methodologies and assumptions may vary widely across industry sources.

In accordance with the InvIT Regulations, "*Basis of Offer Price - Comparison with Industry Peers*" on page 142 includes information relating to our peers. Such information has been derived from publicly available sources specified herein. Such industry sources and publications are also prepared based on information as at specific dates and may no longer be current or reflect current trends. Accordingly, investment decisions should not be based solely on such information.

Technical Reports

The Technical Reports, prepared by the Technical Consultants, were commissioned by the Investment Manager for purposes of the Offer. The Technical Reports were issued by the Technical Consultants and are subject to the following disclaimers:

Disclaimer of FP India Project Management Consultancy Services Private Limited:

"This document includes selected provisions or a summary of the Report or the entire Report(s) being

1. *Project Transit: Technical Due Diligence of Jaipur Mahua Tollway Private Limited dated September 26, 2025,*
2. *Project Transit: Technical Due Diligence of Mahua Bharatpur Expressways Limited dated September 26, 2025,*
3. *Project Transit: Technical Due Diligence of Western UP Tollway Private Limited dated September 26, 2025,*
4. *Project Transit: Technical Due Diligence of Nelamangala Devihalli Expressway Private Limited dated September 26, 2025,*
5. *Project Transit: Technical Due Diligence of Ghaziabad Aligarh Expressway Private Limited dated September 26, 2025,*

6. *Project Transit: Technical Due Diligence of Farakka Raiganj Highways Private Limited dated September 26, 2025,*

7. *Project Transit: Technical Due Diligence of Walayar Vadakkencherry Expressways Private Limited dated September 26, 2025,*

8. *Project Transit: Technical Due Diligence of DA Toll Road Private Limited dated October 27, 2025,*

9. *Project Transit: Technical Due Diligence of Jhansi- Lalitpur Tollway Private Limited dated September 26, 2025,*

10. *Project Transit: Technical Due Diligence of Jhansi-Vigakhet Tollway Private Limited dated September 26, 2025,*

11. *Project Transit: Technical Due Diligence of Lucknow-Raebareli Tollway Private Limited dated September 26, 2025,*

12. *Project Transit: Technical Due Diligence of Kotwa-Muzaffarpur Tollway Private Limited dated October 27, 2025,*

13. *Project Transit: Technical Due Diligence of Hazaribagh Tollway Private Limited dated September 26, 2025,*

14. *Project Transit: Technical Due Diligence of Madurai- Kanyakumari Tollway Private Limited dated September 26, 2025,*

15. *Project Transit: Technical Due Diligence of Kanyakumari- Etturavattam Tollway Private Limited dated September 26, 2025,*

16. *Project Transit: Technical Due Diligence of Salaipudhur-Madurai Tollway Private Limited dated September 26, 2025,*

17. *Project Transit: Technical Due Diligence of Nanguneri-Kanyakumari Tollway Private Limited dated September 26, 2025,*

18. *Project Transit: Technical Due Diligence of Andhra Pradesh Expressway Limited dated September 26, 2025,*

19. *Project Transit: Technical Due Diligence of Borgaon Watambare Highways Private Limited dated September 26, 2025,*

20. *Project Transit: Technical Due Diligence of Mangloor Highways Private Limited dated September 26, 2025,*

21. *Project Transit: Technical Due Diligence of Mangalwedha Solapur Highways Private Limited dated October 27, 2025,*

22. *Project Transit: Technical Due Diligence of Srirangam Infra Private Limited dated September 26, 2025,*

23. *Project Transit: Technical Due Diligence of Shankarampet Projects Private Limited dated September 26, 2025,*

24. *Project Transit: Technical Due Diligence of Tirumala Highways Private Limited dated September 26, 2025,*

25. *Project Transit: Technical Due Diligence of Narketpalli -Adanki-Medarletla dated September 26, 2025,*

26. *Project Transit: Technical Due Diligence of Western MP Tollway Private Limited dated January 2, 2026.*

*(the "**Reports**") prepared by FPPMC, solely in its capacity as the Technical Consultant (the "**Technical Consultant**"), on behalf of Cube Highways Fund Advisors Private Limited (the "**Client**"), being, the investment manager of the Cube Highways Trust, for the Offer and any summary of the Reports is not a full statement of the terms of the Reports. Accordingly, such summary or excerpt is qualified in its entirety by reference to and is subject to the full text of the Reports, which are attached to the Draft Offer Document / Offer Document / Final Offer Document as Annexure B. Investors must view the summaries in the context of the full Reports, which are subject to the limitations and disclaimers in such Reports. Without limiting the generality of the foregoing, the Reports are expressly subject to the qualifications, assumptions made, procedures followed, matters considered and any limitations on the scope of work contained therein.*

Investors should note that these summaries, and the Reports, are provided only as of the date set forth therein and do not contemplate any event, circumstances or changes with respect to Offer or otherwise after such date. The foregoing summaries of the Reports may include projected information and data (financial and otherwise), and other forward-looking information, that may or may not occur or prove to be accurate. Such projected and forward-looking information is based on current expectations and projections about future events which are beyond the control of the Technical Consultant, the Client or any other participant in the Offer, and such projections and information can be affected by inaccurate assumptions. While these projections and information were prepared in good faith, no assurance can be given as to the accuracy or adequacy of such projections and information, or the assumptions underlying such projections and information.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE LIABILITY OF THE TECHNICAL CONSULTANT FOR ANY LOSS, DAMAGE, COST OR EXPENSE SUFFERED OR INCURRED BY ALL PERSONS OR ENTITIES AND FOR ALL CLAIMS RESPECTING ITS WORK PERFORMED IN CONNECTION WITH THE OFFER OR THE REPORTS IS

HEREBY LIMITED IN THE AGGREGATE TO THE AMOUNT OF FEES ACTUALLY PAID BY THE CLIENT TO THE TECHNICAL CONSULTANT IN RESPECT OF THE REPORTS AND CONNECTED SERVICES."

Disclaimer of Knight Frank (India) Private Limited:

"This document includes selected provisions or a summary of the Report or the entire Report(s), being, the Project Transit: Technical Due Diligence of Bharampur to Farakka, Project Transit: Technical Due Diligence of Devenhalli to Hebbal , Project Transit: Technical Due Diligence of Chenani Nashri Road Tunnel, Project Transit: Technical Due Diligence of Quazigund Banihal Road Tunnel, Project Transit: Technical Due Diligence of Jammu Udhampur (the ***"Reports")*** *prepared by* ***Knight Frank India,*** *solely in its capacity as the Technical Consultant (the "Technical Consultant"), on behalf of Cube Highways Trust (the "Client") for the Offer and is not a full statement of the terms of the Reports. Accordingly, such summary or excerpt is qualified in its entirety by reference to and is subject to the full text of the Reports, which are attached to the Draft Offer Document /Offer Document /Final Offer Document as Annexure B. Investors must view the summaries in the context of the full Reports, which are subject to the limitations and disclaimers in such Reports. Without limiting the generality of the foregoing, the Reports are expressly subject to the qualifications, assumptions made, procedures followed, matters considered and any limitations on the scope of work contained therein.*

Investors should note that these summaries, and the Reports, are provided only as of the date set forth therein and do not contemplate any event, circumstances or changes with respect to Offer or otherwise after such date. The foregoing summaries of the Reports may include projected information and data (financial and otherwise), and other forward-looking information, that may or may not occur or prove to be accurate. Such projected and forward-looking information is based on current expectations and projections about future events which are beyond the control of the Technical Consultant, the Client or any other participant in the Issue, and such projections and information can be affected by inaccurate assumptions. While these projections and information were prepared in good faith, no assurance can be given as to the accuracy or adequacy of such projections and information, or the assumptions underlying such projections and information.

It is to be stated that neither Knight Frank (India) Pvt Ltd nor any person acting for or on behalf of Knight Frank (India) Pvt Ltd shall have any liability or responsibility of any kind in any manner whatsoever to the Client, Investor or to any third party or to any other person to whom the Report or contents of the Report or any portion thereof will be disclosed/shared."

Traffic Data

The Traffic Reports, prepared by the Traffic Consultants, were commissioned by the Investment Manager for purposes of the Offer. The Traffic Reports were issued by the Traffic Consultants and are subject to the following disclaimers:

Disclaimer of CRISIL Limited:

*"**About Crisil Intelligence***

Crisil Intelligence, a division of Crisil Limited, provides independent research, consulting, risk solutions, and data & analytics to its clients. Crisil Intelligence operates independently of Crisil's other divisions and subsidiaries, including, Crisil Ratings Limited. Crisil Intelligence's informed insights and opinions on the economy, industry, capital markets and companies drive impactful decisions for clients across diverse sectors and geographies. Crisil Intelligence's strong benchmarking capabilities, granular grasp of sectors, proprietary analytical frameworks and risk management solutions backed by deep understanding of technology integration, makes it the partner of choice for public and private organisations, multi-lateral agencies, investors and governments for over three decades For the preparation of the Report, Crisil Intelligence has relied on third party data and information obtained from sources which in its opinion are considered reliable. Any forward-looking statements contained in the Report are based on certain assumptions, which in its opinion are true as on the date of the Report and could fluctuate due to changes in factors underlying such assumptions or events that cannot be reasonably foreseen. The Report does not consist of any investment advice and nothing contained in the Report should be construed as a recommendation to invest/disinvest in any entity. The Report is intended for use within India. However, we consent to use of the Material in relation to the Offer including in the draft offer document, offer document, and the final offer document to be filed by the Trust, or any other document to be issued or filed such as publicity or other

materials, research reports, presentations and media releases, preliminary or final international offering document or any international supplement of the foregoing for distribution to investors outside India and any other corporate or investor presentations or press releases and research reports prepared by the Trust (through the Trustee or Investment Manager on behalf of the Trust) or the Sponsors or BRLMs, including their affiliates in connection to the Offer."

Disclaimer of Steer Davies Gleave India Private Limited:

"This document includes selected provisions of or a summary of the:

1) Project Transit: Traffic Due Diligence of Hazaribagh Tollway Limited,

2) Project Transit: Traffic Due Diligence of Lucknow – Raebareli Tollway Limited,

3) Project Transit: Traffic Due Diligence of Madurai – Kanyakumari Tollway Limited,

4) Project Transit: Traffic Due Diligence of Kotwa – Muzaffarpur Tollway Limited,

5) Project Transit: Traffic Due Diligence of Jhansi – Lalitpur Tollway Limited,

6) Project Transit: Traffic Due Diligence of DA Toll Road Private Limited,

7) Project Transit: Traffic Due Diligence of Walayar Vadakkencherry Expressways Private Limited,

8) Project Transit: Traffic Due Diligence of Farakka - Raiganj Highways Limited,

9) Project Transit: Traffic Due Diligence of Jaipur – Mahua Tollway Limited,

10) Project Transit: Traffic Due Diligence of Mahua Bharatpur Expressways Limited,

11) Project Transit: Traffic Due Diligence of Western UP Tollway Limited,

12) Project Transit: Traffic Due Diligence of Narketpally-Addanki-Medarametla Expressway Ltd

13) Project Transit: Traffic Due Diligence of Nelamangala Devihalli Expressway Private Limited,

14) Project Transit: Traffic Due Diligence of Ghaziabad Aligarh Expressway Private Limited

15) Project Transit: Traffic Due Diligence of NAM Expressway Private Limited

*dated October 2025 (the "**Reports**") prepared by Steer, Davies & Gleave India Private Limited, solely in its capacity as the Traffic Consultant (the "**Traffic Consultant**"), on behalf of Cube Highways Fund Advisors Private Limited (the "**Client**") for the Offer and is not a full statement of the terms of the Reports. Accordingly, such summary or excerpt is qualified in its entirety by reference to and is subject to the full text of the Reports, which are attached to the Offer Documents. Investors must view the summaries in the context of the full Reports, which are subject to the limitations and disclaimers in such Reports. Without limiting the generality of the foregoing, the Reports are expressly subject to the qualifications, assumptions made, procedures followed, matters considered and any limitations on the scope of work contained therein.*

Investors should note that these summaries, and the Reports, are provided only as of the date set forth therein and do not contemplate any event, circumstances, or changes with respect to the Offer or otherwise after such date. The foregoing summaries of the Reports may include projected information and data (financial and otherwise), and other forward-looking information, that may or may not occur or prove to be accurate. Such projected and forward-looking information is based on current expectations and projections about future events which are beyond the control of the Traffic Consultant, the Client or any other participant in the Offer, and such projections and information can be affected by inaccurate assumptions. While these projections and information were prepared in good faith, no assurance can be given as to the accuracy or adequacy of such projections and information, or the assumptions underlying such projections and information.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE LIABILITY OF THE TRAFFIC CONSULTANT FOR ANY LOSS, DAMAGE, COST OR EXPENSE SUFFERED OR INCURRED BY ALL PERSONS OR ENTITIES AND FOR ALL CLAIMS RESPECTING ITS WORK PERFORMED IN CONNECTION WITH THE OFFER OR THE REPORTS IS HEREBY LIMITED IN THE AGGREGATE TO THE AMOUNT OF FEES ACTUALLY PAID BY THE CLIENT TO THE TRAFFIC CONSULTANT IN RESPECT OF THE REPORTS AND CONNECTED SERVICES."

Valuation

The Valuation Reports, prepared by the Valuer, were commissioned by the Investment Manager in accordance with the InvIT Regulations and the InvIT Master Circular. The Valuation Reports issued by the Valuer is subject to the following disclaimer:

"This document includes selected provisions of or a summary of the valuation reports for Existing Portfolio Assets dated a) 16 May 2024; b) 27 October 2024; c) 28 January 2025; d) 28 May 2025; e) 30 October 2025; f) 29 January 2026; and valuation reports for Proposed Portfolio Assets dated 25 December 2025 ("Report(s)") prepared by Ernst & Young Merchant Banking Services LLP (EY), solely in its capacity as the registered valuer on behalf of Cube Highways Fund Advisors Private Limited (the "Client") for the Offer and is not a full statement of the terms of the Reports. Accordingly, such summary or excerpt is qualified in its entirety by reference to and is subject to the full text of each Report, which are attached to the Offer document. Investors must view the summaries in the context of full Report, which are subject to the limitations and disclaimers in such Report. Without limiting the generality of the foregoing, the Reports are expressly subject to the qualifications, assumptions made, procedures followed, matters considered and any limitations on the scope of work contained therein.

Investors should note that these summaries, and the Reports, are provided only as of the date set forth therein and do not contemplate any event, circumstances or changes with respect to Offer or otherwise after such date. The foregoing summaries of the Reports may include projected information and data (financial and otherwise), and other forward-looking information, that may or may not occur or prove to be accurate. Such projected and forward-looking information is based on current expectations and projections about future events which are beyond the control of the EY, the Client or any other participant in the Offer, and such projections and information can be affected by inaccurate assumptions. While these projections and

information were prepared in good faith, no assurance can be given as to the accuracy or adequacy of such projections and information, or the assumptions underlying such projections and information.

The total aggregate liability of EY and its officers, employees and affiliates for any loss, damage, cost or expense suffered or incurred by all persons or entities (including but not limited to the Client, the addressees to this Consent Letter, placement agents, and investors) and for all claims in respect of work performed in connection with the Offer and/or the Reports, is hereby limited to the amount of fees actually paid by the Client to EY in connection with the Reports (the "Aggregate Liability Cap"). EY is released from all liability in excess of the Aggregate Liability Cap."

Credit Rating

Please see the section entitled "*General Information – Credit ratings*" on page 139 in relation to the details of credit ratings.

Websites

The information contained on our website, the websites of the Investment Manager, the Sponsor, the Sponsor Group, the Selling Unitholders, the Trustee, the Book Running Lead Managers, the Portfolio Assets, to the extent applicable, or the other websites referenced in this Draft Offer Document or that can be accessed through our websites or such other websites, neither constitute part of this Draft Offer Document, nor is it incorporated by reference therein and should not form the basis of any investment decision. For details of the websites of the Trust, the Sponsor, Trustee and Book Running Lead Managers, please see the section entitled "*General Information*" on page 134.

PAST MARKET PERFORMANCE

The following table sets forth the market value of the Units traded on NSE and BSE (where the existing units of the Trust are listed since the private placement of units), indicating the value on the last date of the reporting period, the highest value during the reporting period (based on intra-day and closing price with specified dates), and the lowest value during the reporting period (based on intra-day and closing price with specified dates):

Particulars	Market value (in ₹)			
	NSE		BSE	
Market value (₹ in millions) as on December 31, 2025[3]	186,986.99		186,825.70[4]	
Highest value during the reporting period	**Date**	**Price**	**Date**	**Price**
(a) Intra-day high	November 27, 2025	145.95	November 18, 2025	143.25
(b) Closing	November 18, 2025	143.08	November 18, 2025	143.08
Lowest value during the reporting period	**Date**	**Price**	**Date**	**Price**
(a) Intra-day low	May 10, 2024	100.00	May 10, 2024	100.00
(b) Closing	May 10, 2024	100.00	May 10, 2024	100.00

(Source: www.bseindia.com and www.nseindia.com)

Note:

1. *The reporting period refers to the period from the date on which the Trust's units were initially listed (i.e., April 19, 2023) to the date of the latest available financial statements disclosed, i.e. December 31, 2025 ("**Reporting Period**").*
2. *In case of more than one day with the same high price, low price & closing price the date with the higher traded volume has been chosen.*
3. *Market value is calculated based on the closing price as on the last date of the Reporting Period multiplied by the Units outstanding as on December 31, 2025.*
4. *Since the Units were not traded on December 31, 2025, the closing price for the preceding date (i.e., December 23, 2025) on which the Units were traded has been considered.*

FORWARD-LOOKING STATEMENTS

Certain statements contained in this Draft Offer Document that are not statements of historical fact constitute "forward-looking statements". Investors can generally identify forward-looking statements by terminology such as "aim", "anticipate", "believe", "continue", "can", "could", "estimate", "expect", "intend", "likely", "may", "objective", "plan", "potential", "project", "pursue", "shall", "should", "will", "would", or other words or phrases of similar import. Similarly, statements that describe the strategies, objectives, plans or goals of the Trust are also forward-looking statements. However, these are not the exclusive means of identifying forward-looking statements.

All statements regarding the Trust's expected financial conditions, results of operations, business plans and prospects are forward-looking statements. These forward-looking statements include statements as to the Trust's business strategy, planned projects, revenue and profitability (including, without limitation, any financial or operating projections or forecasts), new business and other matters discussed in this Draft Offer Document that are not historical facts. These forward-looking statements and any other projections contained in this Draft Offer Document (whether made by the Trustee, Investment Manager or any third party), are predictions and involve known and unknown risks, uncertainties, assumptions and other factors that may cause the Trust's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or other projections. Further, this Draft Offer Document also includes the "*Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets"* in Annexure E.

The Valuation Reports included in this Draft Offer Document are based on certain projections and accordingly, should be read together with assumptions and notes thereto. For further details, please see the "*Valuation Reports*" attached as Annexure A. The Technical Reports and Traffic Reports, attached as Annexures B and C, respectively, include projections and estimates in relation to operation and maintenance expenses (including routine and periodic maintenance expenses) and traffic data, and accordingly, should be read in conjunction with the relevant notes and assumptions thereto.

All forward-looking statements and financial projections are subject to risks, uncertainties and assumptions. Actual results may differ materially from those suggested by forward-looking statements and financial projections due to certain known or unknown risks or uncertainties associated with the Investment Manager's expectations with respect to, but not limited to, the actual growth in the infrastructure sector, the Investment Manager's ability to successfully implement the strategy, growth and expansion plans, technological changes, cash flow projections, exposure to market risks, general economic and political conditions in India, monetary and fiscal policies of India, inflation, deflation, foreign exchange rates, performance of financial markets in India or globally, changes in domestic laws, regulations and taxes, changes in competition in the infrastructure sector, the outcome of any legal or regulatory proceedings and the future impact of new accounting standards. By their nature, certain market risk disclosures are estimates and could differ materially from what actually occurs in the future. As a result, actual future gains, losses or impact on net income could materially differ from those that have been estimated.

Factors that could cause actual results, performance or achievements of the Trust to differ materially include, but are not limited to, those discussed under the sections entitled "*Risk Factors*", "*Industry Overview*", "*Business*" and "M*anagement's Discussion and Analysis of Financial Condition and Results of Operations*", on pages 87, 196, 280 and 389, respectively. Some of the factors that could cause the Trust's actual results, performance or achievements to differ materially from those in the forward-looking statements, financial projections and financial information include, but are not limited to, the following:

1. If we fail to receive or comply with the terms of the consents issued by the lenders and regulatory authorities for the transfer of the Proposed Portfolio Assets to the Trust or are not successful in integrating these assets or fail to realize the anticipated benefits of the acquisition of such assets, our business, financial condition, results of operations and cash flows may be adversely affected;

2. We may not be able to make regular distributions to Unitholders or the level of our distributions may fall;

3. A significant portion of our revenue from operations is dependent on annuity payments from the NHAI, which may be delayed, disputed or reduced, which could adversely affect our business, results of operations, financial condition and cash flows;

4. Our failure to extend concession agreements or inability to identify and acquire new road assets that generate comparable or higher revenue from operations, profits and cash flows than the Portfolio Assets may have an adverse effect on our business, financial condition, results of operations, cash flows and our ability to make distributions to Unitholders; and

5. Our toll collections and traffic volumes are subject to uncertainties, including competing roads, exemptions, toll leakage, changes in vehicle mix, and government directives, which could adversely affect our business, results of operations, financial condition and cash flows.

The forward-looking statements, including as contained in the Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets, the Valuation Reports, the Technical Reports and the Traffic Reports reflect current views as of the dates specified therein and are not a guarantee of future performance or returns to Bidders. These statements and projections are based on certain beliefs and assumptions, which in turn are based on currently available

information. Although the Investment Manager and the Sponsor believe that the expectations and the assumptions upon which such forward-looking statements are based are reasonable at this time, neither the Investment Manager nor the Sponsor can assure Bidders that such expectations will prove to be correct or accurate.

In accordance with the InvIT Regulations, the assumptions underlying the Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets have been examined by the Auditors in accordance with SAE 3400 "The Examination of Prospective Financial Information", issued by the Institute of Chartered Accountants of India. The Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets have been prepared for inclusion in this Draft Offer Document for the purposes of this Offer, using a set of assumptions that include hypothetical assumptions about future events and management's actions that are not necessarily expected to occur, and have been approved by the IM Board. Consequently, Bidders are cautioned that the Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets may not be appropriate for purposes other than those described above. In any event, these statements speak only as of the date of this Draft Offer Document, or the respective dates indicated in this Draft Offer Document.

The Trust, the Investment Manager, the Sponsor, the Selling Unitholders, and the Book Running Lead Managers or any of their associates or affiliates or advisors, undertake no obligation to update or revise any of statements reflecting circumstances arising after the date hereof or to reflect the occurrence of underlying events, whether as a result of new information, future events or otherwise after the date of this Draft Offer Document. If any of these risks and uncertainties materialize, or if any of the Investment Manager's underlying assumptions prove to be incorrect, the actual results of operations or financial condition or cash flow of the Trust could differ materially from that described herein as anticipated, believed, estimated or expected. All subsequent forward-looking statements attributable to the Trust are expressly qualified in their entirety by reference to these cautionary statements. Given these uncertainties, Bidders are cautioned not to place undue reliance on such forward-looking statements and financial projections, and not to regard such statements to be a guarantee or assurance of the Trust's future performance or returns to investors.

THE OFFER

The following is a general summary of the terms of the Offer. This summary should be read in conjunction with, and is qualified in its entirety by, the detailed information appearing elsewhere in this Draft Offer Document:

Offer	Public offer of the Units of the Trust aggregating up to ₹ 50,000 million* comprising an Offer for Sale of up to [●] Units by the Selling Unitholders
Less	
Strategic Investor Portion#	Up to [●] Units aggregating up to ₹ [●] million*, subject to a maximum of 25% of the Offer Size
The Offer (excluding Strategic Investor Portion)	Up to [●] Units aggregating up to ₹ [●] million*
Of which	
Institutional Investor Portion (not more than 75% of the Offer Size (excluding Strategic Investor Portion))**	Not more than [●] Units
Non-Institutional Investor Portion (not less than 25% of the Offer Size (excluding Strategic Investor Portion))	Not less than [●] Units
Floor Price	₹ [●]
Cap Price	₹ [●]
Offer Price	₹ [●]
Face Value	Not Applicable
Minimum Bid Size	Minimum of [●] Units and in multiples of [●] Units thereafter by Bidders (other than Anchor Investors and Strategic Investors)
Bid/ Offer Opening Date* **	[●]
Bid/ Offer Closing Date** **	[●]
Sponsor	Cube Highways and Infrastructure V Pte. Ltd.
Trustee	Axis Trustee Services Limited
Investment Manager	Cube Highways Fund Advisors Private Limited
Project Manager	Cube Highways and Transportation Assets Advisors Private Limited *Note: Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager of the Trust and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from the relevant concessioning authorities of the Portfolio Assets and subsequent to the receipt of the approvals, the New PIMA will be executed. The aforesaid change has not been completed as of the date of this Draft Offer Document. For further details, please see the section entitled "Parties to the Trust - The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited" on page 168.*
Authority for this Offer	This Offer was authorised and approved by the IM Board on January 30, 2026, and was approved by the Unitholders on February 20, 2026. Further, the Selling Unitholders have severally authorized their respective participation in the Offer for Sale to the extent of their respective portion of the Offered Units, pursuant to the consent letters as set out below:

Name of the Selling Unitholder	Maximum number of Offered Units and amount proposed to be raised pursuant to the Offer *****	Date of consent letter	Date of corporate action / board resolution
BCI IRR India Holdings Inc.	Up to [●] Units, aggregating up to ₹ 10,725.00 Million	March 17, 2026	February 24, 2026
BCI IRR India Holdings Limited Partnership	Up to [●] Units, aggregating up to ₹ 275.00 Million	March 17, 2026	February 24, 2026
Cube Highways and Infrastructure II Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 15,098.70 Million	March 17, 2026	March 17, 2026
Cube Highways and Infrastructure III Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 6,055.70 Million	March 17, 2026	March 17, 2026
Cube Mobility Investments Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 12,908.40 Million	March 17, 2026	March 17, 2026
Seventy Second Investment Company LLC	Up to [●] Units, aggregating up to ₹ 4,937.20 Million	March 17, 2026	March 17, 2026

Tenure of the Trust	The Trust shall remain in force perpetually until it is dissolved or terminated in accordance with the Trust Deed. For details, please see the section entitled "*Parties to the Trust*" on page 143.

Units issued and outstanding as of the date of this Draft Offer Document	1,344,069,762 Units
Units issued pursuant to the Swap Transaction	[●] Units
Units issued and outstanding immediately after this Offer pursuant to the Swap Transaction	Up to [●] Units
Sponsor and Sponsor Group Units as on the date of this Draft Offer Document	556,381,123 Units, as on the date of this Draft Offer Document The Units held by the Sponsor Group rank *pari passu* with, and have the same rights as, the Units to be Allotted pursuant to this Offer and Swap Transaction. Units shall be allotted to Sponsor and CH-II prior to the Allotment of the Units in the Offer pursuant to the resolution of the IM Board dated January 30, 2026, prior to the Allotment of the Units in the Offer.
Distribution	Please see the section entitled "*Distributions*" on page 385.
Indian Taxation	Please see the section entitled "*Statement of Tax Benefits"* on page 490.
Use of Proceeds	The Offer is limited to an Offer for Sale. For details, please see the section entitled "*Use of Proceeds*" on page 362.
Listing and timelines for listing	The existing Units of the Trust are listed on BSE and NSE. In-principle approval for listing of the Units pursuant to this Offer has been received from NSE and BSE on [●] and [●], respectively. The Investment Manager shall apply to the Stock Exchange for the final listing and trading approvals after the Allotment and the credit of the Units to the demat accounts of the Allottees.
Designated Stock Exchange	[●]
Commitment received from Strategic Investors	[●]
Closing Date	The date on which Allotment of the Units pursuant to this Offer shall be made, i.e. on or about [●].
Ranking	The Units being offered shall rank *pari passu* in all respects, including rights in respect of distribution. Please see the section entitled *"Rights of Unitholders"* on page 460.
Alteration of terms of the Offer	In case of any alteration of the terms of the Units, including the terms of the Offer, which may adversely affect the interest of the Unitholders, an approval from the Unitholders shall be required where the votes cast in favor of the resolution should be more than 60% of the total votes cast for the resolution.
Lock-in and Rights of Unitholders	For details, please see the sections entitled "*Information Concerning the Units*" and "*Rights of Unitholders*" on pages 359 and 460, respectively.
Risk Factors	Prior to making an investment decision, Bidders should carefully consider the matters discussed in the section entitled *"Risk Factors"* on page 87.
ISIN	INE0NR623014

* *Subject to finalisation of Allotment of Units in the Offer.*

** *The Investment Manager may, in consultation with the Book Running Lead Managers, consider participation by Anchor Investors in this Offer for up to 60% of the Institutional Investor Portion in accordance with the InvIT Regulations.*

*** *The Anchor Investor Bidding Date shall be one Working Day prior to the Bid/Offer Opening Date.*

**** *The Investment Manager may, in consultation with the Book Running Lead Managers, consider closing the Bid/ Offer Period for QIBs one Working Day prior to the Bid/ Offer Closing Date, in accordance with the InvIT Regulations.*

***** *With respect to the Units offered by the Selling Unitholders in the Offer for Sale, the Selling Unitholders have held Units for a period of at least one year immediately preceding the date of this Draft Offer Document and are free from any encumbrance or lock-in on the date of this Draft Offer Document.*

\# *The Investment Manager may, in consultation with the Book Running Lead Managers, consider participation by Strategic Investors in the Offer in accordance with the InvIT Regulations and InvIT Master Circular. Each Strategic Investor proposing to invest in the Offer shall enter into a Strategic Investor Unit Subscription Agreement with the Investment Manager (on behalf of the Trust) prior to filing of the Offer Document with SEBI and the Stock Exchange(s).*

The Offer is a public Offer of Units under Regulation 14(4) of the InvIT Regulations read with Chapter 14 of the InvIT Master Circular and consists of the Offer for Sale. The total Units issued and outstanding after this Offer will increase pursuant to the Swap Transaction. Please refer to the section entitled "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" on page 56.

In accordance with the InvIT Regulations and Trust Deed, none of the Unitholders currently enjoy superior voting or any other rights over another Unitholder. Further, there shall not be multiple classes of Units. However, Unitholder(s) holding 10% or more of the total outstanding units of the Trust, either individually or collectively shall have the right, but not the obligation, to nominate any person for appointment as a unitholder nominee director (non-independent director) on the board of directors of the Investment Manager in accordance with the InvIT Regulations read with the InvIT Master Circular. Please refer to the section entitled "*Corporate Governance"* on page 179 for more information on such rights.

As the Offer is an Offer for Sale of Units by the Selling Unitholders, the Trust will not receive any proceeds from the Offer.

No person connected with the Offer, including any person connected with the distribution of this Draft Offer Document, shall offer any incentive, whether direct or indirect, in any manner, whether in cash or kind or services or otherwise, to any person

for making an application for Allotment of the Units pursuant to the Offer, except for any fees or commission for services rendered in relation to the Offer. For further details in relation to this Offer, including the method of application, please see the section entitled "*Offer Information*" on page 467.

The Offer is being made through the Book Building Process, wherein not more than 75% of the Offer Size (excluding the Strategic Investor Portion) shall be available for allocation to Institutional Investors on a proportionate basis, provided that the Investment Manager, in consultation with the Book Running Lead Managers, may allocate up to 60% of the Institutional Investor Portion to Anchor Investors on a discretionary basis in accordance with the InvIT Regulations and InvIT Master Circular. Further, not less than 25% of the Offer Size (excluding the Strategic Investor Portion) shall be available for allocation on a proportionate basis to Non-Institutional Investors, subject to the receipt of valid Bids at or above the Offer Price.

Allocation in all categories, except the Anchor Investor Portion and the Strategic Investor Portion, if any, shall be made on a proportionate basis. In the event of under-subscription in any category, the unsubscribed portion in that category may be allotted to investors in the other category at the discretion of the Investment Manager, in consultation with the Book Running Lead Managers and the Designated Stock Exchange.

The maximum subscription from any investor, other than the Sponsor, its related parties and its associates, taken together with Units held by them and persons acting in concert with them in the Trust, shall not be more than 25% of the total post-Offer unit capital of the Trust.

There shall be only one denomination of Units at any given time. The Investment Manager shall comply with the disclosure and accounting norms specified by SEBI from time to time.

The Units, on Allotment, shall be traded only in the dematerialized segment of the Stock Exchanges.

For further details in relation to this Offer, including the method of application, please see "*Offer Information*" on page 467.

OVERVIEW OF THE TRUST

The following overview is qualified in its entirety by, and is subject to, the more detailed information contained in, or referred to elsewhere, in this Draft Offer Document. The statements contained in this summary that are not historical facts may be forward-looking statements. Such statements are subject to certain risks, uncertainties and assumptions that could cause actual results of the Trust to differ materially from those forecasted or projected in this Draft Offer Document. Under no circumstances should the inclusion of such information herein be regarded as a representation, warranty or prediction of the accuracy of the underlying assumptions by the Trust, the Parties to the Trust or the Book Running Lead Managers or any other person or that these results will be achieved or are likely to be achieved. Investment in Units pursuant to the Offer involves risks. Bidders are advised not to rely solely on this overview, however, and should read this Draft Offer Document in its entirety and in particular, the section entitled "Risk Factors" on page 87.

Structure and description of the Trust

The Settlor set up the Trust by way of the Original Trust Deed dated December 7, 2021 as a contributory irrevocable trust under the provisions of the Indian Trusts Act, 1882 at New Delhi, India such that all assets and properties of the Trust are held by the Trustee for the benefit of Unitholders subject to provisions of the Trust Deed and InvIT Regulations. The Trust was registered as an infrastructure investment trust under the InvIT Regulations on April 5, 2022, having registration number IN/InvIT/22-23/0022. The Original Trust Deed was amended and restated by a trust deed dated July 8, 2022, which was subsequently further amended and restated by the Trust Deed dated March 11, 2024. The units of the Trust were initially listed on Stock Exchanges pursuant to a private placement of Units since April 19, 2023. For details of the registered office and contact person of the Settlor, please see the section entitled "*General Information*" on page 134.

Pursuant to the resolution dated January 30, 2026 passed by the board of directors of Cube Highways Fund Advisors Private Limited acting in its capacity as the investment manager of the Trust, the subsequent resolution dated February 19, 2026, passed by the Unitholders of the Trust, the deed of adherence to the Trust Deed dated February 20, 2026 and in accordance with the InvIT Regulations, CH-I and CH-III were declassified as the sponsors of the Trust and, CH-V was inducted as the new sponsor of the Trust. For more details regarding the Sponsor please see the section entitled "*Parties to Trust*" on page 143.

Further, Cube Highways Fund Advisors Private Limited is the Investment Manager of the Trust, Cube Highways and Transportation Assets Advisors Private Limited is the Project Manager* to the Trust and the settlor of the Trust. For further details, please see the section entitled "*Parties to the Trust*" on page 143.

* *Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager of the Trust and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from the relevant concessioning authorities of the Portfolio Assets and subsequent to the receipt of the approvals, the New PIMA will be executed. The aforesaid change has not been completed as of the date of this Draft Offer Document. For further details, please see the section entitled "Parties to the Trust - The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited" on page 168.*

Investment Objectives

The objective of the Trust is to carry on the activities of, and to make investments as, an infrastructure investment trust, as permissible under the InvIT Regulations, and in accordance with the InvIT Documents, to the extent applicable. The investment of the Trust shall be in any manner permissible under, and in accordance with, the InvIT Documents, the InvIT Regulations and applicable law, the investment strategy, and as detailed in the Trust Deed, this Draft Offer Document and the InvIT Documents, to the extent applicable, including in eligible infrastructure projects either directly or through SPVs or Holding Company(ies) or securities of Indian companies related to the infrastructure sector or government securities or money market instruments, liquid mutual funds or cash equivalents (the "**Investment Objectives**").

The Trustee shall ensure that the capital contribution shall be utilized solely for the purposes of making investments as stated above, in accordance with the InvIT Regulations and applicable law and shall not be utilized for any activities prohibited under the InvIT Regulations. Further, the Trustee shall ensure that the Trust complies with any additional conditions as may be specified by SEBI or applicable law.

Investments by the Trust shall be in compliance with the provisions of the InvIT Regulations and unless specifically provided under applicable law, the Trust shall not carry out any other principal activity or trade, in contradiction of the restrictions and requirements under applicable law. The Trust, through the Investment Manager, shall do all things necessary and conducive to the attainment of the Investment Objectives, directly or through agents or other delegates (including the Investment Manager and the Project Manager), subject to the provisions of the InvIT Regulations and any other applicable law.

The Trustee, on the advice of the Investment Manager, may, if it deems expedient, from time to time, review, revise, amend, vary or alter the Investment Objectives in accordance with the Trust Deed, subject to the provisions of the InvIT Documents, the InvIT Regulations and any other applicable law.

Fee and expenses

Annual Expenses

The expenses in relation to the Trust, other than such expenses incurred in relation to operations of the Portfolio Assets, would broadly include fee payable to: (i) the Trustee; (ii) the Investment Manager; (iii) the Project Manager; (iv) the Auditors, (v) the Valuer; and (vi) other intermediaries and consultants.

The estimated recurring expenses on an annual basis (exclusive of out-of-pocket expenses, and escalations) on a consolidated basis are as follows:

₹

Payable by the Trust	Estimated Expenses*
Fee payable to the Valuer	Please see Note 1
Fee payable to Trustee	Please see Note 2
Fee payable to Investment Manager	Please see Note 3
Fee payable to Project Manager	Please see Note 4
Fee payable to the Statutory Auditors	Please see Note 5
Fee payable to the Technical Consultants	20,414,000
Fee payable to the Traffic Consultants	18,054,000
Fee payable to Stock Exchange and Depositories	[●]
Fee payable to Registrar	[●]
Fee payable to Credit Rating Agencies	[●]**

* The fee and expenses are inclusive of GST. For details with respect to actual expenses incurred by the Trust for the (i) six months ended September 30, 2025, March 31, 2025, March 31, 2024, March 31, 2023; and (ii) nine months ended December 31, 2025, please refer to Audited Consolidated Financial Statements and Consolidated Unaudited Financial Information, respectively.

** The engagement is not structured on an annual basis. This section will be updated and finalised prior to the filing of the Offer Document.

Note 1:

The Valuer shall be entitled to a fee of ₹ 12,744,000 excluding out of pocket expenses incurred in connection with the performance of the services, and an administrative surcharge, to be calculated as 10 % of the out-of-pocket expenses.

Note 2:

The Trustee shall be entitled to a fee of ₹ 2,950,000 (the "**Trusteeship Fee**"), which shall be paid annually to the Trustee for the services rendered to the Trust. In addition, the Trustee shall be entitled to recover from the Trust any (i) any legitimate out of pocket expenses incurred by it in relation to its trusteeship of the Trust, and (ii) any tax or duty including GST (other than income tax) which is, or has become as on the date of collection of such tax or duty, leviable under the applicable law on the fee payable to the Trustee by the Trust, in accordance with the terms of engagement of the Trustee.

Note 3:

The Investment Manager shall be entitled to a fee from the funds of the Trust, on an arm's length basis, in accordance with the Investment Management Agreement ("**Management Fee**"). The Management Fee shall be calculated annually and shall be the higher of:

(a) 0.75% of the revenue of the Portfolio Assets ("**Fee Percentage**"); or

(b) ₹ 190 million ("**Minimum Threshold**") subject to an escalation of 7% per annum from April 1, 2023, onwards.

The Investment Manager shall raise invoices on a monthly basis in Indian Rupees. All the invoices raised by the Investment Manager to the Trustee (on behalf of the Trust) will be at an arm's length price. Each such invoice shall be raised within 30 (thirty) days from the close of every month and payable within 30 (thirty) days upon receipt thereof.

The Investment Manager may charge a delay interest at the rate of 12% per annum in case of failure of the Trustee (on behalf of the Trust) to make the payment within the time mentioned above, and such interest shall be payable for the period of delay. All payments to the Investment Manager shall be made in cash to the bank account provided in writing by the Investment Manager to the other Parties.

In addition, the Investment Manager shall be entitled to recover from the Trust any tax or duty or levies, including goods and services tax (other than income tax), which is, or may become, leviable under applicable law on the Management Fee. The Trust will be entitled to deduct or withhold applicable tax at source on the Management Fee, in accordance with the tax regulations applicable in India at the time of payment of the Management Fee. Any change in the Management Fee will be subject to approval of the Unitholders, as required under the InvIT Regulations and applicable law.

Note 4:

The Project Manager[#] shall be entitled to a fee from the funds of the Portfolio Assets, on an arm's length basis in accordance with the Project Implementation and Management Agreement ("**PM Fee**"). The PM Fee shall be paid by each Existing Portfolio

Assets and Proposed Portfolio Assets upon execution of the respective deed of adherence to the PIMA, from their respective funds. The PM Fee shall be calculated annually and shall be the higher of:

(a). 1.55 % of the standalone revenue of the relevant portfolio Asset based on the audited financial statements of such asset; or

(b). during the term of the relevant Concession Agreement for each portfolio asset, the following amounts in relation to the relevant assets ("**Minimum Threshold**") as set out in the Project Implementation and Management Agreement subject to an escalation of 7% per annum from April 1, 2024.

Sr. No.	Name	Minimum Threshold Amount (*in ₹ million*)
Existing Portfolio Assets		
1.	APEPL	14.90
2.	DATRPL	114.70
3.	FRHPL	32.00
4.	GAEPL	15.10
5.	HTPL	12.30
6.	JMTPL	26.60
7.	JLTPL	10.60
8.	JVTPL	7.40
9.	KETPL	7.20
10.	KMTPL	14.30
11.	LRTPL	10.80
12.	MKTPL	12.10
13.	MBEL	12.30
14.	NKTPL	7.50
15.	NDEPL	11.60
16.	SMTPL	7.00
17.	WVEPL	10.40
18.	WUPTPL	15.40
19.	BWHPL	11.30
20.	MSHPL	12.10
21.	SPPL	11.50
22.	SIPL	13.20
23.	THPL	17.00
24.	MHPL	10.60
25.	JUHPL	*
26.	QEPL	*
27.	NAMEPL	15.10
Proposed Portfolio Assets		
28.	BFHL	*
29.	WMTPL	*
30.	CNTL	*
31.	DTPL	*

* *Not presently applicable for this asset*

\# *Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager of the Trust and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from the relevant concessioning authorities of the Portfolio Assets and subsequent to the receipt of the approvals, the New PIMA will be executed. The aforesaid change has not been completed as of the date of this Draft Offer Document. For further details, please see the section entitled "Parties to the Trust - The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited" on page 168.*

The payments of PM Fee shall be subject to applicable tax deduction, as may be required as per applicable law. The PM Fee shall be exclusive of GST, which shall be paid to the account of the relevant Portfolio Assets. The Project Manager may charge delay interest at the rate of 12% in case of failure to make payments by the project SPV within the agreed timelines in accordance with the provisions of the Project Implementation and Management Agreement.

Note 5:

The Auditor shall be entitled to a fee of ₹ 32.10 million as the statutory auditors of the Trust. The above fees exclude fees paid to S.B. Billimoria & Co. LLP as statutory auditors of the SPVs and the Investment Manager, one-time costs, certification costs and other similar expenses. The above amount includes only the fees payable to S.B. Billimoria & Co. LLP in its capacity as statutory auditor of the Trust. The fees are dependent on the number of entities under consolidation and the agreed scope of work and may therefore be subject to change.

Set-up expenses

In connection with the establishment and registration of the Trust, the Investment Manager has incurred expenses of ₹ 1.70 million.

Offer Expenses

The total expenses of this Offer are estimated to be up to [●]. For details in relation to the Offer Expenses, please see "Use of Proceeds – Offer Expenses" on page 362

Details of credit ratings

Please see the section entitled "*General Information – Credit ratings*" on page 139 in relation to the details of credit ratings.

DESCRIPTION OF THE PORTFOLIO ASSETS

Details of arrangements pertaining to the Trust

The Trust's portfolio of assets comprises of: (a) Existing Portfolio Assets, namely: (i) Andhra Pradesh Expressway Private Limited; (ii) Borgaon Watambare Highways Private Limited; (iii) DA Toll Road Private Limited; (iv) Farakka-Raiganj Highways Private Limited; (v) Ghaziabad Aligarh Expressway Private Limited; (vi) Hazaribagh Tollway Private Limited; (vii) Jaipur-Mahua Tollway Private Limited; (viii) Jammu Udhampur Highway Private Limited; (ix) Jhansi-Lalitpur Tollway Private Limited; (x) Jhansi-Vigakhet Tollway Private Limited; (xi) Kanyakumari–Etturavattam Tollway Private Limited; (xii) Kotwa–Muzaffarpur Tollway Private Limited; (xiii) Lucknow–Raebareli Tollway Private Limited; (xiv) Madurai-Kanyakumari Tollway Private Limited; (xv) Mahua Bharatpur Expressways Limited; (xvi) Mangalwedha-Solapur Highways Private Limited; (xvii) Mangloor Highways Private Limited; (xviii) N.A.M. Expressway Private Limited; (xix) Nanguneri-Kanyakumari Tollway Private Limited; (xx) Nelamangala Devihalli Expressway Private Limited; (xxi) Quazigund Expressway Private Limited; (xxii) Salaipudhur-Madurai Tollway Private Limited; (xxiii) Shankarampet Projects Private Limited; (xxiv) Srirangam Infra Private Limited; (xxv) Tirumala Highways Private Limited; (xxvi) Walayar Vadakkencherry Expressways Private Limited; and (xxvii) Western UP Tollway Private Limited; and will comprise of: (b) Proposed Portfolio Assets, namely (i) Baharampore-Farakka Highways Limited; (ii) Chenani Nashri Tunnelway Limited; (iii) Devanahalli Tollway Private Limited; and (iv) Western MP Infrastructure & Toll Roads Private Limited.

The details of the Existing Portfolio Assets as of the date of this Draft Offer Document are provided below:

1. ***Andhra Pradesh Expressway Private Limited ("APEPL")***

Andhra Pradesh Expressway Private Limited is a private company incorporated on November 11, 2005, under the Companies Act, 1956 (CIN: U63031DL2005PTC349200). APEPL was originally incorporated as "*Andhra Pradesh Expressway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated April 2, 2025, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of APEPL is ₹ 3,000,000,000 (divided into 50,000,000 equity shares of ₹ 10 each and 250,000,000 preference shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 119,000,600 (divided into 11,900,060 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. No preference shares have been issued by APEPL as at the date of this Draft Offer Document. The shareholding pattern of APEPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	11,900,059	99.99
2.	Sandeep Lakhanpal*	1	Negligible
Total		**11,900,060**	**100.00**

* *Nominee shareholder of the Trust.*

2. ***DA Toll Road Private Limited ("DATRPL")***

DA Toll Road Private Limited is a private limited company incorporated on May 26, 2010, under the Companies Act, 1956 (CIN: U45203DL2010PTC430141). Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of DATRPL is ₹ 100,000,000 (divided into 10,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 90,180,000 (divided into 9,018,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of DATRPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	9,017,999	99.99
2.	Sandeep Lakhanpal*	1	Negligible
Total		**9,018,000**	**100.00**

* *Nominee shareholder of the Trust.*

3. ***Borgaon Watambare Highways Private Limited ("BWHPL")***

Borgaon Watambare Highways Private Limited is a private limited company incorporated on April 11, 2018, under the Companies Act, 2013 (CIN: U45203DL2018PTC447846). BWHPL was originally incorporated with the name DBL Borgaon Watambare Highways Private Limited, thereafter its name was changed to BWHPL. Consequently, a fresh certificate of incorporation dated August 22, 2022, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of BWHPL is ₹ 2,500,000 (divided into 250,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 2,259,560 (divided into 225,956 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of BWHPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	225,955	99.99
2.	Abhijit Saukhyashil Sathe*	1	Negligible
Total		**225,956**	**100.00**

* *Nominee shareholder of the Trust.*

4. ***Mangalwedha Solapur Highways Private Limited ("MSHPL")***

Mangalwedha Solapur Highways Private Limited is a private limited company incorporated on April 11, 2018, under the Companies Act, 2013, (CIN: U45309DL2018PTC447504). MSHPL was originally incorporated with the name DBL Mangalwedha Solapur Highways Private Limited, thereafter its name was changed to MSHPL. Consequently, a fresh certificate of incorporation dated October 12, 2022, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of MSHPL is ₹ 2,500,000 (divided into 250,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 1,918,740 (divided into 191,874 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of MSHPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	191,873	99.99

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
2.	Abhijit Saukhyashil Sathe*	1	Negligible
Total		**191,874**	**100.00**

* *Nominee shareholder of the Trust.*

5. ***Farakka Raiganj Highways Private Limited ("FRHPL")***

Farakka Raiganj Highways Private Limited is a private limited company incorporated on March 11, 2010, under the Companies Act, 1956 (CIN: U45400DL2010PTC428360). FRHPL was originally incorporated as "*Farakka Raiganj Highways Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated September 24, 2024, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of FRHPL is ₹ 2,600,000,000 (divided into 260,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 2,502,210,000 (divided into 250,221,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of FRHPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	250,220,999	99.99
2.	Sandeep Lakhanpal*	1	Negligible
Total		**250,221,000**	**100.00**

* *Nominee shareholder of the Trust.*

6. ***Ghaziabad Aligarh Expressway Private Limited ("GAEPL")***

Ghaziabad Aligarh Expressway Private Limited is a private limited company incorporated on December 18, 2009, under the Companies Act, 1956 (CIN: U70101DL2009PTC197148). Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of GAEPL is ₹ 1,940,000,000 (divided into 194,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 1,940,000,000 (divided into 194,000,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of GAEPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	193,999,999	99.99
2.	Vinay C Sekar *	1	Negligible
Total		**194,000,000**	**100.00**

* *Nominee shareholder of the Trust.*

7. *Hazaribagh Tollway Private Limited ("HTPL")*

Hazaribagh Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45500DL2019FTC358748). HTPL was originally incorporated as "*Hazaribagh Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 5, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of HTPL is ₹ 90,000,000 (divided into 9,000,000 equity shares of ₹ 10 each), and its issued, subscribed and paid-up capital is ₹ 45,050,000 (divided into 4,505,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of HTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	4,504,999	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**4,505,000**	**100.00**

* *Nominee shareholder of the Trust.*

8. *Jhansi– Lalitpur Tollway Private Limited ("JLTPL")*

Jhansi-Lalitpur Tollway Private Limited is a private limited company incorporated on December 17, 2019, under the Companies Act, 2013 (CIN: U45100DL2019FTC358903). JLTPL was originally incorporated as "*Jhansi-Lalitpur Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 5, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of JLTPL is ₹ 45,000,000 (divided into 4,500,000 equity shares of ₹ 10 each), and its issued, subscribed and paid-up capital is ₹ 22,185,000 (divided into 2,218,500 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of JLTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	2,218,499	99.99
2.	Vinay C Sekar*	1	Negligible
Total		**2,218,500**	**100.00**

* *Nominee shareholder of the Trust.*

9. *Jaipur-Mahua Tollway Private Limited ("JMTPL")*

Jaipur-Mahua Tollway Private Limited is a private limited company incorporated on March 18, 2005, under the Companies Act, 1956 (CIN: U45200DL2005PTC288617). JMTPL was originally incorporated as "*Jaipur-Mahua Tollway Private Limited*" a private limited company. Thereafter, it converted into a public limited company, "*Jaipur-Mahua Tollway Limited"*, and a new certificate of incorporation dated April 13, 2008, was issued. Subsequently, it

converted into a private company, JMTPL, and a fresh certificate of incorporation dated December 5, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of JMTPL is ₹ 1,955,000,000 (divided into 195,500,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 1,310,510,260 (divided into 131,051,026 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of JMTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	131,051,025	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**131,051,026**	**100.00**

* *Nominee shareholder of the Trust.*

10. ***Jhansi-Vigakhet Tollway Private Limited ("JVTPL")***

Jhansi-Vigakhet Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45309DL2019FTC358750). JVTPL was originally incorporated as "*Jhasi-Vigakhet Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 2, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of JVTPL is ₹ 30,000,000 (divided into 3,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 14,520,000 (divided into 1,452,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of JVTPL at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	1,451,999	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**1,452,000**	**100.00**

* *Nominee shareholder of the Trust.*

11. ***Kanyakumari-Etturavattam Tollway Private Limited ("KETPL")***

Kanyakumari-Etturavattam Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45209DL2019FTC358745). KETPL was originally incorporated as "*Kanyakumari-Etturavattam Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 5, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of KETPL is ₹ 75,000,000 (divided into 7,500,000 equity shares of ₹ 10 each), and its issued, subscribed and paid-up capital is ₹ 36,405,000 (divided into 3,640,500 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of KETPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	3,640,499	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**3,640,500**	**100.00**

* *Nominee shareholder of the Trust.*

12. ***Shankarampet Projects Private Limited ("SPPL")***

Shankarampet Projects Private Limited is a private limited company incorporated on April 12, 2018, under the Companies Act, 2013, (CIN: U45309DL2018PTC457549). SPPL was originally incorporated with the name KNR Shankarampet Projects Private Limited, thereafter its name has been changed to SPPL. Consequently, a fresh certificate of incorporation dated November 8, 2024, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of SPPL is ₹ 521,200,000 (divided into 521,200 equity shares of ₹ 1,000 each), and its issued, subscribed and paid-up capital is ₹ 521,150,000 (divided into 521,150 equity shares of ₹ 1,000 each), as at the date of this Draft Offer Document. The shareholding pattern of SPPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	521,149	99.99
2.	Abhijit Saukhyashil Sathe*	1	Negligible
Total		**521,150**	**100.00**

* *Nominee shareholder of the Trust.*

13. ***Srirangam Infra Private Limited ("SIPL")***

Srirangam Infra Private Limited is a private limited company incorporated on March 19, 2018, under the Companies Act, 2013 (CIN: U45209DL2018PTC457231). SIPL was originally incorporated with the name KNR Srirangam Infra Private Limited, thereafter its name was changed to SIPL. Consequently, a fresh certificate of incorporation dated November 8, 2024, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of SIPL is ₹ 481,150,000 (divided into 481,150 equity shares of ₹ 1,000 each), and its issued, subscribed and paid-up capital is ₹ 481,150,000 (divided into 481,150 equity shares of ₹ 1,000 each), as at the date of this Draft Offer Document. The shareholding pattern of SIPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	481,149	99.99

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
2.	Abhijit Saukhyashil Sathe*	1	Negligible
Total		**481,150**	**100.00**

* *Nominee shareholder of the Trust.*

14. ***Tirumala Highways Private Limited ("THPL")***

Tirumala Highways Private Limited is a private limited company incorporated on April 13, 2018, under the Companies Act, 2013 (CIN: U45500DL2018PTC457230). THPL was originally incorporated with the name KNR Tirumala Infra Private Limited, thereafter its name was changed to THPL. Consequently, a fresh certificate of incorporation dated November 8, 2024, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of THPL is ₹ 716,300,000 (divided into 716,300 equity shares of ₹ 1,000 each), and its issued, subscribed and paid-up capital is ₹ 716,250,000 (divided into 716,250 equity shares of ₹ 1,000 each), as at the date of this Draft Offer Document. The shareholding pattern of THPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	716,249	99.99
2.	Abhijit Saukhyashil Sathe*	1	Negligible
Total		**716,250**	**100.00**

* *Nominee shareholder of the Trust.*

15. ***Kotwa Muzaffarpur Tollway Private Limited ("KMTPL")***

Kotwa Muzaffarpur Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45100DL2019FTC358749). KMTPL was originally incorporated as "*Kotwa Muzaffarpur Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 5, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of KMTPL is ₹ 95,000,000 (divided into 9,500,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 47,605,000 (divided into 4,760,500 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of KMTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	4,760,499	99.99
2.	Vinay C. Sekar*	1	Negligible

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
Total		**4,760,500**	**100.00**

* *Nominee shareholder of the Trust.*

16. ***Lucknow Raebareli Tollway Private Limited ("LRTPL")***

Lucknow Raebareli Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45209DL2019FTC358746). LRTPL was originally incorporated as "Lucknow Raebareli Tollway Limited" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 12, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of LRTPL is ₹ 55,000,000 (divided into 5,500,000 equity shares of ₹ 10 each), and its issued, subscribed and paid-up capital is ₹ 27,010,000 (divided into 2,701,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of LRTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	2,700,999	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**2,701,000**	**100.00**

* *Nominee shareholder of the Trust.*

17. ***Mahua Bharatpur Expressways Limited ("MBEL")***

Mahua Bharatpur Expressways Limited is a public company incorporated on March 23, 2005, under the Companies Act, 1956 (CIN: U45203DL2005PLC329746). MBEL was originally incorporated with the name "Madhucon Agra-Jaipur Expressways Limited" thereafter its name was changed to MBEL. Consequently, a fresh certificate of incorporation dated February 18, 2017, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of MBEL is ₹ 1,000,000,000 (divided into 100,000,000 equity shares of ₹ 10 each), and its issued, subscribed and paid-up capital is ₹ 993,600,000 (divided into 99,360,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of MBEL as at the date of this Draft Offer Document is provided below. MBEL has issued certain non-convertible debentures for more details please see section entitled "*Financial Indebtedness and Deferred - Payments - Principal terms of the non-convertible debentures issued by MBEL*" on page 370.

Sr. No.	Shareholder's Name**	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	99,333,994	99.97
2.	Madhucon Infra Limited**	26,000	0.03
3.	Pankaj Vasani*	1	Negligible

Sr. No.	Shareholder's Name**	No. of equity shares	Percentage (%)
4.	Abhijit Saukhyashil Sathe*	1	Negligible
5.	Sandeep Lakhanpal*	1	Negligible
6.	Vinay C. Sekar*	1	Negligible
7.	Saurabh Bansal*	1	Negligible
8.	Rohan Sharma*	1	Negligible
Total		**99,360,000**	**100.00**

* *Nominee shareholder of the Trust.*

** *In accordance with Regulation 18(3)(a) of the InvIT Regulations, the Trust (acting through the Trustee), the Trustee, the Investment Manager, CH-I, CH-III, MBEL and Madhucon Infra Limited ("**Madhucon**") have entered into a letter agreement dated November 22, 2022, pursuant to which Madhucon has agreed that it shall not act in any manner that prevent the Trust (acting through the Trustee), the Investment Manager or MBEL from complying with the provisions of applicable law, including the InvIT Regulations.*

18. *Madurai-Kanyakumari Tollway Private Limited ("MKTPL")*

Madurai–Kanyakumari Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45100DL2019FTC358752). MKTPL was originally incorporated as "*Madurai- Kanyakumari Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 5, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of MKTPL is ₹ 77,500,000 (divided into 7,750,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 38,255,000 (divided into 3,825,500 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of MKTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	3,825,499	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**3,825,500**	**100.00**

* *Nominee shareholder of the Trust.*

19. *Mangloor Highways Private Limited ("MHPL")*

Mangloor Highways Private Limited is a private limited company incorporated on April 11, 2018, under the Companies Act, 2013 (CIN: U45309DL2018PTC447486). MHPL was originally incorporated with the name DBL Mangloor Highways Private Limited, thereafter its was changed to MHPL. Consequently, a fresh certificate of

incorporation dated April 30, 2025, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of MHPL is ₹ 5,000,000 (divided into 500,000 equity shares of ₹ 10 each and its issued, subscribed and paid-up capital is ₹ 3,574,820 (divided into 357,482 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of MHPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	357,481	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**357,482**	**100.00**

* *Nominee shareholder of the Trust.*

20. ***N.A.M. Expressway Private Limited ("NAMEPL")***

N.A.M. Expressway Private Limited is a private company incorporated on June 15, 2010, under the Companies Act, 1956 (CIN: U45209DL2010PTC362956). NAMEPL was originally incorporated as "*N.A.M. Expressway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated January 28, 2026, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092, Delhi, India. The authorised capital of NAMEPL is ₹2,335,100,000 (divided into 233,510,000 equity shares of ₹10 each), and its issued, subscribed and paid-up capital is ₹2,335,100,000 (divided into 233,510,000 equity shares of ₹10 each), as at the date of this Draft Offer Document. The shareholding pattern of NAMEPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	233,509,996	99.99
2.	Pankaj Vasani*	1	Negligible
3.	Sandeep Lakhanpal*	1	Negligible
4.	Vinay C. Sekar*	1	Negligible
5.	Saurabh Bansal*	1	Negligible
Total		**233,510,000**	**100.00**

* *Nominee shareholder of the Trust.*

21. ***Nelamangala Devihalli Expressway Private Limited ("NDEPL")***

Nelamangala Devihalli Expressway Private Limited is a private limited company incorporated on November 20, 2017, under the Companies Act, 2013 (CIN: U45100DL2017PTC326190). NDEPL was originally incorporated with the name "*Gradient Infra Assets Advisors Private Limited*" thereafter its name was changed to NDEPL. Consequently, a fresh certificate of incorporation dated October 12, 2018, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of NDEPL is ₹100,000,000 (divided into 10,000,000 equity shares of ₹10 each), and its issued, subscribed and paid-up capital is ₹94,829,860 (divided into 9,482,986 equity shares of ₹10 each), as at the date of this Draft Offer Document. The shareholding pattern of NDEPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	9,482,985	99.99
2.	Vinay C Sekar*	1	Negligible
Total		**9,482,986**	**100.00**

* *Nominee shareholder of the Trust.*

22. ***Nanguneri Kanyakumari Tollway Private Limited ("NKTPL")***

Nanguneri Kanyakumari Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45309DL2019FTC358753). NKTPL was originally incorporated as "*Nanguneri Kanyakumari Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 5, 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of NKTPL is ₹ 99,000,000 (divided into 9,900,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 50,185,000 (divided into 5,018,500 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of NKTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	5,018,499	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**5,018,500**	**100.00**

* *Nominee shareholder of the Trust.*

23. ***Salaipudhur-Madurai Tollway Private Limited ("SMTPL")***

Salaipudhur Madurai Tollway Private Limited is a private limited company incorporated on December 13, 2019, under the Companies Act, 2013 (CIN: U45309DL2019FTC358747). SMTPL was originally incorporated as "*Salaipudhur Madurai Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated December 5 2023, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of SMTPL is ₹ 70,000,000 (divided into 7,000,000 equity shares of ₹ 10 each), and its issued, subscribed and paid-up capital is ₹ 33,590,000 (divided into 3,359,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of SMTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	3,358,999	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**3,359,000**	**100.00**

* *Nominee shareholder of the Trust.*

24. ***Western UP Tollway Private Limited ("WUPTPL")***

Western UP Tollway Private Limited is a private limited company incorporated on April 20, 2005, under the Companies Act, 1956 (CIN: U90000DL2005PTC310964). WUPTPL was originally incorporated as "*Western UP Tollway Limited*" a public limited company. Subsequently, it converted into a private limited company, and a fresh certificate of incorporation dated March 4, 2024, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of WUPTPL is ₹ 1,200,000,000 (divided into 120,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 1,148,752,040 (divided into 114,875,204 equity shares of ₹ 10 each). Further, WUPTPL has made filings with respect to a capital reduction scheme as at the date of this Draft Offer Document. The shareholding pattern of WUPTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	114,875,203	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**114,875,204**	**100.00**

* *Nominee shareholder of the Trust.*

25. ***Walayar Vadakkencherry Expressways Private Limited ("WVEPL")***

Walayar Vadakkencherry Expressways Private Limited is a private limited company incorporated on August 16, 2012, under the Companies Act, 1956 (CIN: U45209DL2012PTC423717). Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of WVEPL is ₹ 9,000,000 (divided into 900,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 9,000,000 (divided into 900,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of WVEPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	899,999	99.99

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
2.	Sandeep Lakhanpal*	1	Negligible
Total		**900,000**	**100.00**

* *Nominee shareholder of the Trust.*

26. ***Jammu Udhampur Highway Private Limited ("JUHPL")***

Jammu Udhampur Highway Private Limited is a private limited company incorporated on June 25, 2010, under the Companies Act, 1956 (CIN: U45400DL2010PTC204746). JUHPL was originally incorporated with the name "SP Jammu Udhampur Highway Private Limited" thereafter its name was changed to Athaang Jammu Udhampur Highway Limited on August 25, 2022, and thereafter its name was changed to JUHPL, consequently a fresh certificate of incorporation dated December 18, 2025, was issued. Its registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi, India 110092. The authorised capital of JUHPL is ₹ 120,000,000 (divided into 12,000,000 equity shares of ₹ 10 each), and its issued, subscribed and paid-up capital is ₹ 79,143,620 (divided into 7,914,362 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of JUHPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	7,914,361	99.99
2.	Vinay C. Sekar*	1	Negligible
Total		**7,914,362**	**100**

* *Nominee shareholder of the Trust.*

27. ***Quazigund Expressway Private Limited ("QEPL")***

Quazigund Expressway Private Limited is a private limited company incorporated on May 21, 2010, under the Companies Act, 1956 (CIN: U45203TG2010PTC068532. QEPL was originally incorporated with the name "Navayuga Quazigund Expressway Private Limited" thereafter its was changed to QEPL. Consequently, a fresh certificate of incorporation dated May 04, 2023, was issued Its registered office is located at 3rd Floor, GMR Aero Towers - 2, Mamidipally Village, Saroor Nagar Mandal, Rangareddy, Hyderabad, Telangana, India, 500108. The authorised capital of QEPL is ₹ 161,150,000 (divided into 16,115,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 126,605,860 (divided into 12,660,586 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. The shareholding pattern of QEPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
1.	Cube Highways Trust	12,660,585	99.99
2.	Vinay C. Sekar*	1	Negligible

Sr. No.	Shareholder's Name	No. of equity shares	Percentage (%)
Total		**12,660,586**	**100.00**

* *Nominee shareholder of the Trust.*

Please note that 100% of the equity shares of the Existing Portfolio Assets held by the Trust have been pledged. For more details regarding borrowings of the Trust please see section entitled "*Financial Indebtedness and Deferred – Payments*" on page 364.

The details of the Proposed Portfolio Assets as of the date of this Draft Offer Document are provided below:

1. *Baharampore-Farakka Highways Limited ("BFHL")*

Baharampore-Farakka Highways Limited is a public limited company incorporated on March 11, 2010, under the Companies Act, 1956 (CIN: U45200MH2010PLC200748). Its registered office is located at A-15, Mahavir Nagar CHS Factory Lane, Borivali West, Mumbai 400092 Maharashtra, India. The authorised capital of BFHL is ₹ 2,250,000,000 (divided into 225,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 2,172,530,000 (divided into 217,253,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. BFHL has issued certain non-convertible debentures. For more details, please see section entitled "*Financial Indebtedness and Deferred - Payments - Principal terms of the non-convertible debentures issued by BFHL & WMTPL*" on page 377.

The shareholding pattern of BFHL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares**	Percentage (%)
1.	Cube Highways and Infrastructure V Pte. Ltd	217,252,994	99.99
2.	Pooja Agarwal*	1	Negligible
3.	Gaurav Tyagi*	1	Negligible
4.	Ankit Jain*	1	Negligible
5.	Anshuman Gupta*	1	Negligible
6.	Rohan Sharma*	1	Negligible
7.	Anuj Maitrey*	1	Negligible
Total		**217,253,000**	**100.00**

* *Nominee shareholder of the Cube Highways and Infrastructure V Pte. Ltd*

** *51% of the equity shares of BFHL have been pledged by CH-V in favour of certain external lenders. Such pledge is proposed to be released prior to the transfer of BFHL to the Trust.*

2. *Western MP Infrastructure & Toll Roads Private Limited ("WMTPL")*

Western MP Infrastructure & Toll Roads Private Limited is a private limited company incorporated on August 28, 2007, under the Companies Act, 1956 (CIN: U45203MH2007PTC173577). Its registered office is located at A-15, Mahavir Nagar CHS Factory Lane, Borivali West, Mumbai-400092, Maharashtra, India. The authorised capital of WMTPL is ₹ 300,000,000 (divided into 30,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 291,346,480 (divided into 29,134,648 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. WMTPL has issued certain non-convertible debentures. For more details, please see section entitled "*Financial Indebtedness and Deferred - Payments - Principal terms of the non-convertible debentures issued by BFHL & WMTPL*" on page 377.

The shareholding pattern of WMTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares**	Percentage (%)
1.	Cube Highways and Infrastructure V Pte. Ltd	27,677,915	95.00
2.	Express Way Developers Limited	1,456,732	5.00
3.	Ankit Jain*	1	Negligible
Total		**29,134,648**	**100.00**

* *Nominee shareholder of the Cube Highways and Infrastructure V Pte. Ltd.*

** *51% of the equity shares of WMTPL have been pledged by CH-V in favour of certain external lenders. Such pledge is proposed to be released prior to the transfer of WMTPL to the Trust.*

Note: The Trust proposes to acquire at least 95% of the equity shares of WMTPL. As on date of this Draft Offer Document, 5% of WMTPL's shareholding is held by Express Way Developers Limited. The acquisition of equity shares of WMTPL is subject to the satisfaction of certain conditions precedent specified in the Commitment Letter. For further details, please see "Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust" and "Related Party Transactions - Commitment Letter" on pages 56 and 417, respectively.

3. *Chenani Nashri Tunnelway Limited ("CNTL")*

Chenani Nashri Tunnelway Limited is a public company incorporated on June 02, 2010, under the Companies Act, 1956 (CIN: U45400MH2010PLC203614). Its registered office is located at A-15, Mahavir Nagar CHS, Factory Lane, Borivali West, Mumbai Maharashtra, India, 400092. The authorized capital of CNTL is ₹ 3,720,000,000 (divided into 372,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 3,720,000,000 (divided into 372,000,000 equity shares of ₹ 10 each), as at the date of this Draft Offer Document. CNTL has issued certain optionally convertible debentures. For more details, please see section entitled "*Financial Indebtedness and Deferred - Payments - Principal terms of optionally convertible debentures issued by CNTL*" on page 378.

The shareholding pattern of CNTL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares**	Percentage (%)
1.	Cube Highways and Infrastructure II Pte. Ltd	371,999,994	99.99
2.	Pooja Agarwal*	1	Negligible

Sr. No.	Shareholder's Name	No. of equity shares**	Percentage (%)
3.	Ankit Jain*	1	Negligible
4.	Sanjay Ray*	1	Negligible
5.	Anuj Maitrey*	1	Negligible
6.	Rohan Sharma*	1	Negligible
7.	Gaurav Tyagi*	1	Negligible
Total		**372,000,000**	**100.00**

* *Nominee shareholder of the Cube Highways and Infrastructure II Pte. Ltd.*

** *Under the applicable financing documents the equity shares of CNTL could be subject to being pledged. However, as of the date of this Draft Offer Document, no pledge has been created over such equity shares.*

4. ***Devanahalli Tollway Private Limited ("DTPL")***

Devanahalli Tollway Private Limited is a private limited company incorporated on February 22, 2010, under the Companies Act, 1956 (CIN: U45203TG2010PTC067113). DTPL was originally incorporated with the name Navayuga Devanahalli Tollway Private Limited, subsequently, its name was changed to Essel Devanhalli Tollway Private Limited on May 3, 2018. Subsequently, on January 6, 2021, its name was changed to Athaang Devanahalli Tollway Private Limited. Subsequently, its name was further changed to DTPL and a fresh certificate of incorporation dated July 23, 2025, was issued. Its registered office is located at 3rd Floor, GMR Aero Towers-2, Mamidipally village, Rangareddy, Saroornagar - 500108, Hyderabad, Telangana, India. The authorized capital of DTPL is ₹ 50,000,000 (divided into 5,000,000 equity shares of ₹ 10 each) and its issued, subscribed and paid-up capital is ₹ 42,956,660 (divided into 4,295,666 equity shares of ₹ 10 each), as at the date of this Draft Offer Document.

The shareholding pattern of DTPL as at the date of this Draft Offer Document is provided below:

Sr. No.	Shareholder's Name	No. of equity shares**	Percentage (%)
1.	Cube Highways and Infrastructure V Pte. Ltd.	4,295,665	99.99
2.	Ankit Jain*	1	Negligible
Total		**4,295,666**	**100.00**

* *Nominee shareholder of the Cube Highways and Infrastructure V Pte. Ltd.*

** *Under the applicable financing documents the equity shares of DTPL could be subject to being pledged. However, as of the date of this Draft Offer Document, no pledge has been created over such equity shares*

Existing Third-Party SPAs

The Trust had entered into share purchase agreements and has acquired 100% of the issued, subscribed and paid-up share capital of JUHPL and QEPL from National Investment and Infrastructure Fund.

The Trust has also acquired certain Existing Portfolio Assets pursuant to the Existing Related Party SPAs. For further details, please see the section entitled "*Related Party Transactions – Existing Related Party SPAs*" on page 419.

Acquisition of the Proposed Portfolio Assets by the Trust

Pursuant to the Commitment Letter and the proposed share purchase agreements, the Trust acting through the Trustee or the Investment Manager proposes to acquire prior to allotment of the Units, from the respective shareholders of the Proposed Portfolio Assets, CH-V (Sponsor) and CH-II (including any nominees) ("**Sellers**") in accordance with the timelines prescribed in the Commitment Letter and the Sellers propose to transfer to the Trust in exchange for Units of the Trust, the entire issued and paid-up equity share capital of the Proposed Portfolio Assets held by the Sellers against an issuance of (i) up to 288.413 million Units in respect of the equity held by CH-V in BFHL, DTPL, and WMTPL;* and (ii) up to 98.6 million Units in respect of the equity held by CH-II in CNTL ("**Proposed Transfer**" / "**Swap Transaction**"). Further, the Trust proposes to infuse funds as shareholder loans to repay the non-convertible debentures/optionally convertible debentures or any other securities in the nature of debt held by the relevant Sellers in the Proposed Portfolio Assets. The Commitment Letter provides for certain conditions precedent that must be satisfied prior to the execution of the respective share purchase agreements. For further details, please see the sections entitled "*Related Party Transactions – Share Purchase Agreements*" and "*Related Party Transactions - Commitment Letter" on pages 419 and 417, respectively.*

* *The Trust proposes to acquire at least 95% of the equity shares of WMTPL. As on date of this Draft Offer Document, 5% of WMTPL's shareholding is held by Express Way Developers Limited. The acquisition of equity shares of WMTPL is subject to the satisfaction of certain conditions precedent specified in the Commitment Letter. For further details, please see "Related Party Transactions - Commitment Letter" on page 417.*

Accordingly, the Proposed Transfer shall be as set out below:

I. ***Equity Shareholding***

Sr. No.	Name of the Proposed Portfolio Assets	Pre-Offer shareholding of the Proposed Portfolio Assets		Proposed post-Offer shareholding of the Trust (in %)
		Name of Shareholder's*	Pre-Offer shareholding (in %)	
1.	BFHL	Cube Highways and Infrastructure V Pte. Ltd	99.99	100.00
		Pooja Agarwal*	Negligible	
		Gaurav Tyagi*	Negligible	
		Ankit Jain*	Negligible	
		Anshuman Gupta*	Negligible	
		Rohan Sharma*	Negligible	
		Anuj Maitrey*	Negligible	
2.	WMTPL	Cube Highways and Infrastructure V Pte. Ltd	95.00	95.00^
		Express Way Developers Limited	5.00	
		Ankit Jain*	Negligible	
3.	CNTL	Cube Highways and Infrastructure II Pte Ltd	99.99	100.00
		Pooja Agarwal**	Negligible	
		Ankit Jain**	Negligible	
		Anuj Maitrey**	Negligible	
		Sanjay Ray**	Negligible	
		Rohan Sharma**	Negligible	
		Gaurav Tyagi**	Negligible	
4.	DTPL	Cube Highways and Infrastructure V Pte. Ltd.	99.99	100.00
		Ankit Jain*	Negligible	

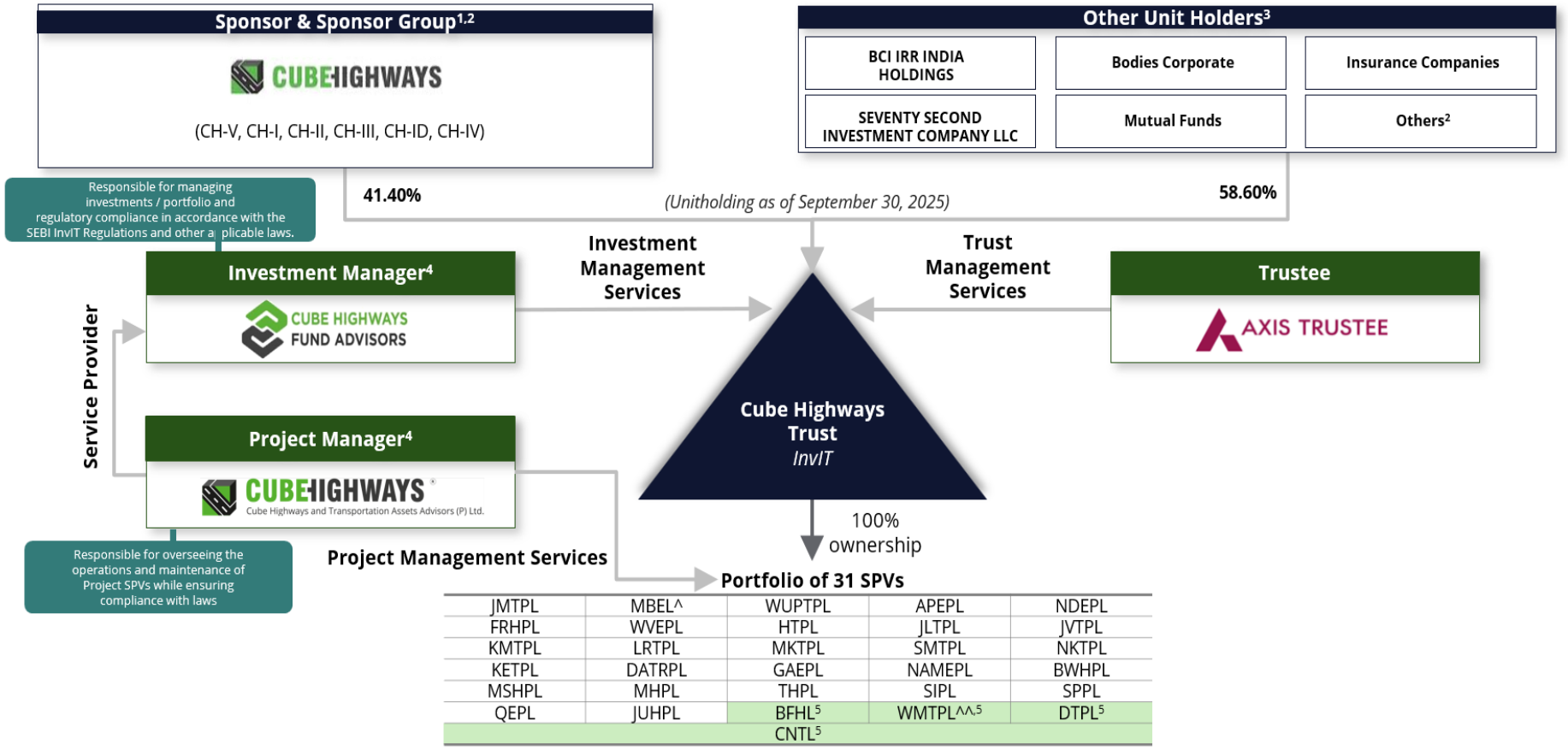
* *Nominee shareholder of the Cube Highways and Infrastructure V Pte. Ltd.*

** *Nominee shareholder of the Cube Highways and Infrastructure II Pte. Ltd.*

^ *The Trust proposes to acquire at least 95% of the equity shares of WMTPL. As on date of this Draft Offer Document, 5% of WMTPL's shareholding is held by Express Way Developers Limited. The acquisition of equity shares of WMTPL is subject to the satisfaction of certain conditions precedent specified in the Commitment Letter. For further details, please see "Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust" and "Related Party Transactions - Commitment Letter" on pages 56 and 417, respectively.*

Structure of the Trust

The following structure illustrates the relationship between the Trust, the Trustee, the Sponsor, the Investment Manager, the Project Manager* and the Unitholders as on the date of filing this Draft Offer Document:



^ 0.03% of the equity share is held by Madhucon Infra Limited; ^^ 5% of the shareholding is held by Express Way Developers Limited that will be acquired in accordance with the Commitment Letter

1. Cube Highways and Infrastructure V Pte. Ltd. (CH-V), Cube Highways and Infrastructure Pte. Ltd. (CH-I), Cube Highways and Infrastructure II Pte. Ltd. (CH-II), Cube Highways and Infrastructure III Pte. Ltd.(CH-III), Cube Highways and Infrastructure I-D Pte. Ltd. (CH-I-D) and Cube Mobility Investments Pte Ltd. (CH=IV)
2. CH-V is the sponsor of the Trust and balance all entities are member of the sponsor group as per the SEBI (InvIT) Regulations.
3. Includes Individuals, Trusts, Alternate Investment Fund, Foreign Portfolio Investor, Financial Institutions / Banks, Non-resident Indians
4. IM & PM are associates of Sponsor
5. Proposed Portfolio Assets

* *Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager of the Trust and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from the relevant concessioning authorities of the Portfolio Assets and subsequent to the receipt of the approvals, the New PIMA will be executed. The aforesaid change has not been completed as of the date of this Draft Offer Document. For further details, please see the section entitled "Parties to the Trust - The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited" on page 168.*

SUMMARY AUDITED CONSOLIDATED FINANCIAL INFORMATION OF THE TRUST

The following tables set forth the summary financial information derived from the Audited Consolidated Financial Statements of the Trust and its Existing Portfolio Assets which were prepared in accordance with Ind AS read with the InvIT Regulations, as of and for the half year ended September 30, 2025 and September 30, 2024 and year ended March 31, 2025, March 31, 2024, and March 31, 2023.

The degree to which the summary financial information included herein below will provide meaningful information is entirely dependent on the reader's level of familiarity with Indian accounting practices, Ind AS, the Companies Act and the InvIT Regulations. Accordingly, any reliance by persons not familiar with Indian accounting practices, Ind AS, the Companies Act and the InvIT Regulations on the summary financial information presented below should be limited.

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Cube Highways Trust

Consolidated Balance Sheet as at the Period Mentioned Below

(*All amounts in ₹ million unless otherwise stated*)

Particulars	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
ASSETS					
Non-current assets					
Property, plant and equipment	456.15	324.14	412.91	250.89	-
Capital work-in-progress	0.85	54.88	3.86	14.10	-
Investment properties	8.52	6.77	6.73	6.80	-
Intangible assets	2,38,265.75	2,23,388.74	2,44,382.18	2,21,160.26	-
Intangible assets under development	67.98	1,531.75	222.55	1,126.94	-
Financial assets:					
Investments	0.01	0.01	0.01	0.01	-
Other financial assets	26,667.42	9,009.17	7,465.08	18.88	-
Deferred tax assets (net)	822.78	352.92	643.79	243.23	-
Current tax assets (net)	1,641.00	1,280.47	1,009.01	541.94	-
Other non-current assets	839.53	97.03	146.13	120.18	-
Total non-current assets	**2,68,769.99**	**2,36,045.88**	**2,54,292.25**	**2,23,483.23**	**-**
Current assets					
Inventories	415.08	313.93	346.54	223.64	-
Financial assets:					
Investments	-	11,393.73	-	13,527.76	-
Trade receivables	2,396.51	2,070.31	1,636.71	600.79	-
Cash and cash equivalents	7,501.28	350.09	8,467.08	2,416.84	-
Bank balances other than cash and cash equivalents	4,667.05	3,470.00	6,091.68	3,593.98	-
Other financial assets	17,504.10	9,648.72	7,936.75	1,808.76	-
Current tax assets (net)	-	0.80	0.02	-	-
Other current assets	1,262.46	1,354.23	1,230.52	602.42	0.24
Total current assets	**33,746.48**	**28,601.81**	**25,709.30**	**22,774.19**	**0.24**
Assets held for sale	3.66	-	-	0.10	-
Total assets	**3,02,520.13**	**2,64,647.69**	**2,80,001.55**	**2,46,257.52**	**0.24**
EQUITY AND LIABILITIES					
EQUITY					
Unit Capital	1,34,396.03	1,37,183.89	1,37,183.89	1,44,773.67	-
Other equity	(17,619.15)	(12,231.43)	(15,969.77)	(15,284.29)	(289.96)
Distribution-Repayment of Capital	(10,361.08)	(3,477.42)	(6,840.23)	-	-
Equity attributable to Non-controlling interests	0.74	0.58	0.66	0.53	-
Total unit holder's equity	**1,06,416.54**	**1,21,475.62**	**1,14,374.55**	**1,29,489.91**	**(289.96)**
LIABILITIES					
Non-current liabilities					
Financial liabilities					
Borrowings	1,73,852.76	1,22,505.10	1,46,296.27	1,02,630.24	-
Other financial liabilities	2.11	133.56	114.17	185.09	-
Provisions	5,978.17	3,459.42	4,390.01	2,338.04	-
Deferred tax liabilities (net)	3,627.96	1,050.34	2,289.14	311.81	-
Total non-current liabilities	**1,83,461.00**	**1,27,148.42**	**1,53,089.59**	**1,05,465.18**	**-**
Current liabilities					
Financial liabilities					
Borrowings	5,122.29	4,496.59	4,850.58	4,722.49	-
Trade payables					
- total outstanding dues of micro enterprises and small enterprises	1,046.30	382.05	937.36	273.52	-
- total outstanding dues of creditors other than micro enterprises and small enterprises	1,271.73	1,553.50	1,290.25	1,372.02	265.97
Other financial liabilities	1,640.82	6,861.09	1,536.54	1,407.31	-
Other current liabilities	175.42	139.11	283.74	214.69	24.23
Provisions	3,371.32	2,583.23	3,638.94	3,312.38	-
Current tax liabilities (net)	14.71	8.08	-	0.02	-
Total current liabilities	**12,642.59**	**16,023.65**	**12,537.41**	**11,302.43**	**290.20**
Total liabilities	**1,96,103.59**	**1,43,172.07**	**1,65,627.00**	**1,16,767.61**	**290.20**
Total equity and liabilities	**3,02,520.13**	**2,64,647.69**	**2,80,001.55**	**2,46,257.52**	**0.24**

Cube Highways Trust

Consolidated Statement of Profit and Loss as at the Period Mentioned Below

(*All amounts in ₹ million unless otherwise stated*)

Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Income					
Revenue from operations	19,958.97	16,115.97	33,071.44	29,161.37	-
Other income	692.62	774.58	1,460.08	1,579.68	-
Total income	**20,651.59**	**16,890.55**	**34,531.52**	**30,741.05**	**-**
Expenses					
Cost of construction	112.72	411.81	634.14	4,025.77	-
Operation and maintenance expenses	3,870.75	3,709.25	7,554.62	5,046.42	-
Employee benefits expense	346.01	244.44	514.68	429.66	-
Finance costs	7,471.31	5,372.68	11,171.01	8,731.29	-
Depreciation and amortisation expense	7,084.72	6,397.72	13,129.12	11,825.72	-
Impairment of intangible assets	-	-	-	5,871.87	-
Other expenses	1,205.74	881.96	2,031.08	1,678.77	277.88
Total expenses	**20,091.25**	**17,017.86**	**35,034.65**	**37,609.50**	**277.88**
Profit/(loss) before tax	**560.34**	**(127.31)**	**(503.13)**	**(6,868.45)**	**(277.88)**
Less: Tax expense/(income)					
Current tax	221.45	164.29	367.11	287.41	-
Tax for earlier years	4.52	-	18.54	5.40	-
Deferred tax	(72.48)	(31.24)	(531.58)	(102.11)	-
Total Tax Expense/(income)	**153.49**	**133.05**	**(145.93)**	**190.70**	**-**
Profit/(loss) after tax for the half year/year	**406.85**	**(260.36)**	**(357.20)**	**(7,059.15)**	**(277.88)**
Other comprehensive income					
Items that will not be reclassified to profit or loss					
Re-measurement (losses)/gains on defined benefit obligations	(0.36)	(1.06)	0.70	0.35	-
Income tax relating to these items	(0.12)	(0.01)	(0.15)	0.10	-
Total other comprehensive income/(loss) for the half year/year	**(0.48)**	**(1.07)**	**0.55**	**0.45**	**-**
Total comprehensive income/(loss) for the half year/year	**406.37**	**(261.43)**	**(356.65)**	**(7,058.70)**	**(277.88)**
Net Income/(loss) for the half year/year					
Attributable to:					
Unit holders	406.77	(260.41)	(357.33)	(7,059.22)	(277.88)
Non controlling interests	0.08	0.05	0.13	0.07	-
Total comprehensive income/(loss) for the half year/year					
Attributable to:					
Unit holders	406.29	(261.48)	(356.78)	(7,058.77)	(277.88)
Non controlling interests	0.08	0.05	0.13	0.07	-

Cube Highways Trust

Consolidated Statement of Cash Flows as at the Period Mentioned Below

(All amounts in ₹ million unless otherwise stated)

	Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
A.	**Cash flows from operating activities**					
	Profit/ (Loss) before tax	560.34	(127.31)	(503.13)	(6,868.45)	(277.88)
	Adjustments for:					
	Depreciation and amortisation expense	7,084.72	6,397.72	13,129.12	11,825.72	-
	Loss on remeasurement of Contingent Consideration	23.76	-	-	-	-
	Loss on sale/write-off of property, plant and equipment (net)	0.09	0.35	0.62	1.91	-
	Net gain on sale of mutual funds	(235.21)	(308.32)	(771.34)	(719.07)	-
	Net gain on investments measured at fair value through profit or loss	-	(186.72)	-	(296.31)	-
	Liabilities no longer required written back	(42.26)	(28.96)	(76.53)	(79.00)	-
	Reversal of impairment loss allowance on trade receivables	(17.63)	-	-	-	-
	Interest income	(288.75)	(209.12)	(403.34)	(435.04)	-
	Interest on income tax refund	(16.57)	(6.44)	(30.99)	(8.28)	-
	Impairment of intangible assets	-	-	-	5,871.87	-
	Impairment loss allowance on financial assets (including write-offs)	57.07	-	27.47	59.74	-
	Allowance for doubtful advances	-	-	12.31	-	-
	Finance costs	7,471.31	5,372.68	11,171.01	8,731.29	-
	Operating cash flows before working capital changes and other adjustments	**14,596.87**	**10,903.88**	**22,555.20**	**18,084.38**	**(277.88)**
	Working capital changes and other adjustments:					
	Increase in inventories	(68.54)	(37.03)	(61.88)	(64.03)	-
	Decrease/(Increase) in trade receivables	(795.37)	116.07	542.58	151.16	-
	Decrease/(Increase) in financial assets and non financial assets	3,435.59	(203.54)	4,363.99	1,605.42	(0.24)
	(Decrease)/Increase in trade payables	(11.64)	8.18	282.88	(597.79)	253.89
	Increase in provisions	1,364.07	452.98	1,570.82	2.39	-
	(Decrease)/Increase in financial liabilities and non financial liabilities	(477.08)	(361.02)	1.53	(114.97)	24.23
	Cash flow generated from operating activities post working capital changes	**18,043.90**	**10,879.52**	**29,255.12**	**19,066.56**	**-**
	Income tax (paid)/ refund (net)	(397.80)	(163.03)	(91.54)	(367.10)	-
	Net cash generated from operating activities (A)	**17,646.10**	**10,716.49**	**29,163.58**	**18,699.46**	**-**
B.	**Cash flows from investing activities**					
	Payment towards property, plant and equipment & intangible assets (after adjustment of increase/decrease in capital work-in progress, intangible assets under development (net) and advances for capital expenditure)	(499.94)	(906.49)	(1,928.97)	(5,107.58)	-
	Proceeds from sale of property, plant and equipment	-	0.94	115.93	(1.91)	-
	Movement in bank balances (including deposits) not considered as cash and cash equivalents (net)	5,386.09	1,142.35	(738.53)	(3,287.78)	-
	Consideration paid for acquisition of Subsidiaries	(10,112.88)	(5,395.31)	(17,884.00)	-	-
	Investment/(redemption) from mutual funds (net)	235.21	4,729.05	16,841.17	(2,187.13)	-
	Interest received	291.49	333.22	574.98	255.51	-
	Net cash used in investing activities (B)	**(4,700.03)**	**(96.24)**	**(3,019.42)**	**(10,328.89)**	**-**
C.	**Cash flows from financing activities**					
	Proceeds from issue of unit capital	-	-	-	38,025.92	-
	Expense incurred towards issue of units	-	-	-	(10.94)	-
	Proceeds from long term borrowings	41,720.00	22,480.00	48,790.00	1,08,800.00	-
	Proceeds from short term borrowings	13,292.87	-	-	-	-
	Repayment of long term borrowings	(44,774.01)	(22,850.23)	(44,094.23)	(1,33,798.23)	-

	Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
	Repayment of short term borrowings	(13,292.87)	-	-	-	-
	Processing Fees paid	(146.02)	(106.23)	(208.36)	(638.00)	-
	Interest paid (including interest capitalised)	(7,444.66)	(5,857.03)	(11,593.73)	(16,683.62)	-
	Payment of distributions to unitholders	(8,364.38)	(7,752.86)	(14,758.71)	(7,935.63)	-
	Net cash used in financing activities (C)	**(19,009.07)**	**(14,086.35)**	**(21,865.03)**	**(12,240.50)**	**-**
D.	**Net increase/(decrease) in cash and cash equivalents (A+B+C)**	**(6,063.00)**	**(3,466.10)**	**4,279.13**	**(3,869.93)**	**-**
E.	Cash and cash equivalents at the beginning of the half year/ year	8,163.86	2,415.24	2,415.24	-	-
	Cash and cash equivalents acquired on asset acquisition	4,877.55	1,400.95	1,469.49	6,285.17	-
	Cash and cash equivalents at the end of the half year/year (D+E) (Refer reconciliation below)	**6,978.41**	**350.09**	**8,163.86**	**2,415.24**	**-**
	Reconciliation of cash and cash equivalents as per Consolidated Statement of Cash Flows					
	Cash and cash equivalents comprise of following:					
	Cash and cash equivalents	7,501.28	350.09	8,467.08	2,416.84	-
	Less: Earmarked balances	(522.87)	-	(303.22)	(1.60)	-
	As per Consolidated Statement of Cash Flows	**6,978.41**	**350.09**	**8,163.86**	**2,415.24**	**-**

SUMMARY FINANCIAL INFORMATION OF THE SPONSOR

The following tables set forth the summary financial information derived from the audited financial statements of the Sponsor which were prepared in accordance with the IFRS, as of and for the years ended December 31, 2024, December 31, 2023, and December 31, 2022.

The summary financial information of the Sponsor is included in this Draft Offer Document as per the requirements of the InvIT Regulations.

The degree to which the summary financial information included herein below will provide meaningful information is entirely dependent on the reader's level of familiarity with IFRS. Accordingly, any reliance by persons not familiar with the same on the summary financial information presented below should be limited.

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Cube Highways and Infrastructure V Pte. Ltd.

Statement of financial position as at December 31, 2024, December 31, 2023, and December 31, 2022

(All amounts in USD unless otherwise stated)

Particulars	As at December 31, 2024	As at December 31, 2023	As at December 31, 2022	As at January 01, 2022
ASSETS				
Non-current assets				
Financial assets at fair value through profit or loss	798,996,735	121,287,150	1,209	-
Total non-current assets	**798,996,735**	**121,287,150**	**1,209**	**-**
Current assets				
Cash and cash equivalents	1,360,473	9,387,269	7,969	3,729
Amount due from immediate holding company	-	-	42,500	34,860
Amount due from related party	15	15	15	-
Other current assets	5,766	8,043	8,750	-
Total current assets	**1,366,254**	**9,395,327**	**59,234**	**38,589**
Total assets	**800,362,989**	**130,682,477**	**60,443**	**38,589**
EQUITY AND LIABILITIES				
EQUITY				
Capital	166,594,292	24,603,658	1,500,000	100
Other equity	235,139,612	20,976,779	(6,617,028)	(1,484,069)
Total equity	**401,733,904**	**45,580,437**	**(5,117,028)**	**(1,483,969)**
LIABILITIES				
Current liabilities				
Amount due to shareholders	-	19,121,638	-	-
Amount due to related parties	724,440	177,034	607,513	253,531
Loan from shareholders	394,940,171	57,408,537	3,500,000	-
Trade and other payables	1,193	72,344	1,069,958	1,269,027
Share application money received pending for allotment	2,963,281	8,322,487	-	-
Total liabilities	**398,629,085**	**85,102,040**	**5,177,471**	**1,522,558**
Total equity and liabilities	**800,362,989**	**130,682,477**	**60,443**	**38,589**

Cube Highways and Infrastructure V Pte. Ltd.

Statement of profit or loss and other comprehensive income for the year ended December 31, 2024, December 31, 2023 and December 31, 2022

(All amounts in USD unless otherwise stated)

Particulars	For the Fiscal ended December 31, 2024	For the Fiscal ended December 31, 2023	For the Fiscal ended December 31, 2022
Income			
Interest income	219,243	144,713	4,968
Other income	-	-	170,000
Net change in fair value of financial assets at fair value through profit and loss	222,158,451	34,780,017	(73)
Net foreign currency gains/(losses)	77	(127)	(61)
Total operating income	**222,377,771**	**34,924,603**	**174,834**
Expenses			
Management fees	(787,118)	(170,000)	(170,000)
Deal costs	(4,760,484)	(4,341,862)	(4,715,282)
Other expenses	(2,667,336)	(2,818,934)	(422,511)
Total expenses	**(8,214,938)**	**(7,330,796)**	**(5,307,793)**
Profit/ (loss) before tax	**214,162,833**	27,593,807	(5,132,959)
Income tax expense	-	-	-
Profit/ (loss) for the period/year	**214,162,833**	27,593,807	(5,132,959)
Other comprehensive income/ (loss)	-	-	-
Total comprehensive profit/ (loss) for the year	**214,162,833**	**27,593,807**	**(5,132,959)**

Cube Highways and Infrastructure V Pte. Ltd.

Statement of cash flows for the year ended December 31, 2024, December 31, 2023 and December 31, 2022

(All amounts in USD unless otherwise stated)

Particulars	For the year ended December 31, 2024	For the year ended December 31, 2023	For the year ended December 31, 2022
Cash flows from operating activities:			
Profit/(loss) before tax	214,162,833	27,593,807	(5,132,959)
Adjustment:			
- Interest income	(219,243)	(144,713)	(4,968)
Operating cash flows before working capital changes	**213,943,590**	**27,449,094**	**(5,137,927)**
Working capital changes and other adjustments:			
Increase/(decrease) in trade and other payables	(71,151)	(997,614)	(199,069)
(Increase)/decrease in other current assets	2,277	707	(8,750)
Increase/(decrease) in amount due to shareholders	(19,121,638)	19,121,638	-
Increase)/decrease in amount due from immediate holding company	-	42,500	(7,640)
Increase)/decrease in amount due from related party	-	-	(15)
Increase/(decrease) in amount due to related parties	547,406	(430,479)	353,982
Increase/(decrease) in financial assets at fair value through profit or loss	(677,709,585)	(121,285,941)	(1,209)
Cash used in operations	**(482,409,101)**	**(76,100,095)**	**(5,000,628)**
Interest received	219,243	144,713	4,968
Net cash used in operating activities	**(482,189,858)**	**(75,955,382)**	**(4,995,660)**
Cash flows from financing activities			
Loan from shareholders	**337,531,634**	70,320,232	3,500,000
Repayment of loan to shareholders	-	(2,500,000)	-
Proceeds from issuance of ordinary shares	47,231,044	3,063,988	499,900
Proceeds from issuance of redeemable preference shares	94,462,090	6,127,975	1,000,000
Proceeds from issuance of nil voting shares	297,500	-	-
Share application money received pending for allotment	(5,359,206)	8,322,487	-
Net cash generated from/(used in) financing activities	**474,163,062**	**85,334,682**	**4,999,900**
Net increase/(decrease) in cash and cash equivalents	(8,026,796)	9,379,300	4,240
Cash and cash equivalents at the beginning of the period	9,387,269	7,969	3,729
Cash and cash equivalents at the end of the period	**1,360,473**	**9,387,269**	**7,969**

SUMMARY FINANCIAL INFORMATION OF THE INVESTMENT MANAGER

The following tables set forth the summary financial information derived from the audited financial statements of the Investment Manager, which were prepared in accordance with Indian GAAP, as of and for the year ended March 31, 2025, March 31, 2024 and March 31, 2023.

The summary financial information of the Investment Manager is included in this Draft Offer Document as per the requirements of the InvIT Regulations.

The degree to which the summary financial information included herein below will provide meaningful information is entirely dependent on the reader's level of familiarity with Indian accounting practices, Ind AS, the Companies Act and the InvIT Regulations. Accordingly, any reliance by persons not familiar with Indian accounting practices, Ind AS, the Companies Act and the InvIT Regulations on the summary financial information presented below should be limited.

Cube Highways Fund Advisors Private Limited

Balance Sheet as at March 31, 2025

(All amounts in ₹ lakhs unless otherwise stated)

Particulars	As at March 31, 2025
Equity and Liabilities	
Shareholders' funds	
Share capital	1,465.00
Reserves and surplus	1,269.66
	2,734.66
Non-current liabilities	
Long-term provisions	539.36
Current liabilities	
Trade payables	
-total outstanding dues of micro enterprises and small enterprises; and	3.26
-total outstanding dues of creditors other than micro enterprises and small enterprises	264.36
Other current liabilities	442.89
Short-term provisions	73.22
	783.73
Total	**4,057.75**
Assets	
Non-current assets	
Property, Plant and Equipment	8.14
Long-term loans and advances	-
Other non-current assets	524.43
Deferred tax assets (net)	142.73
	675.30
Current assets	
Investments	-
Trade receivables	273.63
Cash and cash equivalents	2,716.27
Other Bank balances	-
Short-term loans and advances	77.07
Other current assets	315.48
	3,382.45
Total	**4,057.75**

Cube Highways Fund Advisors Private Limited

Statement of Profit and Loss for the for the period mentioned below:

(All amounts in ₹ lakhs unless otherwise stated)

Particulars	Year ended March 31, 2025
Revenue from operations	2,810.46
Other income	187.71
Total income	**2,998.17**
Expenses	
Employee benefits expense	1,828.34
Finance costs	0.29
Depreciation expense	5.73
Other expenses	545.56
Total expenses	**2,379.92**
Profit before tax	**618.25**
Tax expense	
- Current tax	251.07
- Tax related to earlier years	6.33
- Deferred tax expense/(credit)	(121.79)
Total tax expense	**135.61**
Profit for the year	**482.64**

Cube Highways Fund Advisors Private Limited

Statement of Cash Flow for the period mentioned below:

(All amounts in ₹ lakhs unless otherwise stated)

Particulars	Year ended March 31, 2025
A. Cash flow from Operating Activities	
Profit before tax	**618.25**
Adjustments for:	
Unrealised loss on foreign currency transaction and translation (net)	-
Interest income on bank deposits	(7.97)
Gain on sale of investment	(150.39)
Depreciation expense	5.73
Liabilities no longer required written back	(23.61)
Interest on Income tax refund	(5.61)
Interest on delayed payment of MSME vendors	0.29
Interest on delayed payment of Statutory dues	-
	(181.56)
Operating profit before working capital changes	**436.69**
Changes in working capital:	
Increase/(decrease) in trade payables	(171.56)
Increase/(decrease) in other current liabilities	(44.93)
(Increase)/decrease in short-term loans and advances	(57.78)
(Increase)/decrease in trade receivables	(273.63)
(Increase)/decrease in other assets	(615.22)
Increase/(decrease) in provisions	434.62
Cash generated/(used) in operations	**(291.81)**
Income-tax paid (net of refund)	(113.00)
Net cash generated/(used) in operating activities (A)	**(404.81)**
Cash flow from investing activities	
Payment for purchase of property, plant and equipment	(5.46)
Maturity/(Investment) in bank deposits other than cash and cash equivalents (Net)	1,560.00
Proceeds from maturity in bank deposits other than cash and cash equivalents	-
Investment in mutual funds (other than those considered as cash equivalents)	-
Proceeds from redemption of mutual funds (net)	1,415.11
Interest received on bank deposits	105.35
Interest on Income tax refund	5.61
Net cash generated/(used) from investing activities (B)	**3,080.61**
Cash flow from financing activities	
Interest on delayed payment of Statutory dues	**-**
Net cash (used in)/generated from financing activities (C)	**-**
Net (decrease)/increase in cash and cash equivalents (A+B+C)	2,675.80
Cash and cash equivalents at the beginning of the year	40.47
Cash and cash equivalents at the end of the year	**2,716.27**
Cash and cash equivalents comprise of:	
Balances with Bank	**2716.27**
- In deposits	**-**
– cash in hand	0.87
– In current accounts	46.70
- In Liquid investments- mutual funds	2,668.70
	2716.27

Notes:

1. The above Cash Flow Statement has been prepared under the indirect method set out in Accounting Standard - 3 "Cash Flow Statement" notified under section 133 of the Companies Act, 2013.
2. Figures in brackets indicate cash outflow.

Cube Highways Fund Advisors Private Limited

Balance Sheet as at March 31, 2024 and March 31, 2023

(All amounts in ₹ lakhs unless otherwise stated)

Particulars	As at March 31, 2024*	As at March 31, 2023*
Equity and Liabilities		
Shareholders' funds		
Share capital	1,465.00	1,465.00
Reserves and surplus	787.02	519.26
Non-current liabilities		
Long-term provisions	88.52	60.20
Current liabilities		
Trade payables		
-total outstanding dues of micro enterprises and small enterprises; and	1.97	1.60
-total outstanding dues of creditors other than micro enterprises and small enterprises	436.92	624.78
Other current liabilities	511.42	36.14
Short-term provisions	89.44	65.00
Total	**3,380.29**	**2,771.98**
Assets		
Non-current assets		
Property, Plant and Equipment	8.41	-
Long-term loans and advances	144.39	-
Other non-current assets	-	-
Deferred tax assets (net)	20.94	10.10
Current assets		
Investments	1,264.73	-
Trade receivables	-	
Cash and cash equivalents	40.47	320.34
Other Bank balances	1,560.00	-
Short-term loans and advances	19.28	108.35
Other current assets	322.07	2,333.19
Total	**3,380.29**	**2,771.98**

* *Extracted from audited financial statements of the relevant Financial Year.*

Cube Highways Fund Advisors Private Limited

Statement of Profit and Loss for the for the period mentioned below:

(All amounts in ₹ lakhs unless otherwise stated)

Particulars	Year ended March 31, 2024*	Year ended March 31, 2023*
Revenue from operations	2,535.34	2,302.57
Other income	130.25	21.20
Total income	**2,665.59**	**2,323.77**
Expenses		
Employee benefits expense	1,565.41	1,170.41
Finance costs	0.54	0.82
Depreciation and amortisation	4.84	-
Other expenses	729.96	376.11
Total expenses	**2,300.75**	**1,547.34**
Profit before tax	**364.84**	**776.43**
Tax expense		
- Current tax	107.92	191.60
- Tax related to earlier years	-	-
- Deferred tax expense/(credit)	(10.84)	5.05
Total tax expense	**97.08**	**196.65**
Profit for the year	**267.76**	**579.78**

* *Extracted from audited financial statements of the relevant Financial Year.*

Cube Highways Fund Advisors Private Limited

Statement of Cash Flow for the period mentioned below:

(All amounts in ₹ lakhs unless otherwise stated)

Particulars	Year ended March 31, 2024*	Year ended March 31, 2023*
A. Cash flow from Operating Activities		
Profit before tax	**364.84**	**776.43**
Adjustments for:		
Unrealised loss on foreign currency transaction and translation (net)	-	0.54
Interest income on bank deposits	(118.23)	(14.41)
Gain on sale of investment	(9.82)	-
Depreciation on tangible assets	4.84	-
Liabilities no longer required written back	-	-
Interest on Income tax refund	-	
Interest on delayed payment of MSME vendors	0.54	0.50
Interest on delayed payment of Statutory dues	-	0.32
Operating profit before working capital changes	**242.17**	**763.38**
Changes in working capital:		
Increase/(decrease) in trade payables	174.83	552.78
Increase/(decrease) in other current liabilities	112.42	16.15
(Increase)/decrease in short-term loans and advances	27.37	25.81
(Increase)/decrease in trade receivables	-	
(Increase)/decrease in other current assets	2,117.82	(1,944.58)
Increase/(decrease) in provisions	52.76	44.90
Cash generated/(used) in operations	**2,727.37**	**(541.56)**
Income-tax paid (net of refund)	(200.06)	(242.47)
Net cash generated/(used) in operating activities (A)	**2,527.31**	**(784.03)**
Cash flow from investing activities		
Payment for purchase of property, plant, equipment and intangible assets	(13.25)	-
Investment in bank deposits other than cash and cash equivalents (Net)	(3,700.00)	-
Proceeds from maturity in bank deposits other than cash and cash equivalents	2,140.00	-
Investment in mutual funds	(1,779.90)	-
Proceeds from redemption of mutual funds	525.00	-
Interest received on bank deposits	20.97	15.99
Interest on Income tax refund	-	
Net cash generated/(used) from investing activities (B)	**(2,807.18)**	**15.99**
Cash flow from financing activities		
Interest on delayed payment of Statutory dues	-	(0.32)
Net cash (used in)/generated from financing activities (C)	**-**	**(0.32)**
Net (decrease)/increase in cash and cash equivalents (A+B+C)	(279.87)	(768.36)
Cash and cash equivalents at the beginning of the year	320.34	1,088.70
Cash and cash equivalents at the end of the year	**40.47**	**320.34**
Cash and cash equivalents comprise of:		
Balances with Bank	**40.47**	**320.34**
- In deposits accounts (with original maturity of less than 3 months)	**-**	199.10
– cash in hand	-	-
– In current accounts	40.47	121.24
- In Liquid investments- mutual funds	-	-

* *Extracted from audited financial statements of the relevant Financial Year.*

Notes:

1. The above Cash Flow Statement has been prepared under the indirect method set out in Accounting Standard - 3 "Cash Flow Statement" notified under section 133 of the Companies Act, 2013.
2. Figures in brackets indicate cash outflow.

SUMMARY OF INDUSTRY

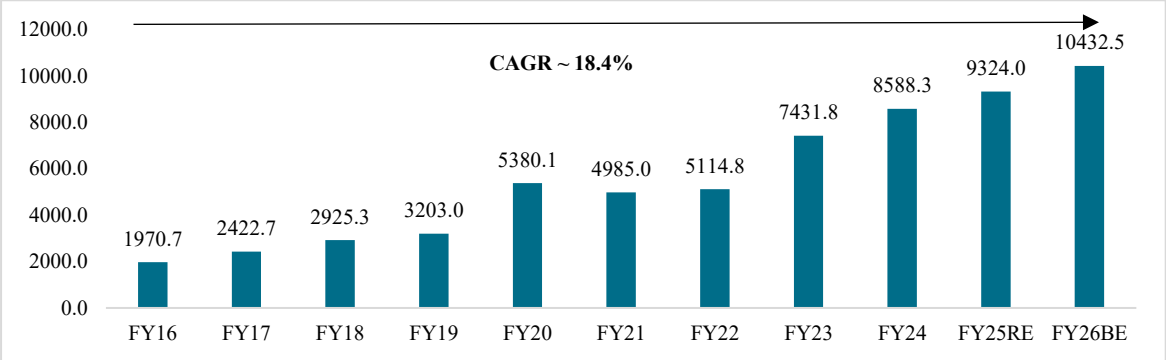
*Unless otherwise specified, the information in this section is derived from the industry report titled "Assessment of the Indian Road Sector" dated February, 2026 (the "**Industry Report**") which has been commissioned and paid for by the Investment Manager for an agreed fee and prepared only for the purposes of confirming our understanding of the industry exclusively in connection with the Offer. The Industry Report has been included in "Material Contracts and Documents for Inspection – Material Documents" on page 503. The Investment Manager engaged the Industry Expert, in connection with the preparation of the Industry Report. The data included in this section includes excerpts from the Industry Report and may have been re-ordered by us for the purposes of presentation.*

Unless otherwise indicated, all financial, operational, industry and other related information are derived from the Industry Report and all references to a "year" in this section are to a calendar year. For further details and risks in relation to commissioned reports, see "Risk Factors – We have relied on data derived from third party reports, which are based on certain estimates and assumptions and are subject to the limitations set out therein" on page 115.

1. Review of infrastructure in India - Overview of infrastructure sector in India

Developing and modernising the infrastructure sector has been a priority area for the Government of India and has witnessed increasing public investments and budgetary support. Infrastructure budget has increased with a CAGR of 18.4% from ₹1,970.7 billion in Financial Year 2016 to ₹10,432.5 billion in Financial Year 2026 showcasing India's growing focus on the infrastructure sector.

Infrastructure Budget over the years (in ₹ Billion)



Note: RE: Revised Estimates, BE: Budget Estimates
Source: Budget documents, CRISIL Intelligence

The Union Budget 2026 allocated estimated budgetary allocation of ₹10.43 trillion for infrastructure ministries, representing a robust 11.9% growth compared to Financial Year 2025RE.

2. Sector-wise capital expenditure for transport sector

The total outlay towards the transport sector has increased from around ₹1.5 trillion in Financial Year 2020 to an estimated ₹5.9 trillion in Financial Year 2026 recording CAGR of 25.6%. The roads and railways segments together account for the bulk of this allocation, highlighting their central role in driving economic growth and improving freight and passenger mobility.

3. Roads and highways

In the Union Budget for Financial Year 2025-2026, the Ministry of Road Transport & Highways (MoRTH) has been allocated ₹2,873.33 billion, representing a 2.4% increase over the revised estimate for Financial Year 2024-2025 (₹2,805.19 billion).

Key Allocations of Financial Year 2025-26

National Highways Authority of India (NHAI): Receives ₹1,702.66 billion, accounting for approximately 59% of MoRTH's total budget. This is about 1% higher than the revised estimate for Financial Year 2024-2025.

Roads & Bridges: Allocated about ₹1,162.92 billion, which is 5% more than the revised estimates for Financial Year 2024-2025. This includes funding for the development and maintenance of national highways, expressways, and related bridge works.

4. Road network in India

Road infrastructure forms the backbone of India's transport network and is one of the most critical enablers of economic activity. With its vast geographical expanse and diverse terrain, India relies heavily on roads for mobility,

trade, and regional integration. Unlike several developed economies where railways or waterways play a larger role in freight movement, India's logistics ecosystem is road-dominant, with roads accounting for nearly 87% of passenger traffic and close to 60% of freight traffic.

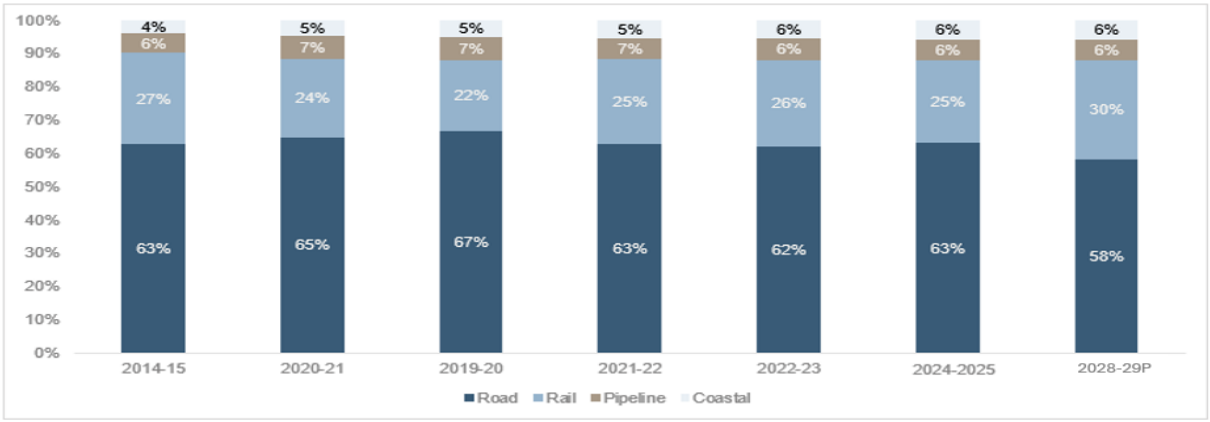
The scale of the road network underscores this importance. India has developed the second-largest road network in the world, spanning over 63 lakh km as of 2025. This network comprises national highways, state highways, district roads, and rural roads, each serving a distinct role in the country's connectivity hierarchy. While national highways make up only about 2% of the overall length, they carry around 40% of road traffic, linking state capitals, major ports, and economic hubs.

Indian freight traffic scenario

5. Road transportation remains dominant; Railways share expected to grow due to rising road freight rates and Dedicated Freight Corridors

Primary BTKM growth is projected at 5–7% in Financial Year 2026, broadly mirroring the expected pace of economic expansion. The momentum is supported by steady freight demand from core manufacturing sectors, where ongoing industrial activity continues to drive both inbound movement of raw materials and outbound movement of finished goods. Growth in Financial Year 2025 is estimated at 5–7%, reflecting an improvement in industrial output and trade flows.

Share of roads in total freight movement (in terms of BTKM)



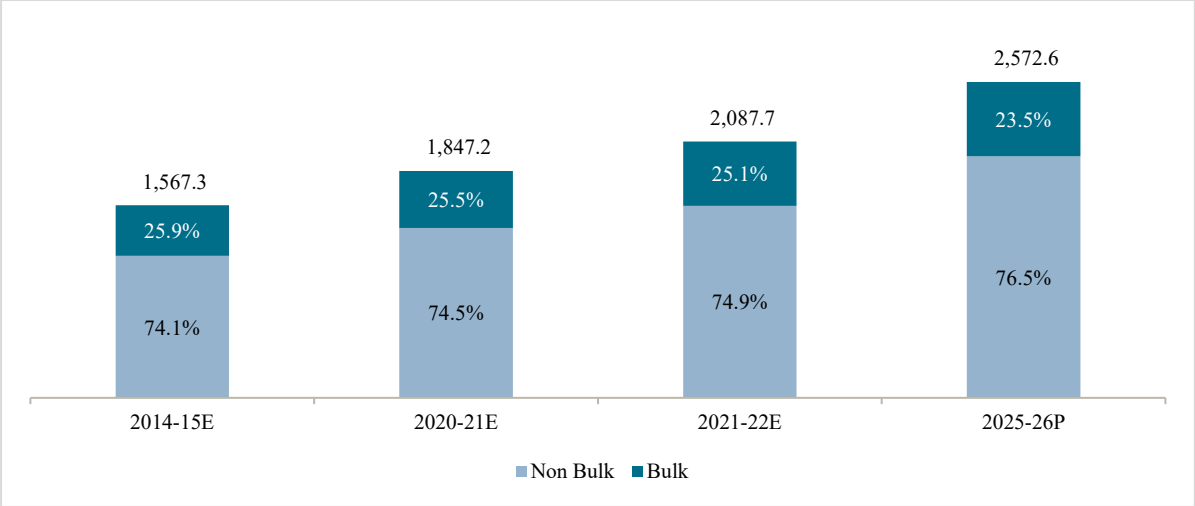
P: Projected
Source: CRISIL Intelligence

Overall, road freight traffic to increase in upcoming years and road will remain the dominant freight carrier in the near *term,* but the modal mix is expected to gradually shift toward rail.

6. Roads remain the preferred mode for non-bulk transportation

Roads continue to remain the dominant mode for non-bulk freight movement, accounting for nearly three-fourths of total BTKM. Road freight growth is expected to remain healthy, supported by rising movement of non-bulk commodities and increasing consumption-driven logistics demand.

Roads predominantly transfer non-bulk freight (in terms of BTKM)



E: Estimated; P: Projected
Source: CRISIL Intelligence

7. Annual Pass for National Highways: Key Features and Early Uptake

The Annual Pass offers significant convenience for private highway users by enabling free passage through all toll plazas on national highways and expressways upon a one-time upfront payment of ₹3,000.

Key functionalities of Annual Pass: The pass provides 200 toll plaza crossings annually, where each passage counts as one trip; a round trip counts as two trips. It operates seamlessly on the user's existing FASTag, eliminating the need for any separate device or tag.

The National Highways Authority of India (NHAI) has seen a strong initial response to its newly introduced Annual Pass, collecting nearly ₹1.5 billion upfront in the first four days through the issuance of 0.5 million passes. The pass is applicable across approximately 1,150 toll plazas on the National Highway and National Expressway network. It is currently available to all non-commercial vehicles with a valid FASTag. Through wider and simpler digital access, the Annual Pass aims to improve user convenience while enhancing upfront revenue visibility for NHAI. Based on the IHMCL database for 823 toll plazas, 22.5 million trips are made using annual pass in October 2025.

8. Outlook on Asset Monetisation of road projects

India's road infrastructure sector is one of the largest and fastest growing in the world, forming the backbone of national connectivity and economic development. Delivering such a vast and expanding network requires substantial and sustained investment, far exceeding the capacity of public budgets alone. Industry Expert projects that the monetisation potential for road assets is ~₹5.9 trillion until Financial Year 2030, nearly double of the ₹2.8 trillion proceeds from monetisation until Financial Year 2025.

Road has been a frontrunner in asset monetisation

The road sector has emerged as a frontrunner in asset monetisation. So far, MoRTH has raised ₹2.8 trillion through various modes of asset monetisation, demonstrating the sector's potential to generate revenue through innovative financing models.

The funds raised till Financial Year 2025 are as follows:

- **Toll-operate-transfer (TOT) mode:** The ministry raised ₹490 billion through the TOT mode, which involves the transfer of toll collection rights to a private operator for a specified period.
- **InvIT listings of NHAI:** ₹436 billion was raised through the listing of Infrastructure Investment Trusts (InvITs) of the NHAI, which allows investments in a portfolio of infrastructure assets.

Future NHAI Pipeline of Asset for Monetization

The upcoming pipeline of road assets for monetization by NHAI represents a substantial pool of opportunities for investors, with 24 highway stretches spanning approximately 1,472 km across multiple states. This includes key corridors such as Muzaffarpur–Darbhanga–Purnia (Bihar, 288 km), Bilaspur–Pathrapali (Chhattisgarh, 127 km), Pipli–Bhavnagar (Gujarat, 208 km), and Four-laning of Sangli–Solapur (Maharashtra, 125 km). The portfolio also extends to strategic routes in Telangana, Odisha, Uttar Pradesh, and West Bengal, ensuring geographical diversity and robust asset quality.

This extensive pipeline signals an abundant supply of mature, revenue-generating road assets poised to enter the market through monetization modes such as TOT and InvITs. The scale and distribution of these projects underscore a sustained deal flow opportunity for institutional investors and infrastructure investment trusts (InvITs), enabling them to expand portfolios with operational, de-risked assets backed by long-term annuity streams and established traffic patterns.

9. Investments in National Highways: Review and outlook

Bharatmala Pariyojana (BMP), an umbrella project of the central government since 2015, aims to improve efficiency in the roads sector.

Status of Bharatmala Pariyojana

Components	Length awarded (in km)	Total Length Completed (in Km)	% completed
Economic Corridors	8,737	5,986	69%
Inter-Corridors Roads	2,889	2,108	73%
Feeder Roads	973	540	55%
National Corridors	1,777	1,394	78%
National Corridors Efficiency Improvement	824	732	89%
Expressways	2,422	1,791	74%
Border Roads & International Connectivity Roads	1,619	1,400	86%
Coastal Roads	77	72	94%
Port Connectivity Roads	348	120	34%
Balance Road Works under NHDP	6,758	5,058	75%
Total- Bharatmala	**26,425**	**19,201**	**73%**

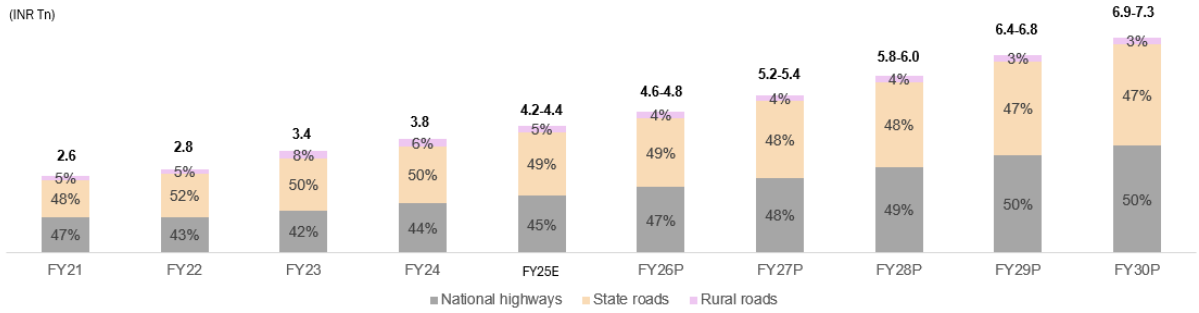
Note: Details as of 31st Dec 2024
Source: MoRTH 2024-25, CRISIL Intelligence

10. National highway capex to grow by 15-20% driven primarily by increased execution

Overall road sector capex, comprising of National Highways, State Highways & rural roads is estimated to have grown at a CAGR of 13.4 % between Financial Years 2021 & 2025. This growth, driven by Bharatmala and increased state spends on roads has been achieved despite brief hiccups such as the pandemic and hampered construction due to elongated monsoons. The outlook of the sector also remains firm supported by higher awarding of previous Financial Years, Bharatmala, NIP pipeline of DPR ready projects and steady state capex.

The national highway segment contributes around 49% of the overall capex in Financial Year 2025.

Momentum to continue, supported by Bharatmala and NIP pipeline



Source: State budget documents, CRISIL Intelligence

11. InvIT Model

The National Highways Authority of India (NHAI) has established an Infrastructure Investment Trust (InvIT) in accordance with the InvIT Regulations. NHAI holds a 11% stake in the InvIT, with primary investors such as CPPIB and OTPP also participating. The InvIT operates as a pooled investment vehicle, issuing units to investors and comprising three key entities: a Trustee, an Investment Manager, and a Project Manager. Each entity has distinct roles and responsibilities as defined by the SEBI Regulations.

As of Financial Year 2025, there were 26 InvITs registered with SEBI, of which 15 were road InvITs. The number of road InvITs increased threefold in the last five Financial Years and more than doubled in the last three Financial Years.

Key Advantages of the InvIT Model

- **Unlocking capital:** Provides Developers with upfront resources by monetising operational projects.
- **Investor diversification**: Attracts long-term domestic and global investors seeking stable yields.
- **Operational efficiency:** Professional management enhances maintenance standards and project delivery.
- **Risk sharing:** Transfers traffic and operational risks to investors, while freeing Developers to focus on new infrastructure creation.

12. Benchmarking Analysis for Road InvITs

This section benchmarks road InvITs across the portfolio dimensions like enterprise value, operating scale (lane-km), asset mix, and returns. In this section, Cube Highways has been kept at the top and the remaining road InvITs have been sorted basis their enterprise valuation (EV).

Road InvIT Portfolio Benchmarking: Comparison across scale, diversification, and residual life

InvIT Name	Portfolio Date	EV[1] (INR Crore)	Scale[2] (Lane Kms)	EV Weighted Residual Life in years[3]	Unique States[4] (toll assets)	Diversification Score[5]
Cube Highways Trust	30 Sep 2025	35,913.40	8,816	16.49	11	29
IRB Infrastructure Trust	30 Sep 2025	63,574.00	10,567	22.53	9	34
National Highways Infra Trust	30 Jun 2025	47,967.60	11,967	21.09	12	58
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	30 Sep 2025	25,759.00	8,302	14.36	8	36
Interise Trust (formerly Indinfravit Trust)	31 Mar 2025	18,690.37	7,366	15.90	6	38
Shrem Invit	30 Sep 2025	12,419.60	11,742	10.51	1	25
Oriental InfraTrust	30 Sep 2025	12,355.00	3,399	11.95	4	49
Maple Infrastructure Trust	31 Mar 2025	9,698.65	1,212	15.93	3	80
IRB InvIT Fund	30 Sep 2025	7,846.00	2,421	14.10	5	47
Roadstar Infra Investment Trust	30 Sep 2025	7,376.90	2,837	11.51	5	52
Indus Infra Trust (formerly Bharat Highways InvIT)	30 Sep 2025	6,063.70	2,677	10.96	No toll assets	35
Nxt-Infra Trust	31 Mar 2025	5,902.26	2,087	10.71	2	62
Capital Infra Trust (formerly National Infrastructure Trust)	30 Sep 2025	4,028.30	2,059	11.44	No toll assets	38

1. *The enterprise value (EV) represents the AUM for InvIT, which is considered as the sum of enterprise value (EV) for each SPV, not adjusted for cash and cash equivalents, as disclosed in the respective InvITs' annual report and valuation report.*
2. *The lane kms represented are sum of the individual asset lane km and are derived from the valuation report and annual report of respective InvITs.*
3. *The parameter represents EV weighted resiudal life in years. The residual concession period refers to the balance duration of the concession agreement for an asset from the cut-off date (September 30, 2025). Please note that for calculation of residual concession period, we have used the concession end date with extension. The residual concession periods of the InvITs were weighted using their EV as of cutoff date specified in note 1 to arrive at the EV weighted residual life.*
4. *This parameter represents the count of unique states in which toll assets of InvIT is present. The analysis is done only for toll assets, since toll revenues are directly linked to traffic volumes, which, in turn, correlate with regional economic activity and freight movement. Since Indus Infra and Capital Infra Trust have no toll assets, hence the count of unique states is not shown.*
5. *The diversification score is represented by Herfindahl-Hirschman Index (HHI) value, that measures the overall concentration of the portfolio. The HHI takes into account both the number of assets and their relative EV weights. A lower HHI score indicates a more diversified portfolio and less concentration risk*

Source: Valuation Reports and Annual Reports of respective InvITs, CRISIL Intelligence

SUMMARY OF BUSINESS

Some of the information in this section, including information with respect to our plans, strengths, and strategies, contains forward-looking statements that involve risks and uncertainties. You should read "Forward Looking Statements" on page 31 for a discussion on the risks and uncertainties related to those statements and also "Risk Factors", "Summary Audited Consolidated Financial Information of the Trust", "Summary Financial Information of the Sponsor", "Summary Financial Information of the Investment Manager" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" on pages 87, 58, 63, 67 and 389 respectively, for a discussion of certain factors that may affect our business, financial condition or results of operations. Our actual results may differ materially from those expressed in or implied by these forward-looking statements.

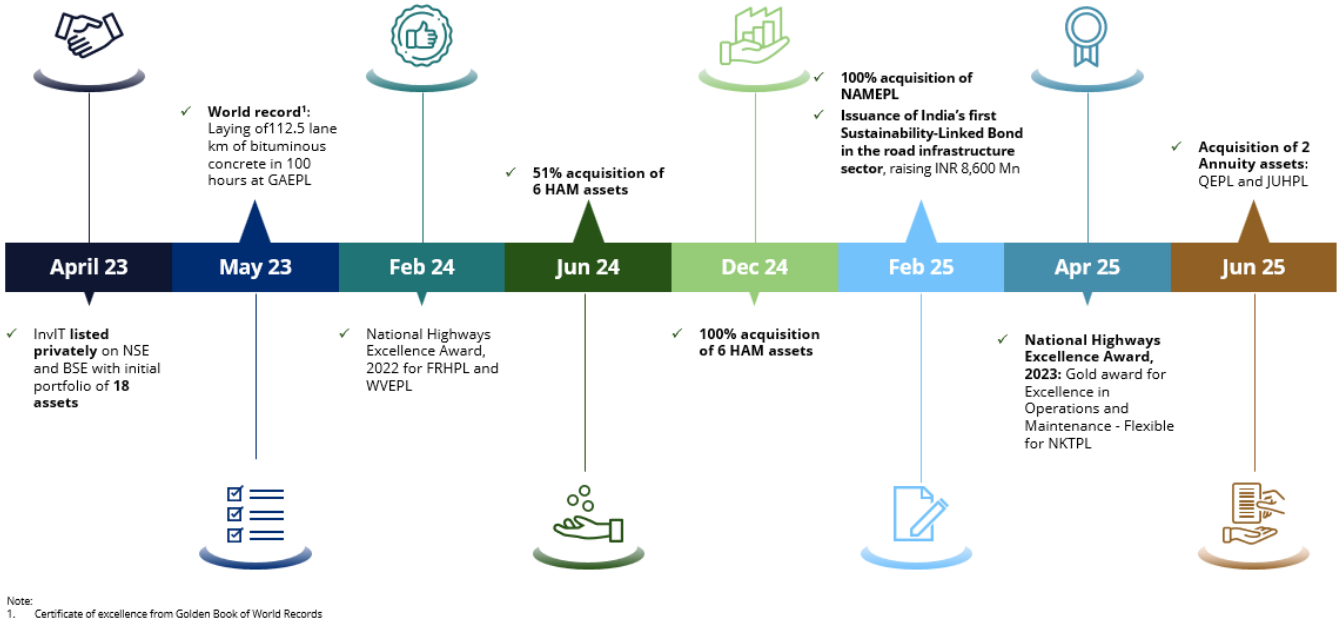
Overview

We are an Indian infrastructure investment trust sponsored by Cube Highways and Infrastructure V Pte. Ltd. and established with the objective of acquiring and operating road assets in India. We are engaged in implementing the public-private partnership model in India's highways sector to operate and manage highways in association with the central and state governments. We are registered with SEBI under the InvIT Regulations, and our Units have been listed on the Stock Exchanges since April 19, 2023.

As of September 30, 2025, through our Existing Portfolio Assets, we operate 27 road assets aggregating to 8,754* lane kilometers and 2,005 kilometers in distance across 12 states and one union territory in India. As of such date, our Existing Portfolio Assets had a weighted average residual concession period of 18.44 years (weighted on the basis of pre-major maintenance EBITDA ("**pre-MM EBITDA**")), and we maintained Enterprise Value/AUM aggregating to ₹365,199.18 million, exhibiting year-on-year AUM growth of 25.23% since September 30, 2024. This growth has corresponded with a 43% increase in our NAV per Unit from listing in April 2023 through September 30, 2025, at a CAGR of 15.70%. We operate our assets under different types of concessions, with a balanced mix of toll and annuity income. As of September 30, 2025, among our Portfolio Assets, our Toll AUM to Annuity AUM ratio was 85:15. Further, as of September 30, 2025, our Portfolio Assets (including the Proposed Portfolio Assets) had an average residual concession period of 17.59 years and operating history of 9.02 years. In addition, prior to the completion of the Offer, the Trust will acquire from certain members of the Cube Group (pursuant to Swap Transactions), 100% of the equity shares of three highway and tunnelway project SPVs that own assets in the states of West Bengal and Karnataka and the union territory of Jammu and Kashmir and at least 95% of the equity shares of another highway project SPV that owns assets in Madhya Pradesh and up to 100% (subject to certain conditions specified in the Commitment Letter). Upon completion of the Swap Transactions, we will operate 31 road assets (aggregating to 9,811 lane kilometers, as of September 30, 2025) across 13 states and one union territory in India.

* *This is represented as 8,816 kms in the Industry Report which is prior to descoping adjustments.*

Set out below is a brief timeline of our progress since listing until September 30, 2025:



Note:
1. Certificate of excellence from Golden Book of World Records

We were initially sponsored by Cube Highways and Infrastructure Pte. Ltd. and Cube Highways and Infrastructure III Pte. Ltd. Following a change in our sponsor, we are currently sponsored by Cube Highways and Infrastructure V Pte. Ltd. ("**CH-V**", or our "**Sponsor**"). Our Sponsor invests in road and highway projects, as well as other select infrastructure sectors in India, focusing on acquiring mature, cash-generating highway assets, stabilizing and derisking them, and operating them while focusing on delivery of returns to our investors. Additionally, CH-V is an active growth vehicle of the Cube Group, with a strong track record of acquiring, operating, and integrating complex and diverse road assets across India. Our Sponsor holds a portfolio of six operational road assets spanning 2,148 lane kilometers, as of September 30, 2025. Our Sponsor and Sponsor Group are a part of the Cube Group, which is an institutionally-owned road infrastructure platform backed by a diversified

investor base, including I Squared Capital (through ISQ Fund III Asia Infrastructure Holdings Pte. Ltd), Platinum Rock B 2014 RSC Limited (as trustee of the Platinum Stone A 2014 Trust, a wholly owned subsidiary of the Abu Dhabi Investment Authority) ("**Platinum Rock**"), Varese IRR LP ("**BCI**") and Mubadala Investment Company PJSC ("**MIC**") (through Seventy Second Investment Company LLC). We have raised ₹134,406.97 million in unit capital (excluding issue expenses of ₹10.94 million) since our settlement, and our Unitholders include several marquee investors, including BCI (through its affiliates) and MIC (through wholly owned subsidiaries) and a variety of domestic mutual funds and insurance companies, among others.

Prudent Debt Management

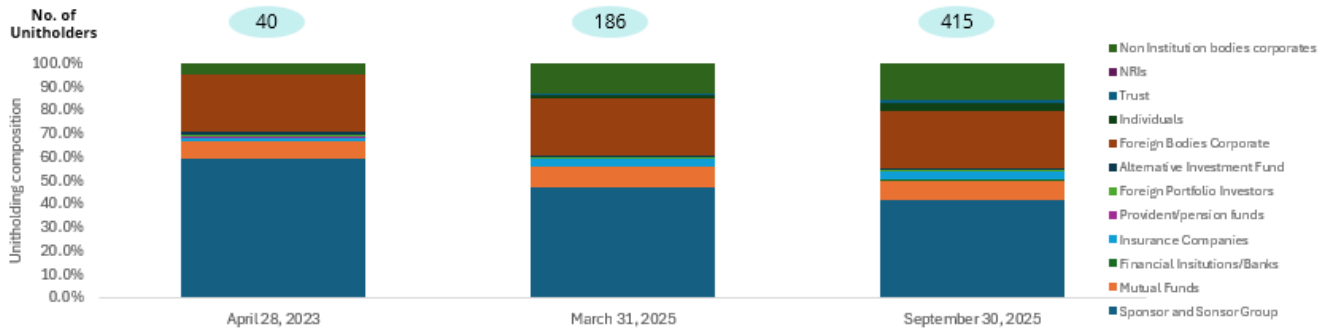
Our debt facilities have been rated (i) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for term loan and bank guarantee; (ii) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for non-convertible debentures; (iii) AAA/Stable by ICRA on September 1, 2025 for term loan and bank guarantee; (iv) AAA/Stable by ICRA on September 1, 2025 for, non-convertible debentures; (v) AAA/Stable by CRISIL Ratings Limited on March 5, 2026 for term loan and bank guarantee – long term; and (vi) A1+ by Crisil Ratings Limited on March 5, 2026, for term loan and bank guarantee – short term. The table below sets out our key financing and borrowing information, as of the dates indicated:

Particulars	As of and for the six months ended September 30, 2025	As of and for the year ended March 31, 2025
Net borrowing ratio (%)	47.37%	44.65%
Borrowings (₹ *in million*)*	179,923.44	152,063.65
Additional debt headroom (as a % of AUM)	22.63%	25.35%
Weighted average cost of borrowings (%)	7.75%	8.05%
Fixed-rate borrowings (%)	28.63%	21.19%

* *Borrowings are on an undiscounted basis and include accrued interest on borrowings.*

Unitholder Base

Since our listing as a private InvIT in April 2023, our Unitholder base has expanded significantly, from 40 Unitholders as of April 28, 2023 to over 400 Unitholders as of September 30, 2025, reflecting increased investor participation from non-institutional investors alongside traditional institutional categories, including corporates, mutual funds, financial institutions and insurance companies. The chart below shows the growth of our Unitholder base from our listing till September 30, 2025:



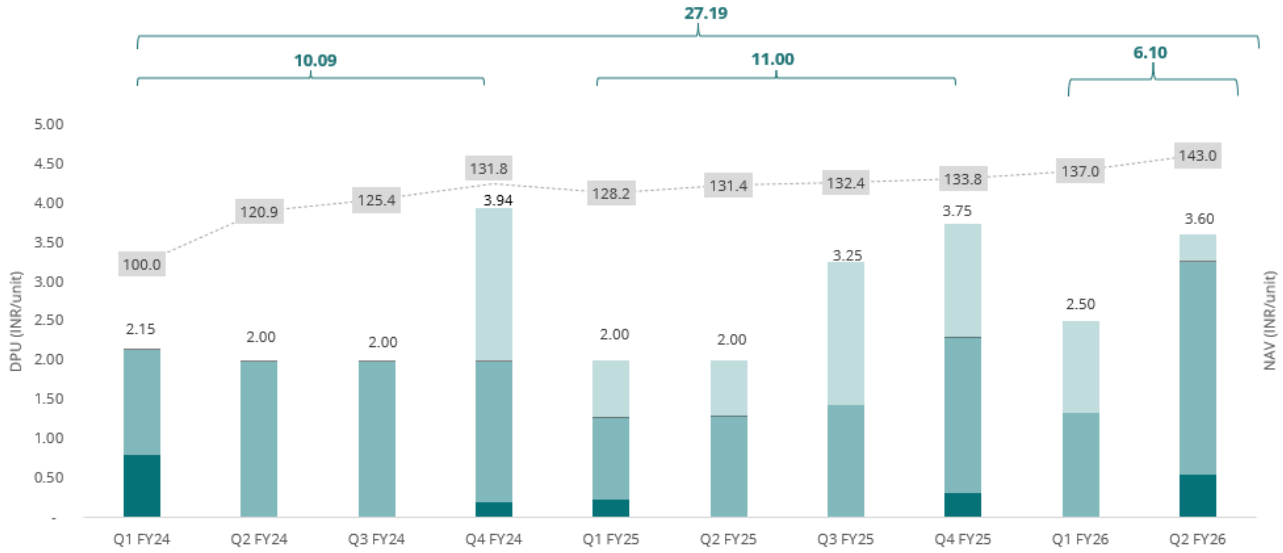
Note: Number of unique unitholders by name as per Beneficiary Position.

Further, as of December 31, 2025, our Unitholder base stood at 656 Unitholders.

Consistent Distributions

We have had a consistent track record of quarterly distributions since our listing. Each financial year, we have distributed, at least quarterly, a minimum of 90% of the net distributable cash flows of the Trust available for distribution to our Unitholders, as required under the InvIT Regulations. Our consolidated net distributable cash flows during the six months ended September 30, 2025 and the Financial Year 2025 totalled ₹7,484.76 million and ₹10,823.81 million, respectively. Our cumulative distributions since listing have aggregated to ₹35,897.35 million (representing a cumulative distribution per unit ("**DPU**") of ₹27.19), as of September 30, 2025.

The chart below provides a breakdown of our cumulative distributions per unit since listing until the quarter ended September 30, 2025:



Since listing until September 30, 2025, we have delivered an average annual DPU yield of 9.52% (computed as the average of DPU yield for Financial Year 2024, Financial Year 2025 and six months ended September 30, 2025 (annualized), with DPU yield being computed as DPU divided by the average traded price of the Units on the BSE), with a total XIRR of 25.09%, according to the Industry Report. For further details, please see "*Distributions*" on page 385.

Sustainability

We have also integrated a comprehensive environmental, social and governance ("**ESG**") framework into our business and financing strategy. Our sustainability priorities are embedded across our asset operations. In February 2025, we issued India's first sustainability-linked bond in the road infrastructure sector, with coupon performance linked to defined ESG targets for greenhouse gas emission intensity, circularity in materials and gender diversity. The average coupon rate of our NCDs was 7.67% per annum, payable quarterly, as of September 30, 2025. We have adopted sustainable construction and maintenance practices, including the use of reclaimed asphalt pavement, polymer-modified bitumen and other low-carbon materials, together with rainwater harvesting, afforestation initiatives such as the Miyawaki plantation method, energy efficient procurement, efficient lighting solutions, solar panel installations, HVAC replacements, electric vehicle adoptions and are further exploring alternative fuels.

Financial Information

The table below sets out certain of our financial information for the periods and financial years indicated:

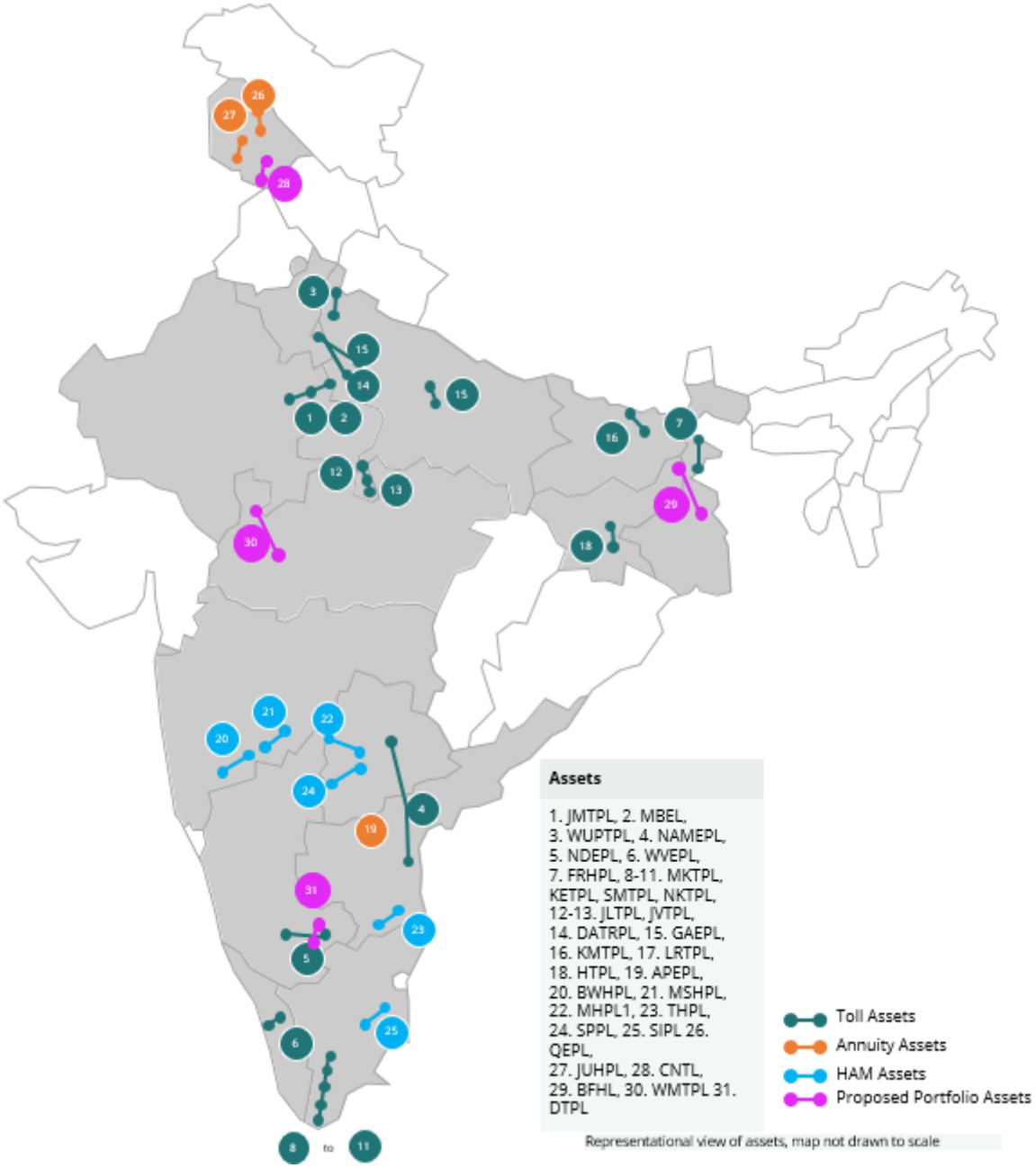
Particulars	For the six months ended September 30, 2025	For the Financial Year		
		2025	2024	2023[#]
Enterprise Value/AUM *(₹ in million)*	365,199.18	322,657.15	258,106.00	-
Revenue from operations *(₹ in million)*	19,958.97	33,071.44	29,161.37	-
Total income *(₹ in million)*	20,651.59	34,531.52	30,741.05	-
EBITDA *(₹ in million)*	15,116.37	23,797.00	13,688.56	(277.88)
Adjusted EBITDA* *(₹ in million)*	15,116.37	23,797.00	19,560.43	(277.88)
Net distributable cash flows *(₹ in million)*	7,484.76	10,823.81	10,761.77	-
Net Asset Value per Unit *(₹)*^	143.00	132.86	126.64	-
DPU *(₹)*	6.10	11.00	10.09	-
Net Debt to AUM ratio *(%)*	47.37%	44.65%	33.65%	-
Share of Fixed rate borrowings *(%)*	28.63%	21.19%	11.16%	

* *Adjusted EBITDA is computed as follows: Total comprehensive income less Trust Group's expenses other than Finance costs, Tax expense, Impairment of Intangible Assets, Depreciation and Amortization and Exceptional items as appearing in the Consolidated Statement of Profit and Loss.*

[#] *The Existing Portfolio Assets were acquired on April 17, 2023 as part of the initial formation transaction, prior to our listing on April 19, 2023.*

^ *Net Asset Value per Unit considers only ordinary units and does not account for the reclassification of subordinate units to ordinary units.*

The map below sets forth the location of our Existing Portfolio Assets and Proposed Portfolio Assets:



Our Existing Portfolio

Our Existing Portfolio Assets have a weighted average residual concession life (weighted on the basis of pre-major maintenance EBITDA ("**pre-MM EBITDA**")) of 18.44 years as of September 30, 2025 and a weighted average operating history (weighted on the basis of pre-MM EBITDA, assuming commencement of operations ("**COD**") as the beginning date) of 8.71 years as of September 30, 2025. The Enterprise Value/AUM, as of September 30, 2025, was ₹283.28 billion for the 18 assets acquired at the time of our listing, ₹50.91 billion for the six HAM assets and a BOT asset acquired between June 2024 and February 2025, and ₹31.01 billion for the two BOT annuity assets acquired during June 2025. The aggregate Enterprise Value/AUM of our Existing Portfolio Assets was ₹365,199.18 million.

The table below sets forth an overview of the Existing Portfolio Assets:

Project SPV	Type of concession	Concessioning authority	Project length and number of lanes	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)[3]	Revenue from operations for the six months ended September 30, 2025	Revenue from operations for the Financial Year 2025	Enterprise Value/AUM as of September 30, 2025
Andhra Pradesh Expressway Private Limited ("**APEPL**") [2]	BOT (Annuity)	NHAI	74.6 kms 4 lanes	Telangana and Andhra Pradesh	1.00 years	₹169.05 million	₹1,520.62 million	₹1,001.35 million
DA Toll Road Private Limited ("**DATRPL**")	BOT	NHAI	179.5 kms 6 lanes	Uttar Pradesh, Haryana and Delhi	18.37 years	₹3,128.60 million	₹6,047.88 million	₹76,804.93 million
Farakka – Raiganj Highways Private Limited ("**FRHPL**") [1]	DBFOT	NHAI	100.1 kms 4 lanes	West Bengal	15.58 years	₹1,319.45 million	₹2,539.65 million	₹27,240.00 million
Ghaziabad Aligarh Expressway Private Limited ("**GAEPL**")	BOT	NHAI	126.3 kms 6 lanes	Uttar Pradesh	13.72 years	₹2,030.34 million	₹4,127.38 million	₹35,502.00 million
Hazaribagh Tollway Private Limited ("**HTPL**")	TOT	NHAI	73.5 kms 4 lanes	Jharkhand	25.05 years	₹717.94 million	₹1,285.25 million	₹20,546.00 million
Jaipur Mahua Tollway Private Limited ("**JMTPL**")	BOT	NHAI	109.1 kms 4 lanes	Rajasthan	5.69 years	₹1,197.56 million	₹2,586.63 million	₹7,890.00 million
Jhansi – Lalitpur Tollway Private Limited ("**JLTPL**")	TOT	NHAI	49.7 kms 4 lanes	Uttar Pradesh	20.05 years	₹519.71 million	₹990.84 million	₹12,687.00 million
Jhansi – Vigakhet Tollway Private Limited ("**JVTPL**")	TOT	NHAI	49.3 kms 4 lanes	Uttar Pradesh	20.05 years	₹362.35 million	₹690.72 million	₹7,926.00 million
Kanyakumari – Etturavattam Tollway Private Limited ("**KETPL**")	TOT	NHAI	64.2 kms 4 lanes	Tamil Nadu	25.05 years	₹470.78 million	₹693.98 million	₹10,558.50 million
Kotwa – Muzaffarpur Tollway Private Limited ("**KMTPL**")	TOT	NHAI	80.0 kms 4 lanes	Bihar	20.55 years	₹601.79 million	₹1,152.15 million	₹14,341.00 million
Lucknow – Raebareli Tollway Private Limited ("**LRTPL**")	TOT	NHAI	70.0 kms 4 lanes	Uttar Pradesh	25.05 years	₹341.74 million	₹689.11 million	₹8,403.15 million
Madurai – Kanyakumari Tollway Private Limited ("**MKTPL**")	TOT	NHAI	52.3 kms 4 lanes	Tamil Nadu	20.05 years	₹1,052.51 million	₹1,136.77 million	₹16,275.00 million
Mahua Bharatpur Expressways Limited ("**MBEL**")	BOT	NHAI	57.3 kms 4 lanes	Rajasthan	5.72 years	₹574.17 million	₹1,159.84 million	₹3,984.00 million
Nanguneri – Kanyakumari Tollway Private Limited ("**NKTPL**")	TOT	NHAI	63.5 kms 4 lanes	Tamil Nadu	25.50 years	₹522.86 million	₹680.05 million	₹14,474.60 million
Nelamangala Devihalli Expressway Private Limited ("**NDEPL**")	BOT	NHAI	80.3 kms 4 lanes	Karnataka	7.33 years	₹585.46 million	₹1,129.52 million	₹4,859.00 million

Project SPV	Type of concession	Concessioning authority	Project length and number of lanes	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)[3]	Revenue from operations for the six months ended September 30, 2025	Revenue from operations for the Financial Year 2025	Enterprise Value/AUM as of September 30, 2025
Salaipudhur – Madurai Tollway Private Limited ("**SMTPL**")	TOT	NHAI	63.5 kms 4 lanes	Tamil Nadu	25.05 years	₹498.66 million	₹746.47 million	₹11,404.00 million
Walayar Vadakkencherry Expressways Private Limited ("**WVEPL**")	DBFOT (Toll)	NHAI	53.5 kms 4 lanes	Kerala	11.85 years	₹564.24 million	₹1,081.69 million	₹9,349.00 million
Western UP Tollway Private Limited ("**WUPTPL**")	BOT	NHAI	78.1 kms 4 lanes	Uttar Pradesh	0.73 years	₹862.38 million	₹1,694.53 million	₹31.00 million
Borgaon Watambare Highways Private Limited ("**BWHPL**") [2]	HAM (Annuity)	NHAI	52.0 kms 4 lanes	Maharashtra	10.98 years	₹294.49 million	₹304.31 million	₹3,799.00 million
Mangalwedha Solapur Highways Private Limited ("**MSHPL**") [2]	HAM (Annuity)	NHAI	55.9 kms 4 lanes	Maharashtra	11.20 years	₹315.23 million	₹404.05 million	₹4,114.85 million
Mangloor Highways Private Limited ("**MHPL**") [2]	HAM (Annuity)	NHAI	49.0 kms 4 lanes	Telangana	11.21 years	₹247.62 million	₹374.06 million	₹2,818.00 million
Tirumala Highways Private Limited ("**THPL**") [2]	HAM (Annuity)	NHAI	61.1 kms 6 lanes	Andhra Pradesh	10.61 years	₹316.16 million	₹593.60 million	₹4,926.00 million
Srirangam Infra Private Limited ("**SIPL**") [2]	HAM (Annuity)	NHAI	38.7 kms 4 lanes	Tamil Nadu	10.66 years	₹268.89 million	₹470.09 million	₹3,765.00 million
Shankarampet Projects Private Limited ("**SPPL**") [2]	HAM (Annuity)	NHAI	46.8 kms 4 lanes	Telangana	11.01 years	₹283.72 million	₹508.91 million	₹4,177.00 million
N.A.M. Expressway Private Limited ("**NAMEPL**")	DBFOT (Toll)	Government of Andhra Pradesh and Telangana	212.9 kms 4 lanes	Andhra Pradesh and Telangana	14.15 years	₹1,673.30 million	₹463.34 million	₹27,312.00 million
Quazigund Expressway Private Limited ("**QEPL**") [2]	DBFOT (Annuity)	NHAI	16.0 kms 4 lanes	Jammu and Kashmir	5.68 years	₹613.59 million	Nil	₹18,837.80 million
Jammu Udhampur Highway Private Limited ("**JUHPL**") [2]	BOT (Annuity)	NHAI	48.0 kms 4 lanes	Jammu and Kashmir	5.71 years	₹426.39 million	Nil	₹12,173.00 million

(1) FRHPL toll fee revenue includes 100% share of overloading revenue. However, only 25% of the overloading revenue is credited to the FRHPL account, and the remaining 75% is credited to the erstwhile owner of FRHPL.

(2) APEPL, BWHPL, MSHPL, MHPL, THPL, SIPL, SPPL, QEPL and JUHPL are annuity assets and accordingly, revenue from operations corresponds to annuity income.

(3) Residual Concession Life represents actual residual life for each asset, after accounting for any extensions granted by or which may be granted by the relevant concessioning authority. Our concession agreements allow changes to the assets' concession periods based on actual traffic/revenue relative to target benchmarks, with specific multipliers for adjustments. Our estimations for residual concession life are based on our contracts and independent traffic studies.

Proposed Portfolio Acquisition Transactions

Cube Highways and Infrastructure II Pte. Ltd. ("**CH-II**") and CH-V, members of the Cube Group, hold 100% of the equity shares of each of Baharampore Farakka Highways Limited, Devanahalli Tollway Private Limited and Chenani - Nashri Tunnelway Limited, and 95% of the equity shares of Western MP Infrastructure & Toll Roads Private Limited, wherein Express Way Developers Limited, a third party, currently holds 5% of the equity shares (collectively, the "**Proposed Portfolio Assets**"). Prior to the completion of the Offer, the Trust, acting through the Investment Manager and Trustee, shall acquire from CH-II

and CH-V, and CH-II and CH-V shall transfer to the Trust, in exchange for Units, the aforementioned equity shareholding of each of the Proposed Portfolio Assets held by both CH-II and CH-V (including at least 95% of the equity shares of WMTPL), together with their nominees. Further, please note that the proposed acquisition of equity shares of the Proposed Portfolio Assets (including at least 95% of the equity shares of WMTPL) is subject to satisfaction of certain conditions precedent specified under the Commitment Letter. For further details, please see "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" and "*Related Party Transactions - Commitment Letter*" on pages 56 and 417, respectively. The aggregate Enterprise Value/AUM of the Proposed Portfolio Assets was ₹72,925.32 million, as of March 31, 2026.

The table below sets forth an overview of the Proposed Portfolio Assets:

SPV	Type of concession	Concessioning authority	Project length and number of lanes	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025) (1)	Revenue from operations for the Financial Year 2025	AUM as of March 31, 2026(3)
Baharampore Farakka Highways Limited ("**BFHL**")	DBFOT	NHAI	100.6 kms 4 lanes	West Bengal	15.34 years(4)	₹2,086.94 million	₹20,192.81 million
Western MP Infrastructure & Toll Roads Private Limited ("**WMTPL**")	BOT	Madhya Pradesh Road Development Corporation	124.2 kms 4 lanes	Madhya Pradesh	12.57 years	₹2,361.35 million	₹15,721.65 million
Devanahalli Tollway Private Limited ("**DTPL**")	DBFOT	NHAI	22.1 kms 6 lanes	Karnataka	6.29 years	₹3,237.77 million	₹14,764.77 million
Chenani-Nashri Tunnelway Limited ("**CNTL**")	DBFOT (Annuity)	NHAI	10.8 kms (2) 2 lanes	Jammu and Kashmir	6.44 years	₹3,389.02 million	₹22,246.10 million

(1) Residual Concession Life represents actual residual life for each asset, after accounting for any extensions granted by or which may be granted by the relevant concessioning authority. Our concession agreements allow changes to the assets' concession periods based on actual traffic/revenue relative to target benchmarks, with specific multipliers for adjustments. Our estimations for residual concession life are based on our contracts and independent traffic studies.

(2) As per the annuity letter dated February 2025, it includes ~1.9 kms of additional approach roads.

(3) As per the Valuation Report.

(4) Please note that the extension for the concession period is yet to be approved by the NHAI.

Right of First Offer Assets ("ROFO Assets")

The Existing Portfolio Assets and the Proposed Portfolio Assets will together comprise our Portfolio Assets. Further, the Trust (acting through the Investment Manager) also has the ability to acquire new projects through (i) a right of first offer ("**ROFO**") with our Sponsor in accordance with the right of first offer agreement dated March 17, 2026, ("**ROFO Agreement**" and such assets, the "**ROFO Assets**"); and (ii) through other acquisitions in terms of the Investment Policy. For further details, please see "*Corporate Governance*" and "*Related Party Transactions*" on pages 179 and 410, respectively. The aggregate revenue from operations for the ROFO Assets was ₹8,805.92 million for the Financial Year 2025.

The table below sets forth an overview of the ROFO Assets:

Particulars	Kokhraj Handia Expressway Private Limited ("KHEPL")	Malayagiri Highways Private Limited ("MHPL2")	Delhi Hapur Meerut Expressway Private Limited ("DHMEPL")
Equity Shareholders	CH –V	CH –V	CH –V
Project Connecting	Kokhraj to Handia	Binjabahal to Teliebani	NCR to Meerut and Hapur
Granting Authority	NHAI	NHAI	NHAI
State	Uttar Pradesh	Odisha	Delhi, Uttar Pradesh
Highway	NH19	NH49	NE3 and NH9
Project Length (Km)	84.5 km	71.6 km	82.0 km
No. of toll plazas	6	1	9
Lane configuration	4 lane	4 lane	6 lane
Toll Plazas ("TP")	Closed Tolling: TP1: Kokhraj toll plaza TP2: Shingverpur TP3: Nawabganj TP4: Soraon	TP 1: Bideibadkudar	Closed Tolling: TP1: Sarai Kale Khan TP2: Indirapuram TP3: Dundahera TP4: Dasna

Particulars	Kokhraj Handia Expressway Private Limited ("KHEPL")	Malayagiri Highways Private Limited ("MHPL2")	Delhi Hapur Meerut Expressway Private Limited ("DHMEPL")
	TP5: Sahson TP6: Handia toll plaza		TP5: Rasoolpur Sikrod TP6: Bhojpur TP7: Zainuddinpur (under construction) TP8: Kashi Toll Plaza (main line) TP9: Chhajarsi Toll Plaza (main line) (NH09)
Concession Period	20 Years	20 Years	20 Years
Residual Concession Life (as of September 30, 2025) [(1)]	18.50 Years	18.50 Years	18.50 Years
Toll/Annuity	Toll	Toll	Toll
Revenue from operations for the Financial Year 2025	₹2,542.44 million	₹999.15 million	₹5,264.33 million
Appointed Date	April 1, 2024	April 1, 2024	April 1, 2024
Concession End Date	March 31, 2044	March 31, 2044	March 31, 2044
Current Status	100% operational	100% operational	100% operational

(1) Residual Concession Life represents actual residual life for each asset, after accounting for any extensions granted by or which may be granted by the relevant concessioning authority. Our concession agreements allow changes to the assets' concession periods based on actual traffic/revenue relative to target benchmarks, with specific multipliers for adjustments. Our estimations for residual concession life are based on our contracts and independent traffic studies.

The strengths of our Trust are as follows:

- Dedicated growth vehicle and access to a strong pipeline of ROFO Assets and other future growth opportunities;
- Large and diversified portfolio of highway assets;
- Differentiated and proven M&A capabilities;
- Strong portfolio construction capabilities;
- Advanced asset management and maintenance expertise;
- Strong corporate finance capabilities;
- Experienced leadership and institutional backing; and
- Attractive sector fundamentals with a favourable policy environment.

Further, our investment, risk and capital management strategies are as follows:

- Active asset management to drive growth and yield;
- Calibrated expansion of the portfolio;
- Implementing prudent capital management policies; and
- Embedding sustainability and ESG practices in our business model.

For details, see "*Our Business*" on page 280.

RISK FACTORS

An investment in the Units involves risk. Prospective investors should carefully consider the risks and uncertainties described below and the information contained elsewhere in this Draft Offer Document, the Offer Document, and the Final Offer Document, before making an investment in the Units. Investors should be aware that the price of the Units, and the income from them, may be subject to volatility. In making an investment decision, each investor must rely on its own examination of the Trust and the terms of the offering of the Units. If any of the risks described below occur, our business and prospects could be adversely affected, the trading price of the Units could decrease, and investors could lose all or part of their original investment. This section should be read in conjunction with the sections entitled "Our Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" on pages 280 and 389, respectively, as well as the financial statements and other financial information included elsewhere in this Draft Offer Document. Prospective investors should consult their tax, financial, and legal advisors regarding any particular consequences of investing in the Offer.

Before investing in the Units, prospective investors should pay particular attention to the fact that the Trust, the Parties to the Trust, the Portfolio Assets, and each of their activities are governed by the legal, regulatory, and business environment in India, which differs from that prevailing in other countries. The risks and uncertainties described in this section may not be the only risks and uncertainties the Trust currently faces. Additional risks and uncertainties not presently known to the Trustee or the Investment Manager, or that the Trustee or the Investment Manager currently deem immaterial, may arise or may adversely affect our business, financial condition, cash flows and results of operations. If any of the following risks, or other risks that are not currently known or are now deemed immaterial, actually occur, our business prospects, results of operations, cash flows and financial condition could suffer, the price of the Units could decline, and investors may lose all or part of their investment. The financial and other related implications of the risk factors, wherever quantifiable, have been disclosed in the risk factors mentioned below. However, there are certain risk factors for which the financial effect is not quantifiable and, therefore, cannot be disclosed in such risk factors. Unless otherwise stated in the relevant risk factors set forth below, the Trustee and the Investment Manager are not in a position to specify or quantify the financial or other risks mentioned herein.

This Draft Offer Document also contains forward-looking statements (including Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets) that involve risks, assumptions, estimates and uncertainties. Our actual results could differ materially from those anticipated in such forward-looking statements as a result of certain factors, including the considerations described below and elsewhere in this Draft Offer Document, including the section titled "Forward-Looking Statements" on page 31.

Unless otherwise stated, references in this section to "we", "our" or "us" are to the Cube Highways Trust, together with the Existing Portfolio Assets. Furthermore, unless the context otherwise requires, the financial information used in this section is derived from the Audited Consolidated Financial Statements. The Trust acquired 51% of the shareholding in Borgaon Watambare Highways Private Limited, Mangalwedha Solapur Highways Private Limited, Mangloor Highways Private Limited, Srirangam Infra Private Limited (formerly known as KNR Srirangam Infra Private Limited), Shankarampet Projects Private Limited (formerly known as KNR Shankarampet Projects Private Limited) and Tirumala Highways Private Limited (formerly known as KNR Tirumala Infra Private Limited) (collectively, the "HAM SPVs") on June 4, 2024, and acquired the remaining 49% shareholding in the HAM SPVs on December 3, 2024. Further, the Trust acquired 100% of the shareholding in N.A.M. Expressway Private Limited ("NAMEPL") on February 12, 2025. Thereafter, the Trust acquired 100% of the shareholding in Quazigund Expressway Private Limited ("QEPL") and Jammu Udhampur Highway Private Limited (formerly known as Athaang Jammu Udhampur Highway Private Limited) ("JUHPL" and together with QEPL, the "NIIF SPVs") on June 12, 2025. Accordingly, the HAM SPVs, NAMEPL and the NIIF SPVs have been accounted for as subsidiaries in our Audited Consolidated Financial Statements with effect from June 4, 2024, February 12, 2025 and June 12, 2025, respectively.

*Cube Highways and Infrastructure II Pte. Ltd. ("**CH-II**") and CH-V, members of the Cube Group, hold 100% of the equity shares of each of Baharampore Farakka Highways Limited, Devanahalli Tollway Private Limited and Chenani - Nashri Tunnelway Limited, and 95% of the equity shares of Western MP Infrastructure & Toll Roads Private Limited, wherein Express Way Developers Limited, a third party, currently holds 5% of the equity shares, which are highway and tunnelway project SPVs that own assets in the states of West Bengal, Karnataka, the union territory of Jammu and Kashmir and the state of Madhya Pradesh, respectively (collectively, the "**Proposed Portfolio Assets**"). Prior to completion of the Offer, the Trust, acting through the Investment Manager and Trustee, shall acquire from CH-II and CH-V, and CH-II and CH-V shall transfer to the Trust, in exchange for Units, the aforementioned equity shareholding of each of the Proposed Portfolio Assets held by both CH-II and CH-V (including at least 95% of the equity shares of WMTPL), together with their nominees. Further, please note that the proposed acquisition of equity shares of the Proposed Portfolio Assets (including at least 95% of the equity shares of WMTPL) is subject to satisfaction of certain conditions precedent specified under the Commitment Letter. For further details, please see "Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust" and "Related Party Transactions - Commitment Letter" on pages 56 and 417, respectively.*

Industry, macro-economic and market data, and all industry-related statements in this section have been extracted or derived from the report titled "Assessment of the Indian Road Sector" prepared and released by the Industry Expert, which has been commissioned and paid for by the Investment Manager on behalf of the Trust (the "Industry Report"). Also see "—We have relied on data derived from third-party reports, which are based on certain estimates and assumptions and are subject to the limitations set out therein" on page 115 for details of risks in relation to commissioned reports.

Risks Relating to our Business and the Concession Agreements

1. ***If we fail to receive or comply with the terms of the consents issued by the lenders and regulatory authorities for the transfer of the Proposed Portfolio Assets to the Trust or are not successful in integrating these assets or fail to realize the anticipated benefits of the acquisition of such assets, our business, financial condition, results of operations and cash flows may be adversely affected.***

Cube Highways and Infrastructure II Pte. Ltd. ("CH-II") and CH-V, members of the Cube Group, hold 100% of the equity shares of each of Baharampore Farakka Highways Limited, Devanahalli Tollway Private Limited and Chenani - Nashri Tunnelway Limited, and 95% of the equity shares of Western MP Infrastructure & Toll Roads Private Limited, wherein Express Way Developers Limited, a third party, currently holds 5% of the equity shares (collectively, the "*Proposed Portfolio Assets*"). Prior to completion of the Offer, the Trust, acting through the Investment Manager and Trustee, shall acquire from CH-II and CH-V, and CH-II and CH-V shall transfer to the Trust, in exchange for Units, the aforementioned equity shareholding of each of the Proposed Portfolio Assets held by both CH-II and CH-V (including at least 95% of the equity shares of WMTPL), together with their nominees. Further, please note that the proposed acquisition of equity shares of the Proposed Portfolio Assets (including at least 95% of the equity shares of WMTPL) is subject to satisfaction of certain conditions precedent specified under the Commitment Letter. For further details, please see "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" and "*Related Party Transactions - Commitment Letter*" on pages 56 and 417, respectively. There are risks associated with our proposed acquisition of the Proposed Portfolio Assets, including:

- *applications have been made to the relevant concessioning authorities seeking their consent in relation to the Proposed Portfolio Acquisition Transactions* – As on the date of this Draft Offer Document, the applications for the change in ownership of the Proposed Portfolio Assets have been submitted before the relevant concessioning authorities. However, such approvals are yet to be received. Any failure to receive such approvals, or to comply with the applicable conditions prescribed thereunder, could lead to events of default under the relevant concession agreements, which could adversely affect our business, results of operations, financial condition, cash flows, ability to own the equity shares of the Proposed Portfolio Assets and ability to make resultant additional distributions to our Unitholders.

- *accurately judging micro-market dynamics, growth potential and competitive environment applicable to each of the Proposed Portfolio Assets*. Each of the Proposed Portfolio Assets operates in distinct corridors, with varying regional demand and industrial linkages. Traffic growth and toll revenue may be influenced by local economic activity, connectivity, and competing infrastructure. Any deviation in local or corridor-level traffic patterns from forecasts may result in lower revenue and cash flows than projected;

- *incurring unknown or unexpected potential liabilities*. The Proposed Portfolio Assets may have historic or contingent liabilities arising from operations prior to acquisition, including disputes with concessioning authorities, pending claims, maintenance deficiencies, or environmental issues. Such liabilities may not be fully identified through due diligence and could require additional provisioning or expenditure, thereby reducing returns from the Proposed Portfolio Assets;

- *dependence on timely and cost-effective refinancing*. Upon acquisition of the Proposed Portfolio Assets, we may refinance the existing debt of the Proposed Portfolio Assets. Our ability to access cost-efficient, long-term funding depends on stable credit markets and retention of our 'AAA/Stable' ratings from CRISIL Rating Limited, ICRA Limited and India Ratings & Research Private Limited. Any volatility in interest rates, tightening liquidity, or downgrade in ratings could increase borrowing costs, delay refinancing or limit debt capacity, thereby affecting projected yields from the integrated assets;

- *obtaining, maintaining and complying with the conditions* prescribed under necessary permits, certificates, licenses and approvals from governmental and regulatory authorities and agencies; and in respect of certain Portfolio Assets, where we have sought clarification from the relevant authorities regarding the applicability of specific approvals, we have communicated with such authorities but have not yet received a response. In the event that the relevant authorities communicate to us that such approvals are required, we shall be obligated to obtain the same in accordance with applicable law.

- *higher than planned expenditure to preserve and grow the value of the Proposed Portfolio Assets*. Certain Proposed Portfolio Assets may require near-term major maintenance or augmentation works following integration. Rising input costs (particularly of bitumen and aggregates), together with higher labour and logistics expenses, could increase overall O&M expenditure. In addition, aligning these legacy assets with our portfolio-wide maintenance and safety standards may require additional capital expenditure, thereby reducing near-term distributable cash flows.

- *non-completion or non-satisfaction, as applicable, of the conditions precedent set out in the under the Commitment Letter (amongst other, receipt of approvals from NHAI, RBI, CCI and certain other third parties) and the proposed share purchase agreements.* Prior to execution of the relevant share purchase agreement, members of the Sponsor Group and the Proposed Portfolio Assets are required to fulfil certain

conditions precedent including the acquisition of 5% of the equity shares of WMTPL by members of the Sponsor Group from the third party shareholders of WMTPL. In the event such condition precedent is not satisfied prior to execution of the relevant share purchase agreement, the Sponsor and other existing shareholder of WMTPL will be required to execute an agreement under Regulation 18(3) of the InvIT Regulations. In the event, the Express Way Developers Limited does not transfer the 5% shareholding held by it in WMTPL to members of the Sponsor Group and also does not execute an agreement/undertaking in accordance with the requirements under Regulation 18(3) or Regulation 18(3A) of the InvIT Regulations, the Trust will not be able to acquire WMTPL. Any failure to acquire WMTPL may adversely affect our to make resultant additional distributions to our Unitholders.

- *the acquisition of the Proposed Portfolio Assets will be subject to the consent of the relevant lenders (as applicable), and such consents may impose additional obligations on the Trust*. The Proposed Portfolio Assets are in the process of obtaining no-objection certificates from one of the lenders. Further, the securities of the Portfolio Assets are subject to a pledge under the relevant financing documents. The materialisation of any of the above risks could adversely affect our business, results of operations, financial condition, and cash flows.

2. ***We may not be able to make regular distributions to Unitholders, or the level of our distributions may fall.***

The amount of future distributions, if any, will depend upon various internal and external factors, including future earnings, financial condition, cash flows, working capital requirements and capital expenditures of the Portfolio Assets and the dividends, interest payments and repayments of indebtedness that are distributed to the Trust. The income earned from the projects depends, among other things, on the amount of income generated from annuities and tolls, and on the level of operating and other expenses incurred. If the projects do not generate sufficient operating profit, the Trust's income, cash flows, and the ability to make distributions, or the level of distributions made to Unitholders, will be adversely affected.

The ability of the Portfolio Assets to make dividend payments is subject, among other things, to applicable laws and regulations in India and any other contractual restrictions to which they may be bound. Under the terms of the InvIT Regulations, in the event any assets are sold by the Trust or SPVs (as applicable) or if the equity shareholding or interest in any SPV (as applicable) is disposed of by the Trust and the proceeds of such sale are proposed to be reinvested in another infrastructure asset, then the Trust is not obligated to make any distributions from such proceeds to the Unitholders in accordance with InvIT Regulations.

In addition, the InvIT Regulations provide that the Trust must distribute not less than 90% of the net distributable cash flows of each Portfolio Asset in proportion to its holding in each of its Portfolio Assets, subject to the applicable provisions of the Companies Act, 2013. The distributions to the Unitholders must be declared and made not less than once every six months in every Financial Year (in accordance with the Trust's distribution policy, adopted by the Investment Manager, and applicable regulations for public infrastructure investment trusts) and within five working days from the record date, being two working days from the date of such declarations, excluding the date of declaration and the record date. There is no assurance that the Trust will be able to make distributions to the Unitholders or that such distributions will be consistent across various periods. Also see "*Distributions*" on page 385.

Further, the method for calculating the net distributable cash flows of a Portfolio Asset is subject to change, and any change in applicable laws in India or elsewhere may limit the Trust's ability to pay or maintain consistent distributions to Unitholders. There is also no assurance that the expansion of the Trust's portfolio of infrastructure assets will increase the Trust's cash flows and, thereby, result in an increase in distributions to Unitholders over time.

3. ***A significant portion of our revenue from operations is dependent on annuity payments from the NHAI, which may be delayed, disputed or reduced, which could adversely affect our business, results of operations, financial condition and cash flows.***

A significant portion of our revenue from operations is derived from annuity-based and Hybrid Annuity Model ("**HAM**") projects, where fixed periodic payments are contractually payable by the NHAI. Set out below are details of revenue generated from our annuity assets for the periods indicated:

Particulars	For the six months ended September 30,				For the Financial Year					
	2025		2024		2025		2024		2023*	
	Amount (₹ in million)	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*
Revenue generated from annuity assets	2,900.86	14.53%	2,370.26	14.71%	4,135.70	12.51%	400.32	1.37%	-	-

* *The HAM projects/entities were acquired subsequent to the Trust's listing on Stock Exchanges on April 19, 2023.*

The timely receipt of payments by our annuity and HAM projects is critical to our ability to service debt and to receive upstream cash flows at the Trust level. There have been instances of delays and deductions by NHAI in the past, citing alleged performance deficiencies, non-compliance with maintenance standards, or delays in achieving milestones. However, such delays and deductions have not, in the aggregate, materially and adversely affected our results of operations during the six months ended September 30, 2025 or the past three Financial Years. Annuity amounts may also be reduced due to reasons such as delayed project completion or penalties for non-performance. Any such deductions or delays could reduce the cash available for distribution to our Unitholders. Set out below are details of delays in the receipt of annuity payments by our Project SPVs across our Existing Portfolio Assets:

SPV	Annuity due date	Actual date of receipt	Delay in receipt (in days)
APEPL	September 13, 2023	September 14, 2023	1
APEPL	September 13, 2025	September 15, 2025	2
SIPL	June 10, 2024	June 19, 2024	9
MHPL	June 28, 2024	July 2, 2024	4
MSHPL	June 29, 2024	July 2, 2024	3
SIPL	December 11, 2024	December 12, 2024	1
THPL	November 21, 2024	December 9, 2024	18
SPPL	October 19, 2024	October 23, 2024	4
MHPL	December 28, 2024	January 1, 2025	4
SIPL	June 10, 2025	June 30, 2025	20
THPL	May 21, 2025	May 27, 2025	6
MHPL	June 28, 2025	July 1, 2025	3
MSHPL	June 29, 2025	July 11, 2025	12
SIPL	December 11, 2025	December 21, 2025	10
MHPL	December 28, 2025	December 30, 2025	2
MSHPL	December 29, 2025	December 31, 2025	2

In addition, we have received certain notices/demands regarding the applicability and treatment of Goods and Services Tax (GST) on historical annuity receipts, and if such positions are sustained or ultimately determined adversely by the relevant authorities, it could result in additional tax liability, interest and penalties. This could significantly reduce the net cash flows from our annuity assets. We are also exposed to risks of broader fiscal or policy pressures affecting NHAI. Any constraints in budgetary allocations, delays in government payments, or shifts in policy towards restructuring of HAM and annuity obligations could affect the stability of our revenue stream. There can be no assurance that payments will be made on time, in full, or without dispute.

Accordingly, our dependence on annuity and HAM payments from government authorities exposes us to risks of delay, reduction or adverse tax treatment, any of which could adversely affect our business, financial condition, results of operations, cash flows, and our ability to make distributions to Unitholders.

4. ***Our failure to extend concession agreements or inability to identify and acquire new road assets that generate comparable or higher revenue from operations, profits and cash flows than the Portfolio Assets may have an adverse effect on our business, financial condition, results of operations, cash flows and our ability to make distributions to Unitholders.***

The concession agreements of the Existing Portfolio Assets and the Proposed Portfolio Assets stipulate a limited concession period. The table below sets out the details of the Existing Portfolio Assets' and the Proposed Portfolio Assets' residual concession periods.

Existing Portfolio Asset	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)
APEPL	Telangana and Andhra Pradesh	1.00 year
DATRPL	Uttar Pradesh and Haryana	18.37 years
FRHPL	West Bengal	15.58 years
GAEPL	Uttar Pradesh	13.72 years
HTPL	Jharkhand	25.05 years
JMTPL	Rajasthan	5.69 years
JLTPL	Uttar Pradesh	20.05 years
JVTPL	Uttar Pradesh	20.05 years
KETPL	Tamil Nadu	25.05 years
KMTPL	Bihar	20.55 years
LRTPL	Uttar Pradesh	25.05 years
MKTPL	Tamil Nadu	20.05 years
MBEL	Rajasthan	5.72 years
NKTPL	Tamil Nadu	25.50 years
NDEPL	Karnataka	7.33 years
SMTPL	Tamil Nadu	25.05 years
WVEPL	Kerala	11.85 years
WUPTPL	Uttar Pradesh	0.73 years

Existing Portfolio Asset	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)
BWHPL	Maharashtra	10.98 years
MSHPL	Maharashtra	11.20 years
MHPL	Telangana	11.21 years
THPL	Andhra Pradesh	10.61 years
SIPL	Tamil Nadu	10.66 years
SPPL	Telangana	11.01 years
NAMEPL	Andhra Pradesh and Telangana	14.15 years
QEPL	Jammu and Kashmir	5.68 years
JUHPL	Jammu and Kashmir	5.71 years

Proposed Portfolio Asset	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)
BFHL	West Bengal	15.34 years*
WMTPL	Madhya Pradesh	12.57 years
DTPL	Karnataka	6.29 years
CNTL	Jammu and Kashmir	6.44 years

** Please note that the extension for the concession period is yet to be approved by the NHAI.*

For further details of the residual concession period of each of the Portfolio Assets, see "*Our Business*" on page 280.

Certain of our concession agreements provide for the concession period to be extended if traffic volumes fall below specified thresholds or reduced if traffic volumes exceed projections. These provisions are intended to balance risks between concessionaires and authorities.

However, the actual grant of extensions or reductions requires approval from the National Highways Authority of India ("**NHAI**") or state concessioning authorities, and in practice, such claims are frequently disputed or subject to protracted reviews. Where disputes arise, concessionaires are often required to initiate arbitration or litigation proceedings to enforce contractual rights. Even if successful, the resolution may take several years, and any interim uncertainty can affect traffic forecasts, valuation of assets, and refinancing assumptions. If concession extensions are not approved on time, are only partially granted, or if concession periods are reduced, our Existing Portfolio Assets and Proposed Portfolio Assets may lose operating tenure, which would reduce our expected revenue from operations, adversely affect our cash flows, and limit our ability to make distributions to Unitholders. For further details, please see the section entitled "*Legal and Other Information - Other matters considered material by the board of directors of the Investment Manager*" on page 452.

Further, a few older concession agreements measure traffic volumes in Passenger Car Units ("**PCU**"), and variations in the interpretation of PCU conversion factors (particularly for multi-axle trucks with three or more axles) may lead to differences in the computation of target traffic and resultant variation in the concession period. We have also observed that the concessioning authority has proposed revising the applicable PCU conversion ratios to reflect changes in post-COVID traffic composition and seasonal variations. Such modifications, if implemented, could alter the measured traffic base and may cause the degree of extension or reduction of concession periods to differ from the levels currently anticipated. Consequently, there can be no assurance that the final concession life determined by the authority will correspond to our internal assessments. Further, these changes may require additional review or reconciliation with lenders, independent engineers, and valuers, which could delay approvals or adversely affect our cash flows. In addition, certain assets have the option to share 25% of their toll revenues with the concessioning authority upon exceeding a prescribed PCU volume on the asset, and in the event the concessionaire of the asset elects to pay the prescribed portion of the toll revenue, the asset will not be subject to a reduction of the concession period.

There can be no assurance that we will be able to obtain extensions on the tenure of our concession agreements or acquire new road assets prior to or upon the expiry of the Portfolio Assets' concession agreements. Accordingly, the number of assets forming part of our portfolio and the revenue generated by them may vary over time. Further, even if new road assets are added to our portfolio, there can be no assurance that such road assets will generate cash flows, revenue from operations, and profits comparable to or higher than those of the Portfolio Assets whose concession periods have expired. If the Portfolio Assets are unable to extend their concession agreements, or if we are unable to acquire new road assets that generate comparable or higher cash flows, revenue, or profits than the Portfolio Assets, our business, financial condition and results of operations and our ability to make distributions to Unitholders may be adversely affected. For further details on the terms of each of the concession agreements, see "*Summary of Key Agreements – Summary of the Concession Agreements*" on page 343.

5. ***Our toll collections and traffic volumes are subject to uncertainties, including competing roads, exemptions, toll leakage, changes in vehicle mix, and government directives, which could adversely affect our business, results of operations, financial condition and cash flows.***

For our toll-based projects, toll collections are their principal source of revenue. The volume of traffic and the level of toll receipts depend on a variety of factors, many of which are outside our control, such as the rise of alternatives to

road infrastructure, the construction of competing roads, changes in toll rates, toll leakage and socio-economic factors affecting traffic on toll roads. In addition, traffic volumes and user willingness to pay tolls may be adversely affected by the capacity, condition and service levels of our roads (including lane availability, congestion levels and travel time reliability), the quality and timeliness of O&M, and the overall safety and security environment on and around such corridors. Any adverse change in traffic volumes or in our ability to collect tolls could adversely affect our business, results of operations, financial condition and cash flows. Set out below are details of revenue generated from our toll assets for the periods indicated:

Particulars	For the six months ended September 30,				For the Financial Year					
	2025		2024		2025		2024		2023*	
	Amount (₹ in million)	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*	*Amount (₹ in million)*	*% of revenue from operations*
Revenue generated from toll assets	16,237.33	81.35%	13,332.09	82.73%	28,275.30	85.50%	24,715.17	84.75%	-	-

* *Certain Existing Portfolio Assets, i.e., the initial 18 SPVs transferred to the Trust, were acquired immediately prior to the listing of the Trust's Units on the Stock Exchanges on April 19, 2023, and therefore did not form part of the Existing Portfolio Assets during the Financial Year 2023.*

Traffic on our toll roads is sensitive to competing infrastructure. New toll-free roads, parallel expressways or alternate transport modes (such as rail corridors or air travel) can divert vehicles away from our assets. For example, according to the Traffic Consultants, the Ganga Expressway and the Shamli–Gorakhpur Expressway, currently under development, are expected to provide alternate connectivity between Delhi and eastern Uttar Pradesh, and may reduce traffic on the Ghaziabad–Aligarh Expressway and other contiguous stretches of our Existing Portfolio Assets. Similarly, the commissioning of metro rail projects or dedicated freight corridors may shift passenger and freight traffic away from certain toll roads.

Toll rates are also subject to regulation under the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended, and are linked to the wholesale price index ("**WPI**"), as set out in our concession agreements. These rules provide only limited escalation in toll rates and, in certain cases, cap inflation-based adjustments. Accordingly, we may not be able to increase tolling rates to cover increases in our operations or financing or other costs. Further, the NHAI has, pursuant to a September 2025 circular (the "**NHAI Circular**"), sought to revise the linking factor applied for WPI adjustments in toll fee computation downward, which has been stayed by the High Court of Delhi, and the NHAI may still press for its implementation. Additionally, NHAI has implemented a new scheme offering an annual user pass at ₹3,000 for certain categories of private vehicles, which may reduce per-trip toll collections on affected corridors. This new scheme has been implemented based on a formula determined by NHAI, and SPVs have executed supplemental agreements to this effect. However, the formula may be reviewed by NHAI, which may have an adverse effect on our business, results of operations, financial condition and cash flows. Any future changes to the WPI linkage or toll-escalation methodology could reduce our toll revenues. The National Highway Fee (Determination of Rates and Collection) Rules, 2008, as amended, provide for annual user fee escalation based on 3% plus 40% of the change in WPI, but the Government or NHAI may amend this formula, change the base year or defer its implementation. Any such modification, or implementation of policies such as the revised WPI linking factor or the annual user pass scheme, or any period of lower WPI growth, would directly limit annual toll increases and adversely affect our business, results of operations, financial condition and cash flows.

In addition, NHAI and state governments may, by notification or order, temporarily suspend or exempt categories of vehicles from paying tolls. For example, toll may not be levied during certain festive periods and the NHAI reserves the right to decide on the number of road users not required to pay the applicable toll rates when using the toll roads, which may be higher in urban settings. Our concession agreements also provide that certain users of the toll roads are exempt from paying user fees for non-commercial use of the roads, while frequent users are entitled to discounted fees to use the toll roads. We are also subject to fluctuations of traffic flow at new toll plazas that may not stabilize within the timelines anticipated or at all.

Toll leakage remains a persistent risk despite the introduction of electronic tolling through FASTag. Leakage may arise from deliberate evasion, fraudulent use of exempt or discounted passes, misclassification of vehicles, vandalism of toll plazas, or technology failures. Further, any failure or delay in undertaking routine or major maintenance, pavement deterioration, lane closures, or other service-level deficiencies may increase congestion and divert traffic to alternate routes, thereby adversely affecting toll collections. Security incidents may disrupt operations, result in temporary suspension of toll operations, increase O&M and insurance costs, and adversely affect user perception and traffic volumes.

Indirect economic and social factors also affect traffic. These include changes in fuel prices, vehicle ownership and financing costs, shifts in commodity production and trade flows, axle-load regulations, political or social agitation, and force majeure events such as floods, epidemics, or pandemics. In addition, seasonal variations, including monsoon-

related disruptions, typically reduce traffic volumes on many of our assets. Further, the local or state agencies responsible for maintaining corridors connecting to our toll roads may not properly maintain these roadways, or their maintenance may require their closure, blocking access to our toll roads. Together, these factors may affect traffic volumes in ways that are difficult to predict.

In the event of a significant decrease in traffic volume or a reduction in toll rates on the toll roads, toll collections may decrease accordingly. While our concession agreements provide for compensation under specified circumstances, there can be no assurance that we will be able to receive such compensation in a timely manner, without dispute or deductions. For instance, there is no compensation provided for changes in traffic volumes after the specified target traffic date under the concession agreements and there are no remedies available for low inflation affecting toll collections. Accordingly, our toll revenues and traffic volumes are subject to a number of uncertainties that may reduce collections and adversely affect our business, results of operations, financial condition and ability to make distributions to Unitholders.

6. ***Our concession agreements may be terminated prematurely or suspended by concessioning authorities upon the occurrence of certain events of default.***

The Portfolio Assets comprise road assets. We will be unable to continue operating a particular road asset without a continuing concession right from the concession authority. A concession may be revoked by the concessioning authority for certain reasons set forth in the relevant concession agreement, including, but not limited to, one or more of the following:

- any failure by the relevant Existing Portfolio Asset or Proposed Portfolio Asset to comply with prescribed minimum shareholding requirements and restrictions in relation to a change in control or ownership;
- any failure by the relevant Existing Portfolio Asset or Proposed Portfolio Asset to make any payments, including negative grants, to the concession authority in a timely manner;
- any failure by the relevant Existing Portfolio Asset or Proposed Portfolio Asset to comply with operational or maintenance standards;
- any temporary or permanent halt of operations at the relevant Existing Portfolio Asset or Proposed Portfolio Asset;
- any abandonment of operations by any Existing Portfolio Asset or Proposed Portfolio Asset without the prior written consent of the concessioning authority;
- any occurrence of an event of default under any financing document where the lender has recalled any part of the loan;
- any continuation of a force majeure event, such as natural calamities, act of war, expropriation or compulsory acquisition of any project assets by the government, industrial strikes, civil commotions, boycotts and political agitations, beyond a specified time; and
- any failure by the relevant Existing Portfolio Asset or Proposed Portfolio Asset to comply with any other material terms of the relevant concession agreement.

For each of the Existing Portfolio Assets and Proposed Portfolio Assets, we have assumed that we will continue to operate the relevant project until the last date of the concession period (as amended) as per the relevant concession agreement. Even where a concession agreement is not terminated, it may expire in the ordinary course of business upon completion of its term. For instance, APEPL and WUPTPL have residual concession lives of 1.00 year and 0.73 years, respectively (each as of September 30, 2025), after which their respective concessions will expire.

If a concession agreement is terminated (a) by the concessioning authority due to a default by an Existing Portfolio Asset or Proposed Portfolio Asset, or (b) by an Existing Portfolio Asset or Proposed Portfolio Asset due to a default by the concessioning authority, such SPV is entitled to termination payments or otherwise from the concessioning authority in accordance with the terms of the relevant concession agreement. There can be no assurance that the concessioning authority will pay the termination payments promptly or at all or that any termination payments will be adequate to enable us to recover our investments or returns in the relevant Existing Portfolio Assets and Proposed Portfolio Assets. Further, termination payments under the concession agreements are linked to outstanding indebtedness or costs incurred at the time of the award of the concession and may not reflect the actual investments we made in the projects at the time of termination, thereby causing a shortfall. While we have not faced any premature termination of a concession agreement, during the six months ended September 30, 2025 and the Financial Years 2025, 2024 and 2023, there can be no assurance that we will not face such premature terminations in the future, which may adversely affect our business, results of operations, financial condition and cash flows.

If any of the concession agreements are reduced or terminated prematurely, our business, financial condition and results of operations may be adversely affected. For further details on the termination of the concession agreements and the termination payments contemplated under the relevant concession agreements, see "*Our Business*" and "*Summary of the Concession Agreements*" on pages 280 and 343, respectively.

7. *Our revenue from operations are significantly concentrated in a few corridors and geographies, and any adverse development in these regions could adversely affect our business, results of operations, financial condition and ability to make distributions to Unitholders.*

A substantial portion of our revenue from operations is derived from toll collections and annuity income from our road assets located in a limited number of high-density traffic corridors in India. Set out below are details of our toll revenues generated from assets situated along National Highway 44 ("**NH-44**"), comprising of MKTPL, KETPL, SMTPL, NKTPL, JLTPL, JVTPL, APEPL, QEPL, JUHPL and DATRPL, and their contiguous stretches during the periods indicated:

Particulars	For the six months ended September 30,				For the Financial Year					
	2025		2024		2025		2024		2023*	
	Amount (₹ in million)	*% of total toll revenue*	*Amount (₹ in million)*	*% of total toll revenue*	*Amount (₹ in million)*	*% of total toll revenue*	*Amount (₹ in million)*	*% of total toll revenue*	*Amount (₹ in million)*	*% of total toll revenue*
Toll revenue generated from assets situated along NH-44	5,847.43	36.01%	5,315.66	39.87%	10,981.06	38.84%	10,333.97	41.81%	-	-

* *Certain Existing Portfolio Assets, i.e., the initial 18 SPVs transferred to the Trust, were acquired immediately prior to the listing of the Trust's Units on the Stock Exchanges on April 19, 2023, and therefore did not form part of the Existing Portfolio Assets during the Financial Year 2023.*

Although our Portfolio Assets span 12 states and one union territory in India, a significant proportion of our revenue from operations depends on the continued performance of a few corridors that connect key industrial, commercial, and agricultural belts. Further, a material portion of our Existing Portfolio Assets is concentrated in the states of Uttar Pradesh, Rajasthan, Jammu and Kashmir, and Tamil Nadu, aggregating to 4,428.60 lane kilometers, 50.89% of our total lane kilometers of our Portfolio Assets.

Any local or regional economic downturn, changes in consumption or production patterns of goods transported, adverse climatic conditions, or political and social unrest in these geographies could result in a material decline in traffic volumes and toll collections. For instance, prolonged agitations, industrial strikes, or natural calamities in Uttar Pradesh or along NH-44 could disproportionately affect a large portion of our portfolio revenues. Furthermore, the development of competing expressways and alternate transport infrastructure in these corridors (such as the Ganga Expressway and the Shamli–Gorakhpur Expressway) may divert traffic away from our existing toll roads, reducing revenue from operations from affected assets.

In addition, corridor concentration increases our exposure to state-specific policy, taxation, and regulatory changes. Any unfavourable amendments to tolling policies, restrictions on vehicle movement, or prolonged delays in annuity disbursements in the states with higher exposure could disproportionately affect our business, results of operations, financial condition and cash flows. While diversification of assets into other geographies may mitigate this risk over time, there can be no assurance that we will be able to acquire assets across a sufficiently broad geographical base or that such acquisitions will be consummated on terms favourable to us.

Accordingly, the geographic and corridor concentration of our Portfolio Assets exposes us to risks associated with localised economic, political, and regulatory factors. Any adverse development in these regions could affect our business, results of operations, financial condition, and our ability to make distributions to our Unitholders.

8. *Our concession agreements contain mandatory capacity augmentation and major maintenance obligations, which could increase our costs and reduce traffic during works, thereby adversely affecting our business, results of operations, financial condition and cash flows.*

Under the terms of our concession agreements, several of our toll roads are subject to capacity augmentation obligations or periodic major maintenance requirements, as provided therein. While such capacity augmentation requirements have not been triggered for any of our Existing Portfolio Assets, these obligations may, upon becoming applicable, require us or, in certain cases, the relevant concessioning authority to undertake lane expansions, pavement strengthening, bridge rehabilitation, or other significant works during the concession period. For instance, in the case of JUHPL, as per the terms of the settlement agreement entered into with NHAI, the SPV is required to pay the NHAI an amount equivalent to the major maintenance cost for the descoped portion of the project section in the years when such major maintenance works are undertaken. However, if there is a dispute with NHAI regarding the interpretation of this obligation and it is resolved unfavourably, we may be required to bear the cost of a second major maintenance

cycle for the descoped portion as well. This could increase the total maintenance outflow for JUHPL and adversely affect our results of operations, cash flows and distributions.

Major maintenance is typically required every five to seven years and involves substantial expenditure on resurfacing, repairing and replacing road furniture, and rehabilitating structures. For example, across our BOT and TOT assets, periodic overlay and resurfacing cycles have required substantial expenditure, with costs rising due to inflation in construction materials such as bitumen and aggregates. These works not only increase operating and capital costs but may also result in temporary lane closures, diversions and disruptions to traffic flows. In turn, this can reduce toll collections during the period of execution. Although certain concession agreements provide for compensation for capacity augmentation works carried out by the concessioning authority, such compensation may not fully cover the traffic and revenue losses incurred by the Existing Portfolio Assets and the Proposed Portfolio Assets.

In addition, where augmentation works are awarded to third-party EPC contractors by NHAI, we may remain responsible for rectifying defects arising in the augmented stretch after the expiry of the defect liability period of such contractors. If the contractors fail to adequately perform their obligations, or if latent defects arise after the defect liability period, we may be required to incur additional costs without reimbursement. Similarly, where change of scope ("**COS**") works are awarded to third-party EPC contractors by NHAI, we may remain responsible for rectifying defects arising in the COS works after the expiry of the defect liability period of such contractors.

The execution of augmentation and major maintenance works also exposes us to construction-related risks such as delays in procurement of materials, shortage of skilled labour, adverse weather conditions, cost escalation, contractor disputes, and safety incidents. Any delay in meeting the prescribed timelines could lead to penalties or termination under the concession agreements.

Accordingly, our exposure to mandatory capacity augmentation and major maintenance obligations may increase our costs, reduce revenue from operations during construction periods, and adversely affect our business, financial condition, results of operations and ability to make distributions to Unitholders.

9. ***Our ability to refinance our debt and maintain access to long-term funding is crucial to our business, and adverse conditions in the debt markets, regulatory restrictions or downgrades in our credit ratings could adversely affect our liquidity and consequently our business, results of operations, financial condition and ability to make distributions.***

We primarily rely on external debt financing at the Trust level to fund acquisitions, refinance existing borrowings and meet capital expenditure requirements. As of December 31, 2025, our consolidated borrowings (on an undiscounted basis and inclusive of accrued interest) were approximately ₹178,834.52 million, representing a net borrowing ratio of 46.86%. For details, see "*Financial Indebtedness and Deferred Payments*" on page 364. Any constraints on refinancing this debt on favorable terms, or at all, could adversely affect our liquidity position and distribution capacity.

Our financing strategy depends on continued access to the Indian bond market, bank loans, and international credit lines. However, debt may not always be available at short notice or on acceptable terms and interest rates, particularly in times of adverse market conditions, volatility in interest rates, tightening liquidity, or regulatory restrictions on infrastructure lending. Such situations could limit our ability to refinance existing debt or raise new funding or increase our cost of capital. Furthermore, as a foreign-owned and controlled entity, we are subject to restrictions on certain domestic borrowings for downstream investments, which narrows our funding options. External commercial borrowings are subject to end-use restrictions, currency risks and regulatory approvals, any of which may not be available in a timely manner or at all. Any sudden disruption in debt market liquidity could result in refinancing gaps, require early redemption of existing borrowings or require us to avail of higher-cost bridge financing, which may reduce distributable cash flows.

Our credit profile is underpinned by our current ratings of 'AAA/Stable' and 'Ind A1+' from CRISIL Ratings Limited, ICRA Limited and India Ratings & Research Private Limited, for long term facilities, and 'A+' from CRISIL Ratings Limited for short term facilities. For details, see "*General Information – Credit Ratings*" on page 139. Any future downgrade in our ratings due to sector-wide issues, deterioration in portfolio performance, or higher leverage could significantly increase borrowing costs, shorten debt maturities or reduce lender appetite for our issuances. In addition, sustainability-linked bonds issued by us in February 2025 contain step-up coupon provisions if agreed ESG targets are not met, which could further raise our cost of debt. For details, see "*Failure to meet ESG-linked performance targets could increase our cost of financing and adversely affect our cash flows and ability to make distributions*" on page 105.

We are also subject to regulatory restrictions on debt financing and refinancing under the InvIT Regulations, the InvIT Master Circular and other applicable laws. For instance, the RBI has issued draft amendment directions for instructions on lending to REITs and InvITs, where the existing guidelines in respect of lending to InvITs are proposed to be harmonized for parity with prudential safeguards proposed for lending to REITs. Also see "*Changing laws, rules and regulations and legal uncertainties may adversely affect our business, financial condition and results of operations*". Further, refinancing and new borrowings may be subject to lender consents and, where applicable, Unitholders' approvals under the InvIT Regulations. In accordance with the InvIT Regulations, aggregate consolidated borrowings

of an InvIT cannot exceed 70% of the value of its assets, and borrowings above 25% require unitholder approval. Borrowings above 49% are permitted only for the acquisition or development of infrastructure projects, subject to prescribed credit ratings and distribution history thresholds. Obtaining such consents or approvals may take time and could delay refinancing or restrict our ability to raise debt opportunistically. Any downgrade in our credit rating or breach of any conditions under the InvIT Regulations applicable to our borrowing limits could limit our ability to obtain additional debt capital. Also see "*We are subject to restrictive covenants under our financing agreements that could limit our flexibility in managing our business or to use cash or other assets, and any non-compliance with such covenants could adversely affect our business, results of operations, financial condition and cash flows*" on page 99.

We are also susceptible to changes in interest rates and the risks arising therefrom. Our financing agreements include variable-rate interest with a provision for periodic rate resets. Any increase in interest rates may adversely affect our results of operations, financial condition, and cash flows.

Particulars	As of September 30,				As of March 31,					
	2025		2024		2025		2024		2023#	
	Amount (₹ in million)	*% of total borrowings*	*Amount (₹ in million)*	*% of total borrowings*	*Amount (₹ in million)*	*% of total borrowings*	*Amount (₹ in million)*	*% of total borrowings*	*Amount (₹ in million)*	*% of total borrowings*
Variable rate borrowing*	128,297.59	71.37 %	109,844.83	86.04 %	119,695.00	78.81 %	95,677.28	88.84%	-	-
Fixed rate borrowing*	51,462.10	28.63%	17,826.29	13.96%	32,186.99	21.19%	12,019.80	11.16%	-	-
Total	179,759.69	100.00%	127,671.12	100.00%	151,881.99	100.00%	107,697.08	100.00%	-	-

* *The above borrowing amounts are undiscounted.*

\# *Certain Existing Portfolio Assets, i.e., the initial 18 SPVs transferred to the Trust, were acquired immediately prior to the listing of the Trust's Units on the Stock Exchanges on April 19, 2023, and therefore did not form part of the Existing Portfolio Assets during the Financial Year 2023.*

If we are unable to refinance or extend existing debt on satisfactory terms, we may need to divert cash flows from operations to service debt, reduce distributions to Unitholders, or delay planned acquisitions and capital expenditure. Lenders may also exercise enforcement rights over secured assets, which could adversely affect our business, financial condition, results of operations and ability to make distributions.

10. ***We have incurred losses aggregating to ₹260.36 million for the six months ended September 30, 2024, ₹357.20 million, ₹7,059.15 million and ₹277.88 million for the Financial Years 2025, 2024 and 2023, respectively and may continue to incur losses in future periods, which could adversely affect our business, cash flows and financial condition.***

We have incurred losses of ₹260.36 million for the six months ended September 30, 2024, and ₹357.20 million, ₹7,059.15 million and ₹277.88 million for the Financial Years 2025, 2024 and 2023, respectively. Our results of operations may continue to fluctuate, and we may incur losses in the future due to factors such as increases in interest rates, higher borrowing costs, escalation in operating and maintenance expenditure, periodic major maintenance cycles, changes in traffic volumes, delays or deductions in annuity payments, adverse regulatory developments, or costs associated with acquisitions and integration of new assets. While we recorded a profit of ₹406.85 million for the six months ended September 30, 2025, there can be no assurance that we will continue to achieve profitability in future periods. If we are unable to generate adequate revenue growth, we may continue to incur losses in the future, which could adversely affect our business, results of operations, financial condition and ability to make distributions to Unitholders.

11. ***Our business will be subject to seasonal fluctuations, which may adversely affect our cash flows.***

Our cash flows and operating performance are affected by seasonal factors and broader climate-related risks. Traffic volumes generally decrease during the monsoon season and tend to increase during holiday and harvest periods, which vary depending on the crop harvest season in the region. Prolonged or unpredictable monsoon conditions can also limit our ability to carry out activities related to our Portfolio Assets' operation and maintenance, resulting in delays in periodic maintenance work, reduced productivity, and lower toll collections. Further, periods of high traffic volumes or growing congestion on certain corridors, particularly during peak travel seasons, festivals or urban expansion phases, may lead to diversion of traffic to alternate routes or roads, which could reduce toll collections on affected assets despite overall increases in regional traffic.

In addition to typical seasonal variations, increasing frequency and intensity of extreme weather events, such as heavy rainfall, flooding, heatwaves, and temperature fluctuations, have heightened operational risks across our portfolio. Climate change may lead to deterioration in pavement quality, rutting, cracking, waterlogging, and drainage failures, necessitating premature or additional maintenance cycles. Certain of our assets, particularly those located in hilly or geologically sensitive regions such as Jammu & Kashmir, are also exposed to risks of landslides and slope failures, which may result in temporary road closures, traffic diversions, or higher restoration costs. In turn, our Existing Portfolio Assets may be required to incur unplanned maintenance expenditure or emergency repair costs to restore road conditions, which could increase overall lifecycle costs and reduce cash flows available for distribution.

Accordingly, adverse seasonal variations and climate-related events, including heavy rains, landslides, and temperature-induced pavement distress, could adversely affect our business, financial condition, results of operations, and cash flows, and our ability to make distributions.

Revenues from Annuity and HAM assets also display variability, as each project receives bi-annual payments at set points in the financial year. These payment schedules differ across assets, with some falling in the first and third quarters of the financial year, while others receive payments in the second and fourth. As a result, quarterly inflows are not uniform, and this timing-driven variation leads to intra-year fluctuations.

12. ***The financial statements of CNTL, one of the Proposed Portfolio Assets, contain audit qualifications and emphasized matters, and any adverse findings or required adjustments may affect our business, cash flows and financial condition.***

For the Financial Years 2025, 2024 and 2023, the statutory auditors of CNTL issued a qualified audit opinion on its Ind AS financial statements. The auditors have qualified their opinion on the basis that CNTL, beginning from the Financial Year 2019, has measured its receivables under the service concession agreements in a manner which is not in accordance with applicable accounting standards and accordingly, the consequential impact on CNTL's balance sheet and profit for the year under the head 'Receivable under Service Concession Arrangements' is not ascertainable. The auditors noted that CNTL did not recognize accrued interest, default interest, penal charges or similar charges on borrowings after October 15, 2018, pursuant to the orders of the NCLAT dated March 12, 2020. The auditors further highlighted that CNTL has certain statutory non-compliances, including delays in depositing statutory dues and deficiencies in maintaining cost records, and that CNTL has defaulted in repayment of loans and other borrowings since the Financial Year 2019.

Further, the auditors have included an emphasis-of-matter paragraph regarding an investigation initiated by the Serious Fraud Investigation Office against the erstwhile shareholders of CNTL. Additionally, the auditors indicated the existence of a material uncertainty that may cast significant doubt on CNTL's ability to continue as a going concern as of the date of the financial statements (prior to the acquisition of CNTL by the Sponsor Group). While the auditors did not modify their opinion in respect of these emphasized matters or material uncertainties, any adverse resolution of these issues may require adjustments to CNTL's reported financial position.

If additional liabilities arise, CNTL is required to restate its financial statements, or if further qualifications are issued in future periods, CNTL's results of operations, cash flows, ability to service debt, and distributions to us may be adversely affected. Persistent qualifications may also affect lenders' perception, refinancing outcomes, covenant compliance and our ability to integrate CNTL into our Portfolio Assets. Accordingly, despite corrective actions having been assessed by the management of the Trust, there is no assurance on the outcome of these matters until the final audit opinion is issued on CNTL's financial statements for the Financial Year 2026, which will be subject to completion of the audit procedures by the relevant statutory auditors. For further details, please refer to "*Financial Statements of the Proposed Portfolio Assets*" in Annexure G.

13. ***Our concession agreements contain certain restrictive terms and conditions which may restrict our ability to conduct our business and limit our financing flexibility.***

The concession agreements of the Existing Portfolio Assets and Proposed Portfolio Assets contain certain restrictive covenants. For instance, the concession agreements include provisions that mandate substitution clauses in the project agreements. Such substitution clauses allow the concessioning authorities to step into project agreements in place of an Existing Portfolio Asset or Proposed Portfolio Asset in the event of suspension or termination of the concession agreements due to a breach or default by such Existing Portfolio Asset or Proposed Portfolio Asset. The concession agreements also provide that the lenders to an Existing Portfolio Asset or a Proposed Portfolio Asset may substitute such SPV with new concessionaires approved by the concessioning authority in the event of a default by such SPV under the relevant concession agreement, financing agreements or other project agreements. Additionally, pursuant to a circular dated January 29, 2014 issued by the NHAI, the NHAI or lenders may substitute the Existing Portfolio Asset or Proposed Portfolio Asset in the event of a "financial default" by such SPV, which includes situations in which the NHAI or lenders have reason to believe that such SPV is likely to face financial distress and is likely to default in its compliance with the terms of the relevant concession agreement.

While these provisions are designed to protect stakeholders and lenders, their exercise may result in loss of operational control over our Existing Portfolio Assets and Proposed Portfolio Assets. For example, our lenders have substitution rights under the financing documents that can be triggered upon a debt service default, allowing them to enforce security and replace the concessionaire. The invocation of step-in rights could disrupt operations, impair our ability to upstream cash flows, and reduce the value of our interest in the affected SPV. In such cases, our recovery may be limited to termination compensation or residual value, which may be inadequate. Accordingly, step-in rights under concession agreements create the risk that our control over projects may be restricted or lost in certain circumstances, which could adversely affect our business, results of operations, financial condition and ability to make distributions to Unitholders.

The terms of the Existing Portfolio Assets' and Proposed Portfolio Assets' concession agreements require such SPVs to indemnify the concessioning authority for losses arising out of the design, engineering, construction, procurement, operation and maintenance of the toll road, defect or deficiency in the provision of services, or arising out of breach of the obligations of such SPVs under the relevant concession agreements, as applicable.

In the event the concessioning authority or a lender invokes any restrictive provision in the concession agreements or interprets any term or condition in an adverse manner, such invocation or interpretation may adversely affect our business, financial condition and results of operations. For further details on the terms of the concession agreements, see "*Summary of the Concession Agreements*" on page 343. Accordingly, restrictions under our concession agreements may adversely affect our business, results of operations, financial condition, cash flows and ability to make distributions to Unitholders.

14. ***A significant portion of our Portfolio Assets is concentrated in Delhi-NCR, Uttar Pradesh and Tamil Nadu regions, and any adverse developments in this region could adversely affect our business, results of operations, financial condition and cash flows.***

As of September 30, 2025, Portfolio Assets located in Delhi-NCR, Uttar Pradesh and Tamil Nadu accounted for approximately 21.03%, 17.68% and 15.47% of our total assets under management ("**AUM**"), respectively, with an aggregate contribution of approximately 54.18% of our AUM. This concentration exposes us to region-specific risks, including adverse economic conditions, changes in traffic patterns, congestion-related diversions, regulatory or policy interventions, environmental restrictions, construction activity, social disruptions or natural events affecting these regions.

Further, the Delhi–NCR region is subject to regulatory oversight and evolving urban mobility, environmental and traffic-management measures, including restrictions on vehicle movement, tolling practices and emission norms. Similarly, assets located in Uttar Pradesh and Tamil Nadu are exposed to state-specific policy, regulatory, climatic and socio-economic factors, including changes in tolling policies, traffic management directives, regional infrastructure development priorities, monsoon-related disruptions and local administrative actions. Any such developments could adversely affect traffic volumes, toll collections, operating costs or compliance requirements for the affected assets. While we seek to mitigate geographic concentration risk through portfolio diversification, there can be no assurance that adverse developments in any of these regions will not affect our business, results of operations, cash flows, financial condition or our ability to make distributions to Unitholders.

15. ***Our concession agreements contain provisions that may be non-negotiable or untested and accordingly, subject to varying interpretations, which could lead to disputes with authorities or termination, adversely affecting our Portfolio Assets, business, results of operations, financial condition and cash flows.***

Our Existing Portfolio Assets and Proposed Portfolio Assets operate under concession agreements with the NHAI or relevant state concessioning authorities, and we have limited ability to negotiate the terms of these contracts. The concession agreements that we have entered into are based on model concession agreements prescribed by the relevant concessioning authorities. These agreements contain provisions relating to tolling rights, concession periods, traffic thresholds, annuity payments, major maintenance, termination payments and compensation events. Many of these provisions are open to interpretation, and in practice, have been the subject of disputes between concessionaires and authorities across the sector. The form of the concession agreement has evolved within the last decade and there is limited guidance available on the interpretation of a number of provisions and conditions of such concession agreements. Several provisions, such as those related to an augmentation in the capacity of the toll roads, termination payments, construction of additional competing roads by the concessioning authority, the Government or State Governments and payment of compensation for changes in law are currently untested.

For instance, in the case of NAMEPL, the concessioning authority granted conditional approval for the construction of three toll plazas, rather than the two originally contemplated under the concession agreement. The concessioning authority has required NAMEPL to pass on any additional financial benefit derived from the operation of a third toll plaza. There is an ongoing difference of interpretation regarding the methodology and computation of any additional financial benefit to be shared with the authority. Similarly, there have been instances of disagreement between concessionaires and authorities regarding the applicable "CPI centre" to be adopted for determining toll escalation, particularly where multiple CPI centres exist within a state. The choice of index can materially affect the applicable escalation factor and, consequently, toll/annuity revenue projections.

If disputes arise, we may be required to pursue lengthy arbitration or litigation processes to enforce our contractual rights. Even where the concession agreements provide for compensation, recoveries may be delayed or awarded only in part. In certain cases, adverse awards have been made against concessionaires in the road sector, despite favourable contractual language. Delays in resolution can also adversely affect the cash flows of Existing Portfolio Assets and reduce upstream distributions. For instance, certain Existing Portfolio Assets, including APEPL and, BWHPL, have filed claims against NHAI in respect of compensation for additional works and, delays in release of payments, respectively. Separately, authorities have raised demands and imposed penalties on certain Existing Portfolio Assets, including MHPL, in relation to maintenance obligations, and WVEPL in relation to the reduction of the concession period, which we are contesting. Also see "*Legal and Other Information*" on page 448.

Accordingly, varying interpretations of concession agreement provisions, adverse outcomes in disputes with authorities, or premature termination could adversely affect valuations of our assets, business, results of operations, financial condition, cash flows and our ability to make distributions to Unitholders.

16. ***Payments by the Existing Portfolio Assets and the Proposed Portfolio Assets, including in the event of termination of the relevant concession agreements, are subject to mandatory escrow arrangements which restrict the financial flexibility of the Existing Portfolio Assets and the Proposed Portfolio Assets.***

The escrow arrangements mandated under the concession agreements require all monies that are received by each Existing Portfolio Asset and Proposed Portfolio Asset, including fees collected from the operation of the road assets and any termination payments received from the concessioning authority, to be deposited in escrow accounts and utilized only in accordance with the order prescribed under the escrow arrangements. The consent of the concessioning authority is required to amend the order of outflow of payments from any such escrow account. The escrow arrangements typically prioritize the payment of all taxes due, followed by payment of expenses in connection with the construction of the project, operation and maintenance expenses including expenses for repair works, payment of concession fees, debt service payments, negative grant/premium payable to the concessioning authority, reimbursement of expenditure incurred by the concessioning authority, any payments and damages due and payable and any reserve requirements set forth in any financing agreements, in such order. For details of the escrow arrangements, please see the section entitled "*Summary of Key Agreements - Summary of the Concession Agreements*" on page 343.

With respect to withdrawals on termination, the escrow arrangements for our DBFOT/BOT assets typically prioritize the payment of all taxes due, followed by the payment of 90% of debt due to senior lenders (excluding subordinated debt), the payment of any outstanding concession fee, the payment of damages in relation to the concession, retentions and payments arising out of liability for any defects, the remainder of debt due, subordinated debt, operation and maintenance expenses and any other payments under the concession agreement, after which the balance may be withdrawn by the Existing Portfolio Assets/Proposed Portfolio Assets for their own purposes. For our TOT assets, the withdrawals on termination under the escrow arrangements prioritize the payment of all taxes due, followed by all payments due to senior lenders, the payment of damages certified by the concessioning authority as being payable by the concessionaire, retentions and payments arising out of liability for any defects and deficiencies, operation and maintenance expenses and any other payments under the concession agreement, after which the balance may be withdrawn by the Existing Portfolio Assets for their own purposes. Any shortfall in future termination payments received from the concessioning authorities may prevent us from recovering our investments and returns from the relevant Existing Portfolio Assets and Proposed Portfolio Assets adequately, or at all.

17. ***The business and financial performance of the Trust, the operations of the Portfolio Assets and any future assets that we may acquire, are significantly dependent on the policies of, and relationships with, government entities in India and could be affected if there are adverse changes in such policies or relationships.***

The operations of the Existing Portfolio Assets and Proposed Portfolio Assets and any future assets that we may acquire, are and will be significantly dependent on central and state government entities, in terms of policies, incentives, budgetary allocations and other resources provided by these entities for the surface transportation industry, as well as the terms of the contractual arrangements, concessions and other incentives available from these government entities for the projects. Sustained increases in budgetary allocations by the central and state governments for investments in the infrastructure sector, the development of structured and comprehensive infrastructure policies that encourage greater private sector participation and increased funding by international and multilateral development financial institutions in infrastructure projects in India have resulted in, and are expected to continue to result in, an increase in the amount of transportation infrastructure projects undertaken in India. Any adverse change in the focus or policy framework regarding infrastructure development or the surface transportation industry, or a change in the Trust's relationships with the central or state government entities in India, could adversely affect the Existing Portfolio Assets and Proposed Portfolio Assets, the opportunities for the Trust to secure new assets and in turn our business, results of operations and financial condition.

In addition, the projects in which government entities participate may be subject to delays, extensive internal processes, policy changes, changes due to local, national, and internal political pressures, changes in governmental or external budgetary allocations, and insufficient funds. Since government entities are responsible for awarding concessions and are parties to the development and operations of projects, projects are directly and significantly dependent on their support. Any withdrawal of support or adverse changes in their policies may lead to renegotiation of the agreements and could also adversely affect financing, capital expenditure, revenue from operations, and development or operations relating to the current and future assets of the Existing Portfolio Assets and Proposed Portfolio Assets.

18. ***We are subject to restrictive covenants under our financing agreements that could limit our flexibility in managing our business or using cash or other assets, and any non-compliance with such covenants could adversely affect our business, results of operations, financial condition and cash flows.***

The financing agreements that the Trust, MBEL and the Proposed Portfolio Assets have entered into (and which the Trust may enter into to refinance the debt of the Proposed Portfolio Assets) with banks and financial institutions

contain and may contain, in the future certain restrictive covenants, including, but not limited to, requirements that they obtain consent from the lenders prior to:

- effecting any change in the nature or scope of the project or any change in the financing plan;
- effecting any change in capital structure (including shareholding pattern);
- making any capital expenditure other than permitted investments;
- making any dividend payments to their shareholders or making any other restricted payments (including redemption of any shares of any class, prepayment in relation to any indebtedness, payment of interest on unsecured loans, investment in any entity) except as permitted under the financing agreements;
- creating any security interest in any of the secured property;
- incurring any other indebtedness, including the issuance of debentures, other than permitted indebtedness;
- entering into any partnership, profit-sharing or royalty agreement;
- amending the constitutional documents of the Existing Portfolio Assets or Proposed Portfolio Assets;
- undertaking of any new project, making any investment, or taking any assets on lease;
- providing guarantees, indemnities or similar assurances in respect of indebtedness of any other person (other than in the ordinary course of business); and
- repaying or prepaying any subordinated loan or loans taken by the Existing Portfolio Assets or Proposed Portfolio Assets from the Sponsor.

In addition, these restrictive covenants may also affect some of the Trust's rights as the shareholder of the Existing Portfolio Assets and Proposed Portfolio Assets and the Existing Portfolio Assets' and Proposed Portfolio Assets' ability to pay dividends and the Trust's ability to make distributions if it is in breach of its obligations under the applicable financing agreement.

Further, the financing agreements may require the creation of security interests, including pledges over the equity shares of the Existing Portfolio Assets and Proposed Portfolio Assets and charges over their assets, bank accounts and receivables. Any invocation or enforcement of such pledges by the lenders upon an event of default could result in a change in control of the relevant Portfolio Asset, restrictions on distributions to us, or loss of our rights as shareholder, which may adversely affect our cash flows and ability to make distributions to Unitholders. In addition, the enforcement of such security may trigger cross-defaults under other financing arrangements or concession agreements.

Such financing agreements also require us to maintain certain financial ratios. In the event of any breach of any covenant contained in these financing agreements, we may be required to immediately repay our borrowings, either in whole or in part, together with any related costs. There can be no assurance that the Investment Manager will be able to secure consents from, and/or negotiate revised terms with, the lenders that are acceptable to the Trust, or at all. Further, the no-objection certificates from certain lenders of the Proposed Portfolio Assets are pending as on the date of this Draft Offer Document, and there can be no assurance that the Investment Manager will be able to secure the pending consents from the lenders in a timely manner or at all. The inability to obtain no-objection certificates from all lenders could adversely affect the Investment Manager's ability to undertake the Offer.

Further, the financing agreements contain cross-default provisions that could automatically trigger defaults under other financing agreements. Certain lenders are also entitled to accelerate repayment of the loans at any time, in accordance with the terms of the concession agreements. While we have not faced any such instances of acceleration of repayment of loans during the six months ended September 30, 2025 and the Financial Years 2025, 2024 and 2023, there can be no assurance that we will not face such instances in the future, which may adversely affect our business, results of operations, financial condition and cash flows.

Any or all of the above restrictive covenants may restrict our ability to conduct business, and any breach thereof may adversely affect our results of operations, financial condition and cash flows.

19. ***We may be subject to increases in costs, including operation and maintenance costs, which we cannot recover by increasing toll fees or annuity income under the relevant concession agreements.***

The terms and conditions of the concession agreements are fixed and non-negotiable during the concession period. The costs of operating and maintaining the toll roads may be subject to cost overruns as a result of increased or unforeseen costs due to a number of factors beyond each Existing Portfolio Asset's or Proposed Portfolio Asset's control, including, among other things:

- inflation or otherwise an increase in the cost of labour, materials (for example, bitumen) and insurance;
- such SPVs being required to install intelligent toll-collection systems or other new technologies for monitoring projects at their own costs, including remedial costs incurred to rectify any defects caused on account of a failure of any technology;
- such SPVs being required to install or deploy sustainable solutions to adhere to evolving and stringent environmental and social norms;
- higher axle loading, traffic volume or environmental stress leading to more extensive or more frequent heavy repairs or maintenance costs, which may be substantial;
- such SPVs being required to restore their project roads in the event of any landslides, floods, road subsidence, other natural disasters, accidents or other events causing structural damage or compromising safety;
- increase in electricity tariff rates or other fuel costs resulting in an increase in the cost of energy;
- changes in transport rules and regulations exempting certain types of vehicles from payment of toll charges and requiring substantial investment in additional infrastructure, such as installation and upgradation of charging infrastructure for electric vehicles;
- adverse weather conditions;
- an increase in minimum wages or other operating costs, including the implementation of amended labour laws and regulations;
- the introduction of a levy on the usage of water for maintenance of the toll roads, among other things, in states in which the toll roads are located;
- unforeseen legal, tax and accounting liabilities relating to road assets; or
- other unforeseen operational and maintenance costs, such as unexpected escalations in third-party fees or costs.

Set out below are details of our Operation & Maintenance expenses for the periods indicated:

Particulars	For the six months ended September 30,				Financial Year					
	2025		2024		2025		2024		2023*	
	Amount (₹ in million)	*% of total expenses*	*Amount (₹ in million)*	*% of total expenses*	*Amount (₹ in million)*	*% of total expenses*	*Amount (₹ in million)*	*% of total expenses*	*Amount (₹ in million)*	*% of total expenses*
Operation & Maintenance expenses	3,870.75	19.27%	3,709.25	21.80%	7,554.62	21.56%	5,046.42	13.42%	-	-

** Certain Portfolio Assets were acquired immediately prior to the Trusts' listing on Stock Exchanges on April 19, 2023, and were not part of the Existing Portfolio Assets during the Financial Year indicated.*

If our costs increase, we may be unable to offset them with higher revenues from toll fees or annuity income, due to restrictions in the concession agreements. Any significant increase in operation and maintenance costs beyond our budget, or any failure to meet quality standards, may reduce our profits, expose us to penalties imposed by the concessioning authorities, and have an adverse effect on our business, financial condition, and results of operations. Such events may also affect the ability of the Existing Portfolio Assets and Proposed Portfolio Assets to service the debt obtained from the Trust, as well as our ability to make distributions to the Unitholders. As such, the inability to change the terms and conditions, including toll fees and/or annuity income during the concession period, may adversely affect our operational and financial flexibility.

20. ***The Investment Manager is subject to regulatory reporting obligations and periodic inspections by SEBI, and any non-compliance or adverse observation may result in regulatory action.***

The Investment Manager is required to comply with ongoing reporting, disclosure and management obligations in relation to the Trust in accordance with the InvIT Regulations and the InvIT Master Circular. These obligations include, among other things, (a) making investment decisions in respect of the Trust's assets in accordance with the investment strategy, (b) overseeing the activities of the Project Manager and other service providers, (c) ensuring compliance with distribution requirements, (d) submitting periodic reports and certifications to the Trustee and stock exchanges, (e) ensuring audit and financial reporting compliance, and (f) maintaining ongoing compliance with its eligibility requirements under the InvIT Regulations. Any failure to comply with such requirements, whether timely or at all, may subject the Investment Manager, the Trust, and other Parties to the Trust to regulatory scrutiny, directions, or other enforcement actions, penalties under the InvIT Regulations, the SEBI Act, or other applicable laws.

Under the InvIT Regulations and the InvIT Master Circular, SEBI has broad supervisory and inspection powers, including the authority to inspect the Trust's books and records, as well as those of the Parties to the Trust. Pursuant to such powers, SEBI may, in appropriate circumstances, issue directions, including, inter alia, (i) requiring corrective actions, (ii) imposing restrictions on capital market access, (iii) directing the sale of assets, (iv) mandating the winding up of the Trust in accordance with applicable laws (v) or cancelling registration of the Trust, and regulatory directions subject to applicable law.

The Trust has undergone periodic inspections by SEBI as part of the regulatory oversight framework. During these inspections, SEBI has issued observations related to, amongst others, disclosure requirements, procedural compliances, and other obligations under the InvIT Regulations and InvIT Master Circular, to which the Trust has responded and taken appropriate remedial or clarifying actions, where necessary. Pursuant to an inspection conducted by SEBI for the period from May 1, 2024, to March 31, 2025, we have received inspection observations from SEBI, including in relation to intimation and disclosure requirements, related party transactions and investment conditions.

While the Trust strives to ensure full regulatory compliance, there is no guarantee that its responses will be accepted without reservations. Any adverse regulatory action, penalty, or directive could significantly impact the Trust's business, financial strength, operational results, or reputation. Additionally, the reporting framework for InvITs differs from that for listed equity companies in India or other regions. Therefore, the type and amount of information available to Unitholders may differ from what is typically disclosed by listed corporate entities.

21. ***The consolidated unaudited financial information prepared in accordance with Ind AS and InvIT Regulations of Cube Highways Trust present in this Draft Offer Document may not be indicative of our financial condition, results of operations and cash flows.***

The financial information for the nine months ended December 31, 2025, is unaudited and has been derived from the Consolidated Unaudited Financial Information of the Trust for the quarter and nine months ended December 31, 2025. The Consolidated Unaudited Financial Information has been prepared in accordance with the recognition and measurement principles laid down in the Indian Accounting Standards ("**Ind AS**") prescribed under Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended, and other accounting principles generally accepted in India to the extent not inconsistent with the InvIT Regulations. The Consolidated Unaudited Financial Information has not been subject to an audit but has been reviewed, in accordance with the Standard on Review Engagements (SRE) 2410, "Review of Interim Financial Information Performed by the Independent Auditor of the Entity," issued by the Institute of Chartered Accountants of India. The disclosures presented in the Consolidated Unaudited Financial Information prepared in accordance with Ind AS 34 and the InvIT Regulations for this period may not be comparable to our consolidated financial statements in the future, including due to potential acquisitions of eligible infrastructure assets in the road sector and other transactions undertaken in accordance with our Investment Objectives and business strategy, including related transactions.

22. ***Termination payments and compensation for change in law, force majeure events or authority defaults under concession agreements may not be adequate or may be disputed, which could reduce recoveries.***

Our concession agreements provide for termination payments if the contract is terminated before expiry of the concession period, with the amount depending on the reason for termination. In cases of concessionaire default, the concessioning authority is generally only required to pay up to 90% of the debt due (as specified in the relevant concession agreement), excluding equity and returns thereon. Even where higher compensation is prescribed, such as in cases of authority default, *force majeure*, or a change in law, actual recoveries remain uncertain. Further, in certain instances, compensation is provided through an extension of the concession agreements, which can adversely affect our cash flows and distributions. Our concession agreements also generally provide for compensation in the event of a change in law, authority default or force majeure, including political force majeure. Such provisions are intended to protect concessionaires from events beyond their control. However, the actual quantum and timing of compensation are subject to interpretation by the relevant concessioning authority or the relevant state authority. For example, several of our SPVs, including NDEPL and MBEL, have submitted representations before the relevant concessioning authority for extension of the concession period in relation to a decrease in traffic volumes due to the COVID-19 pandemic.

In addition, the process for claiming compensation generally requires submission of detailed documentation, certification by independent engineers, and approval from the concessioning authority, which can take considerable time. During this period, Existing Portfolio Assets and Proposed Portfolio Assets may face cash flow mismatches, as costs are incurred upfront while compensation remains uncertain. Further, in practice, authorities have disputed the computation of termination and other payments or delayed settlement, leading to prolonged arbitration and litigation. Even where concession agreements provide clear entitlements, concessioning authorities may contest the applicability of provisions or the calculation of amounts claimed. If termination and other concession payments are inadequate, delayed, or disputed, we may not recover the full value of our investments, which could adversely affect our financial condition, results of operations, and our ability to make distributions to Unitholders.

If compensation is delayed, reduced, or not awarded, our Existing Portfolio Assets and Proposed Portfolio Assets may not be able to recover costs incurred, which could reduce income available for distribution, weaken the liquidity position of the relevant entity, and adversely affect our business, financial condition, and results of operations.

23. ***Our concession agreements are subject to ongoing supervision, inspection and directives from concessioning authorities, and adverse findings or new compliance requirements may increase costs, reduce revenue from operations and adversely affect our business, results of operations, financial condition and cash flows.***

Our concession agreements require us to comply with detailed performance standards for operations, maintenance, toll collection, and safety. NHAI and state authorities have wide supervisory powers to inspect our projects, review compliance, and direct corrective action. Such reviews may lead to demands for additional work, imposition of penalties, or adverse interpretations of our contractual obligations.

For toll-based assets, the concessioning authorities may impose damages and recover them directly from the project's escrow accounts, thereby reducing the cash flows available for debt service and distributions. For annuity-based assets, the authorities may impose deductions from annuity payments in the event of alleged non-compliance with maintenance or performance standards. For instance, in the case of MHPL, the NHAI has deducted amounts from annuity payments on account of alleged deficiencies, which are currently under arbitration. Accordingly, even though we believe we have complied with contractual standards, the concessioning authorities in India continue to exercise considerable discretion in exercising their directive powers, leading to potential revenue reductions and disputes with the concessioning authority.

In some cases, authorities may also issue new circulars or guidelines that alter technical requirements during the concession term. Compliance with such directives could require unplanned capital expenditure or result in operational disruption. Failure to comply may result in suspension of tolling rights or larger reductions in annuity payments. In addition, local authorities, municipal corporations or urban local bodies may, from time to time, require the implementation of additional safety-related measures, construction modifications or enhancements such as street lighting, pedestrian infrastructure or other localized safety interventions, which may not be expressly contemplated under the concession agreements. Compliance with such requirements may entail additional capital or operating expenditure and could disrupt ongoing operations.

Accordingly, periodic reviews and supervision under our concession agreements expose us to the risk of additional obligations, penalties, or adverse interpretations, which could adversely affect our business, results of operations, financial condition, cash flows and ability to make distributions to Unitholders.

24. ***Inadequate operation and maintenance practices by the prior concessionaire or its subcontractors prior to the O&M Handover Date of certain of the toll roads may result in higher-than-expected costs to restore or repair the toll roads and reduced traffic on, and toll collections from, such toll roads.***

The operation and maintenance of certain toll roads will be carried out by the prior concessionaire's existing subcontractors. For instance, the operation and maintenance of four of the toll roads, namely LRTPL, HTPL, JLTPL and JVTPL, will be carried out by the prior concessionaire's existing subcontractors until March 2029, March 2028, March 2027 and March 2027, respectively (each, the applicable "**O&M Handover Date**") under the relevant concession agreement (as defined in "*Summary of Key Agreements— Summary of the Concession Agreements.*" on page 343). To the extent the prior concessionaire or its subcontractors have adopted, or would adopt, inadequate maintenance practices with respect to the toll roads prior to the relevant O&M Handover Date, we may be subject to higher-than-expected costs to restore or repair the toll roads.

Under the relevant concession agreements, the prior concessionaire is obligated to maintain, or cause to be maintained, the relevant toll roads to ensure their traffic worthiness and safety are at no time materially inferior as compared to the condition seven days prior to the last date for submission of the bid in respect of such toll road and to undertake the repair of any material deterioration or damage other than normal wear and tear or pay to the concessionaire the cost and expense required to undertake such repair (as determined by the independent engineer) after the O&M Handover Date. There can be no assurance that the prior concessionaire will comply with its obligations under the concession agreements, or that, in the event of non-compliance therewith, there will be any agreement as to the liability for any material deterioration of the toll roads. Furthermore, the costs and expenses determined by the independent engineer as payable to us may not be sufficient to compensate us for the actual cost of repairing the relevant toll road. As the prior concessionaire has not provided any warranties regarding the operation and maintenance of the toll roads, we will need to bear any additional or unanticipated maintenance costs ourselves.

To the extent the prior concessionaire's subcontractors responsible for the operation and maintenance of the toll roads prior to the O&M Handover Date do not adopt the necessary operation and maintenance practices or in a manner inconsistent with the level of operation and maintenance that we would adopt, the state of the relevant toll roads may deteriorate, which may result in a diversion of traffic away from such roads. A reduction in traffic on the toll roads would result in lower toll collections, which would adversely affect our business and results of operations.

25. ***Payments to the Trust by the Existing Portfolio Assets under the Trust Loan Agreements are dependent on the cash generation of the Existing Portfolio Assets and may be deferred in periods of low liquidity.***

None of our Existing Portfolio Assets, except MBEL, has availed any third-party or external debt, and all financing at the SPV level comprises secured and unsecured loans extended by the Trust (the "**Trust Loans**"). These Trust Loans

are structured as long-term instruments designed to maintain liquidity within each SPV and are serviced only after statutory, operational, and maintenance obligations are met. Under the terms of the Trust Loan Agreements, repayments of principal and payment of interest are contractually subject to the availability of free cash after meeting all mandatory expenditures, taxes, and reserve requirements, consistent with the waterfall provisions under the respective escrow mechanisms and concession agreements. The Trust Loans therefore operate on a "pay-when-able" basis, where unpaid interest or principal does not constitute a default and is deferred until sufficient cash flows are generated by the relevant SPV. In periods of traffic volatility, increased maintenance expenditure, or a temporary suspension of tolling, certain SPVs may have limited or no distributable surplus, leading to the deferral of such payments. While this structure preserves the financial stability of the operating entities and protects continuity of operations, it also means that cash flows to the Trust (and consequently, distributions to Unitholders) may fluctuate based on each SPV's operating performance, working capital requirements, and lifecycle maintenance profile.

In addition, certain of the Proposed Portfolio Assets have existing third-party or external borrowings at the SPV level. Until such borrowings are refinanced, the cash flows generated by the Proposed Portfolio Assets may be used to service existing third-party debt obligations in priority to upstreaming net distributable cash flows to us, in accordance with the applicable financing documents and escrow waterfall mechanisms. As a result, there is a risk that the upstreaming of net distributable cash flows from the Proposed Portfolio Assets may be delayed, reduced or may not occur until the completion of such refinancing. Any delay or inability to complete the proposed refinancing on acceptable terms, or at all, could adversely affect the timing and quantum of cash flows available to us and, in turn, our ability to make distributions to our Unitholders.

26. ***Any infrastructure project that we acquire, which is still under construction and development, may be subject to cost overruns or delays.***

We may acquire infrastructure projects that are still under construction or development, subject to certain thresholds and other considerations, in accordance with the InvIT Regulations and, in certain cases, subject to Unitholders' approval. The development of such projects is subject to substantial risks, including various planning, engineering, and construction risks, as well as regulatory hurdles related to land acquisition and the necessary environmental clearances. The concessionaire generally begins generating returns on investment only after the commencement of commercial operations, which may be delayed for various reasons. During the construction and development phases, we may also experience equipment, material, or labor unavailability; adverse weather conditions; accidents; delays in construction and clearances; and other unforeseen construction-related operational delays and defects. These factors may lead to substantial increases in the time and costs required to complete the projects that we may acquire. We may not be able to recover the additional costs and may be subject to liquidated damages or penalties in case we delay in achieving the commercial operations date for the project. Construction disruptions or delays could impede our ability to undertake future asset acquisitions and, in turn, adversely affect our financial and operational estimates, our business, prospects, financial condition, results of operations, and cash flows.

27. ***Certain actions of the Existing Portfolio Assets and the Proposed Portfolio Assets require the prior approval of the relevant concessioning authority, and no assurance can be given that the concessioning authority will approve such actions in a timely manner or at all.***

Certain terms and conditions in the Portfolio Assets' concession agreements, financing agreements, and our other approvals require the concessioning authority's prior written approval to be obtained for one or more of the following actions, among others:

- amendment, modification or replacement by such Portfolio Asset of any project agreements (including financing agreements) relating to the operation of the road assets to which such Portfolio Asset is a party if the amendment, modification or replacement of such agreement increases or imposes any financial liability or obligation on the concessioning authority;

- the creation of any encumbrance or security interest over, or transfer of rights and benefits of such Portfolio Asset under, the concession agreement or any project agreements; and

- the selection or replacement of any engineering, procurement and construction contract, operation and maintenance contractor and execution of the engineering, procurement and construction agreements and the operation and maintenance agreements (to the extent applicable).

The concession agreements of certain Portfolio Assets also require the submission to the concessioning authorities, for their review and comments, all project agreements to which such Portfolio Assets are a party prior to entry, amendment or replacement of such agreements, even if such agreements do not affect the financial liability or obligations of the concessioning authorities.

The restrictions described above may limit our flexibility in conducting our business. In addition, authorities may impose conditions while granting approvals, including requirements to maintain minimum ownership levels or operational control. Failure to comply with such conditions could result in defaults under the concession agreement and financing documents. Further, if as a result of these restrictions, we are unable to pursue a favorable course of

action or to respond to an unfavorable event, condition or circumstance, then our business, financial condition and results of operations may be adversely affected. These restrictions may limit our ability to restructure projects, securitize cash flows or raise debt against future revenues, unless specific approvals are obtained. Also see "*Summary of the Concession Agreements*" and "*– Our concession agreements contain certain restrictive terms and conditions which may restrict our ability to conduct our business and limit our financing flexibility*" on page 343 and 97, respectively.

28. ***Our success largely depends on the Directors, Key Management Personnel and function heads of the Investment Manager and the Project Manager, and such entities may be unable to appoint, retain such personnel or to replace them with similarly qualified personnel, which could have an adverse effect on the business, financial condition, results of operations and prospects of the Trust.***

Our performance largely depends upon the continued service and performance of the Directors, Key Management Personnel and function heads of the Investment Manager and the Project Manager. The continued operations and growth of our business will depend on the Investment Manager and the Project Manager attracting and retaining personnel with the necessary experience and expertise. Competition for qualified personnel with relevant industry expertise in India is intense due to the scarcity of qualified individuals in the toll roads business, and the aforesaid entities may not be able to retain their executive officers and key employees or attract and retain fresh talent in the future. In addition, a portion of our personnel, including Key Management Personnel, operational staff, and field teams, are required to travel extensively and operate in close proximity to highways and project sites, which exposes them to the risk of accidents or other unforeseen events. Any death, permanent disability, abduction or prolonged unavailability of such personnel could disrupt our operations and adversely affect our asset management and performance.

Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from relevant concessioning authorities of the Portfolio Assets. There can be no assurance that such approvals will be received in a timely manner or at all, or that the transition to the incoming Project Manager will be effected without disruption to the operations, maintenance, or project implementation activities of the Portfolio Assets.

Further, there can be no assurance that any transfer of employees from the existing Project Manager to the incoming project manager will be completed prior to the Closing Date, or that the incoming project manager will be able to retain such employees following their transfer, or that any attrition or disruption during or after the transition will not adversely affect the operations of the Trust. Any inability by the Investment Manager or the Project Manager to retain their respective Directors, Key Management Personnel and function heads, or the inability to replace such individuals with similarly qualified personnel, could have an adverse effect on the business, financial condition, results of operations and prospects of the Trust, the Existing Portfolio Assets and Proposed Portfolio Assets. For further details, see "*Our Business – Strengths – Experienced leadership and institutional backing*" on page 298.

29. ***Failure to meet ESG-linked performance targets could increase our cost of financing and adversely affect our cash flows and ability to make distributions.***

We have integrated environmental, social and governance ("**ESG**") considerations into our financing and capital allocation strategy. In February 2025, we issued India's first sustainability-linked bond in the road infrastructure sector, under which the applicable coupon rate of 7.67% per annum, payable quarterly, is linked to the achievement of specified ESG performance targets relating to greenhouse gas emission intensity, circularity in materials and gender diversity. Our ability to maintain the current cost of such financing depends, in part, on our continued compliance with, and achievement of, these ESG-linked targets within the prescribed timelines.

If we fail to meet the applicable ESG performance benchmarks, the terms of such sustainability-linked instruments provide for step-ups in interest rates or other financial consequences, thereby increasing our borrowing costs. In addition, any perceived underperformance against ESG commitments may adversely affect our credit profile, access to capital markets, investor appetite or the terms on which we are able to raise future debt or refinance existing borrowings. Higher financing costs may reduce cash flows available for distribution, adversely impact returns to Unitholders and constrain our ability to pursue future acquisitions or capital expenditure. Further, meeting ESG targets may require incremental capital expenditure, operational changes or adoption of new technologies, and there can be no assurance that such measures will be sufficient to achieve the desired outcomes within the relevant timeframes.

Accordingly, any failure to achieve ESG-linked performance targets or to align our operations with evolving sustainability expectations of our lenders, investors and regulators could adversely affect our business, financial condition, results of operations, cash flows and ability to make distributions to Unitholders.

30. ***There can be no assurance that we will be able to successfully undertake future acquisitions of infrastructure assets or efficiently manage the infrastructure assets we have acquired or may acquire in the future, which may adversely affect our growth, business, results of operations, financial condition, cash flows and ability to make distributions to our Unitholders.***

The Investment Manager's future growth strategy includes strategic acquisitions, including pursuant to the ROFO Agreement and otherwise. For details of the ROFO Agreement, please see the section entitled "*Related Party Transactions – Present and On-going Related Party Transactions – ROFO Agreement*" on page 412. While we will continue to evaluate future transactions with Sponsor and third parties, we cannot be assured that they will materialise. Also see "*—The Sponsor is under no obligation to provide the Trust with access to future assets, and the Trust may be unable to bid effectively for them*" on page 120. We may not be able to identify or complete such acquisitions in a timely manner, and any future acquisitions will depend upon several factors, including:

- our ability to identify, finance and acquire operational toll roads and other infrastructure assets, including road assets, on a cost-effective basis;
- our ability to integrate acquired personnel, operations, products and technologies into our organisation effectively;
- unanticipated problems or legal liabilities of the acquired businesses; and
- tax or accounting issues relating to the acquired businesses.

There can be no assurance that we will be able to obtain financing for new projects as we have in the past, or that the interest rates and other terms of available financing will remain attractive. In addition, rising interest rates could adversely affect our ability to secure financing on favourable terms and increase our cost of capital. Any additional equity financing may be dilutive to our Unitholders, and any debt financing may include restrictive covenants that limit our flexibility going forward. Even if the Investment Manager is able to successfully make additional acquisitions or investments, there can be no assurance that such acquisitions or investments will produce incremental distributions to our Unitholders or that we will be able to achieve the strategic purpose of such acquisitions or operational integration or an acceptable return on such investments, which may adversely affect our profits, financial condition and distributions.

Furthermore, concession agreements and other underlying project documents for future infrastructure assets, including road assets, may also contain terms and conditions that are more restrictive than those in the Existing Portfolio Assets' and Proposed Portfolio Assets' concession agreements for their underlying assets. These restrictions may restrict our flexibility in managing our business or projects and could, in turn, adversely affect our business, results of operations, financial condition, cash flows and our ability to make distributions to our Unitholders. Also see "*– Our concession agreements contain certain restrictive terms and conditions which may restrict our ability to conduct our business and limit our financing flexibility*" on page 97.

Our Trust Deed, the Investment Management Agreement and our investment policy permit us to pursue acquisitions and investments across a broader mandate of eligible infrastructure assets, and accordingly, the risks associated with identifying, evaluating, acquiring, financing, integrating, operating and managing such assets are not limited to road assets. Any limitations under applicable law, our constitutional documents, our financing arrangements or regulatory requirements, as well as the availability, risk profile and performance of such eligible infrastructure assets, may affect our ability to execute our growth strategy and generate distributions to our Unitholders.

31. ***We depend on third parties to undertake certain activities in relation to the operation and maintenance of the toll roads, and any disruptions, delay, default, fraud, corruption, unethical practices or unsatisfactory performance by these third parties could adversely affect our ability to effectively operate or maintain the toll roads. Further, the operation of the Existing Portfolio Assets and Proposed Portfolio Assets will also depend on our relationships with other stakeholders.***

. There can be no assurance that the services of such third parties will continue to be available at reasonable rates in the areas in which we conduct our operations, or at all. We may also be exposed to risks relating to the inability of such third parties to provide operations and maintenance services, as well as the quality of their services, equipment, and supplies. In particular, the non-availability of, or our inability to engage, an independent engineer may affect our ability to make timely decisions, thereby affecting our operations. We may also fail to ensure the reliability and sustainability of toll collectors required to man toll booths continuously, which may adversely affect our overall revenue. There can be no assurance that we will not experience business disruptions in the form of local or nationwide strikes or work stoppages arising out of disputes over wage increases or other problems with our workforce, our contractors' workforce, or any labour unions. Such labour disruptions may interfere with, or lead to the complete or partial shutdown of, the toll roads, resulting in a loss of toll collections, which may, as a result, adversely affect our business and results of operations. Separately, toll operations and toll collections may also be disrupted due to regional or local disturbances or public events (including elections, religious processions, among others) or actions by state corporation authorities or agencies, which may result in temporary suspension of tolling or reduced collections and adversely affect our business, results of operations, financial condition and cash flows.

We may also be exposed to civil and criminal liability in relation to the actions of other third parties, including our officers, employees and contractors, including where such third parties engage in fraud, corruption, misappropriate of funds, falsification of records or other unethical or unlawful practices in the course of providing services to us. There

can be no assurance that we will not be exposed to civil and criminal liability in the future for the actions of third parties, including our officers, employees, and contractors, which may adversely affect our business, results of operations, financial condition, and cash flows.

Further, if we undertake development, we may subcontract our construction work, but we may still be liable for accidents on our projects due to defects in design and the quality of construction and repair works during their construction and operation. In addition, there can be no assurance that such contractors or their sub-contractors will continue to hold or renew valid registrations under the relevant labour laws in India, or will be able to obtain the requisite approvals undertaking such construction and operations. Furthermore, if the sub-contractor fails to pay the labour costs of the workers engaged by them, we may be liable to pay such costs to the contracted labourers. Any delay, default, fraud, corruption, unethical behaviour or unsatisfactory performance by these third parties could adversely affect our ability to manage the operation and maintenance of the toll roads under the concession agreements in a timely manner or at all and may require us to implement traffic diversion measures, and expose us to penalties and premature termination of our concession agreements, which could have an adverse effect on our business, financial condition, and results of operations.

The operation of the Existing Portfolio Assets and Proposed Portfolio Assets will also depend on our relationships with other shareholders and stakeholders. Under the InvIT Regulations, the Trust is permitted to invest in SPVs with other shareholders or partners, subject to such other shareholders or partners executing an agreement confirming that they will not exercise any rights that prevent the Trust from complying with the InvIT Regulations. In particular, the Trust has (i) acquired 99.97% of the equity share capital in MBEL, with a third-party shareholder holding the remaining 0.03%, and has consequently entered into an agreement with such shareholder; and (ii) proposed to acquire at least 95% of the equity shares of WMTPL and 5% of WMTPL's shareholding is held by Express Way Developers Limited. If the conditions precedent specified in the Commitment Letter are not satisfied, the existing shareholders of WMTPL shall be required to enter into an agreement and/or undertaking, in accordance with the requirements of the InvIT Regulations. For further details, please see "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" and "*Related Party Transactions - Commitment Letter*" on pages 56 and 417, respectively. Further, the shares held by the third-party shareholder in MBEL, WMTPL or any other shareholder in any SPVs acquired by the Trust in the future, will continue to remain an asset of such shareholder and may be subject to encumbrances, regulatory proceedings and other restrictions imposed on such shareholder, which are beyond our control and may expose us to reputational or legal risks if such shareholder engage in any corrupt, fraudulent or unethical conduct that affects the SPVs or their operations.

32. ***The Trust's ability to enter into, and/or complete, the Trust loan arrangements in respect of the Proposed Portfolio Assets may be delayed or may not be achieved, which could delay or reduce upstreaming of cash flows to the Trust and adversely affect distributions to Unitholders.***

Upon acquisition of the Proposed Portfolio Assets, we expect to rely, in part, among other things, on external borrowings availed by the Trust to infuse debt into the SPVs and financing and/or shareholder loan arrangements (including Trust Loan Agreements) to implement our capital management strategy, including refinancing and/or replacing existing third-party indebtedness at the SPV level and optimizing cash flows and reserves in accordance with applicable escrow waterfall mechanisms.

The documentation, execution and effectiveness of any such Trust Loan arrangements may be delayed or may not occur on terms acceptable to us, or at all. Further, any inability to raise, maintain or service such extended borrowings at the Trust level on acceptable terms, or at all, may constrain our ability to infuse debt into the SPVs and implement the Trust loan arrangements as contemplated. Further, until such Trust Loan arrangements are executed and made effective, the Proposed Portfolio Assets may be required to continue to prioritize servicing their existing third-party debt (including maintaining DSRA and other lender-mandated reserves) before making any payments to the Trust, including by way of dividends or payments under any shareholder/Trust Loan arrangements. As a result, the upstreaming of net distributable cash flows from the Proposed Portfolio Assets to the Trust may be delayed, reduced or may not occur for certain periods, which could adversely affect the timing and availability of cash at the Trust level for distributions to Unitholders. Further, if the Trust is unable to avail external borrowings to repay the non-convertible debentures/optionally convertible debentures or any other securities in the nature of debt of the relevant Proposed Portfolio Assets by way of the Trust Loan arrangements, may require us to pursue alternative funding or refinancing solutions, which may be more expensive or subject to more restrictive terms, and could adversely affect our business, results of operations, financial condition, cash flows and distribution to Unitholders.

33. ***The Existing Portfolio Assets and Proposed Portfolio Assets may be in non-compliance with terms of the concession agreements or applicable regulatory requirements, which could lead to penalties and actions, adversely affecting our business, results of operations, financial condition and cash flows.***

Under the terms of the concession agreements, any Existing Portfolio Asset or Proposed Portfolio Asset may be liable to pay damages to the concessioning authority for non-compliance with certain terms of the concession agreements, including for a delay in the fulfilment of the conditions precedent, delays in achieving commercial operations date, delays in completing punch list items specified in provisional completion certificates or for a failure to comply with the maintenance obligations set out in the agreements. In the event we fail to fulfil any condition precedent within the

specified period and such delay is not as a result of a breach of the agreement by the concessioning authority or due to a *force majeure* event, the concerned Existing Portfolio Asset will be liable to pay damages to the concessioning authority typically in an amount ranging from 0.1% to 0.2% of the performance security for each day of delay until the fulfilment of such condition precedent, subject to a maximum of 20% of the performance security.

Further, any failure by any Existing Portfolio Asset or Proposed Portfolio Asset to maintain or repair the toll roads in conformity with the maintenance requirements specified in the concession agreements, the maintenance program, maintenance manual or safety requirements, and if it fails to commence remedial works within 15 days of receipt of an inspection report from the independent engineer of the Existing Portfolio Asset or such other period specified by the concession authority, the concessioning authority will be entitled, in addition to any other rights available to the concessioning authority, including the right to terminate the concession agreements, to take the required remedial measures at the concerned Existing Portfolio Asset's risk and cost. In addition to covering the costs of the remedial work, concessioning authorities may levy on the concerned Existing Portfolio Asset 20% to 25% (in case of BOT/DBFOT assets) and 50% (in case of TOT assets) of the cost of such work on the concessioning authority as damages.

The Portfolio Assets have, in the past, exchanged correspondence with the NHAI and the respective independent engineer under the relevant concession agreements, in relation to various matters including (i) payment of amounts pursuant to claims raised by the NHAI; (ii) matters where a penalty, demand or action has been recommended by the independent engineer but no further action has been taken by the NHAI; and (iii) letters issued by the NHAI without the imposition of any penalty or demand. We cannot assure you that the NHAI or any other relevant authority will not impose penalties or take action in this regard in the future.

Further, in the event that any Existing Portfolio Asset or Proposed Portfolio Asset fails to repair or rectify any defect or deficiency in respect of the toll roads in accordance with the maintenance requirements specified in the agreements, or if it is in breach of the maintenance program, maintenance manual or safety requirements, it will be liable to pay damages to the concessioning authority, in addition to any other rights available to the concessioning authority, including the right to terminate the concession agreements. The damages payable for such a breach may vary across concession agreements and may be computed by reference to factors such as the performance security, average daily fee and the estimated cost of such repair or rectification, and may accrue on a per-day basis until the breach is cured.

Further, there have been instances in the past when the Existing Portfolio Assets and Proposed Portfolio Assets may not have been in compliance with a particular regulatory compliance or filing requirement, or when there may have been a delay in such compliance or filing. For example, there have been instances in which approvals obtained or documentation issued in the old name of an entity have not been replaced with revised approvals or documentation in the new name (such as Provident Fund code allotments for JUHPL and QEPL). Certain documents for periods prior to the acquisition by the Trust may also not be available. There have also been instances of delay in filing in the past, such as filings for the issue or transfer of shares under the foreign exchange regulations, for which the Existing Portfolio Assets and Proposed Portfolio Assets have obtained compounding orders and paid the relevant penalty or late submission fee to the regulatory authority. There have also been instances of non-filings by third-party sellers that transferred shares to our previous sponsors (or their associates). Any non-compliance or delay in filing under applicable laws in the future may subject the relevant Existing Portfolio Asset or Proposed Portfolio Asset to a penalty, which may adversely affect the business, financial condition, results of operations and cash flows of such Existing Portfolio Asset or Proposed Portfolio Asset.

34. ***Interruptions in our information technology systems or increased costs of implementing new technologies or maintaining or refurbishing existing technologies may adversely affect toll collection, operations and our ability to make distributions.***

We rely extensively on information technology systems for toll operations, including automated toll accounting, revenue reconciliation and administrative functions at our toll plazas. Nearly all our toll plazas operate on electronic toll collection systems such as FASTag, and we have migrated to an in-house Toll Management System ("**TMS**") across most of our Existing Portfolio Assets. In addition, we have deployed technology platforms such as Road-Aid, HiRate, Build-Aid, Setu Sthiti and advanced traffic management systems (ATMS) to digitize maintenance, enhance monitoring, and improve road safety. Also see "*Our Business – Technology*" on page 337. Any failure, malfunction, or cyber incident affecting these systems may cause data accuracy issues, disrupt toll collection, delay reconciliations, or result in lost toll revenue and reputational damage. Moreover, any cyber-attack or data breach that results in unauthorised access to sensitive data could lead to reputational damage, potential litigation, and regulatory fines under emerging data privacy regimes. For example, the recently enacted "The Digital Personal Data Protection Act, 2023" (the "**DPDP Act**") on August 11, 2023. The DPDP Act has been notified, and has replaced the existing data protection provision under Section 43A of the Information Technology Act. The DPDP Act provides for the processing of digital personal data in a manner that recognizes both individuals' rights to protect their personal data and the need to process personal data for lawful purposes and matters incidental thereto. As the relevant rules have not yet been notified, the impact of the DPDP Act on our business and operations remains uncertain. For more details related to the privacy and data protection laws applicable to us, see "*Regulations and Polices*" on page 425. Compliance with new and evolving privacy and security laws, regulations and requirements may result in increased compliance costs and may constrain

or require us to alter our existing data protection processes and infrastructure.

For details, see "– *Cybersecurity incidents or failures of our information technology systems could disrupt operations, compromise data and adversely affect our business, results of operations, financial condition and cash flows*" on page 110.

Further, the NHAI and the Ministry of Road Transport and Highways may introduce new technologies, such as GPS-based tolling systems, multi-lane free-flow tolling, or other tolling systems, which will require investment and may impact our revenue from operations and cash flows. The concessioning authorities, NHAI or other governmental authorities, may prescribe new service level standards from time to time. For example, requirements to suspend or waive toll collection if vehicle waiting times exceed specified thresholds at toll plazas, which could directly affect tolling operations, reduce toll revenues during peak periods and require additional operational or technological upgradation. The operation and continual upgrade of these digital systems requires significant capital and operating expenditure. Additionally, refurbishing existing equipment, including electronic tolling, automated number plate recognition and predictive asset monitoring, could involve higher-than-anticipated costs or delays. As technology standards evolve, we may be compelled to make further investments in software integration, cyber security enhancements, and the replacement of outdated systems.

While we seek to manage lifecycle costs through centralized procurement and standardization, no assurance can be given that these measures will mitigate the financial burden of system upgrades or outages. Prolonged IT interruptions or increased technology-related costs may reduce our net distributable cash flows and adversely affect our ability to make timely and adequate distributions to the Unitholders.

35. ***Any mismatch or errors in FASTag transactions, including those arising from system integration failures, network issues or other electronic tolling disruptions, may adversely affect our toll collections, thereby affecting our business, results of operations, financial condition and ability to make distributions to Unitholders.***

A significant portion of our toll collections is through electronic tolling mechanisms, including FASTag, supported by our in-house TMS. These systems require continuous and seamless integration between the hardware systems, software applications, banking and payment infrastructure, the National Payments Corporation of India ("**NPCI**") network, toll acquirers and FASTag issuers. Any mismatch or error in FASTag transactions, whether due to system integration failures, network or connectivity issues, data transmission errors, latency in settlement, incorrect vehicle classification, or failures in reconciling transactions with acquiring banks, may result in incorrect toll deductions, rejection of valid transactions, or delays in settlement.

Such issues may also arise from failures or malfunctions in our TMS, or related applications downtime or outages of external platforms such as NPCI or banking systems, inconsistencies in issuer databases, or manual interventions undertaken to resolve mismatches. The occurrence of any of these circumstances may cause delays in reconciliation and settlement, financial losses due to disputed or uncollectible amounts, and interruption in upstreaming cash flows from the project SPV(s) to us. Persistent mismatches or erroneous deductions may also result in user complaints, reputational concerns, additional administrative costs, scrutiny from concessioning authorities, or operational directives that increase compliance requirements and costs. While we have not faced any such instances of persistent mismatches or erroneous deductions leading to operational directives during the six months ended September 30, 2025 and the Financial Years 2025, 2024 and 2023, there can be no assurance that we will not face such issues in the future, which may adversely affect our toll collections and, in turn, our business, results of operations, financial condition, and cash flows.

36. ***We may not be able to comply with current and changing safety, health and environmental laws and regulations in India, which could adversely affect our business.***

The operation of our road assets requires compliance with environmental laws and regulations, including those governing the discharge of pollutants, the treatment, transport, storage, and disposal of solid and hazardous wastes, and the remediation of soil and groundwater contamination. We cannot be certain that we have identified all environmental matters that may give rise to potential liability, or that current environmental regulations will not change. Environmental approvals are typically subject to ongoing compliance, including monitoring, auditing, and reporting requirements under central and state-specific environmental regulations. Also see "*Regulatory Approvals*" on page 437. There can be no assurance that such actions will not be taken by the relevant authorities in the future, which may adversely affect our ability to continue operating the relevant project profitably, or at all.

Further, changes in environmental laws and pollution control norms, including tightening of emission standards applicable to construction equipment, maintenance machinery and other vehicular fleets deployed across our Portfolio Assets, may require replacement, retrofitting or upgradation of such equipment resulting in increased capital expenditure, higher operating and maintenance costs, downtime during transition periods, or restrictions on the deployment of certain equipment or vehicles, which may adversely impact traffic operations, toll collections, annuity performance, margins and thereby affect our business, financial condition, results of operations and cash flows. The past use of hazardous materials by the concessionaire or its sub-contractors, new releases of hazardous substances, or more stringent future environmental requirements (or different methods of enforcing existing requirements) could

result in additional or unforeseen expenditures or liabilities which could have an adverse effect on our business, financial condition, results of operations and cash flows.

37. ***There may be structural defects in our road infrastructure assets arising from design errors, construction defects or inadequate maintenance by previous operators and may require significant remediation expenditure, result in deterioration of asset condition or expose us to damages under our concession agreements.***

Certain of our Existing Portfolio Assets have been acquired from, certain of our Proposed Portfolio Assets will be acquired from, and our future acquisitions may be from, third-party developers or previous concessionaires, and the long-term structural condition of such assets is dependent on the quality of original design, engineering, construction practices and historical maintenance undertaken prior to our acquisition. Latent defects in pavements, subgrade layers, bridges, culverts, embankments, retaining structures, tunnels, or other ancillary facilities may not be apparent at the time of acquisition or may manifest only after extended operation. Such structural deficiencies may arise from factors such as design errors during construction, the use of substandard materials, improper compaction, inadequate drainage, overloading, construction-stage deviations, or failure to carry out periodic maintenance or major maintenance at the required intervals under the concession agreements. In the event such historical defects are discovered after acquisition, we may be required to undertake unplanned remediation or reconstruction works, which may materially increase our operations and maintenance costs and increase lifecycle expenditure, which may adversely affect our toll collections, thereby adversely affecting our business, results of operations, financial condition and our ability to make distributions to Unitholders.

Further, under our concession agreements, we are obligated to maintain the Existing Portfolio Assets and Proposed Portfolio Assets in accordance with prescribed performance and safety standards. Any failure to remedy structural defects within the timelines specified by the concessioning authority may result in damages, deductions, or enforcement of remedial action at our cost. In severe situations, deterioration of key structures may lead to traffic restrictions, safety concerns, reputational damage, temporary road closures, or penalties under the concession agreements, adversely affecting toll collections. Accordingly, the existence of structural defects in road infrastructure components resulting from inadequate maintenance by previous operators may adversely affect our business, results of operations, financial condition, and our ability to make distributions to our Unitholders.

38. ***Cybersecurity incidents or failures of our information technology systems could disrupt operations, compromise data and adversely affect our business, results of operations, financial condition and cash flows.***

We rely extensively on information technology systems for toll collection, revenue reconciliation, asset monitoring, maintenance management and administrative functions across our Portfolio Assets, including electronic tolling systems such as FASTag and in-house TMS. These systems store and process large volumes of transactional, operational and personal data. Any cyber incident, including cyber fraud, hacking, ransomware attacks, unauthorized access, data theft or system manipulation, could result in disruption of toll operations, loss or corruption of transaction data or operational downtime.

In addition, any failure to adequately safeguard personal or sensitive data relating to road users, employees, contractors or counterparties may result in data privacy breaches, reputational harm, contractual claims, regulatory scrutiny or penalties under applicable data protection and information technology laws. While we have not faced any such material instances, during the six months ended September 30, 2025 and the Financial Years 2025, 2024 and 2023, there can be no assurance that we will not face such data privacy breaches, reputational harm, contractual claims, regulatory scrutiny or penalties in the future, which may adversely affect our business, results of operations, financial condition and cash flows. Further, loss, inaccuracy or unavailability of transaction data could also impair revenue reconciliation, dispute resolution with concessioning authorities or lenders.

While we have implemented systems, controls and monitoring mechanisms to mitigate cybersecurity and data protection risks, there can be no assurance that such measures will be sufficient to prevent cyber incidents or data breaches. The occurrence of such events could adversely affect our business operations, financial condition, results of operations, cash flows and our ability to make distributions to Unitholders.

39. ***We may be unable to obtain, maintain or renew the statutory and regulatory permits and approvals required to operate our Portfolio.***

We operate in a regulated environment, and our road operations are subject to the applicable environmental, labour, social security, public health, consumer protection, competition, operational and safety regulations, among others. Please refer to "*Regulations and Policies*" on page 425.

If we fail to obtain or renew the approvals required to undertake our businesses, or if there is any delay in obtaining them, our businesses and financial condition could be adversely affected. Further, government approvals and licenses are subject to numerous conditions, some of which are onerous and require us to incur substantial expenditure. There can be no assurance that we would be able to continuously meet such conditions or that the approvals, licenses, registrations, consents and permits issued to us would not be suspended or revoked in the event of non-compliance with any terms or conditions thereof, or pursuant to any regulatory action. This may result in interruptions to our

operations and adversely affect our business, financial condition, and results of operations. Also see "*Regulatory Approvals*" on page 437.

In addition, governmental authorities may take enforcement action against us for our failure to comply with the regulations applicable to us. Any failure by us to comply with applicable laws and regulations in a timely manner or at all may result in us being subject to administrative, civil and criminal proceedings by governmental authorities, as well as civil and criminal proceedings, which could have an adverse effect on our operations or result in the imposition of fines or penalties against us, the suspension of operations, or the termination of the concession agreements. Penalties imposed by regulatory authorities on us or third parties upon whom we depend may also disrupt our business and operations. Further, we may become involved in future litigation, regulatory enforcement actions, or other proceedings, or be held responsible in any such future litigation or proceedings relating to breaches of laws or regulations, including those relating to safety, health, and environmental matters. Any damages, payment of fines or other penalties, cleanup or remediation costs, as well as other liabilities and related litigation, could adversely affect our business, prospects, financial condition, cash flows, results of operations, and our ability to make distributions to the Unitholders.

40. ***The Existing Portfolio Assets, the Proposed Portfolio Assets and the Parties to the Trust are involved in legal and other proceedings, which may not be decided in their favour.***

From time to time, we, our Existing Portfolio Assets, the Proposed Portfolio Assets, or our or their directors, officers or employees or the Parties to the Trust may be involved in legal, regulatory and other proceedings concerning matters that arise in the ordinary course of our business operations, including as a result of disputes with the concessioning authority in relation to the provisions of the concession agreements, labour disputes with our employees or contract workers, and disputes with our contractual counterparties, local unions, or users of the toll roads. These disputes may lead to legal, criminal, civil, regulatory and other proceedings, and may cause us to incur significant costs, delays and other disruptions to our business and operations. In addition, regulatory actions and disputes with governmental authorities may result in fines, penalties and other administrative sanctions. There can be no assurance that the outcome of any future legal, regulatory, or other proceedings that may be brought against us will not adversely affect our reputation, business, financial condition, results of operations, and prospects. The following table sets forth a summary of the material proceedings involving us:

Nature of Litigation	Number of Cases[(1)]	Aggregate amount involved (₹ in million)[(2)]
Litigation involving the Trust	Nil	Nil
Litigation involving the Portfolio Assets		
Civil Proceedings	11	4,987.55
Regulatory Proceedings	8	1,761.29
Criminal Proceedings	12	Nil
Material Outstanding Claims	12	16,470.53
Litigation involving the Sponsor and their Associates and the Sponsor Group		
Criminal Proceedings	2	1,915.41
Regulatory Proceedings	3	2,546.79
Litigation involving the Trustee		
Criminal Proceedings	1	Nil
Regulatory Proceedings	3	Nil
Taxation Proceedings*		

Notes:
(1) Includes cases which are not quantifiable
(2) To the extent quantifiable
** For details in relation to the Taxation Proceedings, please see "Legal and Other Information – Taxation Proceedings" on page 458*

For further details, please see the section entitled "*Legal and Other Information*" on page 448.

There is an ongoing administrative matter involving certain affiliated group entities of the Sponsor. It does not involve the Trust Group or any Sponsor of the Trust. The World Bank Group's Integrity Vice Presidency ("**INT**") is currently conducting an audit of Cube Highways and Infrastructure Pte. Ltd. ("**CH-I**"), and Cube Highways and Transportation Asset Advisors Private Limited,("**CHTAAPL**," together with **CH-I**, the "**Relevant Entities**"), affiliated group entities of the Sponsor, as well as the then CEO of CHTAAPL. The audit pertains to the period from 2017 to 2021. This matter does not constitute a criminal or civil investigation by any government authority. In response to the audit, the Relevant Entities engaged external legal counsel ("**Counsel**") to conduct a detailed internal review of the issues raised by INT. As on the date of this Draft Offer Document, Counsel's review has not identified any evidence indicating that the Relevant Entities, their personnel, or any related entities engaged in any knowing, willful, or intentional misconduct. INT and the Relevant Entities may seek to resolve this matter through a negotiated settlement or through the World Bank Group's adjudication process. At present, there is no defined timeline for the conclusion of this matter. Negotiations with INT, and any potential adjudication process, may result in non-monetary sanctions against the Relevant Entities, including potential debarment from participation in World Bank Group-funded projects for a stated period of time. As noted in the section "*Our Business*" of this Draft Offer Document, the International Finance Corporation ("**IFC**"), the private sector arm of the World Bank Group, continues to maintain an active relationship with the Trust and the Sponsor, including leading the first sustainability-linked bond issuance in the toll road sector in

February 2025. While the audit does not pertain to the Trust Group or its Sponsor, the association with a Sponsor Group entity means that an adverse outcome could result in reputational impact.

41. ***Land acquisition, right of way and utility shifting are the responsibility of the concessioning authority under concession agreements, but delays or disputes may affect our ability to meet our obligations.***

Under our concession agreements, NHAI or the relevant state concessioning authority is responsible for providing land and right of way, and for completing the utility shifting required for the project. Timely handover of land is essential for the execution of augmentation works, carrying out maintenance, and complying with concession obligations.

In practice, concessioning authorities often face delays in land acquisition due to disputes over compensation, resistance from local communities, and prolonged regulatory approvals. For example, certain of our Existing Portfolio Assets, including GAEPL and MBEL, have raised claims with NHAI for delays in handing over the required land parcels, leading to disputes and compensation claims.

Delays or a lack of government support regarding land handover, removal of encroachments, or utility shifting may prevent us from completing scheduled works within the timelines specified in the concession agreements. This may result in penalties, reduced concession periods, suspension of toll collection, or termination of the concession. Accordingly, delays or disputes relating to land acquisition, right-of-way or utility shifting may adversely affect our ability to perform contractual obligations, increase costs, and affect our revenue from operations, cash flows, and our ability to make distributions to Unitholders.

42. ***The Existing Portfolio Assets' and Proposed Portfolio Assets' concessions are illiquid in nature, which may make it difficult for us to realize, sell or dispose of our shareholding in the Existing Portfolio Assets or the Proposed Portfolio Assets.***

The Existing Portfolio Assets' and Proposed Portfolio Assets' concessions are illiquid in nature, among other reasons, on account of market conditions, the residual periods of the concession agreements, various approvals, consents and confirmations required by the concessioning authorities as per the concession agreements, and a scarcity of disposal options and/or potential acquirers. As a result, it may be difficult for us to realize, sell or dispose of our shareholding in the Existing Portfolio Assets or Proposed Portfolio Assets at an attractive price, or at the appropriate time, or at all, and such illiquidity may have an adverse effect on our market value, business, prospects, financial condition and results of operations. Further, in addition to the restrictions on minimum holding period and divestment under the InvIT Regulations, we are required to comply with the provisions of the concession agreements, including holding at least 51% of each of the Existing Portfolio Assets and Proposed Portfolio Assets until two years after the completion of construction, provisional COD or appointed date, as applicable, with respect to each of our Portfolio Assets. Further, we are required to hold any infrastructure asset for a period of not less than three years from the date of purchase of such asset by us, under the InvIT Regulations.

43. ***We may not be able to generate adequate or higher returns on our investments, which could adversely affect our business, financial condition, results of operations and ability to make distributions.***

Our ability to deliver returns depends on the performance of our road asset portfolio and the success of future acquisitions. While we target assets and make treasury investments expected to provide stable and predictable cash flows, there can be no assurance that these assets and investments will generate returns consistent with our assessments or that we will be able to enhance yields through refinancing, operational efficiencies, or asset management initiatives. Actual cash flows may also be affected by factors such as macroeconomic conditions, lower traffic volumes, changes in toll or annuity payments, higher operating costs, regulatory changes or delays in realizing synergies from acquisitions.

Further, our future acquisitions are subject to competition, the availability of suitable assets and financing conditions. If acquisition costs rise, financing becomes constrained, or the acquired assets underperform relative to expectations, our overall portfolio yields and distributions could decline. Accordingly, we may not be able to generate adequate or higher returns on our investments, which could adversely affect our business, financial condition, results of operations, cash flows and ability to make distributions to Unitholders.

44. ***We may be required to pay additional stamp duty if any concession agreement is subject to payment of stamp duty as a deed creating leasehold rights, or as a development agreement.***

Currently, concession agreements are treated as agreements which are not lease deeds (under the category of general agreements or other agreements) and stamp duty ranging between ₹100 to ₹500 is typically paid for such concession agreements. Stamp duty authorities in certain states in India have issued notices to some concessionaires, alleging inadequate stamp duty on the concession agreements executed between the concessionaires and the concessioning authorities. The stamp authorities allege that, since the concession agreements relate to the letting of tolls to the concessionaires in the form of leases or development agreements, they were required to be stamped as lease agreements

or development agreements, as applicable. Accordingly, concession agreements that have not been stamped as such may be considered inadequately stamped.

The stamp duty for a lease agreement or a development agreement ranges from 1.0% to 11.0% of the annual rent or premium payable, or the market value of the property. Furthermore, the revenue departments of any state may impose penalties for the payment of inadequate stamp duty, which may extend up to 10 times the amount of the stamp duty payable. Furthermore, a recent judgment of the Supreme Court of India, ruled that a concession agreement for a BOT project should be categorized as a "lease" under the Indian Stamp Act, 1899. As a result, the stamp duty provisions that apply to leases may become applicable to these agreements. This change could lead to substantial financial consequences for the concessionaire, as lease agreements are typically subject to significant ad valorem stamp duties that vary across states, potentially increasing the financial burden. Certain of our Portfolio Assets have received notices alleging deficiency in the payment of stamp duty on their concession agreements. For further details, please see "*Legal and Other Information*" on page 448.

If any of the concession agreements were determined to be inadequately stamped, then such agreements would be inadmissible as evidence in any legal action until the deficient amount of stamp duty, together with interest and penalties, if any, was paid. Any deficiently stamped documents can also be impounded by any person having authority, by law or consent, to receive evidence, or every person who is in-charge of a public office. Such persons impounding the deficiently stamped documents can either levy the appropriate stamp duty and penalty or send them to the revenue authorities for that purpose. In addition, a person who signs an instrument chargeable with stamp duty will be subject to a fine if such an instrument is not duly stamped.

Concession agreements contain change-in-law provisions that extend to a change in the interpretation or application of any Indian law by a court of record after the date of the concession agreement or the submission of the bid documents, as the case may be. Under the terms of the concession agreements, if any financial burden exceeding a certain prescribed threshold is imposed on a concessionaire as a result of such a change in law, then it may be entitled to approach the concessioning authority to amend the concession agreement or seek compensation to place the concessionaire in its former financial condition. However, relief under the concession agreements may be limited. There can be no assurance that the relevant concessioning authority will consider additional stamp duty on the concession agreements as a change in law for which they will amend the concession agreement or agree to provide compensation to the concessionaire. Any disagreement between the relevant concessionaire and the concessioning authority may result in arbitration proceedings, which could increase costs.

Any demand for payment of a higher stamp duty or any penalty would increase the costs of the projects to the extent such additional costs are not recoverable from the concessioning authorities and could adversely affect the business, results of operations, and prospects of the Portfolio Assets.

45. ***Our insurance policies may not provide adequate protection against all risks associated with our business.***

As of September 30, 2025, the aggregate coverage under the insurance policies obtained by us was ₹422,820.33 million. The Investment Manager will maintain insurance cover on the properties and equipment required for the operations of the Portfolio Assets in amounts believed to be consistent with industry practice. Our insurance policies cover physical loss or damage to property arising from a number of specified risks and include, amongst others, comprehensive or commercial general liability, employees' compensation insurance, group medical insurance, and industrial all-risk insurance.

We have also obtained representations and warranties ("**R&W**") insurance in connection with certain acquisitions. However, recovery under such policies is subject to insurer interpretation, exclusions, de minimis thresholds, deductibles and aggregate limits, and there can be no assurance that any claim will be accepted or settled in full or on a timely basis. Accordingly, the value or timing of recoveries under our R&W insurance may be uncertain, and any shortfall could increase our exposure to acquisition-related risks.

Despite our insurance coverage, we may not be fully insured against certain business risks, including accidents that cause losses in excess of the limits specified under the relevant policies, or losses arising from events not covered by the insurance policies, which could adversely affect our business and results of operations. For example, we may incur revenue losses due to pandemics such as COVID-19, and such losses may not be covered by our insurance policies. Further, if a fire or natural disaster substantially damages or destroys some or all of the Portfolio Assets, the proceeds of any insurance claim may be insufficient to cover our expenses, including rebuilding costs. We have received insurance claims amounting to ₹11.12 million, ₹76.47 million, ₹24.57 million and nil for physical damage to road assets and losses caused due to accidents and natural disasters during the six months ended September 30, 2025 and the Financial Years 2025, 2024 and 2023, respectively.

46. ***Any delay or failure in payment of statutory dues by the Trust or our Portfolio Assets may result in the imposition of penalties, which may adversely affect our business, financial condition, results of operations and cash flows.***

The Trust and our Portfolio Assets are required to pay certain statutory dues, including provident fund contributions and employee state insurance contributions, as indicated in the tables below. The tables below set forth the details of

the statutory dues paid by the Trust and our Portfolio Assets, including in relation to our employees, for the periods/years indicated below:

Nature of Payment	As at September 30, 2025		As at September 30, 2024	
	Statutory Dues Paid	Statutory dues unpaid(1)	Statutory Dues Paid	Statutory dues unpaid(1)
	(₹ in million)			
Employee State Insurance*	0.02	0.02	0.05	0.02
Provident Fund*	5.92	0.74	5.15	0.74
Professional Tax	0.29	0.24**	0.21	0.12
Tax Deducted at Source	4.63	-	16.37	-
Labour Welfare Fund	0.20	-	0.02	-
Goods and Service Tax	150.03	-	106.24	-
Total	**161.09**	**1.36**	**128.03**	**0.76**

**Amount not paid as on date pertains to the pre-acquisition period as relevant employee details are not available.*
*** Out of total unpaid amount ₹ 0.06 million is not due for payment as of the date.*
(1) `Unpaid amount represents the amount outstanding as on date.

Nature of payment	As at March 31, 2025		As at March 31, 2024		As at March 31, 2023	
	Statutory Dues Paid	Statutory dues unpaid(1)	Statutory Dues Paid	Statutory dues unpaid(1)	Statutory Dues Paid	Statutory dues unpaid(1)
	(₹ in million)					
Employee State Insurance*	0.02	0.02	0.06	0.02	-	-
Provident Fund*	5.53	0.74	3.62	0.59	-	-
Professional Tax	0.29	0.19	0.33	0.10	-	-
Tax Deducted at Source	56.33	-	69.79	-	24.23	-
Labour Welfare Fund	-	-	0.07	-	-	-
Goods and Service Tax	193.52	-	133.02	-	-	-
Total	**255.69**	**0.93**	**206.89**	**0.71**	**24.23**	**-**

**Amount not paid as on date pertains to the pre-acquisition period as relevant employee details are not available.*
(1) Unpaid amount represents the amount outstanding as on date.

While we have faced instances of marginal delays in payment of statutory dues during the six months ended September 30, 2025, and past three Financial Years (which did not have any adverse effect on our business), we have not faced any other instances of delays in payment of statutory dues during such periods and years. If we are unable to pay our statutory dues on time in the future, we could be subject to penalties which could adversely affect our business, results of operations, financial condition, cash flows and our ability to make distributions to Unitholders.

47. ***The Proposed Portfolio Assets' actual results may be different from the expectations set out in the Projections of Revenue from Operations and Cash Flows from Operating Activities of the Proposed Portfolio Assets included in this Draft Offer Document.***

In accordance with the InvIT Regulations and the InvIT Master Circular, this Draft Offer Document includes certain forward-looking statements, including projections of revenue from operations and cash flows from operating activities of the Proposed Portfolio Assets, as set out in "*Projections of Revenue from Operations and Cash Flows from Operating Activities of the Proposed Portfolio Assets*" in the Annexure E.

These projections have been prepared on the basis that the Trust will acquire all the Proposed Portfolio Assets on or prior to the date of allotment of Units pursuant to the Offer by March 31, 2026.

The projections are based on certain assumptions regarding future financial and operating performance, including revenue from operations, operating and maintenance costs, Trust expenses, the portfolio remaining unchanged during the projection period, and no material outflows arising out of litigation. It has also been assumed that the projects will continue to operate at current or estimated levels.

However, these assumptions may not materialise, and actual results may differ materially from the projections. The Trust's revenue will depend on cash flows from the Proposed Portfolio Assets, including principal and interest payments, which in turn depend on factors such as toll and annuity revenues, traffic volumes and other operational and economic factors.

Accordingly, there can be no assurance that the projections will be realised. The projections for the Financial Years 2026, 2027, 2028 and 2029 have been prepared assuming the post-Offer capital and corporate structure as if the acquisition of the Proposed Portfolio Assets had been completed as of March 31, 2026.

48. ***The Valuation Reports are not an opinion on the commercial merits of the Trust, the Existing Portfolio Assets or the Proposed Portfolio Assets, nor are they an opinion, expressed or implied, as to the future trading price of the Units or the financial condition of the Trust upon completion of the Offer, and the valuation contained therein may not be indicative of the true value of the Existing Portfolio Assets' and Proposed Portfolio Assets' assets.***

Ernst & Young Merchant Banking Services LLP has been appointed as the independent valuer (the "**Valuer**") to undertake an independent valuation of the Existing Portfolio Assets and Proposed Portfolio Assets. The Valuer has issued reports which set out its opinion as to the fair enterprise value of the Existing Portfolio Assets as at September 30, 2025 (pursuant to a report dated October 30, 2025) and December 31, 2025 (pursuant to a report dated January 29, 2026) and the fair enterprise value of the Proposed Portfolio Assets as of March 31, 2026 (pursuant to a report dated December 31, 2025) (collectively, the "**Valuation Reports**"). In order to issue the Valuation Reports, the Valuer based its assumptions regarding the traffic volume, toll rates, operation and maintenance costs, amortization, debt repayments and non-cash net working capital projections amongst other things, on information provided by and discussions with or on behalf of us, the Sponsor and the Investment Manager, and which reflects current expectations and views regarding future events and, therefore, necessarily involves known and unknown risks and uncertainties. Please refer to the Valuation Reports for a detailed description of all assumptions relied upon in the preparation thereof. The Valuation Reports contain forecasts, projections and other "forward-looking" statements that relate to future events, which are, by their nature, subject to significant risks and uncertainties. The future events referred to in these forward-looking statements involve risks, uncertainties and other factors which may cause the actual results or performance to be different from any future results or performance expressed or implied by the forward-looking statements.

The Valuation Reports are not an opinion on the commercial merits and structure of the Trust, the Existing Portfolio Assets or the Proposed Portfolio Assets, nor are they an opinion, expressed or implied, as to the future trading price of the Units or the financial condition of the Trust upon completion of the Offer. The Valuation Reports do not purport to contain all the information that may be necessary or desirable to fully evaluate the Trust, the Existing Portfolio Assets, the Proposed Portfolio Assets or an investment in the Trust or the Units. The Valuation Reports are not based on a comprehensive review of the business, operational or financial condition of the Existing Portfolio Assets or the Proposed Portfolio Assets and, accordingly, make no representation or warranty, expressed or implied, in this regard. The Valuation Reports do not confer rights or remedies upon investors or any other person, and do not constitute and should not be construed as any form of assurance as to the financial condition or future performance of the Trust or as to any other forward-looking statements included therein, including those relating to certain macro-economic factors, by or on behalf of the Sponsor, the Investment Manager, the Project Manager, the Trust, the Selling Unitholders or the Book Running Lead Managers. Further, there can be no assurance that the valuation prepared by the Valuer reflects the true value of the net future revenue from operations of the Existing Portfolio Assets or that other valuers would arrive at the same valuation. Accordingly, the valuation contained therein may not be indicative of the true value of each Existing Portfolio Asset's or Proposed Portfolio Asset's assets. The Valuation Report for the Proposed Portfolio Assets has been issued on December 25, 2025, but does not take into account any subsequent developments and should not be considered as a recommendation by the Sponsor, the Investment Manager, the Project Manager, the Trust, the Selling Unitholders or the Book Running Lead Managers or any other party that any person should take any action based on the Valuation Reports. Accordingly, investors should not rely solely on the Valuation Reports in making an investment decision to purchase Units in the Trust.

49. ***We have relied on data derived from third-party reports, which are based on certain estimates and assumptions and are subject to the limitations set out therein.***

We have appointed Knight Frank (India) Private Limited and FP India Project Management Consultancy Services Private Limited, independent third-party technical engineering firms, as our technical consultants (the "**Technical Consultants**") to forecast the operations and maintenance expenses for each Existing Portfolio Asset and to prepare technical reports on the Existing Portfolio Assets and Proposed Portfolio Assets, which are set out in Annexure B to this Draft Offer Document (the "**Technical Reports**"). We have also appointed Steer Davies Gleave India Private Limited and CRISIL Intelligence as our traffic consultants ("**Traffic Consultants**") to provide their analysis and forecast of traffic volumes for our toll-based Existing Portfolio Assets and Proposed Portfolio Assets (excluding annuity assets), which are set out in Annexure [A] to this Draft Offer Document (the "**Traffic Reports**"). Furthermore, we have also included data from a report titled "*Assessment of the Indian Road Sector*" dated February 2026, prepared by the Industry Expert, (the "**Industry Report**"). The Technical Reports, Traffic Reports and the Industry Report have been commissioned and paid for by the Investment Manager.

The Technical Reports, the Traffic Reports and the Industry Report (together referred to as the "**Third Party Reports**") are subject to various limitations and are based upon certain assumptions and estimates that are subjective in nature and are based, in part, on information provided by and discussions with or on behalf of us, the Sponsor and the Investment Manager. The Third-Party Reports reflect current expectations and views regarding future events, and therefore, necessarily involve known and unknown risks and uncertainties. Industry sources and publications generally state that the information contained therein has been obtained from sources generally believed to be reliable, but that their accuracy, completeness and underlying assumptions are not guaranteed, and their reliability cannot be assured. Industry sources and publications are also prepared based on information as of specific dates and may no longer be current or reflect current trends. Industry sources and publications may also rely on estimates, projections, forecasts,

and assumptions that may prove incorrect. Investors must rely on their independent examination of the Trust, and should not place undue reliance on, or base their investment decision solely on, this information.

The Third Party Reports contain forecasts, projections, and other "forward-looking" statements that relate to future events and are, by their nature, subject to significant risks and uncertainties, including population growth, gross domestic product growth, vehicle ownership rates, per capita income, agricultural output, and fuel consumption. The future events referred to in the Third-Party Reports involve risks, uncertainties and other factors which may cause the actual traffic volumes, technical information or industry estimates to be different from any future traffic volumes, technical information, or industry estimates expressed or implied by the Third-Party Reports. There can be no assurance that the bases, estimates and assumptions adopted by the Technical Consultants, Traffic Consultants or Industry Expert for the purposes of preparing their respective reports will prove to be accurate. If any of these bases or assumptions are incorrect, future traffic volumes, technical information, or industry estimates for the Portfolio could differ from those set forth in these reports and this Draft Offer Document. Accordingly, no investment decision should be made solely on the basis of such information.

50. ***The periods for which financial information has been included in the Audited Consolidated Financial Statements and the Consolidated Unaudited Financial Information are not comparable and may not be indicative of our future financial condition and results of operations. We may not be able to operate our business successfully or generate sufficient distributable cash flows to make or sustain distributions.***

This Draft Offer Document includes audited consolidated financial statements of the Trust as of and for the six months ended September 30, 2025, and September 30, 2024, and the Financial Years 2025, 2024 and 2023, and also unaudited financial information for the nine-month period ended December 31, 2025, and December 31, 2024. For further information, see Annexure D for "*Audited Consolidated Financial Statements*" and Annexure F for "*Consolidated Unaudited Financial Information*". While this financial information has been subject to a limited review, this does not provide the same level of assurance as an audit. Such financial information has been prepared in accordance with Ind AS and on a basis consistent with our Audited Consolidated Financial Statements, but remains subject to normal year-end adjustments, including adjustments relating to revenue recognition, major maintenance provisioning, impairment assessments, fair valuation, taxation and consolidation, and may not be indicative of our results for the full financial year ending March 31, 2026. Any material changes arising upon completion of the statutory audit for the financial year ending March 31, 2026, may adversely affect investors' assessment of our financial performance and the trading price of the Units.

The Existing Portfolio Assets (except the HAM SPVs, NAMEPL and the NIIF SPVs) were transferred to the Trust on April 17, 2023, by CH-I and CH-III, our previous sponsors, pursuant to the formation transactions undertaken as part of the initial offer through private placement of Units. The Trust was privately listed on the Stock Exchanges on April 19, 2023. The Trust acquired 51% of the shareholding in the HAM SPVs on June 4, 2024, and acquired the remaining 49% shareholding in the HAM SPVs on December 3, 2024. Further, the Trust acquired 100% of the shareholding in NAMEPL on February 12, 2025. Thereafter, the Trust acquired 100% of the shareholding in the NIIF SPVs on June 12, 2025. Accordingly, the HAM SPVs, NAMEPL and the NIIF SPVs have been accounted for as subsidiaries in our Audited Consolidated Financial Statements with effect from June 4, 2024, February 12, 2025 and June 12, 2025, respectively. We also intend to acquire the Proposed Portfolio Assets prior to the completion of the Offer. Accordingly, the periods for which the Audited Consolidated Financial Statements have been included in this Draft Offer Document may not be comparable, and the Audited Consolidated Financial Statements may not be indicative of our financial results, cash flows and financial position in the future, including pursuant to the acquisition of the Proposed Portfolio Assets and any future acquisitions.

Risks Relating to the Structure of the Trust and Ownership of the Existing Portfolio Assets and Proposed Portfolio Assets

51. ***We are in the process of acquiring the Proposed Portfolio Assets (pursuant to definitive acquisition agreements), which, if not completed in a timely manner or at all, could adversely affect the Offer and our business, financial condition, results of operations and cash flows.***

The transfer of the equity shares of the Proposed Portfolio Assets to the Trust under the Share Purchase Agreements ("**SPAs**") will only be completed after the Bid/Offer Closing Date. Further, the SPAs will be executed prior to the filing of the Offer Document. Our ability to complete the transactions under the SPAs is subject to certain conditions precedent and closing conditions. For further details in relation to the SPAs, see "*Related Party Transactions – Acquisition of the Proposed Portfolio Assets by the Trust*" on page 419.

As part of the SPAs, we may assume the existing liabilities of the Proposed Portfolio Assets. Although we have conducted due diligence on the Proposed Portfolio Assets to identify any existing liabilities, we may not have identified all such liabilities prior to the completion of the SPAs. There can be no assurance that the Proposed Portfolio Assets will not have defects or deficiencies that are unknown or unquantified and that may require additional capital expenditure or obligations to third parties, including to the relevant concessioning and statutory authorities, which may have an adverse effect on the Trust's earnings and cash flows and the distributions to the Unitholders, upon acquisition. Further, upon completion of the acquisition of the Proposed Portfolio Assets, we will be required to integrate them

with our Existing Portfolio Assets and operating framework. Such integration may be complex, time-consuming and subject to execution risk, and we may not be able to achieve the expected efficiencies within the anticipated timeframe, or at all. Any delay or failure in integration could result in higher costs, operational disruptions and delays or reductions in the upstreaming of cash flows from such assets to the Trust, which may adversely affect our results of operations, cash flows and distributions to Unitholders. Similar integration risks may arise in connection with any of our future acquisitions as well. For more details regarding risks related to the transfer of the Proposed Portfolio Assets to the Trust and integration risks associated therewith, please see section **"***If we fail to receive or comply with the terms of the consents issued by the lenders and regulatory authorities for the transfer of the Proposed Portfolio Assets to the Trust or are not successful in integrating these assets or fail to realize the anticipated benefits of the acquisition of such assets, our business, financial condition, results of operations and cash flows may be adversely affected.***"** on page 88.

Further, our Sponsor and its affiliates have historically acquired the Proposed Portfolio Assets from third parties and the Sponsor proposes to assign their rights under the Erstwhile SPAs to the Trust. Our Sponsor and its affiliates may rely on the indemnities provided by such erstwhile sellers to cover any losses suffered by such acquirers, their affiliates or the Trust. The indemnities provided by the erstwhile sellers may be subject to certain limitations, and the Trust may not be able to enforce them due to various factors, including the creditworthiness of the erstwhile sellers. There may also be legal disputes with the erstwhile sellers in relation to such payments or claims for indemnities against them. Further, in connection with the SPAs, we expect to receive certain indemnities and other contractual protections from the seller(s). However, such indemnities may be subject to limitations, may not cover all losses or liabilities, and their enforceability and recoverability may depend, among other things, on the financial condition of the relevant indemnity provider(s) and the time and cost required to pursue any claims. There can be no assurance that any such indemnities will be sufficient to cover our losses, or that we will be able to recover under such indemnities in a timely manner, or at all. Further, it is proposed that, there may also be certain pass-through obligations that the Trust has towards our Sponsor/its affiliates or erstwhile sellers, as applicable.

Any losses or liabilities we incur in relation to the Proposed Portfolio Assets will adversely affect our results of operations, profitability, cash flows, and our ability to make distributions to the Unitholders. There is no assurance that in the event of any defects or deficiencies in the Proposed Portfolio Assets or any losses suffered by us in relation to the Proposed Portfolio Assets, we will be able to raise any claim or recover any losses from our Sponsor or their affiliates or the erstwhile sellers, as applicable, in a timely manner, or at all.

If we are unable to complete the acquisition of the Proposed Portfolio Assets, our Investment Manager, in consultation with the Book Running Lead Managers, and subject to any conditions imposed by SEBI or any other regulatory authority, may decide not to proceed with the Offer or the Selling Unitholders in consultation with us and the BRLMs may decide to withdraw the Offer. Any inability to consummate any or all of the transactions in the manner described in this Draft Offer Document may adversely affect our Investment Manager's ability to complete the Offer within the anticipated time frame, or at all.

52. ***The regulatory framework governing infrastructure investment trusts in India is still evolving, and the interpretation and enforcement thereof involve uncertainties, which may have an adverse effect on the ability of certain categories of investors to invest in our Units, our business, results of operations, financial condition and our ability to make distributions to Unitholders.***

The SEBI issued the InvIT Regulations with effect from September 26, 2014. These regulations have been amended and supplemented with additional guidelines, circulars and notifications from time to time, including the InvIT Master Circular, which governs many aspects of the disclosure and securities offering requirements for InvITs. While the InvIT Regulations provide a framework for privately placed and listed infrastructure investment trusts and the Trust has been operating under such framework, the SEBI has recently amended the applicable regulatory framework and permitted such privately placed infrastructure investment trusts to convert to publicly offered infrastructure investment trusts, and the Offer is being conducted in accordance with such framework.

Because the regulatory framework governing infrastructure investment trusts is still evolving, interpretation and enforcement by regulators and courts involves uncertainties. Further, regulations and processes with respect to certain aspects of infrastructure investment trusts, including, but not limited to, the dissolution and delisting of infrastructure investment trusts and the liabilities of unitholders, have not yet been issued or adopted.

Changes to applicable regulations, from new regulations, from new interpretations by courts or regulators of existing regulations or from stricter enforcement practices by regulatory authorities of existing regulations may result in changes to the Offer structure, changes to agreements entered into or proposed to be entered into in connection with the Offer, cost increases, fines, legal fees or business interruptions. In addition, new costs may arise from audit, certification and/or self-assessment standards required to maintain compliance with new and existing InvIT Regulations. Such changes in regulation, interpretation and enforcement may render it economically infeasible to continue conducting business as an infrastructure investment trust, or otherwise adversely affect our business, financial condition and results of operations.

Because we operate in an evolving regulatory environment, it is difficult to forecast how any new laws, regulations or standards or future amendments to the InvIT Regulations will affect infrastructure investment trusts and the infrastructure sector in India, and no assurance can be given that the regulatory system will not change in a way that will impair our ability to comply with the regulations, conduct our business, compete effectively or make distributions. Failure to comply with changes in laws, regulations and standards may have an adverse effect on our business, financial condition, results of operations and prospects.

53. ***We must maintain certain investment ratios, which may present additional risks to us***.

Pursuant to the InvIT Regulations, publicly offered InvITs are required to invest not less than 80% of the value of their assets in completed and revenue-generating projects as defined under the InvIT Regulations, such as their Existing Portfolio Assets. In addition, upon conversion to a publicly listed InvIT, we must not invest more than 20% of the value of our assets in certain other investments and financial instruments prescribed (including up to 10% of the value of our assets in under construction projects) under the InvIT Regulations. If these conditions are not fulfilled or breached on account of market movements of the price of the underlying assets or securities, the Investment Manager must inform the Trustee and ensure that these conditions are satisfied within six months of such breach (or within one year with Unitholder approval in accordance with InvIT Regulations). Such regulations may prevent us from acquiring additional assets to achieve our growth strategy. Failure to comply with these conditions may pose additional risks to us, including the divestment of some or all of our assets, the delisting of the units from the stock exchanges, and other penalties, which could adversely affect our business, financial condition, cash flows, and results of operations.

54. ***Distributions may be adversely affected due to cash trapped in the Existing Portfolio Assets and Proposed Portfolio Assets.***

Under the Companies Act, 2013, a company can declare dividends only after the mandatory transfer of profits to reserves. Further, amortisation and depreciation are non-cash expenditures and are charged to the profit and loss account. Consequently, a company may have surplus cash but no profit in the profit and loss account and thus cannot declare dividends, leaving cash trapped within the company.

In addition, where the acquisition of an SPV is funded through external debt, surplus cash available with such SPV may be required to be used solely for debt servicing and repayment, and cannot be upstreamed for distributions. If such debt repayment is restricted or deferred due to financing covenants, approvals, or cash sweep mechanisms, it may also create a cash trap.

In the event that cash is trapped in the Existing Portfolio Assets or Proposed Portfolio Assets, the Investment Manager and the Trustee may evaluate various options to extract the cash and make distributions to the Unitholders. For instance, we have made filings with respect to a capital reduction scheme in WUPTPL during the Financial Year 2025-26, which is currently pending. The approval of such filings is subject to applicable laws and also the NCLT. There is no assurance that any such options to extract the cash trapped in the Existing Portfolio Assets or Proposed Portfolio Assets would not have adverse tax implications or affect our distributions, business and results of operation adversely.

Risks Related to the Trust's Relationships with the Parties to the Trust

55. ***Parties to the Trust are required to maintain the eligibility conditions specified under Regulation 4 of the InvIT Regulations on an ongoing basis. Non-compliance by the Sponsor, the Investment Manager, the Project Manager and the Trustee could result in the cancellation of the registration of the Trust.***

Each of the Parties to the Trust is required to maintain the eligibility conditions specified under Regulation 4 of the InvIT Regulations on an ongoing basis. These eligibility conditions include, among other things, that (a) the Sponsor, Investment Manager and Trustee are separate entities, (b) the Sponsor has a net worth of not less than ₹1,000 million and has a sound track record in the development of infrastructure or fund management in the infrastructure sector, (c) the Investment Manager has a net worth of not less than ₹ 100 million and has not less than five years' experience in fund management or advisory services or development in the infrastructure sector or the combined experience of the directors, partners and employees of the investment manager, each with at least five years of experience, in fund management or advisory services or development in the infrastructure sector is not less than 30 years, (d) the Trustee is registered with the SEBI under Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993 and is not an associate of the Sponsor or Investment Manager, and (e) each of the Trust, the Sponsor, Investment Manager, Project Manager and Trustee are "fit and proper persons" as defined under Schedule II of the Intermediaries Regulations on an ongoing basis. Any non-compliance by the Sponsor, the Investment Manager, the Project Manager and the Trustee may result in the cancellation of the registration of the Trust.

56. ***The Sponsor and Sponsor Group, whose interests may be different from those of the other Unitholders, will be able to exercise significant influence over certain activities of the Trust.***

The Sponsor and Sponsor Group may be able to control the outcome of matters on which Unitholders are entitled to vote and for which the Sponsor is not prohibited from voting due to a conflict of interest. The interests of the Sponsor may differ from those of the other Unitholders. The Sponsor may also exercise influence over the Investment Manager

and the Project Manager, who are associates of the Sponsor. Accordingly, the Investment Manager and Project Manager may also be subject to conflicts of interest with respect to the Trust. Given the influence that the Sponsor exerts on the Investment Manager and the Project Manager, and consequently the operations and credibility of the Trust, any divestiture by the Sponsor in the Units, or any conflict of interest that it has compared to that of other Unitholders, could have an adverse effect on our business, financial condition and results of operations.

57. ***As a shareholder of the Existing Portfolio Assets and proposed shareholder of the Proposed Portfolio Assets, the Trust's rights are (or will be) subordinated to the rights of any creditors, debt holders and other parties specified under Indian law in the event of insolvency or liquidation of the Existing Portfolio Assets.***

In the event of liquidation of any Portfolio Assets, any secured and unsecured creditors (at the applicable time) of the relevant Existing Portfolio Asset or Proposed Portfolio Asset will be entitled to payment from the liquidation proceeds in priority to us in our capacity as an equity shareholder of the Existing Portfolio Assets or Proposed Portfolio Assets. In addition, we have (or may in the future have) indebtedness at the InvIT level, and the relevant lenders may have the right to declare an event of default and accelerate repayment and/or enforce security, which could adversely affect our liquidity, cash flows and ability to make distributions to Unitholders. Such rights may also extend to, or be contractually linked with, loans advanced by us to our SPVs, including the ability to trigger an event of default and/or require repayment under such loans to the SPVs. Under the Insolvency and Bankruptcy Code, 2016, in the event of winding-up of any Existing Portfolio Asset or Proposed Portfolio Asset, workmen's dues and debts due to secured creditors which rank *pari passu* are required to be paid in priority over all other outstanding debt, followed by wages and salaries of employees, debts due to unsecured creditors, any amounts due to the central or state government, any other debts, preference shareholders and equity shareholders. Further, amounts payable to us in respect of any unsecured debt issued to the relevant Existing Portfolio Asset or Proposed Portfolio Asset will be subordinated in the manner set forth above. Further, should the Trust be dissolved, depending on the circumstances and the terms upon which our assets are disposed of, there is no assurance that a Unitholder will recover all or any part of its investment. There may also be uncertainty regarding the interpretation and implementation of certain provisions relating to the insolvency of a trust under the Insolvency and Bankruptcy Code, 2016.

58. ***The Trust and the Existing Portfolio Assets have entered into certain related party transactions and expect to continue to enter into related party transactions, and there can be no assurance that such transactions will not have an adverse effect on our results of operations and financial condition.***

The Trust has entered, and will in the future enter, into certain transactions with related parties, including the Sponsor, the Project Manager, the Investment Manager, and their associates. The Existing Portfolio Assets have also entered into transactions with related parties. Such transactions, or any future transactions with related parties, may involve conflicts of interest and impose certain liabilities on the Trust or the Existing Portfolio Assets. There can be no assurance that previous related party transactions could not have been made on more favourable terms with unrelated parties, and there can be no assurance that such transactions or future transactions, individually or in the aggregate, will not have an adverse effect on our results of operations and financial condition. For detailed information on related party transactions, please see the section entitled "*Related Party Transactions*" on page 410.

59. ***The Investment Manager may not be able to implement our investment, risk and capital management strategies successfully. Further, the fees payable to the Project Manager are dependent on various factors.***

There is no assurance that the Investment Manager will be able to implement our investment, risk, and capital management strategies successfully, or that it will be able to expand our Portfolio Assets at any specified rate or to any specified size, or to maintain distributions at projected levels. The Investment Manager may not be able to acquire or invest on favourable terms or within a desired time frame, and it may not be able to manage the operations of its underlying assets profitably. Factors that may affect this risk include, but are not limited to, changes in the regulatory framework in India, competition for assets, partial award of concessions or licenses favoring local or other competitors of the Trust, changes in the Indian regulatory or legal environment, or macro economic conditions. If the Investment Manager is unable to implement these strategies successfully or expand our portfolio, we will nonetheless be required to pay the Investment Manager an annual management fee, which may only be revised with the approval of the Unitholders such that the votes cast in favour of the resolution shall be at least 60% of total votes cast for the resolution, in accordance with the terms of appointment of the Investment Manager.

Even if the Investment Manager successfully grows the operating businesses of the underlying assets and acquires toll roads and other eligible infrastructure projects in India, there can be no assurance that the Investment Manager will achieve any returns on such acquisitions or capital investments.

Further, the project management/operating and maintenance expenses associated with a toll road asset are primarily based upon the actual wear-and-tear of the road, and depend upon a number of factors like climate conditions during the year, quantum of rainfall, ability of the maintenance team to control and repair damages at an early stage, quality of construction, etc. While such operating and maintenance expenses may be estimated based on prevailing rates, as have been provided in the Valuation Report and Technical Reports that have been included as Annexures A and B to this Draft Offer Document, the actual operating and maintenance expenses for each Existing Portfolio Asset may vary each year based on actual wear-and-tear of the underlying toll road and other exigencies. The fee payable to the Project

Manager varies for each Existing Portfolio Asset and is a percentage of the standalone revenue of such Existing Portfolio Asset, subject to certain limits as stipulated in the Project Implementation and Management Agreement. Any such payment of fees will be treated as a related party transaction. For further information, please see "*Overview of the Trust*" on page 36.

60. ***The InvIT Regulations allow for listed InvITs to undergo a change in sponsors or change in control of the sponsor or a conversion to a self-sponsored investment manager subject to certain conditions. There can be no assurance that in the future, we will not experience another instance of change in our sponsor.***

The InvIT Regulations permit listed infrastructure investment trusts to undergo a change in sponsors or a change in control of the sponsor or a conversion to a self-sponsored investment manager subject to the receipt of approval of 75% unitholders, by value, being obtained in accordance with the InvIT Regulations, and other conditions. Accordingly, with effect from February 19, 2026, CH-V has been identified as our new Sponsor. There can be no assurance that in the future, we will not experience another change in our sponsor.

61. ***The Sponsor is under no obligation to provide the Trust with access to future assets, and the Trust may be unable to bid effectively for them.***

The Sponsor may consider offering three assets to the Trust (aside from the Proposed Portfolio Assets) under certain conditions. For details of the ROFO Agreement, please see the section entitled "*Related Party Transactions – Acquisition of the Proposed Portfolio Assets by the Trust*" on page 419. In order to assess its ability and willingness to bid for and/or operate any ROFO Assets, terms of the concession agreement, along with technical and traffic reports may be offered to Trust, and the Trust may be granted a limited period within which it shall be expected to undertake its due diligence and make a binding offer to the Sponsor in respect of the ROFO Assets. There can be no assurance that the Trust will be able to accurately or effectively assess the ROFO Assets on the basis of the information available to it or within the time available, and its bids may prove uncompetitive. Furthermore, the Sponsor may accept or reject any binding offer made by the Trust, based on its own internal estimate of the concession value of the ROFO Assets, regarding which the Trust will have no influence. Access to future road assets sourced by the Sponsor or their existing or future subsidiaries will be an important source of growth in the future for the Trust, and any inability to bid competitively for ROFO Assets or the inability to win contracts from the Sponsor for their operation for any reason could have an adverse effect on the Trust's business, results of operations, financial condition and prospects.

62. ***Unitholders would not be able to participate in the election or removal of directors in the Investment Manager and will be able to remove the Investment Manager and Trustee only pursuant to a majority resolution.***

Pursuant to the InvIT Regulations, the Investment Manager is responsible for managing the Trust. Unitholders would not be able to participate in the nomination, election or removal of directors in the Investment Manager. However, unitholders holding not less than 10% of the total outstanding units of the InvIT, either individually or collectively, have the right to nominate one director to the board of directors of the Investment Manager. Other than such limited nomination right, the other recourse available to the Unitholders is the removal of the Investment Manager by way of a resolution where Unitholders holding at least 60% of the Units must vote in favour of the resolution. In comparison, the Companies Act, 2013, allows the removal of a director of a private limited company by an ordinary resolution. Similarly, Unitholders would not be able to participate in the nomination, election or removal of directors in the Trustee and may remove the Trustee only if they believe that the acts of the Trustee are detrimental to the interests of the Unitholders and by way of a resolution where the votes cast in favour of the resolution must meet the required percentage as set out in the InvIT Regulations. Further, the Investment Manager and the Trustee cannot be discharged until a suitable replacement is appointed in their place, and there can be no guarantees that a suitable replacement will be appointed, or that appointment will take place in a timely manner, or at all. Accordingly, unlike shareholders removing a director of a private limited company, it may not be possible for Unitholders to remove the Investment Manager or the Trustee.

63. ***Cube Highways Technologies Private Limited and the Project Manager provide services to the Trust on a non-exclusive basis, and their continued availability, prioritization and performance cannot be assured.***

Cube Highways Technologies Private Limited ("**Cube Tech**") and the Project Manager provide technical, traffic, safety and operational advisory support to each Existing Portfolio Assets, including engineering oversight, major-maintenance planning, TMS/ATMS operation and periodic structural assessments, under the expert services agreement. The capabilities, systems and sector expertise of Cube Tech together with the Project Manager's expertise contribute to our asset management framework. However, these services are provided by Cube Tech and the Project Manager on a non-exclusive basis to the Trust, and they may allocate resources to, or provide services for, other entities within the Cube Group or third parties, which may limit the availability of key personnel, delay execution of maintenance or engineering programmes or reduce the level of attention allocated to our assets.

Further, any change in Cube Tech's or the Project Manager's commercial priorities, service models, staffing, technology capabilities, or contractual arrangements may affect the quality or efficiency of support provided to the Trust. Accordingly, if Cube Tech or the Project Manager is unable to meet our requirements or if their services are disrupted, we may be required to appoint alternative service providers, which may not offer comparable expertise or

may involve higher costs. Such developments may adversely affect the maintenance outcomes and technical oversight of our Existing Portfolio Assets, and in turn, will adversely affect our business, results of operations, financial condition and distributions to Unitholders. Pursuant to a resolution dated February 27, 2026, the board of directors of the Investment Manager has approved to replace the existing Project Manager, Cube Highways and Transportation Assets Advisors Private Limited, and appoint Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust, subject to the receipt of necessary approvals, including approval of the National Highways Authority of India and completion of applicable regulatory and contractual formalities. The change in Project Manager will take effect from the date of execution of the New PIMA, subject to the receipt of the above approvals. We cannot assure you that such approvals will be received in a timely manner or at all.

64. ***We depend on the Investment Manager, the Project Manager and the Trustee to manage our business and assets, and our rights and the rights of the Unitholders to recover claims against them are limited.***

The success of our business and growth strategy, and the operational success of our assets, will depend significantly on the managers' satisfactory performance of these services. Our recourse against the Project Manager, the Trustee and Investment Manager is limited.

The aggregate maximum liability of the Project Manager under the Project Implementation and Management Agreement in each financial year is limited to the fees payable to the Project Manager in the immediately preceding financial year in accordance with the terms of the Project Implementation and Management Agreement. As the Project Manager is not a captive company of the Trust and is not bound by an exclusivity arrangement with the Trust, the Project Manager may fail to dedicate appropriate and adequate resources to us/ the Existing Portfolio Assets at all times, which may affect their operations and performance.

Pursuant to the Trust Deed, the Trustee is not liable for anything done or omitted to be done or suffered by the Trustee in good faith and in accordance with, or in pursuance of any request or advice of the Investment Manager. Further, the Trustee and Investment Manager are not liable for any action or omission that results in any depletion in the value of the trust fund and consequent losses of the Unitholder, except in situations where such depletion is a result of the gross negligence or wilful default on the part of the Trustee and/ or Investment Manager, as applicable, or results from a breach by the Trustee of the Trust Deed, as determined by a court of competent jurisdiction. The liability of the Trustee shall be limited to the extent of the fees received by it, in all circumstances whatsoever except (a) in case of any negligence or misconduct or fraud on the part of the Trustee as may be determined by a court of competent jurisdiction, or (b) any failure on the part of the Trustee to protect the interests of the Unitholders.

Under the Investment Management Agreement, the Investment Manager is not liable, among other things, for any action taken or damage suffered by it after exercising due care in accordance with customary industry standards. Further, it shall not incur any liability for any act or omission which may result in a loss to a Unitholder except in the event that such loss is a result of fraud or gross negligence or dishonest acts of commission or omission or wilful default on the part of the Investment Manager, or disregard of duty or breach of duties under the Investment Management Agreement or applicable law. The Investment Management Agreement and the Trust Deed further provide that the Investment Manager is entitled to be indemnified by the Trustee (from the InvIT assets) against any direct and actual claims, actions, losses, damages, liabilities, suits, proceedings and reasonable costs and expenses including legal fees incurred in connection with the Trust, unless arising out of fraud, gross negligence, dishonest acts of commissions or omissions or wilful default on the part of the Investment Manager or disregard of duty or breach of duties under the Investment Management Agreement or the applicable law. The Investment Manager's liability to Trustee, its directors, employees and officers for breach of its obligations under the Investment Management Agreement in each financial year is limited to the aggregate fees paid to the Investment Manager for the immediately preceding financial year under the agreement, except in the event that such liability arises out of any gross negligence, wilful default or misconduct or fraud of the Investment Manager. As a result, the Trust's rights and the rights of the Unitholders to recover claims against the Investment Manager are limited. Furthermore, recourse to the Trustee may be limited under the Trust Deed.

Accordingly, the liability of the Investment Manager and the Trustee is limited under the terms of these agreements and the Unitholders may not be able to recover claims against the Trustee or the Investment Manager, including claims with respect to any Offer Documents relating to the Offer. Further, pursuant to the Trust Deed, the Trustee is not under any obligation to institute, acknowledge the service of, appear in, prosecute or defend any action, suit, proceeding or claim, which in its opinion might involve it in expense or liability unless the Investment Manager shall so request in writing and the Trustee is satisfied that the value of the investment is sufficient to provide adequate indemnity against costs, claims, damages, expenses or demands to which it may be put as Trustee as a result thereof.

If the management agreements were to be terminated or if their terms were to be altered, our business could be adversely affected, as the Trustee may not be able to immediately replace such services, and even if replacement services were immediately available, the terms offered or obtained with the new managers could be less favourable than the ones currently offered by the Investment Manager and the Project Manager.

65. ***Conflicts of interest may arise out of common business objectives shared by the Investment Manager, the Sponsor, the Project Manager, Cube Highways Technologies Private Limited and us.***

We have and will continue to rely on the resources of the Sponsor and the Cube Group, including with respect to infrastructure, technical capabilities and human resources. We may compete with existing and future private and public investment vehicles established and/or managed by the Cube Group, which may present various conflicts of interest. Certain of these divisions and entities have or may have an investment strategy similar to ours and, therefore, may compete with us. Conflicts of interest may arise in allocating or addressing business opportunities and strategies among the Project Manager, Cube Highways Technologies Private Limited, the Cube Group, and us, where our interests differ from theirs. There can be no assurance that there will be no such conflicts of interest, which may adversely affect our business, results of operations, financial condition and cash flows.

In addition, the Trustee and/or Unitholders may not be aware of any such conflict, and even if made so aware, the Trustee and the Unitholders' ability to recover claims against the Investment Manager is limited. Moreover, the Investment Manager's liability is limited under the Investment Management Agreement and the Trustee has agreed to indemnify the Investment Manager out of our assets against certain liabilities. As a result, we could experience poor performance or losses for which the Investment Manager would not be liable. See "*— We depend on the Investment Manager, the Project Manager and the Trustee to manage our business and assets, and our rights and the rights of the Unitholders to recover claims against them are limited*" on page 121.

Other present and future activities of the Cube Group, Cube Highways Technologies Private Limited, the Sponsor, the Investment Manager and the Trustee may also give rise to additional conflicts of interest affecting us and our investment activities. In the event that any such conflict of interest arises, we will attempt to resolve it in a fair and reasonable manner; however, investors should be aware that conflicts will not necessarily be resolved in our favour.

Risks related to India

66. ***We are exposed to risks associated with the road sector in India.***

We expect to continue, in the foreseeable future, to derive almost all of our revenue from operations and profits from the roads sector in India. Changes in macroeconomic conditions generally affect the road industry and could affect our business. Accordingly, our business is highly dependent on the state of the Indian economy and the prevailing macroeconomic environment. The use of our toll roads, our expansion plans and future projects depend on or will depend on macroeconomic factors that may affect the demand for the development of road infrastructure projects in India, or the timely commencement of their operations, which could in turn have an adverse effect on our growth prospects, business and cash flows. In addition, access to financing may be more expensive or not available on acceptable terms during economic downturns. Any of these factors, as well as other factors beyond our control, could have an adverse effect on our business, prospects, financial condition, results of operations, and cash flows.

67. ***Changing laws, rules and regulations and legal uncertainties may adversely affect our business, financial condition and results of operations.***

Our business, financial condition and results of operations could be adversely affected by any change in laws or interpretations of existing laws, or the promulgation of new laws, rules and regulations applicable to us and our business. For instance, the RBI has issued draft amendment directions for instructions on lending to REITs and InvITs, where the existing guidelines in respect of lending to InvITs are proposed to be harmonized for parity with prudential safeguards proposed for lending to REITs. There can be no assurance that, any regulations, guidelines or circulars issued or notified by the RBI in relation lending to InvITs will not cast onerous obligations on our Trust and restrict our ability to avail borrowings from banks and financial institutions on terms favourable to us or at all. There can be no assurance that the central or state governments will not implement new regulations and policies that will require the Trust, the Existing Portfolio Assets, or the Proposed Portfolio Assets to obtain additional approvals and licenses from governmental and other regulatory bodies, or impose onerous requirements and conditions on our operations. The Investment Manager cannot predict the terms of any new policy, nor can it assure you that such a policy will not be onerous.

68. ***Significant increases in the price or shortages in the supply of crude oil and products derived therefrom, including petrol and diesel fuel, could adversely affect the volume of traffic at the projects operated by the Existing Portfolio Assets and the Proposed Portfolio Assets and the Indian economy in general, including the infrastructure sector.***

According to the Industry Report, fluctuations in commodity prices, often driven by international crude oil trends (affecting bitumen) or by supply chain disruptions, directly increase project costs. Crude oil prices are volatile and subject to a number of factors, including global production levels and political factors, such as war and other conflicts, particularly in the Middle East, where a substantial proportion of the world's oil reserves are located. The ongoing Iran conflict, Russia-Ukraine conflict and tariff measures imposed by the United States of America have led to significant increases and volatility in crude oil prices, affecting fuel prices in India. Further increases in the price of or shortages in the supply of crude oil could adversely affect the volume of traffic at the projects operated by the Existing Portfolio Assets and the Proposed Portfolio Assets and adversely affect the Indian economy in general, including the

infrastructure sector, which could have an adverse effect on our business, financial condition and results of operations. These factors may be aggravated by the imposition of trade tariffs by the United States of America on its global trading partners.

69. ***Resolution plans approved under the Insolvency and Bankruptcy Code may be challenged or set aside, creating uncertainty in relation to assets acquired through the insolvency process.***

Our past and future acquisitions may involve assets resolved under the Insolvency and Bankruptcy Code, 2016. Although resolution plans approved by the National Company Law Tribunal ("**NCLT**") and the National Company Law Appellate Tribunal ("**NCLAT**") are intended to be final and binding, such approvals may be challenged before higher judicial forums. In a recent case involving a listed company, a resolution plan approved by the NCLT and NCLAT was temporarily set aside by the Supreme Court before being reinstated, demonstrating that approved plans may still be subject to reversal or modification. For instance, CNTL was acquired through a mechanism adopted for IL&FS entities, and various creditors of the IL&FS group have challenged the resolution framework before the Supreme Court of India. A number of appeals relating to the resolution framework remain pending; however, no adverse orders have been issued to date.

Such judicial uncertainty may affect the stability and enforceability of approved resolution plans and the rights of acquirers under them. If a resolution plan relating to an asset we acquire is challenged, modified, or annulled after approval, we may face delays in implementation, increased costs, or litigation exposure, and our ownership or control of the underlying project may be affected. Any such event could adversely impact our acquisitions, portfolio valuation, business, financial condition, results of operations and our ability to make distributions to Unitholders.

70. ***We may be adversely affected by the adverse application or interpretation of competition laws in India.***

The Competition Act regulates practices having an appreciable adverse effect on competition in the relevant market in India. Under the Competition Act, any formal or informal arrangement, understanding or action in concert, which causes or is likely to cause an appreciable adverse effect on competition, is considered void and results in the imposition of substantial monetary penalties. Further, any agreement among competitors which, directly or indirectly, involves the determination of purchase or sale prices, limits or controls production, supply, markets, technical development, investment or provision of services, shares the market or source of production or provision of services by way of allocation of geographical area, type of goods or services or number of customers in the relevant market or, directly or indirectly, results in bid-rigging or collusive bidding, is presumed to have an appreciable adverse effect on competition. The Competition Act also prohibits any enterprise from abusing a dominant position. The Competition Commission of India ("**CCI**") has extraterritorial powers and can investigate any agreements, abusive conduct, or combinations occurring outside India if such agreements, conduct, or combinations have an appreciable adverse effect on competition in India. Further, future acquisitions by the Trust, including the acquisition of the Proposed Portfolio Assets, may also require approval from CCI if such acquisition is beyond the thresholds permitted for combinations under the Competition Act and its relevant regulations. For details, see "*Regulatory Approvals*" on page 437. There can be no assurance as to the impact of the provisions of the Competition Act on the agreements that the Project SPV(s) have entered into. However, if we are affected, directly or indirectly, by the application or interpretation of any provision of the Competition Act, or any enforcement proceedings initiated by the CCI, or any adverse publicity that may be generated due to scrutiny or prosecution by the CCI, or if any prohibition or substantial penalties are levied under the Competition Act, it could materially and adversely affect our business, prospects, financial condition, results of operations and cash flows.

71. ***Our business is dependent on economic growth in India and financial stability in Indian markets, and any slowdown in the Indian economy or in Indian financial markets could have an adverse effect on our business, results of operations, financial condition and the price of our Units.***

Our Investment Manager and we are registered in India, and the Portfolio Assets and our Investment Manager are located in India. As a result, we are highly dependent on prevailing economic conditions in India and our results of operations are significantly affected by factors that influence the Indian economy. Factors that may adversely affect the Indian economy, and hence our results of operations, may include:

- any increase in interest rates or inflation in India;
- any exchange rate fluctuations;
- any scarcity of credit or other financing in India;
- prevailing income, consumption and savings conditions among consumers and corporations in India;
- the occurrence of future epidemics or pandemics;
- volatility in, and actual or perceived trends in trading activity on, India's principal stock exchanges;

- changes in India's tax, trade, fiscal or monetary policies, which may affect India's foreign exchange reserves;
- civil unrest, riots, protests, acts of violence, terrorist attacks, political instability, terrorism or military conflict in India, including increased tensions on the Indian borders, or in countries in the region or globally, including in India's various neighbouring countries;
- the occurrence of force majeure events under the contractual arrangements of the Existing Portfolio Assets and Proposed Portfolio Assets;
- the occurrence of natural or man-made disasters;
- prevailing regional or global economic conditions;
- balance of trade movements, including export demand and movements in key imports, including oil and oil products;
- annual rainfall, which affects agricultural production; and
- other significant regulatory, policy or economic developments in or affecting India or its infrastructure sector.

Inflation rates in India have been volatile in recent years, and such volatility may continue. High inflation fluctuations may make it more difficult for us to accurately estimate or control our costs. Any increase in inflation in India can increase our expenses, whether entirely or in part, and may adversely affect our business and financial condition. If we are unable to increase our revenue from operations sufficiently to offset our increased costs due to inflation, it could adversely affect our business, prospects, financial condition, results of operations, and cash flows.

Any slowdown or perceived slowdown in the Indian economy, or in specific sectors of the Indian economy, could adversely affect our business, results of operations, financial condition, and the price of our Units.

Furthermore, the Indian economy and Indian financial markets are influenced by economic and market conditions in other countries. We operate in a global trade environment that is susceptible to trade wars and protectionist measures, including tariffs, quotas, and other restrictions on international trade. In particular, any escalation of tariff measures initiated by leading economies such as the United States of America may prompt retaliatory actions by other countries, leading to increased tariffs and heightened trade barriers globally. The global economy has also been negatively affected by the Israel-Hamas and Israel-Iran conflicts and the Russia-Ukraine war. Governments in the United States, the United Kingdom, and the European Union have imposed sanctions on certain products, industries, and parties in Iran and Russia. These conflicts could negatively affect regional and global financial markets and economic conditions, resulting in global economic uncertainty and increased costs for commodities, raw materials, energy, and transportation. Further, China is one of India's major trading partners, and there are growing concerns about a possible slowdown in the Chinese economy, as well as a strained relationship with India, which could adversely affect trade relations between the two countries. A loss of investor confidence in the financial systems of other emerging markets may lead to increased volatility in Indian financial markets and, indirectly, in the Indian economy as a whole. Any significant financial disruption could have an adverse effect on our business, financial condition, cash flows and results of operations.

72. ***Any downgrading of India's debt rating by rating agencies could have a negative effect on our business.***

India's sovereign debt rating could be downgraded due to several factors, including changes in tax or fiscal policy or a decline in India's foreign exchange reserves, all of which are outside our control. Our borrowing costs and our access to the debt capital markets depend on the sovereign credit ratings of India, which are set out below:

Rating Agency	Rating	Outlook
Fitch Ratings	BBB-	Stable
Moody's Ratings	Baa3	Stable
Morningstar DBRS	BBB	Stable
S&P Global Ratings	BBB	Stable

Any adverse revisions to India's credit ratings for domestic and international debt by international rating agencies could adversely affect our ability to raise additional external financing, and the interest rates and other commercial terms at which such additional financing is available. A downgrading of India's credit ratings may occur, for example, upon a change of government tax or fiscal policy, which are outside our control. This could have an adverse effect on our business and future financial performance, our ability to obtain financing for capital expenditures and the trading price of the Units.

73. ***Significant differences exist between Ind AS and other accounting principles, such as IFRS and U.S. GAAP, which may be material to your assessment of our results of operations, financial condition and cash flows.***

The Audited Consolidated Financial Statements included in this Draft Offer Document are prepared and presented in conformity with Ind AS, consistently applied during the periods stated in those reports. Ind AS differs from accounting principles with which persons from other countries may be familiar, such as IFRS and U.S. GAAP. Accordingly, the degree to which the Audited Consolidated Financial Statements included in this Draft Offer Document provide meaningful information is entirely dependent on your level of familiarity with Indian accounting practices. Ind AS differs from IFRS and U.S. GAAP in certain respects. In addition, as the transition to Ind AS is recent, there is no significant body of established practice that we can draw on in forming judgments regarding the implementation and application of Ind AS, as compared to other established principles generally, or in respect of specific industries, such as the industry in which we operate.

74. ***We have in this Draft Offer Document included certain Non-GAAP Measures that may not be comparable with financial or industry-related statistical information of similar nomenclature computed and presented by other infrastructure trusts.***

Certain Non-GAAP Measures and certain other industry measures relating to our operations and financial performance have been included in this Draft Offer Document. We have computed and disclosed such Non-GAAP Measures as we consider such information to be useful measures of the Existing Portfolio Assets' and the Proposed Portfolio Assets' business and financial performance. Such supplemental financial and operational information is therefore of limited utility as an analytical tool, and investors are cautioned against considering such information either in isolation or as a substitute for an analysis of our Audited Consolidated Financial Statements as reported under applicable accounting standards disclosed elsewhere in this Draft Offer Document. These Non-GAAP Measures are not measures of operating performance or liquidity defined by generally accepted accounting principles and, therefore, may not be comparable to financial measures or industry-related statistical information of similar nomenclature computed and presented by other infrastructure trusts.

75. ***Fluctuations in the exchange rate of the Indian Rupee with respect to the U.S. Dollar or other currencies will affect the foreign currency equivalent of the value of the Units and any distributions.***

Fluctuations in exchange rates between the Indian Rupee and other currencies will affect the foreign currency equivalent of the Indian Rupee price of the Units. In particular, the Indian Rupee has declined significantly against the U.S. dollar recently. Such fluctuations will also affect the amount that holders of the Units will receive in foreign currency upon conversion of any cash distributions or other distributions paid in Indian Rupees by us on the Units, and any proceeds from any sale of the Units in the secondary trading market. Further, a decline in India's foreign exchange reserves may reduce liquidity and raise interest rates, which could adversely affect us.

76. ***Unitholders may not be able to enforce a judgment of a foreign court against us.***

The enforcement of civil liabilities by overseas investors in the Units, including the ability to effect service of process and to enforce judgments obtained in courts outside of India, may be adversely affected by the fact that (i) the Trust is constituted under the laws of the Republic of India, (ii) the Investment Manager and the Trustee are limited liability companies incorporated under the laws of the Republic of India, (iii) a majority of the directors and key personnel of the Investment Manager reside in India, and (iv) all of the assets of the Trust, the Existing Portfolio Assets, the Proposed Portfolio Assets and the Investment Manager are located in India. As a result, it may be difficult to serve process upon the Trust, the Investment Manager, the Trustee or any of these persons outside of India or to enforce in India judgments obtained against such persons in courts outside of India.

India is not a party to any international treaty regarding the recognition or enforcement of foreign judgments. Recognition and enforcement of foreign judgments are provided for under Section 13, Section 14 and Section 44A of the Civil Procedure Code, 1908. The central government has, under Section 44A of the Civil Procedure Code, notified certain countries as reciprocating countries. Section 13 of the Civil Procedure Code provides that a foreign judgment will be conclusive regarding any matter directly adjudicated upon, between the same parties or between the parties whom they or any of them claim are litigating under the same title, except: (i) where the judgment has not been pronounced by a court of competent jurisdiction; (ii) where the judgment has not been given on the merits of the case; (iii) where it appears on the face of the proceedings that the judgment is founded on an incorrect view of international law or a refusal to recognise the law of India in cases in which such law is applicable; (iv) where the proceedings in which the judgment was obtained were opposed to natural justice; (v) where the judgment has been obtained by fraud; or (vi) where the judgment sustains a claim founded on a breach of any law in force then in India. Section 44A of the Civil Procedure Code provides that where a foreign judgment has been rendered by a superior court in any country or territory outside India, which the central government has, by notification, declared to be a reciprocating territory, it may be enforced in India by proceedings in execution as if the judgment had been rendered by the relevant court in India. However, Section 44A of the Civil Procedure Code is applicable only to monetary decrees not being in the nature of any amounts payable in respect of taxes or other charges of a similar nature or in respect of a fine or other penalties and does not include arbitration awards.

There may be considerable delays in disposing of suits in Indian courts. It is unlikely that a court in India would award damages on the same basis as a foreign court would if an action is brought in India. Furthermore, it is unlikely that an Indian court would enforce a foreign judgment if it found the damages awarded excessive or inconsistent with India's

public policy. A party seeking to enforce a foreign judgment in India is required to obtain prior approval from the RBI to repatriate any amount recovered pursuant to execution, and any such amount may be subject to income tax in accordance with applicable laws. Any judgment or award in a foreign currency would be converted into Indian Rupees on the date of the judgment or award, rather than on the date of payment, which could be subject to foreign exchange risk. Generally, there are considerable delays in the processing of legal actions to enforce civil liability in India; therefore, it is uncertain whether a suit brought in an Indian court will be disposed of in a timely manner or will be subject to considerable delays.

Furthermore, the Sponsor is incorporated in Singapore and accordingly, the enforcement of civil liabilities by overseas investors in the Units, including the ability to effect service of process and to enforce judgments, against the Sponsor, will be subject to the applicable laws of Singapore.

Risks Related to the Offer and Ownership of the Units

77. ***The Trust may be dissolved, and the proceeds from the dissolution thereof may be less than the amount invested by the Unitholders.***

The Trust is an irrevocable trust registered under the Registration Act, 1908 and it may only be extinguished (i) if it is impossible to continue with the Trust or if the Trustee, on the advice of the Investment Manager, deems it impracticable to continue with the Trust and the Trustee extinguishes the same in terms of the Trust Deed; (ii) on the written recommendation of the Investment Manager and upon obtaining the prior written consent of such number of the Unitholders as is required under the InvIT Regulations; (iii) if the Units of the Trust are delisted from the Stock Exchanges; (iv) if the SEBI passes a direction for the winding up of the Trust or the delisting of the Units; or (v) in the event the Trust becomes illegal. Under the Trust Deed, in the event of dissolution, the net assets of the Trust, remaining after settlement of all liabilities, and the retention of any reserves which the Trustee deems to be necessary to discharge contingent or unforeseen liabilities, shall be paid to the Unitholders. Should the Trust be dissolved, depending on the circumstances and the terms upon which assets of the Trust are disposed of, there is no assurance that a Unitholder will recover all or any part of their investment. There is no assurance that Unitholders will recover all or any part of their investments.

78. ***Any additional debt financing or issuance of additional Units may have an adverse effect on the Trust's distributions and future issuances of Units or sales of Units by the Sponsor or other significant Unitholders may adversely affect the trading price of the Units.***

The Investment Manager, on behalf of the Trust, may require additional debt financing or the issuance of additional Units in order to support the operating business or to make acquisitions and investments. If obtained, any such additional debt financing may decrease distributable income, and any issuance of additional Units may dilute existing Unitholders' entitlement to distributions and their unitholding.

Any future issuance of Units by the Trust could dilute investors' holdings. Any such future issuance of Units may also adversely affect the trading price of the Units, and could affect our ability to raise capital through an offering of our securities. There can be no assurance that the Investment Manager, on behalf of the Trust, will not issue further Units. In addition, any perception by investors that such issuances might occur could also affect the trading price of the Units.

The Units are tradable on the Stock Exchanges. If the Sponsor, directly or indirectly, sells or pledges or encumbers or otherwise disposes or is perceived as intending to sell or pledge or encumber or otherwise dispose a substantial number of Units, or if a secondary offering of the Units is undertaken, the market price for the Units could be adversely affected. These sales may also make it more difficult for us to raise capital by issuing new units at a time and at a price we deem appropriate. We are not required to offer pre-emptive rights to existing Unitholders when issuing new Units. Compliance with securities laws or other regulatory provisions in some jurisdictions may prevent certain investors from participating in future issuances and thereby result in dilution of their existing holdings in Units.

79. ***Unitholders are unable to require the redemption of their Units. Further, under Indian law, foreign investors are subject to restrictions that limit their ability to transfer or redeem Units, which may adversely affect the value of the Units.***

Unitholders will not have the right to redeem Units or request or require the redemption of Units by the Investment Manager while the Units are listed on the Stock Exchanges. Under foreign exchange regulations currently in force in India, transfers of units between non-residents and residents are permitted, subject to certain exceptions and if they comply with the pricing and reporting requirements specified by the RBI. If a transfer of units is not compliant with such pricing or reporting requirements and does not fall under any of the exceptions specified by RBI, then RBI's prior approval is required. Additionally, Unitholders who seek to convert Indian rupee proceeds from a sale of units in India into foreign currency and repatriate that foreign currency from India require a no-objection or a tax clearance certificate from the Indian income tax authorities. There can be no assurance that any required approval from the RBI or any other Governmental agency can be obtained on any particular terms or in a timely manner, or at all.

80. ***An active or liquid market for the Units may not develop or be sustained.***

While the Units of the Trust are currently privately listed on the Stock Exchanges, an active market for the Units may not develop or be sustained after the Listing Date pursuant to the Offer. Listing and quotation do not guarantee that a trading market for the Units will develop or, if a market does develop, that there will be liquidity in that market for the Units.

81. ***The price of the Units may decline after the Offer.***

The Offer Price will be determined by the Investment Manager in consultation with the Book Running Lead Managers, in accordance with the Book Building Process. The Offer Price may not be indicative of the market price of the Units upon completion of the Offer. The market price of the Units may also be highly volatile and could be subject to wide fluctuations. If the market price of the Units declines significantly, investors may be unable to resell their Units at or above their purchase price, if at all. There can be no assurance that the market price of the Units will not fluctuate or decline significantly in the future. The market price of the Units will depend on many factors, including, among others:

- the perceived prospects of our business and investments and the market for toll roads and other infrastructure projects;
- differences between our actual financial and operating results and those expected by investors and analysts;
- the perceived prospects of future toll roads and other infrastructure projects that may be added to our portfolio in accordance with our investment mandate;
- changes in research analysts' recommendations or projections;
- changes in general economic or market conditions;
- the market value of our assets;
- the perceived attractiveness of the Units against those of other business trusts, equity or debt securities;
- the balance of buyers and sellers of the Units;
- the size and liquidity of the Indian business trusts market;
- any changes to the regulatory system, including the tax system, both generally and specifically in relation to India business trusts;
- the ability of the Investment Manager to implement successfully its investment and growth strategies;
- foreign exchange rates;
- broad market fluctuations, including increases in interest rates and weakness of the equity and debt markets;
- variations in our quarterly operating results;
- difficulty in assessing our performance against either domestic or international benchmarks, as there are few listed comparables;
- publication of research reports about us, our affiliates, other road businesses, the road industry in general or other relevant sectors, or the failure of securities analysts to cover the Units after the Offer;
- additions or departures of key management personnel of the Investment Manager and/or the Trust Group;
- changes in the amounts of our distributions, if any, and changes in the distribution payment policy or failure to execute the existing distribution policy;
- actions by Unitholders;
- changes in market valuations of similar business entities or companies;
- announcements by us or our competitors of significant contracts, acquisitions, disposals, strategic partnerships, joint ventures or capital commitments;
- speculation in the press or investment community; and
- changes or proposed changes in laws or regulations affecting the road industry and infrastructure development in India or enforcement of these laws and regulations, or announcements relating to these matters.

To the extent that we retain operating cash flow for investment purposes, working capital reserves or other purposes, these retained funds, while increasing the value of our underlying assets, may not correspondingly increase the market price of the Units. Our failure to meet market expectations with regard to future earnings and cash distributions may adversely affect the market price of the Units.

Where new Units are issued at less than the market price of the Units, the value of an investment in the Units may be affected. In addition, Unitholders who do not, or are not able to, participate in the new issuance of Units may experience a dilution of their interest in the Trust. In addition, the Units are not capital-safe products and there is no guarantee that Unitholders can regain the amount invested, in full or in part. If the Trust is extinguished, it is possible that investors may lose part or all of their investment in the Units.

82. ***Investors will not be permitted to withdraw or lower their Bids (in terms of quantity of Units or the Bid Amount) at any stage after submitting a Bid.***

Pursuant to the InvIT Regulations and the InvIT Master Circular, investors are required to pay the Bid Amount on submission of the Bid, and are not permitted to withdraw or lower their Bids (in terms of quantity of Units or the Bid Amount) at any stage after submitting a Bid, notwithstanding adverse developments in international or national monetary policy, financial, political or economic conditions, our business, results of operations, or otherwise, at any stage after the submission of their Bids. Also see "*Offer Information - Offer Procedure*" on page 467.

83. ***The Trust will not receive any proceeds from the Offer for Sale portion, and the Selling Unitholders shall be entitled to the Offer proceeds to the extent of the Units offered by them in the Offer for Sale.***

The Offer comprises an offer for sale of up to [●] Units aggregating up to ₹50,000 million by the Selling Unitholders. The Selling Unitholders are, therefore, interested in the Offer proceeds to the extent of the Units offered by each of them in the Offer for Sale. The entire proceeds (net of their relevant portion of the Offer expenses) from the Offer will be paid to the Selling Unitholders in proportion to their respective portions of the Units transferred pursuant to the Offer for Sale, and the Trust will not receive any such proceeds. Accordingly, we will not receive any proceeds from the Offer for Sale to fund our operations, capital expenditure, acquisitions or debt repayment. For details, see "*Use of Proceeds*" on page 362.

Risks Related to Tax

84. ***Changes in legislation or the rules relating to tax regimes could adversely affect our business, prospects and results of operations.***

Tax and other levies imposed by the Government and state governments may include: (i) income tax (including withholding tax and tax collection at source); (ii) goods and services tax; (iii) stamp duty; and (iv) other special taxes and surcharges that are introduced on a temporary or permanent basis from time to time. In some cases, these taxes and other levies may be changed from year to year and the Indian courts which interpret tax legislation may apply such interpretations with retroactive effect. Also, the Government in certain situations has the authority to change tax laws retrospectively.

The Finance Act, 2023, provides that unitholders shall be taxed on that portion of distributions which is not covered under section 10(23FC) or 10(23FCA) of the ITA and that which is not chargeable to tax under section 115UA(2) of the ITA. Any such distribution shall be taxed under the head "income from other sources" in the hands of the unitholders as 'income' under section 56(2)(xii) of the ITA, provided the amount received (including similar distributions in earlier years to the same unitholder or any other unitholder who held such unit(s) previously) is in excess of the amount at which units were issued by the InvIT, as reduced by the amount which would have been charged to tax under this provision in the earlier year. The aforementioned amounts received by a unitholder being a specified person covered under section 10(23FE) of the ITA shall not be subject to taxes upon the fulfilment of certain conditions set out in the ITA. Further, any such distribution received by a unitholder, to the extent not chargeable to tax under section 56(2)(xii) and 115UA(2) and not covered under sections 10(23FC) or 10(23FCA) shall be reduced from the cost of units. We cannot assure you that there will be no adverse impact on the tax incidence to the unitholders pursuant to the Finance Act 2023.

Furthermore, pursuant to the Finance Act, 2024, the capital gains tax regime was amended, and the definitions of long-term capital assets, short term capital assets and their applicable tax rates were changed. The Finance Act, 2025, also introduced an amendment to section 115UA of the IT Act to provide that capital gains income, chargeable undersection 112A of the IT Act will be taxed under the rates specified in section 112A of the IT Act, rather than the maximum marginal rate. India's Union Budget for Fiscal 2025 ("**Budget**") has amended the capital gains tax rates and amounts mentioned above, with effect from the date of announcement of the Budget.

A new Income Tax Act, 2025, has also been passed by the Indian Parliament to replace the Income Tax Act, 1961, which will be effective from April 1, 2026, with the aim of consolidating and amending the law relating to income tax. The Government of India announced the Union Budget for the Financial Year 2027, following which the Finance Bill,

2026 ("**Finance Bill**") was introduced in the Lok Sabha on February 1, 2026. The Finance Bill will be enacted once it is passed by the Indian Parliament and receives the President's assent.

The investors are advised to consult their own tax advisors to understand their tax liability as per the laws prevailing on the date of disposal of the Units. Investors are advised to consult their own tax advisors and to carefully consider the potential tax consequences of owning, investing or trading in our Units. Unfavourable changes in or interpretations of existing laws, or the promulgation of new laws, rules and regulations, governing our business and operations could result in us being deemed to be in contravention of such laws requiring us to apply for additional approvals.

There have been two major reforms to Indian tax laws: the introduction of the Goods and Services Tax ("**GST**") and the introduction of general anti-avoidance rules. The GST regime came into effect on July 1, 2017, combining taxes and levies by the Government and State Governments into a unified rate structure (current slabs predominantly at 5% and 18%).

Additionally, there is limited clarity regarding the availability of input tax credit, and any unfavourable orders in this regard may adversely affect our financial position and cash flows. Further, any application of existing law or future amendments may affect our overall tax efficiency and may result in significant additional taxes becoming payable.

The GAAR regime came into effect on April 1, 2017. The GAAR regime is a broad set of provisions that grant Indian tax authorities the power to invalidate any arrangement for tax purposes if the main purpose of the taxpayer in entering into the transaction is to obtain a tax benefit. Besides the "tax benefit", the transaction should meet any one of the following specified additional tests: (i) creates rights, or obligations, which are not ordinarily created between persons dealing at arm's length; (ii) results, directly or indirectly, in the misuse, or abuse, of the provisions of the IT Act; (iii) lacks commercial substance or is deemed to lack commercial substance as prescribed under the IT Act in whole or in part; and (iv) is entered into, or carried out, by means which are, or in a manner which is, not ordinarily employed for bona fide purposes.

Such transactions are declared as impermissible avoidance arrangements, and the consequence in relation to tax arising from such arrangements, including denial of a tax benefit or a benefit under a tax treaty, shall be determined according to the circumstances of the case.

The rules notified under GAAR provide that they shall not apply to FIIs in accordance with the SEBI (Foreign Institutional Investors) Regulations, 1995, subject to the fulfilment of certain conditions. GAAR may have an adverse tax effect on the Trust, the Sponsor and the Unitholders.

In respect of non-resident unitholders, the tax rates and the consequent taxation mentioned under Statement of Tax Benefits shall be further subject to any benefits available under the applicable DTAA, if any, between India and the country in which the non-resident has fiscal domicile. Further, it is pertinent to meet the terms and conditions viz. Principal purpose test, beneficial ownership test, etc., as enacted in DTAAs entered into by India with various countries based on the Multilateral Convention to implement tax treaty-related measures to prevent Base Erosion and Profit Shifting ('MLI').

In addition, transactions between the Trust, its Project SPVs, the Sponsor, the Investment Manager, the Project Manager and their respective affiliates may be subject to transfer pricing regulations, withholding tax requirements and GAAR under the Income-tax Act, 1961. If the relevant tax authorities determine that such transactions or arrangements do not comply with applicable tax laws or arm's length principles, additional tax liabilities, interest or penalties may arise.

Further, pursuant to amendments introduced by the Finance Act, 2022, the applicability of section 94(7) of the IT Act has been extended to the units of business trust (with effect from Financial Year 2022-23), which provides that where:

- any person buys or acquires any securities or units within a period of three months prior to the record date (a date fixed for the purposes of entitlement of the holder of the securities or units, as the case may be, to receive dividends, income, or additional securities or units without any consideration, as the case may be);

- such person sells or transfers such securities within three months after such record date or such units within a period of nine months after such record date; and

- the dividend or income on such securities or unit received or receivable by such person is exempt, then, the loss, if any, arising from the sale and purchase of securities and units to the extent of dividend or income received or receivable on such securities or unit, shall be ignored for computing income chargeable to tax.

The Finance Act, 2022, extended the applicability of section 94(8) of the IT Act (commonly known as bonus stripping) to the units of business trusts (with effect from Financial Year 2022-23), which provides that where:

- Any person buys or acquires any units within a period of three months prior to the record date;

- Such a person is allotted additional units without any payment on the basis of holding such units on such record date;

- Such a person sells or transfers all or any of the units within a period of nine months after the record date,

- while continuing to hold all or any of the additional units referred in clause (ii) above, then, the loss, if any, arising from the sale and purchase of all or any of the units shall be ignored for computing income chargeable to tax and notwithstanding anything contained in any other provision of the ITA, the amount of loss so ignored shall be deemed to be the cost of purchase or acquisition of such additional units referred to in clause (ii) above as are held on the date of such sale or transfer.

The Investment Manager has not determined the impact of such existing or proposed legislation on our business. Uncertainty in the applicability, interpretation or implementation of any amendment to, or change in, governing law, regulation or policy, including by reason of an absence, or a limited body, of administrative or judicial precedent may be time consuming as well as costly for us to resolve, and may impact the viability of our current business or restrict our ability to grow our business in the future.

We may incur increased costs related to compliance with new requirements, which may also require management time and other resources, and any failure to comply may adversely affect our business, results of operations, and prospects.

We intend to take measures to ensure compliance with all relevant tax laws. However, the tax authorities might take a position that differs from ours regarding the tax treatment of various items.

85. ***Some of our road assets enjoy certain benefits under Section 80-IA of the IT Act, and any change in these tax benefits applicable to us may adversely affect our results of operations.***

Currently, surface transport infrastructure development projects, including toll-road concession projects, enjoy certain benefits under Section 80-IA of the IT Act. In accordance with and subject to the condition specified in this section, the Existing Portfolio Assets or Proposed Portfolio Assets (wherein operations have been commenced up to March 31, 2017) are entitled to certain benefits for all of the operational infrastructure projects and would be entitled to a deduction of 100% of the profits derived from the development or operation and maintenance or development, operation and maintenance of the toll roads for any 10 consecutive tax assessment years out of 20 years, beginning from the year in which the concerned Existing Portfolio Asset develops and begins to operate the infrastructure facility. Any other taxable income (for example, interest income, profit on sale of mutual funds) from deployment of temporary funds or otherwise could also be taxable under the terms of the IT Act. The incentives under Section 80-IA of the IT Act are available for 10 consecutive tax years out of a block of 20 years from the year of commencement of operations. Any Existing or Proposed Portfolio Asset will only be subject to minimum alternate tax ("**MAT**") if the concerned Existing or Proposed Portfolio Asset has a book profit as required to be computed under section 115JB of the IT Act. When tax incentives expire or are terminated, our tax liability may increase, thereby affecting our profitability. Further, the Indian tax authorities may disallow the deduction if the conditions specified are not complied with, the computation of the profits and gains of the eligible business is not in accordance with the prescribed manner, or there is no assurance that such projects will continue to enjoy the tax benefits. This may affect the overall tax liabilities of the Existing Portfolio Assets or Proposed Portfolio Assets and result in significant additional taxes becoming payable, thereby adversely affecting our business, financial condition, cash flows, and results of operations, and consequently may have an adverse effect on our distributions.

Benefits under section 80-IA of the IT Act shall not be available to Existing Portfolio Assets or Proposed Portfolio Assets in case they have opted to pay corporate tax under the beneficial regime introduced under Section 115BAA of the IT Act. Further, in such a case, provisions of MAT shall not be applicable.

86. ***Tax laws are subject to changes and differing interpretations, which may adversely affect our operations.***

The current tax laws and regulations in India provide certain exemptions for interest/dividend income earned by business trusts from a special purpose vehicle, as a result of which the InvIT and, subsequently, the Unitholders would be subject to relatively lower tax liabilities. These exemptions could be modified or removed at any time or clarified in a manner adverse to Unitholders, which could adversely affect our profitability and the amount available for distribution to Unitholders.

Tax laws and regulations are subject to differing interpretations by tax authorities. Differing interpretations of tax and other fiscal laws and regulations may exist within governmental ministries, including tax administrations and appellate authorities, creating uncertainty and potentially unexpected outcomes. The degree of uncertainty in tax laws and regulations, combined with significant penalties for default and a risk of aggressive action by the governmental or tax authorities, may result in tax risks in the jurisdictions in which we operate being significantly higher than expected. Any of the above events may result in a material, adverse effect on our business, financial condition, results of operations and/or prospects and our ability to make distributions to the Unitholders. Tax authorities in India may also introduce new or additional regulations applicable to our business, which could adversely affect our operations and profitability.

While the Investment Manager intends to take measures to ensure compliance with all relevant tax laws, there is no assurance that the tax authorities will not take a position that differs from ours regarding the tax treatment of various items. Any of the above events may result in an adverse effect on our business, financial condition, results of operations and/or prospects and our ability to make distributions to the Unitholders.

87. ***Impact of Income Tax Act, 2025, the provisions of which may have an unfavourable implication for us.***

The Parliament has enacted the Income Tax Act, 2025 (pursuant to the Income Tax Bill, 2025) with Presidential assent, and the Act is scheduled to be effective from 1 April 2026, replacing the existing Income Tax Act, 1961. The stated objective of the new legislation is to simplify tax laws, reduce litigation, and eliminate redundant provisions under the current regime.

While the new Income Tax Act, 2025, broadly aligns with the existing Act on key policy matters, its simplification and rationalization measures may introduce changes that could materially alter the Indian tax landscape. These changes may have adverse implications for us and for the unitholders, including potential impact on distributions, withholding tax obligations, and overall tax efficiency.

It is important to note that although the Income Tax Act, 2025 has been passed, the detailed rules and notifications required to implement its provisions have not yet been issued. Consequently, the practical application of the new law remains uncertain, and the full impact on InvITs and their investors cannot be assessed at this stage.

Unitholders are strongly advised to consult their tax advisors to understand the potential implications of the Income Tax Act, 2025, on their investment in the InvIT.

88. ***Investors may be subject to Indian taxes arising out of capital gains on the sale of Units, on any dividend or interest component of any returns from the Units or on certain distributions from the Trust.***

Under current Indian income tax laws, units of a business trust held for more than 12 months are considered long-term capital assets. In case of sale of such units through a recognised stock exchange in India and payment of securities transaction tax ("**STT**"), any gain arising in excess of ₹ 0.125 million is subject to long-term capital gains tax at a concessional rate of 12.5% (plus applicable surcharge and cess). However, if the said units are sold in any other manner, the same shall be subject to long-term capital gains tax at the rate of 12.5% without considering the indexation benefit and the threshold of ₹ 0.125 million (plus applicable surcharge and cess).

If the units are held for up to 12 months, they shall be treated as short-term capital assets. Any gain arising in case of sale of such units through a recognised stock exchange in India and subject to payment of STT, is subject to short-term capital gains tax at a concessional rate of 20% (plus applicable surcharge and cess). However, the condition for chargeability to STT shall not apply to a transaction undertaken on a recognised stock exchange located in any International Financial Services Centre, where, under applicable law, the consideration for such transaction is paid or payable in foreign currency. Further, if the said units are sold in any other manner, the same shall be subject to short-term capital gains tax at applicable tax rates of the holder (plus applicable surcharge and cess). Furthermore, in pursuance of the Finance Act, 2023, gains shall be computed by a unitholder after reducing from its cost of acquisition any amount distributed by us which is not in the nature of dividends, interest or any other income.

The aforesaid taxability in India is subject to tax treaty benefits in the case of a non-resident holder. Further, the applicable taxes on the sale of Units and on any dividend or interest component of returns from the Units will depend on the category of investor holding or selling the Units.

The Finance Act, 2020, amended the IT Act to abolish the dividend distribution tax regime and shift the incidence of taxation of dividends (declared or distributed on or after April 1, 2020) to shareholder. Under the Finance Act, 2020, a distribution made by a business trust, being in the nature of dividend income received from a special purpose vehicle, will not be subject to tax in the hands of a unitholder, so long as the special purpose vehicle has not opted to pay corporate tax under the beneficial regime introduced under Section 115BAA of the IT Act.

Similarly, a business trust (which includes an infrastructure investment trust) will not be required to withhold tax on any distributions which are in the nature of dividend income received from a special purpose vehicle, so long as such special purpose vehicle has not opted to pay corporate tax under the beneficial regime introduced under Section 115BAA of the IT Act. However, where the special purpose vehicle opts to pay tax under Section 115BAA of the IT Act, dividend income distributed by the business trust would be taxed in the hands of a non-resident unitholder at 20% (plus applicable surcharge and cess) or the applicable treaty rate and at the applicable tax rates for a resident unitholder. Further, the business trust would be required to withhold tax on such distributions made from dividends received from the special purpose vehicle. Thus, the taxability of dividends distributed by the Trust will depend on the taxation regime opted for by the Existing and Proposed Portfolio Assets.

It may also be noted that in terms of Section 194LBA (1) of the IT Act, any distributable income in the nature of interest income and dividend income (where the Existing Portfolio Asset has opted to pay corporate tax under the beneficial regime introduced under Section 115BAA of the IT Act) in the hands of a resident investor is subject to

deduction of tax at the rate of 10%. Similarly, in terms of Section 194LBA (2) of the IT Act, any distributable income in the nature of interest income and dividend income (where the SPV has opted to pay corporate tax under the beneficial regime introduced under Section 115BAA of the IT Act) in the hands of a non-resident is subject to deduction of tax at the rate of 5% (plus applicable surcharge and cess) and 10% (plus applicable surcharge and cess) respectively. The ultimate tax liability in the hands of the Unitholder may depend on various factors/ considerations.

The Finance Act, 2023, provides for tax on the unitholders for such portion of the distribution received by them that is not covered under section 10(23FC) or 10(23FCA) of the ITA and that which is not chargeable to tax under section 115UA(2) of the ITA. Any distribution not covered under the aforementioned clauses shall be taxed under the head "income from other sources" in the hands of the unitholders as 'income' under section 56(2)(xii) of the ITA, provided the amount received (including similar distributions in earlier years to the same unitholder or any other unitholder who held such unit(s) previously) is in excess of the amount at which units were issued by the InvIT, as reduced by the amount which would have been charged to tax under this provision in the earlier year. The aforementioned amounts received by a unitholder, being a specified person covered under section 10(23FE) of the ITA, shall not be subject to taxes upon the fulfilment of certain conditions set out in the ITA. Further, any such distribution received by a unitholder to the extent not chargeable to tax under section 56(2)(xii) and 115UA(2) and not covered under sections 10(23FC or 10(23FCA) shall be reduced from the cost of units. We cannot assure you that there will be no adverse impact on the tax incidence on unitholders under the Finance Act 2023.

Further, the treatment of buy-back proceeds has undergone significant changes due to amendments to the tax laws, specifically under Section 2(22)(f) of the Income Tax Act, introduced by the Finance (No. 2) Act, 2024. These changes have reclassified certain buy-back proceeds as dividends, potentially affecting investors' tax implications. The reclassification could result in a higher tax liability for investors who receive buy-back proceeds, as they may now be subject to dividend taxation. Investors should be aware that future legislative amendments or changes in tax interpretation could further affect the tax treatment of buy-back proceeds in the hands of InvIT and its investors. Such changes could impact the after-tax returns of InvIT and/or its investors and may influence investment decisions. It is important for investors to consult with their tax advisors to understand the specific implications of these changes on their individual tax positions.

Furthermore, the Trust might not be able to pay or maintain distributions at current levels, ensure that distributions increase over time, or ensure that future acquisitions increase the Trust's distributable free cash flow to Unitholders. Any reduction in, or elimination or taxation of, payments of distributions could materially and adversely affect the market price of the Units.

89. ***The Trust and the Existing Portfolio Assets may be subject to certain tax-related risks under the provisions of the Income Tax Act, 1961.***

Shortfall in the determination of fair market value of the equity shares at the time of transfer of the Existing Portfolio Assets to the Trust may be subject to taxation in the hands of the acquirer. The equity shares of the Existing Portfolio Assets have been transferred to the Trust. Under the provisions of section 56(2)(x) of the IT Act, where a purchase of shares is undertaken at a value which is lower than the fair market value of the shares, such shortfall in value is subject to be taxed as income from other sources in the hands of the acquirer. The manner of determining fair market value under the Income Tax Rules, 1962, includes the net asset method, subject to the prescribed adjustments.

The Trust is under an obligation to distribute to the Unitholders the surplus of the income earned from receipt of cash flows from the interest and dividend received from the Existing Portfolio Assets, after the deduction of the various expenses incurred in connection with earning such income and general-purpose expenses. The provisions of the IT Act provide that the Trust should disclose the nature of the amount distributed to the Unitholders, i.e., whether from dividends received from the Existing Portfolio Assets, interest income earned, etc. However, there is a lack of clarity on the method to be adopted by the Trust for allocating the various expenses incurred in earning each specific stream of income.

90. ***Depreciation claimed with respect to toll collection rights acquired by Portfolio Assets.***

Considering the diverse judicial precedents and the surrounding controversy as to whether the expenditure incurred on development and construction of infrastructural facilities like roads/ highways on BOT basis with right to collect toll is entitled for depreciation under section 32(1)(ii) of the Act or the same can be amortized by treating it as an allowable expenditure under the relevant provisions of the Act, the CBDT issued the Circular to clarify its position for tax treatment under BOT arrangements (where ownership is not vested with the taxpayer).

Circular No. 9/2014 dated April 23, 2014 issued by the CBDT clarifies that the cost of construction of infrastructure facilities (roads/highways) under BOT projects may be amortised evenly over the concessionaire period (excluding the time taken to create such facilities).

Further, the Circular explicitly clarifies that its applicability is restricted to BOT arrangements in which ownership is not vested in the taxpayer. Further, with respect to BOT projects, courts have held divergent views on the treatment of construction costs incurred by Portfolio Assets. Thus, the position remains uncertain and subject to interpretation, and

tax authorities may adopt a contrary view. Any adverse interpretation could impact the tax treatment of project costs and affect profitability.

Under the Hybrid Annuity Model (HAM), the Project SPV(s) undertakes the construction and development of the infrastructure facility and receives a portion of the project cost during the construction phase, with the balance paid as an annuity during the operational period. Currently, there is no specific guidance from the tax authorities on the treatment of expenditure incurred under HAM projects.

Given the similarities between BOT and HAM, it is arguable that a similar amortization approach could apply to HAM projects. Alternatively, there is a view that the expenditure incurred by the SPV under HAM may qualify as an intangible asset (business or commercial rights) eligible for depreciation under Section 32(1)(ii) of the Income Tax Act.

Similarly, under TOT projects, the concessionaire does not undertake construction; it only collects tolls and operates and maintains the highway/road. We believe that the upfront concessional payment made by the SPV, corresponding to the acquisition of the toll right, may be considered akin to the acquisition of business or commercial rights, and that the SPV is likely to be eligible to claim depreciation under Section 32, under the head intangible asset.

However, tax authorities may interpret the above differently, which may adversely affect our business and profitability.

91. ***The income of the Trust in relation to which pass-through status is not granted under the IT Act may be chargeable to Indian taxes.***

Under the provisions of the IT Act, the total income of the Trust other than capital gains, interest and dividend income from the Existing Portfolio Assets would be taxable at the maximum marginal rate ("**MMR**"). MMR is defined under the IT Act to mean the rate of income-tax (including surcharge on income-tax, if any) applicable to the highest slab of income.

In accordance with Section 115UA of the IT Act, the MMR applicable to the Trust, a separately assessable resident entity, is 30.00% (plus applicable surcharge and cess). However, the tax authorities may view the Trust as a "pass-through" entity, and the applicable tax rate will be the MMR applicable to its beneficiaries. If any beneficiary is chargeable to MMR at a rate higher than the rate applicable to other beneficiaries, the income of the Trust attributable to the share of such beneficiary will be taxed at a higher applicable rate. For example, if any Unitholder is a foreign company, the MMR of 35.00% (plus applicable surcharge and cess) would apply. Given divergent views, the matter may be litigated if the tax authorities adopt the latter view.

The above statements are based on current tax laws and are subject to change due to new or amended laws.

GENERAL INFORMATION

The Trust

The Trust was settled on December 7, 2021, by Cube Highways and Transportation Assets Advisors Private Limited (acting as the settlor) on the instructions of the erstwhile sponsors as a contributory irrevocable trust under the provisions of the Indian Trusts Act, 1882. The Trust was registered as an infrastructure investment trust under the InvIT Regulations on April 5, 2022, having registration number IN/InvIT/22-23/0022. Further, the units of the Trust were privately listed on the Stock Exchanges since April 19, 2023. For information on the background of the Trust and the details of the Portfolio Assets, please see the sections entitled "*Overview of the Trust*" and "*Description of Portfolio Assets*" on pages 36 and 40, respectively.

Compliance Officer of the Trust

The compliance officer of the Trust is Richa Gupta Rohatgi. Her contact details are as follows:

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Bidders can contact the Compliance Officer, Registrar or the Book Running Lead Managers in case of any pre-Offer or post-Offer related problems, such as non-receipt of Allotment Advice/letter of Allotment, non-credit of Allotted Units in the respective beneficiary account of Bidders after Allocation or non-receipt of refund orders.

The Sponsor

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E-mail: cubehighways.invit@hdfcbank.com
Investor Grievance ID: Investor.redressal@hdfcbank.com
Website: www.hdfcbank.com
Contact Person: Gaurav Khandelwal/ Souradeep Ghosh
SEBI Registration Number: INM000011252

HSBC Securities and Capital Markets (India) Private Limited
52/60, Mahatma Gandhi Road
Fort, Mumbai 400 001
Maharashtra, India
Tel: +91 22 6864 1289
E-mail: chtinvit@hsbc.co.in
Investor Grievance ID: investorgrievance@hsbc.co.in
Website: www.business.hsbc.co.in
Contact Person: Harsh Thakkar / Harshit Tayal
SEBI Registration No.: INM000010353

JM Financial Limited
7th Floor, Cnergy,
Appasaheb Marathe Marg
Prabhadevi, Mumbai – 400 025
Maharashtra, India
Tel: +91 22 6630 3030
E-mail: cubehighways.invit@jmfl.com
Investor Grievance E-mail: grievance.ibd@jmfl.com
Website: www.jmfl.com

Contact person: Prachee Dhuri
SEBI Registration No.: INM000010361

Escrow Collection Bank

[●]

Public Offer Account Bank

[●]

Sponsor Bank

[●]

Refund Bank

[●]

Legal Counsel to the Trust, and the IM as to Indian law

Cyril Amarchand Mangaldas
6th Floor, Peninsula Chambers
Peninsula Corporate Park
Ganpatrao Kadam Marg
Lower Parel
Mumbai 400 013
Maharashtra, India
Tel: +91 22 2496 4455

Legal Counsel to the Book Running Lead Managers as to Indian law

AZB & Partners
AZB House, Peninsula Corporate Park
Ganpatrao Kadam Marg, Lower Parel
Mumbai – 400 013
Maharashtra, India
Tel: +91 22 4072 9999

International Legal Counsel to the Book Running Lead Managers

Sidley Austin Singapore Pte. Ltd.
Level 31, Six Battery Road
Singapore 049909
Tel: +65 62303900

Legal Counsel to the Sponsor, Sponsor Group (including the Sponsor Group Selling Unitholders) and Seventy Second Investment Company LLC (a Selling Unitholder) as to Indian law

Shardul Amarchand Mangaldas & Co
24th Floor, Express Towers
Nariman Point
Mumbai, 400 021
Maharashtra, India
Tel.: +91 22 4933 5555

Registrar to the Offer

KFin Technologies Limited
Selenium, Tower B
Plot No- 31 & 32, Financial District
Nanakramguda, Serilingampally
Hyderabad, Rangareddi 500 032
Telangana, India
Tel.: +91 40 6716 2222/ 1800 309 4001
E-mail: cube.invit@kfintech.com
Investor Grievance E-mail: einward.ris@kfintech.com
Website: www.kfintech.com

Contact Person: M. Murali Krishna
SEBI Registration No.: INR000000221

Syndicate Member:

[●]

Inter-se allocation of responsibilities

Sr. No.	Activity	Responsibility	Co-ordination
1.	Due diligence of the InvIT's operations/management/ business plans/legal, etc., Sponsor's / Investment Manager's / Project Manager's experience, the proposed and future assets arrangements, any other related party transactions (including any name licensing or other arrangements), drafting and design of offer documents and of statutory advertisement including memorandum containing salient features of the Offer documents. The Book Running Lead Managers shall ensure compliance with stipulated requirements and completion of prescribed formalities with the Stock Exchanges and the SEBI.	Book Running Lead Managers	Kotak
2.	Capital structuring with the relative components and formalities such as type of instruments, size of issue, allocation between primary and secondary, etc.	Book Running Lead Managers	Kotak
3.	Assist the InvIT in the process of conversion from a privately listed infrastructure trust to a publicly listed infrastructure trust	Book Running Lead Managers	Kotak
4.	Drafting and approval of all publicity material other than statutory advertisement as mentioned above including corporate advertisement, brochure, etc.	Book Running Lead Managers	JM Financial
5.	Appointment of rating agencies, registrar to the Offer, printers, advertising agency, bankers to the Offer and other intermediaries (including coordinating all agreements to be entered with such parties).	Book Running Lead Managers	JM Financial
6.	Finalising road show marketing presentation, FAQs	Book Running Lead Managers	HSBC
7.	International institutional marketing of the Offer which will cover, inter alia: • Formulating overall international institutional marketing strategy; • Finalising the list and division of international investors for one-on-one meetings; and • Finalizing international roadshow schedule and investor meeting schedules	Book Running Lead Managers	HSBC
8.	Domestic institutional marketing of the Offer which will cover, inter alia: • Formulating overall domestic institutional marketing strategy; • Finalising the list and division of domestic investors for one-on-one meetings; and • Finalizing domestic roadshow schedule and investor meeting schedules	Book Running Lead Managers	Kotak
9.	Non-institutional marketing of the Offer which will cover, inter alia: • Formulating marketing strategies, preparation of publicity budget, finalizing media, marketing and public relations strategy; finalizing centres for holding conferences for brokers, etc.; • Finalizing the brokerage & commission for Non-Institutional Investors category for the brokers and sub syndicate; • Finalizing collection centers; and • Deciding on the quantum of the Offer material and allocation amongst the printers	Book Running Lead Managers	JM Financial

Sr. No.	Activity	Responsibility	Co-ordination
10.	Coordination with stock exchanges for book building software and submitting deposit.	Book Running Lead Managers	HDFC
11.	Coordinating and finalizing the Anchor Investor/Strategic Investor activities, minutes, intimation of anchor allocation and CAN		JM Financial
12.	Managing the book and finalizing of pricing and Allocation in consultation with the Investment Manager	Book Running Lead Managers	HSBC
13.	Assisting the Investment Manager in ensuring the completion of the Swap Transactions and the allotment of Units in consideration thereof	Book Running Lead Managers	HDFC
14.	Post bidding activities including management of escrow accounts, coordinate non-institutional and institutional allocation, coordination with Registrar and banks, intimation of allocation and dispatch of refund to Bidders, etc. The post Offer activities of the Offer will involve essential follow up steps, which include finalization of basis of allotment, trading and dealing instruments and dispatch of certificates and demat delivery of Units, with the various agencies connected with the work such as Registrar to the Offer, Bankers to the Offer and the bank handling refund business. Coordinating with Stock Exchanges and SEBI for release of security deposit post closure of the Offer and submission of all post Offer reports including the final post Offer report to SEBI, filing media compliance report with SEBI	Book Running Lead Managers	HDFC

Credit ratings

The Trust has been given a rating of (i) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025, for term loan and bank guarantee, the rationale for which is available at its website *https://www.indiaratings.co.in/search/issuerid/10193*; (ii) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025, for non-convertible debentures, the rationale for which is available at its website, *https://www.indiaratings.co.in/search/issuerid/10193*; (iii) AAA/Stable by ICRA on September 1, 2025 for term loan and bank guarantee, the rational for which is available at https://www.icra.in/Rationale/ShowRationaleReport?Id=137403 *(*iv) AAA/Stable by ICRA on September 1, 2025, for, non-convertible debentures the rational for which is available at its website, https://www.icra.in/Rationale/ShowRationaleReport?Id=137403 (v) AAA/Stable by CRISIL Ratings Limited on March 5, 2026, for term loan and bank guarantee – long term, and A1+ for term loan and bank guarantee - short term, the rationale for which is available at its website at:

https://www.crisilratings.com/mnt/winshare/Ratings/RatingList/RatingDocs/CubeHighwaysTrust_February%2010_%202026_RR_381315.html

It is clarified that the details available on these websites do not form a part of this Draft Offer Document.

Self-Certified Syndicate Banks

The list of SCSBs notified by SEBI for the ASBA process is available at http://www.sebi.gov.in/sebiweb/other/OtherAction.do?doRecognised=yes or at such other website as may be prescribed by SEBI from time to time. For a list of the SCSB branches named by the respective SCSBs to receive ASBA Forms from the Designated Intermediary, please refer to the above-mentioned link.

Syndicate SCSB Branches

In relation to Bids (other than Bids by Anchor Investors) submitted under the ASBA process to a member of the Syndicate, the list of branches of the SCSBs at the Specified Locations named by the respective SCSBs to receive deposits of Bid cum Application Forms from the members of the Syndicate is available on the website of the SEBI (www.sebi.gov.in/sebiweb/other/OtherAction.do?doRecognisedFpi=yes&intmId=35) and updated from time to time. For more information on such branches collecting Bid cum Application Forms from the Syndicate at Specified Locations, see the website of the SEBI at www.sebi.gov.in/sebiweb/other/OtherAction.do?doRecognisedFpi=yes&intmId=35 as updated from time to time.

Registered Brokers

The list of the Registered Brokers, including details such as postal address, telephone number and e-mail address, is provided on the websites of the Stock Exchanges at https://www.bseindia.com/ and https://www.nseindia.com, as updated from time to time.

Registrar and Unit Transfer Agents

The list of the RTAs eligible to accept ASBA Forms at the Designated RTA Locations, including details such as address, telephone number and e-mail address, is provided on the websites of BSE at and NSE at http://www.nseindia.com/products/content/equities/ipos/asba_procedures.htm, respectively, as updated from time to time.

Collecting Depository Participants

The list of the CDPs eligible to accept ASBA Forms at the Designated CDP Locations, including details such as name and contact details, is provided on the websites of BSE at https://www.bseindia.com/Static/PublicIssues/RtaDp.aspx and NSE at http://www.nseindia.com/products/content/equities/ipos/asba_procedures.htm, respectively, as updated from time to time.

BASIS OF OFFER PRICE

The Offer Price will be determined by the Investment Manager, in consultation with the Book Running Lead Managers, on the basis of an assessment of market demand for the Units offered through the Book Building Process, as well as quantitative and qualitative factors described below.

Bidders are requested to also refer to the sections entitled "*Risk Factors"*, "*Our Business*", and "*Summary Audited Consolidated Financial Information of the Trust*" on pages 87, 280 and 58, respectively and Annexure D (Audited Consolidated Financial Statements) and Annexure F (Consolidated Unaudited Financial Information), to make an informed investment decision.

The Price Band is ₹ [●] to ₹ [●].

Based on the evaluation of the qualitative and quantitative factors listed below, the enterprise value and equity value at the Floor Price, the Cap Price and the Offer Price are as follows:

Particulars	At Floor Price	At Cap Price	At Offer Price
Equity Value (Post Offer)	[●]	[●]	[●]
Total Units Post Offer	[●]	[●]	[●]

Qualitative Factors

We believe that some of the qualitative factors which form the basis for computing the Offer Price are as follows:

- Dedicated growth vehicle and access to a strong pipeline of ROFO Assets and other future growth opportunities;
- Large and diversified portfolio of highway assets;
- Differentiated and proven M&A capabilities;
- Strong portfolio construction capabilities;
- Advanced asset management and maintenance expertise;
- Strong corporate finance capabilities;
- Experienced leadership and institutional backing; and
- Attractive sector fundamentals with a favourable policy environment.

For further details, please see the section entitled "*Our Business*" on page 280.

Quantitative Factors

Some of the information presented below is based on the Audited Consolidated Financial Statements. For details, please see the section entitled "*Audited Consolidated Financial Statements*" attached as D.

Some of the quantitative factors which may form the basis for computing the Offer Price are as follows:

- **Valuation provided by the Valuer**

  The Valuer has used the discounted cash flows method to determine the value of the Project SPVs. The assumptions on which the value of the Portfolio Asset is based have been disclosed in the section entitled "*Valuation Reports*" attached as Annexure A to this Draft Offer Document. For further details, please refer to the "*Valuation Reports*" attached as Annexure A to this Draft Offer Document.

- **Enterprise Value / Cash flows from operations ratio in relation to Offer Price:**

Particulars	Amount (in ₹ million)	Enterprise Value/ Cashflow from operations		
		At Floor Price	At Cap Price	At Offer Price
Cash flows from operations for the financial year ended March 31, 2025*	29,163.56	[●]	[●]	[●]

* *Cash flow from operations for the financial year ended March 31, 2025, in the above table is derived from the Audited Consolidated Financial Statements.*

- **Price / Net Asset Value per Unit ratio in relation to Offer Price:**

Particulars	Amount (in ₹)	Price / Net Asset Value per Unit		
		At Floor Price	At Cap Price	At Offer Price
Net Asset Value per Unit as of December 31, 2025[1]	142.70	[●]	[●]	[●]

(1) Since the Units of the Trust are privately listed, the Net Asset Value for the last reported period has been considered.

- **Basic and diluted earnings per Unit:**

Period/ Year ended	Basic Earnings per Unit (in ₹) [2]	Diluted Earnings per Unit (in ₹) [2]
December 31, 2025[1]	0.61	0.61
March 31, 2025	(0.27)	(0.27)

(1) Not annualised.
(2) Basic earnings per Unit and Diluted earnings per Unit are as presented in the Audited Consolidated Financial Statements.

- **Comparison with Industry Peers:**

Name	NAV per Unit (in ₹)[1]	Premium/ (Discount) to NAV%[2]
IRB Infrastructure Trust	317.32	(30.60%)
National Highways Infra Trust	145.76	5.31%
Vertis Infrastructure Trust	103.35	4.50%
Interise Trust	104.20	5.33%
Shrem InvIT	94.33	6.12%
Oriental InfraTrust	110.90	(9.83%)

(1) NAV as of December 31, 2025
(2) Premium / (Discount) to NAV % has been calculated as Unit Price, divided by Net Asset Value per Unit minus one, based on the latest available price on the stock exchanges of the peers as on March 10, 2026. The respective price available is as follows:
IRB Infrastructure Trust – ₹ 220.22 on NSE as on March 10, 2026
National Highways Infra Trust – ₹ 153.50 on NSE as on March 10, 2026
Vertis Infrastructure Trust – ₹ 108.00 on NSE as on March 10, 2026
Interise Trust – ₹ 109.75 on NSE as on March 10, 2026
Shrem InvIT – ₹ 100.10 on NSE as on March 10, 2026
Oriental Infra Trust – ₹ 100.00 on NSE as on March 10, 2026

PARTIES TO THE TRUST

A. The Sponsor and Sponsor Group

Pursuant to the resolution passed by the board of directors of Cube Highways Fund Advisors Private Limited acting in its capacity as investment manager of the Cube Highways Trust dated January 30, 2026, and subsequent resolution dated February 19, 2026, passed by the Unitholders of the Trust, and in accordance with the InvIT Regulations, CH-I and CH-III have been declassified as the sponsors of the Trust and CH-V was inducted as the new sponsor of the Trust through a deed of adherence to the Trust Deed dated February 20, 2026.

Cube Highways and Infrastructure V Pte. Ltd.

History and Certain Corporate Matters

Cube Highways and Infrastructure V Pte. Ltd. was originally incorporated as a private company limited by shares under the laws of Singapore on June 17, 2021, bearing the registration number (Unique Entity Number) 202121313N.

The registered office of the Sponsor is situated at 65 Chulia Street, #21-05, OCBC Centre, Singapore 049513. Please see the section entitled "*General Information*" on page 134.

Background of Cube Highways and Infrastructure V Pte. Ltd.

CH-V is a Singapore-based company that invests in road and highway projects along with other select infrastructure sectors in India. CH-V owns and operates the ROFO Assets namely, Kohkraj Handia Expressway Limited, Delhi Hapur Meerut Expressway Private Limited and Malayagiri Highways Private Limited, and certain Proposed Portfolio Assets namely, BFHL, DTPL, and WMTPL. For details of the acquisition of the Proposed Portfolio Assets from CH-V, please see the section entitled "*Description of Portfolio Assets*" on page 40.

In accordance with the eligibility criteria specified under InvIT Regulations, CH-V is relying on the experience of its associate, Cube Mobility Investments Pte. Ltd., has a sound track record, *i.e.*, experience of at least five years in development of infrastructure or fund management in the infrastructure sector. It was holding a portfolio of 9 TOT assets from the Financial Years 2020-23, which were subsequently transferred to the Trust in the year 2023.

In accordance with the eligibility criteria specified under the InvIT Regulations, CH-V has a net worth of ₹ 38,820.21 million as on December 31, 2025.

***Board of Directors of* Cube Highways and Infrastructure V Pte. Ltd.**

The board of directors of the Sponsor is entrusted with the overall management of the Sponsor

Please see below the names of the directors on the board of CH-V:

Sr. no.	Name of the director
1.	Ashutosh Goyal
2.	Raviraj Vipul Acharya
3.	Lin Le
4.	Zaman Velji
5.	Kunal Agarwal
6.	Angela Mary Bouzanis (alternate director to Zaman Velji)

Other Confirmations

As of the date of this Draft Offer Document, the Sponsor is in compliance with the eligibility criteria provided under Regulation 4 of the InvIT Regulations, to the extent applicable to each of the Sponsor or Sponsor Group, severally, and not jointly and are "fit and proper persons" as prescribed under SEBI Intermediaries Regulations.

Sponsor Group

CH-I, CH-II, CH-III, CH-1D and Cube Mobility Investments Pte. Ltd. form part of the Sponsor Group. For details in relation to the Sponsor Group, please see the section entitled "*Definitions and Abbreviations-Trust Related Terms-Sponsor Group*" on page 10.

Neither the Sponsor nor the Sponsor Group, nor the directors of the Sponsor, or the promoters, directors, or partners of the Sponsor Group (i) are or have been debarred from accessing the securities market by SEBI; (ii) are or have been promoters, directors or persons in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; and/or (iii) are or have been declared a wilful defaulter by any bank or a financial institution or consortium thereof, in accordance with the guidelines on 'wilful defaulters' issued by the RBI.

B. The Trustee – Axis Trustee Services Limited

Axis Trustee Services Limited is the Trustee in respect of the Trust. The Trustee is a debenture trustee registered with SEBI under the Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993, having registration number IND000000494, which is valid until suspended or cancelled by SEBI. The Trustee's registered office is situated at Axis House, Bombay Dyeing Mills Compound, PB Marg, Worli, Mumbai 400 025. The Trustee's address for correspondence and principal place of business is situated at The Ruby, 2nd Floor, SW, 29, Senapati Bapat Marg, Dadar West, Mumbai 400 028.

Background of the Trustee

The Trustee is a wholly owned subsidiary of Axis Bank Limited. The Trustee's services are aimed at catering to the individual needs of the client and enhancing client satisfaction. As the trustee, it ensures compliance with all statutory requirements and believes in the highest ethical standards and best practices in corporate governance. It aims to provide the best services in the industry with its well trained and professionally qualified staff with a sound legal acumen. The Trustee is involved in varied facets of debenture and bond trusteeships, including, advisory functions and management functions. The Trustee also acts as a security trustee and is involved in providing services in relation to security creation, compliance and holding security on behalf of lenders.

The Trustee is involved in providing services as (i) debenture trustee; (ii) security trustee; (iii) facility agent; (iv) escrow agency; (v) custody services; (vi) trust and retention account; (vii) securitization trustee; (viii) share monitoring trustee; (ix) lender repayment trustee; (x) digital escrow agency; and (xi) trustee of a REIT, InvIT, AIF and family trust, Trustee to Mutual Fund Lite, etc., in the domestic market.

The Trustee is also an IFSC-registered intermediary authorised to provide debenture and bond trustee, private trustee, facility and escrow agent, safekeeping, and other related financial services in the overseas market, that is, International Financial Services Centers ("**GIFT City**").

The Trustee has and undertakes to ensure that it will at all times, maintain adequate infrastructure personnel and resources to perform its functions, duties and responsibilities with respect to the Trust in accordance with the InvIT Regulations, the Trust Deed and other applicable law.

The Trustee is not an Associate of the Sponsor or the Investment Manager or the Project Manager to the Trust.

Other Confirmations

Further, as of the date of this Draft Offer Document, the Trustee is in compliance with the eligibility criteria provided under Regulation 4 of the InvIT Regulations and is a "fit and proper person" as prescribed under SEBI Intermediaries Regulations.

Further, neither the Trustee nor the settlors of the Trustee, any of the promoters or directors of the Trustee (i) are or have been debarred from accessing the securities market by SEBI; (ii) are or have been promoters, directors or persons in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; and/or (iii) are or have been declared a wilful defaulters or fraudulent borrowers as per the list published by the RBI; or (iv) are fugitive economic offenders.

Board of Directors of the Trustee

The Board of Directors of the Trustee is entrusted with the responsibility for the overall management of the Trustee. Please see below the details in relation of the board of directors of the Trustee:

Sr. No.	Name	DIN	Designation
1.	Rahul Rajan Choudhary	10935908	Managing Director and Chief Executive Officer
2.	Prashant Ramrao Joshi	08503064	Non-Executive Director
3.	Arun Mehta	08674360	Independent Director
4.	Parmod Kumar Nagpal	10041946	Independent Director
5.	Bipin Kumar Saraf	06416744	Non-Executive Non-Independent Director

Brief profiles of the Directors of the Trustee

1. **Rahul Rajan Choudhary** is the managing director and chief executive officer of Axis Trustee Services Limited.

2. **Prashant Joshi** is a non-executive director on the board of directors of Axis Trustee Services Limited.

3. **Arun Mehta** is an independent director on the board of directors of Axis Trustee Services Limited.

4. **Parmod Kumar Nagpal** is an independent director on the board of directors of Axis Trustee Services Limited.

5. **Bipin Kumar Saraf** is a non-executive non-independent director on the board of directors of the Trustee.

Key Terms of the Trust Deed

The Trustee, the CH-I and CH-III and the Settlor have entered into the trust deed dated December 7, 2021, in terms of the InvIT Regulations, which was registered under the provisions of the Indian Registration Act, 1908 on December 7, 2021. Subsequently, the parties to the trust deed entered into an amended and restated trust deed on July 8, 2022, which was further amended and restated on March 11, 2024 (as so amended, the "**Trust Deed**"). Pursuant to the deed of adherence to the Trust Deed dated February 20, 2026, the CH-V has been inducted as the Sponsor. The key terms of the Trust Deed, are provided below:

1. *Powers of the Trustee*

   The Trustee has been provided with various powers under the Trust Deed in accordance with the Indian Trusts Act, 1882 and the InvIT Regulations, including but not limited to:

   (i) the Trustee shall, in relation to the Trust, have every and all powers that a person competent to contract and acting as a legal and beneficial owner of such property;

   (ii) the Trustee shall make distributions to Unitholders in accordance with the InvIT Documents and in compliance with the InvIT Regulations and applicable law;

   (iii) the Trustee shall oversee voting of Unitholders in accordance with the InvIT Regulations;

   (iv) the Trustee shall have the power to do the following, in accordance with the InvIT Regulations, which power may be delegated to the Investment Manager in terms of the Investment Management Agreement:

      a) cause the offering of the Units through any offer document;

      b) cause any offer document to be provided to the investors;

      c) offer and allot Units or other securities, obligations or instruments of the Trust;

      d) summon and conduct meetings of the Unitholders in accordance with the relevant InvIT Documents and the InvIT Regulations; and

      e) subject to, and only in accordance with, the terms of the InvIT Documents and the InvIT Regulations, approve transfer of the Units;

   (v) the Trustee shall invest and hold the Portfolio Assets in the name of the Trust for the benefit of the Unitholders in accordance with the provisions of the InvIT Regulations, InvIT Documents, Trust Deed and the Investment Objective. The Trustee shall be empowered to make investment decisions with respect to the underlying assets or projects of the Trust including any further investments or divestments, subject to InvIT Regulations and the InvIT Documents;

   (vi) subject to the provisions of the InvIT Regulations and the distribution policy adopted by the Investment Manager, the Trustee, in consultation with the Investment Manager, shall have the power to make such reserves out of the income or capital as the Trustee may deem proper in order to, amongst other things, meet the expenses, liabilities or contingent liabilities of the Trust and any decisions of the Trustee whether made in writing or implied from its acts, so far as the applicable law may permit, shall be conclusive and binding on the Unitholders;

   (vii) the Trustee, subject to the recommendations of the Investment Manager, shall have the power to employ and pay at the expense of the Trust, any agent in any jurisdiction whether attorneys, solicitors, brokers, banks, trust companies or other agents whether associated or connected in any way with the Trustee or not, without being responsible for the default of any agent if employed in good faith to transact any business, including without limitation, the power to appoint agents to raise funds, or do any act required to be transacted or done in the execution of the trusts including the receipt and payment of moneys and the execution of documents;

   (viii) the Trustee shall, on behalf of the Trust, within a reasonable time from the date of execution of the Original Trust Deed, appoint the Investment Manager as the investment manager to the Trust, by execution of the Investment Management Agreement, on behalf of the Trust, to manage the assets and investments of the Trust and undertake activities of the Trust;

(ix) the Trustee shall oversee the activities of the Investment Manager in the interest of the Unitholders, ensure that the Investment Manager complies with the InvIT Regulations and applicable law and shall obtain a compliance certificate from the Investment Manager on a quarterly basis or such other time period as prescribed by applicable law, in the form prescribed by SEBI, if any;

(x) the Trustee shall, on behalf of the Trust, either through itself or through the Investment Manager, within a reasonable time from the date of execution of the Original Trust Deed, appoint the Project Manager as the project manager for the Trust, by execution of the Project Implementation and Management Agreement, for the operation and management of the Portfolio Assets;

(xi) the Trustee shall oversee activities of the Project Manager in terms of the InvIT Regulations, other applicable law and the Project Implementation and Management Agreement and shall obtain a compliance certificate from the Project Manager on a quarterly basis or such other time period as prescribed by applicable law, in the form prescribed by SEBI, if any;

(xii) the Trustee may, in consultation with the Investment Manager, appoint any custodian in order to provide custodian services, and may permit any property comprised in the Trust to be and remain deposited with a custodian or with any person or persons in India or in any other jurisdiction subject to such deposit being permissible under the applicable law;

(xiii) in the event of any capital gains tax, income tax, stamp duty or other duties, fees or taxes (and any interest or penalty chargeable thereon) whatsoever becoming payable in any jurisdiction in respect of the Trust or in respect of documents issued or executed in pursuance of the Trust Deed in any circumstances whatsoever, the Trustee shall have the power and duty to pay all such duties, fees or taxes (and any interest or penalty chargeable thereon) as well as to create any reserves for future potential tax liability out of the Trust or Portfolio Assets or the income thereof, or to the extent of the amount invested in the Units by the Unitholders, as may be permitted under applicable law and as the Trustee may reasonably deem proper, and the Trustee may pay such duties, fees or taxes (and any such interest or penalty) on behalf of the Trust;

(xiv) the Trustee shall, subject to the advice of the Investment Manager, have the power to pay expenses of the Trust out of the funds held by the Trust;

(xv) the Trustee shall, in discharge of its duties, have the power to take the opinion of legal or tax counsel in any jurisdiction concerning any disputes or differences arising under the Trust Deed or any matter relating to the Trust and the fees of such counsel shall be paid out of the funds held in the Trust;

(xvi) the Trustee may, in execution of the Trust in terms of the Original Trust Deed, or in exercise of any of the powers stipulated in the Trust Deed or by law given to the Trustee sell, rent or buy any property, or borrow property from or carry out any other transaction with the trustees of any other trust or the executors or administrators of any estate;

(xvii) the Trustee (on behalf of the Trust) shall have the power to:

a) accept any property before the time at which it is transferable or payable;

b) pay or allow any claim on any evidence that it thinks sufficient;

c) accept any security movable or immovable in lieu of any amounts payable to it;

d) alter the dates for payment of any amounts payable to it; and

e) compromise, compound, abandon or otherwise settle any claim or thing whatsoever relating to the Trust or the Trust Deed;

(xviii) the Trustee shall, subject to the advice of the Investment Manager, have the power to borrow funds including any subordinated equity, long term loans, short term loans, bonds or other loans or funds from any person or authority (whether Government or otherwise, whether Indian or overseas) for the purpose of the Trust on such terms and conditions and for such periods and subject to approval of the Unitholders in accordance with and as may be required in terms of the InvIT Regulations and applicable law. The Trustee shall, subject to the advice of the Investment Manager, also have the power to create encumbrances of any kind on the Portfolio Assets as collateral security for any such borrowings;

(xix) the Trustee may, subject to the conditions stipulated in the Trust Deed and any other InvIT Documents, InvIT Regulations, applicable law and any advice of the Investment Manager, retain any proceeds received by the Trust from any Portfolio Assets, Holding Companies or SPVs, including through the sale of any Holding Company or SPV, for the purpose of re-investment;

(xx) the Trustee may, make rules to give effect to, and carry out the investment objectives, subject to applicable law and relevant provisions of the Trust Deed. In particular, and without prejudice to the generality of such power, the Trustee may provide the (a) manner of maintaining of the records and particulars of the Unitholders; (b) norms of investment by the Trust in accordance with the investment objectives of the InvIT and in accordance with the powers and authorities of the Trustee as set out herein; (c) matters relating to entrustment / deposit or handing over of any securities or shares of the SPVs of the Trust to any one or more custodians and the procedure relating to the holding thereof by the custodian; (d) such other administrative, procedural or other matters relating to the administration or management of the affairs of the Trust and which matters are not by the very nature required to be included or provided for in the Trust Deed or by the management thereof and which matters are not inconsistent with the provisions thereof; (e) procedure for seeking the vote of the Unitholders either by calling a meeting or through postal ballot or otherwise; and (f) procedure for summoning and conducting meetings of Unitholders;

(xxi) the Trustee shall cause the depository to maintain the depository register;

(xxii) the Trustee shall advise the Investment Manager in relation to the appointment of Valuer, Auditors, Registrar, merchant bankers, custodian, Credit Rating Agencies and any other intermediary or service provider or agent as may be applicable with respect to the activities pertaining to the Trust, in a timely manner;

(xxiii) the Trustee shall review the reports required in terms of InvIT Regulations and applicable law, as submitted by the Investment Manager. In the event such reports are not submitted in a timely manner, the Trustee, after due follow-up, shall intimate the same to SEBI;

(xxiv) the Trustee shall have the power to open one or more bank accounts and/or demat accounts for the purposes of the Trust, to deposit and withdraw money and/or securities and fully operate the same;

(xxv) the Trustee shall have the power to take up with SEBI or with the designated stock exchange(s) as applicable, any matter which has been approved in any meeting of Unitholders, if the matter requires such action;

(xxvi) the Trustee shall have the power to exercise all rights of the Trust in the SPVs, including voting rights, rights to appoint directors, whether pursuant to securities held by it, or otherwise, in such manner as it deems to be in the best interest of the Trust, and in accordance with the InvIT Regulations and applicable law. Additionally, if the Trust has invested in infrastructure projects through the Holding Company or SPVs, then the Investment Manager, in consultation with the Trustee, shall appoint the majority of the directors of the Holding Company(ies) and/or the SPV(s), in accordance with the applicable law, as well as ensure that in every general meeting including the annual general meeting of any SPV or Holding Company, the voting of the Trust is exercised, in accordance with the InvIT Regulations and applicable law;

(xxvii) the Trustee shall have the power to, in consultation with the Investment Manager (except where such action relates to the Investment Manager), institute, conduct, compromise, compound, or abandon any legal proceedings for or on behalf of or in the name of the Trust or the Trustee, and to defend, compound or otherwise deal with any such proceedings against or by the Trust or Trustee or its officers or concerning the affairs of the Trust, and also to compound and allow time for payment or satisfaction of any equity due and of any claims or demands by or against the Trust and observe and perform any decisions thereof;

(xxviii) the Trustee can make and give receipts, releases and other discharges for moneys payable to the Trust and for the claims and demands of the Trust;

(xxix) the Trustee can enter into all such negotiations and contracts, and, execute and do all such acts, deeds and things for or on behalf of or in the name of the Trust as the Trustee may consider expedient for or in relation to any of the matters or otherwise for the purposes of the Trust;

(xxx) the Trustee can sign, seal, execute, deliver and register according to law all deeds, documents, agreements, and assurances in respect of the Trust;

(xxxi) the Trustee can take into its custody and/or control all the capital, assets, property of the Trust and hold the same in trust for the Unitholders in accordance with the Trust Deed, the InvIT Regulations and applicable law;

(xxxii) the Trustee may at any time, buy back the Units from the Unitholders in accordance with the policy formulated by the Investment Manager and subject to applicable law;

(xxxiii) the Trustee may cause the Trust to pay, prepay or repay any and all debt raised from any Person in accordance with the terms therein and to redeem any debt securities or other securities, obligations or instruments in accordance with the terms thereof issued to such Persons;

(xxxiv) the Trustee can generally exercise all such powers as it may be required to exercise under the InvIT Regulations and applicable law for the time being in force and do all such matters and things as may promote the Trust or as may be incidental to or consequential upon the discharge of its functions and the exercise and enforcement of all or any of the powers and rights under the Trust Deed and applicable law; and

(xxxv) the Trustee may, delegate to the Investment Manager or the Project Manager, any powers set out above.

2. *Duties of the Trustee*

(i) The Trustee shall use best endeavours to carry on and conduct the business of the Trust in a proper and efficient manner in the best interest of the Unitholders.

(ii) The Trustee, on behalf of the Trust, shall appoint an Investment Manager and Project Manager in accordance with the InvIT Regulations and other applicable law.

(iii) The Trustee shall, on behalf of the Trust, within a reasonable time from the date of execution of the Trust Deed, enter into the Investment Management Agreement with the Investment Manager.

(iv) The Trustee shall ensure that the Investment Manager performs its obligations under the Investment Management Agreement, InvIT Regulations and other applicable law, including the following:

(a) The Trustee shall ensure that the Investment Manager complies with reporting and disclosure requirements in accordance with InvIT Regulations and in case of any delay or discrepancy, require the Investment Manager to rectify such delay or discrepancy on an urgent basis.

(b) The Trustee shall review the transactions carried out between the Investment Manager and its associates and where the Investment Manager has advised that there may be a conflict of interest, it shall obtain a certificate from a practising chartered accountant or valuer, as applicable, that such transaction is on arm's length basis.

(c) The Trustee shall review the Valuation Report submitted by the Investment Manager.

(d) The Trustee shall require the Investment Manager to set up such systems and procedures and submit such reports to the Trustee, as may be necessary for effective monitoring of the functioning of the Trust.

(e) The Trustee shall ensure that the Investment Manager convenes meetings of the Unitholders in accordance with the InvIT Regulations and oversee the voting by Unitholders and declaration of such results of such meetings, provided that where there is (i) a change or removal of the Investment Manager, or a change in control of the Investment Manager, and the Trustee will be required to obtain approval of the Unitholders the Trustee shall be responsible for convening and conducting of the meeting of the Unitholders; and (ii) any issue pertaining to the Trustee, such as change in the Trustee, the Trustee shall not be involved in any manner in the conduct of the meetings of the Unitholders. The Trustee shall ensure that the Investment Manager convenes meetings of Unitholders not less than once every year and the period between such meetings shall not exceed 15 (fifteen) months.

(v) The Trustee shall either by itself or through the Investment Manager, provide SEBI and the stock exchange(s), where applicable, such information as may be sought by SEBI or by the stock exchange(s), as applicable, pertaining to the activity of the Trust. The Trustee shall comply with intimation requirements under the InvIT Regulations and applicable law, including in relation to intimating SEBI in case of any discrepancy in the operation of the Trust with the Trust Deed, the InvIT Regulations and any offer document. The Trustee shall also immediately inform SEBI in case any act which is detrimental to the interest of the Unitholders is noted or if the Investment Manager fails to submit to the Trustee the information or reports as specified under the InvIT Regulations, in a timely fashion.

(vi) The Trustee shall at all times exercise due diligence in carrying out its duties and protecting the interests of the Unitholders. The Trustee shall, through the Investment Manager, from time to time provide such documents and information to the Unitholders, as may be required by the SEBI, the

stock exchange(s), where applicable, or other governmental agency, with respect to the activities carried on by the Trust.

(vii) The Trustee shall delegate all such powers to the Investment Manager as may be required by the Investment Manager to carry out its obligations under the Investment Management Agreement and under applicable law. Further, it shall delegate all such powers to the Project Manager as may be required by the Project Manager to carry out its obligations under the Project Implementation and Management Agreement and under applicable law.

(viii) The Trustee shall obtain prior approval from the Unitholders in accordance with the InvIT Regulations and InvIT Documents before any change in, or change in control of, the Investment Manager due to removal or otherwise. In this regard, the Trustee shall also obtain prior approval from SEBI and any concessioning authority or other authorities as may be required, prior to any change in, or change in control of, the Investment Manager, in the event that such approval is required in terms of the InvIT Regulations or other applicable law or InvIT Documents. In case of change in Investment Manager due to removal or otherwise, the Trustee shall, appoint a new investment manager in accordance with the InvIT Documents, InvIT Regulations and applicable law. The Trustee shall appoint a new investment manager within the time period prescribed under the InvIT Regulations. The previous investment manager shall continue to act as such at the discretion of the Trustee until such time as the new investment manager is appointed. The Trustee shall ensure that the new investment manager shall stand substituted as a party in all the documents to which the earlier Investment Manager was a party. The Trustee shall also ensure that the earlier Investment Manager continues to be liable for all its acts of omission and commission for the period during which it served as investment manager, notwithstanding its termination.

(ix) In case of change in Project Manager due to removal or otherwise, the Trustee shall appoint a new project manager in accordance with the InvIT Regulations, Applicable Law and the InvIT Documents. The Trustee shall appoint a new project manager within the time period prescribed under the InvIT Regulations. The Trustee may, either *suo moto* or based on the advice of the concessioning authority(ies) appoint an administrator in connection with an infrastructure project for such terms and on such conditions as it deems fit. The previous project manager shall continue to act as the project manager till such time as a new project manager is appointed. All costs and expenses in this regard will be borne by the new project manager. The Trustee shall ensure that the new project manager shall stand substituted as a party in all the documents to which the earlier Project Manager was a party. The Trustee shall also ensure that the earlier Project Manager continues to be liable for all its acts of omission and commission for the period during which it served as project manager, notwithstanding its termination. The Trustee shall ensure that in case of change in the Project Manager, written consent is obtained from the concessioning authority(ies) in terms of the concession agreement(s), prior to such change, if applicable.

(x) The Trustee shall ensure that in case of change in control of the Project Manager, written consent is obtained from the concessioning authority(ies) in terms of the concession agreement(s), prior to such change, if applicable.

(xi) The Trustee shall ensure that subscription amount is kept in a separate no lien, no interest bearing bank account in name of the Trust and is only utilised for adjustment against allotment of Units or refund of money to the applicant till the time such Units are allotted or listed and the same will be utilised for objectives of the offering as will be mentioned in the relevant offer document.

(xii) The Trustee shall cause the books of accounts of the Trust to be maintained in accordance with Article 15 of the Trust Deed.

(xiii) The Trustee shall ensure that all acts, deeds and things are done for the attainment of the investment objectives of the Trust and in compliance with the InvIT Documents, the InvIT Regulations, applicable law and relevant concession agreements, as applicable, and to secure the best interests of the Unitholders.

(xiv) The Trustee shall either by itself or through the Investment Manager file such reports as may be required by SEBI or any other regulatory authority or as required under the InvIT Documents, InvIT Regulations and applicable law with regard to the activities carried on by the Trust.

(xv) The Trustee shall periodically review the status of the Unitholders' complaints and their redressal undertaken by the Investment Manager, in accordance with the InvIT Regulations.

(xvi) The Trustee and its directors, officers, employees and agents shall at all times maintain the greatest amount of confidentiality as regards the activities and assets of the Trust and such other matter connected with them and the Trust generally and shall not disclose any confidential information to

any other person, other than the Investment Manager, or the Project Manager, unless such information is required to be disclosed to some regulatory authority, court or any other person under any order of court or any law in force in India.

(xvii) The Trustee shall ensure that the assets and liabilities of the Trust shall at all times be segregated from the assets and liabilities of the Trustee and the assets and liabilities of other trusts or funds managed by the Trustee. The assets held under the Trust shall be held for the exclusive benefit of the Unitholders and such assets shall not be subject to the claims of any creditor or any person claiming under any other fund or trust administered by the Trustee or by the Investment Manager respectively.

(xviii) The Trustee shall ensure that the Investment Manager shall ensure that a detailed valuation is undertaken of the Portfolio Assets by a Valuer at such intervals and in the manner as may be prescribed under the InvIT Regulations and applicable law. The Trustee shall ensure that the remuneration of the Valuer is not linked to or based on the value of the asset being valued.

(xix) The Trustee of the Trust shall not invest in Units of the Trust.

(xx) The Trustee shall fulfil its duties and obligations in terms of the InvIT Regulations.

(xxi) The Trustee shall ensure that the activities of the Trust are being operated in accordance with the provisions of the Trust Deed, the InvIT Regulations, applicable law and the InvIT Documents and in case of any discrepancy, it shall inform SEBI immediately in writing.

(xxii) The Trustee shall ensure that the Trust, the Investment Manager, the Project Manager, the Holding Companies and the Portfolio Assets adopt, policies, including corporate governance policies, policies in relation to acquisition of assets from the Sponsor and third parties, policies in relation to the net distributable cash flows, policies in relation to anti-bribery and anti-corruption, policies in relation to the investments by the Trust, policies in relation to environment, safety and health, policies in relation to anti-money laundering, policy on related party transactions and any other policies in relation to their activities related to the Trust, as may be required and applicable, prior to filing of the relevant initial offer document for the initial offer. The terms, such as, manner or requirement of Unitholders' approval for each of these policies, applicability, amendment and termination, of the respective policies shall be set out in each of the policies.

(xxiii) The Trustee shall maintain records in relation to the Trust in accordance with the InvIT Regulations and other applicable law.

(xxiv) The Trustee shall wind up the Trust in accordance with the InvIT Regulations and applicable law. Upon winding up of the Trust, the Trustee shall surrender the certificate of registration to SEBI.

(xxv) The Trustee shall, promptly on occurrence, inform the Sponsor and the Settlor of a cancellation, revocation, suspension, non-renewal of its registration to act as a trustee under Applicable Law or a breach of the terms of such registration that will materially impair its ability to perform its obligations and exercise its powers under the Trust Deed.

(xxvi) The Trustee (either by itself or through the Investment Manager) shall ensure that all related party transactions in relation to the Trust are entered into on an arm's length basis and in accordance with the InvIT Documents and applicable law (including the InvIT Regulations).

3. *Rights of the Trustee*

The Trustee shall have the following rights:

(i) The Trustee may, in consultation with the Investment Manager, in the discharge of its duties, act upon any advice obtained in writing from any bankers, accountants, brokers, lawyers, professionals, consultants, or other experts acting as advisers to the Trustee;

(ii) Subject to the applicable law, no Unitholder shall be entitled to inspect or examine the Trust's premises or properties (including any Holding Company and SPVs) without the permission of the Trustee, who shall give such permission, if necessary, in consultation with the Investment Manager. Further, no Unitholder shall be entitled to require discovery of any information in respect of any detail of the Trust's activities or any matter which may relate to the conduct of the business of the Trust and which information may, in the opinion of the Trustee and the Investment Manager adversely affect the interest of other Unitholders;

(iii) The Trustee shall be entitled to reimburse itself and shall be entitled to charge the Trust, and shall be entitled to be indemnified and be kept indemnified from the Trust with the expenses, outgoings,

taxes, levies, and liabilities (including indemnity obligations of the Trust, if any) as set out in the Trust Deed; and

(iv) The Trustee may accept as sufficient evidence for the value of any investment or for the cost price or sale price thereof or for any other fact within its competence, a certificate by a Valuer or any other professional person appointed by the Investment Manager for such purpose.

4. *Liabilities of the Trustee*

The liabilities of the Trustee in terms of the Trust Deed are as follows:

(i) The Trustee shall only be chargeable for such monies, stocks, funds, shares, assets, investment, property and securities as the Trustee shall have actually received and shall not be liable or responsible for any banker, broker, custodian or other person in whose hands the same may be deposited or placed, nor for the deficiency or insufficiency in the value of any investments of the Trust nor otherwise for any involuntary loss. Any receipt signed by the Trustee for any monies, stocks, funds, shares, assets, securities, investment or property, paid, delivered or transferred to the Trustee under or by virtue of the Trust Deed or in exercise of the duties, functions and powers of the Trustee shall effectively discharge the Trustee or the person or persons paying, delivering or transferring the same therefrom or from being bound to see to the application thereof, or being answerable for the loss or misapplication thereof provided that the Trustee and such persons shall have acted in good faith, without negligence and shall have used their best efforts in connection with such dealings and matters;

(ii) The Trustee shall not be under any liability on account of anything done or omitted to be done or suffered by the Trustee in good faith in accordance with, or in pursuance of any request or advice of the Investment Manager;

(iii) The Trustee shall not be under any obligation to institute, acknowledge the service of, appear in, prosecute or defend any action, suit, proceedings or claim in respect of the provisions hereof or in respect of the Portfolio Assets or any part thereof or any corporate action which in its opinion would or might involve it in expense or liability unless the Investment Manager shall so request in writing and the Trustee is satisfied that the value of the investment is sufficient to provide adequate indemnity against costs, claims, damages, expenses or demands to which it may be put as Trustee as a result thereof. The costs in relation to such action, suit, proceedings or claims (whether undertaken upon request of Investment Manager or otherwise) incurred by the Trustee in connection with or arising out of the Trust, shall be borne by the Trust;

(iv) The Trustee shall not be liable in respect of any action taken or damage suffered by it on reliance upon any notice, resolution, direction, consent, certificate, affidavit, statement, certificate of stock, plan of reorganization or (without being limited in any way by the foregoing) other paper or document believed to be genuine and to have been passed, sealed or signed by appropriate authorities or entities;

(v) The Trustee shall not be liable to the Unitholders for doing or failing to do any act or thing which by reason of any provision of any present or future law or regulation made pursuant thereto, or of any decree, order or judgment of any court, or by reason of any request announcement or similar action (whether of binding legal effect or not) which may be taken or made by any person or body acting with or purporting to exercise the authority of any government (which legally or otherwise) it shall be directed or requested to do or perform or to forbear from doing or performing. If for any reason it becomes impossible or impracticable (as determined by the Trustee and the Investment Manager) to carry out any of the provisions of these presents the Trustee shall not be under any liability therefore or thereby;

(vi) The Trustee shall not be responsible to any Unitholder for the authenticity of any signature affixed to any document or be, in any way, liable for any forged or unauthorized signature on or for acting upon or giving effect to any such forged or unauthorized signature. The Trustee shall be entitled but not bound to require that the signature of any Unitholder to any document required to be signed by him under or in connection with these presents shall be verified to the Trustee's reasonable satisfaction;

(vii) If the Trustee is required by the InvIT Regulations or any other applicable law to provide information regarding the Trust or the Sponsor or the Unitholders, the investments made by the Trust and income therefrom and provisions of these presents and complies with such request in good faith, whether or not it was in fact enforceable, the Trustee shall not be liable to the Unitholders or to any other party as a result of such compliance or in connection with such compliance;

(viii) The Trustee shall not incur any liability for any act or omission or (as the case may be) failing to do any act or thing which may result in a loss to a Unitholder (by reason of any depletion in the value of the Portfolio Assets or otherwise), except in the event that such loss is a direct result of fraud, gross negligence, dishonest acts of commissions or omissions or wilful default on the part of the Trustee, where the Trustee fails to exercise due care in relation to its obligations under the Trust Deed, or disregard of duty or breach of duties under the Trust Deed or applicable law by the Trustee;

(ix) If the Trustee engages any external advisors or experts to discharge its obligations under the Trust Deed, or undertakes any work (in consultation with the Investment Manager, in the interest of the Unitholders) which is not covered within the scope of work of the Trustee under the Trust Deed and such additional work is beyond the obligations of the Trustee under applicable law, the Trustee shall be entitled to recover such costs, charges and expenses which the Trustee may incur in this regard, from the funds of the Trust. Further, it is clarified that, the Trustee will not be required to utilize funds held by the Trustee for any other trust for which, Axis Trustee Services Limited is appointed as a trustee, for discharging its obligations as the Trustee under the Trust Deed; and

(x) The liability of the Trustee shall be limited to the extent of the fees received by it, except (a) in case of any fraud, gross negligence, dishonest acts of commissions or omissions or willful default on the part of the Trustee, where the Trustee fails to exercise due care in relation to its obligations under the Trust Deed, or disregard of duty or breach of duties under the Trust Deed or Applicable Law by the Trustee, or (b) any failure on the part of the Trustee to protect the interests of the Unitholders, other than as specified in the Trust Deed.

5. *Offer, Listing and Delisting of Units*

(i) The Trust may issue Units in accordance with and subject to the requirements of applicable law.

(ii) The Trustee shall ensure that the Units are offered and issued in accordance with and within the time period specified under Applicable Law. The Trust shall also comply with the minimum public holding for the Units and minimum number of Unitholders as prescribed under the InvIT Regulations.

(iii) In the event the Units of the Trust are proposed to be delisted, the Trustee shall ensure that the Investment Manager applies for delisting of the Units, as applicable, to SEBI and the designated stock exchanges in accordance with the provisions of Applicable Law. In the event of mandatory delisting of the units, the Investment Manager shall ensure that such delisting is undertaken in accordance with the InvIT Regulations and Applicable Law.

(iv) The Trustee shall cause the depository to effect the book entry of Units to be issued to a depositor into such depositor's securities account.

(v) The Trust shall redeem Units only by way of a buy back or at the time of delisting of Units, as applicable, in accordance with applicable law or pursuant to any other method prescribed under applicable law.

6. *Term, discharge and removal of the Trustee and appointment of new Trustee*

(i) The Trustee shall hold the office of the Trustee until the dissolution of the Trust or the discharge of the Trustee, whichever is earlier.

(ii) The Trustee shall stand discharged as the Trustee of the Trust on the happening of any of the following events:

(a) The Board passes a resolution for the Trustee to be voluntarily wound up or any order of winding up against the Trustee is passed by any court of competent jurisdiction, in which case the Sponsor shall, within 90 (ninety) Business Days of the notice cause the appointment of a new trustee;

(b) In the event that the Trustee desires to resign, it may submit its resignation to the Investment Manager and all the Unitholders setting out reasons for the same and may nominate a new trustee, which has consented in writing to serve as the new trustee. The Unitholders with required majority (as set out in the InvIT Regulations) may approve the aforesaid resignation. A new trustee may be appointed in its place by execution of a deed of appointment between the Investment Manager (acting on behalf of the Unitholders) and the new trustee, to hold office in its place from the date of acceptance of the resignation. The date of acceptance of the Trustee's resignation shall be deemed to be the date of discharge of the Trustee. On such appointment, the Trust shall vest with the new trustee;

(c) If SEBI or any other governmental or regulatory authority passes a direction to remove the Trustee; or

(d) Removal of the Trustee in accordance with the Trust Deed.

Provided that the Trustee shall, upon it becoming aware, promptly intimate the Trust of any event or potential event which may result in any of the foregoing events set out above. In any event, the Trustee shall not be discharged unless a new trustee is appointed in its place and on such appointment of a new trustee the Trustee shall be deemed to have vacated office as Trustee of the InvIT. Further, notwithstanding the discharge of the Trustee in accordance with articles of the Trust Deed, the Trustee shall continue to be responsible and liable for all its past acts and deeds, whether by way of commission or omission, subject to the indemnity of the Trustee as provided in the Trust Deed, during its tenure as Trustee.

(iii) Post allotment or listing of the Units, as the case may be, the Unitholders may by passing a resolution with required majority as set out in the InvIT Regulations, remove the Trustee if the Unitholders have sufficient reason to believe that the acts of the Trustee are detrimental to the interests of the Unitholders. Upon such removal, a new trustee may be appointed as the trustee of the InvIT as prescribed in the InvIT Regulations.

7. *Provisions relating to Unitholders*

(i) The aggregate liability of each Unitholder in the Trust shall be limited to making the capital contribution payable by it in respect of the Units subscribed by it. For the avoidance of doubt, the Unitholders shall not be responsible or liable, directly or indirectly, for acts, omissions or commissions of the Trustee, the Investment Manager, the Sponsor, or any other person, whether or not such act, omission or commission, has been approved by the Unitholders in accordance with the InvIT Regulations or not;

(ii) Each Unit allotted to the Unitholders shall have one vote for any decisions requiring a vote of Unitholders;

(iii) No Unitholder shall enjoy superior voting or any other rights over another Unitholder;

(iv) In no event shall the Trustee or the Investment Manager be bound to make payment to any Unitholder, except out of the funds held by it for that purpose under the provisions of the Trust Deed and the InvIT Documents;

(v) A Unitholder whose name and account details are entered in the depository register shall be the only person entitled to be recognised by the Trustee as having a right, title, interest in or to the Units registered in his name and the Trustee shall recognise such holder as an absolute owner and shall not be bound by any notice to the contrary and shall also not be bound to take notice of or to see to the execution of any trust, express or implied, save as expressly provided or as required by any court of competent jurisdiction to recognise any trust or equity or interest affecting the title of the Units;

(vi) The Unitholders shall not give any directions to the Trustee or the Investment Manager (whether in a meeting of Unitholders or otherwise) if it would require the Trustee or the Investment Manager to do or omit doing anything which may result in:

(a) the Trust or the Trustee, in its capacity as the trustee of the Trust or the Investment Manager, in its capacity as the investment manager of the Trust ceasing to comply with Applicable Law;

(b) interference with the exercise of any discretion expressly conferred on the Trustee by the Trust Deed or the Investment Manager by the Investment Management Agreement provided that nothing provided herein shall limit (i) the right of the Unitholder to require the due administration of the Trust in accordance with the Trust Deed, the InvIT Documents and Applicable Law and/or (ii) the right of the Unitholders in accordance with Regulation 22(5)(f) of the InvIT Regulations to give directions to the Trustee or the Investment Manager in relation to any issue which is detrimental to the Unitholders (in the sole opinion of the Unitholders).

(vii) The depository register shall (save in case of manifest error) be conclusive evidence of the number of Units held by each depositor and in the event of any discrepancy between the entries of the depository register and any statement issued by the depository, the entries in the depository register shall prevail unless the Depositor proves to the satisfaction of the Trustee and the depository that the depository register is incorrect.

(viii) The Unitholders holding Units shall have the right to call for certain matters to be subject to their consent, in accordance with the InvIT Regulations and other applicable law.

(ix) The Unitholders holding Units may, in accordance with the provisions of the InvIT Documents and applicable law, transfer any of the Units to an investor where such investor accepts all the rights and obligations of the transferor and the Trustee or the Investment Manager shall give effect to such transfer in accordance with applicable law.

(x) No person, other than the Sponsor, their related parties and associates ("**Investor**") shall acquire Units, which when taken together with Units held by the Investor and by persons acting in concert with the Investor exceeds 25% (twenty five percent) of the value of the outstanding Units, unless prior approval of the Unitholders holding Units is obtained in accordance with the InvIT Regulations. In the event such approval is not received, the Investor shall provide an exit option to the dissenting Unitholders in terms of the InvIT Regulations and in the manner specified by SEBI.

(xi) The Trustee shall ensure that the Investment Manager obtains the consent of the Unitholders holding Units for the matters prescribed under the InvIT Regulations in accordance with the provisions of the InvIT Regulations and the InvIT Documents.

(xii) In relation to items that require the approval of Unitholders, a meeting of the Unitholders holding Units may be called after giving shorter notice if consent is given in writing or by electronic mode by not less than 95% (ninety five percent) of the Unitholders holding Units entitled to vote at such meeting.

8. *Fees and Right to Reimbursement of Expenses of the Trust Deed*

For acting as the Trustee and discharging its functions and responsibilities as the Trustee, the Trustee shall be entitled to receive from the Trust, during its tenure as Trustee, annual trusteeship fees as agreed in terms of the letter (Ref No. ATSL/CO/2020-21/122) dated August 21, 2020 amended by way of an addendum (Ref No. ATSL/CO/2021-2022/5427) dated November 25, 2021. In addition, the Trustee shall be entitled to recover from the InvIT (i) any legitimate out of pocket expenses incurred by it in relation to its trusteeship of the InvIT, and (ii) any tax or duty including goods and services tax (other than income tax) which is, or

has become as on the date of collection of such tax or duty, leviable under the Applicable Law on the fee payable to the Trustee by the InvIT.

9. *Indemnity*

In addition to the fees, distributions and expense reimbursements as described in the Trust Deed, the Portfolio Assets shall be utilized to indemnify and hold harmless the Trustee from and against any claims, losses, costs, damages, liabilities including legal fees ("**Losses**") suffered or incurred by them by reason of their activities on behalf of the InvIT, unless such Losses resulted from fraud, gross negligence, or dishonest acts of commission or omission of the Trustee, or wilful default (in the case of the Trustee) where the Trustee fails to exercise due care in relation to its obligations under the Trust Deed, or (in the case of the Trustee) disregard of duty or breach of duties under the Trust Deed or Applicable Law by the Trustee.

10. *Term and Termination*

The Trust is subject to dissolution and termination in accordance with and subject to the InvIT Regulations and applicable law:

(i) if the Trust fails to make any offer of the Units, whether by way of public issue or private placement, within the time period stipulated in the InvIT Regulations or any other time period as specified by SEBI, the Trust shall surrender its certificate to SEBI and cease to operate as an investment infrastructure trust, unless the period is extended by SEBI;

(ii) upon the liquidation of all or substantially all of the Portfolio Assets;

(iii) if there are no projects remaining under the Trust and the Trust does not invest in any project for six months thereafter;

(iv) delisting of the Units in accordance with the InvIT Regulations unless such delisting is done for purposes of conversion of a listed trust to an unlisted trust in accordance with the InvIT Regulations and the Trust retains its certificate of registration and continues to undertake the activity of a privately placed and unlisted Trust; or

(v) illegality of the Trust.

11. *Amendment*

The Trust Deed shall not be amended unless approved by the Unitholders holding Units as required under applicable law and approval of relevant regulatory authorities as may be required under Applicable Law; provided however that from the date of execution of the Trust Deed until the Units are issued and allotted to Unitholders, amendment of the Trust Deed or any of its terms or provisions shall be valid or binding provided that such amendment is set forth in writing and duly executed by the parties to the Trust Deed.

C. The Investment Manager – Cube Highways Fund Advisors Private Limited

History and Certain Corporate Matters

Cube Highways Fund Advisors Private Limited is the Investment Manager for the Trust. The Investment Manager is a private company limited by shares incorporated on April 12, 2021, at New Delhi under the Companies Act, 2013 having CIN U74999DL2021FTC379941. The Investment Manager's registered office is situated at B-376, Upper Ground Floor, Nirman Vihar, East Delhi, New Delhi 110 092. Please see the section entitled "*General Information*" on page 134.

Background of the Investment Manager

The authorised equity share capital of the Investment Manager is ₹ 150,000,000 divided into 15,000,000 Equity Shares of ₹ 10 each and the paid-up equity share capital is ₹ 146,500,000 divided into 14,650,000 Equity Shares of ₹ 10 each. Cube Highways Advisory Pte. Ltd. along with its nominee holds 100% of the equity share capital of the Investment Manager.

The principal business of the Investment Manager in terms of its memorandum of association is to:

(a) To act as the investment manager of or for any infrastructure investment trusts or any other portfolio of securities, properties and/or assets of any kind, established in India or in any other country by the Investment Manager or by any other person including bodies corporate, limited liability partnerships, partnerships, trusts, societies, associations of persons (whether incorporated or not) of any other agency or organization with respect to any class of assets, and to thereby settle, administer, manage and deploy funds, acquire, take up, manage, invest, hold, sell, deal or dispose of all or any property, investments, securities or other assets of any kind whatsoever; and

(b) To provide advisory, investment management and business consultancy services on projects relating to highways, logistics and other infrastructure assets and to render all allied services as are usually rendered by investment managers and business consultants whether directly or through third parties in India and abroad.

The cumulative experience of the key personnel (i.e. directors/ partners or employees, as applicable) of the Investment Manager in fund management, advisory services, or development in the infrastructure sector exceeds 30 years. Accordingly, the Investment Manager is qualified to act as such, in terms of Regulation 4(2)(e)(ii) of the InvIT Regulations.

In accordance with the eligibility criteria specified under the InvIT Regulations, the Investment Manager has a consolidated net worth of ₹ 319.60 million as on December 31, 2025.

The Investment Manager is a fit and proper person based on the criteria as specified under Schedule II of the SEBI Intermediaries Regulations. No disciplinary action has been taken by SEBI or any regulatory authority against the Investment Manager or its directors.

Further, neither the Investment Manager nor any of the promoters or directors of the Investment Manager: (i) are or have been debarred from accessing the securities market by SEBI; (ii) are or have been promoters, directors or persons in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; or (iii) are or have been in the list of wilful defaulters published by the RBI.

Board of Directors of the Investment Manager

The IM Board is responsible for the overall management of the Investment Manager. Please see below the details in relation to the IM Board:

Sr. No.	Name	DIN	Designation
1.	Jayesh Ramniklal Desai	00038123	Independent Director
2.	Upendra Kumar Sinha	00010336	Independent Director
3.	Surinder Chawla	09605209	Independent Director
4.	Fereshte Dhunjishaw Sethna	00284941	Independent Director
5.	Sandeep Lakhanpal	07171147	Non-Executive Director

Sr. No.	Name	DIN	Designation
6.	Helly Bharat Ajmera	10240609	Non-Executive Director
7.	Raviraj Vipul Acharya	10707405	Non-Executive Director

Brief Biographies of the Directors of the Investment Manager

Please see below the brief biographies of the directors of the Investment Manager:

1. **Jayesh Ramniklal Desai** has been an independent director on the board of the Investment Manager since January 25, 2022. He holds a bachelor's degree in commerce from the University of Bombay. He is a chartered accountant and admitted as an associate of the Institute of Chartered Accountants of India. He has been associated with Ernst & Young Private Limited and Coca-Cola India. He was also employed with Piramal Enterprises Limited from April 2012 to January 2017. He has also served as a director on the boards of, amongst others, TruBoard Private Limited, Ayana Renewable Power Private Limited, and Piramal Investment Advisory Services Private Limited.

2. **Upendra Kumar Sinha** has been an independent director on the board of the Investment Manager since January 25, 2022. He has served as the chairman of SEBI. Prior to being the chairman of SEBI, he was the chairman and managing director of UTI Asset Management Company Limited, the chairman of the Association of Mutual Funds in India. He is also a retired officer of the Indian Administrative Service and has held several government positions in state and central governments, including as Joint Secretary (Banking) and Joint Secretary (Capital Markets) in the Ministry of Finance, Government of India. He has also been the chairman of the working group on foreign investment in India and a member of committees set up by the government, including those on liquidity management, foreign institutional investors, the corporate bond market, and investor protection.

3. **Surinder Chawla** has been an independent director on the board of the Investment Manager since May 20, 2022. He holds a bachelor's degree in technology in chemical engineering from the Indian Institute of Technology, Delhi. He also holds a post-graduate diploma in management from the Indian Institute of Management, Calcutta. He has over 36 years of experience and prior to joining the Investment Manager, he had worked at the International Finance Corporation, a member of the World Bank Group, as its chief investment officer.

4. **Fereshte Dhunjishaw Sethna** has been an independent director on the board of the Investment Manager since March 16, 2023. She holds a bachelor's degree in commerce and a bachelor's degree in law from the University of Bombay. She also holds a master's degree in law from the University of Bombay. She is enrolled on the roll of advocates maintained by the Bar Council of Maharashtra and Goa in 1990. She is also a director on the board of Morrisett Agro Forestry Ventures Private Limited, Morrisett One Harvests Private Limited, Morrisett Agro Plantations Private Limited, Morrisett Litigators Private Limited and Lexnovum Consultaire Private Limited.

5. **Sandeep Lakhanpal** has been a non-executive director on the board of the Investment Manager since June 30, 2022. He holds a bachelor's degree in technology and electrical engineering from Punjab Technical University, Punjab, and a master's degree in business administration with a specialisation in finance from Narsee Monjee Institute of Management Studies, Mumbai. He has over 18 years of experience. He is a managing director at I Squared Capital. Prior to joining I Squared he had been associated with Cube Highways and Transportation Assets Advisors Private Limetd, as the head of business development – M&A, CRISIL as a manager in its infrastructure advisory PPP group, and with Ernst & Young as a vice president.

6. **Helly Bharat Ajmera** has been a non-executive director on the board of the Investment Manager since November 07, 2023. She has completed her post-graduation in management from the Indian Institute of Management and graduated as an engineer in telecommunications. She is senior director & head of BCI's Asia Investments. At BCI, she is responsible for investing in and managing Infrastructure & Renewable Resources investments across Asian economies, including India, the Philippines, Indonesia, Singapore, Japan, and Korea. Prior to joining BCI, she has worked with Ernst & Young.

7. **Raviraj Vipul Acharya** has been a non-executive director on the board of the Investment Manager since July 31, 2024. Raviraj V. Acharya is an Investment Manager in the Infrastructure Department at Abu Dhabi Investment Authority. He has over 9 years of experience across investments and corporate finance. Prior to joining Abu Dhabi Investment Authority in 2020, he had worked at Morgan Stanley and Edelweiss Financial Services Limited in India. He is a member of the Institute of Chartered Accountants of India.

Brief profiles of the Key Personnel of the Investment Manager

Please see below the brief biographies of the key personnel of the Investment Manager:

1. **Vinay Chandramouli Sekar** has been the Chief Executive Officer of the Investment Manager since July 11, 2022. He holds a bachelor's degree in mechanical engineering from the Indian Institute of Technology, Madras and a post-graduate diploma in management from the Indian Institute of Management, Ahmedabad. He has over 16 years of experience in infrastructure financing and advisory services. Prior to joining the Investment Manager, he had worked with Cube Highways and Transportation Asset Advisors Private Limited, IndusInd Bank Limited and IFCI Limited.

2. **Pankaj Vasani** has been the Chief Financial Officer of the Investment Manager since July 11, 2022. He holds a bachelor's degree in commerce and a LL.B. degree from the University of Delhi. He is a member of the Institute of Chartered Accountants of India. He is also an associate of the Institute of Chartered Accountants of England and Wales and an associate Certified Public Accountant (CPA) from CPA Australia. He has experience in sectors such as telecom, media/advertising, FMCG/beverages, and the automotive industry. Prior to joining the Investment Manager, he worked with the Vodafone Group, Publicis Groupe, Coca-Cola, and Subros. Among other leadership roles, he has also served as the CEO of Cable & Wireless Global India Private Limited, within the Vodafone group.

3. **Richa Gupta Rohatgi** has been the Compliance Officer of the Investment Manager since January 30, 2025. She is an associate member of The Institute of Company Secretaries of India. She holds a bachelor's degree in law from Chaudhri Charan Singh University, Meerut and a bachelor's in commerce from Hansraj College, Delhi University. She has over 16 years of experience and prior to joining the Investment Manager, she was associated with Bharti Airtel Limited, Eldeco Infrastructure and Properties Ltd, SRL Limited, Pacific Development Corporation Limited and Religare Finvest Limited.

4. **Saurabh Bansal** has been in the employment of the Investment Manager and has been serving as the senior vice president – capital structure and budgeting of the Investment Manager since November 2021. He holds a bachelor's degree in technology in electronics and communication engineering from Malaviya National Institute of Technology, Jaipur and a post graduate diploma in industrial management from National Institute of Industrial Engineering, Mumbai and has cleared level III exam of chartered financial analyst from CFA Institute (USA). He has over 13 years of experience and prior to joining the Investment Manager, have worked with Cube Highways and Transportation Asset Advisors Private Limited, Yes Bank Limited, L&T Fincorp Limited and Northern Arc Capital Limited.

5. **Abhijit Saukhyashil Sathe** has been in the employment of the Investment Manager and has been serving as the senior vice president – finance, of the Investment Manager since November 16, 2022. He holds a bachelor's degree in commerce from the University of Pune. He is a member of the Institute of Chartered Accountants of India. He has over 21 years of experience, and prior to joining the Investment Manager, he has worked with Vodafone group, HSBC group and the TATA group. He has also served as the Chief Financial Officer of Cable and Wireless Global India Private Limited, within the Vodafone group.

6. **Saurabh Kumar** has been in the employment of the Investment Manager since September 1, 2022. He has been serving as the vice president – strategy and investor relations of the Investment Manager since April 1, 2025. He holds a bachelor's degree in technology in civil engineering from the Indian Institute of Technology, Bombay and a post-graduate diploma in management from the Indian Institute of Management, Bangalore. He has over 10 years of experience, and prior to joining the Investment Manager, he worked with Deloitte India and Feedback Infra Private Limited.

7. **Deepan Shah** has been in the employment of the Investment Manager since November 01, 2022. He has been serving as the vice president – legal of the Investment Manager since April 1, 2025. He holds a B.A. LLB (Hons.) degree from National Law University, Delhi. He has more than 9 years of experience, and prior to joining the Investment Manager, he worked with Cube Highways and Transportation Assets Advisors Private Limited and Trilegal.

Key Terms of the Investment Management Agreement

The Investment Manager has entered into the Investment Management Agreement, in terms of the InvIT Regulations, the key terms of which, are provided below.

1. *Powers of the Investment Manager*

   The Investment Manager has been provided with various powers under the Investment Management Agreement in accordance with the InvIT Regulations, including but not limited to:

   (i) The Investment Manager shall take all decisions in relation to the management and administration of Portfolio Assets and the investments of the Trust as may be incidental or necessary for the advancement or fulfilment of the investment objectives of the Trust in accordance with the InvIT Regulations and other applicable law.

(ii) The Investment Manager shall, subject to such approval as may be required from the Unitholders, make the investment decisions with respect to the underlying assets or projects of the Trust, including any further investments or divestments, subject to the InvIT Regulations, the InvIT Documents and in accordance with the offer document, and in this regard is also empowered to do the following acts, through and on behalf of the Trust, including:

(a) acquire, hold, manage, trade and dispose of shares, stocks, convertibles, debentures, bonds and other equity or equity-related securities and other debt or mezzanine securities of all kinds issued by any holding company or any SPV or any infrastructure projects in India, whether in physical or dematerialised form, including power to hypothecate, pledge or create encumbrances of any kind on such securities held by the Trust in such holding companies and/or SPVs, or infrastructure projects to be used as collateral security for any borrowings by the Trust;

(b) avail commercial loans, including the power to hypothecate, pledge or create encumbrances of any kind on the Portfolio Assets as collateral security for any such loans availed by the Trust, in accordance with the InvIT Regulations and applicable law;

(c) keep the capital and monies of the Trust in deposit with banks or other institutions, whatsoever, provided that such institutions shall not be a related party or parties to the Trust (as defined in the InvIT Regulations);

(d) accept contributions made to the Trust;

(e) collect and receive the profit, interest, repayment of principal of debt or debt like, or equity or equity like, mezzanine securities, dividend, return of capital of any type by the holding companies, or SPVs, or infrastructure projects and income of the Trust as and when the same may become due and receivable;

(f) invest in securities or in units of mutual funds in accordance with the InvIT Regulations and other applicable law;

(g) invest in money market instruments including government securities, treasury bills, certificates of deposit and commercial papers in accordance with applicable law;

(h) to give, provide and agree to provide to any holding companies, or SPVs financial assistance in the form of investment in the debt securities or share capital of any class including , preference, participating, non-participating, voting, non-voting or other class, and in the form of investment in securities convertible into share capital; and

(i) to invest, acquire, purchase, hold, divest, sale, hypothecate, pledge or otherwise transfer land and building and immovable property of any kind including any rights and interest therein.

(iii) The Investment Manager along with the Trustee shall within a reasonable time from the date of execution hereof, appoint a Project Manager for the Trust, by execution of the Project Implementation and Management Agreement.

(iv) The Investment Manager shall oversee activities of the Project Manager with respect to compliance with the InvIT Regulations and the Project Implementation and Management Agreement and in terms of the InvIT Regulations and applicable law. The Investment Manager shall obtain a compliance certificate from the Project Manager in the form as may be specified by SEBI, on a quarterly basis or such other intervals as may be prescribed under applicable law.

(v) The Trustee authorizes the Investment Manager to do all such other acts, deeds and things as may be incidental or necessary for the advancement or fulfilment of the investment objectives of the Trust, as set out in the offer document in accordance with the InvIT Regulations and the InvIT Documents.

(vi) The Investment Manager shall have the power to issue and allot Units or other securities, obligations or instruments in accordance with the InvIT Regulations and within such time period as may be prescribed under applicable law. The Investment Manager shall have the power to accept subscriptions to Units of the Trust and issue and allot Units to Unitholders or such other Persons and undertake all related activities under applicable law. The Investment Manager shall also have the power to refund subscription money and pay necessary interest thereon, in accordance with applicable law. Further, the Investment Manager shall, subject to and only in accordance with the terms of the InvIT Documents and applicable law, have the power to transfer the Units. The power of the Investment Manager is subject to the condition that, after the initial offer, no person, other

than the Sponsor, its related parties and associates (the "**Investor**") shall acquire or receive Units, which when taken together with Units held by the Investor and by persons acting in concert with the Investor exceeds 25% (twenty five percent) of the value of the outstanding Units unless prior approval of the Unitholders is obtained in accordance with the InvIT Regulations. In the event such approval is not received, the Investor shall provide an exit option to the dissenting Unitholders in terms of the InvIT Regulations and in the manner specified by SEBI.

(vii) The Investment Manager shall cause the depository to maintain a depository register.

(viii) In accordance with the provisions of the InvIT Regulations and the relevant policies adopted by the Investment Manager, if any, the Investment Manager, shall make such reserves out of the income or capital as it may deem proper, in order to, amongst other things, meet the expenses, liabilities or contingent liabilities of the Trust and any directions of the Trustee in this behalf whether made in writing or implied from their acts shall, so far as the applicable law may permit, be conclusive and binding. Any distribution made from such reserves shall be in accordance with the InvIT Regulations and the InvIT Documents.

(ix) The Investment Manager may cause the Trust to borrow for the purposes of the Trust and the Portfolio Assets subject to any approval of the Unitholders in accordance with the InvIT Regulations and applicable law. The Investment Manager shall also have the power to cause the Trust to create encumbrances of any kind on the Portfolio Assets as collateral security for any such borrowings.

(x) The Investment Manager may cause the Trust to pay, prepay or repay any and all debt raised from any person in accordance with the terms therein and to redeem any debt securities or other securities, obligations or instruments in accordance with the terms thereof issued to persons in compliance with the InvIT Regulations and other applicable law

(xi) The Investment Manager shall have the power to exercise all rights of the Trust in the Portfolio Assets, including voting rights, rights to appoint directors, whether pursuant to securities held by it, or otherwise, in such manner as it deems to be in the best interest of the Trust, and in accordance with the InvIT Regulations, the InvIT Documents and applicable law. Additionally, if the Trust has invested in infrastructure projects through the holding company or SPVs, then the Investment Manager, in consultation with the Trustee, shall appoint the majority of the directors of the holding company(ies) and/or the SPV(s), in accordance with the applicable law, as well as ensure that in every general meeting including the annual general meeting of any SPV or holding company, the voting of the Trust is exercised, in accordance with the InvIT Regulations and applicable law.

(xii) The Investment Manager may use the services of external advisors and rely on the information provided in the due diligence process of assessing investment proposals as it deems necessary in its sole discretion.

(xiii) The Investment Manager, along with the Trustee, shall have the power to employ and pay at the expense of the Trust, any agent in any jurisdiction whether attorneys, solicitors, brokers, banks, trust, companies or other agents, without being responsible for the default of any agent if employed in good faith to transact any business, including without limitation, the power to appoint agents to raise funds, or do any act required to be transacted or done in the execution of the responsibilities in accordance with the Investment Management Agreement including the receipt and payment of moneys and the execution of documents.

(xiv) The Investment Manager may appoint any custodian in order to provide custodian services, and may permit any property comprised in the Trust to be and remain deposited with a custodian or with any person or persons in India or in any other jurisdiction subject to such deposit as authorised by the Trustee and permissible under the applicable law.

(xv) The Investment Manager, in consultation with the Trustee, shall appoint and have the power to appoint, determine the remuneration and enter into, execute, deliver and/to terminate all documents and agreements, any contracts, agreements, including share purchase agreement, deed of right of first offer and refusal, escrow agreements, debt documentation, underwriting agreements and other InvIT documents, any investment pooling agreement, agreement relating to strategic investments, co-investment agreements and other any and all documents and instruments containing customary terms including contractual indemnity with valuers, auditors, registrar and transfer agent, merchant banker, credit rating agency, or any other intermediary or service provider or agent including any amendments or supplements thereto as may be applicable with respect to the activities pertaining to the Trust in a timely manner as per the provisions of the InvIT Regulations and applicable law. The Investment Manager shall appoint an auditor for a period of not more than five consecutive years as provided in the InvIT Regulations. The Investment Manager shall have the power to determine the remuneration of the auditors in consultation with the Trustee. Provided that in the event the

Investment Manager is required to take any approval of the Unitholders for approval of remuneration of the auditors or appointment of the auditors, the same shall be obtained in accordance with the requirements as set out in the InvIT Regulations. The Investment Manager shall also have the power to determine the remuneration of the valuer. The remuneration of the valuer shall not be linked to or based on the value of the Portfolio Assets being valued.

(xvi) In the event of any capital gains tax, income tax, stamp duty or other duties, fees or taxes (and any interest or penalty chargeable thereon) whatsoever becoming payable in any jurisdiction in respect of the Trust or any part thereof or in respect of documents issued or executed in pursuance of the Trust Deed in any circumstances whatsoever, the Investment Manager shall have the power and duty to pay all such duties, fees or taxes (and any interest or penalty chargeable thereon) as well as to create any reserves for future potential tax liability (and any such interest or penalty) out of the Trust's income (and any such interest or penalty), in accordance with applicable law and as the Investment Manager may deem proper. For avoidance of doubt, it is clarified that (i) pursuant to this clause no Unitholder will be required to make a contribution as a capital commitment to the Trust (other than the issue price for Units allotted); and (ii) nothing in this clause pertains to the capital gains tax, income tax, stamp duty or other duties, fees or taxes (and any interest or penalty chargeable thereon) whatsoever becoming payable by the Unitholders, in their respective jurisdictions. The Investment Manager shall exercise due care and prudence in payment of duties and taxes of the Trust and shall endeavour to ensure that there are no material outstanding dues in that behalf, except for any claim or demand made by any tax department or authority subsequently, or any amounts disputed in good faith.

(xvii) The Investment Manager shall have the power to pay InvIT Expenses (as defined in the Investment Management Agreement) out of the funds of the Trust, or from any or all of the Portfolio Assets (as defined in the Investment Management Agreement), in such proportion as may be determined from time to time, and the Investment Manager shall be entitled to reimbursement of any such expenditure duly incurred by the Investment Manager and that is not paid out of the funds of the Trust, subject to the conditions set out in the Investment Management Agreement.

(xviii) The Investment Manager shall have the power to take the opinion of legal / tax counsel in any jurisdiction concerning any difference arising under the Investment Management Agreement or any matter in any way relating to the Investment Management Agreement or to its duties in connection with the Investment Management Agreement, provided that the cost of such opinion shall not be borne by the Trust.

(xix) Subject to applicable law, the Investment Manager shall have the power to:

(a) accept any property before the time at which it is transferable or payable;

(b) pay or allow any equity or claim on any evidence that it thinks sufficient;

(c) accept any composition or any security movable or immovable for any equity or other property;

(d) allow any time of payment of any equity; and

(e) subject to such approval as may be required from the Unitholders, compromise, compound, abandon, submit to arbitration or otherwise settle any equity account, claim or thing whatsoever relating to the Trust or the Investment Management Agreement.

(xx) Subject to the conditions laid down in any offer document, InvIT Documents and applicable law, the Investment Manager may retain the invested capital portion of any proceeds received by the Trust from any holding company or SPV, including through the sale of or any holding company or SPV for the purpose of re-investment.

(xxi) The Investment Manager may make rules to give effect to, and carry out the investment objectives, subject to applicable law. In particular, and without prejudice to the generality of such power, the Investment Manager may provide, in a manner not inconsistent with the provisions of the Investment Management Agreement, the Trust Deed, the InvIT Regulations and other applicable laws, for all or any of the following matters, namely:

(a) manner of maintaining of the records and particulars of Unitholders;

(b) norms of investment by the Trust in accordance with the investment objectives of the Trust and in accordance with the powers and authorities of the Trustee as set out in the Trust Deed and those delegated to the Investment Manager;

(c) matters relating to entrustment, deposit or handing over of any securities or SPVs of the Trust to any one or more custodians and the procedure relating to the holding thereof by the custodian;

(d) such other administrative, procedural or other matters relating to the administration or management of the affairs of the Trust and which matters are not, by their very nature, required to be included or provided for in the Trust Deed or the Investment Management Agreement by the management thereof and which matters are not inconsistent with the provisions thereof;

(e) procedure for seeking the vote of the Unitholders either by calling a meeting or through postal ballot or otherwise; and

(f) procedure for summoning and conducting of meetings of Unitholders.

(xxii) Subject to applicable law, no Unitholder shall be entitled to inspect or examine the Trust's premises or properties without the prior permission of the Investment Manager, who shall not unreasonably withhold such permission. Further, no Unitholder shall be entitled to require discovery of any information with respect to any detail of the Trust's activities or any matter which may be related to the conduct of the business of the Trust and which information may, in the opinion of the Investment Manager, adversely affect the interest of other Unitholders.

(xxiii) The Investment Manager may cause the Trust to buyback the Units from the Unitholders at the end of the term of the Trust or any other time or in any other manner in accordance with applicable law and any policies formulated by the Investment Manager in this regard, if so directed by the Trustee.

(xxiv) The Investment Manager shall provide the Trustee with advice and recommendations regarding the extension of loans from the Trust to the holding company and/or the SPVs and also subscription to debt securities or quasi-debt securities or any similar kind of securities issued by the holding company and/or SPVs to the Trust or extension of loans from the Trust in compliance with applicable law.

(xxv) The Investment Manager, in accordance with the InvIT Regulations and the Investment Management Agreement, shall have the power to exercise all rights of the Trust in the Portfolio Assets, including voting rights, rights to appoint directors, whether pursuant to securities held by it, or otherwise, in such manner as it deems to be in the best interest of the Trust, and in accordance with the InvIT Regulations and applicable law. Additionally, if the Trust has invested in infrastructure projects through the Holding Company or SPVs, then the Investment Manager, in consultation with the Trustee, shall appoint the majority of the directors of the Holding Company(ies) and/or the SPV(s), in accordance with the applicable law, as well as ensure that in every general meeting including the annual general meeting of any SPV or Holding Company, the voting of the Trust is exercised, in accordance with the InvIT Regulations and applicable law.

(xxvi) The Investment Manager shall also have the following powers and authorities, subject to the InvIT Regulations, applicable law and the InvIT Documents:

(a) to institute, conduct, compromise, compound, or abandon any legal proceedings for or on behalf of or in the name of the Trust, and to defend, compound or otherwise deal with any such proceedings against the Trust or the Investment Manager or the officers of the Investment Manager or concerning the affairs of the Trust, and also to compound and allow time for payment or satisfaction of any equity due and of any claims or demands by or against the Trust and to refer any differences to arbitration and observe and perform any awards thereof;

(b) to make and give receipts, releases and other discharges for moneys payable to the Trust and for the claims and demands of the Trust;

(c) to enter into all such negotiations and contracts, and, execute or terminate and do all such acts, deeds and things for or on behalf of or in the name of the Trust as it may consider expedient for or in relation to any of the matters or otherwise for the purposes of the Trust;

(d) to ascertain, appropriate, declare and distribute or reinvest the surplus generally or under the Trust, to determine and allocate income, profits, expenses and gains in respect of the Trust to and amongst the Unitholders, to carry forward, reinvest or otherwise deal with any surplus and to transfer such sums, as it may deem fit, to one or more reserve funds which may be established by it, in each case in accordance with the InvIT Documents and the InvIT Regulations;

(e) to open one or more bank accounts and demat accounts for the purposes of the Trust, to deposit and withdraw money and/or securities, and fully operate and manage any such accounts fully;

(f) to sign, seal, execute, deliver and register according to applicable law all deeds, documents, and assurances in respect of the Trust;

(g) to ascertain, assess and calculate the net distributable cash flows of the Trust in accordance with the Trust Deed, the distribution policy adopted by the Trust, the InvIT Regulations, InvIT Documents, and applicable law;

(h) pay out of the income of the Trust, after deducting all expenses, the income and other distributions in accordance with the Trust Deed, InvIT Regulations and applicable law;

(i) take into their custody or control all the capital, assets, property of the Trust and hold the same in trust for the Unitholders in accordance with the Trust Deed, applicable law and the InvIT Regulations;

(j) generally to exercise all such powers as it may be required to exercise under the InvIT Regulations and applicable law for the time being in force and do all such matters and things as may promote the investment objectives of the Trust or as may be incidental to or consequential upon the discharge of its functions and the exercise and enforcement of all or any of the powers and rights under the Investment Management Agreement, applicable Law, InvIT Documents and the InvIT Regulations;

(k) together with the Trustee, initiate, prosecute or defend any action or other proceedings in any court of law or through arbitration or in any other manner for recovery of debts or sums of money, right, title or interest, property, claim, matter or thing whatsoever now or hereafter to become due or payable or in any way and belonging to the Trust by any means or on any account whatsoever in respect of and pertaining to the investments made by it and the same actions or proceedings or suits to discontinue or settle, as it shall in its best judgment or discretion deem fit;

(l) to issue statement of accounts or Unit certificates (if requested) to the Unitholders on behalf of the Trustee in accordance with applicable law. To submit Units for dematerialisation and to make all applications and execute all documents with the depositories and depository participants as may be necessary in this regard;

(m) to set up such systems and procedures, and submit such reports, as may be required by the Trustee and/or Unitholders as necessary for effective monitoring of the functioning of the Trust.

2. *Duties of the Investment Manager*

The Investment Manager shall perform its duties as required under the Investment Management Agreement in accordance with the InvIT Regulations, including but not limited to:

(i) The Investment Manager shall carry out and conduct its business in a proper and efficient manner in the best interest of the Unitholders. Further, it shall at all times exercise due diligence in carrying out its duties and protecting the interest of the Unitholders.

(ii) The Investment Manager shall coordinate with the Trustee, as may be necessary, with respect to the operations of the Trust.

(iii) The Investment Manager shall ensure that the valuation of the Portfolio Assets is done by the valuer(s) in accordance with Regulation 21 of the InvIT Regulations.

(iv) The Investment Manager shall arrange for adequate insurance coverage for the Portfolio Assets in accordance with the InvIT Regulations. The Investment Manager shall ensure that assets held by the Holding Companies and the Portfolio Assets are adequately insured in accordance with the InvIT Regulations.

(v) The Investment Manager shall maintain proper books of accounts, documents and records with respect to the Trust, in the manner set out in the Trust Deed, to give a true, fair and accurate account of the investments, expenses, earnings, profits etc. of the Trust. The financial year of the Trust shall begin from the date of the Trust Deed and shall end on the immediately succeeding 31st of March and on the anniversary thereof in each succeeding year, unless otherwise determined. The Investment Manager shall ensure that audit of the accounts of the Trust by the auditors is undertaken

in accordance with and in the frequency mentioned in the InvIT Regulations and such report is submitted to the stock exchange(s) within the time stipulated by the stock exchange(s), if any, and in accordance with the InvIT Regulations.

(vi) The Investment Manager shall declare distributions to Unitholders in accordance with the InvIT Regulations and InvIT Documents. Subject to applicable law, such percentage of the net distributable cash flows of the Holding Companies and SPVs, shall be distributed to the Trust, in terms of the InvIT Documents and InvIT Regulations. Such declared distributions shall be made within the time period prescribed by the InvIT Regulations. The Investment Manager shall maintain a record (for such periods as may be prescribed by the InvIT Regulations) of the distributions declared and made to the Unitholders.

(vii) The Investment Manager shall convene meetings of the Unitholders and maintain records pertaining to the meetings in accordance with the InvIT Regulations. The Investment Manager shall be responsible for all the activities pertaining to conducting of meeting of the Unitholders, subject to oversight by the Trustee in all cases other than where the meetings are on issues pertaining to the Trustee. Provided that, for Unitholder meeting related to issues related to Investment Manager such as change, removal or change in control of the Investment Manager, the Trustee shall be required to obtain approval of the Unitholders and consequently, the Unitholder meetings shall be convened and conducted by the Trustee.

(viii) The Investment Manager shall intimate the Trustee prior to any change in control of the Investment Manager to enable the Trustee to seek prior approval from the Unitholders and SEBI or any other authorities in accordance with the InvIT Documents, InvIT Regulations and applicable law, in this regard and shall ensure that no such change is given effect to, until the approval of the Unitholders and SEBI has been obtained, or the Investment Management Agreement is terminated and a new investment manager has been appointed in accordance with the terms of the Investment Management Agreement, or in compliance with any other requirement under the InvIT Documents, InvIT Regulations and applicable law.

(ix) The Investment Manager will monitor the Trust, including monitoring current and projected financial position of the Trust and the Portfolio Assets. The Investment Manager shall place before its board of directors, a report on the activity and performance of the Trust in accordance with the InvIT Regulations. The Investment Manager shall designate an employee from the team or a director as the compliance officer for monitoring of compliance with the InvIT Regulations and any circulars or guidelines issued thereunder and intimating SEBI in case of non-compliance.

(x) The Investment Manager shall maintain records pertaining to the activity of the Trust in terms of the InvIT Regulations.

(xi) The Investment Manager shall adopt, as applicable, and shall ensure that, the Trust, the Project Manager, the holding companies and the SPVs adopt policies, including corporate governance policies, policies in relation to acquisition of assets from the Sponsor and third parties, policies in relation to the net distributable cash flows, policies in relation to anti-bribery and anti-corruption, policies in relation to the investments by the Trust, policies in relation to environment, safety and health, policies for anti-money laundering, policy on related party transactions and any other policies, in relation to their activities related to the Trust as may be required and applicable, prior to filing of the relevant initial offer document for the initial offer. The terms, such as, manner or requirement of Unitholders' approval for each of these policies, applicability, amendment and termination, of the respective policies shall be set out in each of the policies.

(xii) The Investment Manager shall manage the Trust in accordance with the InvIT Regulations, the InvIT Documents, the investment objectives of the Trust and applicable laws, and shall ensure that the investments made by the Trust are in accordance with the investment conditions enumerated in the InvIT Regulations, applicable law and in accordance with the investment objectives and the InvIT Documents and are solely in the interest of Unitholders.

(xiii) The Investment Manager shall review the transactions carried out between the Project Manager and its associates and where the Project Manager has advised that there may be a conflict of interest, shall obtain confirmation from a practising chartered accountant or a valuer, as applicable, that such transaction is on an arm's length basis.

(xiv) The Investment Manager shall ensure adequate and timely redressal of all Unitholders' grievances pertaining to the activities of the Trust, in accordance with the InvIT Regulations.

(xv) The Investment Manager shall submit to the Trustee:

(a) quarterly reports on the activities of the Trust including receipts for all funds received by it and for all payments made, status of compliance with the InvIT Regulations, specifically Regulations 18, 19 and 20 of the InvIT Regulations, performance report, status of development of under-construction projects, within the time period specified under the InvIT Regulations;

(b) valuation reports as required under the InvIT Regulations within the time period specified under the InvIT Regulations;

(c) proposal to acquire, sell or develop, or bid for any asset or project or expand existing completed assets or projects along with rationale for the same;

(d) details of any action which requires approval from the Unitholders as may be stipulated under the InvIT Regulations;

(e) details of transactions it enters into with its associates;

(f) details of any other material fact including change in its directors, change in its shareholding, any legal proceedings that may have a significant bearing on the activity of the Trust, within such period as stipulated under applicable law;

(g) details of any breach of the investment conditions specified under the InvIT Regulations or of any borrowings exceeding such percentage of the value of the Portfolio Assets as may be prescribed by the InvIT Regulations, in each case, on account of market movements of the price of the Portfolio Assets;

(h) such information, document and records as pertaining to the activities of the Trust and as may be reasonably necessary for the Trustee with respect to its responsibilities under the Trust Deed or the InvIT Regulations and applicable law;

(i) such other information, document and records as pertaining to its activities, obligations, duties and responsibilities under the Investment Management Agreement or the InvIT Regulations and applicable law; and

(j) any other reports, presentations, documents, as may be required under the InvIT Documents and applicable law including the InvIT Regulations.

In the event of failure of the Investment Manager to submit information or reports as specified above, or such reports as requested by Trustee to be delivered to the Trustee, as may be necessary for effective monitoring of the functioning of the Trust, in a timely manner and in terms of the InvIT Regulations, the Trustee shall intimate SEBI.

(xvi) The Investment Manager shall submit to the Unitholders such information, document and records as pertaining to the activities of the Trust or having bearing on the operation or performance of the Trust and/or the Portfolio Assets as may be required by the Unitholders in accordance with InvIT Regulations and other applicable law and subject to compliance with Insider Trading Regulations and other applicable law.

(xvii) The Investment Manager shall be responsible for all activities pertaining to the issue and listing of the Units of the Trust, in accordance with applicable law, including:

(a) filing of offer document with SEBI;

(b) filing the offer document with SEBI and stock exchange(s), in the event the Trust is listed or proposes to be listed, within the prescribed time period;

(c) dealing with all matters up to allotment of Units to the Unitholders;

(d) obtaining in-principle approval and final listing and trading approvals from the stock exchanges, in the event the Trust is listed or proposes to be listed; and

(e) dealing with all matters relating to the issue and listing of the Units as specified under Chapter IV of the InvIT Regulations and all matters relating to the offer and issue of Units under Chapter VIA of the InvIT Regulations and any guidelines as may be issued by SEBI in this regard, as applicable. The Trust shall also comply with the minimum public holding for the Units and minimum number of Unitholders as prescribed under the InvIT Regulations.

(xviii) The Investment Manager is also responsible for ensuring that all relevant provisions of the InvIT Regulations and applicable law have been complied with and that all statements and disclosures made in any offer document are material, true, correct, not misleading and are adequate disclosures in order to enable the investors to make an informed decision and are in accordance with the InvIT Regulations and applicable law, and such offer document should not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, and shall include such other disclosures as may be specified by SEBI.

(xix) In the event the Trust is listed and in case of occurrence of any event specified in Regulations 17(1)(a) to 17(1)(g) of the InvIT Regulations, the Investment Manager shall apply for delisting of units of the Trust to SEBI and the designated stock exchange in accordance with the InvIT Regulations and applicable law. The Investment Manager shall, on the instruction of the Trustee, wind up the Trust in accordance with applicable law. Upon winding up of the Trust, the Trustee shall surrender the certificate of registration to SEBI.

(xx) The Investment Manager shall within the time period prescribed under the InvIT Regulations, submit half-yearly reports, annual reports and any other such reports including quarterly reports, if applicable, as may be required under the InvIT Regulations to all the Unitholders electronically or through physical copies and to the designated stock exchange.

(xxi) The Investment Manager shall, in accordance with the requirements of the InvIT Regulations and other applicable law, including any requirements prescribed by SEBI or the stock exchange(s) from time to time, disclose half-yearly reports and any other such reports, as may be required under the InvIT Regulations, within the time period prescribed under the InvIT Regulations to the stock exchange(s) and provide any information having bearing on the operation or performance of the Trust, as well as price sensitive information and other information that is required in terms of the InvIT Regulations and applicable law, including in relation to intimating SEBI in case of any discrepancy in the operation of the InvIT with the InvIT Regulations and the InvIT Documents, as required under applicable law.

(xxii) The Investment Manager (along with the Trustee) shall ensure that all related party transactions in relation to the Trust and Portfolio Assets are on an arms' length basis in accordance with relevant accounting standards, in the best interests of the Unitholders, and are consistent with the Investment Objectives of the Trust and shall be disclosed in accordance with the InvIT Regulations

(xxiii) Without prejudice to any other provision of the Investment Management Agreement and the InvIT Regulations, the Investment Manager will also have the following duties and obligations:

(a) ensure that computation and declaration of net asset value of the Trust is based on the valuation done by the valuer in accordance with the InvIT Regulations and applicable law and is disclosed to the stock exchanges in accordance with the InvIT Regulations and applicable law, if applicable, within the time period specified under the InvIT Regulations;

(b) maintain regular interaction with the Trustee regarding performance of the Trust and providing the Trustee with any information in relation to the operations of the Trust as maybe required under applicable law;

(c) conducting its affairs and the affairs of the Trust in such a manner that no Unitholder will have any personal liability with respect to any liability or obligation of the Trust;

(d) keeping the Unitholders of the Trust informed and updated on investment activities of the Trust in accordance with the terms of the InvIT Documents;

(e) collecting all dividends, fees, property and other payments due and receivable by the Trust declaring distribution to the Unitholders in the manner set out in the Trust Deed and in terms of the InvIT Regulations and applicable law;

(f) to ensure that no commission or rebate or any other remuneration, arising out of transactions pertaining to the Trust is collected by it or its associates, other than as specified in the offer document or any other document as may be specified by SEBI for the purpose of the issue of the Units of the Trust;

(g) to ensure that the Portfolio Assets and/ or Holding Company(ies), have proper legal titles, to the extent applicable, and that all the material contracts entered into on behalf of the Trust or the Portfolio Assets are legal, valid, binding and enforceable by and on behalf of the Trust;

(h) to ensure that the activities of the intermediaries or agents or service providers appointed by it are in accordance with the InvIT Regulations or any guidelines or circulars issued thereunder;

(i) to ensure that any possible conflict of interest involving its role as Investment Manager is reported to the Trustee;

(j) to ensure that disclosures or reporting to Unitholders, SEBI, the Trustee and the designated stock exchange(s) are in accordance with the InvIT Regulations and applicable law;

(k) to ensure compliance with reporting and disclosure requirements under applicable law, and in case of any delay or discrepancy, to rectify such delay or discrepancy on an urgent basis;

(l) submit a compliance certificate to the Trustee, in the form and at such intervals as may be specified under the InvIT Regulations and Applicable Law;

(m) provide SEBI, the designated stock exchange and Trustee, where applicable, such information as may be sought by SEBI or by the designated stock exchange or Trustee pertaining to the activity of the Trust;

(n) to immediately notify the Trustee, the Unitholders and SEBI (if required) of any act which is detrimental to the interest of the Unitholders;

(o) to fulfil any other duty, obligation and responsibility that may be required of the Investment Manager, in accordance with, and within the timelines prescribed under (if any) the provisions of the InvIT Regulations

(p) to inform the Trustee in writing about any change in the representations and warranties provided under the Investment Management Agreement; and

(q) taking any other actions reasonably incidental to any of the foregoing, or necessary or convenient in order to fully effect or evidence any action or transaction contemplated under the Investment Management Agreement.

(xxiv) The Investment Manager shall provide to the Trustee such assistance as may be required by the Trustee in fulfilling its obligation towards the Trust under applicable law or as may be required by any regulatory authority with respect to the Trust.

(xxv) The assets and liabilities of the Trust shall at all times be segregated from the assets and liabilities of the Investment Manager. The assets held under the Trust shall be held by the Trustee for the exclusive benefit of the Unitholders and such assets shall not be subject to the claims of any creditor or any person claiming against the Investment Manager.

3. *Liabilities of the Investment Manager*

The liabilities of the Investment Manager in terms of the Investment Management Agreement are as follows:

(i) the Investment Manager shall not be liable in respect of any action taken or damage suffered by it on reliance upon any notice, resolution, direction, consent, certificate, affidavit, statement, certificate of stock, plan of reorganization or (without being limited in any way by the foregoing) other paper or document believed to be genuine and to have been passed, sealed or signed by appropriate authorities or entities, after exercising due care in accordance with customary industry standards.

(ii) the Investment Manager shall not be liable to the Unitholders for doing or failing to do any act or thing which by reason of any provision of any present or future law or regulation made pursuant thereto, or of any decree, order or judgment of any court, or by reason of any request, announcement or similar action (whether of binding legal effect or not) which may be taken or made by any person or body acting with or purporting to exercise the authority of any government (which legally or otherwise) it shall be directed or requested to do or perform or to forbear from doing or performing. If for any reason it becomes impossible or impracticable (as determined by the Trustee and the Investment Manager) to carry out any of the provisions of the Investment Management Agreement, the Investment Manager shall not be under any liability. However, it shall duly inform the Trustee and the Unitholders of the same.

(iii) if the Investment Manager is required, by the InvIT Regulations or any other applicable law to provide information regarding the Trust and/or the Unitholders, the Trust investments and income therefrom and provisions of the Investment Management Agreement and complies with such request in good faith, whether or not it was in fact enforceable, the Investment Manager shall not be liable

to the Unitholder or any of them or to any other party as a result of such compliance or in connection with such compliance.

(iv) the Investment Manager shall not incur any liability for any act or omission which may result in a loss to a Unitholder (by reason of any depletion in the value of the Portfolio Assets or otherwise), except in the event that such loss is a result of fraud or gross negligence or dishonest acts of commission or omission or wilful default on the part of the Investment Manager, or disregard of duty or breach of duties under the Investment Management Agreement or applicable law by the Investment Manager.

(v) if the distributions, after being declared, are not made within the period prescribed in the InvIT Regulations, the Investment Manager shall be liable to pay interest to the Unitholders at the rate as may be prescribed in the InvIT Regulations until the distribution is made, and such interest shall not be recovered in the form of fees or any other form payable to the Investment Manager by the Trust. In the event of delay or non-payment of such interest by the Investment Manager within 30 days of such interest becoming due, the Trustee shall set off the relevant amount against the management fees payable to the Investment Manager.

(vi) the Investment Manager shall not be liable to any Unitholder for the authenticity of any signature or of any seal affixed to any endorsement or other document affecting the title to or the transmission of Units or interests in the InvIT or of any investments of the InvIT or be in any way liable for any forged or unauthorized signature or seal affixed to such endorsement, transfer or other document, or for acting upon or giving effect to any such forged or unauthorized signature or seal, so long as the Investment Manager was not aware that such signature, seal or document was unauthorized or forged and acted in good faith thereto. The Investment Manager shall be bound to require that the signature of any Unitholder to any document required to be signed by such Unitholder, under or in connection with these presents shall be verified to its reasonable satisfaction.

4. *Indemnity*

(i) in addition to the fees, distributions and expense reimbursements described, subject to any exceptions set out in the InvIT Documents, the Trustee (on behalf of the Trust) shall, from the Portfolio Assets, indemnify and hold harmless the Investment Manager and its affiliates, respective officers, directors, shareholders, partners, members, employees, advisors and agents ("**Indemnified Parties**") from and against any direct and actual claims, actions, losses, damages, liabilities, suits, proceedings and reasonable costs and expenses including legal fees ("**Losses**") suffered or incurred by them by reason of their activities on behalf of the Trust, unless such Losses have resulted from fraud or gross negligence or dishonest acts of commission or omission or wilful default on the part of the Investment Manager, or disregard of duty or breach of duties under the Investment Management Agreement or applicable law by the Investment Manager.

(ii) the Trust (acting through the Trustee) and the Trustee's directors, employees and officers acting on behalf of the Trust (collectively, the "**Trustee Party**") shall be indemnified by the Investment Manager against any and all Losses, incurred or suffered by the Trustee Party in connection with the breach of any of the terms of this Agreement by the Investment Manager, or failure in furnishing information required by SEBI or any regulatory authority with respect to the Trust, or furnishing incorrect information by the Investment Manager under the InvIT Regulations or related to InvIT including in any offer document, or arising out of gross negligence, wilful default or misconduct or fraud on part of the Investment Manager, in carrying out its obligations under the Investment Management Agreement, the Trust Deed, the other InvIT Documents any information memorandum / offer document and applicable law. The Trustee acknowledges and agrees that the aggregate maximum liability of the Investment Manager in each financial year shall be limited to the aggregate fees paid to the Investment Manager for the immediately preceding one financial year, provided that such aggregate maximum liability shall not be applicable in the event such liability of the Investment Manager to indemnify the Trustee Party for losses or damages suffered arising out of any gross negligence, wilful default or misconduct or fraud of the Investment Manager.

5. *Termination*

(i) subject to the other provisions of the Investment Management Agreement, the Investment Management Agreement shall continue during the term of the Trust and shall terminate upon dissolution of the Trust.

(ii) the Investment Management Agreement shall be effective from the date of execution of the Investment Management Agreement and shall terminate in accordance with the terms of the Investment Management Agreement.

(iii) the appointment of the Investment Manager may be terminated by the Trustee or the Unitholders in accordance with the procedure specified under the InvIT Regulations.

(iv) the Unitholders, other than any party related to the transactions and its associates holding not less than such percentage by value as specified under the InvIT Regulations, may apply in writing to the Trustee for removal of the Investment Manager.

(v) subject to the approval of Unitholders (as required) and compliance with other requirements under applicable law, the Investment Management Agreement may be terminated:

(a) by the Investment Manager by delivery of a written notice to the Trustee, subject to appointment of new Investment Manager in accordance with the Investment Management Agreement and the InvIT Regulations; or

(b) by the Trustee in accordance with applicable law; or

(c) by any Party by delivery of a written notice to the other Party upon the bankruptcy of such other Party, or if winding up or liquidation proceedings are commenced against such other Party (and such proceedings persist for a period of more than three months).

(vi) after approval from the Unitholders and SEBI in accordance with the InvIT Regulations, the Trustee shall appoint a new investment manager and execute a new investment management agreement within three months from the termination of the earlier investment management agreement in accordance with applicable law. The Trustee shall also ensure that the new investment manager stands substituted as a party in all documents to which the Investment Manager was a party. The Investment Manager shall remain in office until the appointment of a new investment manager. The Investment Manager shall continue to be liable for all its acts and omissions and commissions during its tenure as Investment Manager notwithstanding its termination.

(vii) upon removal or replacement of the Investment Manager, the Investment Manager shall, within a period of 30 business days, transfer custody of the Trust to the Trustee and give the Trustee all books of accounts, correspondence, documents and records relating to the Trust which the Investment Manager has in its possession. In the event of removal or resignation of the Investment Manager, the Investment Manager shall be entitled to receive management fees only up to the end of its term.

Notwithstanding anything contained hereinabove, (i) in the event that the offer of Units does not occur within the time period stipulated in the InvIT Regulations or such other date as may be mutually agreed to between the Investment Manager and the Trustee, or (ii) in the event of cancellation of registration of the Trust by SEBI, or (iii) winding up of the Trust, then the Investment Management Agreement shall automatically terminate without any liability on any party.

D. The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited

History and Certain Corporate Matters

Cube Highways and Transportation Assets Advisors Private Limited is the Project Manager in respect of the Trust. The Project Manager is a private company incorporated on January 1, 2015, under the Companies Act, 2013 having CIN U74140DL2015PTC274877. The Project Manager's registered office is situated at B-376, Upper Ground Floor, Nirman Vihar, East Delhi, New Delhi 110 092. The Project Manager is an Indian entity providing advisory services in the infrastructure sector. Currently, it has entered into project management agreements with several companies in India for providing infrastructure advisory services.

Proposed Change in the Project Manager

Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii). indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from relevant concessioning authorities of the Portfolio Assets. Subsequently, a project implementation and management agreement shall be executed with the incoming project manager and relevant parties. The aforesaid change has not been completed as of the date of this Draft Offer Document. Further, in accordance with the InvIT Regulations and the Trust Deed the existing Project Manager continues to be liable for all its acts of omission and commission for the period during which it served as project manager.

Background of the Project Manager

The Project Manager will oversee the operations and maintenance of the entire portfolio of the 31 projects transferred to the Trust.

Neither the Project Manager nor any of the promoters or directors of the Project Manager (i) are or have been debarred from accessing the securities market by SEBI; (ii) are or have been a promoter, director or person in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; and/or (iii) are or have been declared a wilful defaulter by any bank or financial institution or consortium thereof in accordance with the guidelines on wilful defaulters published by the RBI.

Brief profiles of the Key Personnel of the Project Manager

Please see below the brief biographies of the key personnel of the Project Manager:

1. **Bovin Kumar**:

   Bovin Kumar has been the chief executive officer of the Cube Highways and Transportation Assets Advisors Private Limited since 10th January 2023. He holds a bachelor's degree in civil engineering from Regional Engineering College Hamirpur (HP) and master's degree in technology from Indian Institute of Technology, Kanpur. He also holds executive post-graduate diploma in international business from the Indian Institute of Foreign Trade, New Delhi. He has over 25 years of experience in designing, development and operating & maintaining of roads. Prior to joining the Cube Highways and Transportation Assets Advisors Pvt Limited as Chief Operating Officer, he had worked with Ramboll, CH2MHILL (now Jacobs), Halcrow (Now Jacobs), National Highways Authority of India and Ministry of Road Transport (Govt of India).

2. **Dr. C. S. Bhagavan Raju**

   Dr. C. S. Bhagavan Raju is the chief operating officer of Cube Highways and Transportation Assets Advisors Private. Limited since April 1, 2024, and also served as senior vice president from July 6, to March 31, 2024. He holds a bachelor's of technology in civil engineering from Jawaharlal Nehru Technological University, Kakinada, A.P, Master of Engineering from University of Poona, and a Doctor of Philosophy (PhD) in civil engineering, specializing in flexible pavements from JNTU, Kakinada, A.P. With over 32 years of experience in the roads sector, Dr. Raju has extensive expertise in quality control, construction, and project management, encompassing planning, implementation, and commissioning of infrastructure projects. Prior to joining Cube Highways and Transportation Assets, he held key positions with leading organizations such as Afcons Infrastructure, Land Transport Authority, Singapore, Soma Enterprise Ltd., Gammon Infrastructures Pvt Ltd., Ashoka Buildcon Ltd., and Megha Engineering & Infrastructure Ltd.

3. **Dr. Mukul Shastry**

   Mukul Shastry has served as general counsel since July 2022. He holds a bachelor's, master's and doctorate in Law from the University of Rajasthan, Jaipur, and is an alumnus of the Indian Institute of Management, Ahmedabad, where he completed the PGPX program (one-year full time MBA). He is also a qualified company secretary and has cleared the CAIIB. His career spans legal practice, academia as an assistant professor at National Law University, Jodhpur, and central banker as a legal officer with the Reserve Bank of India.

4. **Rahul Shankar**

   Rahul Shankar has been the group chief human resources officer of Cube Highways and Transportation Assets Advisors Private Limited since July 11, 2023. He holds master's in business administration from Ecole Nationale des Ponts et Chaussèes and master's in political science from University of Lucknow. He has over 19 years of experience in human resources, organization development, talent development & succession planning, and employee engagement & culture transformation, across infrastructure and diversified business environments. Prior to joining Cube Highways and Transportation Assets Advisors Private Limited as chief human Resources Officer on July 7, 2023, he had worked with KEC International Limited, Kenersys Kalyani Ltd, Dalkia Energy, Punj Lloyd, and Bharti Teletech Ltd.

5. **Anuj Maitrey**

   Anuj Maitrey is leading the operations and traffic teams at Cube Highways and Transportation Assets Advisors Private Limited since April 2024. He has completed his bachelor's in technology in civil engineering, from Dr. Ram Manohar Lohia Avadh University, and holds a master's degree in planning (transport) from School of Planning and Architecture, New Delhi and MBA from Leeds University Business School, Leeds (United Kingdom). Prior to joining Cube Highways and Transportation Assets Advisors Private Limited, Anuj has worked with Halcrow Consulting India Limited (now Jacobs), IL&FS Infrastructure Development Corporation, Isolux Corsan Concessions (now Roadis), Ramboll India, and Steer Davies Gleave, India.

6. **Neeraj Singh**

Neeraj Singh serves as the senior vice President and head of routine maintenance at Cube Highways and Transportation Assets Advisors Private Limited. He has been associated with the organization since April 1, 2018. He brings over 25 years of experience in the construction and maintenance of highways and bridges, and tunnel construction. He holds a graduate degree in civil engineering from Lingayas Vidyapeeth, Faridabad, and a diploma in Civil Engineering from Board of Technical Education, Delhi. Prior to joining Cube Highways and Transportation Assets Advisors Private Limited, he was associated with reputed organizations including Punj Lloyd, Oriental Structural Engineers, Leighton Contractors, Galfar Engineering, and Continental Engineering Corporation.

7. **Sippy N Kumar**

Sippy N Kumar has been associated with Cube Highways and Transportation Assets Advisors Private Limited since December 12, 2016 and has been the senior vice president - environment & social since April 1, 2022. She holds a bachelor's degree in environmental engineering from the Delhi College of Engineering (now Delhi Technological University), University of Delhi and pursuing executive MBA from SP Jain school of Global Management. She has over 18 years of experience in ESG, sustainability, Environment and Social (E&S) due diligence, E&S management system implementation, sustainable finance and environmental consultancy. Prior to joining the Cube Highways and Transportation Assets Advisors Private Limited as Sr VP-E&S, she had worked with SMEC (now part of Surbana Jurong Group), Halcrow (now Jacobs) and SNC Lavalin.

8. **Bhanoj Dokku**

Bhanoj Dokku has been associated with Cube Highways and Transportation Assets Advisors Private Limited since April 1, 2018. He is currently the vice president - strategies & analytics at Cube Highways and Transportation Assets Advisors Private Limited. He holds a bachelor's degree in civil engineering and a postgraduate degree in Transportation Engineering from the Indian Institute of Technology, Madras. He has over nine years of experience in pavement engineering, maintenance strategy development, and highway operations and maintenance. Prior to joining Cube Highways and Transportation Assets Advisors Private Limited, he worked with Mahua Bharatpur Expressways Limited (Cube Highways Group) and ITS Planners and Engineers.

Key terms of the Project Implementation and Management Agreement

The Project Manager[#] has entered into the Project Implementation and Management Agreement for the Existing Portfolio Assets, in terms of the InvIT Regulations, the key terms of which, are provided below:

1. *Scope of Services*

The Project Manager shall, either directly or through the appointment and supervision of appropriate agents, which may be persons directly employed by the Portfolio Assets ("**Agents**"), undertake the operation, maintenance and management of the Portfolio Assets, in compliance with the Concession Agreements and applicable law.

The scope of services of the Project Manager are as follows:

(i) supervision of the engineering, procurement and construction works in relation to the Portfolio Assets as required under the Concession Agreements, including completion of all outstanding capital works in respect of the Portfolio Assets, such as any punch list items, to the extent applicable, and in procuring the completion certificate in accordance with the Concession Agreements, where applicable;

(ii) ensuring implementation of the operations and maintenance for the Portfolio Assets as stipulated under the Concession Agreements, including tolling;

(iii) undertaking periodic inspection visits of the Portfolio Assets and promptly reporting to the Trustee and the Investment Manager, any deficiency, non-compliance or failure in fulfilling the obligations of the Project Manager. The Project Manager, either by itself or by way of supervision of Agents shall undertake all steps to remedy such deficiency;

(iv) coordination and undertaking of any and all activities required to be performed by the Portfolio Assets pursuant to the Concession Agreements or pursuant to any communication from concessioning authorities or any other governmental authorities, including in relation to shifting of utilities, associated roads, felling of trees and related works with respect to the project site or any work to be undertaken pursuant to a change of scope order based on a determination of change of scope by concessioning authorities under the Concession Agreements;

(v) providing assistance wherever sought by the Portfolio Assets or considered expedient by the Project Manager, in relation to the following:

(a) liasioning with governmental authorities, in connection with the Portfolio Assets;

(b) sending appropriate responses to notices from the governmental authorities and coordinating with them to obtain appropriate approvals, if any, for the Portfolio Assets;

(c) liasioning with the independent engineer in connection with the Portfolio Assets; and

(d) submitting appropriate reports on interactions with governmental authorities in relation to the Portfolio Assets;

(e) operation of the bank accounts of the Portfolio Assets; and

(vi) provide business support services for the activities to be undertaken by the Portfolio Assets.

2. *Functions, Duties and Responsibilities of the Project Manager*

The functions, duties and responsibilities of the Project Manager in terms of the Project Implementation and Management Agreement are as follows:

(i) the Project Manager shall, either directly or through the appointment and supervision of Agents, provide the specified services in relation to the Portfolio Assets as may be necessary for the discharge of its duties under the terms of the agreement and under the InvIT Regulations.

(ii) the Project Manager shall, either directly or through Agents, oversee the progress of development, approval status and other aspects of the Portfolio Assets that may be under development or is to be established until its completion in accordance with any agreement that may be entered into in this regard, including the relevant concession agreements and discharge all obligations in respect of achieving timely completion of the infrastructure projects, wherever applicable, including the supervision of agents appointed for such purpose.

(iii) the Project Manager shall, either directly or through Agents, discharge all obligations in respect of the maintenance, operation and management of the infrastructure projects which have achieved the commercial operations date in terms of the respective concession agreements in terms of the Project Implementation and Management Agreement and the InvIT Regulations and ensure compliance with the relevant provisions of the concession agreements in this regard.

(iv) the Project Manager shall ensure that, for the purpose of provision of the services, all procurement of goods (including raw materials) and award of contracts, either directly or through Agents, is undertaken in accordance with procedures established and within the budget determined by the Project Manager in consultation with the Investment Manager.

(v) the Project Manager acknowledges that the Trustee and the Investment Manager will oversee the activities undertaken by the Project Manager in accordance with the InvIT Regulations and the InvIT Documents and accordingly, the Project Manager shall extend complete co-ordination to enable the Trustee and the Investment Manager to perform such obligations in accordance with the InvIT Regulations and the InvIT Documents. The Project Manager shall provide compliance certificate(s), as may be specified, to the Investment Manager and the Trustee in accordance with the InvIT Regulations, in the form prescribed by SEBI, if any.

(vi) the Project Manager shall at all times ensure that the transactions or arrangements entered into by the Project Manager with a related party are on an arm's-length basis and shall provide the Investment Manager with details of transactions carried out between itself and its associates and disclose any conflict of interest in such cases to the Investment Manager, in accordance with the InvIT Regulations.

(vii) the Project Manager shall intimate the Trustee prior to any change in control of the Project Manager to enable the Trustee to seek requisite approval from regulatory, statutory, legal or government authorities, lenders and any contractual counter parties in accordance with any documents pertaining to the Portfolio Assets, if applicable.

(viii) the Project Manager shall provide to the Trustee and the Investment Manager or to such other person as the Trustee and/or the Investment Manager may direct, all information that may be necessary for each of them to maintain the records of the InvIT and as may be required for making submissions to SEBI or any other Governmental Authority, including with respect to relevant approvals, consents and other documents required in relation to the Portfolio Assets and the reporting requirements under the InvIT Regulations, in a proper and timely manner, and in the format prescribed (if any), as required by the Trustee and /or the Investment Manager. Further, the Project Manager shall provide reasonable assistance to the Portfolio Assets to apply for, obtain and maintain all necessary approvals

(and renewals of the same) that each of the Portfolio Assets is required to obtain from or file relevant applications for approvals with any Governmental Authority in connection with Portfolio Assets or as may be required under any third party agreement entered into by the Portfolio Assets and will oversee the progress of the Portfolio Assets in this regard.

(ix) the Project Manager shall have full authority, to receive directions and instructions from each of the Portfolio Assets and to take actions in relation to and ensure compliance with such directions and instructions and report back to each Portfolio Assets, the Trustee and the Investment Manager.

(x) the Project Manager shall promptly inform the Parties in writing of any act, occurrence or event, which the Project Manager believes is reasonably likely to increase the cost of or the time for implementation taken in relation to any InvIT asset, materially change the financial viability, quality or function of any InvIT asset or materially change the budget determined by the Project Manager in consultation with the Investment Manager in relation to the operations and maintenance of the Portfolio Assets.

(xi) if any defects are found in the maintenance, materials and workmanship of the services provided under this Agreement by the Project Manager and/or by the team members, the Project Manager shall promptly, in consultation and agreement with the other parties to the Project Implementation and Management Agreement regarding appropriate remedying of the defects, repair, replace or otherwise make good such defects as well as any damage caused by such defect at the cost of the relevant Portfolio Assets.

(xii) the duties of Project Manager shall also include the following:

(a) supervision of revenue streams from the Portfolio Assets and providing the necessary information and documents as may be required under the applicable law and the InvIT Regulations;

(b) execution and completion of activities in relation to the Portfolio Assets under development or to be developed in accordance with and in the manner contemplated in any agreement entered into by the relevant Portfolio Asset in this regard;

(c) exercising diligence and vigilance in carrying out its duties and protecting the Portfolio Assets;

(d) keeping the Investment Manager informed on all matters which have a material bearing on the operations of the Portfolio Assets;

(e) liaising with governmental authorities in respect of its obligations under the agreement;

(f) taking appropriate measures to mitigate the risks which may be encountered by the InvIT in respect of the Portfolio Assets;

(g) keeping proper records for actions taken in respect of the Portfolio Assets;

(h) appointing external consultants and advisers, including legal advisers, technical consultants and valuers, as may be required, for the purposes of rendering the services; and

(i) complying with the instructions of the Investment Manager and the Trustee and the provisions of the InvIT Regulations.

(xiii) if, in the assessment of the Project Manager, additional services are required for the purposes of carrying out its duties and obligations under the agreement and applicable law, the Project Manager shall notify the parties in writing of such requirement and obtain prior written approval of the relevant parties in this regard.

(xiv) notwithstanding anything to the contrary contained in the agreement, nothing contained in the Project Implementation and Management Agreement shall be construed to limit or restrict the performance of any duties or obligations of the Project Manager, Investment Manager or the Trustee contained in the InvIT Regulations and other applicable law.

(xv) during the term of the Project Implementation and Management Agreement, in the event the representations provided by the Project Manager under the agreement, become untrue or incorrect or incomplete in any respect, the Project Manager shall, within a reasonable time, inform the Trustee and Investment Manager of such event.

3. *Indemnity*

If the Project Manager is required to make any payments for such taxes, levies, duties, or charges (excluding direct tax) in relation to services provided during the subsistence of the agreement, then the relevant Portfolio Asset shall promptly make good such payment and shall keep the Project Manager indemnified against any tax liability or duties that relate to the service or the agreement.

4. *Termination*

(i) The Project Implementation and Management Agreement shall remain valid and effective, unless terminated by the parties in accordance with the provisions of the agreement or extended by mutual consent expressed in writing by the Parties until the such time as the last of the Concession Agreements is in force ("**Validity Period**"). It is clarified that the Project Implementation and Management Agreement shall be terminated in respect of a particular Portfolio Asset, upon termination of the relevant concession agreements entered into by such Portfolio Asset.

(ii) Prior to the expiry of its Validity Period, the Project Implementation and Management Agreement, may be terminated:

(a) by the Investment Manager after consultation with the Trustee by delivery of a prior written notice of 60 days to the Project Manager, subject to appointment of new project manager in accordance with the Project Implementation and Management Agreement and the InvIT Regulations; or

(b) by the Investment Manager after consultation with the Trustee by delivery of a written notice to the Project Manager at any time, upon breach of any of the terms, covenants, conditions or provisions of the agreement by the Project Manager and a failure of the Project Manager to remedy the said breach within a period of 60 days or such other period as may be mutually agreed to cure such breach; or

(c) by any party by delivery of a written notice to the other party upon the bankruptcy of such other party or if winding up or liquidation proceedings whether voluntary or involuntary are commenced or admitted against such other party (and such proceedings persist for a period of more than three months).

(iii) In the event that the offer of the Units does not occur within the time period stipulated in the InvIT Regulations or such other date as may be mutually agreed to between the parties, or in the event of cancellation of registration of the InvIT by SEBI, or upon winding up of the InvIT, then the Project Implementation and Management Agreement shall automatically terminate without any liability to any party.

 # Pursuant to the resolution dated February 27, 2026, the board of directors of the Investment Manager has approved the (i) change of the project manager of the Trust and the appointment of Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new project manager of the Trust; and (ii) indicative draft of the New PIMA. The change is subject to receipt of requisite approvals from the relevant concessioning authorities of the Portfolio Assets and subsequent to the receipt of the approvals, the New PIMA will be executed. The aforesaid change has not been completed as of the date of this Draft Offer Document. For further details, please see the section entitled "Parties to the Trust - The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited" on page 168.

Shared Services

Shared Services Agreement

The Project Manager and the Investment Manager have entered into the SSA dated September 7, 2022, as amended on January 18, 2023, and September 26, 2023, in relation to services to be provided by the Project Manager to the Investment Manager. Certain key terms of the SSA are as follows:

Provision of services: The Project Manager shall, on and from the effective date, as defined in the SSA, provide the services, as set out in the SSA, to the Investment Manager (such services, the "**Support Services**"), with reasonable skill and care and keeping with the good practices for the industry in which the Trust and Sponsor/ Project Manager operate, and in compliance with applicable law. The Investment Manager shall authorise the Project Manager to take all steps and actions required for it to provide the Support Services.

Further, the Project Manager may subcontract any part of its obligations in relation to the Support Services to its affiliates or any third party contractor ("**Contractor**") with prior notice to the Investment Manager, provided that the Project Manager shall ensure that any of its affiliates or the Contractors (i) are adequately trained, skilled and experienced at a level appropriate to provide and perform the Support Services, and (ii) provide and perform the Support Services in compliance with applicable law. The Project Manager shall be liable for all acts and omissions of such affiliates and the Contractors in relation to the Support Services, as well as for compliance by such affiliates and Contractors with the applicable provisions of the SSA. Any breach or default by such affiliate or Contractor of any terms of the SSA shall be deemed to be a breach of the Project Manager.

Fee: The fee is based on a 'cost' plus mark-up basis for specified general services. The 'cost' shall be as determined in accordance with the principles described in the SSA, and the 'mark-up' will be determined based on a suitable benchmarking report. For specified infrastructure services, the Project Manager shall be entitled to claim a reimbursement for all costs/expenses/fees, calculated in accordance with the SSA. The Project Manager shall determine the cost or expenses in relation to the Support Services which may include any expenditures that are (a) directly incurred in relation to the Support Services, and (b) indirectly incurred and as may be attributable/allocable to the Support Services.

Representations and warranties: Each party represents and warrants to the other party to the SSA, as follows:

(i) Each party is duly organized and validly existing under applicable law, and has the right, power and authority to execute, deliver and perform the SSA;

(ii) The SSA has been duly executed and delivered by such party and, assuming the due authorization, execution and delivery by all other parties, constitutes valid and binding obligations of such party enforceable against such party in accordance with its terms, subject to any principles of equity or insolvency law;

(iii) The execution and delivery of the SSA by such party and the performance by such party of its obligations under the SSA has been duly and validly authorized by all necessary corporate action, including on the part of the Trust, if required, and does not require any further authorization or consent of any third party;

(iv) The execution, delivery and performance by such party of the SSA, and the compliance by it with the provisions of the SSA will not result in:

  (a) a breach of, or constitute a default under, any agreement or instrument to which such party is a party or by which such party is bound; or

  (b) result in a violation of its constitutional documents; or

  (c) contravene any applicable law to which it is subject, or any order, writ, injunction or decree of any court or Governmental Authority to which it is subject; and

  (d) No liquidation, dissolution, winding up, commencement of bankruptcy, insolvency, liquidation or similar proceedings, whether voluntary or involuntary, with respect to it is pending or has been pending, or to the knowledge of such party, threatened.

Force majeure: The Project Manager shall not be liable or responsible for any failure to perform or delay in performance of their respective obligations under the SSA, when such failure or delay is due or attributable to or arises out of, any force majeure event. Provided that the Project Manager shall, as soon as reasonably practicable, notify the other parties thereafter, provide detailed information concerning such force majeure event and documents evidencing such force majeure event, explaining the reasons for its inability to execute, or for its delay in the execution of, all or part of its obligations under the SSA. The Project Manager shall take all reasonable steps within its power to recommence performance of the SSA on the ceasing of such event. If either party has delayed the performance of, or not performed, any obligation under the SSA due to any force majeure event, the performance of any corresponding obligations of the other party shall stand suspended to the same extent.

Termination: The SSA shall become effective and binding on the parties on and from the effective date, as defined in the SSA, and shall continue to be valid and in full force and effect unless terminated. The SSA may be terminated as follows:

(i) by mutual consent of the parties in writing; or

(ii) by the Investment Manager by delivery of a written notice to the Project Manager at any time, including upon breach of any of the terms, covenants, conditions or provisions of the SSA by the Project Manager and a failure of the Project Manager to remedy the said breach within a period of 30 days or such other period as may be mutually agreed to cure such breach; or

(iii) by any party by delivery of a written notice to the other party upon the bankruptcy of such other party, or if winding up or liquidation proceedings, whether voluntary or involuntary, are commenced or admitted against such other party (and such proceedings persist for a period of more than three months); or

(iv) in the event of cancellation of registration of the Trust by SEBI, or winding up of the Trust, then the SSA shall automatically terminate without any liability to any party.

Indemnification: The Investment Manager shall be indemnified by the Project Manager against any claims, losses, costs, damages, liabilities, suits, proceedings, taxes and expenses, including legal fee from and incurred or suffered by the Investment Manager in connection with the breach of any of the terms of the SSA by the Project Manager or its agents or arising out of gross negligence, wilful default or fraud on part of the Project Manager, in carrying out its obligations under the SSA or under applicable law, subject to such maximum aggregate liability of the Project Manager as set out under the SSA.

OTHER PARTIES INVOLVED IN THE TRUST

The Auditors

Background and terms of appointment

The Investment Manager, in consultation with the Trustee, has appointed S.B. Billimoria & Co. LLP, Chartered Accountants (Firm Registration No. 101496W/W100774 as the statutory auditors of the Trust for a term of 5 years to conduct the statutory audit of the Trust for a term of 5 consecutive financial years commencing from FY 2023-24 upto FY 2027-28 ("**Auditors**"), from list of auditors previously approved by the IM Board and unitholders of the Trust, in a timely manner and in accordance with the InvIT Regulations. The Investment Manager has appointed the Auditors for a period of not more than five consecutive years; provided that the Auditors, not being an individual, may be reappointed for a period of another five consecutive years, subject to approval of Unitholders in the annual meeting in accordance with the InvIT Regulations. The Auditors have been identified and appointed in accordance with the policy on *'Appointment of Auditor and Valuer of Cube Highways Trust'*.

The Auditor has audited the Audited Consolidated Financial Statements which have been prepared in accordance with the basis of preparation as specified in Audited Consolidated Financial Statements, reviewed the Consolidated Unaudited Financial Information, and have examined and certified Projections of Revenue from Operations and Cash Flow from Operating Activities of the Portfolio Assets and the same have been included in the Draft Offer Document.

Functions, Duties and Responsibilities of the Auditors

The functions, duties and responsibilities of the Auditors will be in accordance with the InvIT Regulations. Presently, in terms of the InvIT Regulations, the Auditors are required to comply with the following conditions at all times:

1. the Auditors shall conduct audit of the accounts of the Trust and draft the audit report based on the accounts examined after taking into account the relevant accounting and auditing standards, as may be specified by SEBI;

2. the Auditors shall, to the best of its information and knowledge, ensure that the accounts and financial statements give a true and fair view of the state of the affairs of the Trust, including profit or loss and cash flow for the period and such other matters as may be specified;

3. the Auditors shall have a right of access at all times to the books of accounts and vouchers pertaining to activities of the Trust; and

4. the Auditors shall have a right to require such information and explanation pertaining to activities of the Trust as it may consider necessary for the performance of its duties as auditors from the employees of the Trust or parties to the Trust or the Portfolio Assets or any other person in possession of such information.

The Valuer

Background and terms of appointment

The Investment Manager, in consultation with the Trustee, has appointed Ernst & Young Merchant Banking Services LLP with effect from May 28, 2025, as the valuer of the Trust, for the valuation ("**Valuer**"), in a timely manner and shall determine the remuneration of such Valuer, in accordance with the InvIT Regulations. The Valuer shall be identified and appointed in accordance with the policy on '*Appointment of Auditor and Valuer of Cube Highways Trust*'.

In accordance with the InvIT Regulations, the Valuer has undertaken a full valuation of the Existing Portfolio Assets, and their reports, in relation to such valuation as on December 31, 2025, and September 30, 2025, has been included in this Draft Offer Document. Further, the Valuer has undertaken a full valuation of the Proposed Portfolio Assets and their report in relation to such valuation as on March 31, 2026, has been included in this Draft Offer Document.

Functions of the Valuer

The functions, duties and responsibilities of the Valuer will be in accordance with the InvIT Regulations. Presently, in terms of the InvIT Regulations, the Valuer is required to comply with the following conditions at all times:

1. the Valuer shall ensure that the valuation of the Portfolio Assets is impartial, true and fair and is in accordance with Regulation 21 of the InvIT Regulations;

2. the Valuer shall ensure that it has adequate and robust internal controls to ensure the integrity of its valuation reports

3. the Valuer shall ensure that it has sufficient key personnel with adequate experience and qualification to perform valuations;

4. the Valuer shall ensure that it has sufficient financial resources to enable it to conduct its business effectively and meet its liabilities;

5. the Valuer and any of its employees involved in valuing of the assets of the Trust, shall not, (i) invest in Units or in the assets being valued; and (ii) sell the assets or Units held prior to being appointed as the valuer, until the time the Valuer is designated as the valuer of the Trust and not less than six months after ceasing to be valuer of the Trust;

6. the Valuer shall conduct valuation of the Trust's assets with transparency and fairness and shall render, at all times, high standards of service, exercise due diligence, ensure proper care and exercise independent professional judgment;

7. the Valuer shall act with independence, objectivity and impartiality in performing the valuation;

8. the Valuer shall discharge its duties towards the Trust in an efficient and competent manner, utilizing its knowledge, skills and experience in best possible way to complete given assignment;

9. the Valuer shall not accept remuneration, in any form, for performing a valuation of the Trust's assets from any person other than the Trust or its authorized representative;

10. the Valuer shall before accepting any assignment from any related party of the Trust, disclose to the Trust any direct or indirect consideration which the valuer may have in respect of such assignment;

11. the Valuer shall disclose to the Trust any pending business transactions, contracts under negotiation and other arrangements with the investment manager or any other party whom the Trust is contracting with and any other factors that may interfere with the Valuer's ability to give an independent and professional valuation of the assets;

12. the Valuer shall not make false, misleading or exaggerated claims in order to secure assignments;

13. the Valuer shall not provide misleading valuation, either by providing incorrect information or by withholding relevant information;

14. the Valuer shall not accept an assignment which interferes with its ability to do fair valuation; and

15. the Valuer shall, prior to performing a valuation, acquaint itself with all laws or regulations relevant to such valuation.

Policy on Appointment of Auditor and Valuer ("Appointment Policy")

The Investment Manager has adopted a policy on the appointment of auditor and valuer of the Trust, pursuant to the resolution of the IM Board dated July 11, 2022. The key terms of the Appointment Policy are set out below:

Appointment and role of the auditor of the Trust

(i) the Investment Manager, in consultation with the Trustee, shall appoint the auditor of the Trust (the "**Auditor**"), from list of auditors previously approved by the IM Board, in a timely manner and in accordance with the InvIT Regulations.

(ii) the Auditor shall at all times be any of PricewaterhouseCoopers, Deloitte Touche Tohmatsu Limited, Ernst & Young or KPMG (or their affiliates in India).

(iii) the Investment Manager shall ensure that the appointment of the Auditor and the fees payable to the Auditor is approved by the Unitholders in accordance with the InvIT Regulations.

(iv) the Investment Manager shall ensure that the removal of the Auditor and appointment of another auditor to the Trust is taken up at a meeting of the Unitholders at the request of the Unitholders, such that the removal of the Auditor shall be approved by the Unitholders in accordance with Regulation 22 (5)(f) of the InvIT Regulations.

(v) the Investment Manager shall appoint an Auditor for a period of not more than five consecutive years; provided that the Auditor, not being an individual, may be reappointed for a period of another five consecutive years, subject to approval of Unitholders in the annual meeting in accordance with the InvIT Regulations.

(vi) the Investment Manager shall ensure that the audit of accounts of the Trust by the Auditor is done not less than once in a year and such report is submitted to the stock exchanges within the timelines prescribed under the InvIT Regulations.

(vii) the Auditor shall conduct the audit of the accounts of the Trust and draft the audit report based on the accounts examined by him/her after taking into account the relevant accounting and auditing standards under applicable law, including the InvIT Regulations and any guidelines, circulars, notifications and clarifications framed or issued by SEBI, as may be specified from time to time.

(viii) the Auditor shall comply with the conditions and be entitled to the rights prescribed under the InvIT Regulations at all times, including the following:

(a) the accounts of the Trust shall be subjected to audit by the Auditors and shall be accompanied by a report of the Auditors in such manner and at such intervals as may be prescribed under applicable law, including the InvIT Regulations;

(b) the Auditor shall, to the best of his information and knowledge, ensure that the accounts and financial statements give a true and fair view of the state of the affairs of the Trust, including profit or loss and cash flow for the period and such other matters as may be specified by SEBI;

(c) the Auditor shall have a right of access at all times to the books of accounts and vouchers pertaining to activities of the Trust; and

(d) the Auditor shall have a right to obtain such information and explanation pertaining to activities of the Trust as he may consider necessary for the performance of his duties as auditor from the employees of Trust or any holding company or parties to the Trust or any holding company or the special purpose vehicle(s) or any other person in possession of such information.

(ix) the Investment Manager, in consultation with the Trustee, shall have the right to take all necessary steps to remove the Auditor who ceases to comply with the eligibility criteria required under the InvIT Regulations and/or applicable law or for any other reason as determined by the Investment Manager. In case of removal of the Auditor and appointment of another auditor to the InvIT, approval from the Unitholders shall be required in accordance with the InvIT Regulations.

Appointment and role of valuer of the Trust

(i) the Investment Manager, in consultation with Trustee, shall appoint the valuer of the Trust ("**Valuer**"), in a timely manner and shall determine the remuneration of such Valuer, in accordance with the InvIT Regulations. A 'Valuer' shall have the meaning provided under the InvIT Regulations.

(ii) the remuneration of the Valuer shall not be linked to or based on the value of the assets being valued.

(iii) the Valuer shall not be an associate of any of the sponsor(s) of the Trust or the Investment Manager or Trustee.

(iv) the Valuer shall be eligible to act as a valuer in accordance with the InvIT Regulations or any clarifications, guidelines, notifications or exemptions issued by SEBI.

(v) A Valuer shall not undertake valuation of the same project for more than four years consecutively, provided that the Valuer may be reappointed after a period of not less than two years from the date it ceases to be the Valuer of the Trust.

(vi) the Valuer shall not undertake valuation of any assets in which it has either been involved with the acquisition or disposal within the last twelve months other than such cases where the Valuer was engaged by the Trust for such acquisition or disposal.

(vii) the Investment Manager shall ensure that the valuation of the assets of the Trust is done by the Valuer in accordance with and in the frequency stipulated in the InvIT Regulations. The Investment Manager shall ensure that the valuation reports received by it shall be submitted, and the computation and declaration of net asset value, as defined in the InvIT Regulations, of the InvIT based on the valuation done by the Valuer shall be disclosed, to the stock exchange(s) within the timelines prescribed under the InvIT Regulations.

(viii) the Valuer shall comply with the following conditions at all times:

(a) the Valuer shall ensure that the valuation of the Trust assets is impartial, true and fair and is in accordance with the InvIT Regulations;

(b) the Valuer shall ensure adequate and robust internal controls to ensure the integrity of its valuation reports, and shall maintain strict confidentiality in relation to all non-public information that comes into its possession by virtue of its engagement;

(c) the Valuer shall ensure that it has sufficient key personnel with adequate experience and qualification to perform valuations;

(d) the Valuer shall ensure that it has sufficient financial resources to enable it to conduct its business effectively and meet its liabilities;

(e) the Valuer and any of its employees involved in valuing of the assets of the Trust, shall not:

a. invest in Units of the Trust or in the assets being valued; and

b. sell the assets or Units of the Trust held prior to being appointed as the Valuer,

during the time such person is designated as Valuer of the Trust and not less than six months after ceasing to be Valuer of the InvIT;

(f) the Valuer shall conduct valuation of the Trust assets with transparency and fairness and shall render, at all times, high standards of service, exercise due diligence, ensure proper care and exercise independent professional judgment;

(g) the Valuer shall act with independence, objectivity and impartiality in performing the valuation;

(h) the Valuer shall discharge its duties towards the InvIT in an efficient and competent manner, utilizing its knowledge, skills and experience in best possible way to complete given assignment;

(i) the Valuer shall not accept remuneration, in any form, for performing a valuation of the Trust assets from any person other than the Trust or its authorized representative;

(j) the Valuer shall, before accepting any assignment from any related party of the Trust, disclose to the Trust, by disclosing to the Investment Manager or the Trustee, any direct or indirect consideration which the Valuer may have in respect of such assignment;

(k) the Valuer shall disclose to the Trust, through the Investment Manager or the Trustee, any pending business transactions, contracts under negotiation and other arrangements with the Investment Manager or any other party whom the Trust is contracting with and any other factors that may interfere with the Valuer's ability to give an independent and professional valuation of the assets, and other necessary disclosures required under the InvIT Regulations;

(l) the Valuer shall not make false, misleading or exaggerated claims in order to secure assignments;

(m) the Valuer shall not provide misleading valuation, either by providing incorrect information or by withholding relevant information;

(n) the Valuer shall not accept an assignment which interferes with its ability to do fair valuation; and

(o) the Valuer shall, prior to performing a valuation, acquaint itself with all laws or regulations relevant to such valuation.

(ix) the Investment Manager in consultation with the Trustee shall have the right to take all necessary steps to remove the Valuer who ceases to comply with the eligibility criteria required under the InvIT Regulations and/ or applicable law or for any other reason as determined by the Investment Manager. If the removal of the Valuer and appointment of another valuer to the Trust is taken up at a meeting of the Unitholders at the request of the Unitholders, such removal of the Valuer shall be approved by the Unitholders in accordance with the InvIT Regulations.

CORPORATE GOVERNANCE

The section below is a summary of the corporate governance framework in relation to the Trust, implemented by the Investment Manager and the Portfolio Assets, as applicable and as specified in this section.

1. Investment Manager

Cube Highways Fund Advisors Private Limited is the investment manager of the Trust. For further details on the background of the Investment Manager, please see the section entitled "*Parties to the Trust – The Investment Manager – Cube Highways Fund Advisors Private Limited"* on page 155.

Board of Directors

Composition of the IM Board

In addition to the applicable provisions of the Companies Act and LODR Regulations (to the extent applicable), the IM Board shall adhere to the following:

(a) The IM Board comprises of seven directors;

(b) Not less than 50% (fifty per cent) of the board of directors comprises of independent directors, determined in accordance with the Companies Act read with the InvIT Regulations and the LODR Regulations, as applicable. Such directors shall not be directors or members of the governing board of the investment manager of another infrastructure investment trust registered under the InvIT Regulations. The IM Board shall have not less than one woman independent director. The remaining directors have been appointed in accordance with the provisions of the Companies Act;

(c) The independence of directors shall/has to be determined in accordance with the Companies Act and other applicable law; and such other requirements as may be specified in the articles of association of the Investment Manager;

(d) the chairman of the board of directors may be an executive or non-executive director.

(e) collective experience of the directors covers a broad range of commercial experience, particularly experience in infrastructure sector (including the applicable sub-sector), including development, investment/fund management or advisory and financial matters.; and

(f) the shareholders of the Investment Manager shall have the right to (i) nominate three directors on the IM Board (the "**Nominee Directors**"); and (ii) nominate one or more observer on the IM Board ("**Observer**").

Unitholder(s) holding 10% or more of the total outstanding units of the Trust, either individually or collectively ("**Eligible Unitholders**") shall have the right, but not the obligation, to nominate any person for appointment as a unitholder nominee director (non-independent director) on the board of directors of the Investment Manager in accordance with the InvIT Regulations and the policy on qualification and criteria for appointment of Unitholders Nominee Directors on the IM Board (defined below) adopted by the Investment Manager. For details, please see the section entitled "*Corporate Governance — Policy on qualification and criteria for appointment of Unitholders Nominee Directors on the IM Board*" on page 194. Eligible Unitholders shall be entitled to nominate only one unitholder nominee director, subject to the Unitholding of such Eligible Unitholder exceeding the specified threshold. If the right to nominate one or more directors on the IM Board is available to any entity (or to an associate of such entity) in the capacity of shareholder of the Investment Manager or lender to the Investment Manager or the Trust (or its portfolio assets), then such entity in its capacity as Unitholder, shall not be entitled to nominate or participate in the nomination of a Unitholder nominee director, provided that such restriction relating to the right to nominate a Unitholder nominee director shall not be applicable if the right to appoint a nominee director is available in terms of the Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993. Further, if the Unitholding of more than one unitholder is aggregated for the purpose of qualifying as Eligible Unitholder(s) to exercise the right to nominate a unitholder nominee director, then such unitholders shall not be eligible to participate in any other group of Eligible Unitholder(s).

For details of the current composition of the board of directors, please see the section entitled "*Parties to the Trust – The Investment Manager – Cube Highways Fund Advisors Private Limited – Board of Directors of the Investment Manager*" on page 155.

Quorum

The quorum for every meeting of the Board shall be in accordance with the Companies Act and LODR Regulations (to the extent applicable), including at least one independent director and one Nominee Director, must be present at a meeting of the IM Board, unless prohibited by applicable law, for purposes of constitution of a valid quorum. Further, the Observer shall have the right to attend all meetings of the IM Board and all the committees of the IM Board.

Frequency of meetings

The IM Board shall meet at least four times every year, with a maximum gap of 120 days between any two successive meetings or such gap as prescribed under applicable law. Additionally, the IM Board shall meet prior to any meeting of the Unitholders and approve the agenda for Unitholders' meetings.

Sitting fee

The independent directors of the Investment Manager will receive sitting fee for attending board meetings and meetings of the committees, in accordance with the provisions of the Companies Act and other applicable law.

Articles of Association of the Investment Manager

The articles of association should not include any affirmative rights for the Investment Manager in relation to the Trust.

Matters to be decided by the committee and IM Board

The Investment Manager shall not, whether by way of a resolution of its shareholder(s), board of directors or committee of its board of directors or through any of their respective delegates or otherwise (including with respect to the Trust and the portfolio assets), take any decisions or actions with respect to certain specified matters, except with the prior approval by the committees, other than the Investment Committee and the Operations Committee, or the IM Board, in accordance with the following:

Committee matters

Notwithstanding anything contained in the Corporate Governance Policy, subject to the provisions on 'Investment Committee and Operations Committee matters' below, specific matters, as specified in the Corporate Governance Policy, shall be validly approved by the Investment Committee or the Operations Committee or the IM Board in respect of the Investment Manager or its subsidiaries, or any matters pertaining to the Trust and its portfolio assets, unless such matter has been taken up at a meeting of the members of either the Investment Committee or the Operations Committee or the IM Board, as the case may be, or by circulation, and a resolution has been passed in its favour (whether in a meeting or by circulation):

(i) by the majority of the members on such committee or the IM Board, as applicable, who are entitled to vote on such matter and not disqualified from voting due to being interested in such matter or otherwise, and

(ii) unanimously by the members on such committee or the IM Board, as applicable, who are not independent directors, and who are entitled to vote on such matter (in case of matters such as, amongst others, (a). as any removal or replacement of the auditors of the Trust, subject to certain conditions; (b). the undertaking by the Trust of any sale or disposal, or any transaction having the effect of a sale or disposal of assets, subject to certain conditions; (c). any material changes in compliance or environmental, social and governance policies of the Trust; and (d). any appointment or removal of the Project Manager or Valuer with respect to the Trust); or,

(iii) by the majority of the members on such committee or the IM Board, as applicable, who are entitled to vote on such matter and not disqualified from voting due to being interested in such matter or otherwise, and

(iv) at least two-thirds of the members on the committee or the IM Board, as applicable, who are not independent directors, and who are entitled to vote on such matter (in case of matters such as, amongst others, (a). any material change to the employee share plan and/or stock appreciation rights plan of the employees of the Investment Manager; and (b). any change in the annual budget of the Trust, subject to certain conditions);

Provided, that if such matter has already been taken up first at a meeting of the Operations Committee or Investment Committee and has been approved in the manner set out above, as applicable, read with the provisions on 'Investment Committee and Operations Committee matters' below, and such matter is then taken up at the level of the IM Board, the requirement for the unanimous approval or approval of two-thirds of the non-independent directors, as the case may be, shall not be required.

- *Investment Committee and Operations Committee matters*

  If any of the specified matters are being taken up by either the Operations Committee or Investment Committee, or the IM Board, as the case may be, in respect of the Investment Manager or its subsidiaries, or any matters pertaining to the Trust and its SPVs, a notice and agenda of such matters shall first be sent to all members of the Operations Committee or Investment Committee, as the case may be, or the directors on IM Board, as applicable, at least 10 days prior to the date on which such matter is being taken up at a meeting or by way of circulation. In the event that the members of the Operations Committee or Investment Committee, or the directors on IM Board, as applicable (each

a "**Relevant Member/Director**") are unable to attend the relevant meeting of the members of the Operations Committee or Investment Committee, as the case may be, or the IM Board, as applicable, the Relevant Member/Director shall be entitled to send in communication as to their approval or rejection of the proposed resolution on the said matter, and such decision shall be binding on the Operations Committee or Investment Committee, as the case may be, or the IM Board, as applicable. If such Relevant Member/Director is unable to attend such meeting as scheduled, and has not sent any communication as to his/her approval or rejection of the proposed resolution on the said matter by the time of commencement of the meeting of the members of the Operations Committee or Investment Committee, or the IM Board, as applicable, such Relevant Member/Director's vote shall not be considered for the requirement for unanimous approval and/or approval of two-thirds of the non-independent directors (as set out above), as the case may be, for such specified matter.

Constitution of Committees

Name of the committee	Composition	Present Members	Quorum	Frequency of meetings
Nomination and Remuneration Committee	The Nomination and Remuneration Committee should comprise at least three directors. All the directors of the committee shall be non-executive directors where at least two-thirds of the directors shall be independent directors. The nominee directors on the board shall be the members of the nomination and remuneration committee on a rotational basis. Provided that the chairperson of the Board, may be appointed as a member of the Nomination and Remuneration Committee and shall not chair such committee.	Upendra Kumar Sinha, Jayesh Ramniklal Desai, Surinder Chawla, Fereshte Dhunjishaw Sethna, Sandeep Lakhanpal, Helly Bharat Ajmera	The quorum shall be either two members or one third of the members of the committee, whichever is greater, including at least one independent director in attendance.	The nomination and remuneration committee shall meet at least once in a financial year or as necessary.
Audit Committee	The audit committee shall consist of at least three directors and shall have a maximum of four directors. At least two-thirds of the members of audit committee shall be independent directors. The non-independent director members of the audit committee shall retire annually by rotation. The chairperson of the audit committee should be an independent director and be present at annual general meeting to answer unitholders' queries. All members of the audit committee should be financially literate and at least one member should have accounting or related financial management expertise, in accordance with the LODR Regulations. The company secretary of the Investment Manager shall act as the secretary to the audit committee. The audit committee at its discretion shall invite the finance director or head of the finance function, head of internal audit and a representative of the statutory auditor and any other such executives to be present at the meetings of the committee. Provided occasionally the audit committee may meet without the presence of any such executives of the InvIT or the Investment Manager.	Upendra Kumar Sinha, Jayesh Ramniklal Desai, Fereshte Dhunjishaw Sethna, Sandeep Lakhanpal	The quorum shall either be two members or one third of the members of the audit committee, whichever is greater, including at least two independent directors in attendance.	The audit committee should meet at least four times every financial year, with a maximum gap of 120 days between any two successive meetings.
Stakeholders' Relationship Committee	The stakeholders' relationship committee shall consist of at least three directors and shall have a maximum of four directors. At least	Fereshte Dhunjishaw Sethna, Upendra Kumar Sinha,	-	The stakeholders' relationship committee

Name of the committee	Composition	Present Members	Quorum	Frequency of meetings
	two-thirds of the members of the committee shall be independent directors. The chairperson of the committee must be an Independent Director and be present at annual general meeting to answer Unitholders' queries.	Surinder Chawla, Helly Bharat Ajmera		shall meet at least once in a financial year.
Risk Management Committee	The risk management committee shall consist of at least three members. A majority of the members of the committee shall be directors on the IM Board and senior executives of the Investment Manager may be members of the risk management committee. The chairperson of this committee shall be a member of the board of directors and senior executive of the Investment Manager. At least one member of the committee shall be an independent director.	Jayesh Ramniklal Desai, Sandeep Lakhanpal, Helly Bharat Ajmera, Raviraj Vipul Acharya	The quorum shall either be two members or one third of the members of the committee, whichever is greater, including at least one director in attendance.	The risk management committee should meet at least twice every financial year, with a maximum gap of 210 days between any two successive meetings.
Investment Committee	The Investment Committee shall consist of three Nominee Directors and one independent director.	Surinder Chawla, Sandeep Lakhanpal, Helly Bharat Ajmera, Raviraj Vipul Acharya	-	The Investment Committee shall meet at least once in a year or as necessary.
Operations Committee	The Operations Committee shall consist of three Nominee Directors and one independent director.	Jayesh Ramniklal Desai, Sandeep Lakhanpal, Helly Bharat Ajmera, Raviraj Vipul Acharya	-	The Operations Committee shall meet at least once in a year or as necessary.

For details of the scope of each committee, please see below.

<u>*Nomination and Remuneration Committee*</u>

Terms of reference of the Nomination and Remuneration Committee

The key terms of reference of the Nomination and Remuneration Committee include the following:

(i) formulation of the criteria for determining qualifications, positive attributes and independence of a director and recommend to the IM Board a policy relating to, the remuneration of the directors, key managerial personnel and other employees;

(ii) for every appointment of an independent director, evaluation of the balance of skills, knowledge and experience on the IM Board and on the basis of such evaluation, prepare a description of the role and capabilities required of an independent director. The person recommended to the IM Board for appointment as an independent director shall have the capabilities identified in such description. For the purpose of identifying suitable candidates, the Nomination and Remuneration Committee may:

a. use the services of external agencies, if required;

b. consider candidates from a wide range of backgrounds, having due regard to diversity; and

c. consider the time commitments of the candidates.

(iii) formulation of criteria for evaluation of performance of independent directors and the board of directors;

(iv) devising a policy on diversity of board of directors;

(v) identifying persons who are qualified to become directors and who may be appointed in senior management in accordance with the criteria laid down, and recommend to the IM Board their appointment and removal;

(vi) whether to extend or continue the term of appointment of the independent director, on the basis of the report of performance evaluation of independent directors; and

(vii) recommend to the board, all remuneration, in whatever form, payable to senior management (if any).

Audit Committee

Terms of reference of the Audit Committee

The key terms of reference of the Audit Committee include the following:

(i) oversight of the financial reporting process of the Trust and/or the Investment Manager and the disclosure of its financial information to ensure that the financial statement is correct, sufficient and credible;

(ii) recommendation for appointment, remuneration and terms of appointment of auditors of the Trust;

(iii) approval of payment to statutory auditors for any other services rendered by the statutory auditors of the Trust;

(iv) determining the occurrence of Entitlement Events (*as defined in the Trust Deed*) issued by the Trust as set out in the Trust Deed;

(v) reviewing, with the management, the annual financial statements and auditor's report thereon before submission to the IM Board for approval, with particular reference to:

a. matters required to be included in the director's responsibility statement to be included in the IM board's report of Investment manager in terms of clause (c) of sub-section (3) of Section 134 of Companies Act 2013;

b. changes, if any, in accounting policies and practices and reasons for the same;

c. major accounting entries involving estimates based on exercise of judgment by management;

d. significant adjustments made in the financial statements arising out of audit findings;

e. compliance with listing and other legal requirements relating to financial statements;

f. disclosure of any related party transactions; and

g. modified opinion(s) in the draft audit report;

(vi) reviewing, with the management, the quarterly financial statements before submission to the IM Board for approval;

(vii) reviewing, with the management, the statement of uses / application of funds raised through an issue (public issue, rights issue, preferential issue, etc.), the statement of funds utilized for purposes other than those stated in the placement document / offer documents / notice and the report submitted by the monitoring agency monitoring the utilisation of proceeds of a public or rights issue, and making appropriate recommendations to the board to take up steps in this matter;

(viii) reviewing and monitoring the auditor's independence and performance, and effectiveness of audit process;

(ix) approval or any subsequent modification of all transactions of the Trust and/or the Investment Manager with related parties;

(x) scrutiny of inter-corporate loans and investments;

(xi) valuation of undertakings or assets of the Trust, wherever it is necessary;

(xii) evaluation of internal financial controls and risk management systems;

(xiii) reviewing, with the management, performance of statutory and internal auditors, adequacy of the internal control systems;

(xiv) reviewing the adequacy of internal audit function, if any, including the structure of the internal audit department, staffing and seniority of the official heading the department, reporting structure coverage and frequency of internal audit;

(xv) discussion with internal auditors of any significant findings and follow up thereon;

(xvi) reviewing the findings of any internal investigations by the internal auditors into matters where there is suspected fraud or irregularity or a failure of internal control systems of a material nature and reporting the matter to the IM Board;

(xvii) discussion with statutory auditors of the Trust before the audit commences, about the nature and scope of audit as well as post-audit discussion to ascertain any area of concern;

(xviii) to look into the reasons for substantial defaults in the payment to the depositors, debenture holders, shareholders (in case of non-payment of declared dividends) and creditors;

(xix) to review the functioning of the whistle blower mechanism;

(xx) approval of appointment of chief financial officer after assessing the qualifications, experience and background, etc. of the candidate;

(xxi) reviewing the utilization of loans and/ or advances from/investment by the holding company in the subsidiary exceeding rupees 100 crore or 10% of the asset size of the Trust, Holding Companies and SPVs, whichever is lower including existing loans / advances / investments existing as on the date of the adoption of the policy;

(xxii) considering and commenting on rationale, cost-benefits and impact of schemes involving merger, demerger, amalgamation etc., on the Trust and/or the Investment Manager; and

(xxiii) noting the report of compliance officer as per SEBI (Prohibition of Insider Trading) Regulations, 2015; and

The audit committee shall mandatorily review the following information:

(i) management discussion and analysis of financial condition and results of operations;

(ii) management letters / letters of internal control weaknesses issued by the statutory auditors;

(iii) internal audit reports relating to internal control weaknesses;

(iv) the appointment, removal and terms of remuneration of the internal auditor, if any, shall be subject to review by the audit committee; and

(v) the statement of deviations:

1. quarterly statement of deviation(s) including report of monitoring agency, if applicable, submitted to stock exchange(s) in terms of Regulation 32(1) of the LODR.

2. annual statement of funds utilized for purposes other than those stated in the offer document/prospectus/notice in terms of Regulation 32(7) of the LODR.

Further, the audit committee is also responsible for the implementation of the Anti-corruption Policy of the Trust in accordance with the Anti-corruption Policy. For details, please see the section entitled "*Corporate Governance- Policies of the Board of Directors of the Investment Manager in relation to the Trust – Anti-corruption Policy*" on page 189.

Stakeholders' Relationship Committee

Terms of reference of the Stakeholders' Relationship Committee

The terms of reference of the Stakeholders' Relationship Committee include the following:

(i) resolving the grievances of the security holders of the Trust and/or the Investment Manager (as applicable) including complaints related to transfer/transmission of Units, non-receipt of annual report, non-receipt of declared dividends, issue of new/duplicate certificates, general meetings etc.;

(ii) review of measures taken for effective exercise of voting rights by unitholders of the Trust and/or shareholders of the Investment Manager (as applicable);

(iii) review of adherence to the service standards adopted by the Trust and/or the Investment Manager in respect of various services being rendered by the Registrar;

(iv) review of the various measures and initiatives taken by the Trust and/or the Investment Manager for reducing the quantum of unclaimed distributions, as applicable, and ensuring timely receipt of annual reports/statutory notices by the Unitholders of the Trust; and

(v) resolving grievance of debenture holders related to creation of charge, payment of interest/ principal, maintenance of security cover and any other covenants.

Risk Management Committee

Terms of reference of the Risk Management Committee

The terms of reference of the Risk Management Committee include, amongst others, the following:

(i) formulation of a detailed risk management policy, which will include:

a. a framework for identification of internal and external risk specifically faced by the trust in particular, including financial, operational, sectoral, substantial (particularly, ESG related risks), information, cyber security risks or any other risk as may be determined by the risk management committee;

b. measures for risk mitigation including systems and processes for internal control of identified risks; and

c. business continuity plan;

(ii) ensuring that appropriate methodology, processes and systems are in place to monitor and evaluate risks associated with the business of the Trust;

(iii) monitoring and overseeing implementation of the risk management policy, including evaluating the adequacy of risk management systems;

(iv) periodically reviewing the risk management policy, at least once in two years, including by considering the changing industry dynamics and evolving complexity;

(v) keeping the board of directors informed about the nature and content of its discussions, recommendations and actions to be taken;

(vi) reviewing the appointment, removal and terms of remuneration of the chief risk officer, if any; shall be subject to review by the risk management committee and

(vii) coordinating its activities with other committees, in instances where there is any overlap with activities of such committees, as per the framework laid down by the Board.

Investment Committee

Terms of reference of the Investment Committee

Subject to the provisions under "*Matters to be decided by the committee and IM Board*" on page 180 above, and the specified matters and related provisions in the Corporate Governance Policy, the Investment Committee shall decide upon and recommend to the IM Board, matters in relation to the following:

(i) issuance of capital;

(ii) third party liabilities;

(iii) third party transactions;

(iv) constitutional documents/ parties to the Trust; and

(v) de-listing.

Operations Committee

Terms of reference of the Operations Committee

Subject to the provisions under "*Matters to be decided by the committee and IM Board*" on page 180 above, and the specified matters and related provisions in the Corporate Governance Policy, the Operations Committee shall decide upon and recommend to the IM Board, matters in relation to the following:

(i) third party transactions;

(ii) litigation;

(iii) constitutional documents/ parties to the Trust;

(iv) related party transactions;

(v) operational matters; and

(vi) bankruptcy.

Policies of the IM Board in relation to the Trust

The Investment Manager has adopted the following policies, in relation to management of the Trust and all assets of the Trust:

1. **Policy on UPSI and Dealing in Securities by the Parties ("UPSI Policy")**

   The Investment Manager has adopted the UPSI Policy pursuant to a resolution of the IM Board on July 11, 2022, which was amended on April 2, 2023, and August 10, 2023. The purpose of the policy is, *inter alia*, to ensure that the Trust complies with applicable law, including the InvIT Regulations or such other laws, regulations, rules or guidelines prohibiting insider trading and governing disclosure of material, unpublished price sensitive information ("**UPSI**").

   The key principles of the UPSI Policy are set out below:

   (i) The Investment Manager shall promptly disclose to the relevant stock exchanges all UPSI that would impact price discovery no sooner than credible and concrete information comes into being in order to make such information generally available;

   (ii) The Investment Manager shall follow uniform and universal dissemination of UPSI to avoid selective disclosure. The Investment Manager shall also make prompt dissemination of UPSI that gets disclosed selectively, inadvertently or otherwise to make such information generally available;

   (iii) The Compliance Officer shall be responsible for deciding whether a public announcement is necessary for verifying or denying rumours and then making the disclosure, in accordance with the procedure specified in the Policy for Determining Materiality of Information for Periodic Disclosures;

   (iv) The Compliance Officer shall also make an appropriate and fair response to the queries on news reports and requests for verification of market rumours by regulatory authorities, in accordance with the procedure specified in the Policy for Determining Materiality of Information for Periodic Disclosures. Further, no employee or representative of the Investment Manager who is in receipt of any inquiries relating to the Trust, including from any investors, shall respond to such inquiries. Such employee or representative of the Investment Manager shall refer the inquirer to the Compliance Officer or an any person authorised by the IM Board to deal with inquiries;

   (v) While dealing with analysts or research persons, the Investment Manager shall provide only public information. Alternatively, the information given to analysts or research persons shall be simultaneously made public at the earliest; and

   (vi) The Investment Manager shall handle all UPSI on a "need to know" basis, provided that UPSI may be disclosed to persons who need such information for furtherance of legitimate purposes, performance of duties or discharge of legal obligations in relation to the Trust.

2. **Corporate Governance Policy ("Corporate Governance Policy")**

   The Investment Manager has adopted the Corporate Governance Policy pursuant to a resolution of the IM Board dated July 11, 2022, which was amended on December 22, 2022, and July 18, 2025, in relation to Trust. The objective of the Corporate Governance Policy is to provide for the standards of governance in relation to the Trust and the Investment Manager including the constitution of the IM Board and committees of the IM Board. For details, please see the section entitled "*Corporate Governance – Investment Manager*" on page 179.

3. **Code of Conduct for the Trust (the "Code")**

   The Investment Manager has adopted the Code pursuant to a resolution of the IM Board dated July 11, 2022, in relation to the Trust. The Trust and the parties to the Trust shall comply with the Code at all time, in accordance with the InvIT Regulations.

   The key principles of the Code are set out below:

(i) the Trust and the Parties to the Trust shall conduct all affairs of the Trust in the interest of all the Unitholders of the Trust;

(ii) the Trust and the Parties to the Trust shall make adequate, accurate, explicit and timely disclosure of relevant material information to all Unitholders, the stock exchanges and the SEBI in accordance with the InvIT Regulations and as may be specified by the stock exchanges from time to time;

(iii) the Trust and the Parties to the Trust shall try to avoid conflicts of interest, as far as possible, in managing the affairs of the Trust and keep the interest of all Unitholders paramount in all matters. In case such events cannot be avoided, it shall be ensured that appropriate disclosures are made to the Unitholders and they are fairly treated;

(iv) the Trust and the Parties to the Trust shall ensure that fees charged by them with respect to activities of the Trust shall be fair and reasonable;

(v) the Investment Manager shall carry out the business of the Trust and invest in accordance with the Investment Objectives and take investment decisions solely in the interest of Unitholders;

(vi) the Trust, the Parties to the Trust and any third party appointed by the Investment Manager shall not use any unethical means to sell, market or induce any person to buy Units of the Trust and where a third party appointed by the Investment Manager fails to comply with this condition, the Investment Manager shall be held liable for the same;

(vii) the Trust and the Parties to the Trust shall maintain high standards of integrity and fairness in all their dealings and in the conduct of their business;

(viii) the Trust and the Parties to the Trust shall render at all times high standards of service, exercise due diligence, ensure proper care and exercise independent professional judgment; and

(ix) the Trust and the Parties to the Trust shall not make any exaggerated statement, whether oral or written, either about their qualifications or capabilities or experience.

4. **Determination of Materiality of Information for Periodic Disclosures Policy ("Materiality of Information Policy")**

The Investment Manager has adopted the Materiality of Information Policy pursuant to a resolution of the IM Board dated July 11, 2022, in relation to Trust. The Materiality of Information Policy aims to outline process and procedures for determining materiality of information in relation to periodic disclosures on the Trust's website, to the Stock Exchanges and to all stakeholders at large, in relation to the Trust. The key principles of the Materiality of Information Policy are set out below:

(i) Any information concerning the InvIT is considered material to the business and affairs of the Trust if (i) it results in, or would reasonably be expected to result in a significant change in the market price or value of units of the Trust; or (ii) if there is a substantial likelihood that a reasonable unitholder would consider it important in determining whether to buy, sell or hold, or engage in other transactions concerning the Trust's units; or (iii) an investor would consider important in making an investment decision.

(ii) The Investment Manager or the Trustee shall provide to SEBI and to the Stock Exchanges, wherever applicable, such information as may be sought by SEBI or by the Stock Exchanges pertaining to the activity of the Trust.

(iii) The Trust shall also submit such information to the Designated Stock Exchange and Unitholders on a periodical basis as may be required under the listing agreements. Further, the Trust shall disclose all such information as may be specified by SEBI to the Designated Stock Exchange, Unitholders and SEBI, in the manner as may be specified by SEBI.

(iv) The Materiality of Information Policy also provides for the approval process for disclosure or dissemination of any material or unpublished price sensitive information on behalf of the Trust and authorises the compliance officer and other authorised persons to make the disclosures, as may be required.

5. **Borrowing Policy of the Trust ("Borrowing Policy")**

The Investment Manager has adopted the Borrowing Policy pursuant to a resolution of the IM Board dated July 11, 2022, in relation to Trust. The Investment Manager shall ensure that all funds borrowed by the Trust or in relation to the Trust are (i) in compliance with the InvIT Regulations, applicable prudential norms and other applicable law; (ii) availed subject to the ability of the Trust to repay such borrowings. Accordingly,

the IM Board has formulated the Borrowing Policy to outline the process for borrowing monies in relation to the Trust. The key terms of the Borrowing Policy include, among other things, the following:

(i) The Investment Manager shall ensure that all funds borrowed in relation to the Trust are in compliance with the InvIT Regulations, applicable prudential norms and other applicable law. Further, the Investment Manager may decide the end use of all funds borrowed by the Trust, in compliance with the InvIT Regulations and other applicable law.

(ii) The Investment Manager shall ensure that in the event the aggregate consolidated borrowings and deferred payments (net of cash and cash equivalents) of the Trust, holding companies and the SPVs, exceed any thresholds prescribed under the InvIT Regulations in this regard, any further borrowings by the Trust shall be availed in accordance with the requirements prescribed under the InvIT Regulations. If the thresholds prescribed under the InvIT Regulations are breached on account of market movements of the price of the underlying assets or securities, the Investment Manager shall inform the same to the Trustee and ensure that the conditions prescribed under the InvIT Regulations are satisfied within the timelines prescribed under the InvIT Regulations for curing such breach.

(iii) The Trust may raise debt and avail borrowings and deferred payments from time to time, including through (i) issuance of debt securities, in accordance with applicable law, and (ii) availing loans from banks and financial institutions in accordance with applicable law (including the InvIT Regulations). The Trust shall be permitted to borrow monies through any permitted means, by any instrument, in Indian or foreign currency, as permitted by applicable law, including as prescribed by the RBI. The Investment Manager and the Trustee (on behalf of the Trust) shall be permitted to borrow monies in relation to the Trust, subject to the approval of the board of the IM Board or such other committee, including the Investment Committee of the IM Board as may be constituted in this regard.

(iv) The Trust also has the power to create mortgage or secure any of its Assets or provide guarantees in order to borrow funds. However, the Investment Manager shall not be allowed to create any obligation which would allow the liabilities to extend beyond the assets held by the Trust.

(v) The Investment Manager will not cause the Trust to undertake any obligation which will make the liabilities of the Trust unlimited except with prior approval by the 60% of the Unitholders and the obtaining of any other approvals required under applicable law. Notwithstanding anything contained in the Borrowing Policy, the Investment Manager will not cause the Trust to undertake any obligation which will result in the Trust assuming unlimited liability in respect of any related party transaction.

(vi) In addition to the above, any borrowing by the holding companies or the SPVs, incorporated under the Companies Act, 1956 or the Companies Act, 2013, will be in accordance with the conditions prescribed in the Companies Act, 1956, the Companies Act, 2013, the InvIT Regulations and other Applicable Law.

6. **Policy on Preservation of Documents ("Document Archival Policy")**

The Investment Manager has adopted the Document Archival Policy pursuant to a resolution of the IM Board dated July 11, 2022, in relation to Trust. The document archival policy aims to provide a comprehensive policy on the preservation and conservation of the records and documents of the Trust. It provides guidance on the preservation and management of documents to help ensure the authenticity, reliability and accessibility of such documents. The policy aims at identifying, classifying, storing, securing, retrieving, tracking and destroying or permanently preserving records. It stipulates the duration and manner in and place at which records and documents of the Trust shall be preserved.

7. **Policy on appointment of the auditor and valuer of the Trust**

The IM Board has adopted the policy on appointment of the auditor and valuer of the Trust pursuant to a resolution dated July 11, 2022. For details of the policy on appointment of the auditor and the valuer of the Trust, please see the section entitled "*Other Parties Involved in the Trust – Policy on appointment of Auditor and Valuer*" on page 176.

8. **Distribution Policy ("Distribution Policy")**

The IM Board has adopted the Distribution Policy pursuant to a resolution dated July 11, 2022, which was amended on December 22, 2022, and further amended on July 18, 2025. For details of the Distribution Policy, please see the section entitled "*Distribution*" on page 385

9. **Policy on Related Party Transactions ("RPT Policy")**

The IM Board has adopted the RPT Policy pursuant to a resolution dated July 11, 2022. For details of the RPT Policy, please see the section entitled "*Related Party Transactions – Procedure for dealing with Related Party Transactions*" on page 410.

10. **Insurance Policy**

The IM Board has adopted the insurance policy pursuant to its resolution dated July 11, 2022. In accordance with the insurance policy, the Investment Manager shall necessitate and validate that the respective holding companies and special purpose vehicles, either by themselves or through their agents or brokers shall obtain insurance policies with a financially sound and reputable insurer(s) adequately covering for:

(i) liability of the directors and officers;

(ii) property all risks or fire and other named perils (including natural perils and strike, riot and malicious damage) based on new replacement cost of assets;

(iii) terrorism (standalone or as an add-on to property/material damage policy);

(iv) employee/workmen compensation in case of death or bodily injury caused to employees due to an injury/accident arising at the workplace;

(v) public liability; and

(vi) all kinds of risks required to be covered in accordance with applicable law and the relevant project agreements.

11. **Environmental and Social Due Diligence Policy ("ESDD Policy")**

The IM Board has adopted the ESDD policy pursuant to its resolution dated July 11, 2022. The ESDD policy aims to provide a criteria for selection of future projects. The key terms of the ESDD Policy are:

(i) Prior to the acquisition of an eligible infrastructure project, the Investment Manager shall undertake the following steps:

a. review the Environmental Impact Assessment ("**EIA**") and environment and social management system, of such eligible infrastructure asset, if available. The Investment Manager shall also evaluate the compliances of environmental issues as highlighted in the EIA and highlight significant areas of concern to the IM Board and Unitholders;

b. ensure that all requisite environmental approvals are obtained and renewed, as and when required. In the event that the environmental clearance is not obtained by an eligible infrastructure project, such project shall not be acquired except for where all the applications have been timely filed and the approval or clearance is expected soon;

c. conduct due diligence to assess the outstanding litigation involving the land utilized or to be utilized for purposes of the eligible infrastructure project; and

d. undertake diligence of the concerns of stakeholders expressed in public domain and instances of protests or civil action in relation to adverse environmental impacts; and

(ii) The Investment Manager may propose an environmental and social action plan to the Board, for purposes of resolving the key issues and gaps identified in the environmental and social due diligence.

12. **Policy on Investment**

The IM Board adopted the investment policy pursuant to its resolution dated 11 July 2022. The investment policy specified the assets in which the Trust was entitled to invest. The Trust was only entitled to invest in, and acquire (directly or indirectly), the initial portfolio assets of the Trust including NAMEPL (*formerly* N.A.M. Expressway Limited, Chenani Nashri Tunnelway Limited, Borgaon Watambare Highways Private Limited, Mangalwedha Solapur Highways Private Limited, Mangloor Highways Private Limited, SIPL (*formerly* KNR Srirangam Infra Private Limited), SPPL (*formerly* KNR Shankarampet Projects Private Limited) and THPL (*formerly* KNR Tirumala Infra Private Limited). Pursuant to the policy, the Trust could invest in, and acquire directly or indirectly, any securities or assets from Cube Highways and Infrastructure V Pte. Ltd. or other affiliates of CH-I and CH-III or any other securities or asset subject to the approval of the IM Board or any other approvals as may have been required in accordance with applicable law.

13. **Anti-corruption Policy**

The IM Board has adopted the anti-corruption policy pursuant to its resolution dated July 11, 2022 which was amended on April 2, 2023. The anti-corruption policy aims to ensure that the InvIT sets up adequate procedures in order to prevent its involvement in any activity relating to bribery, facilitation of payments that are not permitted under applicable law, or corruption, even where the involvement may be unintentional. The key terms of the policy are:

(i) The Investment Manager shall not and shall ensure that the Holdcos/SPVs shall not engage in (nor authorize or permit any of its affiliates or any other person acting on its behalf, to engage in) any Corrupt Practices, Fraudulent Practices, Coercive Practices or Collusive Practices (*as defined in the policy*), or enter into any transaction: (i) with, or for the benefit of, any of the individuals or entities named on lists promulgated by; or (ii) related to any activity prohibited by, the United Nations Security Council or its committees pursuant to any resolution under Chapter VII of the United Nations Charter (collectively, "**Sanctionable Practices**") with respect to the Trust or any transaction contemplated with respect to the Trust.

(ii) The Project Manager shall not and shall endeavour to ensure that all contractual counterparties and sub-contractors shall not engage in (nor authorize or permit any of its affiliates or any other person acting on its behalf, to engage in) any Corrupt Practices, Fraudulent Practices, Coercive Practices or Collusive Practices (*as defined in the policy*), or enter into any Sanctionable Practices with respect to the Trust or any transaction contemplated with respect to the Trust.

(iii) The Investment Manager shall not authorize or permit any of its directors, officers, employees or agents, acting on behalf of the Investment Manager or the Holdcos/SPVs (the "**Representatives**") to engage in any Sanctionable Practice with respect to the Trust or any transaction contemplated with respect to the Trust. As a preventive measure, the Investment Manager shall ensure that this Policy is applicable to the third-party service providers by way of incorporation in the agreement or contracts to be entered into with them.

(iv) The Audit Committee shall be responsible for the implementation of this policy. The Audit Committee shall set up procedures or recommend to the IM Board procedures to implement this policy, if required. The Investment Manager shall also develop and disseminate tools and conduct training for Representatives to facilitate the implementation of this policy.

(v) The Investment Manager and the Project Manager shall ensure that the Representatives and all contractual counterparties and sub-contractors agree to comply with the policy under their respective terms of employment or contract/engagement with the Investment Manager and/or the Project Manager or as per the instructions or authorizations of the Investment Manager and/or the Project Manager, as the case may be.

(vi) To minimize the risk of doing business with a corrupt third party, complete assessment of the third party shall be undertaken to confirm that it is a legitimate business with a reputation for integrity. The management of the Investment Manager will have internal control mechanisms in place, to try to avoid dealing with corrupt third parties.

(vii) The Investment Manager shall establish a vigil mechanism for its directors and employees to report their genuine concerns and grievances. The Audit Committee shall oversee the vigil mechanism and if any of the members of the committee have a conflict of interest in a given case, they should recuse themselves and the others on the committee would deal with the matter on hand. The vigil mechanism shall provide for adequate safeguards against victimisation of employees and directors who avail of the vigil mechanism and also provide for direct access to the chairperson of the Audit Committee, in exceptional cases. Provided that In case of repeated frivolous complaints being filed by a director or an employee, the Audit Committee may take suitable action against the concerned director or employee including reprimand.

The Investment Manager undertakes on behalf of the Trust that it shall comply with such disclosure and accounting norms as specified by SEBI from time to time.

14. **Valuation Policy**

The IM Board adopted the valuation policy pursuant to its resolution dated July 11 2022, which was amended on December 22, 2022.

15. **Nomination and Remuneration Policy ("NR Policy")**

The Investment Manager has adopted the NR Policy pursuant to a resolution of its board of directors on April 2, 2023. The NR Policy aims to provide a framework for nomination and remuneration of members of the IM

Board , its key managerial personnel, and other employees of the Investment Manager. The key terms of the NR Policy are set out below:

(i) The NR Policy reflect the remuneration philosophy and principles of the Investment Manager and the Trust, and consider the pay and employment conditions with peers / competitive market to ensure that pay structures are appropriately aligned.

(ii) The remuneration of the independent directors of the Investment Manager will be paid by way of sitting fees and commission. This remuneration will be determined by the Nomination and Remuneration Committee and recommended to the IM Board for its approval.

(iii) No remuneration shall be payable by the Investment Manager to non-independent directors.

(iv) The Investment Manager's total compensation for its managerial personnel will consist of:

a. fixed compensation;

b. variable compensation in the form of annual incentive;

c. work related facilities and perquisites; and

d. any other component as recommended by the NRC and approved by the Board.

(v) KMP of the Investment Manager will also be eligible for work related facilities and perquisites as may be determined through human resources policies issued from time to time based on the grade of the KMP.

16. **Policy on Code of Conduct for Board of Directors and Senior Management Personnel (the "CoC")**

The Investment Manager has adopted the CoC pursuant to a resolution of the IM Board dated April 2, 2023, for all members of board of directors and senior management personnel of the Investment Manager. The senior management personnel of the Investment Manager shall include officers and personnel of the Investment Manager who are members of its core management team, excluding the IM Board, and shall also comprise all members of management, one level below the chief executive officer or managing director or whole time director or manager (including chief executive officer or manager, in case they are not part of the IM Board) and shall specifically include the compliance officer and chief financial officer, as applicable ("**Senior Management Personnel**").

The key terms of the CoC are set out below:

(i) The CoC enables the Investment Manager to publicly state to the external stakeholders of the Trust (suppliers, customers, consumers, Unitholders, etc.), the way in which they intend to carry out their business and their business in relation to the Trust.

(ii) In accordance with the CoC, the IM Board and Senior Management Personnel should:

a. demonstrate the highest standards of integrity, business ethics, and corporate governance;

b. perform their roles with competence, diligence, in good faith and in the best interests of the Trust and the Unitholders of the Trust;

c. provide expertise and experience in their areas of specialization and share learnings at the meetings of the IM Board with best interests of the Trust and its stakeholders along with the Unitholders in mind. They should point the Investment Manager's management in the 'right' direction based on their experience and judgement;

d. give careful and independent consideration to the affairs of the Investment Manager and the Trust and all documents placed before them to satisfy themselves with the soundness of key decisions taken by the management. They should call for additional information, where necessary, for making such judgements;

e. not engage in any business, relationship or any activity which detrimentally conflicts with the interest of the Trust or bring discredit to the Investment Manager or the Trust. Any situation that creates a conflict of interest between personal interests and the Trust or its Unitholders' interest must be avoided at all costs;

f. follow all the guidelines put forth in the policy for prevention of insider trading;

g. not disclose any confidential / privileged information of the Investment Manager or the Trust and should direct any media queries or approaches to the appropriate spokesperson within the Investment Manager; and

h. not achieve or attempt to achieve any undue gain or advantage either to himself or to his relatives, partners, or associates.

(iii) The CoC also sets out the duties of the independent directors on the IM Board, including, amongst others, (a) undertaking appropriate induction and regularly update and refresh their skills, knowledge and familiarity with the Investment Manager and the Trust; (b) seeking appropriate clarification or amplification of information and, where necessary, take and follow appropriate professional advice and opinion of outside experts at the expense of the Trust; and (c) striving to attend all meetings of the IM Board and of the committees of the IM Board, which the independent director(s) is a member of.

(iv) All members of the IM Board and Senior Management Personnel shall affirm compliance with the CoC on an annual basis.

17. **Policy to Promote Diversity of Board of Directors (the "Diversity Policy")**

The Investment Manager has adopted the Diversity Policy pursuant to a resolution of the IM Board dated April 2, 2023. The key terms of the Diversity Policy are set out below:

(i) The Nomination and Remuneration Committee shall ensure that the IM Board shall have an optimum combination of non-independent, independent and woman directors in accordance with requirements of the InvIT Regulations, LODR Regulations and other statutory, regulatory and contractual obligations of the Investment Manager and the Trust.

(ii) The Nomination and Remuneration Committee shall review the profile of the prospective candidates for appointment as a director on the IM Board taking in consideration knowledge, experience, financial literacy / expertise, global market awareness and other relevant factors as may be considered appropriate and the IM Board shall be so formulated with mix of members to maintain high level of ethical standards. The Nomination and Remuneration Committee shall also take into consideration the provisions of the InvIT Regulations, LODR Regulations and other statutory, regulatory and contractual obligations of the Investment Manager.

18. **Risk Management Policy in relation to the Trust ("RM Policy")**

The Investment Manager has adopted the RM Policy pursuant to a resolution of its board of directors on April 2, 2023. The RM Policy aims to provide a framework for management of risks associated with the business of the Trust. The key terms of the RM Policy are set out below:

(i) *Principles of risk management:* The risk management committee shall provide reasonable assurance in protection of business value of the Trust from uncertainties and consequent losses.

(ii) *General:* Risk management process includes four activities:

a. Risk identification;

b. Risk assessment;

c. Risk mitigation and monitoring; and

d. Reporting.

(iii) *Risk identification:* The purpose of risk identification is to identify internal and external risks specifically faced by the Trust, in particular including financial, operational, sectoral, sustainability (particularly, environment, social and governance related risks), information, cyber security risks or any other risk as may be determined by the Risk Management Committee and identify all other events that can have an adverse impact on the achievement of the business objectives.

(iv) *Risk assessment:* Assessment involves quantification of the impact of Risks to determine potential severity and probability of occurrence.

(v) *Risk mitigation:* All identified risks should be mitigated using any of the following risk mitigation plans:

a. Risk avoidance: by not performing an activity that could carry any risk. Avoidance may seem the answer to all Risks but avoiding Risks also means losing out on the potential gain that accepting (retaining) the risk may have allowed;

b. Risk transfer: mitigation by having another party to accept the risk, either partial or total, typically by contract or by hedging / insurance;

c. Risk reduction: Employing methods/solutions that reduce the severity of the loss; and

d. Risk retention: Accepting the loss when it occurs. Risk retention is a viable strategy for small risks where the cost of insuring against the risk would be greater than the total losses sustained. All Risks that are not avoided or transferred are retained by default.

(vi) *Monitoring and reviewing risks:* The risk management committee shall formulate the policies for effective identification, monitoring, mitigation of the risks. The Risk Management Committee shall take cognizance of risks which may impact business continuity while framing risk responses. Existing process of Risk Assessment of identified Risks and its mitigation plan will be appraised by the Risk Management Committee to the Board on an annual basis.

19. **Vigil Mechanism and Whistle Blower Policy ("Whistleblower Policy")**

The Investment Manager has adopted the Whistleblower Policy pursuant to a resolution of its board of directors on April 2, 2023. The key terms of the Whistleblower Policy are set out below:

(i) Any communication made in good faith that discloses or demonstrates information that may evidence unethical or improper activity, including of a Leak (as defined in the UPSI Policy) ("**Protected Disclosure**") should be made by the relevant whistle-blower ("**Whistleblower**") to the Compliance Officer.

(ii) Protected Disclosure should be in writing so as to ensure a clear understanding of the issues raised and should be either typed or written in legible writing in English, Hindi or a regional language. The protective disclosure or reporting can also be made by electronic mail.

(iii) Protected Disclosure should be forwarded with a cover letter which shall bear the identity of the Whistleblower.

(iv) Protected Disclosure should be factual and not speculative and should contain as much specific information as possible in order to allow proper investigation.

(v) The Whistleblower is not required or expected to conduct any investigation and shall not have the right to participate in any investigation conducted by the Compliance Officer in relation to Protected Disclosure made by such Whistleblower.

(vi) The Compliance Officer, on finding the Protected Disclosure to be proper, shall forward the details of the Protected Disclosure to the Empowered Committee (as defined in the Whistleblower Policy). The Empowered Committee will apply due diligence on Protected Disclosure received from the Compliance Officer and conclude if it is of administrative or of disciplinary nature and whether it requires further investigation or decide appropriate course of action including closure of the complaint. The decision taken by the Empowered Committee on the Protected Disclosure along with its justification shall be put up to Board or to any person authorised by the Board in this regard for approval.

(vii) The Investment Manager shall ensure that no Whistleblower who has made any Protected Disclosure is subjected to victimization by initiation of any proceedings or otherwise merely on the grounds that such Whistleblower had made any Protected Disclosure or rendered assistance in any inquiry.

(viii) If any Whistleblower is being victimized or likely to be victimized on the ground of making any Protected Disclosure, filing a complaint or rendering assistance in any inquiry pursuant to the Protected Disclosure made by such Whistleblower, such Whistleblower may approach or file an application to the chairman, managing director or the members (including the chairman) of the Audit Committee of the Investment Manager seeking redress in the matter and such authority shall take such action as it deems fit and may give suitable directions to protect the Whistleblower being victimized and avoid any further victimization.

(ix) Every effort will be made to protect Whistleblowers' identity and under no circumstances shall such identity be discussed with any unauthorized person. Utmost care should be taken by the Compliance Officer that the Protected Disclosure made by any Whistleblower is kept confidential and identity

of the Whistleblower is not revealed. In case any such information is disclosed, necessary action shall be taken against the concerned employee making such disclosure.

20. **Investors' Grievance and Redressal Policy ("Investor Grievance Redressal Policy")**

The Investment Manager has adopted the Investor Grievance Redressal Policy pursuant to a resolution of its board of directors dated February 9, 2025. The main purpose of Investor Grievance Redressal Policy is to allow stakeholder (unitholder) engagement to be undertaken in a systematic manner that will allow the various stakeholder groups to express their individual views and opinions, and Investment Manager of the Trust to appropriately respond to them.

21. **Policy for filing of claims by unitholders and debenture holders for unclaimed amounts ("Policy on Unclaimed Distribution")**

The Investment Manager has adopted the Policy on Unclaimed Distribution pursuant to a resolution of its board of directors dated November 23, 2024. The main purpose of Policy on Unclaimed Distribution is to provide a comprehensive process to be followed by unitholders and debenture holders for claiming their unclaimed or unpaid amounts and processing of same by the Investment Manager. It stipulates the format in which claim shall be submitted by the unitholder, the procedure and documentation for making claim, the documents required to be submitted in support of the claim, manner and timeline of submission, conditions for rejection of claim, option of re-filing of a claim and the process to be followed for verification of claims.

22. **Policy on qualification and criteria for appointment of Unitholders Nominee Directors on the IM Board**

The Investment Manager has adopted the policy on qualification and criteria for appointment of Unitholders Nominee Directors pursuant to a resolution of its board of directors on October 08, 2023. The policy provides the framework wherein the investment manager to the Trust is required to formulate and adopt a policy providing for qualifications, criteria for appointment, and evaluation parameters of individuals nominated for Unitholder Nominee Director. Accordingly, the policy prescribes requisite procedures and guidelines for, inter alia, the appointment of Unitholder Nominee Directors and the criteria for evaluation of the individuals nominated as Unitholder Nominee Directors.

23. **Framework on succession planning for the Board and Senior Management of Cube Highways Fund Advisors Private Limited**

The Investment Manager has adopted the framework on succession planning for the Board and Senior Management of Cube Highways Fund Advisors Private Limited pursuant to a resolution of its board of directors on August 09, 2024.

(i) The objectives of the framework on succession planning for the Board and Senior Management of the IM are:

a) To identify and nominate suitable candidates for the Board's approval to fill vacancies which may arise in the Board from time to time;

b) To identify the competency requirements of critical and key positions, assess potential candidates and develop required competency through planned development and learning initiatives;

c) To identify the key job incumbents in senior management positions and recommend whether the concerned individual be granted an extension in term/service or be replaced with an identified internal or external candidate or recruit other suitable candidate(s); and

d) To ensure the systematic and long-term development of individuals in the senior management level to replace as and when the need arises due to deaths, disabilities, retirements, and other unexpected occurrence.

(ii) The Framework shall be applicable for succession planning of the managing director/whole-time/ executive directors, non-executive directors, independent directors and other members of the Board and senior management.

(iii) The Nomination and Remuneration Committee of the Board (the "**NRC**") shall review the leadership and management needs of the Investment Manager from time to time. The NRC shall assess the suitability of a person who is being considered for appointment as a director of the Investment Manager, based on his / her educational qualification, experience, expertise and track record and shall recommend to the Board, the terms and conditions of his/her appointment, including remuneration.

(iv) The NRC may, at its discretion, recommend to the Board, appointment of suitable candidate(s) in senior management level with a view to ensure a continuous availability of managerial talent at senior levels to meet the organizational needs.

(v) The recommendations of the NRC shall be placed before the Board for approval. The senior management team shall always strive to develop in-house capabilities by enriching work exposure.

2. Portfolio Assets

Representatives on the Board of Directors of the Portfolio Assets

The Investment Manager, in consultation with the Trustee, has appointed the majority of the members of the board of directors of each of the Existing Portfolio Assets, in accordance with the requirements prescribed under the InvIT Regulations. Upon acquisition of the Proposed Portfolio Assets by the Trust, the Investment Manager shall continue to appoint the majority of board members in the same manner and in accordance with the requirements prescribed under the InvIT Regulations.

*Unless otherwise specified, the information in this section is derived from the industry report titled "Assessment of the Indian Road Sector" dated February, 2026 (the "**Industry Report**") which has been commissioned and paid for by the Investment Manager for an agreed fee and prepared only for the purposes of confirming our understanding of the industry exclusively in connection with the Offer. The Industry Report has been included in "Material Contracts and Documents for Inspection – Material Documents" on page 503. The Investment Manager engaged the Industry Expert, in connection with the preparation of the Industry Report. The data included in this section includes excerpts from the Industry Report and may have been re-ordered by us for the purposes of presentation.*

Unless otherwise indicated, all financial, operational, industry and other related information derived from the Industry Report and included herein, all references to a "year" in this Draft Offer Document are to a calendar year. For further details and risks in relation to commissioned reports, see "Risk Factors – We have relied on data derived from third party reports, which are based on certain estimates and assumptions and are subject to the limitations set out therein" on page 115.

Macroeconomic overview of India

Review and Outlook of India's GDP growth

1. India's GDP is projected to clock 6-7% CAGR between Financial Years 2026-2030

India ranks as the world's 4th largest economy and is the fastest growing among major economies with gross domestic product (GDP) for Financial Year 2025 at 6.5%. India's economy has shown strong and steady progress over the past decade, with real GDP rising from ₹140 trillion in Financial Year 2019 to ₹188 trillion estimated in Financial Year 2025, reflecting a CAGR of around 5%. Despite periods of volatility, most notably the contraction in Financial Year 2021 due to the pandemic, the economy recovered sharply, supported by robust domestic demand, infrastructure spending, and the resilience of core sectors such as construction, manufacturing, and services.

A large part of the lower growth between Financial Years 2018 and 2023 having CAGR 4.2% was because of the economy contracting 5.8% in Financial Year 2021 owing to the fallout of Covid-19. The pandemic's impact was more pronounced on contact-sensitive services and social distancing norms-affected services such as entertainment, travel, and tourism, with many industries in the manufacturing sector also facing issues with shortage of raw materials/components as lockdown in various parts of the world upended supply chains.

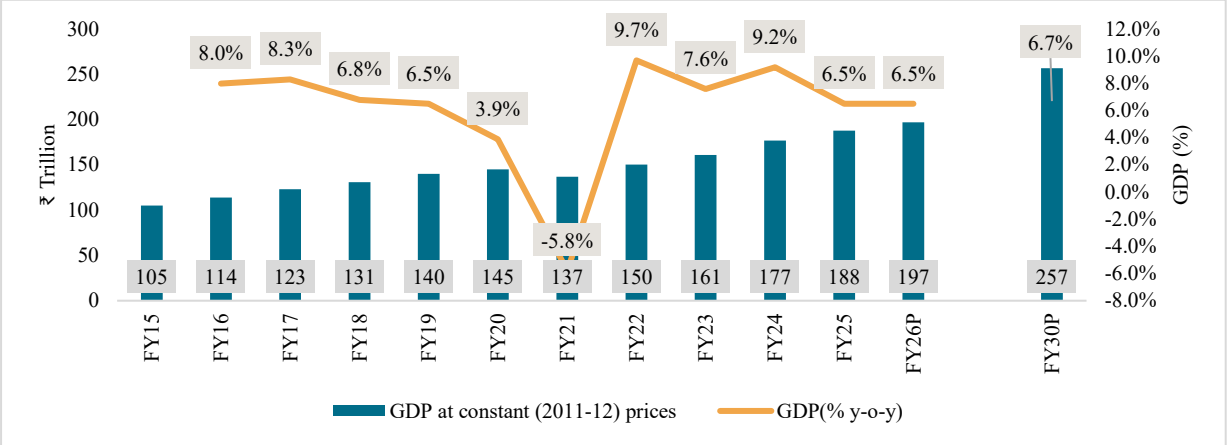
Real GDP rose to 7.4% year-on-year in the fourth quarter of Financial Year 2025, up from 6.4% in the previous quarter, but was lower than the 8.4% recorded in the year-ago period. The uptick in growth was led by a significant growth in fixed investments even as private consumption growth slowed. On the demand side, the uptick in the fourth-quarter of Financial Year 2025 growth was driven by a substantial pick-up in fixed investments (9.4% in the fourth quarter vs 5.2% in the previous quarter) even as private consumption growth slowed (6.0% in the fourth quarter vs 8.1% in the previous quarter) and government consumption contracted (-1.8% in the fourth quarter vs +9.3% in the previous quarter). Growth in exports slowed drastically to 3.9% in the fourth quarter of Financial Year 2025 from the 10.8% growth registered in the previous quarter. Imports contracted at a much sharper pace (-12.7% versus -2.1%), partially led by a decline in crude oil prices. The slowdown in exports was driven by declining merchandise exports (-4.4% vs +3.0%) which faced headwinds from escalating global trade tensions, while services exports growth remained resilient (despite some easing). Hence, despite exports decelerating, the continuing fall in imports led to net exports supporting GDP. India's real gross domestic product (GDP) growth was at a five-quarter high of 7.8% on-year in the first quarter of Financial Year 2026 (vs 7.4% in the previous quarter).

India's economic growth in recent years has been increasingly anchored in its robust domestic consumption, which accounts for nearly 60% of GDP. The sustained expansion of household spending has been a key driver of output and investment, providing resilience even during periods of external slowdown. This consumption-led momentum reflects improving living standards, rising aspirations, and a structural shift from basic to discretionary spending categories such as consumer durables, housing, travel, and digital services. A key enabler of this trend is the steady rise in per capita income, supported by stable economic growth, formalisation of employment, and expanding access to financial services. As incomes grow, households are not only spending more but also diversifying their consumption toward higher-value goods and experiences. This rising purchasing power is helping broaden domestic demand beyond urban centers, with rural and semi-urban regions emerging as important consumption hubs.

Population growth continues to provide a demographic advantage, ensuring a large and youthful consumer base. India's working-age population is expanding, leading to higher labour participation and consumption potential. This demographic dividend enhances the demand for education, healthcare, housing, and consumer goods, creating a virtuous cycle between income generation and consumption spending. At the same time, rapid urbanisation is reshaping consumption behaviour and market dynamics. As more people migrate to cities, exposure to new lifestyles and digital platforms is accelerating demand for organized retail, e-commerce, and modern services. Urban infrastructure development, improved connectivity, and digital penetration are further amplifying consumer access and convenience. Collectively, these factors make domestic consumption the cornerstone of India's GDP growth trajectory, underpinning both short-term resilience and long-term structural expansion.

Looking ahead, India's medium-term outlook for Financial Year 2026-2030 remains broadly positive, India is on track to be the third largest economy. For Financial Year 2026, GDP is projected at ₹197 trillion, reflecting continued growth of around 6.5%, consistent with consensus estimates from MOSPI, the Reserve Bank of India, and global institutions. This trajectory is supported by ongoing capex expansion, infrastructure development, stronger formalisation of the economy, and improving macroeconomic stability. Reforms such as the anticipated GST 2.0, focused on rate rationalisation and simplification are also expected to boost infrastructure and construction activity, further supporting medium-term growth

India's GDP growth trend and outlook



Note: P – Projected
Source: National Statistical Office (NSO), International Monetary Fund (IMF), CRISIL Intelligence estimates

New GST reforms impact

The introduction of GST 2.0, with its simplified two-slab structure (5% and 18%) and extensive rate rationalisation, is expected to significantly boost India's infrastructure and overall economic growth. The reduction in GST on cement from 28% to 18% and on construction materials such as marble, granite, and sand-lime bricks from 12% to 5% will directly lower project costs for roads, housing, and urban infrastructure. This will enhance affordability in the housing market, accelerate project execution, and create new employment opportunities in construction and allied sectors.

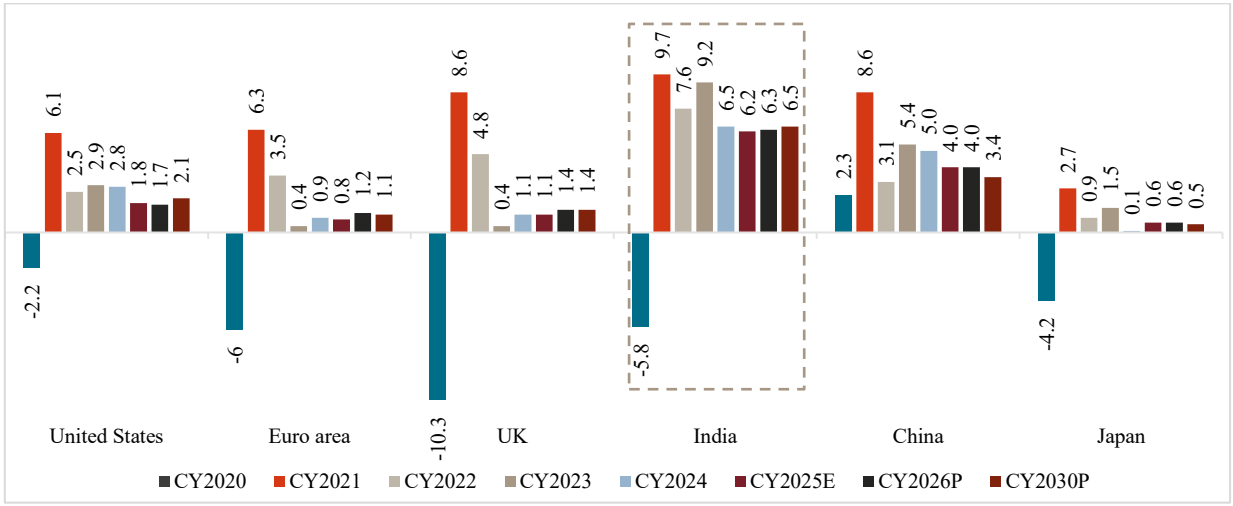
By easing compliance, streamlining refunds, and correcting inverted duty structures, GST 2.0 will improve cash flows for developers and contractors, especially MSMEs engaged in infrastructure supply chains. The reforms are designed to expand domestic manufacturing and boost demand for materials such as steel, cement, and machinery, creating a multiplier effect across core industries.

Lower taxation on farm machinery, auto parts, and services, along with exemption of insurance and healthcare premiums, will further stimulate consumption and investment. As infrastructure construction intensifies under public and private investment programs, these reforms will sustain economic momentum through stronger domestic demand, improved ease of doing business, and enhanced Financial Year buoyancy. In essence, GST 2.0 is not merely a tax rationalisation measure but a structural reform that supports India's long-term vision of inclusive and infrastructure-led growth, aligning Financial Year simplification with national development priorities.

Global GDP: Review & Outlook

Growth trends across major economies highlight a multi-speed global recovery. Advanced economies such as the US, Euro area and UK are expected to see a moderation in growth through Calendar Year 2024–2025 as high interest rates and soft external demand constrain activity. In contrast, India stands out as the fastest-growing major economy, supported by strong domestic demand and a sustained capex push. China continues on a gradual slowdown path amid structural and property-sector pressures, while Japan remains in a low-growth trajectory. These dynamics underline the widening growth differential between advanced and emerging economies.

GDP growth (% y-o-y) of key economies



Note: On Calendar Year (CY) basis
** Euro area comprises 19 member countries of the EU*
Source: International Monetary Fund (IMF); World Economic Outlook (WEO) - April 2025 update, CRISIL Intelligence

Differences in growth momentum are reflected in the relative size of global economies. The US and China retain their positions as the world's two largest economies in both Financial Year 2024 and Financial Year 2025. Germany remains the third-largest, while India moves up from the fifth to the fourth position in Financial Year 2025, overtaking Japan as its nominal GDP expands from USD 3.9 trillion to USD 4.2 trillion. Japan and the UK maintain their rankings but with comparatively slower expansion. Overall, while the global economic hierarchy remains broadly stable, India's rising economic weight is increasingly evident.

Nominal GDP top 6 countries ($ billion)

Country	FY24	Rank	FY25	Rank
United States	29,184.9	1	30,507.2	1
China	18,748.0	2	19,231.7	2
Germany	4,658.5	3	4,744.8	3
India	3,909.1	5	4,187.0	4
Japan	4,026.2	4	4,186.4	5
United Kingdom	3,644.6	6	3,839.2	6

Source: World bank, CRISIL intelligence

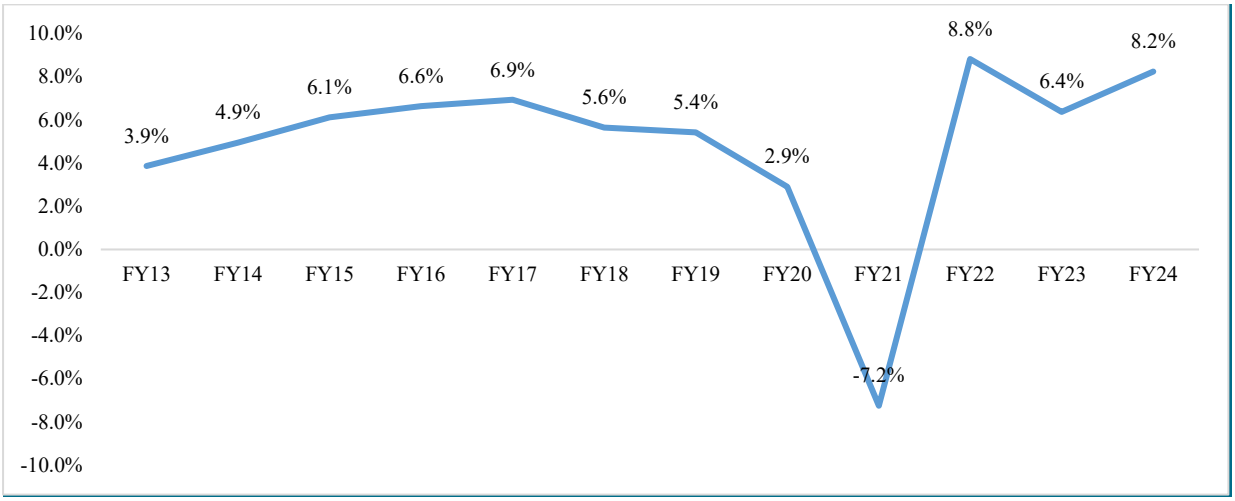
Per Capita GNI

India's per capita Gross National Income (GNI) has recorded fluctuating growth trends over the period Financial Year 2012-2013 to Financial Year 2023-2024. Growth remained steady between Financial Year 2012-2013 and Financial Year 2016-2017, rising from 3.9% to 6.9%, supported by consistent economic expansion. This momentum slowed slightly in subsequent years, with growth moderating to 5.6% in Financial Year 2017-18 and 5.4% in Financial Year 2018-2019, before declining to 2.9% in Financial Year 2019-2020.

The period Financial Year 2020-2021 witnessed a contraction of -7.2%, primarily due to the impact of the COVID-19 pandemic on economic activity. However, per capita GNI rebounded sharply in Financial Year 2021-2022, registering growth of 8.8%, followed by 6.4% in Financial Year 2022-2023 and 8.2% in Financial Year 2023-2024.

Overall, the data reflects a pattern of steady growth in the initial years, a temporary setback during the pandemic period, and subsequent recovery driven by the revival of economic activity

Per Capita GNI (in ₹)



Source: MOSPI, CRISIL Intelligence

Trend in Inflation

Headline inflation remained well below 4% during H1:2025-2026 (up to August), aided by benign food prices and favourable base effects. However, inflation inched up to 2.1% in August 2025, compared to 1.6% in July, marking the first increase after three consecutive months of moderation.

As per the Reserve Bank's bi-monthly household survey, inflation expectations among urban households moderated by 20 basis points (bps) for the three-month horizon and 30 bps for the one-year horizon, settling at 8.7% and 7.6%, respectively. Similarly, the current perception of inflation among both rural and semi-urban households edged up marginally by 10 bps to 5.9% in September 2025, while the year-ahead expectations declined, reflecting improved inflation sentiment across categories.

Survey Indicators: Household surveys indicate that inflation expectations, both short-term and long-term, have been gradually declining over the past few rounds. On the supply side, manufacturing firms polled in the July-September 2025 round of the Reserve Bank's Industrial Outlook Survey reported moderation in input cost pressures but steady growth in selling prices, reflecting firm demand conditions. Similarly, the Purchasing Managers' Index (PMI) surveys for August 2025 pointed to easing cost pressures and a slowdown in output price increases relative to earlier months. Professional forecasters polled by the Reserve Bank in September 2025 also revised down their inflation projections for Financial Year 2025-2026, expecting CPI inflation to average around 2.6%, compared to earlier estimates of 3.0%.

Trends in CPI

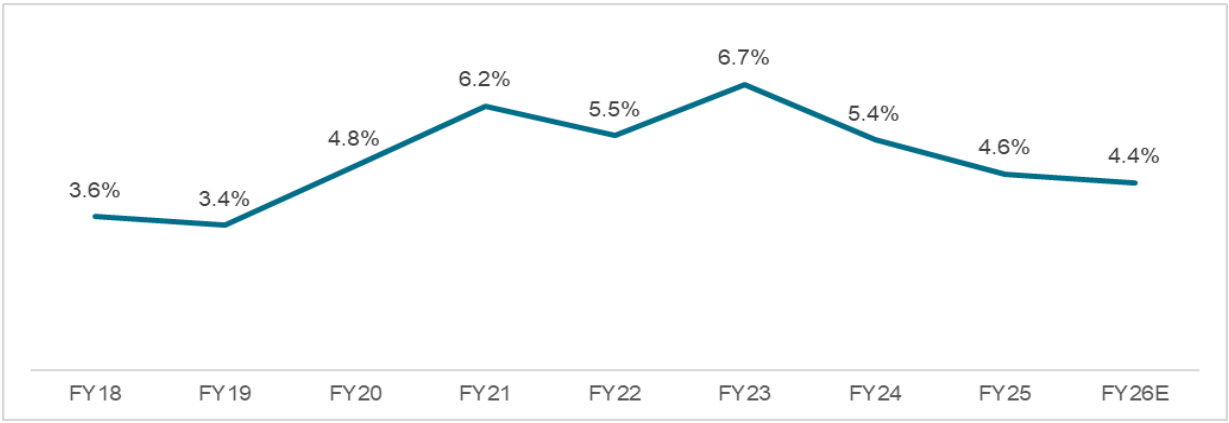
Consumer Price Index (CPI)-based inflation eased to 1.5% on-year in September 2025 from 2.1% in August 2025. This is the lowest inflation reading since June 2017, and the second time this Financial Year it has slipped below the lower limit of RBI's target range.

Lower food and fuel inflation drove the decline. Food inflation dropped to -2.3%, remaining in the negative zone for the fourth straight month. Vegetables, edible oils, fruits and pulses led to the decline, helped by a favourable base effect. Fuel inflation also softened (2% vs 2.3%).

However, core inflation accelerated 40 bps to 4.6%, the highest in 2 years. Gold, and housing drove the rise. With sharp rise in international prices gold inflation stood at a decadal high of 46.9%. Core inflation excluding gold saw a milder rise to 3.3% from 3.1%. It is still early to gauge the impact of goods and services tax (GST) cuts, which came into effect from 22nd September 2025.

The CPI trendline shows a clear inflation cycle over Financial Year 2018-Financial Year 2026E. After remaining subdued at around 3.4-3.6% in Financial Year 2018-Financial Year 2019, inflation began rising, peaking at 6.2% in Financial Year 2021 due to pandemic-related supply disruptions. Although it moderated slightly to 5.5% in Financial Year 2022, CPI surged again to 6.7% in Financial Year 2023 amid global commodity shocks. Since then, inflation has been on a gradual downward trajectory, falling to 5.4% in Financial Year 2024 and further easing to 4.6% in Financial Year 2025. The estimate for Financial Year 2026 suggests continued stabilization at around 4.4%.

CPI trendline



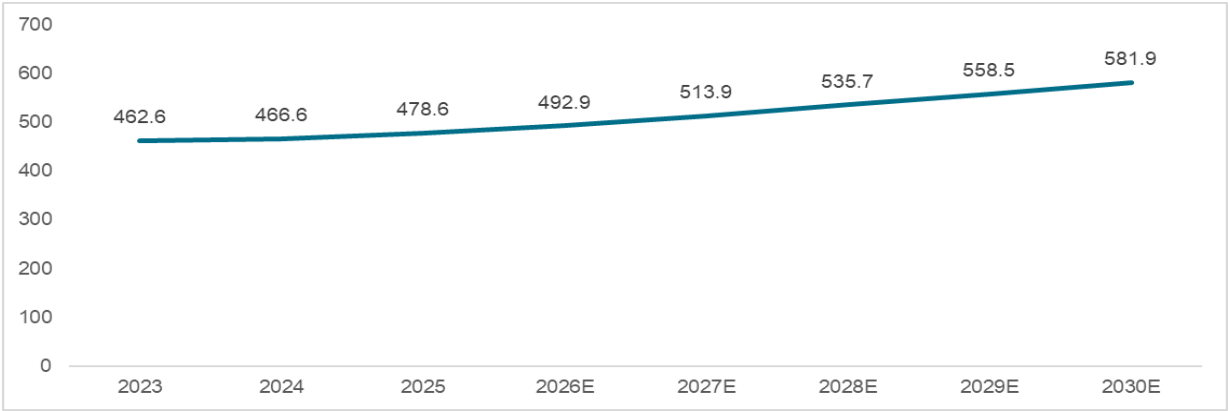
Source: Ministry of Statistics and Programme Implementation (MOSPI), CRISIL Intelligence

Trends in WPI

The Wholesale Price Index (WPI) has exhibited a steady upward trajectory, reflecting a gradual firming up of producer prices in line with improving industrial demand and input cost normalization. After witnessing subdued growth through Financial Year 2024 and Financial Year 2025, the WPI is projected to increase from 478.6 in Financial Year 2025 to 492.9 in Financial Year 2026, indicating a mild but steady pick-up in wholesale price pressures.

For Financial Year 2027, the index is expected to rise further to 513.9, driven by a combination of improving manufacturing output, moderate commodity price recovery, and strengthening domestic demand. This moderate inflation trend suggests a balanced recovery, where input costs remain contained even as capacity utilization improves across key sectors such as infrastructure, energy, and basic metals. Over the medium to long term (Financial Year 2028–Financial Year 2030), WPI is projected to maintain its upward trajectory, reaching 581.9 by Financial Year 2030. The gradual increase reflects expectations of sustained economic expansion, structural reforms boosting industrial activity, and stable commodity markets. The outlook also assumes continued Financial Year support for infrastructure and manufacturing, alongside moderate imported inflation pressures. Overall, the WPI trajectory signals a moderate but durable recovery in wholesale prices, consistent with a stable inflation environment and healthy economic fundamentals over the forecast horizon.

WPI trendline (base 2011-12)



Source: Ministry of Commerce and Industry, CRISIL Intelligence

Review of private final consumption growth

2. Private final consumption expenditure to maintain dominant share in GDP

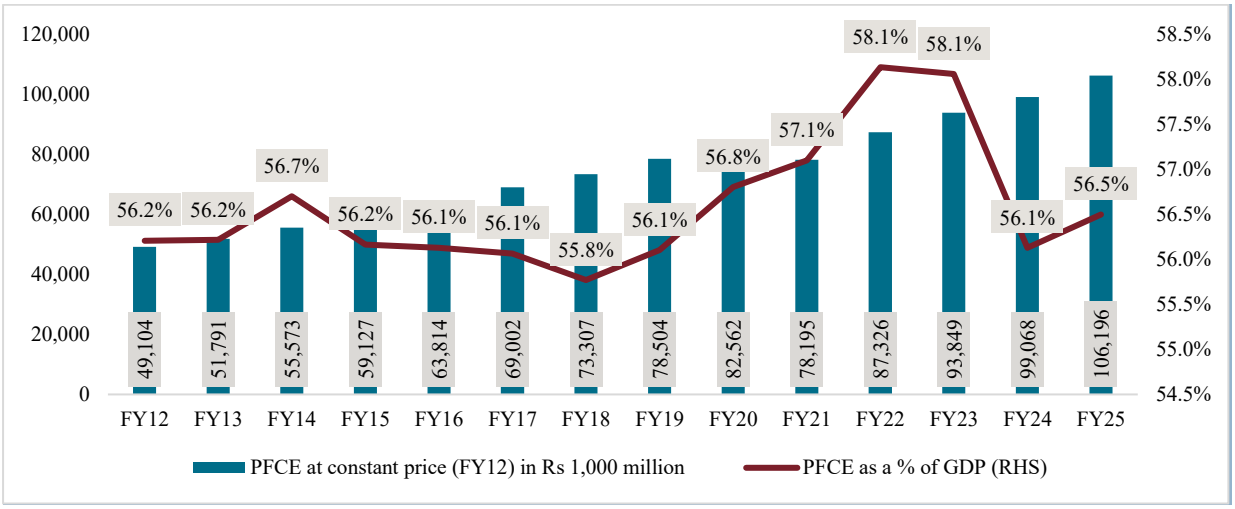
Private final consumption expenditure (PFCE) reflects the overall consumption patterns and spending capacity of households within an economy. When PFCE increases it often translates to increased demand for various goods and services.

PFCE at constant prices clocked 6.0% CAGR between Financial Years 2012 and 2023, maintaining its dominant share in the GDP pie, at 58.5% or ₹93.5 trillion as of Financial Year 2023. Factors contributing to the growth included good monsoons, wage revisions due to the implementation of the Pay Commission's recommendations, benign interest rates and low inflation.

That said, PFCE had declined to ₹78.2 trillion in Financial Year 2021 from ₹82.6 trillion in Financial Year 2020 on account of the pandemic, when consumption demand was impacted on account of strict lockdowns, employment loss,

limited discretionary spending and disruption in demand-supply dynamics. PFCE increased 6.8% to ₹93.8 trillion in Financial Year 2023 but remained at 58.0% as a % of GDP. This was because the pandemic had an adverse impact on personal expenditure and government spending increased in an effort to boost the economy from the Covid-19-induced slump.

PFCE at constant prices



PE – Provisional Estimate; Source: First Advance Estimates 2024-25, MoSPI, CRISIL Intelligence

Private final consumption expenditure (PFCE) growth slowed in the fourth quarter of Financial Year 2025. Demand for both goods and services seem to have slowed. For goods, the Index of Industrial Production (IIP) indicated slowing demand for both consumer durables and non-durables. Demand for services moderated, too, as indicated by slowing growth in THTC services. Urban demand was likely constrained by elevated interest rates and slowing credit growth. That being said, some strengthening of rural demand (real agricultural and rural wages picked up in the quarter as inflation slowed considerably and tractor sales accelerated compared with the previous quarter) helped provide a cushion.

Historical trends in FDI inflows

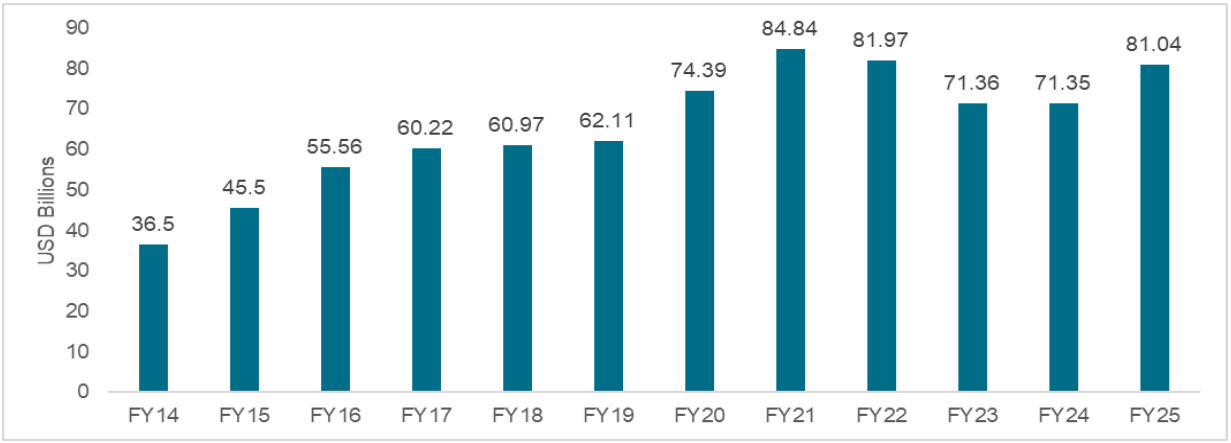
Under the new foreign investment policy, the Government of India constituted the Foreign Investment Promotion Board (FIPB), whose main function was to invite and facilitate foreign investments. The FIPB ceased to exist as per the decision taken by the finance ministry in 2017. The government has now empowered individual departments to clear FDI proposals in consultation with the Department of Industrial Policy and Promotion (DIPP) within the set timelines. From a baseline of less than $1 billion in 1990, India has become one of the most important FDI destinations in the world.

Foreign Direct Investment (FDI) inflows to India have shown a steady upward trajectory over the past decade, reflecting growing investor confidence and India's emergence as a preferred global investment destination. FDI equity inflows rose from USD 36.5 billion in Financial Year 2014 to USD 84.84 billion in Financial Year 2021, registering more than a two-fold increase during this period.

After peaking in Financial Year 2021, inflows moderated slightly to USD 81.97 billion in Financial Year 2022, followed by a decline to around USD 71.36 billion in Financial Year 2023 and Financial Year 2024. The marginal recovery to USD 81.04 billion in Financial Year 2025 indicates renewed investor interest, likely driven by continued policy reforms, infrastructure development, and India's resilience amid global economic uncertainties.

Overall, the data suggests that India continues to remain one of the most attractive destinations for FDI, supported by its strong macroeconomic fundamentals, improving ease of doing business, and government initiatives such as Make in India, Production Linked Incentive (PLI) schemes, and focus on manufacturing and digital transformation.

FDI equity inflows to India ($ billion)



Source: DIPP, CRISIL Intelligence

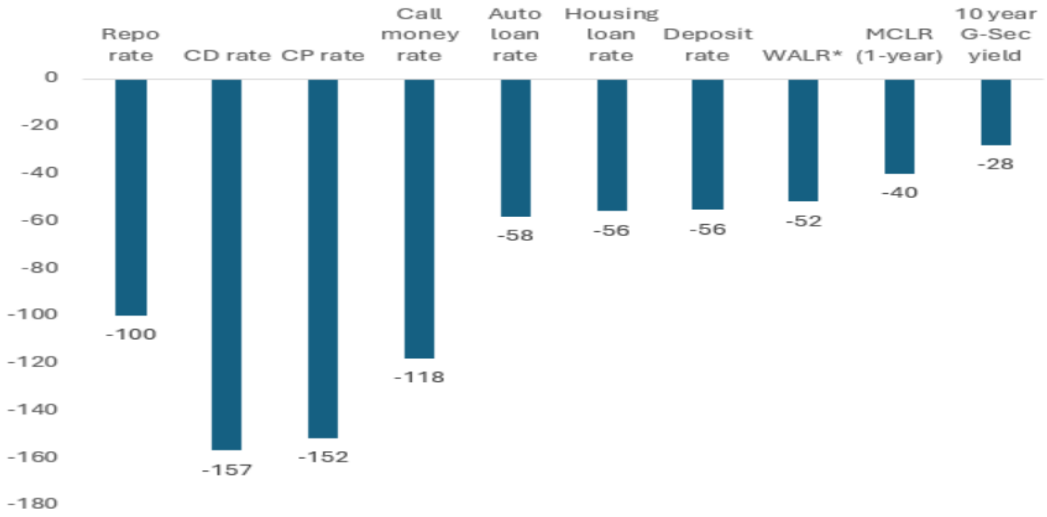
Bank rates

Bank credit growth edged up to 10% on-year in August from 9.8% in July.

Looking at the sectoral data available till July, credit growth had picked up in key categories. Lending to the non-food (9.9% vs 9.3%), industry (6% vs 5.5%) and services (10.6% vs 9%) categories increased. However, in the personal loans category, it declined to 11.9% from 12.1% (in June), pulled down by vehicle loans (8.9% vs 10.8%) and credit card outstanding (5.6% vs 7.2%). Housing loan growth was stable at 9.6% on-year in July.

Growth in non-food credit to agriculture and allied activities increased to 7.3% from 6.8% in June. Within industry, there was a pick-up in credit to micro and small industries (21% vs 19.3%), midsize (14.7% vs 13.1%) and large (0.9% vs 0.8%) industries. Within services, the increase was driven by wholesale (16.9% vs 13%) and trade (13% vs 10.8%) segments. Credit to NBFCs was stable at 2.6%.

Change in Bank Rates (January 2025 - July 2025)



Source: RBI, CEIC, CRISIL Intelligence

Benign inflation will give the MPC some room to cut rates one more time this Financial Year. We have revised our forecast on inflation based on the Consumer Price Index (CPI) downwards to 3.2% from 3.5% this Financial Year. In the coming months, a fading base effect and stronger demand due to festive sales will lift the CPI inflation rate, but will keep the uptick benign. Low crude prices, higher kharif sowing, the expectation of healthy food supplies, and a one-off effect of GST rate cuts on retail prices, should keep headline inflation lower than last Financial Year.

We expect India's gross domestic product to grow 6.5% this Financial Year, with downside risks from tariff hikes by the US. The tariffs, a global trade slowdown and geopolitical uncertainties are expected to have a non-uniform impact on the economy.

Amid uncertainties, major central banks remain cautious about easing rates. The US Federal Reserve (Fed) has cut policy rates by 25 bps in its September meeting. S&P Global expects a cumulative 50 bps cut by the Fed towards the end of 2025.

On the domestic front, we expect one more repo rate cut by the MPC this Financial Year. The trajectory of inflation and growth risks from higher US tariffs and weaker global trade will bear watching in this regard.

PLI Scheme boosting industrial investments (EV etc)

The Production Linked Incentive (PLI) Scheme, launched in 2020 under the Atmanirbhar Bharat initiative, is one of India's most significant industrial policies aimed at strengthening domestic manufacturing and reducing import dependence. The scheme provides financial incentives to firms based on incremental sales from manufacturing goods within India, encouraging them to scale up production, enhance value addition, and integrate into global supply chains. Covering 14 strategic sectors such as electronics, automobiles, pharmaceuticals, textiles, food processing, telecom, and solar modules, the PLI scheme seeks to build globally competitive manufacturing capabilities while promoting employment generation and export growth.

So far, the PLI scheme has demonstrated substantial progress in driving industrial investment and production. As per official data from the Ministry of Commerce and Industry and reports cited in ET Manufacturing and Hindustan Times, the scheme has attracted committed investments of around ₹1.76 trillion, with realised investments touching ₹1.61 trillion by late 2024. The cumulative production output under PLI-linked sectors has crossed ₹16.5 trillion, and exports especially of mobile phones, pharmaceuticals, and electronic goods have shown remarkable growth. For instance, mobile manufacturing output increased by nearly 146% from Financial Year 2020–2021 to Financial Year 2024–2025, transforming India into a major global exporter in this category.

The PLI initiative has also emerged as a key employment generator and FDI catalyst. As of 2024–2025, the scheme has created over 12 lakh direct and indirect jobs across the 14 sectors. Furthermore, it has boosted investor confidence, leading to a 69% rise in FDI equity inflows into the manufacturing sector in recent years. This surge reflects the scheme's role in positioning India as a preferred global manufacturing destination, with ripple effects on infrastructure, research and development, and component manufacturing.

However, the scheme's long-term success depends on addressing implementation bottlenecks, enhancing MSME participation, and ensuring logistical and infrastructural efficiency. While PLI has catalysed major investments and industrial transformation, sustaining momentum will require a focus on innovation, skill development, and value chain deepening. Overall, the PLI scheme has laid the foundation for a more resilient and export-oriented manufacturing ecosystem, marking a pivotal shift toward India's ambition of becoming a global manufacturing hub.

Improving infrastructure to raise efficiencies in logistics

India's logistics sector has long been hampered by fragmented infrastructure, modal imbalances and high costs; policy makers aim to reduce these frictions through coordinated infrastructure investments and a single-window planning approach. The National Logistics Policy (2022) provides the broad policy framework to reduce cost & time inefficiencies, promote multimodal transport, and strengthen data-driven decision making across jurisdictions. The policy explicitly encourages integration of ports, rail, road, inland waterways and warehousing to lower logistics cost and improve competitiveness of Indian goods.

At the project and programme level, the Government is building the physical backbone needed for efficient freight movement. The PM GatiShakti National Master Plan creates an integrated, geo-tagged digital platform to align 16 ministries and accelerate multimodal connectivity, enabling faster project clearances and coordinated investments across road, rail, ports and airports. Complementary flagship programmes such as Bharatmala (for national highways and multi-modal logistics parks) and Sagarmala (port modernization and port-led development) are explicitly designed to shift freight to more efficient modes, shorten transit times, and reduce door-to-door logistics cost.

Rail and coastal/waterway interventions are central to modal shift and cost reduction. The development of Dedicated Freight Corridors (DFCCIL) creates high-axle-load, double-stack rail capacity that speeds up freight movement and frees up conventional network capacity for passenger traffic; DFCCIL-enabled terminals and private freight terminals are also being linked to Multi-Modal Logistics Parks (MMLPs) to enable seamless rail–road–port transfers. Similarly, investments under Sagarmala and the inland waterways programme are expanding coastal and inland shipping options to take long-haul cargo off roads, lowering costs and emissions. Together these measures (road corridors + DFCs + ports + inland waterways + MMLPs) are designed to reduce transit times, cut inventory carrying costs, and improve supply-chain reliability.

To measure and sustain improvement, the Government tracks state-level logistics performance and encourages state logistics policies and reforms. The LEADS (Logistics Ease Across Different States) initiative and related Commerce/Industry reporting provide a benchmarking tool for states to prioritise investments in warehousing, last-mile connectivity and quality of freight infrastructure; many states are now aligning their logistics action plans with the National Logistics Policy and PM GatiShakti to attract industry and lower logistics costs. Implementation challenges remain (land, financing, and last-mile connectivity), but the combined approach national policy, integrated planning platform, targeted corridor & port programmes, and state benchmarking constitutes the official roadmap for raising logistics efficiency in India.

Population growth & urbanization

India with a population of 1.46 billion, is now the most populous country in the world. According to the United Nations World Population Prospects (2024), India's population is projected to peak around 1.6 billion by 2048 before gradually stabilizing. It has witnessed significant demographic expansion and rapid urban transformation over the past few decades. Although the annual population growth rate has slowed to about 0.8% in 2024 down from over 2% in the 1980s, the absolute increase continues to add millions to the national population each year, placing growing pressure on land, resources, and public services.

Urbanisation in India has accelerated alongside this demographic change. In 2023, about 36% of India's population nearly 500 million people lived in urban areas, compared to just 27.8% in 2001 and 31.2% in 2011. The country is expected to become 50% urban by 2047, coinciding with its centenary of independence. Urban centres such as Delhi, Mumbai, Bengaluru, Hyderabad, and Pune have expanded rapidly, while smaller cities and peri-urban regions are emerging as new growth hubs due to infrastructure development, industrial corridors, and improved connectivity.

This surge in urbanisation contributes significantly to India's economic output urban areas account for nearly 63% of national GDP in 2023. However, it also poses challenges, including housing shortages, traffic congestion, environmental stress, and unequal access to basic amenities like water, sanitation, and healthcare. To manage these pressures, the Government of India has launched several initiatives such as the Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT 2.0), and Pradhan Mantri Awas Yojana (Urban) to promote sustainable, inclusive, and resilient urban growth.

Gross Fixed Capital Formation Trends as a % of GDP

Gross Fixed Capital Formation Trends as a Percentage of GDP (2015–2024)

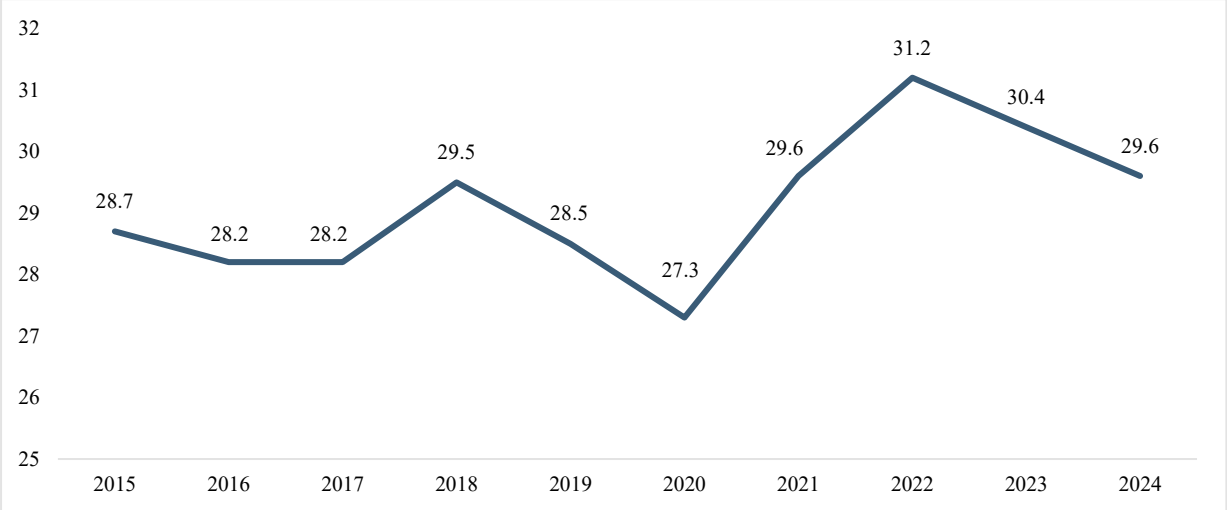
Between 2015 and 2017, GFCF remained relatively stable at around 28.2–28.7% of GDP, indicating modest investment momentum. A rebound was observed in 2018, with the ratio improving to 29.5%, supported by an uptick in infrastructure spending and gradual recovery in private sector investment. However, this momentum slowed in 2019, with the ratio declining to 28.5%, and further contracted sharply to 27.3% in 2020, primarily on account of the disruptions caused by the COVID-19 pandemic.

The post-pandemic period witnessed a significant revival in investment activity. In 2021, GFCF rose to 29.6% of GDP, and further peaked at 31.2% in 2022, reflecting the government's emphasis on capital expenditure and infrastructure development, alongside improving private sector sentiment.

Nevertheless, the trend moderated thereafter, with GFCF easing to 30.4% in 2023 and projected to decline further to 29.6% in 2024. This suggests a normalization following the sharp post-pandemic rebound, though the ratio remains above the pandemic-era trough and broadly consistent with medium-term averages.

Overall, the trajectory of GFCF underscores the importance of sustaining capital expenditure and catalyzing private investment to maintain levels above 30% of GDP, a threshold considered conducive for achieving high and sustainable economic growth.

Gross Fixed Capital Formation Trends as a % of GDP



Source: World Bank, Crisil Intelligence

Index of Industrial Production

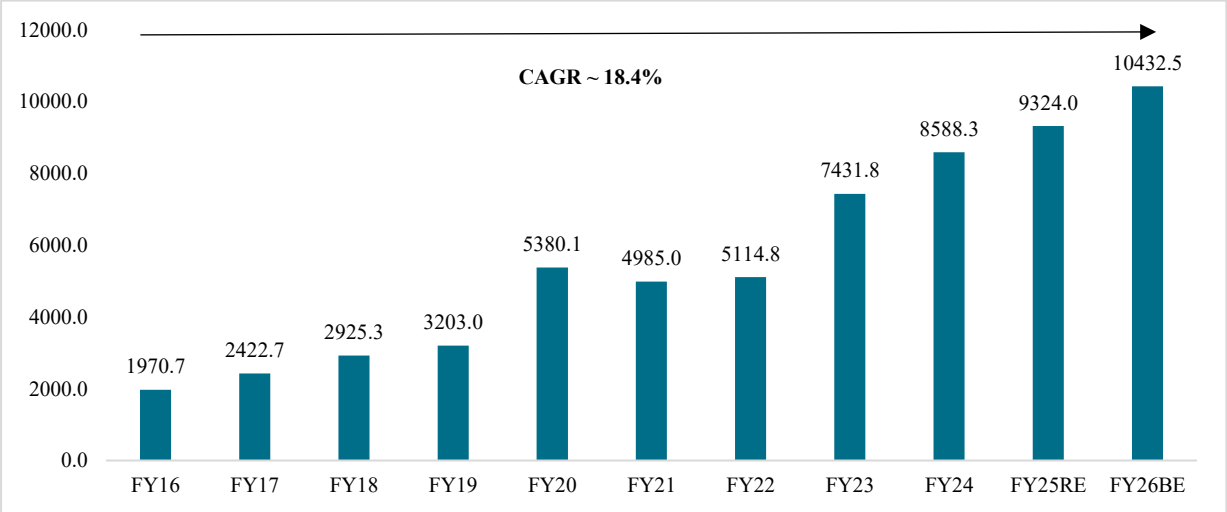
Category	Key Drivers / Trends	Supporting Data / Insights
Industrial Production (IIP)	Improvement in output across manufacturing, infrastructure, and consumer goods	IIP growth accelerated to 3.5% in July 2025 (vs 1.5% in June 2025)
Manufacturing Sector	Stronger output in key segments like infrastructure and capital goods	Manufacturing output rose 5.4% vs 3.7% previous month
Infrastructure & Construction Goods	Continued infrastructure push by the government	Growth at 11.9% vs 6.7% earlier
Capital Goods	Increased investment activity and industrial demand	Growth improved to 5% vs 3%
Intermediate Goods	Stable industrial supply chain	Growth steady at 5.8% vs 5.5%
Consumer Durables	Higher demand recovery and festival-led spending	Output up 7.7% vs 2.8%
Consumer Non-Durables	First positive growth in six months	0.5% vs -0.9% earlier
Primary Goods	Decline moderating, indicating base recovery	-1.7% vs -2.5% contraction
External Factors	Pre-export frontloading ahead of US tariffs; shifting global supply chains	Export growth likely to face headwinds from new US tariffs (25–50%)
Policy & Macroeconomic Support	Government infrastructure spending, RBI rate cuts, tax relief	Expected to strengthen domestic demand and private investment
Inflation & Monsoon	Benign inflation and healthy monsoon conditions	Supportive of rural and consumer demand
Sectoral Challenges	Mining sector continued to decline; MSMEs vulnerable to tariffs	Mining down -7.2% vs -8.7%; MSMEs form ~45% of exports

Review of infrastructure in India

Overview of infrastructure sector in India

Developing and modernising the infrastructure sector has been a priority area for the Government of India and has witnessed increasing public investments and budgetary support. Further, the government has undertaken several reforms and initiatives in the infrastructure sector, which has resulted in robust secular growth in most of the segments within the sector. Infrastructure budget has increased with a CAGR of 18.4% from ₹1,970.7 billion in Financial Year 2016 to ₹10,432.5 billion in Financial Year 2026 showcasing India's growing focus on the infrastructure sector.

Infrastructure Budget over the years (in ₹ Billion)



Note: RE: Revised Estimates, BE: Budget Estimates
Source: Budget documents, CRISIL Intelligence

The Union Budget 2026 allocated estimated budgetary allocation of ₹10.43 trillion for infrastructure ministries, representing a robust 11.9% growth compared to Financial Year 2025RE. Meanwhile, the total GBS (Gross Budgetary Support) for infrastructure ministries has risen modestly by 0.9%, with the major infrastructure ministries, namely the Ministry of Railways and the Ministry of Road Transport and Highways continuing to account for a large portion of the infrastructure outlay.

To strengthen project planning and execution, each infrastructure-related ministry will develop a three-year project pipeline, with implementation avenues through the public-private partnership (PPP) model. States have also been encouraged to adopt a similar approach. Additionally, to support state-level infrastructure development, the budget proposes ₹1.5 trillion in 50-year interest-free loans, aimed at augmenting capital expenditure and enabling policy reforms. In parallel, after successfully monetising assets worth ₹3.86 trillion from Financial Year 2022 to Financial Year 2024 in first phase of National Monetisation Policy (NMP), the government has advanced the second phase of the NMP, targeting ₹10 trillion in asset monetisation between Financial Years 2025 and 2030. This is expected to

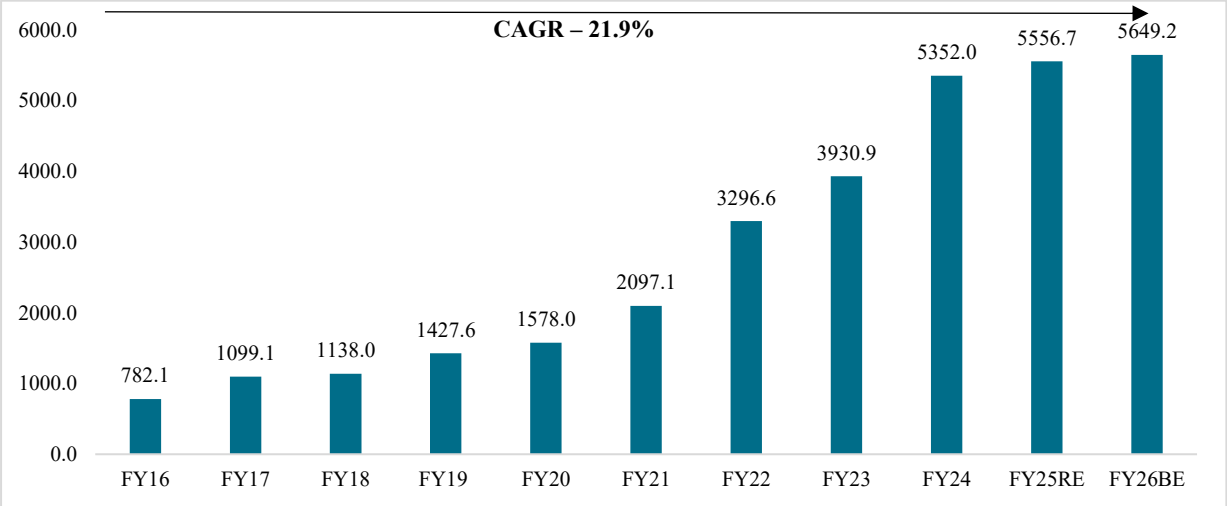
unlock significant value from existing infrastructure assets and channel it into new investments, further bolstering India's growth trajectory.

Budgetary allocations increased from ₹5,380.1 billion in Financial Year 2020 to a projected ₹10,432.5 billion in Financial Year 2026, registering a compound annual growth rate (CAGR) of 11.6%. This consistent upward trajectory reflects policy continuity and the recognition of infrastructure as a critical enabler for productivity gains, competitiveness, and regional equity.

While growth between Financial Year 2020 and Financial Year 2023 registering a compound annual growth rate (CAGR) of 11.3%. Allocations accelerated sharply in Financial Year 2024 to ₹8,588.3 billion, marking a 15.5% jump over the previous year. This boost highlights the government's strategic decision to prioritize budget allocation in order to stimulate economic recovery post-pandemic, crowd-in private investment, and create long-term multipliers for employment and industry. Allocations have continued to rise thereafter, reaching ₹9,324 billion in Financial Year 2025 and ₹10,432.5 billion in Financial Year 2026.

The growth of the infrastructure industry is significantly driven by government policies, with several key initiatives playing a crucial role. Notably, the National Infrastructure Pipeline, launched in 2019, is expected to attract investments of ₹111 trillion across 7,400 projects from Financial Year 2020 to Financial Year 2025, encompassing all infrastructure sectors. Additionally, the introduction of PM Gatishakti aims to enhance integrated planning and collaboration among ministries to eliminate logistical bottlenecks and ensure seamless multimodal connectivity. Specific schemes such as Bharatmala for road infrastructure, Sagarmala for ports, and the Ude Desh ka Aam Naagrik (UDAN) scheme for airport infrastructure have also contributed substantially to the development of the transport infrastructure sector. Furthermore, factors like rapid urbanization, rising foreign direct investments, and the improved health of the Indian financial system have fueled infrastructure growth. Moreover, domestic corporates are focusing on localization, while multinational corporations are diversifying their global supply chains, providing a further boost to the industry's development.

Infrastructure Capex over the years (in ₹ Billion)



Source: Union Budget documents, Crisil Intelligence

Infrastructure capital expenditure has expanded sharply over the past decade, reflecting the government's sustained push for infrastructure-led economic growth. From ₹782 billion in Financial Year 2016, central capex has risen steadily through the years, crossing major milestones such as ₹2.1 trillion in Financial Year 2021 and ₹3.9 trillion in Financial Year 2023, before accelerating further to ₹5.35 trillion in Financial Year 2024. The rising allocations in Financial Year 2025RE of ₹5.56 trillion and Financial Year 2026BE of ₹5.65 trillion underscore the continued emphasis on strengthening national connectivity, logistics efficiency, and economic competitiveness. Overall, the trend highlights a structural shift toward high public investment.

Sector-wise capital expenditure for transport sector

Public investment in the transport sector has seen a significant and sustained rise over the past few years, reflecting the government's continued focus on infrastructure-led growth. Budgetary allocations for key modes of transport, roads, railways, metro rail, ports, and airports have expanded sharply, underscoring efforts to strengthen connectivity and logistics efficiency across the country.

The total outlay towards the transport sector has increased from around ₹1.5 trillion in Financial Year 2020 to an estimated ₹5.9 trillion in Financial Year 2026 recording CAGR of 25.6%, representing nearly a fourfold rise over six years. The roads and railways segments together account for the bulk of this allocation, highlighting their central role in driving economic growth and improving freight and passenger mobility.

Roads continue to receive the highest allocation, increasing from ₹684 billion in Financial Year 2020 to approximately ₹2.7 trillion in Financial Year 2026 recording CAGR of 25.9%, driven by major expressway projects under the Bharatmala Pariyojana, and the push for last-mile connectivity through the PM Gati Shakti framework.

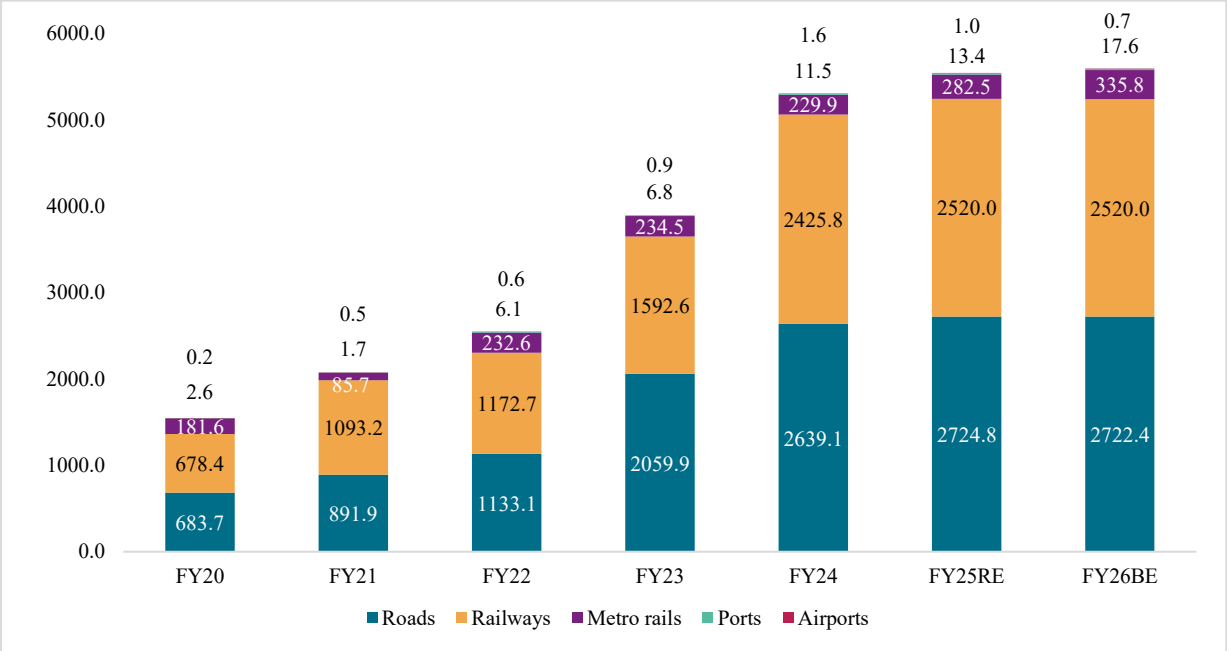
Railways have seen a parallel surge in capital expenditure, rising from ₹678 billion in Financial Year 2020 to ₹2.52 trillion in Financial Year 2026 recording CAGR of 24.5%, reflecting the government's emphasis on capacity enhancement, electrification, safety modernisation, and logistics integration through dedicated freight corridors.

Metro rail investments have grown steadily from ₹182 billion in Financial Year 2020 to ₹336 billion in Financial Year 2026 recording CAGR of 10.8%, in line with the urban mobility agenda and expansion of mass transit systems across major cities.

Although ports and airports account for a smaller share of total outlay, allocations have risen consistently, supporting port modernisation under Sagarmala and airport expansion under UDAN and regional connectivity programmes.

This sustained rise in public expenditure demonstrates a strong commitment to transforming India's transport infrastructure. The focus on multimodal integration, digitalisation, and connectivity under PM Gati Shakti, complemented by resource mobilisation through NMP and operational reforms under NLP, is expected to yield substantial efficiency gains.

Sector wise split of capital expenditure in transport infrastructure – Actual Budget Allocations (GBS) *(in ₹ Billion)*



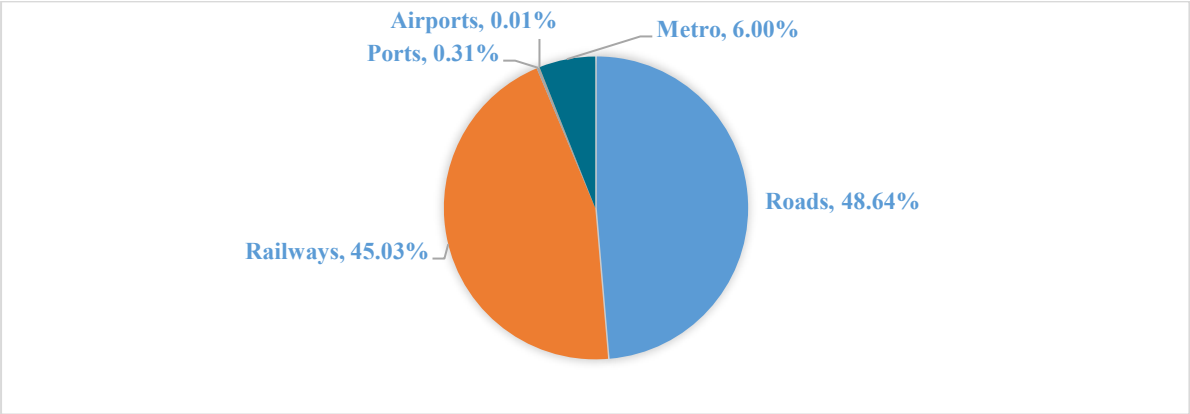
Note: RE: Revised Estimates, BE: Budget Estimates, the actual allocations of Financial Year 2025 and Financial Year 2026 may vary around these values
Source: Budget documents, CRISIL Intelligence

The Financial Year 2026 Budget Estimates continue to prioritise core transport infrastructure, with roads and railways accounting for the bulk of sectoral allocations. Roads receive the highest outlay at ₹2.72 trillion, reflecting the government's sustained focus on expressway expansion, highway upgrades and connectivity under Bharatmala and allied programmes. Railways follow closely with ₹2.52 trillion, driven by ongoing investments in network modernization, dedicated freight corridors and station redevelopment.

Urban transport also receives meaningful support, with metro projects allocated ₹335.80 billion, underscoring continued expansion across major cities. Ports (₹17.6 billion) and airports (₹0.70 billion) form a smaller share of the overall spend, indicating a more targeted capex approach in these segments. The Financial Year 2026 budget estimates reflect a strong infrastructure push, with roads and railways together accounting for over 93% of the total sectoral outlay. Roads receive the highest allocation at 48.64%, underscoring continued emphasis on network expansion, connectivity, and corridor development. Railways follow closely with 45.03%, driven by investments in modernization, safety enhancements, and capacity augmentation. Metro projects constitute 6.00% of the allocation, highlighting steady support for urban mass transit systems. Ports (0.31%) and airports (0.01%) form a very small share of the overall budget, indicating a more targeted, project-specific approach in these sectors for Financial Year 2026.

Overall, the Financial Year 2026BE highlights a continued push toward large-scale transport infrastructure, aimed at enhancing connectivity, improving logistics efficiency and supporting long-term economic growth.

Sector wise split of Financial Year 2026 budget estimates *(in ₹ Billion)*



Note: BE: Budget Estimates, the actual allocations of Financial Year 2026 may vary around these values
Source: Budget documents, CRISIL Intelligence

3. Roads and highways

In the Union Budget for Financial Year 2025-2026, the Ministry of Road Transport & Highways (MoRTH) has been allocated ₹2,873.33 billion, representing a 2.4% increase over the revised estimate for Financial Year 2024-2025 (₹2,805.19 billion).

Key Allocations of Financial Year 2025-26

National Highways Authority of India (NHAI): Receives ₹1,702.66 billion, accounting for approximately 59% of MoRTH's total budget. This is about 1% higher than the revised estimate for Financial Year 2024-2025.

Roads & Bridges: Allocated about ₹1,162.92 billion, which is 5% more than the revised estimates for Financial Year 2024-2025. This includes funding for the development and maintenance of national highways, expressways, and related bridge works.

Revenue vs Capital Expenditure

- Revenue Expenditure is estimated at ₹150.92 billion for Financial Year 2025-26, which is 88% higher than the revised estimate for Financial Year 2024-2025 (₹80.38 billion).
- Capital Expenditure is budgeted at ₹2,722.41 billion, almost unchanged from the Financial Year 2024-2025 revised estimate of ₹2,724.81 billion.

Use of Funds & Implications

- The consistent capital outlay suggests continued emphasis on physical infrastructure (construction, expansion, and maintenance) rather than just operational or administrative costs.
- The increase in revenue expenditure reflects growing non-capital costs possibly maintenance, safety, grants, subsidies, or regulatory functions.
- Allocation to NHAI remains strong, indicating government's ongoing focus on national highways (new works, expressway expansion, etc.).
- The 5% increase in roads & bridges allocation suggests a push to bolster connectivity and structural works (bridges, bypasses, etc.).

Bharatmala Pariyojana (Road & Highway Development)

- Phase I targets ~34,800 km, with 26,425 km awarded and 19,826 km completed by 28 February 2025.
- Total expenditure on Bharatmala stands at ₹4.92 trillion, including 6,669 km of greenfield corridors awarded and 4,610 km completed.
- Bharatmala Pariyojana Phase 2 is expected to develop about 8,000–8,500 km of new expressways and access-controlled corridors, strengthening connectivity to major economic and logistics hubs. Its projected cost is around ₹3.5–3.7 trillion and timeline beyond Calendar Year 2027.

- This effort is repositioning India's road infrastructure by improving logistics efficiency and national connectivity.

Contribution of roads sector to India's GVA

The share of the road transport sector in India's Gross Value Added (GVA) has remained relatively stable over the last decade, reflecting its consistent role in supporting national economic activity. As per data from the MoSPI, National Accounts Statistics 2024, and CRISIL Intelligence, the contribution of road transport to India's GVA hovered around 3.2–3.3% from Financial Year 2012 to Financial Year 2020, indicating steady performance during this period.

However, a notable decline was observed in Financial Year 2021, when the share dropped sharply to 2.5%, largely due to the impact of the COVID-19 pandemic which disrupted transport operations and demand for logistics services. The sector demonstrated recovery in the subsequent years, improving to 3.1% in Financial Year 2022, though it has since moderated slightly to 3.0% in Financial Year 2023 and 2.9% in Financial Year 2024.

Overall, the data highlights the resilient yet moderate contribution of the roads sector to the economy, underscoring the need for continued investment in infrastructure and efficiency improvements to enhance its share in India's GVA in the coming years.

Road transport GVA share

GVA	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Road transport share (at constant prices)	3.2%	3.3%	3.3%	3.3%	3.3%	3.2%	3.3%	3.3%	3.3%	2.5%	3.1%	3.0%	2.9%

Source: MoSPI, National Accounts Statistics, CRISIL Intelligence

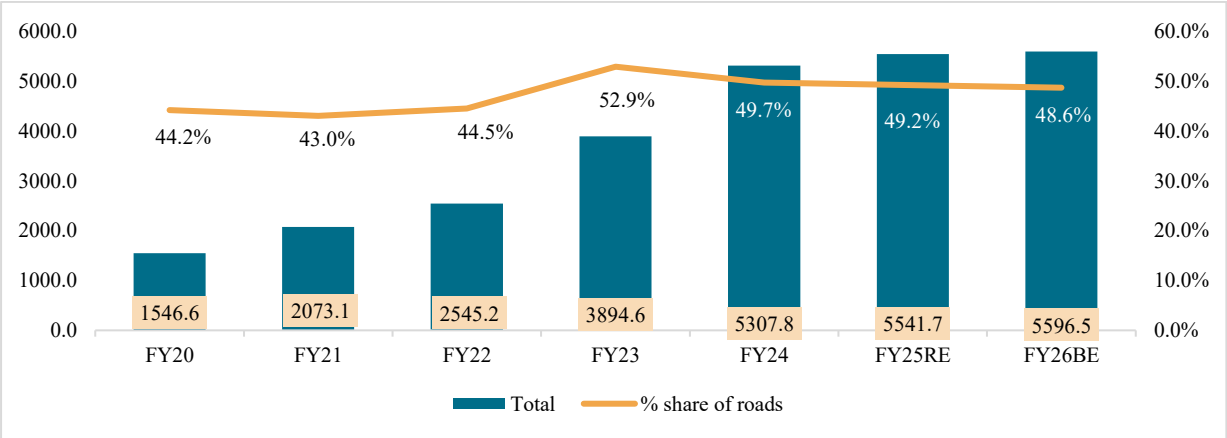
Share of roads in total infrastructure investments in India

Roads have historically accounted for the largest share of India's infrastructure investments, reflecting their critical role in ensuring last-mile connectivity, supporting freight movement, and enabling regional integration. The chart shows that the share of roads in total infrastructure investments has remained consistently high, ranging from 43–53% between Financial Year 2020 and Financial Year 2025.

In budget percentage terms, investments in roads peaked at ₹2,059.9 billion in Financial Year 2023 with 52.9% of the transport infrastructure budget being given to the roads sector. Especially under Bharatmala Pariyojana, saw significant allocations. As of March 2025, 26,425 km of projects awarded out of approved 34,800 km, with 20,378 km already constructed. Several large projects were already sanctioned/underway, leading to a natural moderation in the next years.

Roads continued to attract nearly half of overall infrastructure spending in subsequent years, underscoring their importance in the national development agenda. This was supported by renewed momentum in highway construction, expressway development, and rural connectivity schemes. Financial Year 2026 investments are expected to be driven by the government's continued focus on the National Infrastructure Pipeline (NIP), the enabling role of the National Highways Authority of India (NHAI), and the acceleration of the National Monetisation Pipeline (NMP), which seeks to unlock value from existing assets to fund new projects.

Share of roads in total infrastructure investments in India (in ₹ Billion)



Source: Budget Documents, CRISIL Intelligence

The sustained focus on roads also aligns with broader economic objectives: reducing logistics costs, improving supply chain efficiency, and enabling regional equity by connecting underserved areas. With major initiatives such as Bharatmala Pariyojana, the GatiShakti Master Plan, and asset monetisation strategies, roads are expected to remain the backbone of India's infrastructure investment story, anchoring growth and competitiveness in the years ahead.

Road network in India

Road infrastructure forms the backbone of India's transport network and is one of the most critical enablers of economic activity. With its vast geographical expanse and diverse terrain, India relies heavily on roads for mobility, trade, and regional integration. Unlike several developed economies where railways or waterways play a larger role in freight movement, India's logistics ecosystem is road-dominant, with roads accounting for nearly 87% of passenger traffic and close to 60% of freight traffic. This makes the sector not only a facilitator of day-to-day mobility but also a central pillar in ensuring supply chain efficiency, rural connectivity, and market access.

The scale of the road network underscores this importance. India has developed the second-largest road network in the world, spanning over 63 lakh km as of 2025. This network comprises national highways, state highways, district roads, and rural roads, each serving a distinct role in the country's connectivity hierarchy. While national highways make up only about 2% of the overall length, they carry around 40% of road traffic, linking state capitals, major ports, and economic hubs. State highways extend coverage to key intra-state corridors, while rural and district roads, accounting for nearly 95% of the network, provide essential last-mile connectivity to villages, agricultural mandis, production centres, and railway stations. Together, this layered network sustains both India's urban growth centres and its rural hinterland.

Road network in India in 2025

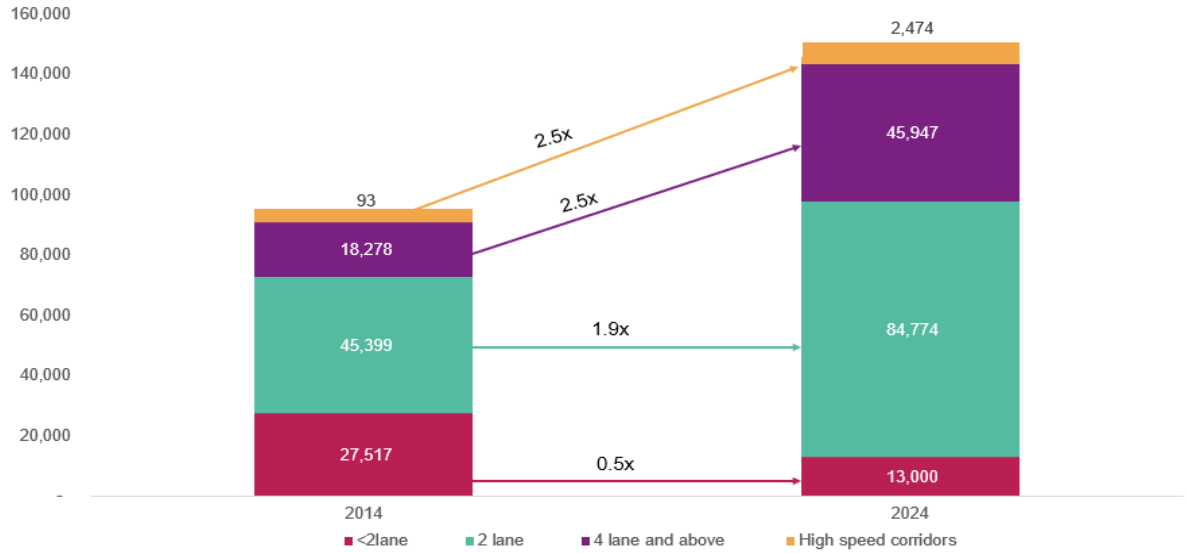
Road network	Length (km)	Percentage of total length	Percentage of total traffic	Connectivity to
National highways	146,204	~2	40	Union capital, state capitals, major ports, foreign highways
State highways	179,535	~3	60	Major centres within the states, national highways
Other roads	6,019,723	~95		Major and other district roads, rural roads - production centres, markets, highways and railway stations
Total Network	6,345,403	100	100	

Source: MoRTH PIB-05 Jan 2024, MoRTH Annual Report 2023-24, CRISIL Intelligence

The expansion of India's road network over the past decade reflects the government's sustained emphasis on infrastructure-led growth. Between Financial Year 2016 and Financial Year 2025, the total length of roads in the country increased from 5.60 million km to 6.35 million km, recording a growth rate of 13.2%. Within this, national highways registered the fastest growth, expanding from 101,011 km in Financial Year 2016 to 146,204 km in Financial Year 2025, with a growth rate of 44.7%, supported by consistent budget allocations, flagship programmes, and improved execution capabilities. Government is planning to expand highway network to 185,000 km by 2030.

The share of four-lane and above stretches has expanded more than 2.5 times, reaching close to 45,947 km. This rapid capacity addition has enhanced logistics efficiency, reduced travel time, and facilitated smoother movement of goods and people across regions. The government has further articulated plans to expand access-controlled corridors by developing nearly 20,000 km of high-speed corridors (HSCs) over the next 5–6 years, with a long-term vision of building a 50,000 km HSC network by 2040.

National highway network



Note: Length mentioned in Financial Year 2025 is till 31st December 2024
Source: MoRTH Annual Report 2022-23 and 2024-25, PIB June 2025, CRISIL Intelligence

The National Highway network demonstrated robust expansion between Financial Year 2014 and Financial Year 2024, characterized by a significant shift towards wider roads. Specifically, the lengths of 4-lane and above and 2-lane categories both saw remarkable growth of 2.5 times, increasing the network's capacity and speed. This expansion was complemented by a 0.5 times reduction in the <2-lane segment, indicating a successful effort to upgrade the narrowest sections and modernize the overall highway infrastructure.

State highways, which form the next tier of the network, have grown at a relatively modest pace. Their length increased from 176,166 km in Financial Year 2016 to 179,535 km in Financial Year 2025, translating into a growth rate of just 1.9%. Despite their slower growth, state highways continue to play a critical role by linking district centres, industrial clusters, and agricultural markets with the national highway system. These roads handle nearly 40% of road traffic and remain essential for intra-state mobility and regional trade flows.

Other roads, which include district and rural roads, represent the bulk of India's road network. Their length expanded from 5.33 million km in Financial Year 2016 to 6.02 million km in Financial Year 2025, growing at the rate of 13%. The expansion has been supported primarily by the Pradhan Mantri Gram Sadak Yojana (PMGSY), which has significantly enhanced rural accessibility over successive phases. The programme has not only connected previously unserved habitations but also contributed to rural economic development by improving access to markets, health facilities, and educational institutions.

Total length and break-up of national, state and rural roads (in km)

Road network	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	CAGR (FY16-25)
National highways	101,011	114,158	126,350	132,500	132,995	136,440	140,995	144,955	146,145	146,204	44.7%
State highways	176,166	175,036	186,908	186,528	194,900	176,818	171,039	167,079	179,535	179,535	1.9%
Other roads	5,326,116	5,608,477	5,902,539	6,067,269	6,165,660	5,902,539	6,059,813	6,019,757	6,019,723	6,019,723	13.0%
Total	5,603,293	5,897,671	6,215,797	6,386,297	6,493,555	6,215,797	6,371,847	6,331,791	6,345,403	6,345,462	13.2%

Note: Length mentioned in Financial Year 2025 is till 31st December 2024
Source: MoRTH Annual Report 2022-23 and 2024-25, PIB June 2025, CRISIL Intelligence

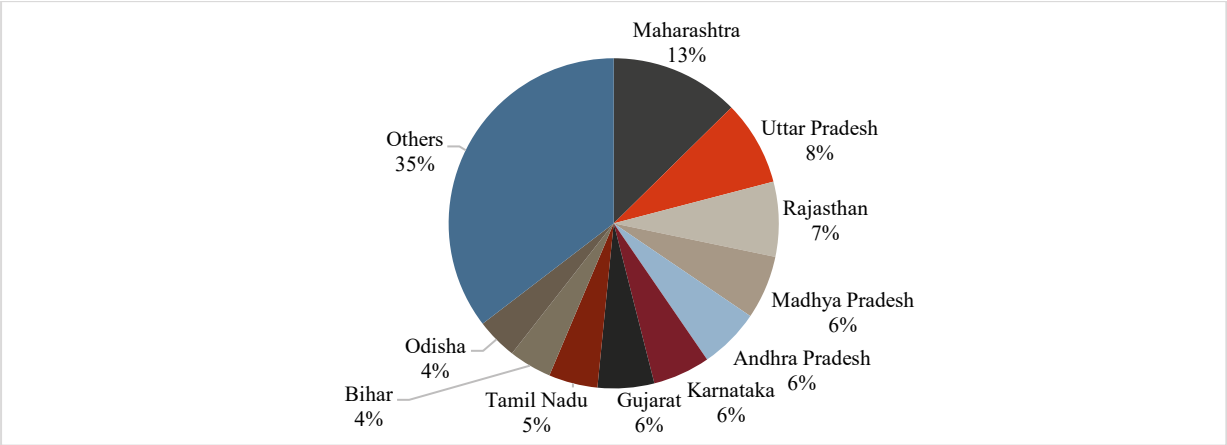
State-wise length of national highways in India as on June 30, 2024

S. No.	State	Total NH length as on March 31, 2014	Total NH length as on June 30, 2024	S. No.	State	Total NH length as on March 31, 2014	Total NH length as on June 30, 2024
1	Andhra Pradesh	4,190	8,683	19	Manipur	1,452	1,840
2	Arunachal Pradesh	2,027	4,367	20	Meghalaya	1,171	1,156
3	Assam	3,634	4,077	21	Mizoram	1,222	1,499
4	Bihar	4,467	6,132	22	Nagaland	741	1,670
5	Chandigarh	24	15	23	Odisha	4,550	5,897
6	Chhattisgarh	3,031	3,620	24	Puducherry	53	64
7	Delhi	80	157	25	Punjab	1,699	4,239
8	Goa	269	299	26	Rajasthan	7,646	10,706
9	Gujarat	4,694	8,099	27	Sikkim	149	709

S. No.	State	Total NH length as on March 31, 2014	Total NH length as on June 30, 2024	S. No.	State	Total NH length as on March 31, 2014	Total NH length as on June 30, 2024
10	Haryana	2,050	3,394	28	Tamil Nadu	4,975	7,000
11	Himachal Pradesh	2,196	2,607	29	Telangana	2,400	4,926
12	Jammu and Kashmir	1,513	1,935	30	Tripura	509	889
13	Jharkhand	2,968	3,633	31	Uttar Pradesh	7,986	12,141
14	Karnataka	6,177	8,191	32	Uttarakhand	2,282	3,664
15	Kerala	1,700	1,858	33	West Bengal	2,908	3,910
16	Ladakh	8,06	806	34	Andaman & Nicobar Islands	300	331
17	Madhya Pradesh	5,116	9,105	35	Dadra & Nagar Haveli	31	37
18	Maharashtra	6,249	18,447	36	Daman & Diu	22	22
					TOTAL	**91,287**	**146,126**

Source: PIB (July 25, 2024), CRISIL Intelligence

State-wise share of national highways in India



Note: Data as of June,2024
Source: MoRTH Annual Report 2025, CRISIL Intelligence

Traffic on India's national highways grew by 5.2% between Financial Year 2023 and Financial Year 2025, supported by steady expansion in both freight and passenger movement. This growth reflects the impact of continuous infrastructure improvements undertaken by the Ministry of Road Transport & Highways (MoRTH). Over the past few years, the government has significantly expanded and upgraded the national highways network through programmes such as Bharatmala Pariyojana, adding new corridors, improving lane capacity and reducing congestion points.

MoRTH has highlighted that enhanced connectivity to industrial clusters, logistics hubs, ports and agricultural markets has strengthened freight movement, while improved road quality and reduced travel times have supported rising passenger mobility. These network enhancements, combined with robust economic activity have collectively contributed to the consistent traffic uptick observed across Financial Year 2023-Financial Year 2025.

Qualitative overview of maintenance of roads in India

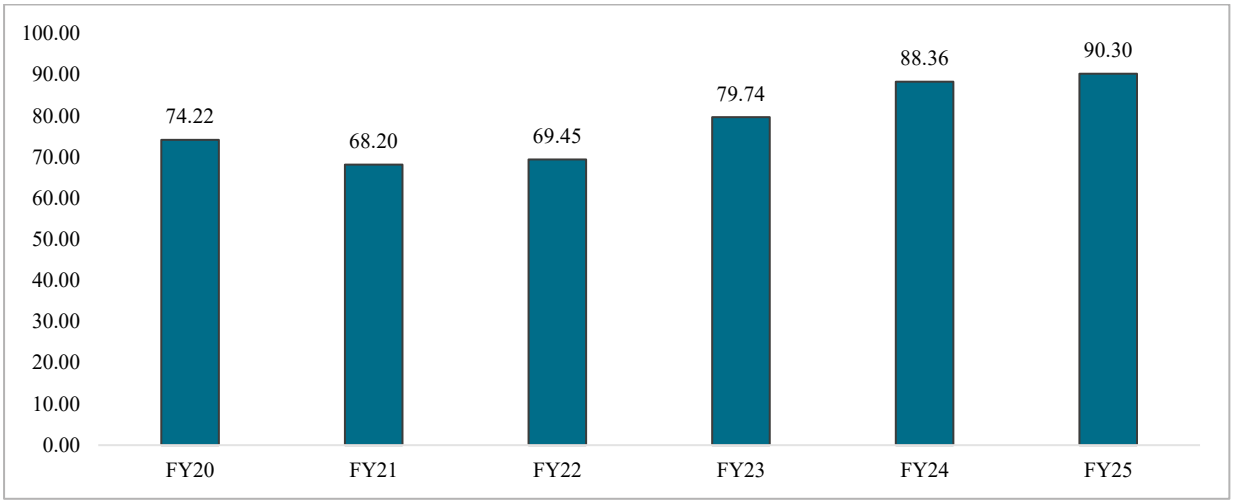
The Ministry of Road Transport and Highways (MoRTH) has significantly strengthened its focus on the maintenance and repair (M&R) of the National Highway (NH) network to ensure safety, durability, and traffic worthiness. Maintenance responsibility for stretches developed under Operation, Maintenance and Transfer (OMT), Toll Operate Transfer (TOT), and Infrastructure Investment Trust (InvIT) models lies with respective concessionaires till the end of the concession period, ensuring accountability and performance-based upkeep. For other NH stretches, MoRTH has institutionalized systematic maintenance through Performance-Based Maintenance Contracts (PBMC) and Short-Term Maintenance Contracts (STMC), thereby introducing structured monitoring and accountability. The government's commitment is evident in the allocation of about ₹60 billion annually over the past three years for M&R works, with nearly 29,030 km currently under maintenance and a planned scale-up to 25,000 km under PBMC/STMC mode in Financial Year 2024-2025.

The improved maintenance regime under MoRTH emphasizes integration of technology-driven practices and data-backed decision-making to optimize performance and lifecycle management of highways. Digital monitoring tools, periodic condition assessment through remote sensing, and automated data collection systems are increasingly being deployed to ensure proactive maintenance interventions. Use of Performance-Based Maintenance Contracts fosters outcome-oriented approaches by linking contractor payments to measurable service levels, encouraging innovation and higher construction quality. Furthermore, under models such as TOT and InvIT, private concessionaires leverage advanced asset management technologies to maintain consistent quality and operational efficiency. This shift toward technology-enabled, accountable maintenance frameworks marks a transition from reactive to preventive asset management across India's national highway network.

4. Central Road Infrastructure Fund (CRIF)

The CRIF is funded from the cess collected on the sale of petrol and high-speed diesel (HSD). On every litre of petrol and HSD that is sold, a cess of ₹6 is collected (since Financial Year 2016; previously cess was ₹2). The fund provides assistance to states for the development and maintenance of state roads, rural roads, national highways, under- and over-bridges, and safety works at unmanned railway crossings. About 11% of the cess collected on HSD and 30% on petrol is allocated towards maintenance of state roads. Under CRIF, 147 works amounting to 46.44 billion are in progress for the improvement of State roads as of Dec 2024.

Allocation under CRIF *(in ₹ Billion)*



Source: MoRTH Annual Report 2024-25, CRISIL Intelligence

Development of roads under CRIF scheme

2021-22 (Length in km, Cost in ₹ billion)			
State/UT	**No. of projects**	**Length (km)**	**Cost (₹ billion)**
Arunachal Pradesh	27	294	5.5
Chhattisgarh	15	316	8.5
Goa	6	75	0.8
Haryana	9	24	1.0
Himachal Pradesh	13	94	2.4
Madhya Pradesh	24	600	18.9
Maharashtra	276	1597	22.3
Meghalaya	15	127	2.6
Mizoram	1	10	0.5
Odisha	35	619	17.3
Punjab	5	24	2.7
Rajasthan	81	1607	20.5
Telangana	48	612	8.8
Uttarakhand	42	370	6.2
Ladakh	17	422	3.0
Puducherry	4	41	0.3
Total	618	6,832	121.1

2022-23 (Length in km, Cost in ₹ billion)			
State/UT	**No. of projects**	**Length (km)**	**Cost (₹ billion)**
Andhra Pradesh	37	391	12.7
Arunachal Pradesh	3	0	0.3
Bihar	27	122	15.4
Chhattisgarh	6	0	3.2
Haryana	11	279	7.2
Himachal Pradesh	1	0	1.0
Jharkhand	17	216	11.3
Karnataka	22	0	7.9
Kerala	37	404	6.7
Madhya Pradesh	39	651	30.5
Maharashtra	171	943	29.8
Meghalaya	2	0	0.0
Odisha	6	0	3.6
Punjab	23	372	6.3
Rajasthan	14	0	6.7

2022-23 (Length in km, Cost in ₹ billion)			
State/UT	**No. of projects**	**Length (km)**	**Cost (₹ billion)**
Tamil Nadu	51	103	10.0
Telangana	5	0	4.3
Uttar Pradesh	17	80	11.0
Uttarakhand	6	1	1.9
West Bengal	14	346	10.0
Total	509	3,908	179.8

2023-24 (Length in km, Cost in ₹ billion)			
State/UT	**No. of projects**	**Length (km)**	**Cost (₹ Billion)**
Andhra Pradesh	3	40	1.1
Arunachal Pradesh	25	88	3.2
Assam	7	76	4.3
Chhattisgarh	1	0	0.4
Goa	1	1	0.9
Gujarat	49	577	19.1
Himachal Pradesh	5	73	3.0
Karnataka	317	2056	21.7
Madhya Pradesh	11	586	9.0
Maharashtra	89	663	19.0
Manipur	8	58	1.5
Nagaland	8	39	1.0
Punjab	1	0	0.8
Rajasthan	112	2397	35.9
Sikkim	13	33	0.5
Telangana	37	498	9.8
Tripura	6	22	0.8
Uttarakhand	13	439	2.6
Delhi	1	3	0.1
Ladakh	37	469	13.5
Total	744	8,118	148.1

2024-25 (Number of projects, Cost in ₹ billion)		
State/UT	**No. of projects**	**Cost (₹ Cr)**
Arunachal Pradesh	55	20.6
Assam	18	13.5
Manipur	13	2.4
Meghalaya	24	3.6
Mizoram	4	23.6
Nagaland	8	2.7
Sikkim	24	1.1
Tripura	1	0.2
Total	147	67.7

Source: PIB (March 23, 2023, July 25, 2024), CRISIL Intelligence

Of the amount collected under CRIF for state roads, 10% is reserved for the development of roads under the following schemes:

5. Interstate connectivity (ISC)

Under this scheme, 100% funding (not a loan) is provided by the central government. ISC typically encompasses the development of

Interstate roads

Roads connecting national highways

6. Economic importance (EI)

Under this scheme, projects are funded to the extent of 50% by the central government. The state government contributes the rest of the project cost. This scheme is focussed on the development of:

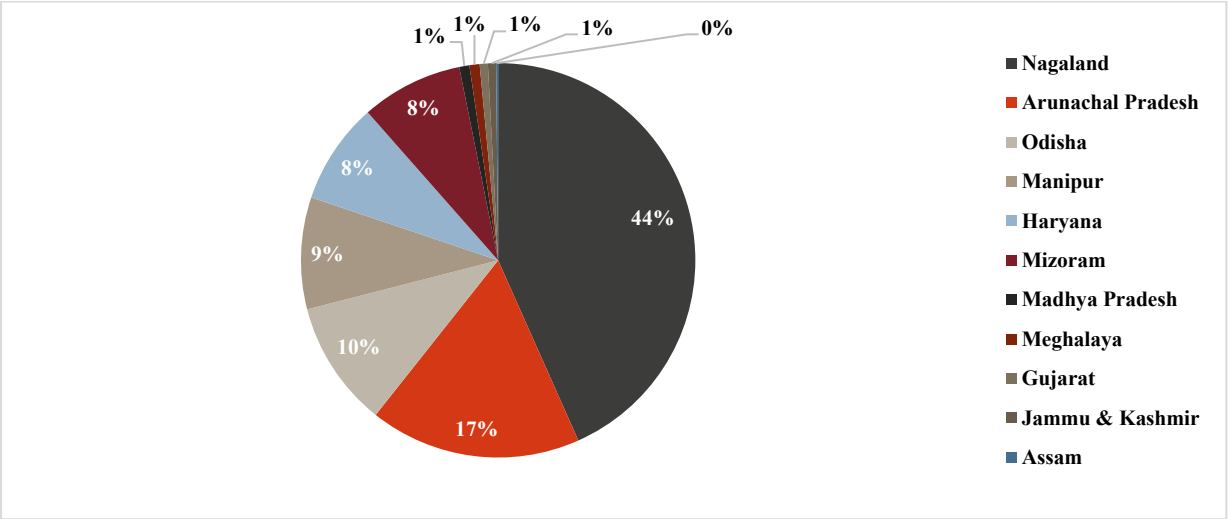
Roads facilitating connectivity to remote industrial and economic areas

Roads facilitating the development of remote residential areas, such as those connecting the hilly regions to plains

Funds allocated together under ISC and EI in Financial Years 2015, 2016 and 2017 stood at ₹2,390 million, ₹3,550 million and ₹4,150 million, respectively. In Financial Year 2018, ~19 projects amounting to ₹6,600 million were approved under ISC and EI. In Financial Year 2019, ~18 projects amounting to ₹4,740 million were approved.

During Financial Year 2023, a sum of ₹1,900 million had been allocated to various stat.es. Also, as per MoRTH's letter dated February 9, 2024, ₹3,000 million had been allocated for Financial Year 2024.

State-wise allocation under ISC and EI schemes in Financial Year 2023



Source: Letter published by MoRTH, CRISIL Intelligence

Indian freight traffic scenario

7. Road transportation remains dominant; Railways share expected to grow due to rising road freight rates and Dedicated Freight Corridors

Primary BTKM growth is projected at 5–7% in Financial Year 2026, broadly mirroring the expected pace of economic expansion. The momentum is supported by steady freight demand from core manufacturing sectors, where ongoing industrial activity continues to drive both inbound movement of raw materials and outbound movement of finished goods. Growth in Financial Year 2025 is estimated at 5–7%, reflecting an improvement in industrial output and trade flows.

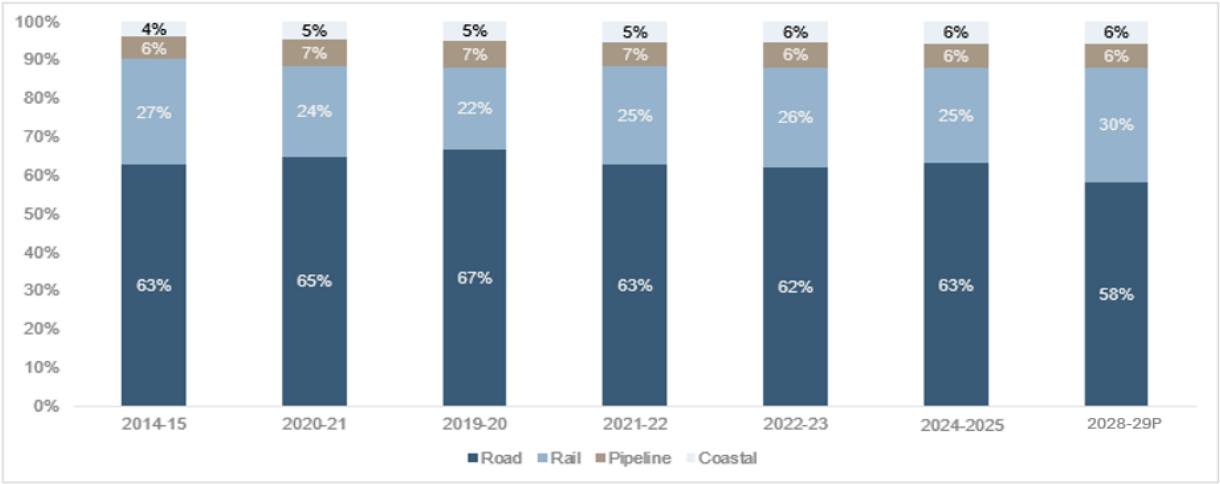
Across modes, road freight is expected to expand by 5–7% in Financial Year 2026, with demand primarily driven by non-bulk commodities. However, its medium-term share is likely to face pressure as railways gain traction. Rail freight is forecast to grow faster at 6-8%, aided by commissioning of dedicated freight corridors and relatively more competitive tariffs. Coastal movement is expected to grow at a more moderate pace of 3–5%.

BTKM growth forecast

Mode	BTKM growth forecast			
	FY24E	FY25E	FY26P	CAGR FY25-30P
Road	7-9%	6-8%	5-7%	5-7%
Rail	7-9%	4-6%	6-8%	6-8%
Coastal	5-7%	5-7%	3-5%	3-5%
Primary BTKM	**7-9%**	**5-7%**	**5-7%**	**5-7%**

P: Projected
Source: CRISIL Intelligence

Share of roads in total freight movement (in terms of BTKM)



P: Projected
Source: CRISIL Intelligence

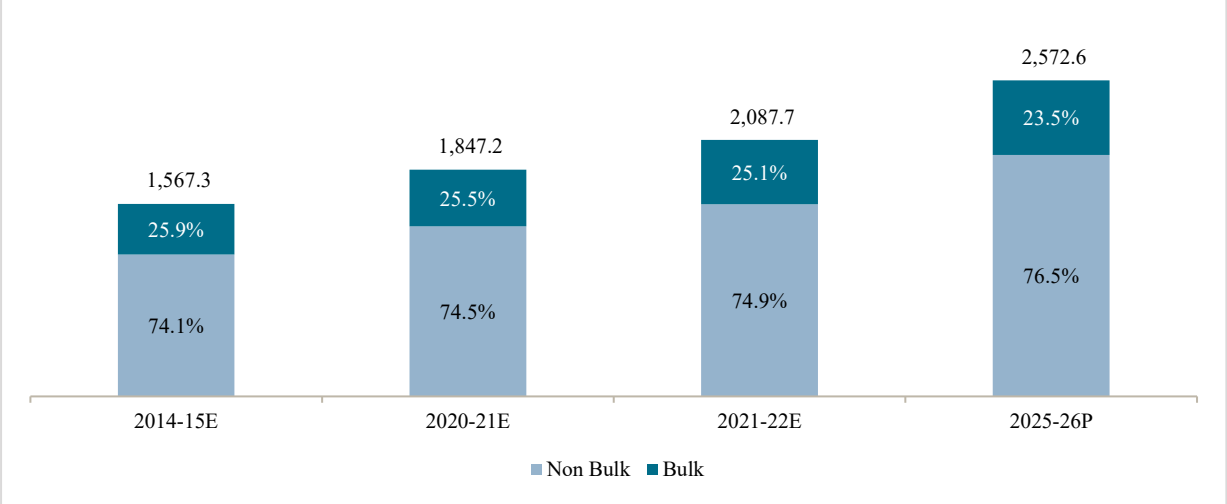
Overall, road freight traffic to increase in upcoming years and road will remain the dominant freight carrier in the near *term,* but the modal mix is expected to gradually shift toward rail.

8. Roads remain the preferred mode for non-bulk transportation

Roads continue to remain the dominant mode for non-bulk freight movement, accounting for nearly three-fourths of total BTKM. Road freight growth is expected to remain healthy, supported by rising movement of non-bulk commodities and increasing consumption-driven logistics demand.

While the share of railways is expected to strengthen over the coming years with the commissioning of dedicated freight corridors and network upgrades, the road sector will continue to play a crucial role in India's freight ecosystem. Roads provide indispensable last-mile connectivity, enable flexible point-to-point movement, and help decongest railway stations that often face operational bottlenecks and limited handling capacities. This makes road transport particularly critical for time-sensitive, fragmented and non-bulk cargo.

Roads predominantly transfer non-bulk freight (in terms of BTKM)



E: Estimated; P: Projected
Source: CRISIL Intelligence

9. Historical growth of vehicular population

Review of Indian domestic PV industry

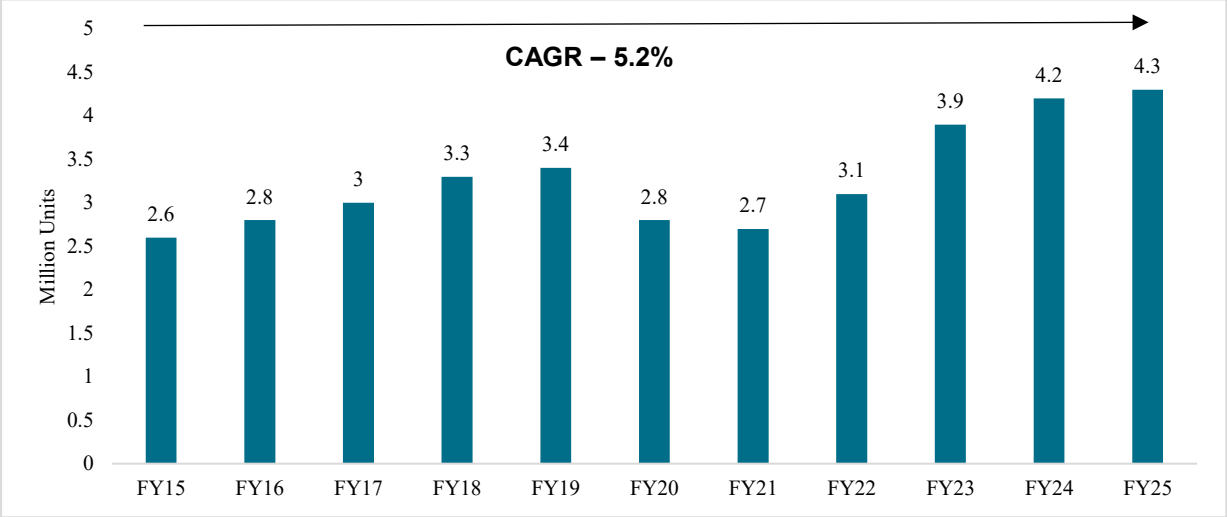
Between Financial Years 2020 and 2025, India's domestic PV sales clocked 9.3% CAGR despite a sales contraction (10% CAGR) during Financial Years 2019-2021. From the low base of Financial Year 2021, PV sales bounced back and grew healthily to reach a historic high of 4.3 million vehicles in Financial Year 2025.

In Financial Year 2020, the economic contraction owing to the pandemic put pressure on vehicle sales. Other factors that heightened the pressure are like non-banking financial company (NBFC) liquidity crisis. The industry also lost sales in Financial Year 2020 owing to the outbreak of Covid-19 and subsequent nationwide lockdown.

In Financial Year 2021, domestic sales continued to be impacted by the first wave of the pandemic. A nationwide lockdown, restrictions on mobility and supply-chain constraints, majorly of semiconductors led to production cuts, which weighed on annual sales. Despite some improvement in sales with the reopening of the economy and increased demand for personal mobility, during the second half of the year, sales contracted ~2% year-on-year owing to the price hikes after the implementation of the BS-VI norms.

Financial Year 2022 began with a very severe second wave of Covid-19. State-imposed lockdowns, economic uncertainty, and a global shortage of semiconductor supply extended waiting periods, impacting the sales, especially in the first half of the Financial Year. There was some improvement in the economic scenario with the reopening of markets in the second half. Pent-up vehicle demand, increased use of personal mobility options owing to fears of infection and improved supply scenario boosted PV sales during the period, PV sales grew by 13% on a low base.

Review of domestic PV sales volume



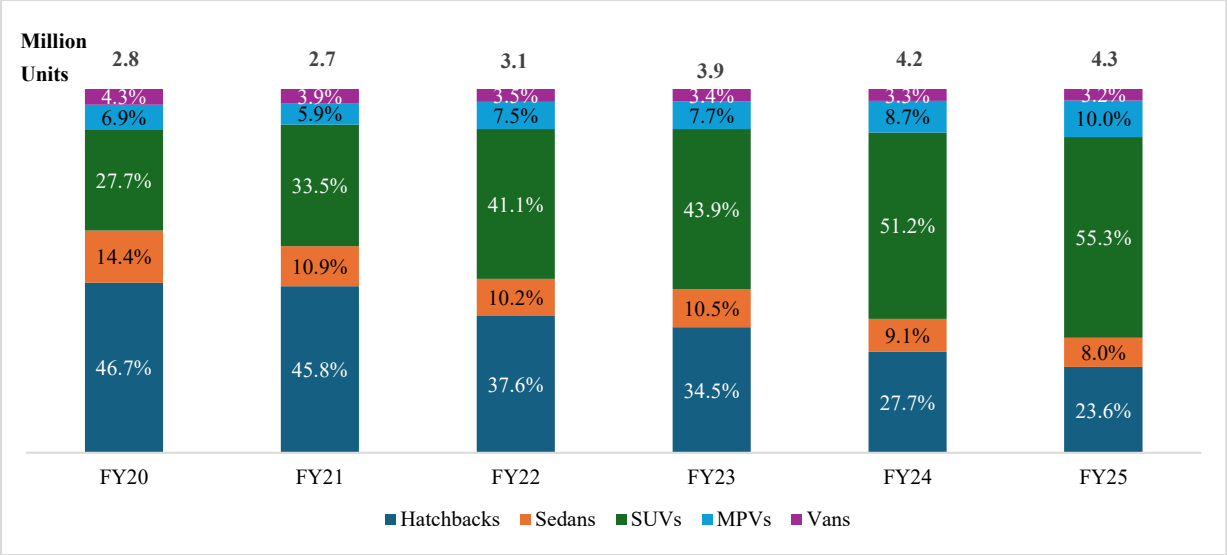
Source: SIAM, VAHAN, CRISIL Intelligence

In Financial Year 2023, the PV industry grew 27% y-o-y, more than double the rate 13% y-o-y witnessed in Financial Year 2022. The orderbooks of auto OEMs were further supported by several new launches in the growing SUV category, which saw higher traction. Facelifts of existing models and easing supply of semiconductors also helped. In fact, overall wholesale volumes reached a historic high of 3.9 million units in the Financial Year.

Financial Year 2024 marked the third year of consecutive growth in PV industry by recording 8% growth. This growth was over a high base of Financial Year 2023. During the year, the orderbooks of auto OEMs were further supported by a plethora of launches in the growing UV (Utility vehicles) category, which had witnessed high traction, along with multiple facelifts of existing models and easing semiconductor supplies that drove record sales in each quarter in Financial Year 2024. The overall wholesale volumes settled at ~4.2 million units in Financial Year 2024.

During Financial Year 2025, growth momentum of the industry continued, albeit at a slower pace, backed by the continued traction for the SUV segment, intermittent launches and improvement in disposable income. On the high base of Financial Year 2024, the industry grew ~2% in Financial Year 2025 to hit a record 4.3 million units in Financial Year 2025.

Segment-wise trends in the overall PV sales volume in India (Financial Year 2019-25)



Source: SIAM, CRISIL Intelligence

Outlook of the domestic PV industry (Financial Years 2025 to 2030P)

The domestic PV industry grew at ~9% CAGR over Financial Years 2020 to 2025 on a high base of Financial Year 2020 despite the pandemic hiatus led by significant traction for the SUV segment, increased vehicle launches, coupled with the entry of new players. A relatively lower impact on disposable income of the upper middle class led to healthy growth in the SUV segment, driving overall PV sales. In turn, the industry reached historic high sales of ~4.3 million vehicles in Financial Year 2025.

Despite healthy growth, car penetration, at 27 per 1,000 people in Financial Year 2025, in India was still much lower than that of global peers such as China, Mexico, Brazil as well as developed countries such as the United States, UK, Japan and Korea. Thus, there is a lot of headroom for growth in the domestic market.

Industry Expert expects the macroeconomic scenario to support industry growth with GDP projected to grow at a healthy pace between Financial Years 2025 and 2030. India's GDP growth is expected to outperform other major geographies over the next five years at 6-7%. Inflation levels are also expected to remain subdued in the 3-5% range, which is within the RBI's target band. Industry Expert has assumed three years of normal monsoons within the five-year outlook period and has considered positive momentum in rural demand. Fuel prices are also expected to remain near steady in the next five years. These favorable macroeconomic factors are expected to support consumer disposable income.

Besides macroeconomic factors continued government support in terms of policies as well as continued expenditure and investments are expected to boost the industry. The favorable demographics are an added advantage for India and expected to help propel the PV industry.

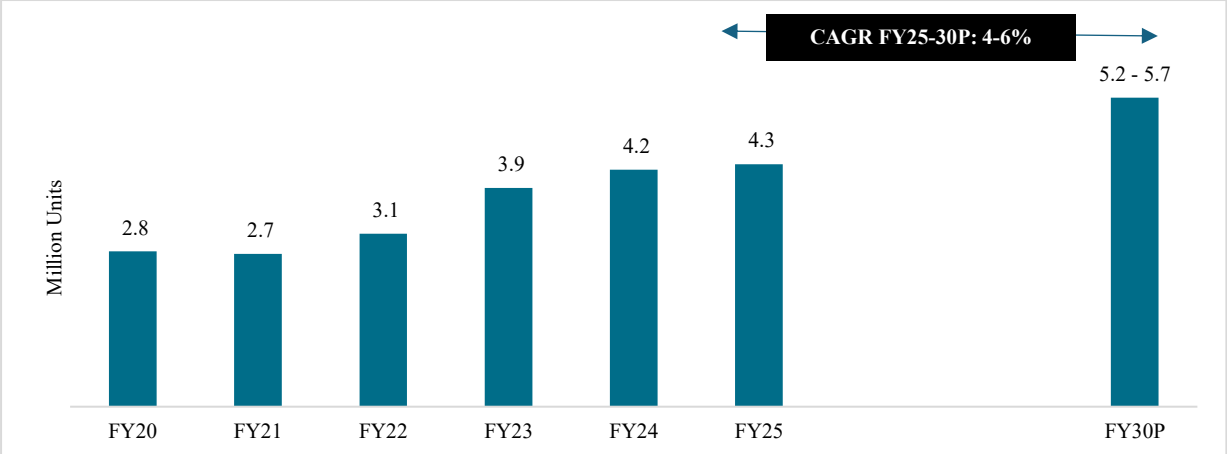
Additionally, OEMs are expected to continue to launch feature-rich competitively priced vehicles, aiding overall demand growth.

The financing scenario is projected to remain favourable for the industry and lend further support amid expanding financing reach and high loan to value (LTV) levels. Moreover, after multiple rate hikes in the past two years, a rate cut of 100 bps in 2025 and a further rate cut is expected during Financial Year 2026 to keep interest rates competitive in the near term.

Changing market dynamics, including a younger consumer base, premiumisation, electrification, shorter replacement cycles (four to five years currently vis-a-vis seven to eight years, a decade ago) will provide further impetus to demand. Additionally, the government's push for scrapping old vehicles (as per the government regulation vehicles above the age of 15 years will be compulsorily scrapped) is expected to shorten replacement cycles and support demand.

Further, capacity expansion by players such as Maruti Suzuki, Hyundai, Tata Motors is expected to support growing vehicle demand. Moreover, expansion of supporting infrastructure such as EV charging stations and CNG pumps will also enhance the choice of customers in terms of powertrains. Industry Expert expects domestic sales to grow at a 4-6% CAGR between Financial Years 2025 and 2030 to 5.2-5.7 million vehicles.

Domestic PV industry outlook (annual sales volume)



Source: SIAM, CRISIL Intelligence

Review of Heavy Commercial Vehicles industry

The domestic heavy commercial vehicle (HCV) industry experienced notable volatility in sales volumes over the past few Financial Year years, shaped by economic downturns, pandemic-induced disruptions, and a gradual recovery backed by infrastructure spending and replacement demand.

In Financial Year 2020, the HCV market contracted sharply to 224 thousand units due to a downturn in economic activity and weakened fleet demand. The situation worsened in Financial Year 2021, with volumes falling further to 161 thousand units as industrial activity slowed and fleet operators deferred capital expenditure amidst pandemic uncertainties.

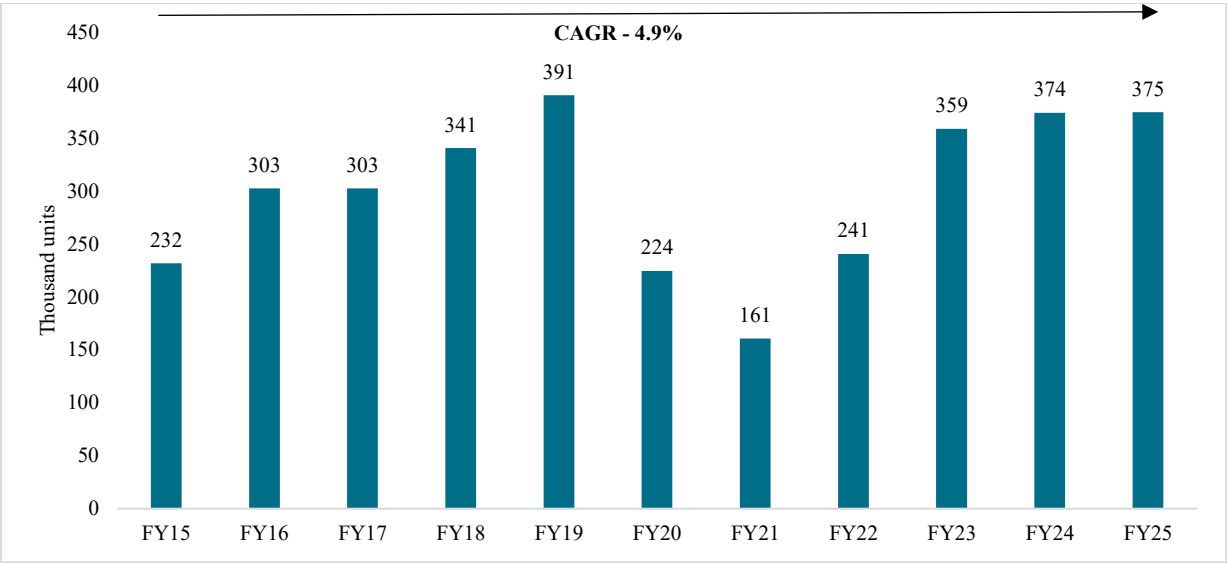
However, the segment regained traction in Financial Year 2022, recording a notable recovery to 241 thousand units, driven by improved freight availability and a gradual uptick in infrastructure projects. This positive momentum accelerated in Financial Year 2023 as sales rose significantly to 359 thousand units, supported by strong replacement demand, rising freight rates, and enhanced fleet utilization. Financial Year 2024 further built on this revival, with sales reaching 374 thousand units. This growth was underpinned by robust infrastructure spending, better transporter margins, and fleet modernization initiatives. Interestingly, the trend has plateaued in Financial Year 2025, with volumes remaining flat at 374 thousand units. This stability may indicate a maturing demand cycle, influenced by cautious expansion strategies and a possible saturation in fleet replacement activity.

The HCV industry comprises two primary segments: Intermediate, Medium & Heavy Commercial Vehicles (IMHCV) and Buses. The IMHCV segment, which includes core freight carriers and heavy-duty applications, has historically dominated industry volumes, accounting for over 90% of total sales during the Financial Years Financial Year 2020–Financial Year 2022. Even during the pandemic-induced slump, IMHCV volumes remained resilient due to their critical role in supporting freight movement and infrastructure development.

While the Bus segment, catering to public and institutional transportation, saw a steep decline during the pandemic, with volumes plunging from 40 thousand units in Financial Year 2020 to a mere 7 thousand in Financial Year 2021. This drop was largely attributed to school closures, reduced inter-city travel, and lower demand in the public mobility space. However, a gradual rebound began in Financial Year 2022, and gained momentum in Financial Year 2023–Financial Year 2025, with sales improving to 66 thousand units in Financial Year 2025, supported by public transport services, growing demand for low emission buses (CNG and electric) demand in metro and tier-2 cities, and fleet modernization initiatives.

Together, these segments reflect the broader recovery and shifting dynamics within the HCV market. While IMHCVs continue to anchor industry with consistent demand from logistics and construction sectors, the improving performance of the bus segment signals renewed traction in public mobility and institutional transport.

Review of Heavy Commercial Vehicles industry, Financial Year 2020-2025 (in volume terms of sales)



Note: IMHCV segment includes >=7.5 tonnage
Source: SIAM, CRISIL Intelligence

Segmental Trends

The domestic commercial vehicle industry has witnessed evolving dynamics across its core segments, particularly between buses and IMHCV. While the IMHCV segment has historically dominated volumes, recent years have shown a shifting trend shaped by infrastructure spending and public mobility programs.

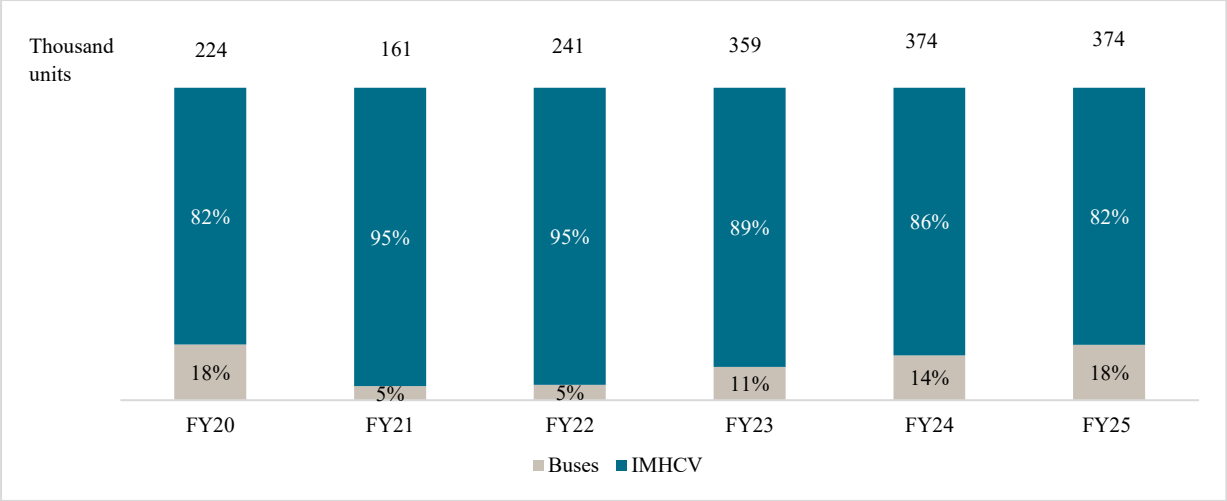
The bus segment, which caters to public and institutional transportation, experienced a steep contraction in Financial Year 2021 and Financial Year 2022, with its share plunging to just 5% of total sales volumes. This was largely due to pandemic-induced disruptions in public mobility, school closures, and a sharp fall in inter-city travel demand. From a relatively healthy 18% share in Financial Year 2020, the segment remained subdued as fleet renewals and new orders were widely deferred.

On the other hand, the IMHCV segment comprising core freight carriers and heavy-duty applications has remained the mainstay of the domestic CV market. Even during the pandemic slowdown, IMHCVs maintained a commanding share of 95% in Financial Year 2021 and Financial Year 2022, reflecting their critical role in freight logistics and infrastructure support.

A notable rebound began in Financial Year 2023, with the bus segment improving to 11% amid resumed state transport undertakings (STUs) tenders, school reopening, rising demand for electric and CNG buses in metro and tier-2 cities, and increased intercity travel. This positive momentum continued, and the bus segment share rose further to 14% in Financial Year 2024 and regained the 18% level in Financial Year 2025. Meanwhile, IMHCV share moderated slightly to 86% in Financial Year 2024 and 82% in Financial Year 2025, though it remained the primary contributor, driven by sustained replacement demand, strong traction in e-commerce logistics, and government investment in roads and highways.

The trajectory suggests optimism in the bus segment, supported by urban mobility initiatives, increased government focus on electrification and improving utilization levels, while IMHCVs continue to anchor the industry on the back of freight-led economic activity.

Segment-wise share in domestic industry (in volume terms of sales)



Note:
1. *HCV segment includes >=7.5 tonnage.*
2. *Buses segment includes only IMCV buses*
3. *All percentages have been rounded off.*

Source: SIAM, CRISIL Intelligence

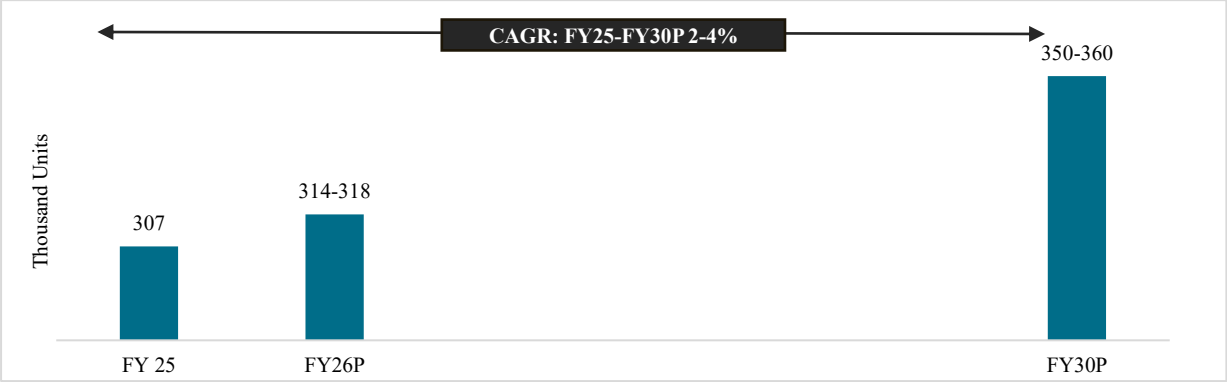
Outlook for Indian Commercial Trucks industry

Commercial truck industry, encompassing Medium and Heavy Commercial Vehicles (MHCV) and Tippers, has witnessed a fluctuating yet resilient performance in recent years. Financial Year 2025 growth was moderated, reflecting the impact of economic headwinds and supply-side challenges.

The segmental dynamics of the commercial trucks industry highlight a transition toward a more balanced fleet mix, with MHCVs recovering and tippers maintaining steady demand. The sustained push for infrastructure development, increased logistics digitization and policy-driven fleet modernization are expected to shape the segment-wise trends in the coming years.

Domestic commercial truck sales are expected to maintain a steady upward trajectory over the forecast period. For Financial Year 2026, sales are projected to rise to 314-318 thousand units, reflecting stable demand driven by continued economic activity and infrastructure-led momentum. Looking ahead to Financial Year 2030, the industry is poised for further expansion, with volumes estimated to reach 350–360 thousand units. This growth translates to a CAGR of 2–4% during Financial Year 2025–Financial Year 2030, supported by improving industrial output, stronger freight movement, and sustained investment in logistics and construction sectors.

Commercial trucks domestic sales outlook



Note:
1. *CT segment includes >=7.5 tonnage.*
2. *P: Projected*

Source: SIAM, CRISIL Intelligence

Medium & Heavy Commercial Vehicles Set to Thrive in the Coming Five Years

The MHCV industry is expected to grow significantly, with a compound annual growth rate (CAGR) of approximately 2-4% projected from Financial Year 2025 to Financial Year 2030.

Long-term MHCV sales are likely to be driven by several factors, including the country's improving industrial activity, consistent agricultural output, and the government's continued emphasis on infrastructure development. However, volume growth may be limited due to efficiencies gained from the implementation of the Goods and Services Tax

(GST), the development of improved road infrastructure, and the commissioning of the dedicated goods corridor (DFC). Nonetheless, the industry remains on a promising growth trajectory in the coming years.

Over the next five years (Financial Year 2025-2030), industry GVA is expected to be robust, driven by the government's emphasis on "Make in India." Moreover, improvement in infrastructure and higher expected corporate expenditure is likely to support the capex cycle going forward post-Financial Year 2024. India's ambitious infrastructure development plans, including the Bharatmala Pariyojana and Sagarmala programs, are expected to drive commercial vehicle demand during Financial Year 2025 to Financial Year 2030, as the resulting increase in construction and logistics activities boosts demand for heavy and medium commercial vehicles.

Key growth drivers and emerging trends for road sector

10. Policy pushes aimed at improving private participation in national highways

The following are the recent policy changes that the MoRTH and NHAI have undertaken to improve private participation in the sector and increase competition:

- Technical and financial bidder eligibility criteria tightened for HAM and EPC projects.
- Changes in the hybrid-annuity model (HAM) concession agreement aimed at protecting developers' returns and easing their cash flows during the construction period
- Changes in the Build-Operate-Toll (BOT) concession agreement to reinstate developer interest in the model

Apart from this, the government has taken various steps under the Atmanirbhar package to mitigate the impact of Covid-19 on the sector:

- Extension of time (EOT) of up to 3-6 months for all projects and relaxation of milestone achievement
- Monthly payment mechanism, instead of milestone-based payments
- Reduction in performance security from 5% to 3%, release of retention money to the extent of work done
- Extension of concession period for BOT-toll operators, due to toll suspension and restriction in movement during lockdowns

Rail limitations: last-mile connectivity and capacity constraints

- Last-mile connectivity gaps: Indian Railways provides extensive reach, but rail freight and passenger services frequently face first/last-mile limitations at ports, industrial terminals and urban nodes; this forces consignments onto road for door-to-door movement. Improving road feeders and terminal linkages is a stated priority.
- Capacity and expansion constraints: The existing rail network faces line-capacity and terminal handling constraints that limit its ability to absorb additional freight growth; where rail capacity or terminal capability is inadequate, the modal share shifts towards road. Government planning documents note the need for substantial upgrades to enable rail to take higher freight share.

Demographic & urbanisation drivers

- Population growth and rapid urbanisation: Continued urban expansion and higher urban population densities increase intra-city and inter-city passenger and goods movement, placing higher demand on highways and arterial roads. National road transport policy recognises urbanisation as a core factor affecting demand and planning.

User behaviour & policy: willingness to pay tolls; NH development

- Tolling & willingness-to-pay: The institutionalisation of user-fee/tolling regimes and electronic toll collection has supported the financing and faster rollout of national highways. Policy guidance from MoRTH and NHAI shows that tolling (and improved payment technology) enables more NH projects and a steadily improving highway network which in turn increases road capacity and encourages greater vehicle usage.
- National Highways expansion: NHAI’s strategic focus on expanding national highways and expressways (and connecting them to economic centres) directly increases road traffic volumes as new, faster corridors attract long-haul and regional traffic.

Supply-side improvements: mechanisation, cost and execution time

- Mechanisation and faster delivery: Adoption of modern construction technologies and mechanisation in highway construction has reduced execution time and construction unit costs, enabling quicker project completion and faster capacity addition which supports faster growth of road traffic as new capacity becomes operational. NHAI annual reports highlight emphasis on efficient execution and mechanised construction methods. Strict majors taken for reduction of overloading of vehicles as FASTag discourage truck drivers from overloading vehicle.

Key challenges faced by roads sector in India

Given the share of roads in the overall transport of goods and passenger traffic, it is critical to develop the roads sector. Although the government has been continuously making efforts to give a fillip to the sector, several issues and challenges hamper the pace of development.

11. Shift in Major Traffic Corridors:

The traditional traffic patterns are undergoing significant shifts due to the development of new, high-quality expressways. As freight and passenger movement increasingly diverts to faster, better-connected corridors, some of the existing national highways face traffic redistribution, affecting toll revenues, project viability, and long-term traffic forecasting accuracy.

12. NHAI trying to reduce risks associated with BOT projects through changes in MCA

In order to improve private participation via the BOT-toll mode, NHAI and the ministry introduced changes to the BOT MCA, aimed at addressing key issues such as land acquisition, revenue assessment in case of traffic shortfall and stuck projects. Key amendments to the MCA are as below:

Land acquisition

Minimum 90% right of way before issue of appointed date as against 80% earlier, providing more comfort to lenders and developers

Balance 10% to be granted within 180 days of appointed date, else it would be removed from the scope of work. Automatic de-scoping clause would enable the developer to receive PCOD/COD on the completed stretch and start tolling

Termination clause if appointed date is not received within one year of concession signing date

Traffic risk

Revenue assessment of project to be done every five years instead of 10 years (or once in a life time of a project) earlier. In case of traffic either exceeding or seeing a shortfall from the target traffic, the concession period would be adjusted accordingly, providing more comfort to lenders and developers

Stuck projects

In case the project has not achieved COD one year post its scheduled completion date, the project will be mutually foreclosed, and the authority will pay the concessionaire an amount equal or lower of:

90% of the debt due less insurance cover and

Value of work done

This will prevent dragging of projects that would lead to time and cost overruns, which was witnessed in the earlier BOT era.

Termination of Payment

Old Clause:

Termination payment on Concessionaire Default was limited to 90% of Debt Due (less insurance cover).

No termination payment was payable for defaults before Project Completion Date.

Clause 37.8 specified that if physical progress before COD exceeded 40%, part of the Debt Due (over 40% of total project cost) would be eligible for termination payment

New clause:

Clarifies that termination on account of Concessionaire Default "on or after COD" gets 90% of Debt Due less insurance cover.

Explicitly refers to Clause 37.8 for pre-COD defaults.

Clause 37.8 itself is revised (no longer deleted) to clearly define eligibility if physical progress > 40%, with detailed method for computing payable portion and inclusion of latest payment milestone.

Introduces a new clause for "Buy-Back Termination" (Clause 37.2 A), allowing the Authority to terminate and pay based on the higher of (a) 80% × average monthly fee × 75% of remaining months (capped at 20% of concession period), or (b) termination payment due under indirect political event default.

Impact:

Greater protection to concessionaires ensures limited recovery even for pre-COD work > 40%.

New Buy-Back option formalizes authority takeover when design capacity is reached.

Clearer lender security due to capped Authority liability (now 115% of total project cost).

Alternative Roads / Additional Tollway

Old Clause:

Authority prohibited from constructing any expressway or other toll road ("Additional Tollway") during the Construction Period.

Any breach entitled the concessionaire to compensation under Clause 35.4.

New Clause:

The restriction now applies for the entire Concession Period, not just construction.

If breached, the concessionaire now gets both compensation and enhancement of concession period under Clauses 35.4 and 30.2.

Clause 30.2 itself was modified to make the extension of concession period the curative measure for such breach.

Impact:

Strengthens concessionaire protection against revenue loss from competing links.

Ensures time-based cure (extension) instead of only monetary compensation, maintaining project viability.

Limits MoRTH/NHAI's freedom to add parallel corridors prematurely.

Capacity Augmentation and Buy-Back

New Additions:

When project reaches design capacity (Clause 29.2.3), the Authority can trigger a Buy-Back Termination (Clause 37.2 A).

Termination payment defined based on recent toll revenue performance (average monthly fee × remaining months × 75%).

Impact:

Establishes structured exit when road saturates, enabling fresh capacity expansion via new concession.

Protects investors by quantifying fair buy-back value linked to actual revenue performance.

13. Subdued private participation due to limited financial flexibility witnessing strong revival

Funding constraints and financial stress have thwarted the pace of development in the roads sector. The PPP model for road construction and development acted as a catalyst and provided an impetus to the sector's growth. During Financial Years 2008-2012 of the total 10,600 km of national highways completed under the National Highways Development Programme, 50% was funded through the BOT-toll model and 10% through the BOT-annuity model. Rise of PPP in

the roads sector has also had some adverse effects. Period of 2007 to 2011 was considered to be the golden age for PPP in the roads sector, wherein the road developers bid aggressively to bag more BOT-toll projects.

In the subsequent years, developers faced viability issues with projects. Issues pertaining to subdued financing, lower traffic, high gearing ratio and delayed execution have stressed their balance sheets. Bidders for PPP toll projects have become limited on account of the said issues. This led to a rise in EPC contracts, but the quality of roads constructed has been usually poor as the EPC contractor has no stake in the roads once these are constructed and handed over to the government. Further, maintenance of roads has been poor after handover to the government, since there is no proper accountability on quality in case of state-owned roads. In case of PPP projects, the developer ensures that the roads are in good condition for a longer period of time, i.e., the concession period. In the recent years, private participation has revived with the introduction of the HAM model in 2016 and the subsequent favourable changes to the concession agreements in 2020 for the HAM and BOT model.

14. Delays in project execution and resultant cost overruns

Delays in project execution have posed a major hurdle in the development of the roads sector. Delays lead to significant cost overruns, which lower returns for developers as well as adversely affect their debt-servicing ability. Reasons for delays are numerous and include:

Issues in land acquisition

Environmental clearances

Forest clearances

Railway clearances

Shifting of utilities, religious structures and encroachments

It is observed that the duration of delay and cost escalation are on the higher side for projects involving interstate road construction owing to the involvement of different state agencies. NHAI is working towards fast-tracking the resolution of these issues and has established conciliation committees, which target at settling arbitration disputes within 18-20 months (Arbitration Act - amendment in 2019). As per the April 2022 press release, 251 cases have been referred to CCIE and claims worth ₹387.4 billion have been settled for an amount of ₹130.6 billion.

15. Hurdles in bank funding for under construction road projects

Banks are reluctant to fund road sector projects as they are close to the sector exposure limits. Moreover, to ensure delays because of land acquisition do not hinder the progress of a project, they demand 80-100% of the land to be available with the developer at the time the project is awarded. Given the dependence of infrastructure projects on banks for funding, the projects are unable to take off owing to such funding constraints.

Moreover, the stretched working capital cycle in the core construction business of many entities has also strained their liquidity position and increased their dependence on borrowed funds. The operating margins of several road contractors came under pressure because of rising commodity prices (in case of fixed-price contracts) and idling of capacities since execution could not begin on many new projects.

16. Exposure to Natural Calamities

Frequent floods, landslides, and extreme weather conditions significantly impact the construction and maintenance of highways. Regions such as the Himalayan states and coastal areas are particularly vulnerable.

Such events lead to project delays, cost escalations, and damage to completed infrastructure, especially in hilly terrain where slope stability and drainage are crucial.

17. Timely Availability of Construction Materials & Commodity Price Volatility

Highway projects are highly dependent on the steady availability of key materials such as bitumen, aggregates, steel, and cement.

Fluctuation in commodity prices, often driven by international crude oil trends (affecting bitumen) or supply chain disruptions, directly increases project costs.

Logistical constraints especially in remote or underdeveloped regions, delay material transport, affecting work schedules.

18. Overloading of Vehicles and Deterioration of Road Quality

Unregulated or excessive overloading of freight vehicles accelerates pavement distress, rutting, and structural damage to road assets.

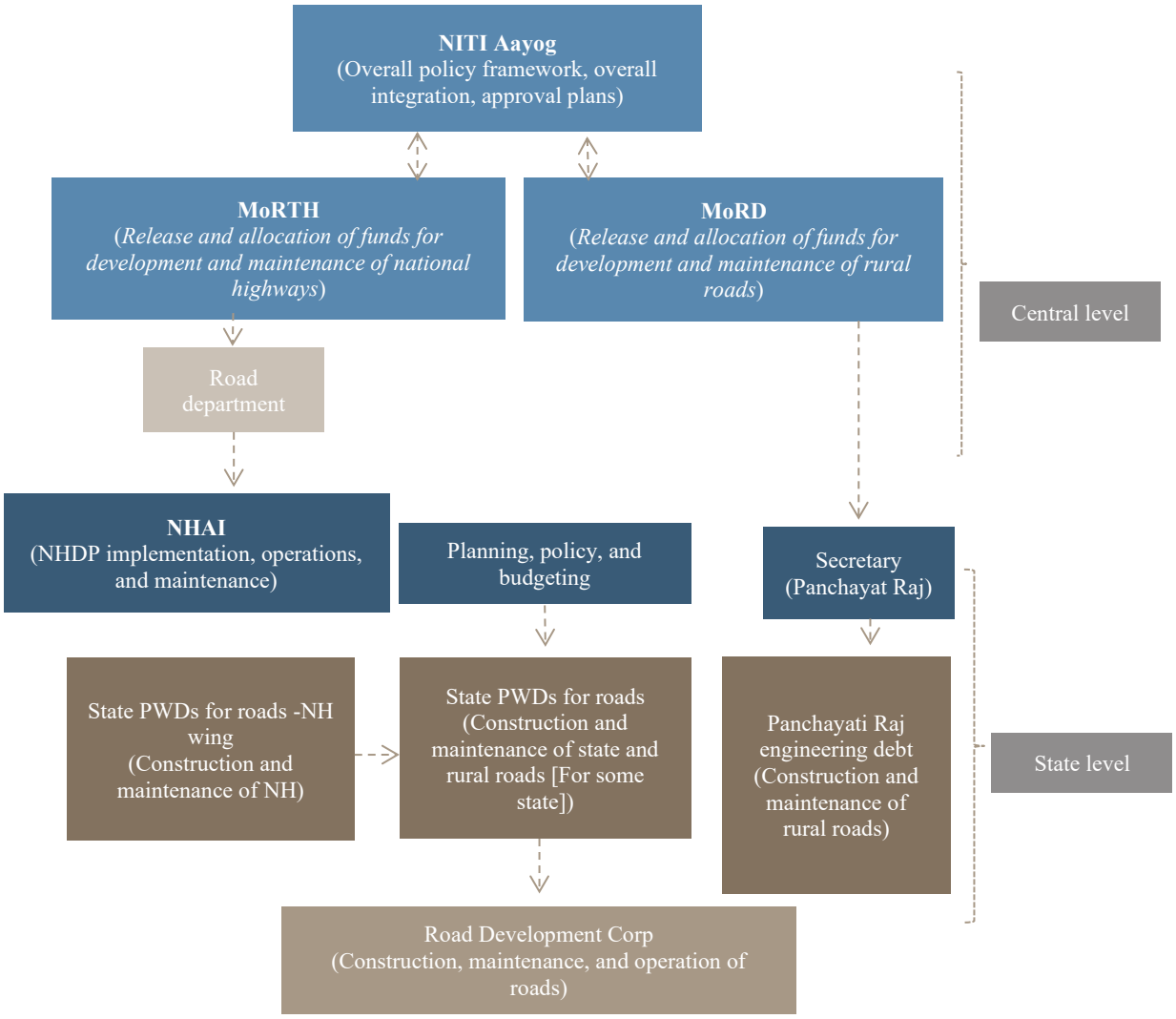
According to MoRTH and NHAI field inspections, overloaded trucks reduce pavement life by up to 50%, leading to higher maintenance costs and shorter resurfacing cycles.

Enforcement through Weigh-in-Motion (WiM) stations and Automated Vehicle Weight Systems is being strengthened, but the lack of consistent enforcement and bypassing of check-posts remains a challenge.

Institutional framework for roads

In January 2015, the government replaced the Planning Commission with the National Institution for Transforming India (NITI) Aayog – a multi-tiered structure, providing strategic and technical advice to the central and state governments. At the central government level, several line ministries handle transport planning, coordination and policy-setting, and NITI Aayog coordinates the entire effort.

Roads sector - Institutional arrangement at the central and state levels



At the central level, NITI Aayog, in consultation with the MoRTH and Ministry of Rural Development (MoRD), is responsible for the overall policy, programme development, and resource planning of rural roads. The MoRTH's duties relate to drawing up policies on road transport and development and the maintenance of national highways.

The National Highways Authority of India (NHAI) is responsible for the implementation, operation and maintenance of national highways. It was constituted and operationalised in February 1995 and was given the status of an autonomous corporate body under the control of the road transport ministry. However, the central government has powers to divest the NHAI of its responsibilities.

At the state level, the overall policy, programme development and resource planning are carried out by the state planning cell in consultation with the centre (NITI Aayog) and state ministry of roads.

The National Highways and Infrastructure Development Corporation (NHIDCL) was incorporated in July 2014. The NHIDCL is a fully-owned company of the MoRTH. Its mandate is to design, build, operate and maintain national

highways and roads in the north-eastern region and other parts of the country that share international boundaries with neighbouring countries.

At the state level, state public works departments (PWDs) and road development corporations are responsible for implementing, operating, and maintaining state highways, major district roads and rural roads in some states.

The MoRD is responsible for policy development, as well as monitoring and coordination of rural roads. Apart from state PWDs, the Panchayati Raj ministry also constructs and maintains rural roads. Allocation for the Pradhan Mantri Gram Sadak Yojana (PMGSY), which is focused on rural roads, is provided by the MoRD.

The ministries allocate and release funds for the development of roads to the respective implementing agencies.

Policy framework for road sector

19. Recent policy reforms provide a significant push to the sector

Key policy measures to boost private participation

To encourage and facilitate private sector investment and participation in the roads sector, the central government, via its respective authorities, has undertaken certain policy measures and provided certain Financial Year incentives within the sector. The most significant policy reforms in recent times are discussed below.

20. Amendments to the EPC model concession agreement (MCA)

The key changes are as follows:

Right of way: Deadline reduced from 240 days to 180 days for approval/ clearances for areas under forest or sanctuary

If the appointed date is not received within 90 days of signing the agreement, the contract may be terminated, the authority will pay contractor damages = 1% of the contract price to the contractor for each day of delay

If the project is not completed within 90 days of the scheduled completion date, the contractor would be ineligible to bid for future projects till it is completed

Lower compensation and longer tenure for the contractor's maintenance obligations. Defect liability period increased from 4 years to 10 years

Higher interest on mobilisation advances paid to the authority; earlier recovery of mobilisation advance by the authority; release of retention money against bank guarantees discontinued

Impact

The authority's obligations increased to enable quicker land acquisition

Developer's working capital needs increased, also responsible for timely project completion

21. Introduction of the hybrid annuity model (HAM) in 2016

The broad outline of the new model of operation is as follows:

Of the total project cost, 40% is to be funded by the government, and balance 60% is given during operations

The project cost will be linked to inflation

Construction support is to be disbursed in five equal instalments of 8% each, and the timing of each such payment will be linked to the percentage of project cost spent by the concessionaire

Traffic risk will be borne by the government, with developers receiving fixed annuities

Annuities will be linked to bank rate plus 3%

80% of land to be provided prior to the appointed date

Impact of the model

With land being acquired and other clearances already in place before the appointed date, construction risk is expected to be lower

Lenders will be assured a steady stream of inflows as traffic risk will be borne entirely by the government

Low risk and lower capital requirements are expected to attract private players, as well as bankers, towards these projects and gradually help increase private participation in the sector

Impact

The amendment to allow premium payment to begin only in the fourth year of completion will provide developers and lenders a great deal of comfort as interest payments are high in the first three years of operations. The deemed termination of projects will ensure that troubled projects are terminated without delay, thereby avoiding problems that previously existed with prolonged project delays. The amendments, with regard to toll fees and the maintenance of national highways, will provide better protection to highway users.

22. Exit policy

On August 26, 2015, the Cabinet Committee on Economic Affairs (CCEA) amended its earlier approval dated May 13, 2015, to allow 100% equity divestment after two years of completion for all BOT projects, irrespective of the year of award. The earlier policy allowed such divestments only for projects awarded prior to September 30, 2009. While the earlier policy allowed the funds obtained through such divestments to be used only for the completion of the concessionaire/promoter's other pending BOT road projects, the new policy allows the proceeds to be used to complete any highway project, any power sector project, or also to retire debt in any other infrastructure project. The exit policy has been changed to six months for HAM projects during construction period and remains as two years for BOT projects as per the latest MCA changes in 2020.

Impact

This move will help close stake sale transactions announced in the last one year and help free up developers capital, which can be used to repay debt or invest in new projects.

NHAI fund infusion

On May 13, 2015, the CCEA permitted the NHAI to infuse funds in projects stuck in advanced stages of completion. Below are the broad contours of the policy announced:

Government to look at one-time fund infusion for installed projects where 50% work has already been done

The NHAI to have the first charge on toll revenue

Impact

This policy will improve developers' cash flows through toll collections and also their debt servicing ability. However, as the NHAI will have the first charge on receivables, lenders are hesitant to allow such a fund infusion. Hence, this policy may not have a significant impact in the near future.

23. Premium rescheduling

In March 2014, premium rescheduling was announced for projects with delays or lower-than-expected traffic. This helped players manage cash flow mismatches, especially at a time when loan tenures were significantly lower than the project life, resulting in cash flow issues. It also helped specifically in the case of aggressively bid projects where premium payments amounted to a very large portion of the total cost. Decision allowing rescheduling of premium payments, i.e. monthly payments due, to be made by developers to NHAI with an escalation of 5% per annum over the concession period.

24. Substitution

In January 2014, the CCEA approved the proposal to facilitate the substitution of concessioners in ongoing and completed national highway projects. As per the proposal, existing concessioners are permitted to divest their equity in totality in on-going or completed projects. However, subsequent to the substitution, the leading substituting entity will be required to maintain at least 51% equity holding in the project SPV. The decision to permit substitution will be taken by lenders in consent with the NHAI.

25. De-linking of forest and environmental clearances

In March 2013, the Supreme Court approved the de-linking of forest and environmental clearances. This de-linking is valid only for road widening projects. In a notification in 2011, the Ministry of Environment and Forests had asked for forest clearances before seeking environmental approval. This led to many road projects being stalled in the first stage itself. This judgement in 2013 allows companies to start road widening work with just environmental clearances, without having to wait for forest clearances. However, forest clearances will be necessary for stretches that fall in forested areas.

26. Relaxation on green nod norms for road widening projects up to 100 km

In June 2013, the environment ministry cleared a proposal allowing for the expansion of highways up to 100 km without environmental clearances. Earlier, approval from the environment ministry was not required for road expansion up to 30 km. The relaxation will also be applicable on existing highways, which require additional 40 m of land for widening. This limit was earlier 20 m.

27. Payment of 75% of arbitration claims

In August 2016, the ministry introduced a policy with regard to the payment of 75% of arbitration claims to the concessionaires. According to the policy, if an arbitration claim has been awarded in favour of a private concessionaire in a lower court/tribunal and the government agency has appealed against it in a higher court/tribunal, then the private player can receive 75% of the claimed amount. It will have to provide the authorities a bank guarantee of an equivalent amount to the government agency.

As per PIB's publication dated 14th, October 2023, Union Minister for Road Transport and Highways, Shri Nitin Gadkari, held a High-Level meeting with the National Highway Builders Federation to resolve their issues. It was agreed that implementation of Vivad Se Vishwas II Scheme be taken in a campaign mode with a target to settle all eligible claims. NHBF was requested to ensure that all contractors file their claims by 25th October 2023.

The Vivad se Vishwas Il (Contractual Disputes) Scheme of Department of Expenditure, Ministry of Finance, Government of India contains detailed procedure / modalities to arrive at the settlement amount that shall be offered to the contractors and where the claim amount is ₹5 billion or less, procuring entities will have to accept the claim, if the claim is in compliance with the guidelines. In case the claim is more than ₹5 billion, then the decision of not accepting the request for settlement from the contractor should be done after recording the reasons with the approval of the competent authority. The claims are to be submitted by 31.10.2023 through GeM portal.

The extant guideline is applicable to disputes of all such cases where the award has been passed by the court/tribunal is for monetary value only and the award of the Arbitration is issued up to 31.01.2023 or Court Award is passed up to 30.04.2023.

Secretary for Ministry of Road Transport & Highways, Shri Anurag Jain said that Vivad se Vishwas Il Scheme has been formulated to clear backlog of old litigation cases. He said the scheme will help in freeing up locked working capital and stimulate fresh investments.

As per PIB's publication dated 08th February 2024 regarding updates of Vivaad se vishwash II scheme, by February 5, 2024, 120 applications have been received, with 56 applications accepted and settlement offers extended, and 43 offers accepted by contractors. However, 7 applications have been rejected. The scheme's deadline for application submission is March 31, 2024, with extended cut-off dates provided for certain cases.

Impact

This policy will help private players facing financial problems and having substantial claims pending with the NHAI. It is expected to help kick-start stalled projects on account of fund infusion by developer and provide some relief to lenders because of loan repayment.

28. Eligibility Norms for HAM and EPC Projects to Improve Construction Quality

Ministry of Road Transport and Highways (MoRTH) and the National Highways Authority of India (NHAI) have implemented comprehensive reforms to the eligibility criteria for Hybrid Annuity Model (HAM) and Engineering, Procurement and Construction (EPC) highway projects. These stringent norms, introduced through multiple policy circulars in 2025, are specifically designed to enhance construction quality, reduce project delays, and ensure better accountability in highway development.

Enhanced Financial Qualification Requirements

HAM Project Financial Norms

The financial thresholds for HAM projects have been significantly strengthened to ensure only well-capitalized contractors participate in bidding:

- Minimum Financial Capacity: Increased from 15% to 20% of the estimated project cost
- Net Worth Requirement for Consortium Members: Raised from 7.5% to 10% of the estimated project cost
- Available Net Worth Calculation: Now deducted after accounting for 20% of the balance value of existing public-private partnership projects

EPC Project Financial Norms

Similar enhancements have been implemented for EPC projects:

- Minimum Net Worth: Increased from 5% to 10% of the estimated project cost
- Average Annual Turnover: Raised from 15% to 20% of the estimated project cost

Technical Qualification and Experience Requirements

NHAI has introduced stringent definitions for "Similar Work" experience to prevent misrepresentation:

- HAM Projects: Contractors must demonstrate completion of either: One project equivalent to 35% of the estimated project cost (increased from 20%) or Two projects equivalent to 25% each of the estimated project cost
- Definition Clarification: "Similar Work" now refers exclusively to completed highway projects that include all major components comparable to those required for the project being bid

Annual Pass for National Highways: Key Features and Early Uptake

The National Highways Authority of India (NHAI) has seen a strong initial response to its newly introduced Annual Pass, collecting nearly ₹1.5 billion upfront in the first four days through the issuance of 0.5 million passes. Tamil Nadu recorded the highest number of purchases, followed by Karnataka and Haryana. Correspondingly, the highest number of Annual Pass transactions at toll plazas were also observed in Tamil Nadu, Karnataka and Andhra Pradesh, indicating rapid early adoption in these states.

Key Features of the Annual Pass

The Annual Pass offers significant convenience for private highway users by enabling free passage through all toll plazas on national highways and expressways upon a one-time upfront payment of ₹3,000.

Key functionalities include

- The pass provides 200 toll plaza crossings annually, where each passage counts as one trip; a round trip counts as two trips.
- It operates seamlessly on the user's existing FASTag, eliminating the need for any separate device or tag.
- The Annual Pass can be purchased exclusively through the Raimargvatra mobile app or the NHAI website and is activated within two hours of payment.
- On state highways or expressways managed by state bodies, the FASTag will continue to function in the regular manner, and normal user charges may apply.

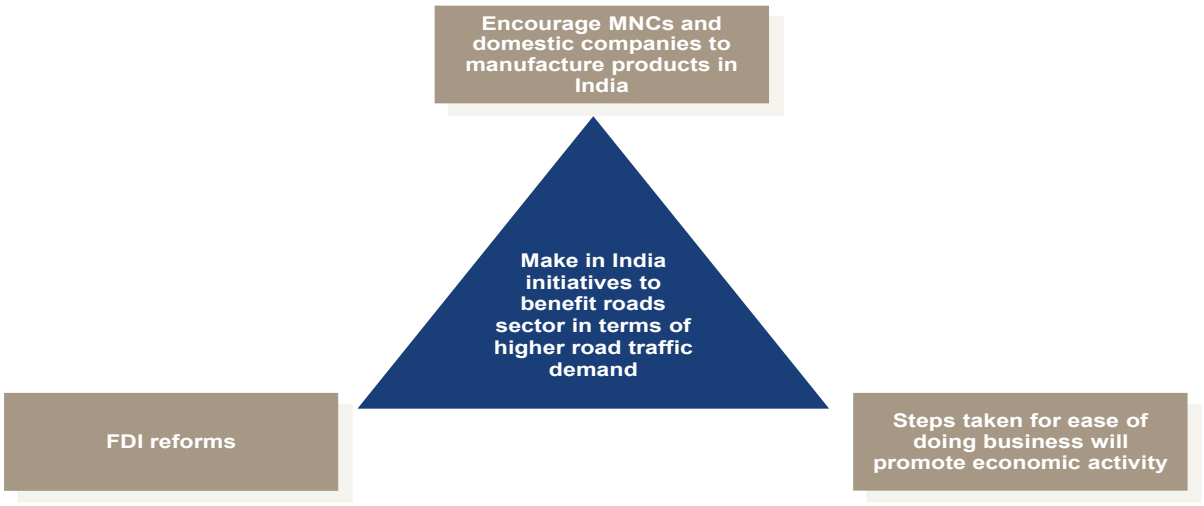
Coverage and Accessibility

The pass is applicable across approximately 1,150 toll plazas on the National Highway and National Expressway network. It is currently available to all non-commercial vehicles with a valid FASTag. Through wider and simpler digital access, the Annual Pass aims to improve user convenience while enhancing upfront revenue visibility for NHAI. Based on the IHMCL database for 823 toll plazas, 22.5 million trips are made using annual pass in October 2025.

Impact of the 'Make in India' initiative on the roads sector

The 'Make in India' campaign, launched in September 2014, covers 25 major sectors, including roads and highways. The initiatives under the campaign, such as encouraging multinational companies (MNCs) to manufacture products in India, taking steps to improve the ease of doing business, as well as FDI reforms, are expected to benefit the roads sector in terms of increase in traffic movement.

Impact of 'Make in India' on the roads sector



Source: CRISIL Intelligence

29. Encourage MNCs and domestic companies to manufacture products in India

MNCs and domestic companies setting up manufacturing plants in India will facilitate increase in passenger as well as freight traffic on roads. Following the announcement of the 'Make in India' campaign, the government received several proposals from MNCs interested in manufacturing electronics in India. For instance, Xiaomi, a Chinese mobile phone maker, partnered with Foxconn in August 2015 to manufacture smartphones in a factory in Andhra Pradesh. A few weeks later, Lenovo, a Chinese computer and mobile phone maker, announced its plans to manufacture smartphones in India at its Chennai plant.

30. Steps to improve ease of doing business will promote economic activity

The measures undertaken for ease of doing business will promote economic activity and, thereby, boost road traffic demand. Some of these key measures are:

Applications for environment and forest clearances are to be submitted online through the Ministry of Environment and Forests and Climate Change portals

Application forms for industrial licence (IL) and industrial entrepreneur memorandum (IEM) have been simplified

Applications for IL and IEM are to be submitted online

The eBiz portal has integrated 20 services and will function as a single-window portal to obtain clearances from various governments and government agencies

The Ministry of Labour and Employment has launched a unified portal to register units for Labour Identification Number (LIN), report inspections, submit returns, and for grievance redressal

31. Overview of government initiatives

New tolling policy (2011)

Toll act

The central government is authorised to levy a fee (toll) under Section 7 of the National Highways Act, 1956, for public-funded projects and under Section 8-A of the said Act for private investment projects. The government can levy fees on all sections of national highways (irrespective of four or two lanes), tunnels, bypasses, and bridges with specific cost criteria.

Fee structure

Toll charges are based on rates notified by the government. The fee for use of a section of national highways with four or more lanes for the base year Financial Year 2008 shall be the product of the length of such a section multiplied by the rates specified hereunder.

Toll rates for four-lane national highways

Vehicle category	Rs/ km
Car, jeep, van, light motor vehicle	0.65

Vehicle category	Rs/ km
Light commercial vehicle	1.05
Bus or truck	2.2
3-axle commercial vehicle	2.4
Heavy construction machinery, multi-axle vehicles (MAV) with 4-6 axles	3.45
Oversized vehicles with 7 axles or more	4.2

Source: PIB, CRISIL Intelligence

The rates, which will be revised every year, will be an aggregate of the following rules effective April 1, 2016:

Increase of 3% without compounding (on base rates of Financial Year 2008)

Compared with the previous year, 40% of the increase in wholesale price index (WPI)

In previous years, the toll rates were fully linked to the WPI, which led to numerous case where WPI would become negative. The current method of toll rates has been beneficial for private players.

Other features of the new tolling policy include the following:

Uniform rates for public- and private-funded projects

Fee for a permanent bridge, bypass, or tunnel costing ₹0.10 billion or more and that of NH length will be calculated separately

In 2013, 2014, 2015, 2019, 2020, and 2022 some amendments were made to the National Highway Fee (determination of rates and collection) Rules 2008, as follows:

- In the case of a four-lane highway being upgraded to a six-lane one, the increase in rate shall be limited to 75% of the fee specified, revised as per the applicable rules calculated on and from the date of commencement of upgrade-related work to the date of completion of the project, according to the agreement entered into with the concessionaire without any annual revision
- In certain cases, fee collection is started when the project is 75% complete, but the fee is applicable only to 75% of the operational length
- No user fee shall be levied on the delayed period between the date of completion as per the agreement entered into with the concessionaire and the date of actual completion of the project. For the purposes of this rule, any provisional completion shall not be treated as completion of the project.
- The tolls rates are calculated on the basis of the road length, excluding bypass (costing more than 100 million) and structures (more than 60 metre). The road length fee is payable at 100% of the applicable rate for four lanes and at 60% for two lanes with paved shoulders
- Bypass (costing more than 100 million) length fee is payable at 150% of the applicable rate for four lanes and at 90% for two lanes with paved shoulders
- Structure (costing more than 100 million) length fee is payable at 100% of the applicable rate for four lanes and at 60% for two lanes with paved shoulders
- Commercial vehicles registered within the district are tolled at 50% discount, and local non-commercial vehicles are issued a monthly pass for a certain amount
- The rate of fee for use of an expressway shall be 1.25 times the rate specified in the applicable rule
- The rate of fee for private investment projects shall be as specified under the applicable rule or as the concessionaire may determine by issuing a public notice to users
- The following method is used to calculate the rate of fee for highways/expressways with standalone structures and structures forming part of linear highways/expressways:

Length of the structure* (L) X Factor "10" = Length in metres

** Structure of 60 metres of length or less*

- To calculate fee for a linear highway/expressway, structures will be considered a part of the normal length of highways/expressways
- In the December 2013 amendments, the NHAI empowered the concessionaire to collect 10 times the applicable fee from overloaded vehicles. The December 2015 amendments allowed the concessionaire to stop

vehicles plying on National Highways unless they cleared their dues. Any vehicle loaded in excess of its maximum permissible gross vehicle weight (GVW) is not permitted to use the National Highway or cross the toll plaza until the excess load is removed or a fee of 10 times the applicable amount is paid. Moreover, the concessionaire can detain the vehicle until all dues are cleared

- The May 2018 amendment stated that if a vehicle user with a valid, functional FASTag or any such device with sufficient balance in the linked account crossing a fee plaza installed with Electronic Toll Collection infrastructure is not able to pay the user fee through FASTag or any such device because of malfunctioning of Electronic Toll Collection infrastructure, the vehicle user shall be permitted to pass the fee plaza without payment of any user fee

- In the National Highways Fee (Determination of Rates and Collection) Rules, 2008, in rule 11, in clause (e), the word "disability" should be replaced with "DIVYANGJAN"

- The fee payable towards discounts shall be paid through pre-paid instruments, smart card or through FASTag or on-board unit (transponder) or any other such device

- The executing authority or the concessionaire, as the case may be, provide for multiple journeys to cross a toll plaza within the specified period at the rates specified

- The words "may opt for such pass" shall be omitted

- "A person who owns a mechanical vehicle", the words, "with valid functional FASTag," shall be inserted

- "A person who owns a commercial vehicle (excluding vehicle plying under National Permit)", the words "with valid functional FASTag," shall be inserted.

- User of the vehicle not fitted with "FASTag" or vehicle without valid, functional "FASTag" entering "FASTag lane" of the Fee plazas shall pay a fee equivalent to two times of the fee applicable to that category of vehicles

- closed user fee collection system means a system under which the fee is levied based on the actual distance travelled by a mechanical vehicle, on a national highway or expressway

- the executing authority or the concessionaire may establish fee plaza on the national highway or expressway on which the closed user fee collection system has been installed

- Provided further that no such concession shall be provided for commuting on a national highway or expressway on which fees is levied based on the closed user fee collection system.

Overloading of vehicles

FASTag can discourage truck overloading on Indian highways by tying each vehicle's electronic toll identity to automated weight screening and enforcement at toll plazas, which increases the certainty and immediacy of penalties for violations. When weigh-in-motion sensors and number-plate cameras are integrated with the FASTag ecosystem, overloaded vehicles can be detected in traffic flow, linked to the responsible owner through the tag, and subjected to actions such as diversion to static scales, higher user fees, issuance of e-notices, and progressive suspension or blacklisting of the tag in cases of repeated non-compliance. This creates a predictable data trail time, place, vehicle identity, and measured weight making adjudication and follow-up more efficient while raising the direct costs and delays associated with illegal overloading, thereby reducing the financial incentive to exceed axle and gross weight limits. Current policy directions around barrier-less tolling and electronic enforcement further support this model by enabling remote issuance of notices and linkage with VAHAN records, while procurement documents from IHMCL explicitly provide for ETC systems that incorporate WIM and static weighbridges, indicating a standardized pathway to scale weight enforcement across high-load corridors. As cash lanes narrow and compliance rules tighten, the risk of double fees for non-compliance and the possibility of tag suspension make persistent overloading operationally costly for fleet operators, encouraging better load management and compliance with statutory limits.

Reduction In WPI linking factor

WPI linking factor used in national highway toll indexation has been reduced by NHAI via a policy circular dated September 13, 2025, which lowers the factor from roughly 1.641 to 1.561; this effectively cuts the converted WPI used in fee computation and reduces base toll rates. The matter is sub-judice with the hearing being listed for October 17, 2025. In the interim, the Delhi High Court has directed that no coercive or precipitative action be taken by NHAI against concessionaires on the basis of the policy circular.

- NHAI's circular revises the WPI linking factor applied when converting WPI between base years for toll fee indexation, moving from about 1.64 to about 1.56 with effect from September 13, 2025.

- Public disclosures by listed InvITs confirm receipt of the circular, the exact factor change, and that asset managers are assessing applicability and reserving legal rights.

- Industry and rating analyses indicate the revision will permanently lower base tolls on public-funded and BOT (Toll) projects unless relief is granted.

32. Financial incentives for road developers

- Under section 80 IA of the Income Tax Act, profits and gains derived by an undertaking are subject to 100% deduction for 10 consecutive assessment years out of 20, beginning from the year in which the undertaking begins to operate the business, provided such profits and gains are derived from the business of: 1) developing, 2) operating and maintaining, or 3) developing, operating, and maintaining a road, including tolls and bridges, a highway project including housing or other activities being an integral part of the highway project. These criteria shall not apply to any enterprise that starts development or operations and maintenance of the infrastructure facility on or after April 1, 2017, as that enterprise shall be eligible for 100% deduction of capital expenditure under section 35AD

- Import duty has been completely exempted for public-funded needs on certain identified high-quality construction plants and equipment

- Import of bitumen is now permitted under the Open General Licence

- External commercial borrowings are permitted up to 35% of the project cost

Overview of PPP framework and models in operations

PPP is an arrangement between a government/statutory entity/government-owned entity and a private sector entity for the provision of public assets and/or public services through investments made and/or management undertaken by the private sector entity for a specified period of time. In this arrangement, allocation of risk between the private sector and the public entity is defined well. The private entity receives performance-linked payments that conform with (or are benchmarked to) specified and pre-determined performance standards, measurable by the public entity or its representative.

For broad-based and sustainable growth, the government recognises the need to engage with the private sector through a PPP framework to achieve the following objectives:

Harness private sector efficiencies in asset creation, maintenance and service delivery

Focus on a life-cycle approach for project development, involving asset creation and maintenance over its life cycle

Create opportunities to bring in innovation and technological improvements

Enable affordable and improved services to users in a responsible and sustainable manner

While the preferred form of the PPP model is one in which ownership of the underlying asset remains with the private entity during the contract period, and the project is subsequently transferred back to the public entity on contract termination, the final decision on the form of PPP is taken using the value-for-money analysis.

The types of construction contracts based on price risk are as follows:

Fixed-price contracts: These contracts state the fixed fee or payment (per unit output or whole project) the contractor receives on completion of a contract. The contractor bears the risk of a rise in cost during the construction period. Certain pass-through of higher cost may be allowed in some projects.

Cost-plus contracts: These are contracts in which the contractor is entitled to receive a fixed surplus over the project cost borne. The surplus given to the contractor can be in the form of a fixed percentage over cost or a pre-decided fee over cost. Therefore, any increase in cost of the project, during the construction phase, is passed on to the client.

Evolution of construction contracts over the years

Source: CRISIL Intelligence

The types of contracts based on scope of execution are as follows:

33. Item rate contract

These are fixed-price contracts, where the concerned authority provides the detailed design and the estimated quantity of materials. A project is divided into several sub-activities, for which the item-wise quantity of input material to be used is specified in a document called bill of quantities. Bids are invited for the price of each construction activity based on the items specified. As the aggregate of bid amounts form the total project cost, the lowest bidder wins the project. The bill of quantity document may state the quantity of items such as cement, girders, electric boards, wires, etc, to be used, against which the bids are invited.

34. Lump-sum turnkey (LSTK) contract

LSTK is a fixed-price contract in which the contractor fixes a lump-sum fee based on the specific project requirements. The client states the project specifications with respect to designs, drawings, technical stipulations, quality of raw material, etc, based on which the contractor provides bids, stating a lump-sum fee for execution.

35. Design and build contract

In this type of a contract, the authority does a conceptual study of the project to be awarded and specifies the technical output details based on which the specifications of the project are decided. The developer has to undertake the detail designing and execution of these projects. EPC and BOT are design and build models.

A few operational models:

I. BOT-toll/-annuity/-hybrid annuity model (HAM)

II. EPC

III. Toll collection

IV. Operate, maintain and transfer (OMT)

V. Toll, operate and transfer (TOT)

Types of PPP models

Type of project	Description	Development risk	Financing risk	Traffic risk and accrual of toll fee collection	Net cash outflow for the government	Revenue for private party	Concession period	Award criteria
BOT-toll	Private party builds the road, undertakes O&M and collects toll	Concessionaire	Concessionaire	Concessionaire	Yes (in the form of grant/equity support)	Toll	20-30 years for the NHAI** and other authorities	Highest revenue sharing bid/highest premium/ lowest equity support
BOT-annuity	Private party builds the road, undertakes O&M* and collects annuity	Concessionaire	Concessionaire	Authority	Yes, net payment to be made is the difference between the toll	Annuity payment	15-20 years for the NHAI and other authorities	Lowest annuity

Type of project	Description	Development risk	Financing risk	Traffic risk and accrual of toll fee collection	Net cash outflow for the government	Revenue for private party	Concession period	Award criteria
	from the granting authority				collection and the annuity payable			
BOT-HAM	Private party builds the road, undertakes O&M. Gets 40% of payment during construction and 60% as annuity along with interest	Concessionaire	Concessionaire	Authority	40% during construction and 60% as semi-annual annuity along with interest, net of toll collected	Construction grant plus annuity payments, interest on annuities, inflation-indexed O&M payments	Around 15 years of operations plus additional construction period	Lowest project cost plus O&M cost
EPC	Private party builds the road, based on the cost incurred by the government	Concessionaire	Authority	Authority	Yes	Contract amount	Not required	Lowest contract price requested
OMT	Private party collects toll, and undertakes O&M and major maintenance	No development risk except minimal risk in case of paved shoulders	Concessionaire	Concessionaire	No	Toll	Up to nine years for NHAI projects	Highest % of toll revenue share or highest premium per year
Tolling	Private party pays the estimated toll upfront to the authority and collects it during the concession period	No development by tolling contractor	Concessionaire	Concessionaire	No	Toll	One year for NHAI projects	Highest upfront payment
TOT	Private party pays an upfront bid concession fee (summation of NPV of free cash flow based on concessionaire estimates) to the authority, undertakes O&M plus certain capex and collects the toll during concession period	Authority (in case upgradation of lanes is taken up during the concession period)	Concessionaire	Concessionaire	No	Toll	15, 20, 30 years[#]	Highest upfront payment

Note: Development risk refers to construction risk in developing a road project
**Operations and maintenance*
*** National Highways Authority of India*
#As per TOT bundles of NHAI in 2021-22
Source: CRISIL Intelligence, NHAI

36. Viability gap funding (VGF)

VGF means a grant, one-time or deferred, provided to support infrastructure projects that are economically justified but fall short of financial viability. The VGF scheme was launched in 2004 to support PPP projects. It was a method used by the government for awarding a few BOT projects. Projects generally expected to have traffic numbers insufficient to compensate the costs to the developer were provided an additional grant from the government for execution. The bidder who used to quote the lowest grant used to be awarded the project. The number of projects which got such a grant fell from a high of 23 in Financial Year 2010 to only two in Financial Year 2016, and no projects in Financial Year 2017. Up to Financial Year 2012, the rise in the bidding aggression led to a fall in the

number of projects receiving VGF. Over Financial Years 2013-15, the NHAI's awarding fell drastically. Since Financial Year 2016, a majority of the projects awarded by the central government have been on an EPC basis.

In the recently developed HAM model, which in a way is VGF, the government provides 40% of the total cost incurred by the developer during the construction period itself.

37. BOT

BOT contracts are typically PPP agreements wherein a government agency provides a private player the rights to build, operate and maintain a facility on public land for a fixed period, after which the assets are transferred back to the public authority.

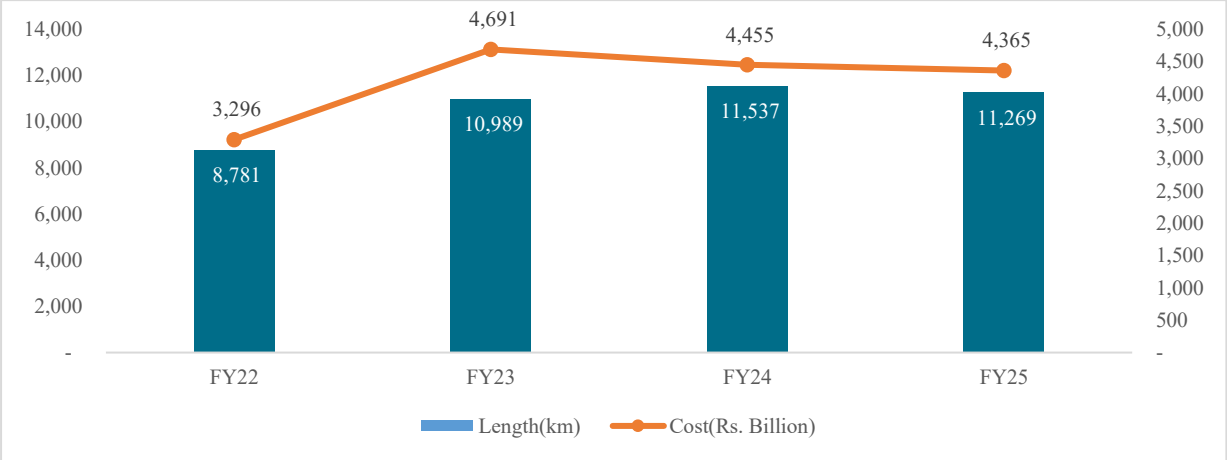
Funding for the project is arranged by the concessionaire through a mix of equity and debt from banks and other financial institutions. Under the basic BOT mode, the concessionaire charges a fee to the users of the project/facility and may either transfer the entire user fee collected to the authority or may retain the entire amount as revenue. BOT contracts are, therefore, classified into the following types:

Annuity-based contract: Under this contract, the concessionaire is responsible for the construction and maintenance of the project during the concession period. Variability in user fee gives rise to revenue risk, which is borne by the authority. However, the concessionaire generates revenue through fixed annuity payments received from the authority over the concession period. Since this annuity payment is a cost to the authority, the contract is awarded to the lowest bidder. Tolls charged under these contracts are generally regulated by a policy or a public agency.

Toll-based: Under this model, too, the concessionaire is responsible for the construction and maintenance of the project, after which the project's ownership is transferred to the public authority. However, the toll collected is retained by the concessionaire and not transferred to the authority. Therefore, the concessionaire bears the revenue risk during the concession period. As in BOT annuity-based projects, toll charged under these contracts is generally regulated by a policy or a public agency.

HAM: This is a mix of EPC and BOT (annuity) models with an average concession period of 15 years. In this model, the project cost is shared between the authority and the concessionaire in a 40:60 ratio. This model aims to lower the financial burden on the concessionaire during the project implementation phase. Compared with EPC projects, the shift to HAM will also ease cash flow pressure on the NHAI. It will lower project risk for developers because the NHAI will bear the risk of traffic volume and the developer earns through fixed annuity payments. It will also help developers participate in more projects given that equity contribution per project will now be lower. This model will also encourage banks to lend to road projects because of the NHAI's involvement. HAM was approved by the Cabinet Committee on Economic Affairs on January 27, 2016. HAM remains the dominant PPP model in recent years. In the Financial Year period 2024-25, HAM projects accounted for about 65% of awards by NHAI, overtaking EPC in terms of value of project awards. This dominance reflects policy preference, since HAM allocates traffic risk largely to the government while allowing private players to share construction, operations, and finance risk.

Ham project awarding



Source: CRISIL Intelligence, NHAI, MORTH

The tentative NHAI project allocation for Financial Year 202025-26 includes 124 projects (6,376 km), out of which HAM accounts for the largest share with 4,699 km of project length and 81 projects, underscoring its role as the primary delivery mode.

List of BOT Projects over last 5 years

Project	Financial Year Year	Managed By
Kagal-Satara section	2022	NHAI

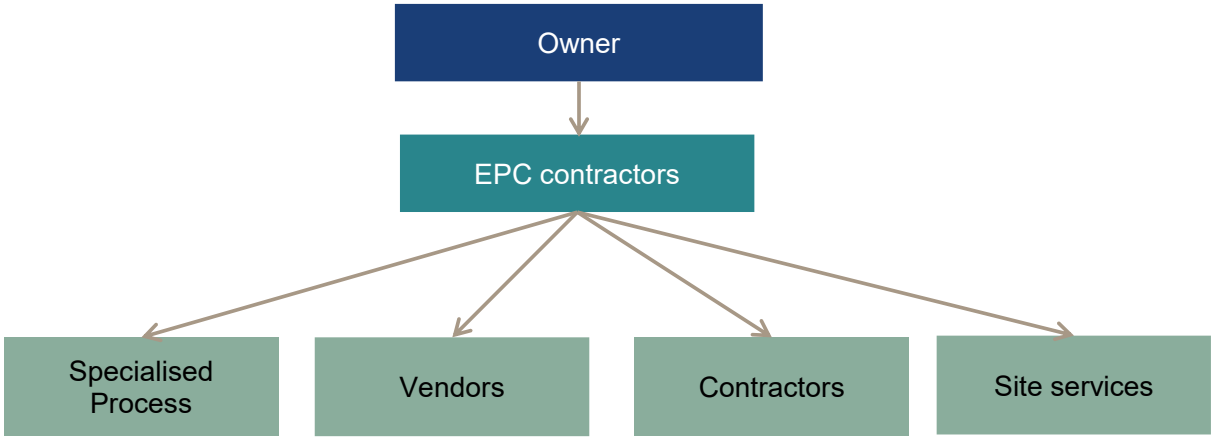
Project	Financial Year Year	Managed By
Dankuni road asset	2022	NHAI
Patna-Koilwar road asset	2023	NHAI
Samakhyali-Santalpur road asset	2023	NHAI
Jaipur-Reengus section of NH-52	2024	NHAI
Agra Gwalior	2025	NHAI
Guwahati Bypass	2025	NHAI
Pune-Shirur road asset	2025	MSIDC

Source: MoRTH, Crisil Intelligence

38. EPC

EPC contracts are fixed-price, wherein the client provides conceptual information about the project. Technical parameters, based on the desired output, are specified in the contract. The contractor undertakes the responsibility of designing the project either through an in-house design team or by appointing consultants. Unlike item rate and LSTK contracts, the contractor is allowed to innovate on the project design. Based on these designs, the contractor draws up cost estimates and accordingly bids for the project.

EPC contracts



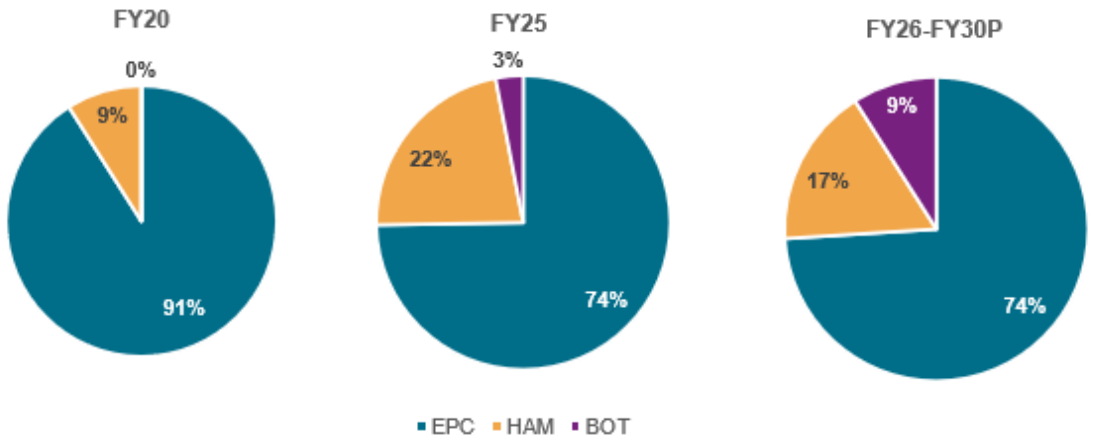
Source: CRISIL Intelligence

Trends in bidding by private sector participants

Private sector participation in India's road sector has evolved with distinct trends across BOT (Toll), HAM, EPC, and TOT models, reflecting shifts in risk appetite, competition, and qualification norms.

Between Financial Year 2019 and Financial Year 2025, the EPC model dominated, accounting for over 70% of the total projects open for private participation due to its efficiency and low-risk structure. The HAM model contributed around 20%, supported by its balanced risk-sharing framework between the government and concessionaires. Meanwhile, the BOT (Toll) model has seen a modest revival, rising to about 3% in Financial Year 2025, driven by the 2024 amendments to the Model Concession Agreement that improved its viability for investors.

Share of HAM, BOT & EPC



Source: Ministry of Road Transport and Highways (MoRTH), CRISIL Intelligence

39. Toll collection

Toll collection, as a separate business model, evolved in 2009. Under this model, the authority invites bids from private players to collect toll on roads constructed under the EPC and BOT-annuity models. It is used for short-duration projects, typically lasting 12 months. The private player with the highest bid is awarded the project. The user fee is pre-determined by the contracting authority. The right to collect user fees during the concession period lies with the private player. A contract of this category involves negligible to minimal road construction and maintenance.

Along with the NHAI, state authorities, municipal bodies and developers are also outsourcing toll collection to private players to recognise revenue upfront. Toll management companies recover their investments and make profits from toll receipts. A typical bidding process adopted by the NHAI and state authorities has been outlined below.

40. NHAI's bidding process

The NHAI introduced the operate-maintain-transfer (OMT) model for roads in India, and has awarded the maximum number of OMT projects. The bidding process specified by the NHAI for awarding OMT projects is as follows:

NHAI awards OMT projects under a two-stage process: **qualification stage** and **bid stage**

Qualification stage

The NHAI solicits applicants' qualifications through the request for qualification (RFQ) document, for a prefixed number of OMT projects and road length, to ease the process at the bid stage

The aim of the qualification stage is to evaluate the technical and financial capability of the applicants and decide their eligibility for various categories of OMT projects based on estimated project cost. The cost is specified by the NHAI for all OMT projects and includes all costs expected to be incurred during the project such as cost of major/minor maintenance works, construction of toll plazas, manpower cost, and incident management costs

At the time of applying for qualification, the applicant is expected to indicate the estimated project cost for which he wishes to be qualified, which should be more than ₹200 million

At the end of the qualification stage, the NHAI gives out a list of qualified applicants along with specific estimated project costs, which qualifies them for participation in the bidding stage. The qualification is typically valid for 12 months

To be eligible for qualification and shortlisting, an applicant is expected to fulfil certain minimum technical and financial criteria:

- **Technical capacity –** The applicant should have an experience of five financial years, prior to the date of application, of paying or receiving payments for construction or paying for development or collection and appropriation of revenue of PPP projects in the highways* or core sectors* (with capital cost of more than ₹50 million).

- **Financial capacity –** In the financial year preceding immediately, the applicant is required to have minimum net worth of the following amounts:

For an estimated project cost of less than ₹20 billion – 25% of the estimated project cost

For an estimated project cost between ₹20 billion and ₹30 billion – ₹5 billion plus 50% of the amount by which the estimated project cost value exceeds ₹20 billion

For an estimated project cost value of more than ₹30 billion – ₹10 billion plus 100% of the amount by which the estimated project cost value exceeds ₹30 billion

In the case of a consortium, the combined technical and financial capacity of the members is evaluated.

The concessionaire is required to engage an experienced O&M contractor or hire qualified and trained personnel to undertake operation and maintenance activities

No separate applications are needed for qualification for OMT projects, which are part of the RFQ

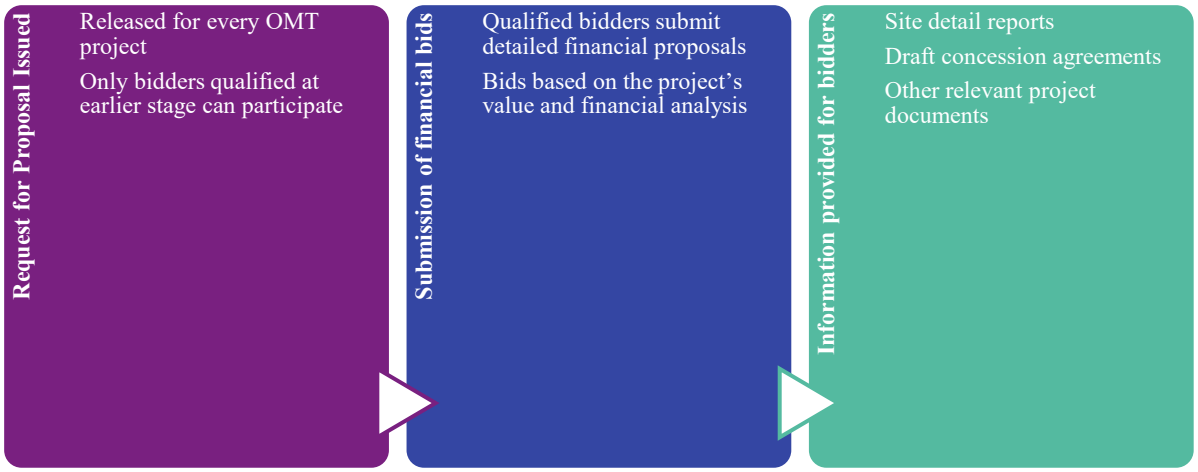
A pre-application conference is also convened by the NHAI, wherein applicants can seek clarifications as well as make suggestions for consideration by the authority

** As per the RFQ recently published by the NHAI, the highways sector includes highways, expressways, bridges, tunnels and airfields; core sectors include power, telecom, ports, airports, railways, metro rail, industrial parks/estates, logistic parks, pipelines, irrigation, water supply, sewerage, and real estate development.*

Bidding stage

Multiple OMT projects are evaluated together through an RFQ. It is conducted separately for each OMT project.

Project Flow



Source: CRISIL Intelligence

Award Criteria:

- Project is awarded to the bidder quoting the highest first-year concession fee payable to NHAI
- Alternatively, in projects with lower toll revenue, bidder requiring the lowest O&M support may win

41. Technology used to help tolling industry

ETC

It is a system that enables road users to pay highway tolls electronically without stopping at the plazas. The applicable toll amount is deducted from a prepaid account that is linked to the FASTag. The dedicated ETC lanes are colour-coded for immediate recognition. This helps avoid fuel wastage, loss resulting from drivers who avoid payment, and booth attendants taking their cut. It also reduces time delays because of toll payment, thus reducing the resistance for toll payments. In November 2019, MoRTH directed the NHAI that all toll lanes on national highways must have ETC. In December, the ministry relaxed the rule temporarily to have 75% of the lanes to have ETC. However, in February 2021, the ministry mandated compulsory use of FASTag and announced penalty of double payment in case the toll was paid in cash.

Weigh-in-motion (WIM)

It is a system integrated with toll operations to ensure users are liable for overloaded vehicles and to provide accurate data for charging users by their vehicle weight and type. WIM's main purpose is to prevent road damage as these get easily damaged when overload vehicles pass over it. The Indian Road Congress has limits – prescribed to each axle – to which each vehicle can be loaded. Hence, WIM is an axle-weight calculator installed on the road near toll plazas, which weighs the vehicles in motion and hastens the weighing process.

Static weigh bridge (SWB)

This, too, is a weighing system integrated with toll operations to ensure users are liable for overloaded vehicles and to provide accurate data for charging users by their vehicle weight and type. It differs from WIM as it is used to weigh static vehicles.

Automatic vehicle counter-cum-classifier system (AVCC)

It is a system that consists of sensor devices installed in a lane to record the physical characteristics of vehicles to determine their configuration for the purpose of charging the user appropriately.

42. Operate, Maintain and Transfer (OMT)

The OMT concept was introduced to assure road users of adequate quality and safety. An OMT project entails a contract for the right to collect toll and a contract for the operation and maintenance of the stretch.

43. Scope of work for OMT contracts under Model Concession Agreement (MCA) includes the following:

O&M of the stretch/ section of highway

Tolling of the section

Construction of project facilities such as toll plazas, street lighting, medical aid posts, traffic aid posts, and bus shelters

Any major maintenance work (necessary in long-term contracts, not mandatory in short-term contracts)

This model provides consistent revenue (in terms of concession fee by private parties) to the NHAI as well as just-in-time (JIT) maintenance of the project. It includes performance-based, periodic and routine maintenance (minor repairs, cleaning of carriageways, shoulders, cross drainage structures, etc); as well as road property and incident management. In this type of arrangement, toll collection rights are given to the private operator, which form the sole source of revenue.

Road development agencies are looking to generate revenue by awarding OMT contracts. Such revenue is planned to be used to upgrade other roads, and/or for maintenance of roads with low-volume traffic. OMT projects provide an opportunity for firms from the private sector who are not willing to take up construction risk and cannot bring in large investments but can take traffic risk.

From a developer's perspective, OMT projects offer an opportunity to synergise existing projects by taking up OMT contracts on the same corridor. From an investor's perspective, such projects are equivalent to design, build, finance, operate and transfer (DBFOT) toll-based concessions in terms of traffic risk, but without the construction risk. Investments in such projects would carry benefits similar to investments in DBFOT (toll) projects during the operation period. However, OMT projects have financial liabilities, principally towards road development agencies, unlike capital-intensive DBFOT (toll) projects, where financial liabilities of the project are borne by the road development agencies as well as by lenders. On the other hand, the ticket size of OMT projects, which is about 1/10th the size of a DBFOT (toll) project, is smaller, so a pool of such projects is required to attract larger investors. The creation of such a pool of projects has other advantages such as the hedging of traffic risk. The medium concession period in OMT projects (5-10 years) is another factor that might attract private equity funds to such schemes.

44. Bidding process of state authorities

Like the NHAI, many Indian states such as Bihar, Madhya Pradesh, Andhra Pradesh and Telangana follow a two-stage bidding process (qualification stage followed by bidding stage). In the first stage, the authorities qualify applicants through an RFQ process, based on their technical and financial strength. However, unlike the NHAI, which undertakes qualification of a number of OMT projects in one single process (through an RFQ stage), qualification for every single OMT project of the Madhya Pradesh Road Development Corporation (MPRDC) and the Bihar State Road Development Corporation (BSRDC) is typically carried out separately. In the second stage (the bidding stage), which mirrors the NHAI process, bids are invited from qualified applicants and the project is awarded to the bidder which quotes the maximum concession fee or minimum O&M support from the authority. The Karnataka Road Development Corporation, on the other hand, follows a single-stage bidding process wherein qualification and evaluation of financial bids are undertaken.

Asset Monetisation

Asset monetisation has emerged as a central financing strategy for India's infrastructure development, particularly in the highways sector. It refers to the structured process of unlocking the economic value of operational public assets by transferring their rights to private entities for a defined period in return for upfront or periodic consideration. This approach enables the creation of a cycle, completed assets are monetised to generate fresh capital, which is then reinvested in new infrastructure, thereby expanding the overall asset base without exerting additional Financial Year pressure.

The National Highways Authority of India (NHAI), under the guidance of the National Monetisation Pipeline (NMP) prepared by NITI Aayog, has institutionalised asset monetisation as a long-term strategy. The objective is to tap into private sector capital and operational efficiencies while recycling funds into greenfield projects and capacity augmentation.

Objective of Asset Monetisation in Roads

The monetisation of road assets serves three interlinked purposes. First, it facilitates unlocking of value embedded in completed highways, allowing their conversion into a sustainable source of funding for future projects. Second, it enables the attraction of alternate sources of capital, complementing traditional channels such as budgetary allocations and toll revenues, and broadening participation to include global pension funds, sovereign wealth funds, and private equity investors. Third, it promotes efficiency improvements in asset management, as private operators bring advanced technologies, better maintenance standards, and innovative project management practices.

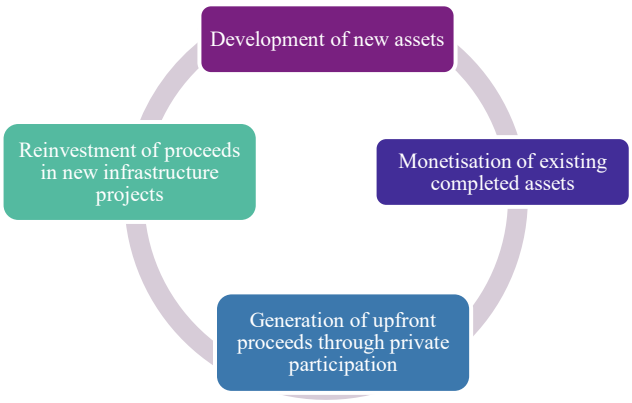
Strategic Approach of NHAI

NHAI's asset monetisation strategy is designed to maximise value realisation from operational highways while ensuring transparency and risk mitigation. Its medium-term plan rests on three pillars:

- Streamlined Processes: Simplification and standardisation of procedures to ensure that monetisation transactions are conducted efficiently and within defined timelines.
- Transparency: Strengthening disclosure and oversight mechanisms to attract a wider pool of credible investors.
- Risk Mitigation: Identification of risks related to traffic volatility, financing, and regulatory uncertainties, and adoption of measures to address them.

The strategy is dynamic in nature, with periodic revisions to reflect evolving market conditions, policy priorities, and investor appetite. The current framework particularly emphasises the use of Toll -Operate -Transfer (TOT) and Infrastructure Investment Trusts (InvITs) as the primary vehicles for monetisation, supported by supplementary mechanisms such as Operate -Maintain -Transfer (OMT) concessions and securitisation of toll receivables

Asset Monetisation Cycle



Source: Asset Monetisation NHAI Report, CRISIL Intelligence

This cycle not only ensures capital recycling but also embeds efficiency gains from private participation, thereby sustaining sectoral growth in the long term.

The National Highways Authority of India (NHAI) undertakes asset monetisation through three primary mechanisms: Toll-Operate-Transfer (TOT), Infrastructure Investment Trusts (InvITs), and Securitisation of Toll Revenues (project-based financing through Special Purpose Vehicles). Both TOT and InvITs involve the transfer of operational assets with established cash flows, thereby insulating investors from pre-construction and construction-related risks. However, concessionaires under these models remain responsible for operations and maintenance (O&M) obligations and are exposed to revenue risk linked to traffic performance.

Across these three mechanisms, the allocation of risks varies significantly across different stages of the project lifecycle including pre-construction, construction, financing, operations and maintenance, and revenue generation. The table below sets out the specific distinctions in risk-sharing under each monetisation model.

Key differences between ToT and InvIT

Metric	ToT	InvIT
Nature of Projects	Completed projects with adequate remaining design life to serve traffic	
Bidder / Investor Profile	Road infrastructure value chain players	Institutional and financial investors such as pension funds, sovereign wealth funds, and insurance companies
Nature of Mechanism	PPP operational + financing model for completed road assets of NHAI	Financial investment instrument regulated by SEBI
Nature of Agreement with NHAI	ToT agreement of bidder/consortium with NHAI	ToT, annuity and HAM agreement of SPV (InvIT subsidiary) with NHAI
Revenue Model	Toll collections through operation of the asset	Revenue from underlying asset is upstreamed net of costs (at SPV & InvIT level)
Monetization after how many years of concession	At the time of award of concession	After achieving after 1 year of operation post COD
Key benefit	Upfront revenue to government while the concessionaire gets rights over toll collection	Unlocking of equity by the Sponsor

Metric	ToT	InvIT
Nature of Projects	Completed projects with adequate remaining design life to serve traffic	
Investment Horizon	Ranges from 15 to 30 years	Depending on the asset's concession duration typically 20-30 years
Exit Options and Liquidity	Can exit 2 years post start of concession. Less liquid as compared to InvIT	1 year from the date of listing of units. Unit holders can exit any time excluding sponsor. Units can be sold to other investors, providing them with liquidity options through secondary market trading.
Control in Operation	High control over toll operations and collection process	Professionally managed through IM & PM team

Source: Asset Monetisation NHAI Report, CRISIL Intelligence

While TOT dominated the initial years, InvITs have gained prominence since Financial Year 2022, providing a stable platform for institutional investment. Project-Based Financing Consistently contributed a substantial share, complementing direct monetisation tools. The sharp rise in investment mobilisation reflects greater private sector appetite for operational highway assets and growing investor confidence in NHAI-led monetisation programmes. Over ₹1.1 trillion has been mobilised through these mechanisms till date, marking a significant shift in India's infrastructure financing strategy.

45. TOT

The Toll -Operate -Transfer (TOT) model was introduced by the National Highways Authority of India (NHAI) in 2016 as part of its asset monetisation programme. Unlike traditional PPP frameworks that focus on greenfield construction, TOT is designed specifically for the monetisation of brownfield highway assets that are already operational and generating toll revenues.

Under this model, NHAI bundles completed highway stretches and auctions them to private concessionaires for a fixed concession period, typically ranging between 20 to 30 years. The winning bidder pays an upfront lump sum amount to NHAI in exchange for the right to collect tolls and operate the stretches during the concession period. The capital thus mobilised is recycled into the development of new highway projects, reducing NHAI's dependence on budgetary support and borrowings.

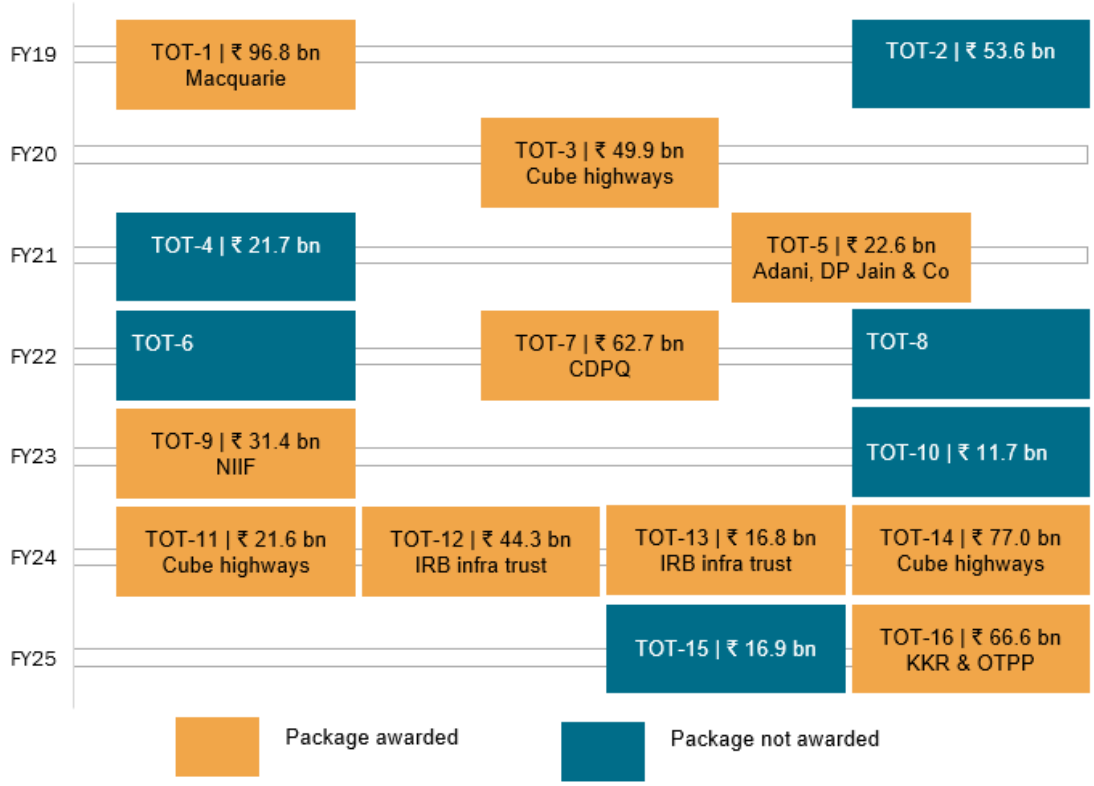
Key Features of TOT of road

- **Revenue Model:** Investors earn returns from toll collections on pre-constructed stretches, while bearing the risk of traffic performance and operational costs.
- **Risk Allocation:** Since assets are already operational, construction risk is eliminated. The concessionaire assumes traffic and O&M (operations & maintenance) risks, while regulatory risks remain under government oversight.
- **Investor Base**: The model has attracted not only domestic developers but also global institutional investors such as pension funds, sovereign wealth funds, and infrastructure investment funds, owing to its predictable cash flow profile.
- **Capital Recycling**: NHAI uses upfront proceeds from TOT to fund greenfield projects under flagship programmes like Bharatmala Pariyojana.

Since 2016, the TOT model has witnessed several successful asset monetisation rounds, with multiple bundles awarded to leading domestic and international investors. Early allocation includes TOT 1 and 2 allocated in Financial Year 2019 and Financial Year 2021 respectively.

Certain TOT bundles have been scrapped due to unattractive bids or strategic decisions by NHAI. Bundles 2, 4, 6 and 8 were cancelled in earlier bidding rounds, while TOT 10, despite attracting a record bid of ₹171 billion from Sekura Roads, was later withdrawn. These instances reflect the challenges of aligning investor expectations with NHAI's valuation benchmarks. Furthermore, Cube Highways emerged as the leading recipient, in terms of kilometers awarded, under the Toll-Operate-Transfer (TOT) scheme, securing a total of 839 km (566 + 84 + 189 km). This cumulative figure highlights the entity's strong interest in the sector. Furthermore, Cube Highways emerged as the leading recipient, in terms of kilometers awarded, under the Toll-Operate-Transfer (TOT) scheme, securing a total of 839 km. This cumulative figure highlights the entity's strong interest in the sector.

TOT bundle



Source: CRISIL Intelligence

Upcoming TOT bundles

Bundle	Road section	Length (Km)	Status
TOT 17	Kanpur-Lucknow-Ayodhya section and Ayodhya-Gorakhpur section in Uttar Pradesh	333.4	Bidding process in progress
TOT 18	Chandikhol-Bhadrak and Panikholi – Rimuli sections in Odissa	283.8	Bidding process in progress
TOT 19	Trichy – Thanjavur and Madurai – Tuticorin sections in Tamilnadu	184.5	Bidding process in progress
TOT 20	Muzaffarpur-Darbanga-Asanpur (NH-27, Bihar)	145.6	Proposal
TOT 21	Asanpur-Forbesganj-Purnea (NH-27, Bihar)	139.3	Proposal
TOT 22	Purnea-Dalkhola-Raiganj (NH-27, Bihar-West Bengal)	90.6	Proposal

Source: Government e-procurement system, CRISIL Intelligence

Overall, the TOT model has proven to be a vital instrument for unlocking value from operational highway assets while ensuring steady revenue inflows for NHAI. With leading investors such as Macquarie, Cube Highways (highest winner in terms of total km under ToT), Adani, IRB Infrastructure, and NIIF actively participating, and with a strong pipeline of projects under bidding and proposal stages, the model is poised to play a critical role in mobilising private capital and strengthening India's road infrastructure monetisation strategy.

All TOT bundle

Section	Location	Length (km)	Awarded Value (₹ Cr.)	Year of Concession Fee Realization	Concession Period (years)	Winning Bidder
TOT1	Andhra Pradesh and Gujrat	681	9682	FY 2018-19	30	Macquarie-Ashoka
TOT 3	Uttar Pradesh, Bihar, Jharkhand, and Tamil Nadu	566	5011	FY 2020-21	30	Cube Highways and Infrastructure Ltd
TOT 5 A-1	Gujarat	54	1011	FY 2021-22	20	Adani-Skylark
TOT 5 A-2	Gujarat	106	1251	FY 2022-23	20	D. P. Jain
TOT 7	Uttar Pradesh	135	6267	FY 2022-23	20	CDPQ, IIFL Trust
TOT 9	Uttar Pradesh	73	3144	FY 2022-23	20	NIIF

Section	Location	Length (km)	Awarded Value (₹ Cr.)	Year of Concession Fee Realization	Concession Period (years)	Winning Bidder
TOT 11	Uttar Pradesh	84	2156	FY 2023-24	20	Cube Highways and Infrastructure Ltd
TOT 12	Uttar Pradesh and Madhya Pradesh	316	4428	FY 2023-24	20	IRB Infrastructure Trust
TOT 13	Rajasthan, Uttar Pradesh and Madhya Pradesh	108	1683	FY 2023-24	20	IRB Infrastructure Trust
TOT 14	Delhi, Uttar Pradesh and Odisha	189	7701	FY 2023-24	20	Cube Highways and Infrastructure Ltd
TOT 15	Tamil Nadu	125	1682	FY 2025-26	20	Adani
TOT 16	Telangana	252	6661	FY 2024-25	20	Vertis Infrastructure Trust

Source: Government e-procurement system, CRISIL Intelligence

46. InvIT Model

The National Highways Authority of India (NHAI) has established an Infrastructure Investment Trust (InvIT) in accordance with the InvIT Regulations. NHAI holds a 11% stake in the InvIT, with primary investors such as CPPIB and OTPP also participating. The InvIT operates as a pooled investment vehicle, issuing units to investors and comprising three key entities: a Trustee, an Investment Manager, and a Project Manager. Each entity has distinct roles and responsibilities as defined by the SEBI Regulations.

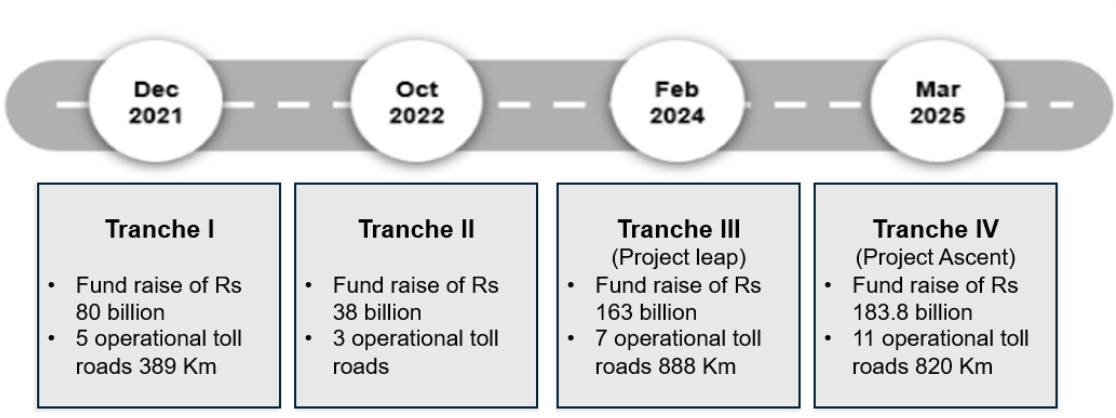
In an InvIT transaction, infrastructure asset owners transfer operational projects into Special Purpose Vehicles (SPVs), which are then placed under the trust. The trust issues units to investors, raising funds that are subsequently deployed towards the development and management of infrastructure assets. Investors receive returns in the form of periodic distributions generated by the underlying assets.

As of Financial Year 2025, there were 26 InvITs registered with SEBI, of which 15 were road InvITs. The number of road InvITs increased threefold in the last five Financial Years and more than doubled in the last three Financial Years.

Key Advantages of the InvIT Model

- **Unlocking capital:** Provides Developers with upfront resources by monetising operational projects.
- **Investor diversification**: Attracts long-term domestic and global investors seeking stable yields.
- **Operational efficiency:** Professional management enhances maintenance standards and project delivery.
- **Risk sharing:** Transfers traffic and operational risks to investors, while freeing Developers to focus on new infrastructure creation.

NHAI InvIT have raised total of ₹464 billion through 4 tranches until Financial Year 2025



Source: NHAI, CRISIL Intelligence

The National Highways Infra Trust (NHIT), an InvIT established by NHAI in 2020 to drive the Government of India's asset monetization programme, has successfully concluded its fourth fund-raising round at an enterprise value of

approximately ₹183.8 billion. This marks the largest monetization transaction in the Indian roads sector to date, taking the cumulative realized value across all four rounds to over ₹464 billion.

In this round, NHIT raised ₹83.4 billion in unit capital from prominent domestic and global investors and secured ₹100.4 billion in debt from domestic lenders. The proceeds will finance the acquisition of eleven key national highway stretches across Andhra Pradesh, Uttar Pradesh, Uttarakhand, Gujarat, and Chhattisgarh, with a total concession value of ₹177.4 billion. With this round, NHIT now manages a diversified portfolio of 26 operational toll roads (41 toll plazas), covering 2,345 km across 12 states, with concession periods ranging from 20 to 30 years. The success of this fundraising round demonstrates the confidence of investors in the Indian road sector and NHIT. It also highlights the government's efforts to monetise its infrastructure assets and attract private sector investment in the sector.

47. Outlook on Asset Monetisation of road projects

India's road infrastructure sector is one of the largest and fastest growing in the world, forming the backbone of national connectivity and economic development. Delivering such a vast and expanding network requires substantial and sustained investment, far exceeding the capacity of public budgets alone. Over the past two decades, the financing framework for road projects has evolved from traditional government funding to a diversified mix of public, private and blended mechanisms. This evolution has allowed the government to leverage private capital and expertise, introduce innovative risk-sharing arrangements, and accelerate project execution while maintaining Financial Year prudence. It has been central to achieving the scale, speed and quality of road development under flagship programmes such as the National Highways Development Project (NHDP) and Bharatmala Pariyojana.

Industry Expert projects that the monetisation potential for road assets is ~₹5.9 trillion until Financial Year 2030, nearly double of the ₹2.8 trillion proceeds from monetisation until Financial Year 2025.

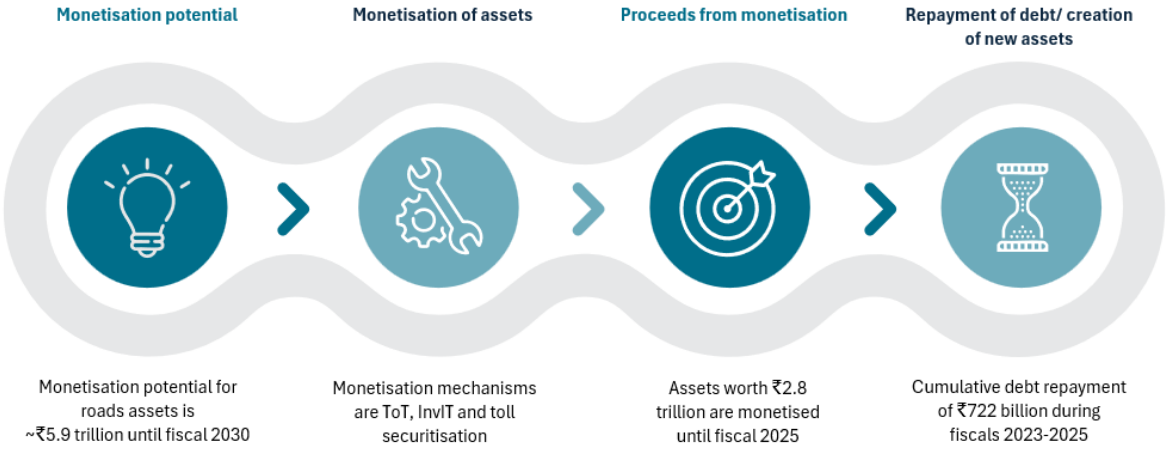
Asset monetisation, equity infusion key to support private investment in the long run

Currently, there are two broad drivers of asset sales in the roads sector - rationalisation of financial position to improve balance sheet strength and asset churning to be able to participate in the upcoming projects. The erstwhile major BOT players are selling off assets to reduce their debt burden and free up equity, which can be infused in under-execution projects.

In recent years, several investors and infrastructure developers have adopted a brownfield acquisition strategy to acquire operational or near-operational HAM road projects.

Acquisition of HAM projects through a brownfield strategy exemplifies a maturing Indian road sector where operational efficiency, risk mitigation, and capital recycling converge to support sustainable infrastructure development and private sector participation in the national asset monetization agenda.

Emergence of value unlocking through asset monetisation



Source: Crisil Intelligence

Road has been a frontrunner in asset monetisation

The road sector has emerged as a frontrunner in asset monetisation. So far, MoRTH has raised ₹2.8 trillion through various modes of asset monetisation, demonstrating the sector's potential to generate revenue through innovative financing models.

The funds raised till Financial Year 2025 are as follows:

- **Toll-operate-transfer (TOT) mode:** The ministry raised ₹490 billion through the TOT mode, which involves the transfer of toll collection rights to a private operator for a specified period.

- **InvIT listings of NHAI:** ₹436 billion was raised through the listing of Infrastructure Investment Trusts (InvITs) of the NHAI, which allows investments in a portfolio of infrastructure assets.

The success of asset monetisation in the road sector can be attributed to the government's efforts to create a favourable environment for private sector investment and participation. The use of innovative financing models such as TOT and InvITs has helped unlock the value of existing infrastructure assets and attract new investors to the sector.

The financing landscape for India's road infrastructure sector has matured from a predominantly budgetary model to a diversified portfolio of public, private and blended arrangements. Traditional government funding continues to play a critical role for rural and low-revenue roads, but newer structures such as BOT, HAM, TOT and InvITs have enabled the mobilisation of large volumes of private capital and improved efficiency in delivery. Each model offers a distinct balance of risk, reward and operational responsibility, allowing projects to be tailored to their traffic potential and financial viability. Going forward, maintaining this balanced mix while further refining contracts, expanding non-toll revenue sources and strengthening the capacity of developers and lenders will be essential to sustain rapid road development, attract long-term investment and ensure that India's highways meet the country's growing economic and mobility needs.

Future NHAI Pipeline of Asset for Monetization

The upcoming pipeline of road assets for monetization by NHAI represents a substantial pool of opportunities for investors, with 24 highway stretches spanning approximately 1,472 km across multiple states. This includes key corridors such as Muzaffarpur–Darbhanga–Purnia (Bihar, 288 km), Bilaspur–Pathrapali (Chhattisgarh, 127 km), Pipli–Bhavnagar (Gujarat, 208 km), and Four-laning of Sangli–Solapur (Maharashtra, 125 km). The portfolio also extends to strategic routes in Telangana, Odisha, Uttar Pradesh, and West Bengal, ensuring geographical diversity and robust asset quality.

This extensive pipeline signals an abundant supply of mature, revenue-generating road assets poised to enter the market through monetization modes such as TOT and InvITs. The scale and distribution of these projects underscore a sustained deal flow opportunity for institutional investors and infrastructure investment trusts (InvITs), enabling them to expand portfolios with operational, de-risked assets backed by long-term annuity streams and established traffic patterns.

The below list was published under the Asset monetisation report by NHAI for tentative plans to monetise assets under various modes of monetisation.

Future NHAI Pipeline of Asset for Monetization

S. No	Section	State	Length (km)
1	Muzaffarpur-Darbhanga-Purnia (OMT)	Bihar	288
2	Purnea-Dalkhola (Bihar)	Bihar	36
	Bihar Total		324
3	Bilaspur to Pathrapalli	Chhattisgarh	53
	Chattisgarh Total		53
4	6L of Gurgaon Sohna Pkg-II from existing Km 11.682 to existing Km 24.40	Haryana	86
	Haryana Total		86
5	Pipli Bhavnagar-Package 1 from km 136.025 to km 169.328	Gujarat	33
	Gujarat Total		33
6	Balance work of Ranchi-Mahulia Section of NH-33 from Km 217.300 (Chowka) to Km 233.350 (Saharbeda) (pkg-III)	Jharkhand	16
7	Balance work of Ranchi-Mahulia Section of NH-33 from Km 233.350 (Saharbeda) to Km 277.568 (Mahulia) (Package - IV)	Jharkhand	44
8	Gorhar - Barwa Adda	Jharkhand	79
9	Ranchi-Rargaon Section	Jharkhand	77
	Jharkhand Total		216
10	Gabbur - Devgiri	Karnataka	64
	Karnataka Total		64
11	Kalamassery-ICTT Vallarpadam (Kerala)	Kerala	17
	Asset Monetization Strategy for Roads Sector		

S. No	Section	State	Length (km)
Kerala Total			17
12	4L of Chikhli - Tarsod section of NH-6 from km 360.00 - km 422.700	Maharashtra	65
13	Aurangabad - Karodi km 290.00 - km 320.104 of NH 211 (New NH 52)	Maharashtra	30
14	Four Laning of Sangli - Solapur (Pkg I) [Sangli - Boragaon km 182.556 -km 224.00]	Maharashtra	41
15	Karodi-Telwadi	Maharashtra	56
16	Wardha - Butibori (Maharashtra)	Maharashtra	59
Maharashtra Total			252
17	Sunakhala - Bhubaneshwar	Odisha	77
Odisha Total			77
18	Hyderabad Yadgiri/Warangal	Telangana	65
19	Mancherial - Repellewada	Telangana	23
Telangana Total			89
20	Aligarh-Kanpur (Pkg II) [Bhadawas to Kalyanpur]	Uttar Pradesh	45
21	Four Laning of Sultanpur to Varanasi (PKG-II) [from Jaunpur (Km 209.230) to Varanasi (Km 272.590)]	Uttar Pradesh	63
22	Varanasi (Km 12.01) to Birnon (Km 84.160) [Varanasi - Gorakhpur] (PKG-II)	Uttar Pradesh	72
Uttar Pradesh Total			181
23	Balance Work for Raiganj Dalkola section from km 398.00 to km 452.700 (excl. Dalkola Bypass)	West Bengal	54
24	Salsabari-Assam/West Bengal Border (WB)	West Bengal	27
West Bengal Total			81
Grand Total			**1472**

Source: Asset Monetisation Report of NHAI, CRISIL Intelligence

NHAI focuses on clearing land acquisition issues

Historically, cess was allocated towards land acquisition expenditure incurred by the NHAI. After the enactment of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, the shortfall in funds to meet the expenditure widened. However, with the authority's focus on clearing these issues and on new greenfield alignments, the issues plaguing land acquisition have reduced.

In the Union Budget for Financial Year 2019, road cess was replaced by the Central Road and Infrastructure Fund (CRIF). Previously, road cess was split based on a fixed formula used and utilised for national highway construction, maintenance, railways, Pradhan Mantri Gram Sadak Yojana, etc. So far, there has been no change in the split. However, going forward, the share of cess for the roads sector could reduce given the increase in the overall scope from roads to roads and infrastructure, increasing dependence on borrowings.

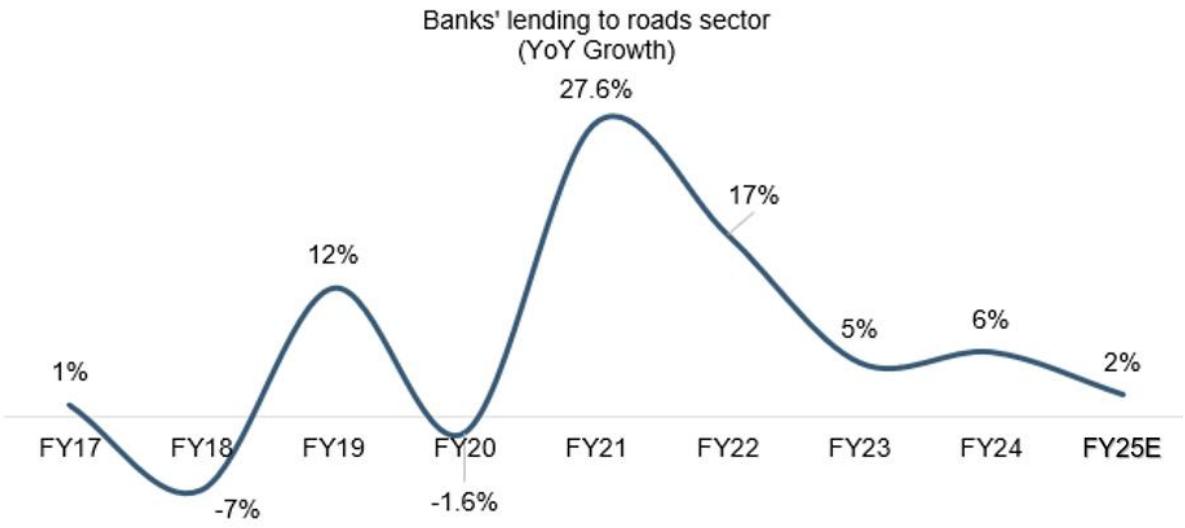
The compensation policy under the current land acquisition law requires the NHAI to pay four times the market value for rural land and two times for urban land. This and the new rehabilitation and resettlement Act have almost tripled land acquisition costs. In Financial Year 2014, the average cost for acquiring land was ₹9 million/ha. It increased to about ₹30-32 million/ha in Financial Year 2019 and declined to ₹24-25 million/ha in Financial Year 2020.

Improvement in bank credit growth led by higher HAM execution

After a dip in Financial Year 2020, bank lending to the roads sector surged through Financial Years 2022 and 2023, but momentum moderated thereafter, with Financial Year 2025 reflecting consolidation rather than acceleration; RBI's sectoral deployment releases for Financial Year 2025 show overall non-food credit growth easing to about 11–12% year-on-year, industry credit at roughly 6–7%, and an explicit deceleration within the infrastructure bucket even as construction within industry remained relatively firmer, implying that outstanding bank credit to roads expanded at a measured pace rather than the robust 17–27% increases seen in Financial Year 2022–Financial Year 2023; further, by December 2024 the exit rate for infrastructure was already soft at ~1% year-on-year and for roads at ~2.8%, setting a lower base that carried into Financial Year 2025, while the Economic Survey 2024-25 characterized bank credit growth as steady and converging with deposits rather than overheating, consistent with a more calibrated lending environment for roads and highways; in summary, as of end-Financial Year 2025, the sector's credit conditions remained supportive but normalized, with growth tempered by base effects and regulatory tightening compared to the post-pandemic rebound years

For projects that were awarded in Financial Year 2012, banks approved costs that were much higher than those approved by the National Highways Authority of India (NHAI). As a result of the problems faced in these projects, bankers are now very cautious while evaluating projects and are estimating project costs much closer to the NHAI estimates. They demand that at least 80% land acquisition should be completed, and all clearances must be obtained at the beginning. While this has increased the time taken by players to achieve financial closure, it will ensure participation only by serious players. However, viable projects and those that have not gone through aggressive bidding should achieve financial closure quite smoothly.

Bank credit growth to the roads sector moderated in Financial Year 2024 due to the high base



Source: RBI, CRISIL Intelligence

48. NHAI's Debt Position

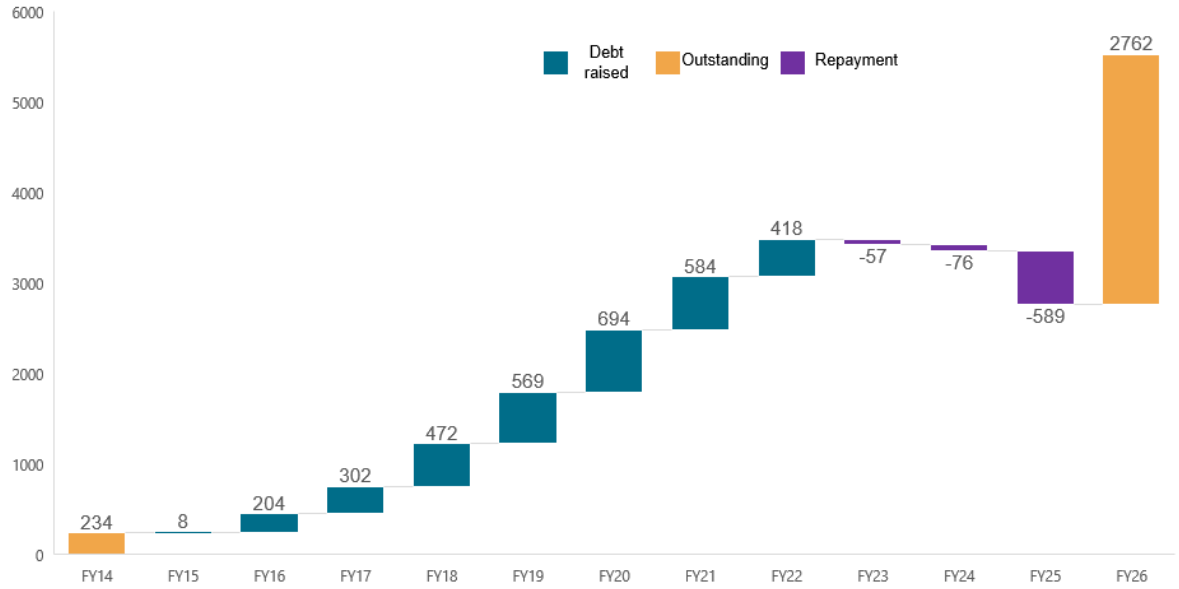
A striking trend is the increase in NHAI's outstanding debt over the last decade. From just ₹234 billion in Financial Year 202014, debt levels have surged to reach approximately ₹3.48 trillion in Financial Year 2022 and then reduced to ₹2.76 trillion in Financial Year 2025 with the help of asset monetization pipeline (TOT and InVITs). This steep rise highlights NHAI's growing reliance on borrowings to fund highway expansion, particularly in periods when budgetary support has stabilised.

The debt build-up has significant implications. While it has enabled accelerated project execution, high repayment obligations may constrain NHAI's financial flexibility. This makes asset monetisation tools such as the Toll -Operate -Transfer (TOT) model, InvITs, and securitisation critical for sustaining investment flows into the sector while reducing dependence on debt.

Implications

- Stable but plateauing GBS implies that while government funding remains substantial, additional growth will need to come from private and institutional investors.
- Elevated debt levels necessitate stronger monetisation efforts to recycle capital and reduce repayment pressures on NHAI.

NHAI debt *(₹ billion)*



Source: CRISIL Intelligence

Change in the Model Concession Agreement (MCA)

49. BOT (Toll)

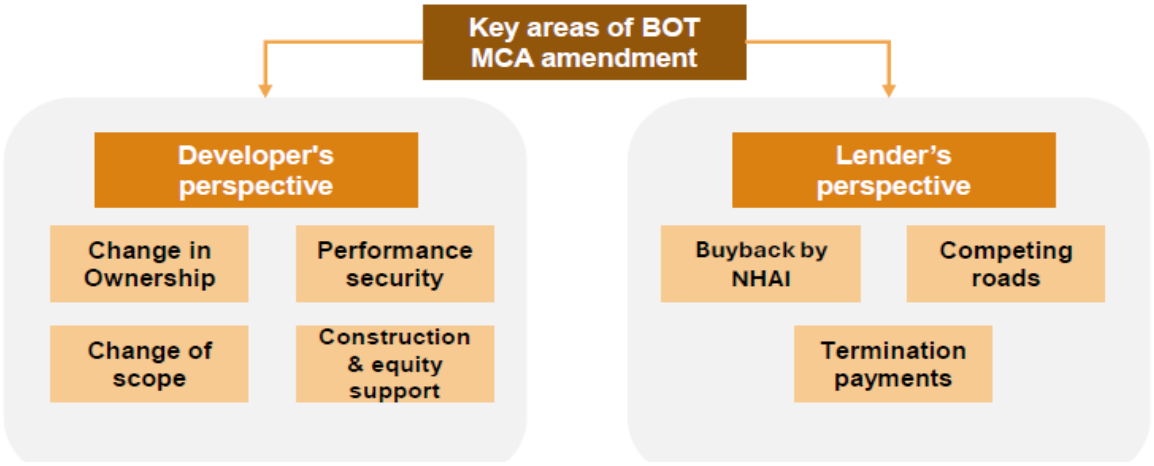
The government has introduced significant amendments to the MCA for BOT projects, aiming to address the concerns of large corporates, creating a lucrative investment environment for them in the road and highway sector.

Key amendments include:

Key Change	Old clause	New Clause	Impact
Change in Ownership	Each consortium member (whose credentials were used for bidding) had to hold 26% equity in the SPV during construction and 1 year after Punch List completion.	Each such member must: (a) Hold 26% equity, with a minimum of 5% of Total Project Cost, and (b) The 1-year lock-in excludes delays in Punch List completion caused by NHAI or govt. authorities.	More practical lock-in requirements; enables smoother exits and reduces developer burden from NHAI-related delays.
Performance security	Only bank guarantee accepted as performance security; Amount = 5% of Total Project Cost + estimated 12 months' toll revenue.	Multiple forms allowed: insurance surety bond, demand draft, banker's cheque, or e-bank guarantee from approved banks; Amount reduced to 3% of Estimated Project Cost (as per RFP).	Eases financial burden on developers; enhances flexibility in providing security; lowers entry cost and improves participation.
Change of scope	NHAI could initiate only additional work as change of scope; Concessionaire needed to submit preliminary documents with implementation options.	NHAI can now also modify existing scope; Concessionaire must submit a detailed proposal with: (i) Quantity, rate, cost breakdown; (ii) Proposed design changes; (iii) Timeline revisions.	Brings clarity and structure to scope changes; reduces ambiguity and potential disputes; supports better project planning and control.
Construction and equity support	Only equity support was available; Capped at 10% of Total Project Cost.	Introduced construction support disbursed in 10 equal instalments during construction, linked to physical progress; Both equity and construction support together capped at 40% of Total Project Cost;	Improves liquidity during construction phase; reduces developer funding pressure; ensures better project execution and risk-sharing
Buyback by NHAI	If traffic exceeded design capacity in any financial year, it was treated as an Indirect Political Event; Termination required specific payment as per MCA provisions.	NHAI can now buy back the project if average daily traffic reaches design capacity in 2 out of 3 years; Compensation = Higher of • 80% × (avg. monthly fee × 75% of remaining period) • After deducting major maintenance cost.	Provides clear exit option in high-traffic scenarios; ensures fair compensation and reduces uncertainty for concessionaires

Key Change	Old clause	New Clause	Impact
Competing roads	NHAI/government could not build a Competing Road within 10 years of Appointed Date, unless traffic exceeded 90% of design capacity; If breached, NHAI had to compensate the concessionaire.	In case of breach, NHAI must now also extend the concession period; Compensation + extension together are considered a full remedy.	Stronger protection for traffic and revenue; ensures more balanced risk-sharing between NHAI and developers.
Termination payments	No termination payment for concessionaire default before Project Completion Date; NHAI's liability capped at 100% of Total Project Cost.	No payment if physical progress < 40% before COD; If progress > 40%, payment includes Debt Due and costs beyond 40% of Total Project Cost; NHAI's liability limit increased to 115% of Total Project Cost.	Clarifies payment conditions based on project progress; improves financial protection for developers in partial default cases.

MCA amendments in BOT to address concerns of developers and lenders in past



Source: CRISIL Intelligence

The government is set to introduce additional changes to the BOT concession agreement for greenfield highways in Financial Year 2026, aiming to reduce disputes and boost private sector investment in the sector. The proposed reforms are a follow-up to the amendments made in Financial Year 2025, which were designed to make the BOT model more lucrative to large corporates.

One of the key amendments is to mandate that all pre-construction activities be completed before issuing the Letter of Award. The move is expected to reduce the risk of potential delays and disputes during the construction phase and provide a more stable environment for private sector investors. The government has also announced plans to create a long-term project pipeline of 53 highway projects worth ₹2.1 trillion under the BOT model. The pipeline is expected to provide a steady stream of investment opportunities for private sector players and help boost economic growth.

Further, government is finalizing a revamped Model Concession Agreement (MCA) for BOT (Toll) highway projects by the end of 2025 to revive private participation and reduce disputes. The new framework will eliminate the concept of competing roads, which often caused revenue losses and legal challenges for concessionaires, thereby reducing traffic-related risks. It will also ensure that all requisite approvals, including land acquisition and forest or wildlife clearances, are secured before bidding, so projects are awarded only when they are fully ready for construction. Additionally, the revised MCA will link key contract parameters such as concession period extensions, compensation, and termination terms directly to actual traffic performance, creating a more transparent and equitable risk-sharing mechanism. Overall, these reforms aim to make the BOT (Toll) model more bankable, predictable, and investor-friendly, restoring confidence among private developers in long-term highway concessions.

50. HAM

HAM assets with NHAI as the counter-party typically have a concession period of 15 years following the commercial operations date. The contracted revenue from HAM assets provides a hedge and eliminates risks associated with fluctuations in traffic volumes, and the income of such assets is also largely protected against changes in inflation and interest rates. Typically, in addition to annuity receipts under the respective concession agreements during the operations period and O&M payments, NHAI must pay interest on the reducing balance of the completion cost (equivalent to 60% of the bid project cost and subject to concession agreement defined escalation provisions) throughout the operational period. This interest is calculated at either 3% above the applicable RBI bank rate, or 1.25% above the average MCLR of five banks, depending on the vintage of the bid. As a result, any rise in floating interest loan rates due to an increase in the bank rate is partially offset by higher interest revenues from NHAI on the reducing

completion cost. This structure within the concession agreements substantially mitigates interest rate risk for HAM assets, providing greater financial predictability and stability

The Hybrid Annuity Model (HAM) has undergone significant changes, as outlined in the HAM MCA 2022. Key changes include the change in timing of premium payment, redefinition of project milestones, and interest on annuity payments linked to the average one-year MCLR of the top five scheduled commercial banks +1.25%. Additionally, lenders will receive the first charge on all receivables, and there will be deemed termination of projects prior to the appointed date. The model also includes maintenance obligations and toll fee notifications. These changes aim to improve private participation and project awards in the road sector.

MCA amendments in HAM model

MCA Amendments	Old Clause	Revised Clause	Impact
Annuity Payments	Interest on annuity payment linked to RBI determined Bank Rate +3%	Interest on annuity payment linked to average of one-year MCLR of top five Scheduled Commercial Banks + 1.25%.	Differential between cost of borrowing and interest on annuity is reduced, preventing erosion of developers' returns due to RBI repo rate changes.
Milestone Payments	5 instalments, each equal to 8% of the Bid Project Cost.	10 instalments, each equal to 4% of the Bid Project Cost.	Quicker payments help developers' liquidity.
Change in ownership	Original sponsor/concessionaire shall hold at least 26% of equity during construction period and 2 years thereafter.	Original sponsor/concessionaire shall hold at least 26% of equity during construction period and *6 months thereafter*.	Quicker stake sell-off would ease developers' balance sheets, enabling room for new projects.
Financial Closure	No clarity on amount for Financial Closure.	FC to be undertaken for an amount not lower than either: 1. Total Project Cost (60% of BPC), or 2. 10% less than (Estimated Project Cost minus 40% of Bid Project Cost).	Would likely prevent termination of projects due to inadequate financing.
Dispute resolution board	In case of a dispute, either party may call upon the Independent Engineer to mediate.	Failing mediation by the IE, either party may require such dispute to be referred to the *Dispute Resolution Board (DRB)*.	Quicker dispute-resolution mechanism to prevent stuck projects.
Others	Interest on mobilization advance linked to bank rate. Termination payments based on previous milestone payments.	Interest on mobilization advance linked to MCLR. Termination payments based on new milestone payments.	N/A

Source: CRISIL Intelligence

The HAM model is expected to have a positive impact on the road sector, as it eliminates traffic risk and provides stable cash flows to developers. This, in turn, will ensure timely debt servicing for bankers. The model shifts the traffic risk from the concessionaires to the NHAI, with developers receiving fixed annuities based on predetermined schedules. This will make debt servicing easier, especially during the initial years of the concession period. The elimination of traffic risk is a significant positive, given the past experiences of road developers where actual base traffic and traffic growth were significantly lower than estimated.

This model also mitigates cost overrun risks by linking construction and maintenance costs to inflation and ensuring the timely availability of land. In the past, cost overruns had a significant impact on project returns, with a 10% increase in cost lowering project returns by ~100 basis points. To address this issue, the government has linked construction, operation, and maintenance costs to inflation. Additionally, projects are now awarded only after 80% of the land required is in possession of the awarding agency, reducing delays in land acquisition.

The HAM model has several benefits, including lower equity contribution requirements, which will increase private players' ability to bid for projects. With the government incurring 40% of the project cost, the HAM calls for lower equity contribution from developers (~15%, compared with ~25% for BOT-toll projects). This is beneficial, given the current weak financial position of road developers. The model also reduces developers' interest rate risk, as interest rate payments are linked to the average one-year MCLR of the top five scheduled commercial banks +1.25%. This significantly lowers the risk for the developer in terms of interest rate volatility.

It is expected to attract private players due to its low-risk nature and lower capital requirements. The model is also expected to boost private investments in national highways over the next five years. Despite initial delays in land

acquisition and caution shown by lenders, the HAM has seen increased participation in awarding, with a total of 6,306 km awarded in Financial Year 2022, of which ~3,468 km was under the HAM. The share of private investment is expected to increase, driven by the changes to the HAM bid eligibility and MCA changes. The HAM roads awarding in Financial Year 2024 and Financial Year 2025 was 654 km and 264 km respectively.

51. TOT

Key amendments in TOT MCA, 2024 are as follows:

Key Change	Past Clause	Change	Impact
Inclusion of Expressways	The earlier MCA applied only to *National Highways* entrusted to NHAI.	The revised MCA now explicitly includes *Expressways* along with National Highways.	Broadens the TOT framework to cover higher-speed corridors, expanding asset monetization opportunities.
Refined Capacity Augmentation Criteria	Capacity augmentation was triggered when traffic exceeded the "Target Traffic" for three consecutive years.	Now, augmentation is assessed for *homogeneous/tollable sections* using updated IRC standards and ETC-based traffic data.	Introduces more accurate, data-driven triggers and aligns augmentation with modern traffic monitoring systems.
Detailed DPR Preparation Process	DPR preparation guidelines were generic and not linked to digital or section-specific data.	The new MCA mandates DPRs based on *ETC data* and *IRC norms* for individual tollable sections.	Ensures technical consistency and transparent cost estimation for expansion works.
Concessionaire's Right to Match EPC Bid	The concessionaire had a general right to match the first-ranked EPC bid for augmentation works.	The clause is now refined with clear eligibility criteria, technical capability, and transparent bid evaluation steps.	Enhances fairness and competitive parity while safeguarding the concessionaire's first right of refusal.
Maintenance & Support Obligations During Augmentation	Concessionaire's role during EPC works was vaguely defined, leading to operational overlaps.	The amendment specifies obligations for *maintenance, diversions, and coordination* during construction.	Clearly divides operational responsibilities, ensuring uninterrupted road safety and user convenience.
Defect Liability and Repair Responsibilities	EPC contractor's defect liability period and repair procedures were outlined but lacked clarity on enforcement.	The revision strengthens the defect liability duration (approx. 4 years) and authority's power to recover costs for delayed repairs.	Improves accountability for post-construction quality and timely rectification of defects.
Compensation for Toll Reduction During Augmentation	There was no specific provision for financial relief if toll rates were reduced during augmentation.	The revised MCA introduces *quarterly compensation* for concessionaires facing revenue loss from temporary toll reductions.	Provides financial stability and investor confidence during major maintenance or expansion activities.
Adjustment for Change in Tollable Length	The MCA lacked a clear mechanism for adjusting revenues when the tollable stretch changed.	A new formula determines gain or loss sharing between Authority and Concessionaire based on *Equivalent Tollable Length*.	Establishes transparent and equitable financial treatment for changes in highway length.
New Definition: "Equivalent Tollable Length	No such term existed; toll revenue was tied to physical road length alone.	The new definition, added in *Schedule M*, accounts for partial sections or multi-lane variations to calculate tollable units.	Creates a standardized measure for revenue assessment and compensation adjustments.
Deletion of Return Pass/Discounted Ticket Clause	Concessionaires were required to offer *return passes* (150% of one-way rate) and multi-trip discounts.	The entire clause has been deleted, removing mandatory fare concessions.	Simplifies toll management and increases revenue efficiency for operators.
Toll Collection and Anti-Evasion Clarification	Earlier wording allowed ambiguity around distance-based tolling and placement of anti-evasion booths.	Reaffirms a *10 km limit* between plazas and clarifies the right to set up booths for toll evasion prevention.	Strengthens toll compliance mechanisms and reduces leakages in revenue collection.
Traffic Measurement Modernization	Traffic reconciliation relied mainly on manual sampling and periodic audits	Introduces electronic systems and *ETC counters* for continuous, data-backed traffic verification.	Enhances transparency, accuracy, and trust in reported toll traffic data.

Key Change	Past Clause	Change	Impact
Local Content Requirement	No clause existed mandating the use of domestic materials or compliance with procurement rules.	New clause (5.8) requires adherence to *DPIIT/GFR guidelines* for local content ("Make in India").	Promotes domestic industry participation and aligns TOT projects with national procurement policies.

Source: TOT MCA document, MoRTH, CRISIL Intelligence

Investments in National Highways: Review and outlook

52. National highways investment

Investment in India's National Highways sector has seen a consistent and significant upward trajectory over the past decade, reflecting the government's strong focus on strengthening road infrastructure to support economic growth. Estimated investments rose sharply from ₹241 billion in Financial Year 2015-2016 to ₹1,426 billion in Financial Year 2022-23. This momentum has continued, with investments crossing ₹1,661 billion in Financial Year 2023-24, marking a nearly sevenfold increase compared to 2015-16 levels.

The trend further projects sustained growth, with estimated investments reaching between ₹1,650–1,750 billion in Financial Year 2024-25 and expected to rise further to ₹1,750–1,850 billion by Financial Year 2025-26. This rising allocation underscores the government's commitment under initiatives like Bharatmala Pariyojana and Vision 2047 to expand and modernize the national highway network.

The Cabinet Committee on Economic Affairs (CCEA) has granted approval for the development of eight important National High Speed Corridor projects. These projects cover a total length of 936 km and are estimated to cost ₹506.55 billion across the country. The specific corridors approved include the 6-Lane Agra - Gwalior National High-Speed Corridor, the 4-Lane Kharagpur - Moregram National High-Speed Corridor, and the 6-Lane Tharad - Deesa - Mehsana - Ahmedabad National High-Speed Corridor. Other key projects are the 4-Lane Ayodhya Ring Road, the 4-Lane Section between Pathalgaon and Gumla of Raipur-Ranchi National Highspeed Corridor, the 6-Lane Kanpur Ring Road, the 4-Lane Northern Guwahati Bypass and Widening/Improvement of Existing Guwahati Bypass, and the 8-Lane Elevated Nashik Phata - Khed Corridor near Pune.

Bharatmala Pariyojana (BMP), an umbrella project of the central government since 2015, aims to improve efficiency in the roads sector. It is expected to supersede the NHDP and envisages the construction of 65,000 km of highways under the national corridor (north-south, east-west, and golden quadrilateral), economic corridor, inter-corridor roads, and feeder roads categories. As per the ministry's announcements in 2017, Bharatmala, along with the other schemes being undertaken, was estimated to have required a total outlay of ₹6,900,000 million.

Total aggregate length of 26,425 km with a total capital cost of ₹8.54 trillion have been approved and awarded till date under Bharatmala Pariyojana (including 6,758 km length of residual NHDP). No further projects are now being taken up under Bharatmala Pariyojana. The status of various components of Bharatmala Pariyojana as on 31st December 2024 is as given below.

Status of Bharatmala Pariyojana

Components	Length awarded (in km)	Total Length Completed (in Km)	% completed
Economic Corridors	8,737	5,986	69%
Inter-Corridors Roads	2,889	2,108	73%
Feeder Roads	973	540	55%
National Corridors	1,777	1,394	78%
National Corridors Efficiency Improvement	824	732	89%
Expressways	2,422	1,791	74%
Border Roads & International Connectivity Roads	1,619	1,400	86%
Coastal Roads	77	72	94%
Port Connectivity Roads	348	120	34%
Balance Road Works under NHDP	6,758	5,058	75%
Total- Bharatmala	**26,425**	**19,201**	**73%**

Note: Details as of 31st Dec 2024
Source: MoRTH 2024-25, CRISIL Intelligence

The long-term policy roadmap is guided by Vision 2047, formulated by MoRTH in alignment with the Viksit Bharat aspirations. The plan envisages the development of 50,000 km of high-speed corridors (HSCs) by 2040, expanding

further to 200,000-230,000 km by 2047, thereby creating a seamless and efficient national road network. This is expected to significantly reduce logistics costs, improve competitiveness, and support India's transition into a developed economy.

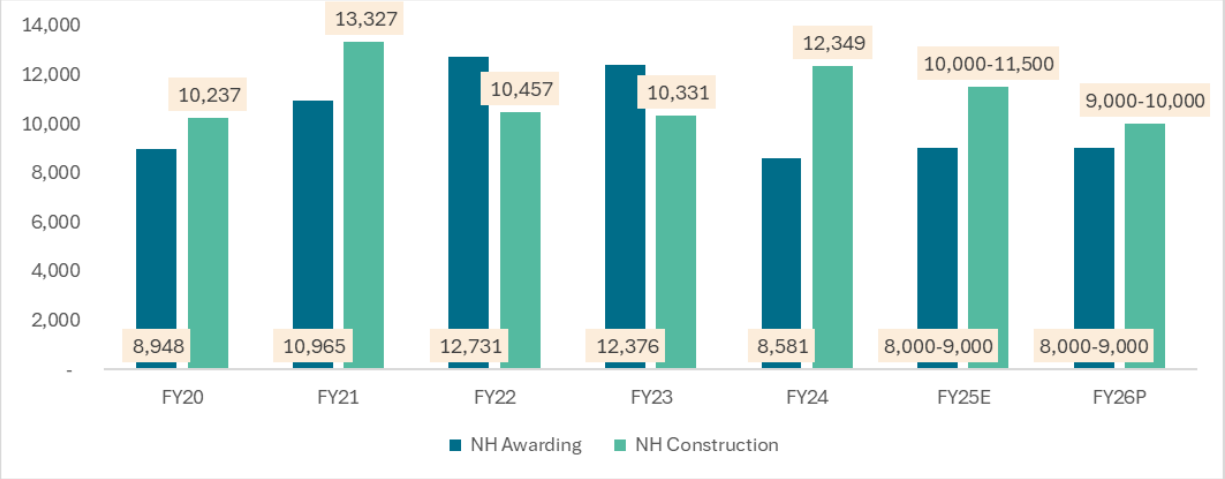
53. Length of National Highways

The awarding and construction of National Highways (NH) has witnessed significant momentum over the past five years, reflecting strong government commitment and robust implementation capacity.

In Financial Year 2020, a total of 8,948 km of highways were awarded, while 10,237 km were constructed. Awards rose sharply in Financial Year 2021 to 10,965 km, accompanied by construction of 13,327 km, the highest in the observed period. This surge was supported by policy reforms, streamlined approvals, and the accelerated push under Bharatmala Pariyojana. In Financial Year 2022, awards further increased to 12,731 km, while construction moderated to 10,457 km, marking a reversal in the award-construction balance. This trend continued into Financial Year 2023, where 12,376 km were awarded compared to 10,331 km constructed. The higher rate of awards relative to construction in these two years has contributed to building a healthy execution pipeline.

By Financial Year 2024, however, there was a slowdown in awarding, with only 8,581 km awarded against 12,349 km constructed. This indicates a phase of consolidation where focus shifted towards executing previously awarded projects rather than aggressively announcing new ones. For Financial Year 2025 (estimates), NHAI is expected to award 8,000 -9,000 km, with construction targeted at 10,000 -11,500 km. Similarly, in Financial Year 2026 (projections), awards are expected to stabilise at 8,000 -9,000 km, while construction is projected at 9,000 -10,000 km. These projections highlight the government's focus on sustaining annual construction at around 10,000 km per year, in line with medium-term policy targets.

Total length of National Highways constructed/ upgraded (km) by NHAI

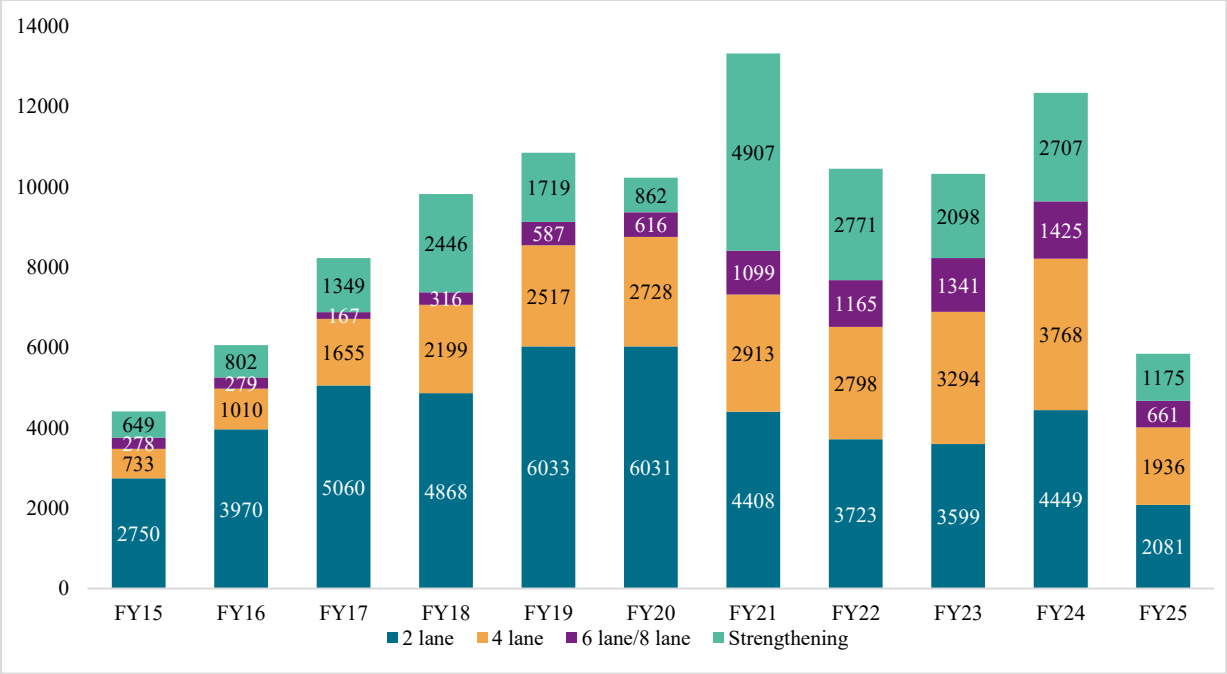


Source: NHAI, CRISIL Intelligence

54. Length of highway over the decade

The awarding and construction trends highlight a strategic shift: while the earlier years focused on aggressive project announcements, recent years indicate a balance between awarding and execution, ensuring that the pace of construction remains steady and aligned with long-term targets.

Length of National Highway Lane increase (in km)



Note: Data of Financial Year 2025 is till 31st December 2024
Source: MoRTH Annual Report 2024-25, CRISIL Intelligence

55. Few HAM projects terminated due to land acquisition issues

Even though execution of HAM contracts has picked up, delays with regard to appointed date persists. In fact, a few of these projects have also been terminated.

Terminated HAM projects

Name of asset	Concessionaire	Termination effective
Vizag Port road	Sadbhav Infrastructure	Jul-2019
Meensurutti to Chidambaram	KNR Construction	Apr-2019
Puducherry-Poondiyankuppam Highway	IRB Infrastructure	Nov-2019
Poondiyankuppam-Sattanathapuram	IRB Infrastructure	Nov-2019

Source: Company report, CRISIL Intelligence

Upcoming MoRTH Projects Pipeline

Sr No.	Project Name	Tentative mode	Location	Total Project Cost (In ₹ billion)
1	Greenfield Development, Maintenance and Management of a new alignment of National Highway-06 from Mawlyngkhung in Meghalaya (from 61.8 km on existing NH06) to Panchgram in Assam (to 197.4 km on the existing NH06) by 4 laning with paved shoulders.	-	Meghalaya	248.0
2	Considering the revalidation of the revised cost of the Development, Maintenance and Management of the New NH-06 from Existing 61.8KM, Mawlyngkhung (Barapani Near Shillong in Meghalaya) to existing Km.197.40 New NH-06 (Panchgram in Assam) in the State of Meghalaya and Assam by 4-Laning with paved Shoulder on Hybrid Annuity Mode (HAM) Basis under Public-Private Partnership (PPP) Mode reg: -	HAM	Meghalaya	228.6
3	Construction of Six lane access-controlled Greenfield Expressway from Km 0.000 to Km 213.803 (Tharad to Ahmedabad-Design length 213.803 km) in 6 packages under Bharatmala Pariyojana in the State of Gujarat on Hybrid Annuity Mode.	HAM	Gujarat	105.8

Sr No.	Project Name	Tentative mode	Location	Total Project Cost (In ₹ billion)
4	Four-lane STRR, NH948A - Obalapura to S.Mudugadapalli in Karnataka & Tamil Nadu on HAM.	HAM	Karnataka	88.3
5	Development of 8- Lane Elevated Flyover at Tier 1 on Single Pier including upgradation of Existing Road to 4/6 Lane with 2 Lane Service Road on both sides of Nashik Phata to Khed section of NH-60 in the state of Maharashtra under NH(O) Projects on Build, Operate and Transfer (BOT) Mode.	BOT	Maharashtra	78.1
6	Construction of Guwahati Ring Road in the state of Assam on DBFOT (Toll)	DBFOT	Assam	57.3
7	Development of 4-lane Access Controlled Sirhind - Sehna section of NH205AG in the State of Punjab under NH(O) on Hybrid Annuity Mode (Package I & II)	HAM	Punjab	50.8
8	Six lane Acess Control Greenfield Capital Region Ring Road Bhubaneshwar Bypass from Rameshwar to Tangi in the state of Odisha on HAM	HAM	Odisha	49.5
9	Development of 4-lane access-controlled Pathalgaon-Kunkuri-CG/JH border-Gumla-Bharda section as part of Raipur-Dhanbad Economic Corridor under Bharatmala Pariyojana in the state of Chhattisgarh and Jharkhand on HAM model	HAM	Jharkhand	44.7
10	Four-lane, Badvel to Nellore section of NH-67 in the state of Andhra Pradesh on HAM	HAM	Andhra Pradesh	43.8
11	Development of 6 lane access-controlled Agra-Gwalior greenfield highway in the state of Uttar Pradesh, Rajasthan and Madhya Pradesh on BOT(Toll) Mode	BOT	Uttar Pradesh	42.6
12	Six-Lane Greenfield Highway from Pagote to Chowk of NH 348B in Maharashtra on Built Operate Transfer (BOT) mode.	BOT	Maharashtra	36.5
13	Revalidation of the proposal, Development of 4-lane from Badvel to Nellore (Guruvindapudi Vilage on NH-16) in the State of Andhra Pradesh on Built Operate Transfer (BOT) Toll mode.	BOT	Andhra Pradesh	28.4
14	4 laning of NH-167 from Gudebellur to Mahabubnagar of Hyderabad- Panaji section under NH(O) on HAM in the State of Telangana	HAM	Telangana	25.7
15	Development of 4-lane Access Controlled Marakkanam to Puducherry of NH332A in the State of Tamil Nadu under NH(O) on Hybrid Annuity Mode (Package - III).	HAM	Tamil Nadu	21.6
16	Six-lane Zirakpur Bypass in the state of Punjab & Haryana on Hybrid Annuity Mode	HAM	Punjab	18.8
17	Four-lane, Parmakudi to Ramanathapuram Section of NH-87 in the state of Tamil Nadu on HAM	HAM	Tamil Nadu	18.5
18	Development of Multi Modal Logistics Parks MMLP at Pune Maharashtra	-	Maharashtra	13.6

Sr No.	Project Name	Tentative mode	Location	Total Project Cost (In ₹ billion)
19	Development of 4 lane access-controlled Economic Corridor from Kharagpur to Moregram Section Km 0.000 to Km 230.957 of NH 116A divided into 5 packages in the state of West Bengal under Bharatmala Pariyojana on HAM model	HAM	West Bengal	10.2
20	Four-lane, Parmakudi to Ramanathapuram Section of NH-87 in the state of Tamil Nadu on HAM	HAM	Tamil Nadu	0.3
21	Construction of Access Controlled Highway of 4-Lane with Paved Shoulders from Ranganathpura (Hassan) to Keresooragondanahalli in Hassan Hiriyur section (EC-20) in Karnataka on HAM under NH (O).	HAM	Karnataka	0.3
22	Six-lane Access Control Greenfield Capital Region Ring Road (Bhubaneswar Bypass) from Rameshwar to Tangi in the State of Odisha on HAM	HAM	Odisha	Not Available
23	Two-lane with Paved shoulder from Basnaghat (Morigaon) to Bhuragaon (in Darrang district) including new 2 lane Major Bridge over river Brahmaputra in the State of Assam on HAM	HAM	Assam	Not Available
24	Four-Lane Patna - Arrah - Sasaram Access Controlled Greenfield Corridor' as a new National Highway NH-119A on Hybrid Annuity Model (HAM)	HAM	Bihar	Not Available
25	4 Laning of Rajapalayam to Shenkottai Section of NH-744 from Km 71+600 to Km 139+900 (Design Chainage) in Tamil Nadu on Hybrid Annuity Mode (Project Length-68.3Km)	HAM	Tamil Nadu	Not Available

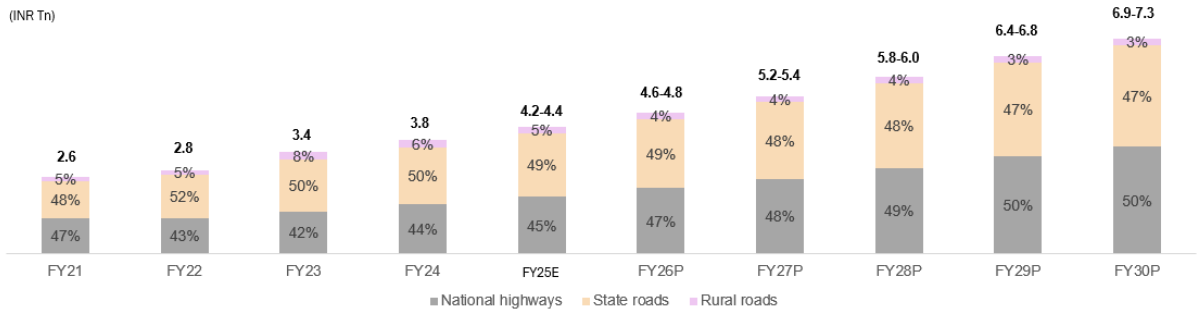
Source: PPP in India website, Department of Economic Affairs, Crisil Intelligence

56. National highway capex to grow by 15-20% driven primarily by increased execution

Overall road sector capex, comprising of National Highways, State Highways & rural roads is estimated to have grown at a CAGR of 13.4 % between Financial Years 2021 & 2025. This growth, driven by Bharatmala and increased state spends on roads has been achieved despite brief hiccups such as the pandemic and hampered construction due to elongated monsoons. The outlook of the sector also remains firm supported by higher awarding of previous Financial Years, Bharatmala, NIP pipeline of DPR ready projects and steady state capex.

The national highway segment contributes around 49% of the overall capex in Financial Year 2025. While the execution remained flattish in Financial Year 2023 vis-à-vis Financial Year 2022, capex grew by 18.6% due to a rise in construction of high value projects and high commodity prices. In Financial Year 2025 capital expenditure increased by around 18.4% as compared to previous Financial Year. In Financial Year 2025, state spends grew by 13.4 % and their percentage of budgetary allocations are expected to be largely in line with historical average.

Momentum to continue, supported by Bharatmala and NIP pipeline



Source: State budget documents, CRISIL Intelligence

57. Implementation of Fastag

FASTag has significantly reduced toll violations and collection costs by shifting payments from manual cash handling to authenticated, RFID-based electronic transactions that settle through a centralized clearing system, which curbs pilferage, minimizes human error, and creates an auditable trail for every vehicle crossing. With adoption above 90% and record daily collections after the mandate, plazas process more vehicles per lane with shorter queues, lowering staffing needs, cash logistics, and dispute-management overheads while improving realization per vehicle and investor confidence in toll cash flows. Automated vehicle recognition and balance checks deter barrier breaches and intentional non-payment, and the steady rise in electronic transaction volumes and collections after rollout reflects tighter compliance, faster throughput, and lower leakage across the network.

58. Outlook of toll collection and remittance on national highways

As per IHMCL data, the electronic toll collection on national highways is estimated to have reached ~₹496.89 billion in the Financial Year 2024. Further, toll collections are expected to grow at a CAGR of 9.5-10.0% between Financial Year years 2023 and 2028 on a like-to-like basis and to grow at 18-19% considering new road additions and subsequent tolling on them over the same period. The growth will be driven by factors such as improvement in overall economic activity, efficiency gains due to removal of check posts post implementation of GST, increase in both passenger and commercial vehicles, strong execution pipeline of road and highway projects, better compliance and blocking of leakages due to electronic toll collection.

Key transactions in road sector

Over the past three years, India's roads and highways sector has witnessed sustained and large-scale transaction activity, reflecting strong investor confidence in operational road assets. Across Financial Year 2023-Financial Year 2025 period, transactions exceeding ~₹350-400 billion, driven by platform-level acquisitions, InvIT buyouts, NHAI asset monetisation, and consolidation by large global investors. This underscores the size, depth, and maturity of India's road monetisation ecosystem. Combined with the upcoming Bharatmala pipeline, it demonstrates that the roads sector presents one of the largest investment opportunities in India's infrastructure landscape. Continued capital recycling, InvIT expansions, and global investor participation will keep transaction activity robust in the foreseeable future.

Recent key asset sales and private equity transactions

Date	Target	Buyer	Seller	Deal value (₹ million)	% sought
Sep-2025	Five BOT toll road SPVs of Ashoka Concessions: Bhandara, Durg, Belgaum-Dharwad, Dhankuni - Kharagpur	Maple Infrastructure Trust	Ashoka Concessions Ltd	45,000	100%
June-2025	Quazigund Expressway and Athang Jammu Udhamour Highway	Cube Highways InvIT	NIIF	4,185	100%
Mar-2025	Two operational NHAI HAM road SPVs on Delhi-Amritsar-Katra corridor	Neo Infrastructure Income	CDS Infra Projects Ltd.	15,000	100%
Jan-2025	11 HAM road projects	EAAA Alternatives	Ashoka Buidcon Ltd	23,240	NA
Apr-2024	Entire equity stake in L&T IDPL	EAAA/Sekura	L&T	60,000	100%

Date	Target	Buyer	Seller	Deal value (₹ million)	% sought
Mar-2024	IRB Infrastructure Trust 24% stake	Cintra InvIT Investment	GIC affiliates	65,900	24%
Jan-2024	Portfolio of 11 HAM & 1 BOT (UPSHA)	Vertis Infrastructure Trust	PNC Infrastructure	90,057	100%
Sep-2023	Four road SPVs	KKR	Macquarie	30,000	NA
May-2023	Four HAM projects	Vertis Infrastructure Trust	HG Infra Engineering Ltd.	13,940	100%
Apr-2023	Kundapur-Surathkal section (90.1 km road project in Karnataka, comprising 74.8 km Kundapur-Surathkal section and 15.3 km Mangaluru-Kerala border section	Vertis Infrastructure Trust	Navayuga Udupi Tollways	9,240	NA
Apr-2023	Baharampore-Farakka Highways Ltd	Cube Highways and Infrastructure Pte Ltd	HCC Group	13,230	NA
Mar-2023	Aurang Tollway (section of NH 6 between Aurang in Chhattisgarh and Odisha border)	Macquarie Group	BSCPL	16,000	NA
Feb-2023	5 completed HAM assets (Welspun Delhi Meerut Expressway Pvt Ltd, Welspun Road Infra Pvt Ltd, MBL (CGRG) Road Ltd, MBL (GSY) Road Ltd, Chikhali Tarsod Highways Pvt Ltd) and one operating BOT toll asset (Welspun Infrafacility Pvt Ltd)	Actis and Welspun Enterprises	5 completed HAM assets (Welspun Delhi Meerut Expressway Pvt Ltd, Welspun Road Infra Pvt Ltd, MBL (CGRG) Road Ltd, MBL (GSY) Road Ltd, Chikhali Tarsod Highways Pvt Ltd), and Welspun Infrafacility Pvt Ltd	NA	NA
Nov-2022	Eastern Peripheral Expressway	Maple Infrastructure Trust	NHAI	62,670	NA
Oct-2022	InvIT (across 7 states: Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh, Telangana)	CPPIB and Ontario Teachers' Pension Plan Board	National Highways Infra Trust	NA	NA
Sep-2022	Andhra Pradesh and Gujarat assets (Tada Nellore)	Adani Group	Macquarie Group	31,100	NA
Aug-2022	SP Jammu-Udhampur Highway Ltd	NIIF	Shapoorji Pallonji Group	22,800	100%
Jul-2022	Navayuga Quazigund Expressway Pvt. Ltd	NIIF	Navayuga Quazigund Expressway Pvt Ltd	30,350	NA
Jun-2022	Six operating highway toll projects	Actis' Long Life Infrastructure Fund	Welspun Enterprises Ltd	60,000	100%
Jun-2022	Five operational road projects	IndInfravit Trust, an InvIT led by Canada Pension Plan Investment Board	Brookfield	93,750	100%
Jun-2022	A toll road SPV	Maple Infrastructure trust	SJEPL	NA	100%

Date	Target	Buyer	Seller	Deal value (₹ million)	% sought
April-2022	KKR & Co's road platform in India	Ontario Teachers	Ontario Teachers' Pension Plan Board committed an investment to boost alternative investment company KKR & Co's road platform in India.	Committed ₹13.33 billion ($175 million)	-
Jul-2021	One highway concession	KKR Asian Fund III LP	Global Infrastructure Partners	-	39%
Jan-2021	Shree Jagannath Expressways Pvt. Ltd	Indian Highway Concessions Trust	Bharat Road Network	7,300	74%
Jun-2021	Navayuga Road Projects Pvt. Ltd. – two road projects	Sekura Roads Ltd	Navayuga Road Projects Pvt Ltd	-	100%
Feb-2021	Sadbhav Infrastructure Projects Ltd	Allianz Global Investors joined by AMP Capital	-	To raise ₹7 billion ($96 million) through NCDs	-
Jan-2021	Chennai Elevated Tollway Ltd	JC Flowers Asset Reconstruction Company	-	Acquire over half of the debt of a stressed road developer at a discount of over 80%	-

Source: Industry, CRISIL Intelligence

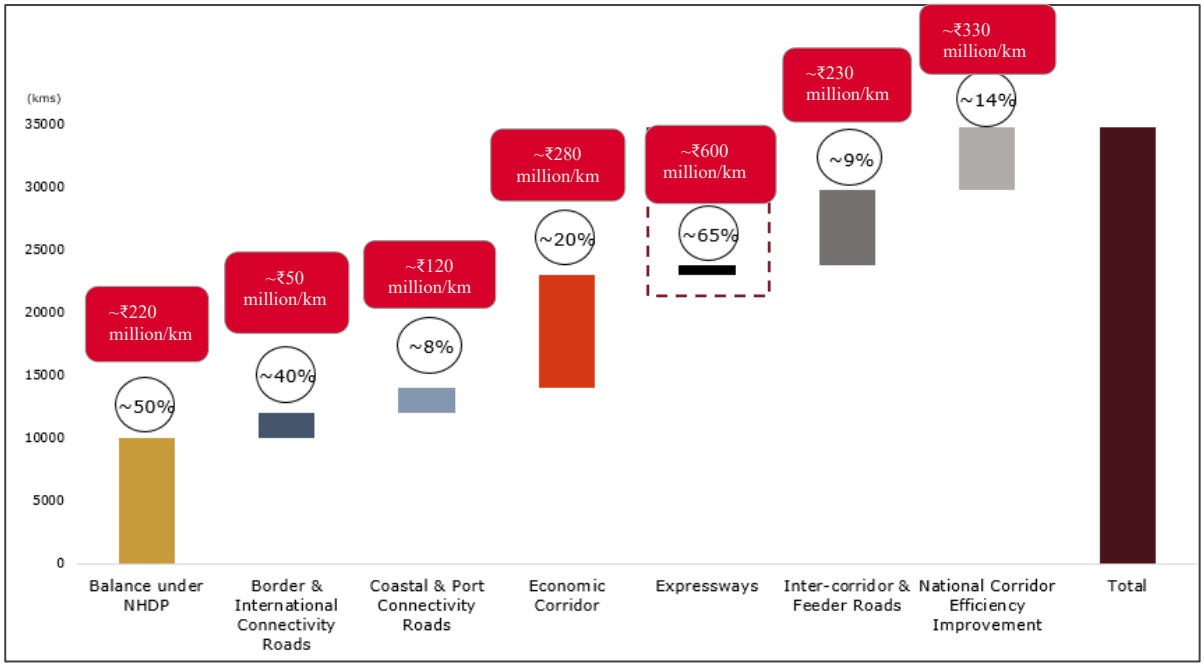
Key government intiatives

59. Bharatmala Pariyojana

Bharatmala Pariyojana (BMP), an umbrella project of the central government since 2015, aims to improve efficiency in the roads sector. It is expected to supersede the NHDP and envisages the construction of 65,000 km of highways under the national corridor (north-south, east-west, and golden quadrilateral), economic corridor, inter-corridor roads, and feeder roads categories. As of Dec 2024, 5,058 km of total length is constructed of 6,758 km awarded under NHDP. As per the ministry's announcements in 2017, Bharatmala, along with the other schemes being undertaken, was estimated to have required a total outlay of ₹6,900,000 million.

The Bharatmala Pariyojana is a highway development initiative structured across four phases. Phase I (2017–2028) targets approximately 34,800 km of corridors, including 24,800 km of new alignments and 10,000 km of upgraded existing routes, designed to enhance connectivity across over 550 districts. As of early 2025, Bharatmala Pariyojana Phase-I have 26,425 km awarded and 19,826 km constructed, with greenfield high-speed corridors seeing 6,669 km awarded and 4,610 km completed by February 2025. Awarding under Bharatmala has begun from Financial Year 2018 and will likely stretch until Financial Year 2028 for Phase 1, involving development of ~9,000 km of economic corridors, ~6,000 km of inter-corridor and feeder roads, ~5,000 km of national corridors efficiency improvements, ~2,000 km of border and international connectivity roads, ~2,000 km of coastal and port connectivity roads, and ~800 km of expressways. The total estimated investment for Phase I stands at roughly ₹6.92 trillion (US $83 billion). Across all phases, Bharatmala aims to develop about 83,677 km of highways, ultimately expanding the National Highway network to cover nearly 80% of India's districts.

Cost per km for expressways are highest



Note: As of Financial Year 2020
Source: NHAI, CRISIL Intelligence

Components of BMP Phase -I

Category	Description	Total length (km)	Upgrade proposed in Phase I (km)
National corridor efficiency improvement	Lane expansion and de-congestion of the national corridor	13,100	5,000
Economic corridor development	Connecting economically important production and consumption centres	26,200	9,000
Inter-corridor and feeder route development	Inter-connection between economic corridors; first- and last-mile connectivity	15,500	6,000
Border and international roads	Connectivity to border areas, boosting trade with neighbouring countries	5,300	2,000
Coastal and port connectivity roads	Connectivity to coastal areas to enable port-led economic development	4,100	2,000
Expressways	Greenfield expressways	1,900	800
Total		66,100	24,800

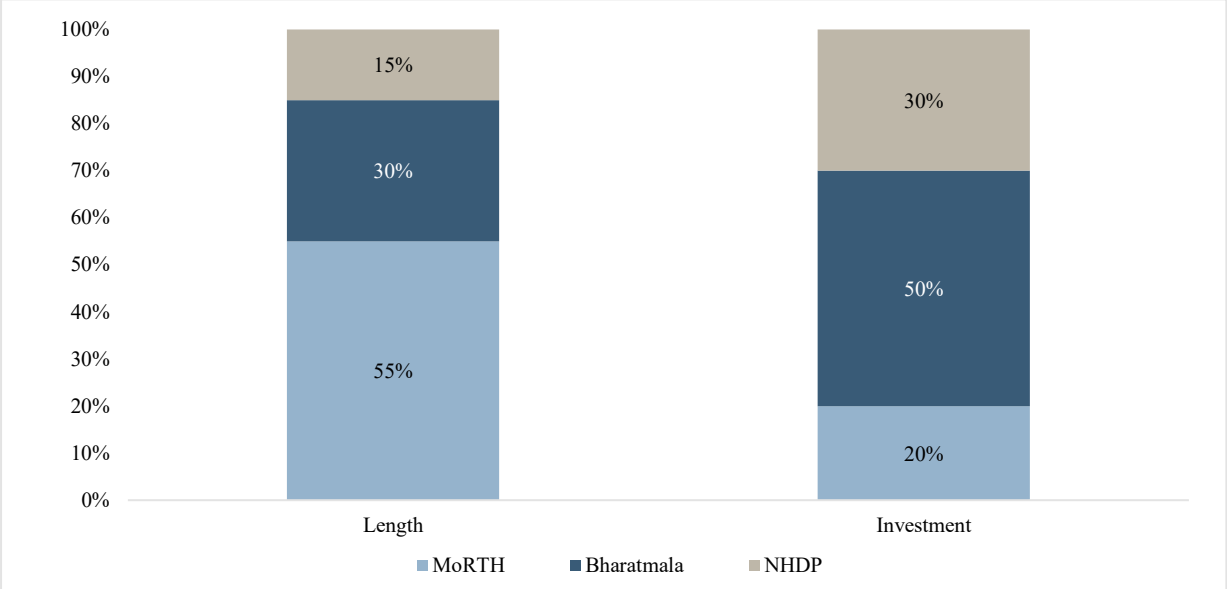
Source: NHAI, CRISIL Intelligence

State-wise summary of BMP

State	Total project length (km)	Awarded project length (km)	Length completed (km)	State	Total project length (km)	Awarded project length (km)	Length completed (km)
Andhra Pradesh	2,525	1,936	641	Maharashtra	3,029	2,174	1,628
Assam	433	431	312	Manipur	635	635	332
Bihar	1,572	1,152	571	Meghalaya	170	170	81
Chhattisgarh	571	471	134	Mizoram	593	593	363
Delhi	203	203	158	Nagaland	208	208	131
Goa	26	26	26	Odisha	1,586	967	785
Gujarat	1,577	1,194	742	Punjab	1,764	1,553	424
Haryana	1,058	1,058	776	Rajasthan	2,503	2,360	2,152
Himachal Pradesh	167	167	105	Tamil Nadu	2,414	1,476	1,011
Jammu & Kashmir	433	251	88	Telangana	1,719	1,026	492
Jharkhand	1,000	801	367	Tripura	94	94	66
Karnataka	2,059	1,603	855	Uttar Pradesh	3,127	2,496	1,612
Kerala	1,126	708	172	Uttarakhand	273	264	112
Madhya Pradesh	3,063	2,017	1,137	West Bengal	874	385	277

Source: MoRTH PIB, CRISIL Intelligence

Share of different schemes under national highways



P: Projected
Note: National highway investments do not include land acquisition costs
Source: CRISIL Intelligence

60. PM Gati Shakti - National Master Plan for Multi-modal Connectivity

Gati Shakti Scheme or National Master Plan for multi-modal connectivity plan, was unveiled in October 2021, with an objective of curtailing the logistics cost for the country, by coordinating the infrastructure creation activity different government entities. Major characteristics of the scheme are

- Digital platform for coordination across 16 ministries, including roadways and railways
- 'Gati Shakti' platform will subsume the infrastructure projects announced under National Infrastructure Pipeline (valued at ₹111 trillion)
- Existing infrastructure schemes across ministries, such as Bharatmala (Roads), Sagarmala (Ports), UDAN (Air), Inland Waterways, Dry ports etc. will be incorporated in the platform
- The platform will also provide spatial data and implementation status for different projects
- Eleven industrial corridors and two defence corridors are also planned in the scheme, covering clusters for textile, pharmaceutical, fishing, electronics, agriculture etc.

Key targets set for different heads under the scheme and status as of 2025

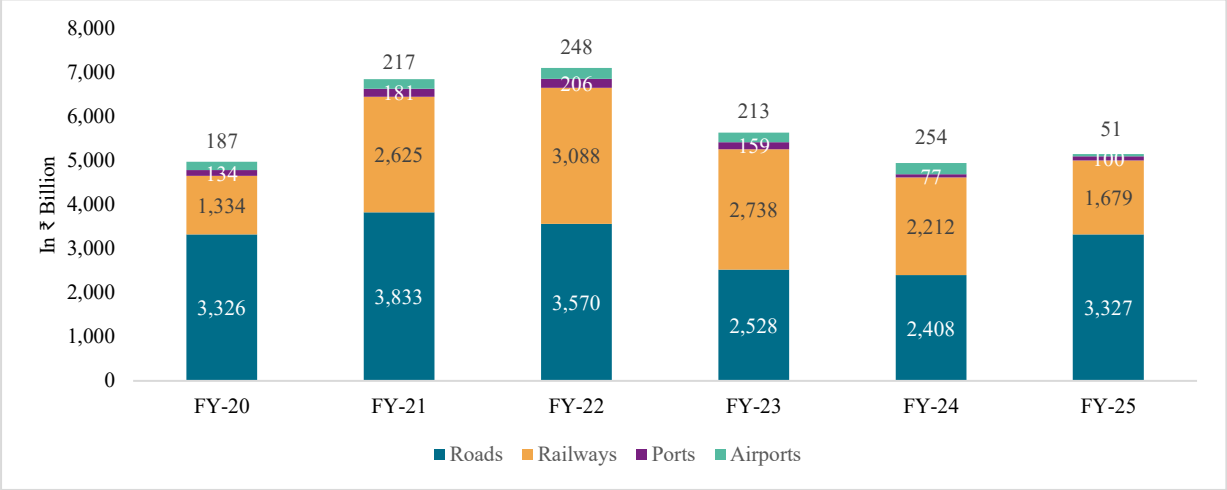
Sectors	Ministry Involved	Target by FY25	Previous Level (FY20/FY21)	Actual by FY 25
Ports	Ministry of Ports, Shipping & Waterways	Increase capacity to 1,759 million tonnes	1,282 million tonnes (FY20)	2921 million tonnes
National Waterways	Ministry of Ports, Shipping & Waterways	Ramp up cargo movement to 95 million tonnes	74 million tonnes (FY20)	145.5 million tonnes
Railways	Ministry of Railways	Freight movement target: 1,600 million tonnes	1,210 million tonnes (FY20)	1610 million tonnes
Multimodal Logistics Parks (MMLPs)	Ministry of Railways	Develop 100 multimodal cargo terminals	-	112
Gas Pipelines	Ministry of Petroleum and Natural Gas	Double pipeline length to 34,500 km	17,000 km (FY20)	25429 km operational and 10459 km under sonstruction
Renewable Energy	Ministry of New and Renewable Energy	Add 150 GW incremental renewable capacity	89.63 GW	217.62 GW
Power Transmission	Ministry of Power	Expand transmission capacity to ~452,000 circuit km	-	491871 circuit km

Source: Crisil Intelligence

61. National Infrastructure Pipeline (NIP)

The Government of India launched the National Infrastructure Pipeline (NIP) in December 2019 as a landmark initiative to systematically identify and develop large-scale infrastructure projects across the country. Covering the period from Financial Year 2020 to Financial Year 2025, the NIP initially envisaged investments worth ₹111 trillion, spanning over 7,400 projects. The sectors included in this pipeline are energy, roads, railways, ports, airports, urban, irrigation, rural infrastructure, digital infrastructure, agricultural and food processing infrastructure, social infrastructure and industrial infrastructure. Only projects with a capital outlay exceeding ₹1 billion are included, ensuring focus on transformative, high-impact ventures. The NIP serves as a structured framework to improve project preparation, accelerate approvals, and attract both public and private investment.

Sector wise split of capital expenditure on Transport Infrastructure- NIP Forecast (2019)



Source: Report of the Task Force National Infrastructure Pipeline Volume 1 (2019), Crisil Intelligence

As of 12 April 2024, out of the total capital outlay under NIP, the transportation sector dominates with a contribution of 58%, followed by the energy sector at 24%, and the water and sanitation sector at 12%, and balance five% by other sectors such as social infrastructure, communication, etc. NIP currently has over 9,666 projects and schemes covering 37 sub-sectors (as on 12th April 2024) that are hosted and monitored through the India Investment Grid (NIP-PMG) integrated portal. Out of these projects, 4,413 projects (46%) are under implementation while 2,062 projects (21%) have been completed.

62. Sagarmala Programme

The Sagarmala Programme is a flagship initiative of the Government of India aimed at driving port-led economic growth by modernizing and optimizing the use of India's extensive coastal and maritime resources. Launched in 2015, the programme seeks to leverage the country's 7,500 km coastline, 14,500 km of navigable waterways, and strategic position along major global trade routes to enhance logistics efficiency, reduce costs, and improve international competitiveness. Under this initiative, the government has identified over 800 projects spanning port modernization, connectivity enhancement, coastal community development, and port-linked industrialization, with a total estimated investment of around ₹3.59 trillion

The programme encompasses several key components. The Port Modernization and New Port Development segment focuses on upgrading existing ports to handle larger vessels and constructing new facilities at strategic locations such as Vadhavan, Enayam, and Paradip Outer Harbour, with an investment of approximately ₹1.6 trillion (₹1,600 billion). The Port Connectivity Enhancement initiative aims to improve last-mile rail, road, and inland waterway connections to major ports through projects such as dedicated freight corridors, expressways, and multi-modal logistics parks, with an allocation of around ₹1.2 trillion. The Port-Linked Industrialization component involves the development of 14 Coastal Economic Zones (CEZs) and associated industrial clusters to boost manufacturing near ports, backed by an investment of ₹550 billion, while the Coastal Community Development initiative focuses on skill training, fisheries, tourism, and livelihood generation for coastal populations, supported by ₹240 billion.

As of 2025, the Sagarmala Programme has made significant progress, with over 250 projects completed and more than 400 projects under implementation. India's total port capacity has increased from 1,560 million tonnes per annum (MTPA) in 2015 to over 2,600 MTPA by 2024, while the average turnaround time at major ports has improved from 82 hours to under 48 hours, reflecting substantial efficiency gains. So far, projects worth more than ₹1.3 trillion have been executed, with the remaining initiatives advancing through planning and execution stages.

Strategically, Sagarmala is expected to reduce logistics costs by 10–15%, expand India's port capacity to over 3,500 MTPA by 2030, and create approximately 10 million direct and indirect jobs. By working in synergy with complementary infrastructure programmes such as Bharatmala Pariyojana and PM Gati Shakti, Sagarmala plays a pivotal role in strengthening India's multimodal transport network and supporting the country's long-term trade and economic growth objectives. Government has outlined investments of ~₹6.8 trillion in port infrastructure by 2035.

63. UDAN

The UDAN (Ude Desh ka Aam Nagrik) scheme, launched on 21st October 2016, is a flagship initiative of the Ministry of Civil Aviation (MoCA) designed to enhance regional air connectivity and make air travel affordable for the common citizen. The first UDAN flight commenced on 27th April 2017, connecting Shimla and Delhi, marking the beginning of India's journey toward inclusive aviation growth.

Conceived under the National Civil Aviation Policy (NCAP) 2016, UDAN operates with a 10-year vision to connect Tier-2 and Tier-3 cities through a market-driven yet financially supported model. The scheme provides incentives to airlines through Viability Gap Funding (VGF), ensures fare caps for affordability, and promotes collaborative participation among the Central and State Governments, Airports Authority of India (AAI), and private operators. This approach has significantly transformed India's regional connectivity landscape by extending air services to previously underserved and unserved regions.

Evolution of the UDAN Scheme

- UDAN 1.0 (2017): Marked the launch of the first flight (Shimla–Delhi). Five airline operators were awarded 128 routes connecting 70 airports, including 36 new airports.
- UDAN 2.0 (2018): Expanded the scheme to include 73 additional underserved and unserved airports. For the first time, helipads were integrated into the network.
- UDAN 3.0 (2019): Introduced tourism routes in collaboration with the Ministry of Tourism and incorporated seaplane operations to connect water aerodromes, especially in the North-East Region.
- UDAN 4.0 (2020): Focused on hilly regions, North-Eastern States, and island territories, emphasizing helicopter and seaplane services.
- UDAN 5.0–5.5 (2023–2025): Aims to achieve greater network coverage, including water aerodrome and helicopter routes, introduce Krishi UDAN for agricultural cargo, and enhance last-mile air connectivity.

As of 2025, the UDAN scheme has operationalized 635 routes, connecting 90 airports (including 2 water aerodromes and 15 heliports) across India. More than 149 million passengers have benefited from affordable regional air services under UDAN. India's regional airport network has grown significantly, from 74 airports in Financial Year 202014 to 159 airports in Financial Year 2024, more than doubling within a decade. The government has allocated ₹84 billion as VGF support and an additional ₹45 billion for infrastructure development to enhance connectivity in underserved and remote areas.

Through these initiatives, UDAN has played a crucial role in improving regional tourism, healthcare access, trade, and economic growth in Tier-2 and Tier-3 cities, effectively catalyzing balanced and inclusive development in India's aviation sector.

64. Viksit Bharat 2047

The Viksit Bharat 2047 initiative envisions world-class infrastructure as a core driver of India's transition into a fully developed economy, with a strong emphasis on enabling globally competitive industry. The strategy focuses on building an integrated, multimodal transport network through flagship programmes like Gati Shakti, Bharatmala, Sagarmala, dedicated freight corridors, and major port and airport expansions to reduce logistics costs and improve supply-chain efficiency. Industrial infrastructure is being scaled through new and upgraded industrial corridors, smart manufacturing zones, plug-and-play industrial parks, and modern logistics hubs, aimed at boosting productivity, attracting global investment, and supporting Make in India 2.0. The initiative also prioritises energy transition, expanding renewable capacity, green hydrogen ecosystems, and modern grid infrastructure to ensure reliable, low-carbon power for industry. Digital public infrastructure—including 5G, AI, IoT, and semiconductor manufacturing—is being positioned to strengthen high-tech industries. Overall, Viksit Bharat 2047 seeks to create an advanced, sustainable, and resilient industrial ecosystem that supports high-value manufacturing, job creation, and globally competitive economic growth.

Overview of National Highways and Infrastructure Development Corporation Limited (NHIDCL)

The National Highways and Infrastructure Development Corporation Limited (NHIDCL) was established under the MoRTH, on July 18, 2014. It aims to boost construction of national highways and infrastructure in the North Eastern Region and strategic border areas. NHIDCL facilitates economic development in these regions by integrating them more robustly with the mainstream, providing economic benefits to the local population.

NHIDCL has also ventured into other infrastructure projects such as multi-level car parking, logistic parks, and bus ports. NHIDCL's projects are enhancing accessibility to remote areas, constructing safer roads, tunnels, and bridges,

particularly in challenging terrains like Jammu and Kashmir, Uttarakhand, North-East, West Bengal, and Andaman & Nicobar Islands.

65. NHIDCL portfolio for road development in Northeast Regions of India and Jammu & Kashmir

As of Financial Year 2025, NHIDCL is managing a robust portfolio of 262 ongoing projects, covering 5,338 km of highways, with a cumulative estimated cost of approximately ₹1.3 trillion. In addition, the corporation has successfully completed 90 projects spanning 1,681 km, with a total expenditure of around ₹218.51 billion.

NHIDCL has demonstrated remarkable financial growth, with its revenue rising from ₹0.94 billion in 2018 to ₹4.74 billion in 2023, reflecting a CAGR of 38%.

In the current financial year alone, NHIDCL:

- Constructed 1,160 km of national highways
- Awarded works for 1,000 km of road length worth ₹230.55 billion
- Completed 29 projects in the Northeastern region

The corporation is currently tasked with developing and upgrading road connectivity across an aggregate length of approximately 8,857 km, including corridors in the North Eastern states, Andaman & Nicobar Islands, North Bengal, and hill states/UTs like Jammu & Kashmir, Ladakh, and Uttarakhand.

Order Book of NHIDCL

State	Total NH Length entrusted
Jammu & Kashmir	448
Ladakh	234
Manipur	1,481
Meghalaya	367
Mizoram	912
Nagaland	690
Sikkim	256
Tripura	879
Uttarakhand	100
West Bengal	98

Source: NHIDCL Annual Report 2023-24, CRISIL Intelligence

Overview of Cable Stayed Bridges

Cable-stayed bridges are a type of bridge where the deck is supported by cables attached to vertical towers known as pylons. Unlike suspension bridges, where cables are primarily horizontal, cable-stayed bridges have cables that connect directly from the deck to the pylons, allowing for greater stability and a more compact design. This makes these bridges suitable for areas with limited space or challenging terrains.

Some Notable Cable-Stayed Bridges in India

1. **Bandra-Worli Sea Link (Mumbai)**: A prominent example featuring stylish pylons and efficient design, showcasing advancements in Indian bridge engineering.
2. **Chenab Bridge**: Currently under construction, this bridge is set to be one of the tallest and longest cable-stayed bridges in the world, connecting important regions in Kashmir.
3. **New Yamuna Bridge (Allahabad)**: An impressive cable-stayed structure aimed at enhancing connectivity in urban areas.
4. **Chennai's Durgam Cheruvu Cable Bridge**: A key bridge connecting important transit routes, highlighting modern architectural trends in India.

Overview of Elevated Roads

Elevated roads, often designed as flyovers or overpasses, are roadways that are built above ground level to allow for the uninterrupted flow of traffic. They play a crucial role in urban planning and traffic management by reducing congestion at critical junctions, maintaining traffic speeds, and providing a smoother transit experience for commuters. One notable example is the 114 km elevated road corridor announced for Bengaluru, aimed at mitigating traffic woes in the city as part of the Swachha Bengaluru initiative. This project emphasizes the growing trend of integrating elevated roads into urban development plans to alleviate congestion and improve air quality.

Some Notable Elevated Road Projects

1. **Mumbai-Pune Expressway:** Recognized as India's first access-controlled expressway, it includes elevated sections to facilitate high-speed travel between these two major urban centres.

2. **Yamuna Expressway:** A prominent example of an elevated road that connects Greater Noida to Agra, showcasing the effectiveness of elevated systems in facilitating long-distance travel.

Sustainability in the Indian roads sector

Sustainability has increasingly become a central pillar of India's road infrastructure strategy, with agencies such as the National Highways Authority of India (NHAI) integrating environmental, social and governance (ESG) principles into planning and execution. Recent initiatives include the adoption of greener construction practices, large-scale plantation drives along national corridors, use of recycled materials such as plastic-modified bitumen, and enhanced climate-resilient design standards to address flooding, heat stress and slope instability. NHAI's Sustainability Report further highlights efforts to incorporate social inclusion, improved road safety engineering, and continuous environmental monitoring across the highway network.

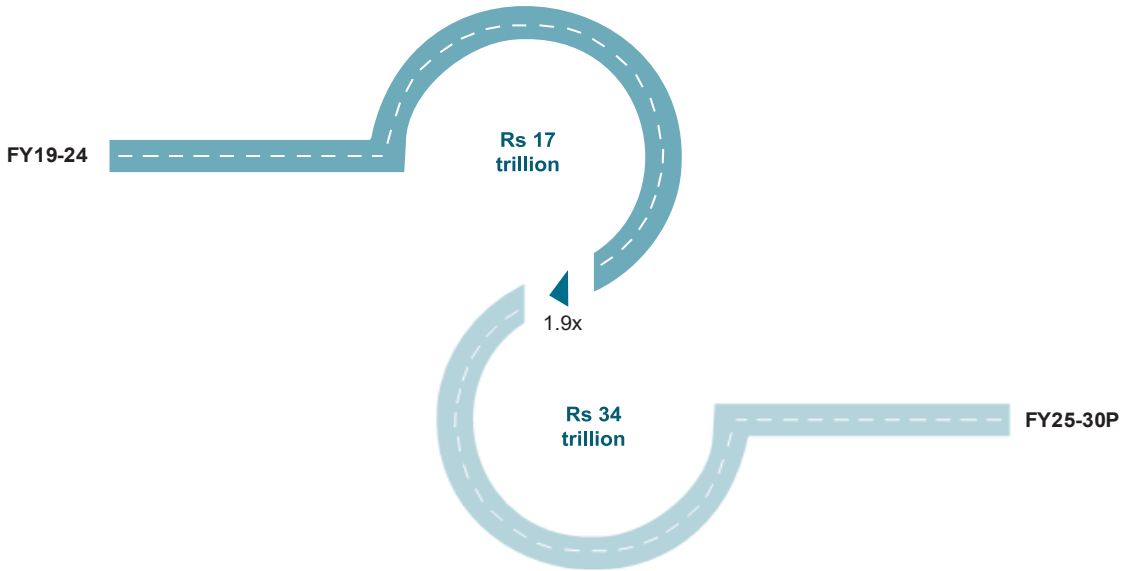
Technological advancement is playing a growing role in strengthening sustainability outcomes. Highway developers and operators are increasingly adopting digital tools such as automated pavement-condition assessments, drones for construction monitoring, geospatial analytics, and AI-based systems for pothole detection and lifecycle maintenance planning. These technologies help reduce material consumption, optimise maintenance cycles, lower emissions, and extend the asset life of national highways. At the same time, greater emphasis on electric-vehicle charging infrastructure and intelligent transport systems (ITS) is supporting future-ready, low-carbon mobility along major economic corridors.

Outlook of Road Sector

India's economic expansion and the government's long-term Viksit Bharat 2047 vision have placed infrastructure at the centre of policy planning. Total infrastructure investments are expected to nearly double from ₹47.8 trillion during Financial Year 2019-24 to ~₹93 trillion in Financial Year 2025-30, reflecting sustained public spending and growing private sector participation. Transport infrastructure alone is projected to attract ₹42-45 trillion over Financial Year 2025-30, underscoring its pivotal role in supporting the movement of goods, people, and services across sectors.

India's road sector is poised to maintain strong momentum, underpinned by its central role in facilitating both freight and passenger mobility. Accounting for over 60% of total freight and nearly 85% of passenger traffic, roads form the backbone of India's transport ecosystem. The sector is expected to attract the largest share of transport investments, approximately ₹33-35 trillion between Financial Year 2025-30. This growth is supported by continued policy impetus through flagship programmes such as the Bharatmala Pariyojana, National Infrastructure Pipeline (NIP), National Monetisation Pipeline (NMP), and PM Gati Shakti, which collectively aim to build a modern, integrated, and efficient road network.

Capex in roads sector *(₹ billion)*



Source: Crisil Intelligence

Growth Drivers and Demand Outlook

Road freight is expected to maintain a healthy growth trajectory, with volumes projected to expand by 5-7% annually in Financial Year 2026. This follows robust growth of 6-8% in Financial Year 2025, driven primarily by the sustained movement of bulk goods and the growing share of non-bulk commodities such as agricultural produce, consumer goods, and e-commerce deliveries. Rising rural connectivity, expanding industrial corridors, and increasing consumption demand are expected to sustain medium-term freight growth.

Passenger traffic will similarly benefit from continued improvements in intercity expressways and rural road connectivity. Highway expansions and new expressway developments are expected to improve travel time efficiency, safety, and service reliability-making road travel more competitive relative to other transport modes.

Investment and Policy Landscape

Capital expenditure in the road sector is projected to increase from around ₹17 trillion during Financial Year 2019-24 to about ₹33-35 trillion in the medium-term span of 5 years, nearly 1.9 times higher. This surge will be driven by a combination of public and private investments, supported by government policy thrust on network expansion, asset monetisation, and multimodal integration.

The share of private investments is anticipated to increase from 11% between Financial Year 2019-24 to 16-18% between Financial Year 2029-30, with government increasingly shifting its focus to asset monetization models which provide stable, long-term, annuity-like returns and lower risk for private investors. Financing diversification is being achieved through models such as Hybrid Annuity Model (HAM), Build-Operate-Transfer (BOT), Toll-Operate-Transfer (TOT), and Infrastructure Investment Trusts (InvITs). The success of these models has strengthened investor confidence and attracted long-term institutional and global capital.

Capacity Augmentation and Network Expansion

The next phase of highway development will focus on capacity augmentation, expressway expansion, and corridor-based planning. MoRTH aims to upgrade 25,000-30,000 km of two-lane highways into four lanes (with estimated investment of ₹8-10 trillion) and convert about 16,000 km of four-lane highways into six lanes. The upcoming Financial Year 2026-30 build programme will prioritise systematic widening of high-traffic corridors and development of new greenfield expressways and access-controlled highways.

Guided by Vision 2047 and the Viksit Bharat roadmap, India targets the development of 50,000 km of high-speed corridors by Financial Year 2037, scaling up to 200,000-230,000 km by Financial Year 2047. These initiatives are expected to enhance logistical efficiency, reduce transit times, and lower logistics costs, aligning with the government's broader target of achieving single-digit logistics costs as a percentage of GDP.

Technological Advancements and Innovation

Technology adoption is emerging as a key enabler in improving construction efficiency and network management. MoRTH is encouraging the use of advanced materials and construction techniques to reduce costs and enhance pavement quality. Research initiatives are underway on the use of bio-bitumen from agricultural waste and performance-based bituminous mixes. Additionally, digital tolling, contactless payment systems, and intelligent transport management solutions are being rolled out to improve traffic flow and reduce congestion.

Multimodal Integration and Logistics Efficiency

To strengthen last-mile connectivity and multimodal freight integration, 73 Multi-Modal Logistics Parks (MMLPs) are planned under the PM Gati Shakti initiative. These will serve as nodal hubs connecting road, rail, and air cargo networks, improving modal balance and supply chain competitiveness. The corridor-based development of MMLPs, along with expressway spines and grade-separated bypasses, is expected to enhance logistics efficiency during Financial Year 2026-30.

The road sector's medium-term outlook remains robust, supported by sustained policy push, strong investment appetite, and increasing technological sophistication. Continued government focus on improving network quality, safety, and digital integration will be critical in achieving the objectives of Vision 2047.

Overview of Infrastructure Investment Trusts (InvITs) for roads in India

Overview of InvITs currently listed in India

Infrastructure Investment Trusts (InvITs) have emerged as a significant instrument in India's infrastructure financing ecosystem, facilitating capital recycling and balance sheet deleveraging for infrastructure developers. InvITs allow sponsors, primarily infrastructure developers or financial investors, to monetize operational assets by pooling them into a trust structure and offering units to institutional and retail investors. The proceeds thus generated help free up capital for the development of new projects while providing investors with long-term, yield-generating infrastructure exposure.

66. Evolution of regulations

InvITs in India operate within the regulatory framework established by the SEBI in 2014. The regulations have evolved significantly over the past decade, driven by market growth, practical learnings, and demand for enhanced governance and investor protection.

Early regulations (2014-2017)

The SEBI introduced InvITs formally in September 2014. The SEBI (Infrastructure Investment Trusts) Regulations, 2014, formed the basic framework for registration, structure and operation. Early amendments to the framework focused on practicalities, IPO and listing provisions, private placements, sponsor requirements, and enabling foreign and institutional investment. Tax incentives and exchange control relaxations soon followed, paving the way for the registration and listing of InvITs in 2016 and 2017.

Market deepening and structural flexibility (2018-2020)

In 2018, the SEBI refined IPO/ private placement processes of InvITs, introduced provisions to facilitate strategic investor participation and streamlined investment portfolio and leverage norms. The leverage limit was raised from 49% to 70%, subject to strict credit rating conditions and demonstrated distribution track, significantly augmenting borrowings for acquisition and expansion. Further, the amendments enabled rights issues and conversions between listed and unlisted InvITs, and broadened lending access for InvITs. Corporate governance prescriptions, especially for those with large outstanding debt securities, were progressively applied. They were mostly borrowed from the governance norms for listed companies.

Prescriptive governance and innovation (2021-2023)

With growing retail and institutional participation, the SEBI laid down more stringent governance rules, including Board composition standards, committee structures, induction of independent directors and stewardship responsibilities. Disclosure requirements, audit protocols and stewardship codes were formalised for greater transparency.

Notably, in 2022, the framework for unlisted InvITs was discontinued, triggering listings of the existing ones and narrowing the regulatory focus to publicly listed structures. Also, timelines for listing and conversion of InvITs from one structure to another were aligned and reduced, and rules for follow-on offerings were further clarified.

Recent reforms (2024-2025)

More recent amendments focused on sponsor lock-in flexibility, streamlining of conversion procedures from private to public InvITs, reduction of lock-ins, and simplified disclosure norms to facilitate smoother transitions and encourage broader market participation. These changes also reinforce director nomination protocols and trustee roles, and set out distinct rules for issuance and management of subordinate units to further institutionalise governance in the market.

Since their introduction in 2014, almost every year the SEBI has either issued a circular or a notification refining InvIT regulations to tighten standard of investor safeguards, disclosures, leverage, conversion or governance.

67. Investment by Sovereign Wealth Funds (SWF) and Pension funds

Tax benefits are available to sovereign wealth funds, foreign pension funds, and domestic investors in InvITs through specific exemptions and pass-through rules, while InvIT platforms also offer structural advantages over a normal holding company. Income in the nature of dividend, interest, and long-term capital gains from investments in specified infrastructure (including InvIT units/SPVs) is exempt for notified SWFs and pension funds under Section 10(23FE), subject to conditions on control, non-commercial participation, debt-free investment, and government notification. The exemption window for eligible investments has been extended by five years, allowing claims until March 31, 2030, to attract long-term foreign capital into infrastructure.

Key conditions include that the fund must be wholly owned and controlled by a foreign government, be notified by the Central Government, not borrow to invest, and not participate in day-to-day operations of the investee other than protective rights. Income types covered typically include dividend, interest, and long-term capital gains from equity or debt of SPVs and InvIT units in specified infrastructure, if all notification conditions are met.

DIIs and other investors

InvIT distributions are taxed by component: interest is taxable and subject to withholding under Section 194LBA; dividend is taxable if the SPV has opted for Section 115BAA but can be exempt in unitholder hands if the SPV has not opted for 115BAA; capital repayment reduces cost base and may not be taxed on receipt. Recent clarifications on "other income" distributions taxability limit slab-rate taxation to "specified sums" under Section 56(2)(xii), effectively deferring tax until cumulative other-income distributions exceed the unit's original issue price.

68. Road InvITs to deleverage balance sheets and enable capital recycling

Infrastructure investment trusts (InvITs) will help free up capital of players by divesting stake in operational assets and help recycle this capital to deleverage balance sheets for creating new assets.

Details of Road InvITs currently registered in India

InvIT Name	Sponsor Name	Date of Listing	Asset Details
Athaang Infrastructure Trust	National Investment and Infrastructure Fund (NIIF)	Yet to be listed	-
Citius Transnet Investment Trust	Epic Transnet Infrastructure Private Limited	Yet to be listed	3 Annuity, 7 Toll assets
Raajmarg Infra Investment Trust (RIIT)	National Highways Authority of India	Yet to be listed	5 Toll assets
Anantam Highways Trust	Alpha Alternatives Fund Advisors LLP	16-Oct-2025	7 HAM assets
Roadstar Infra Investment Trust	Roadstar Infra Private Limited (RIPL)	11-Mar-25	2 Annuity, 4 Toll assets
Capital Infra Trust (formerly National Infrastructure Trust)	Gawar Construction Ltd	14-Jan-25	9 HAM assets
Nxt - Infra Trust	Actis Highway Infra Limited	2-Jul-24	5 HAM, 1 Toll assets
Indus Infra Trust (formerly Bharat Highways InvIT)	Aadharshila Infratech private Limited	12-Mar-24	9 HAM assets
Maple Infrastructure Trust	Maple Highways Pte. Ltd.	21-Jun-23	2 Toll assets
Cube Highways Trust	Cube Highways and Infrastructure Pte. Ltd. ("CH-I") and Cube Highways and Infrastructure III Pte. Ltd. ("CH-III")	19-Apr-23	3 Annuity, 6 HAM, 18 Toll assets
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	Galaxy Investments II Pte. Limited	25-Aug-22	2 Annuity, 14 HAM, 12 Toll assets
IRB Infrastructure Trust	IRB Infrastructure Developers Limited	8-Apr-22	16 Toll assets
National Highways Infra Trust	National Highways Authority of India	3-Nov-21	26 Toll assets
Shrem InvIT	Shrem Infra Invest Private Limited	22-Sep-21	19 HAM Assets, 2 Toll, 6 Annuity and 10 Toll-plus-Annuity assets
Oriental Infra Trust	Oriental Structural Engineers Private Limited ("OSEPL") and Oriental Tollways Private Limited ("OTPL")	27-Jun-19	1 annuity, 5 Toll assets
Interise Trust (formerly Indinfravit Trust)	Self-Sponsored	9-May-2018	2 Annuity, 14 Toll assets
IRB InvIT Fund	IRB Infrastructure Developers Limited	18-May-17	1 HAM, 5 Toll assets

Source: Credit Rating Rationale, Offer Document, CRISIL Intelligence
InvIT Portfolio data updated as of September-2025. The data for Citius and Raajmarg has been added from the offer document filed with SEBI

As of 2025, several InvITs have been registered and listed in India across diverse sponsor categories. Sponsors broadly fall under two classifications, Infrastructure Developers and Financial Sponsors.

- Infrastructure Developers typically comprise companies engaged in asset creation, construction, and project management, with core strengths in infrastructure execution.
- Financial Sponsors, on the other hand, include private equity funds, pension funds, or infrastructure-focused asset managers that specialize in acquiring and managing quality assets over time.

This growing portfolio reflects the increasing adoption of the InvIT model as a preferred mechanism for infrastructure monetization in India. The continued support from government policies, coupled with rising investor appetite for stable yield instruments, is expected to further accelerate the InvIT market's expansion across road, transmission, renewable energy, and logistics sectors in the coming years.

69. Benchmarking Analysis for Road InvITs

This section benchmarks road InvITs across the portfolio dimensions like enterprise value, operating scale (lane-km), asset mix, and returns. In this section, Cube Highways has been kept at the top and the remaining road InvITs have been sorted basis their enterprise valuation (EV).

Road InvIT Portfolio Benchmarking: Comparison across scale, diversification, and residual life

InvIT Name	Portfolio Date	EV[1] (INR Crore)	Scale[2] (Lane Kms)	EV Weighted Residual Life in years[3]	Unique States[4] (toll assets)	Diversification Score[5]
Cube Highways Trust	30 Sep 2025	35,913.40	8,816	16.49	11	29

InvIT Name	Portfolio Date	EV[1] (INR Crore)	Scale[2] (Lane Kms)	EV Weighted Residual Life in years[3]	Unique States[4] (toll assets)	Diversification Score[5]
IRB Infrastructure Trust	30 Sep 2025	63,574.00	10,567	22.53	9	34
National Highways Infra Trust	30 Jun 2025	47,967.60	11,967	21.09	12	58
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	30 Sep 2025	25,759.00	8,302	14.36	8	36
Interise Trust (formerly Indinfravit Trust)	31 Mar 2025	18,690.37	7,366	15.90	6	38
Shrem Invit	30 Sep 2025	12,419.60	11,742	10.51	1	25
Oriental InfraTrust	30 Sep 2025	12,355.00	3,399	11.95	4	49
Maple Infrastructure Trust	31 Mar 2025	9,698.65	1,212	15.93	3	80
IRB InvIT Fund	30 Sep 2025	7,846.00	2,421	14.10	5	47
Roadstar Infra Investment Trust	30 Sep 2025	7,376.90	2,837	11.51	5	52
Indus Infra Trust (formerly Bharat Highways InvIT)	30 Sep 2025	6,063.70	2,677	10.96	No toll assets	35
Nxt-Infra Trust	31 Mar 2025	5,902.26	2,087	10.71	2	62
Capital Infra Trust (formerly National Infrastructure Trust)	30 Sep 2025	4,028.30	2,059	11.44	No toll assets	38

1. *The enterprise value (EV) represents the AUM for InvIT, which is considered as the sum of enterprise value (EV) for each SPV, not adjusted for cash and cash equivalents, as disclosed in the respective InvITs' annual report and valuation report.*
2. *The lane kms represented are sum of the individual asset lane km and are derived from the valuation report and annual report of respective InvITs.*
3. *The parameter represents EV weighted resiudal life in years. The residual concession period refers to the balance duration of the concession agreement for an asset from the cut-off date (September 30, 2025). Please note that for calculation of residual concession period, we have used the concession end date with extension. The residual concession periods of the InvITs were weighted using their EV as of cutoff date specified in note 1 to arrive at the EV weighted residual life.*
4. *This parameter represents the count of unique states in which toll assets of InvIT is present. The analysis is done only for toll assets, since toll revenues are directly linked to traffic volumes, which, in turn, correlate with regional economic activity and freight movement. Since Indus Infra and Capital Infra Trust have no toll assets, hence the count of unique states is not shown.*
5. *The diversification score is represented by Herfindahl-Hirschman Index (HHI) value, that measures the overall concentration of the portfolio. The HHI takes into account both the number of assets and their relative EV weights. A lower HHI score indicates a more diversified portfolio and less concentration risk*

Source: Valuation Reports and Annual Reports of respective InvITs, CRISIL Intelligence

Road InvIT Asset Portfolio composition in terms of asset type and concessioning authority

InvIT Name	Total No. of Assets[1]	Asset Split by Asset Type				Asset Split by Concessionaire Authority		
		Annuity	HAM	Toll	Toll + Annuity	MoRTH	NHAI	State
Cube Highways Trust	27	3	6	18	0	0	26	1
IRB Infrastructure Trust	16	0	0	16	0	0	13	3
National Highways Infra Trust	26	0	0	26	0	0	26	0
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	28	2	14	12	0	1	24	3
Interise Trust (formerly Indinfravit Trust)	16	2	0	14	0	0	16	0
Shrem Invit	37	6	19	2	10	1	19	17
Oriental InfraTrust	6	1	0	5	0	0	6	0
Maple Infrastructure Trust	2	0	0	2	0	0	2	0
IRB InvIT Fund	6	0	1	5	0	0	6	0
Roadstar Infra Investment Trust	6	2	0	4	0	0	4	2
Indus Infra Trust (formerly Bharat Highways InvIT)	9	0	9	0	0	0	9	0
Nxt-Infra Trust	6	0	5	1	0	0	5	1
Capital Infra Trust (formerly National Infrastructure Trust)	9	0	9	0	0	0	9	0

1 *Total assets represented in the table is as of 30th September 2025 except for Interise, Maple and Nxt-Infra Trust for which the data is as of 31st March 2025 and for National Highways Infra Trust, the asset details are as of 30th June 2025.Subsequent columns present the split of these assets by asset type and by concessioning authority.*

Source: Valuation Reports and Annual Reports of respective InvITs

Percentage Split of Enterprise Value (EV) and Revenue by Asset Type (Annuity, HAM, Toll, Toll+Annuity) for Road InvITs

InvIT Name	EV Mix by Asset Type[1]				Revenue Mix by Asset Type[2]			
	Annuity	HAM	Toll	Toll + Annuity	Annuity	HAM	Toll	Toll + Annuity
Cube Highways Trust	9%	6%	85%	-	3%	15%	82%	-
IRB Infrastructure Trust	-	-	100%	-	-	-	100%	-
National Highways Infra Trust	-	-	100%	-	-	-	100%	-
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	-	29%	71%	-	5%	10%	85%	-
Interise Trust (formerly Indinfravit Trust)	1%	-	99%	-	3%	-	97%	-

InvIT Name	EV Mix by Asset Type[1]				Revenue Mix by Asset Type[2]			
	Annuity	HAM	Toll	Toll + Annuity	Annuity	HAM	Toll	Toll + Annuity
Shrem Invit	3%	78%	16%	3%	4%	83%	7%	6%
Oriental InfraTrust	18%	-	82%	-	19%	-	81%	-
Maple Infrastructure Trust	-	-	100%	-	-	-	100%	-
IRB InvIT Fund	-	14%	86%	-	-	15%	85%	-
Roadstar Infra Investment Trust	3%	-	97%	-	7%	-	93%	-
Indus Infra Trust (formerly Bharat Highways InvIT)	-	100%	-	-	-	100%	-	-
Nxt-Infra Trust	-	41%	59%	-	-	67%	33%	-
Capital Infra Trust (formerly National Infrastructure Trust)	-	-	100%	-	-	100%	-	-

1. *The enterprise value (EV) considered is the sum of enterprise value (EV) for each SPV, not adjusted for cash and cash equivalents, as disclosed in the respective InvITs' annual report and valuation report.*
   The EV value considered is as of 30th September 2025 except for Interise, Maple and Nxt-Infra Trust for which the data is as of 31st March 2025. For National Highways Infra Trust, the cutoff is as of 30th June 2025.
2. *The revenue considered for InvITs is as of 31st March 2025. Asset level revenue as disclosed in the Annual report has been considered to arrive at the revenue split*

Source: Annual Reports and Valuation Reports, Financial Statements, CRISIL Intelligence

Percentage Split of Enterprise Value (EV) and Revenue by Concessionaire Authority (MoRTH, NHAI and State) for Road InvITs

InvIT Name	EV Mix by Concessionaire Authority[1]			Revenue Mix by Concessionaire Authority[2]		
	MoRTH	NHAI	State	MoRTH	NHAI	State
Cube Highways Trust	-	92%	8%	-	99%	1%
IRB Infrastructure Trust	-	55%	45%	-	69%	31%
National Highways Infra Trust	-	100%	-	-	100%	-
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	3%	82%	15%	4%	73%	23%
Interise Trust (formerly Indinfravit Trust)	-	100%	-	-	100%	-
Shrem Invit	3%	91%	6%	3%	87%	10%
Oriental InfraTrust	-	100%	-	-	100%	-
Maple Infrastructure Trust	-	100%	-	-	100%	-
IRB InvIT Fund	-	100%	-	-	100%	-
Roadstar Infra Investment Trust	-	87%	13%	-	90%	10%
Indus Infra Trust (formerly Bharat Highways InvIT)	-	100%	-	-	100%	-
Nxt-Infra Trust	-	89%	11%	-	78%	22%
Capital Infra Trust (formerly National Infrastructure Trust)	-	100%	-	-	100%	-

1. *The enterprise value (EV) considered is the sum of enterprise value (EV) for each SPV, not adjusted for cash and cash equivalents, as disclosed in the respective InvITs' annual report and valuation report.*
   The EV value considered is as of 30th September 2025 except for Interise, Maple and Nxt-Infra Trust for which the data is as of 31st March 2025. For National Highways Infra Trust, the cutoff is as of 30th June 2025.
2. *The revenue considered for InvITs is as of 31st March 2025. Asset level revenue as disclosed in the Annual report has been considered to arrive at the revenue split*

Source: Annual Reports and Valuation Reports, Financial Statements, CRISIL Intelligence

Road InvIT Returns and Latest NAV Profile

InvIT Name	Listing Date	Total XIRR Return since listing[1]	Distribution XIRR[2]	Capital Appreciation[3]	NAV Value[4]
Cube Highways Trust	19-Apr-2023	25%	10%	15%	143
IRB Infrastructure Trust	3-Apr-2023	21%	1%	20%	313.34
National Highways Infra Trust	3-Nov-2021	14%	6%	8%	137.32
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	25-Aug-2022	18%	17%	1%	103.55
Interise Trust (formerly Indinfravit Trust)	9-May-2018	9%	8%	1%	107
Shrem Invit	22-Sep-2021	16%	17%	-1%	97.34
Oriental InfraTrust	27-Jun-2019	12%	10%	2%	115.61
Maple Infrastructure Trust	21-Jun-2023	19%	1%	18%	146.31
IRB InvIT Fund	18-May-2017	6%	10%	-4%	96.6
Roadstar Infra Investment Trust	11-Mar-2025	8%	18%	-10%	94.16

InvIT Name	Listing Date	Total XIRR Return since listing[1]	Distribution XIRR[2]	Capital Appreciation[3]	NAV Value[4]
Indus Infra Trust (formerly Bharat Highways InvIT)	12-Mar-2024	21%	12%	9%	112.6
Nxt-Infra Trust	2-Jul-2024	23%	17%	6%	106.79
Capital Infra Trust (formerly National Infrastructure Trust)	14-Jan-2025	9%	51%	-42%	67.48

1. *Returns are calculated as on 30th September 2025. For calculating the Total Return, listing date and listing price of InvIT are considered as the initial value, all distributions as per record date for interim cash flows, and NAV as on 30th September 2025 has been considered as terminal value in case of privately listed InvITs. In the case of public listed InvITs, the traded price has been considered for the terminal value.*
2. *For calculating the distribution XIRR, terminal value as on 30th September 2025 is same as the initial listing price, while the other values remain the same. Capital Infra and Roadstar Infra Investment Trust have completed less than a year as on September 30, 2025*
3. *The difference between the Total XIRR return since listing and the distribution XIRR is attributed to the capital appreciation.*
4. *The NAV values are as of 30th September 2025.*

Source: Annual Report, Financial Statements, Official website of InvITs, Stock exchange, CRISIL Intelligence

Road InvIT Net Debt Ratios and Latest Ratings Snapshot: Net Debt/EBITDA, Net Borrowings Ratio, Latest Credit Rating

InvIT Name	Net Debt/EBITDA[1] (no of times)	Net Borrowings Ratio[2] (percentage)	Date of Latest Credit Rating	Latest Credit Rating
Cube Highways Trust	5.74	47.37%	12-Sep-2025	Crisil AAA
IRB Infrastructure Trust	7.84	41.11%	17-Nov-2025	Crisil AAA
National Highways Infra Trust	10.74	43.80%	24-Jul-2025	CARE AAA
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	2.62	37.55%	1-Jul-2025	IND AAA
Interise Trust (formerly Indinfravit Trust)	3.30	44.65%	7-Oct-2025	IND AAA
Shrem Invit	4.34	54.79%	26-Jun-2025	IND AAA
Oriental InfraTrust	3.39	44.39%	19-Sep-2025	IND AAA
Maple Infrastructure Trust	6.82	40.04%	12-Nov-2024	ICRA AAA
IRB InvIT Fund	3.31	27.41%	24-Oct-2025	IND AAA
Roadstar Infra Investment Trust	4.52	37.57%	29-May-2025	ICRA A
Indus Infra Trust (formerly Bharat Highways InvIT)	3.08	19.07%	8-Aug-2025	Crisil AAA
Nxt-Infra Trust	7.65	48.71%	29-Aug-2024	Crisil AAA
Capital Infra Trust (formerly National Infrastructure Trust)	236.30	52.50%	14-Nov-2025	CARE AAA

1. *The Net Debt numbers are as of 31st March 2025. The Net Debt is considered as sum of Non-current + current borrowings + deferred payment to regulators (NHAI for road InvITs) minus cash and cash equivalents + other bank balance). Each of these numbers are sourced from Consolidated Financial Statements for Financial Year 2025. EBITDA has been taken as disclosed in the consolidated P&L. In case of Oriental Infra Trust, Maple Infrastructure Trust and Capital Infrastructure Trust EBITDA has been calculated as Profit / Loss before Tax + Depreciation + Amortisation + Impairment Cost + Finance cost.*
2. *The net borrowings ratio is taken from the respective InvITs "Statement of Net Borrowings Ratio" as required by SEBI Master Circular no SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025. The net borrowings ratio is as of September 30, 2025.*

Source: Annual Reports and Valuation Reports, Financial Statements, Outcome of Board Meetings, CRISIL Intelligence

Road InvIT EV Growth

InvIT Name	EV Date as per Offer Document[1]	EV[2] (INR Crore as per offer document date)	EV[3] (INR Crore as of March 2025)	Percentage Change of EV[4]
Cube Highways Trust	31-Oct-2022	26,912.00	31,611.80	17%
IRB Infrastructure Trust	31-Mar-2023	28,733.90	61,738.00	115%
National Highways Infra Trust	30-Mar-2021	7,362.40	47,130.10	540%
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	31-Mar-2022	5,202.20	19,150.10	268%
Interise Trust (formerly Indinfravit Trust)	31-Dec-2017	5,303.07	18,700.94	253%
Shrem Invit	31-Mar-2021	6,488.90	13,074.00	101%
Oriental InfraTrust	31-Dec-2018	11,638.00	12,561.60	8%
Maple Infrastructure Trust	31-Dec-2021	2,263.29	9,698.65	329%
IRB InvIT Fund	31-Mar-2017	7,050.77	7,828.00	11%
Roadstar Infra Investment Trust	30-Sep-2024	7,178.93	7,691.48	7%
Indus Infra Trust (formerly Bharat Highways InvIT)	30-Sep-2023	5,727.30	6,469.90	13%
Nxt-Infra Trust	31-Dec-2023	6,467.00	5,902.26	-9%
Capital Infra Trust (formerly National Infrastructure Trust)	30-Sep-2024	4,514.30	4,342.60	-4%

1. *The Enterprise Value (EV) date is as per offer documents available on the SEBI website. For IRB Infrastructure Trust, the EV for 31st March 2023 is considered from the March 2023 valuation report.*
2. *The EV numbers considered is the sum of enterprise value (EV) for each SPV, not adjusted for cash and cash equivalents, as disclosed in the respective InvITs' disclosures. The EV considered here is as per date mentioned in the "EV Date as per offer document" column.*
3. *The EV numbers considered is the sum of enterprise value (EV) for each SPV, not adjusted for cash and cash equivalents, as disclosed in the respective InvITs' disclosures. The EV considered here is as of 31st March, 2025.*
4. *This number represents the percentage change of EV from Offer document date till 31st March 2025.*

Source: SEBI Disclosures, Annual Report, Valuation Report

Road InvIT NAV Growth

InvIT Name	NAV Date as per Offer Document[1]	NAV per unit[2] (as per offer document)	NAV per unit[3] (as on 30th Sept 2025)	NAV CAGR[4]
Cube Highways Trust	30-Sep-2023	115.51	143.00	11.3%
IRB Infrastructure Trust	31-Mar-2023	207.83	313.34	17.8%
National Highways Infra Trust	31-Mar-2021	101.00	137.32	7.1%
Vertis Infrastructure Trust (formerly Highways Infrastructure Trust)	31-Mar-2022	94.67	103.55	2.6%
Interise Trust (formerly Indinfravit Trust)	31-Dec-2017	69.63	107.00	5.7%
Shrem Invit	31-Mar-2021	100.00	97.34	-0.6%
Oriental InfraTrust	31-Dec-2018	49.61	115.61	13.4%
Maple Infrastructure Trust	31-Dec-2021	37.53	146.31	43.7%
IRB InvIT Fund	30-Sep-2017	124.63	96.60	-3.1%
Roadstar Infra Investment Trust	30-Sep-2024	96.55	94.16	-2.5%
Indus Infra Trust (formerly Bharat Highways InvIT)	31-Mar-2024	114.12	112.60	-0.9%
Nxt-Infra Trust	26-Jun-2024	128.95	106.79	-13.9%
Capital Infra Trust (formerly National Infrastructure Trust)	30-Sep-2024	91.77	67.48	-26.5%

1. *The Net Asset Value (NAV) per unit date is as per offer documents available on the SEBI website. The NAV per unit disclosure is taken from the Dilution section in Offer Document. For IRB Infrastructure Trust and Indus Infra the NAV for the mentioned date has been taken from the respective annual reports. For IRB InvIT, the NAV is taken from September 30, 2017, report disclosure on the InvIT website. For cube highways, the NAV is taken from half yearly report as on 30th September 2023.*
2. *The NAV is as per the mentioned offer document dates as detailed in previous note. The NAV per unit fair value for Cube highways is taken as Ordinary units + reclassified units as disclosed in the half yearly report.*
3. *The NAV values are as on 30th September 2025.*
4. *The NAV Growth is calculated as the CAGR from the offer document date till 30th September 2025.*

Source: SEBI Disclosures, Annual Report, Half yearly Report, Valuation Report

State Roads

Review and Outlook of State Road

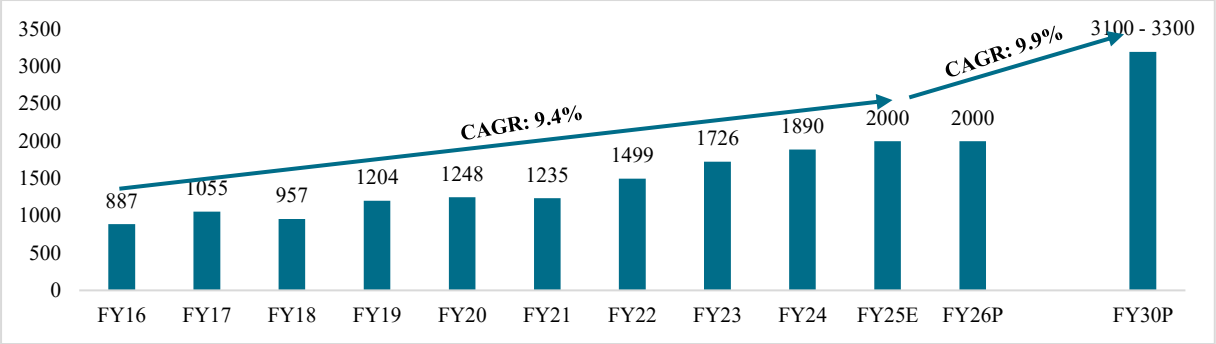
70. State road capex to continue its growth this Financial Year, albeit at a slightly lower pace

Industry Expert's analysis of state road budgets indicates that state road capex forms 45-50% of the sector. State capex on roads & highways sector remained flattish in Financial Year 2021 due to constrained state funds. On this low base, it grew by 21% in Financial Year 2022 and is estimated to have further grown by 10-13% in Financial Year 2023 largely in line with the growth in budgetary outlay. Subsequently, growth is expected to moderate slightly to 8-12% over the next 2 years.

Our interactions with market participants indicate that state road projects funded by external agencies such as World Bank or ADB or have private/bank funding such as Expressways under UPEIDA have not had much impact due to COVID-19, as compared to state-funded projects.

Investments in state roads have exhibited a moderate but steady trajectory over the past decade, reflecting consistent government focus on improving intra-state connectivity and rural linkages. Total investments grew from around ₹887 billion in Financial Year 2016 to approximately ₹2,000 billion in Financial Year 2025, recording a CAGR of about 9.4% over the period. This growth has been supported by continued budgetary allocations under schemes such as the Central Road and Infrastructure Fund (CRIF) and the Pradhan Mantri Gram Sadak Yojana (PMGSY), as well as increased participation from state governments in developing and upgrading their respective road networks.

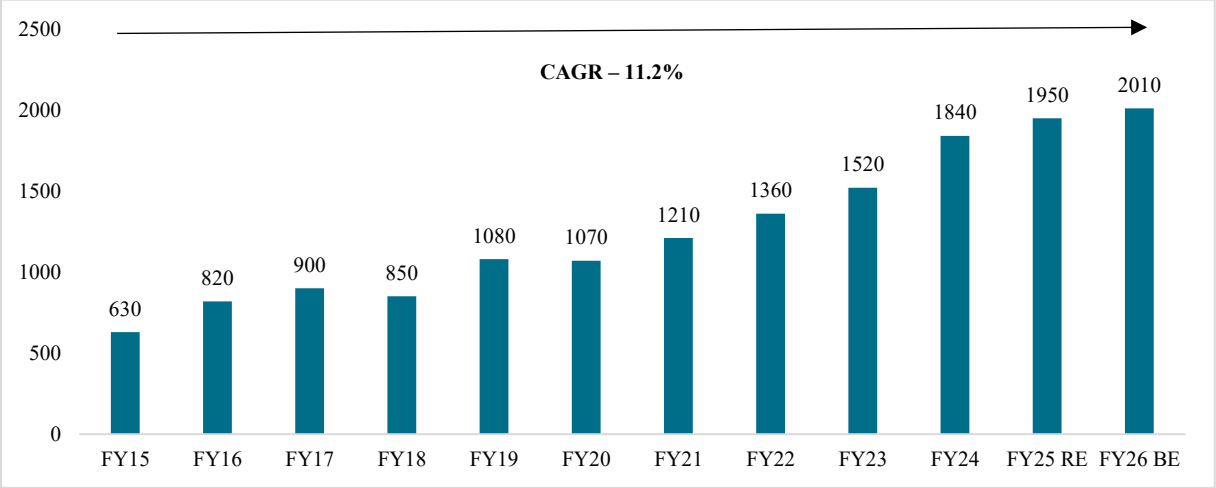
State roads: Overall investments (₹ billion)



Note: P: Projected, E: Estimated
Source: RBI, CRISIL Intelligence

State roads, which include highways, major district roads and rural roads that do not come under the purview of the Pradhan Mantri Gram Sadak Yojana, constitute over 20% of the country's road network and handle ~40% of road traffic. These play an important role in the economic development of mid-sized towns and rural areas, and aid industrial development by enabling the movement of raw materials and products to and from the hinterland.

State Roads Capital Outlay



Source: Crisil Intelligence

State governments' capital outlay on roads has grown steadily from ₹630 billion in Financial Year 2015 to a budgeted ₹2010 billion in Financial Year 2026, recording a strong CAGR of 11.2% over the period. Spending rose gradually through Financial Year 2019–Financial Year 2021, followed by a sharper increase from Financial Year 2022 onward as states strengthened their focus on infrastructure-led development and leveraged improved Financial Year capacity. The significant jump in allocations in Financial Year 2024–Financial Year 2026BE reflects sustained emphasis on expanding and upgrading regional road networks, improving connectivity, and reducing logistics bottlenecks, positioning the road sector as a key enabler of economic activity and state-level development.

71. State roads financed by state governments, private participation in state-level HAM projects, a monitorable

State roads are largely financed through budgetary allocations by respective state governments. These are supplemented by funds from the National Bank for Agriculture and Rural Development (Nabard), Housing and Urban Development Corporation Ltd, Rural Infrastructure Development Fund, and the state's portion of Central Road Fund (CRF).

State governments will finance most state road projects (via budgetary allocation, external assistance, and CRF). Some states have a favourable policy framework to attract private participation. Going forward, the share of private participation in state roads is expected to be at 12-15% as the success of the HAM projects introduced across various states are monitorable.

Budgetary support and lender comfort key success factors for states

	NHAI	Maharashtra	Madhya Pradesh	Karnataka	Rajasthan
Number of bidders	5-6 bidders	6-7 bidders	4-5 bidders	2-3 bidders	2-3 bidders
Bid Project Cost vs Authority Cost	10-15% above	Almost at par	Almost at par	15-20% above	8-10% above
Awarded projects (kms) till date	>7000	~10000	280	420	750
Average size of Project	~Rs 1,100 crore	~Rs 200 crore	~Rs 150 crore	~Rs 1,000 crore	~Rs 500 crore
Cost per km	Rs 20 crore per km	Rs 2.5-3 crore per km	Rs 3-3.5 crore per km	Rs 7 crore per km	Rs 2-2.5 crore per km
Key players	Dilip Buildcon, Ashoka Buildcon, PNC Infratech, Sadbhav, IRB	Rajpath Infra, SB Deshmukh, Harsh Construction, Welspun,	Ravi Infra, Shreeji, Path, RCL	Sadbhav, KNR	Dineshchandra R Agarwal, GR Infra, Gawar Construction
	Awarding began in FY16	Awarding began in FY18, future pipeline in line with Govt. budget allocation	Awarding began in FY20, future pipeline of ~1300 kms	Awarded in FY19, no future pipeline	Awarded in FY18, future awarding potential of 750 kms in FY21
Funding	Budgetary allocation + IEBR	Budgetary allocation of Rs 30-35 billion per year	$ 490 mn from ADB	$ 346 mn from ADB approved for KSHIP	$ 190 mn from ADB
Key findings		GoM deposits 50% of its grant in escrow account maintained by bank to ensure no delayed payments	Awarded in Jan 2020 after approval for ADB loan	Land acquisition & funding issues due to change in Govt. Projects awarded in June 2018 have only now achieved FC. Appointed date given with 65% land to KNR	750 kms awarded in FY18 under RSHIP-1 with ADB funding. RSHIP Tranche-2 now approved

Source: State budget documents, CRISIL Intelligence

72. Central assistance to state roads

State roads come under the jurisdiction of the respective state governments. However, the central government may provide financial assistance to state governments through various schemes for the development of the road network. The responsibility of awarding contracts for road development is entrusted with two state government divisions, namely, the PWD and Road Development Corporation (RDC). Generally, cash contracts are awarded by the state PWDs, while BOT-annuity and BOT-toll contracts are awarded by state RDCs.

The central government has set up the CRF to provide financial assistance to state governments for road development and railway safety works within the states.

73. State-level financial stress

State-level financial stress can pose notable counterparty risk for road operators, particularly in projects dependent on state governments for periodic payments such as annuity-based PPP assets. Several states like Maharashtra , Rajasthan and Madhya Pradesh observed frequent delays in annuity payment due to rising revenue deficits, increasing committed expenditures, and dependence on central transfers, which can lead to delays in releasing annuity payments or settling contractor dues. This often results in elongated payment cycles, adversely affecting the cash flows and working capital requirements of road developers and concessionaires. Prolonged delays may also increase financing costs, weaken debt-service coverage, and impact the overall bankability of future PPP projects. As states continue to expand their road development programmes, the stability and predictability of payment mechanisms will remain a critical factor for private sector participation and long-term financial sustainability in the sector.

Raw Materials for Road Construction

Overview of Bitumen Derivatives Market in India

In the second quarter of Financial Year 2025, bitumen consumption declined by 7% on-year following general and state elections scheduled during the Financial Year leading to muted off-take of road implementation, this is post witnessing an exponential growth of 40% and 27% on-quarter during the third and fourth quarters of Financial Year 2024 as the road construction was increased pre- election season, respectively.

74. Road construction and Infrastructure to drive bitumen demand in Financial Year 2026

In the Financial Year 2026, bitumen demand is expected to improve post completion of elections, road implementation off-take is expected to pick up in-line with continued focus on increasing the pace of construction activity, leading to increase in investments by the center and state governments. Healthy implementation of state roads to increase by up 8-10%, which accounts to 65-70% of overall bitumen demand. Thus, Industry Expert expects bitumen consumption to improve 9-11% on-year to 9-11 million tonne in Financial Year 2026.

In Financial Year 2027, the demand for Bitumen is anticipated to grow 6% reaching consumption to 9-11 MMtpa. The long-term demand for bitumen for road construction and maintenance is driven by infrastructure development, urbanization, government initiatives such as the Bharatmala project, and economic growth.

75. Bitumen demand to log higher growth in the long run

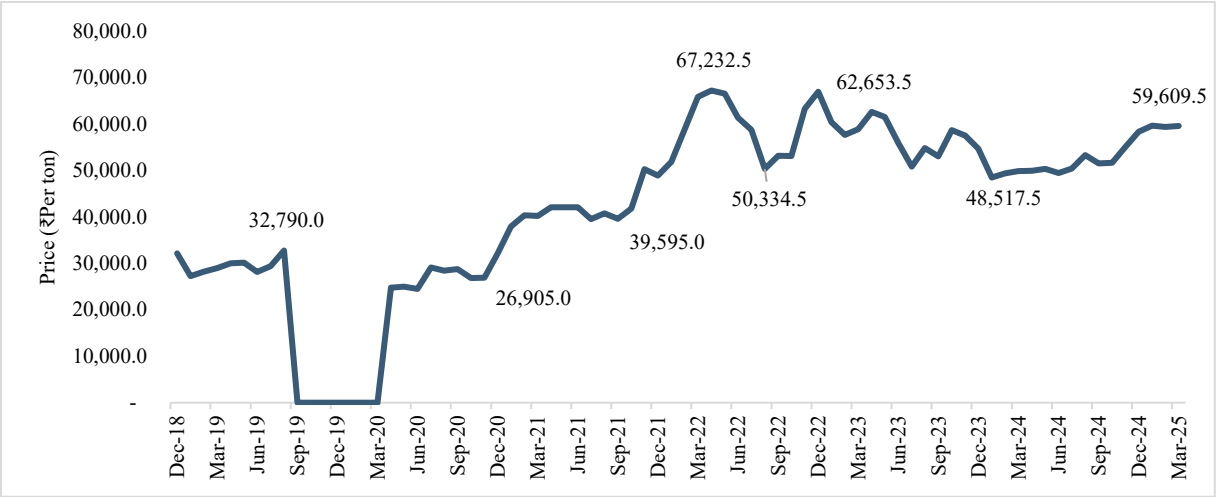
The expansion of transportation networks and the need for well-constructed roads fuel the demand for bitumen as a key component. Urbanization and population growth contribute to the increasing requirement for road infrastructure, while government policies and emphasis on sustainable and durable roads further drive the need for quality bitumen fuel. Economic growth and industrial activities also impact demand through increased road freight and transportation

of goods. Industry Expert projects bitumen demand to increase at 5-7% CAGR between Financial Years 2025 and 2029, to reach 11-13 MMtpa.

Price of Bitumen in India

- Prices remained relatively stable between Dec 2018 and Mar 2020, ranging from approximately ₹28,000 to ₹33,000 per ton.
- A sharp decline occurred around Jun 2020, with prices hitting a low of ₹26,905, likely due to reduced demand and economic slowdown during the COVID-19 pandemic.
- Post-2020, prices began a steady upward climb, peaking sharply at ₹67,232.5 in Jun 2021, driven by economic recovery and global crude price surge.
- By Mar 2025, prices again rose to ₹59,609.5, indicating a potential long-term upward trend.

Prices of Bitumen in India



Source: IOC, CRISIL Intelligence

Other Raw Materials

76. Cement

The share of the infrastructure segment in cement demand has been on the rise over the past few years because of a surge in the central government's capex towards infra sectors. In fact, the share has jumped from 19-21% in Financial Year 2017 to 29-31% in Financial Year 2025. Over the period, the share of housing declined from 64-66% to 55-57% whereas share of industrial and commercial segment remained almost same. Going forward, we expect the infrastructure segment's share to rise further because of the continued rise in central and state government's focus on roads, railways, metros, airports and irrigation. The segment's share is expected to increase to 31-33% in Financial Year 2030.

The government's focus on developing dedicated rail corridors for the energy, mineral and cement sectors, higher budget allocation for metro, UDAN scheme for airports, expansion of metro rail and Namo Bharat to more cities, ongoing NHAI road projects should continue to support infrastructure demand in Financial Year 2026.

The reduction in the GST rate on the key construction material is expected to decrease its prices, thereby stimulating the construction sector. The price fall, in turn, will lead to lower construction costs for urban and rural individual housing buildings (IHBs), enabling homeowners to allocate savings towards larger or modified living spaces. Given that raw materials account for 50-60% of total construction costs, a 7-8% decline in cement prices is anticipated to result in a marginal 100 bps reduction in the overall cost.

Roads: The allocation for MoRTH is further distributed towards NHAI and roads and bridges construction. The budgeted capex for roads and bridges has increased moderately by 5% in Financial Year 2026BE over Financial Year 2025RE. Similarly, the NHAI has been allocated a marginal 1% increase in capex in Financial Year 2026BE compared to the previous Financial Year 2025RE under MoRTH. While there is no growth in overall allocation for MoRTH and Railways, the high quantum of capital expenditure is expected to support cement consumption from construction of roads. A portion of the funds from NHAI will be directed toward completing pending works under the Bharatmala Pariyojana program, an initiative focused on highway expansion and connectivity improvements.

Industry Expert expects a revival in cement demand growth in Financial Year 2026, with on-year growth of 6.5-7.5% after a moderation in Financial Year 2025 which is estimated to have grown by only 4.5-5.5% on three consecutive high bases. The moderation is owing to slowdown during first half of the Financial Year on account of general elections followed by erratic monsoon. In Financial Year 2026 infrastructure to remain the key demand driver. A 10% rise in the capex for core infrastructure ministries (Railways, Road Transport and Highways, Rural Development, Housing and Urban Affairs, Ports, Shipping and Waterways and Civil Aviation) in Financial Year 2026BE over the Financial Year 2025RE is expected to drive the segment growth to 7-9% in Financial Year 2026.

77. Long Steel

India's sponge iron production is estimated to have increased by 8% to 55.5 million tonnes, with healthy infrastructure and construction growth, which are key drivers of the long steel segment. The reduction in long steel output by a major player also led to a surge in demand for secondary TMT, which in turn boosted demand for sponge iron. Looking ahead, the sponge iron sector is expected to witness a positive growth of 8-10% in Financial Year 2026, driven by the strong and sustained momentum in the Indian steel sector, which is fuelled by robust construction demand and supportive government policies. Additionally, the anticipated increase in US production with amended import duty/tariffs in place, is expected to reduce scrap availability, thereby benefiting the Direct Reduced Iron (DRI) sector.

Threats and Challenges

The following section frames out some of the threats and challenges in the industry.

Market and Economic Challenges

- **Economic Slowdowns:** A slowdown in the broader economy can lead to a reduction in government spending on infrastructure projects, fewer new tenders being floated, and a general tightening of credit, all of which adversely impact the civil construction sector.

- **Commodity Price Volatility:** The civil construction sector is highly dependent on key raw materials like steel, cement, bitumen, and aggregates. Fluctuations in the prices of these commodities can significantly impact a company's project costs and profitability.

- **Intense Competition and Bid Price Pressure:** The Indian Road construction sector is highly competitive, with many domestic and international players vying for projects. This leads to aggressive bidding and can compress profit margins. Companies might be forced to bid for projects at lower-than-ideal margins just to secure a healthy order book and maintain market share.

- **Funding and Liquidity Issues:**

    - Delayed Fund Disbursement: In case of any delays in payment from government agencies and state road development corporations, it can strain a company's working capital and cash flow. This often leads to increased borrowing and higher interest costs.

    - Capital-Intensive Nature: Road projects require significant initial capital for equipment, manpower, and materials. Companies must have access to adequate funding, both from banks and from their own cash flows, to sustain operations.

Operational and Execution Challenges

- **Land Acquisition Delays:** This remains one of the most significant and persistent challenges. The process of acquiring land for new road alignments is often slow, complex, and can be mired in legal disputes and community resistance. Delays in land acquisition directly affect project timelines, leading to cost overruns and financial penalties.

- **Regulatory and Environmental Hurdles:** Obtaining various statutory clearances, including environmental, forest, and wildlife approvals, can be a time-consuming and bureaucratic process. This can cause significant project delays.

- **Inconsistent Policies:** Changes in government policies, tax regimes (e.g., GST), and regulatory frameworks can create uncertainty and impact project economics.

- **Shortage of Skilled Labor and Manpower Management:** The road construction sector heavily relies on a large workforce, including skilled engineers, technicians, and migrant laborers. Challenges include a shortage of skilled personnel, high labor turnover, and managing a dispersed workforce across multiple project sites.

- **Project Management and Execution Risks:**

- Lack of Timely Approvals: Projects often get delayed due to slow approval processes for design changes, material specifications, or other on-site issues.
- Sub-Contractor and Supply Chain Risks: Over-reliance on sub-contractors can introduce risks related to quality control, project timelines, and contractual disputes. Disruptions in the supply chain for key materials can also lead to delays.

Technology and Innovation Threats

- **The Need for Technology Adoption:** The industry is experiencing a rapid shift towards new technologies, and companies that fail to adapt risk falling behind.
- **Automation and Robotics:** The use of robotics, drones for site monitoring, and other forms of automation is improving speed, precision, and safety. A lack of investment in these technologies can impact a company's competitiveness.
- **Sustainability and Green Technologies:** Growing concerns about environmental impact are driving a demand for more sustainable construction methods and materials. Companies that are not prepared to integrate green building materials and eco-friendly practices may face regulatory pressures and lose out on projects where sustainability is a key criterion.
- **Data and Digital Transformation:** The future of infrastructure lies in 'smart' roads and digital project management. Companies need to invest in data analytics, IoT sensors for monitoring road conditions, and digital platforms for real-time project tracking. This requires a significant cultural and technological shift, which can be a major challenge for traditional players.

OUR BUSINESS

Some of the information in this section, including information with respect to our plans, strengths, and strategies, contains forward-looking statements that involve risks and uncertainties. You should read "Forward Looking Statements" on page 31 for a discussion on the risks and uncertainties related to those statements and also "Risk Factors", "Summary Audited Consolidated Financial Information of the Trust" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" on pages 87, 58, and 389, respectively, for a discussion of certain factors that may affect our business, financial condition or results of operations. Our actual results may differ materially from those expressed in or implied by these forward-looking statements.

*Unless otherwise stated, references in this section to "we", "our" or "us" are to the Cube Highways Trust, together with the Existing Portfolio Assets. The Trust acquired 51% of the shareholding in Borgaon Watambare Highways Private Limited, Mangalwedha Solapur Highways Private Limited, Mangloor Highways Private Limited, Srirangam Infra Private Limited (formerly known as KNR Srirangam Infra Private Limited), Shankarampet Projects Private Limited (formerly known as KNR Shankarampet Projects Private Limited) and Tirumala Highways Private Limited (formerly known as KNR Tirumala Infra Private Limited) (collectively, the "HAM SPVs") on June 4, 2024, and acquired the remaining 49% shareholding in the HAM SPVs on December 3, 2024. Further, the Trust acquired 100% of the shareholding in N.A.M. Expressway Private Limited ("NAMEPL") on February 12, 2025. Thereafter, the Trust acquired 100% of the shareholding in Quazigund Expressway Private Limited ("QEPL") and Jammu Udhampur Highway Private Limited ("JUHPL" and together with QEPL, the "NIIF SPVs") on June 12, 2025. Accordingly, the HAM SPVs, NAMEPL and the NIIF SPVs have been accounted for as subsidiaries in our Audited Consolidated Financial Statements with effect from June 4, 2024, February 12, 2025 and June 12, 2025, respectively. Cube Highways and Infrastructure II Pte. Ltd. ("**CH-II**") and CH-V, members of the Cube Group, hold 100% of the equity shares of each of Baharampore Farakka Highways Limited, Devanahalli Tollway Private Limited and Chenani - Nashri Tunnelway Limited, and 95% of the equity shares of Western MP Infrastructure & Toll Roads Private Limited, wherein Express Way Developers Limited, a third party, currently holds 5% of the equity shares, which are highway and tunnelway project SPVs that own assets in the states of West Bengal, Karnataka, the union territory of Jammu and Kashmir and the state of Madhya Pradesh, respectively (collectively, the "**Proposed Portfolio Assets**"). Prior to completion of the Offer, the Trust, acting through the Investment Manager and Trustee, shall acquire from CH-II and CH-V, and CH-II and CH-V shall transfer to the Trust, in exchange for Units, the aforementioned equity shareholding of each of the Proposed Portfolio Assets held by both CH-II and CH-V (including at least 95% of the equity shares of WMTPL), together with their nominees. Further, please note that the proposed acquisition of equity shares of the Proposed Portfolio Assets (including at least 95% of the equity shares of WMTPL) is subject to satisfaction of certain conditions precedent specified under the Commitment Letter. For further details, please see "Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust" and "Related Party Transactions - Commitment Letter" on pages 56 and 417, respectively.*

Unless otherwise stated, the financial information included herein is based on our Audited Consolidated Financial Statements included in this Draft Offer Document. We have included certain non-Ind AS financial measures and other performance indicators relating to our financial and operational performance in this Draft Offer Document, each of which is a supplemental measure of our performance and liquidity and not required by, or presented in accordance with, Ind AS or IFRS. Furthermore, such measures and indicators are not defined under Ind AS, IFRS, or other accounting standards and therefore should not be viewed as substitutes for performance, liquidity, or profitability measures under those standards. In addition, such measures and indicators are not standardised, and a direct comparison between companies may not be possible. Other companies may calculate these measures and indicators differently from us, limiting their usefulness as a comparative measure. Although such measures and indicators are not performance measures calculated in accordance with applicable accounting standards, our management believes they are useful to investors in evaluating our operating performance. Investors are accordingly cautioned against placing undue reliance on such information in making an investment decision and must evaluate such information in the context of the Audited Consolidated Financial Statements.

Industry, macro-economic and market data, and all industry-related statements in this section have been extracted or derived from the report titled "Assessment of the Indian Road Sector" prepared and released by the Industry Expert, which has been commissioned and paid for by the Investment Manager on behalf of the Trust (the "Industry Report"). Investors must rely on their independent examination of the Trust, and should not place undue reliance on, or base their investment decision solely on, this information. Also, please see the section entitled "Risk Factors – We have relied on data derived from third-party reports, which are based on certain estimates and assumptions and are subject to the limitations set out therein" on page 115 for details of risks in relation to commissioned reports.

Overview

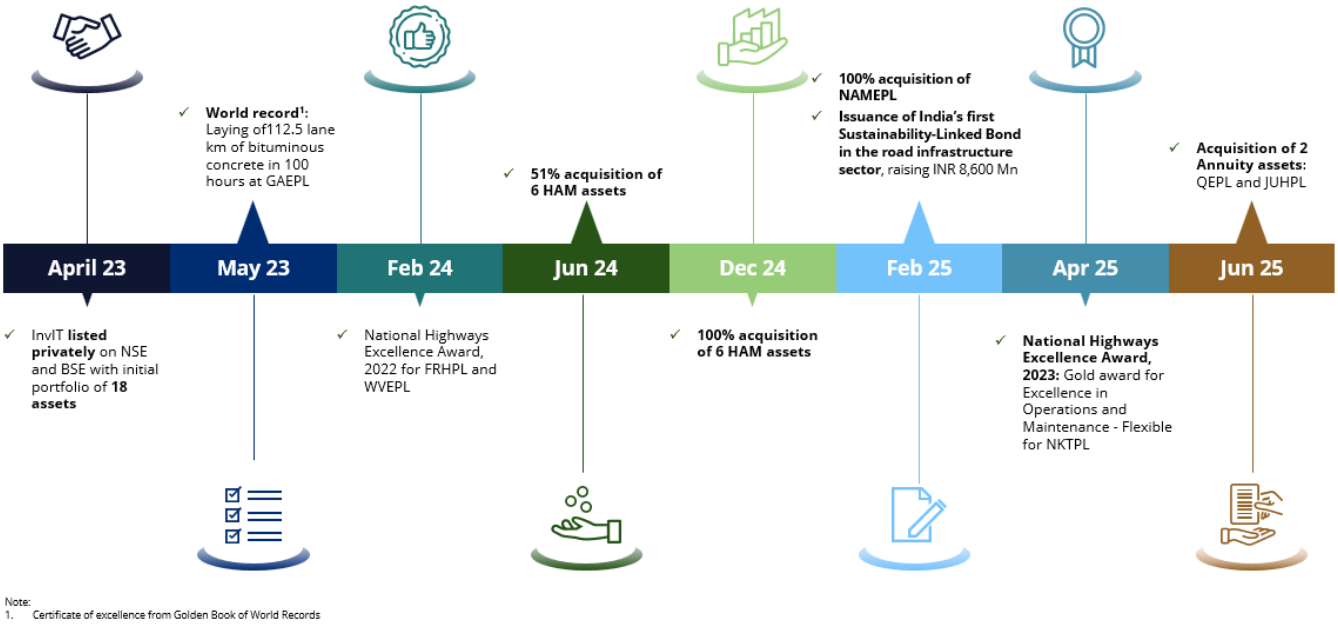
We are an Indian infrastructure investment trust sponsored by Cube Highways and Infrastructure V Pte. Ltd. and established with the objective of acquiring and operating road assets in India. We are engaged in implementing the public-private partnership model in India's highways sector to operate and manage highways in association with the central and state governments. We are registered with SEBI under the InvIT Regulations, and our units were listed on the Stock Exchanges since April 19, 2023.

As of September 30, 2025, through our Existing Portfolio Assets, we operate 27 road assets aggregating to 8,754* lane kilometers and 2,005 kilometers in distance across 12 states and one union territory in India. As of such date, our Existing Portfolio Assets had a weighted average residual concession period of 18.44 years (weighted on the basis of pre-major

maintenance EBITDA ("**pre-MM EBITDA**")), and we maintained Enterprise Value/AUM aggregating to ₹365,199.18 million, exhibiting year-on-year AUM growth of 25.23% since September 30, 2024. This growth has corresponded with a 43% increase in our NAV per Unit from listing in April 2023 through September 30, 2025, at a CAGR of 15.70%. We operate our assets under different types of concessions, with a balanced mix of toll and annuity income. As of September 30, 2025, among our Portfolio Assets, our Toll AUM to Annuity AUM ratio was 85:15. Further, as of September 30, 2025, our Portfolio Assets (including the Proposed Portfolio Assets) had an average residual concession period of 17.59 years and operating history of 9.02 years. In addition, prior to the completion of the Offer, the Trust will acquire from certain members of the Cube Group (pursuant to Swap Transactions), 100% of the equity shares of three highway and tunnelway project SPVs that own assets in the states of West Bengal and Karnataka and the union territory of Jammu and Kashmir and at least 95% of the equity shares of another highway project SPV that owns assets in Madhya Pradesh and up to 100% (subject to certain conditions specified in the Commitment Letter). Upon completion of the Swap Transactions, we will operate 31 road assets (aggregating to 9,811 lane kilometers, as of September 30, 2025) across 13 states and one union territory in India.

* *This is represented as 8,816 kms in the Industry Report which is prior to descoping adjustments.*

Set out below is a brief timeline of our progress since listing until September 30, 2025:



Note:
1. Certificate of excellence from Golden Book of World Records

We were initially sponsored by Cube Highways and Infrastructure Pte. Ltd. and Cube Highways and Infrastructure III Pte. Ltd. Following a change in our sponsor, we are currently sponsored by Cube Highways and Infrastructure V Pte. Ltd. ("**CH-V**", or our "**Sponsor**"). Our Sponsor invests in road and highway projects, as well as other select infrastructure sectors in India, focusing on acquiring mature, cash-generating highway assets, stabilizing and derisking them, and operating them while focusing on delivery of returns to our investors. Additionally, CH-V is an active growth vehicle of the Cube Group, with a strong track record of acquiring, operating, and integrating complex and diverse road assets across India. Our Sponsor holds a portfolio of six operational road assets spanning 2,148 lane kilometers, as of September 30, 2025. Our Sponsor and Sponsor Group are a part of the Cube Group, which is an institutionally-owned road infrastructure platform backed by a diversified investor base, including I Squared Capital (through ISQ Fund III Asia Infrastructure Holdings Pte. Ltd), Platinum Rock B 2014 RSC Limited (as trustee of the Platinum Stone A 2014 Trust, a wholly owned subsidiary of the Abu Dhabi Investment Authority) ("**Platinum Rock**"), Varese IRR LP ("**BCI**") and Mubadala Investment Company PJSC ("**MIC**") (through Seventy Second Investment Company LLC). We have raised ₹134,406.97 million in unit capital (excluding issue expenses of ₹10.94 million) since our settlement, and our Unitholders include several marquee investors, including BCI (through its affiliates) and MIC (through wholly owned subsidiaries) and a variety of domestic mutual funds and insurance companies, among others.

Prudent Debt Management

Our debt facilities have been rated (i) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for term loan and bank guarantee; (ii) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for non-convertible debentures; (iii) AAA/Stable by ICRA on September 1, 2025 for term loan and bank guarantee; (iv) AAA/Stable by ICRA on September 1, 2025 for, non-convertible debentures; (v) AAA/Stable by CRISIL Ratings Limited on March 5, 2026 for term loan and bank guarantee – long term; and (vi) A1+ by Crisil Ratings Limited on March 5, 2026, for term loan and bank guarantee – short term. The table below sets out our key financing and borrowing information, as of the dates indicated:

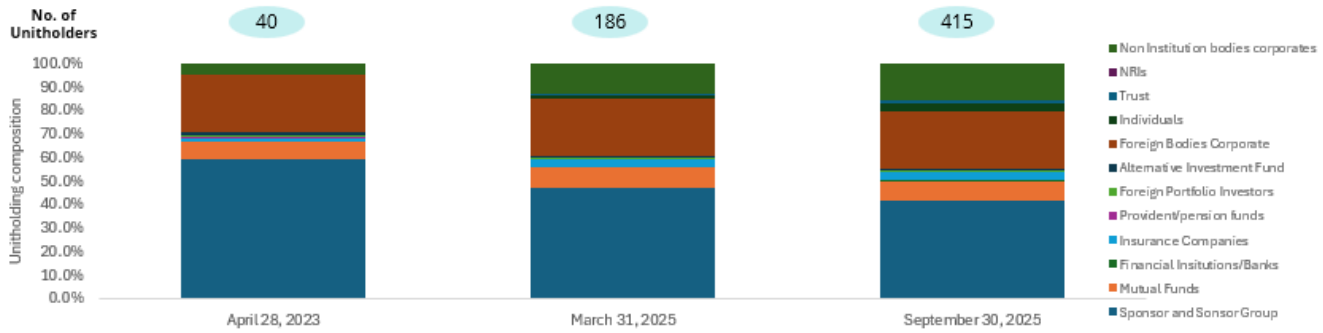
Particulars	As of and for the six months ended September 30, 2025	As of and for the year ended March 31, 2025
Net borrowing ratio (%)	47.37%	44.65%
Borrowings (₹ *in million*)*	179,923.44	152,063.65
Additional debt headroom (as a % of AUM)	22.63%	25.35%

Particulars	As of and for the six months ended September 30, 2025	As of and for the year ended March 31, 2025
Weighted average cost of borrowings (%)	7.75%	8.05%
Fixed-rate borrowings (%)	28.63%	21.19%

* *Borrowings are on an undiscounted basis and include accrued interest on borrowings.*

Unitholder Base

Since our listing as a private InvIT in April 2023, our Unitholder base has expanded significantly, from 40 Unitholders as of April 28, 2023, to over 400 Unitholders as of September 30, 2025, reflecting increased investor participation from non-institutional investors alongside traditional institutional categories, including corporates, mutual funds, financial institutions and insurance companies. The chart below shows the growth of our Unitholder base from our listing till September 30, 2025:

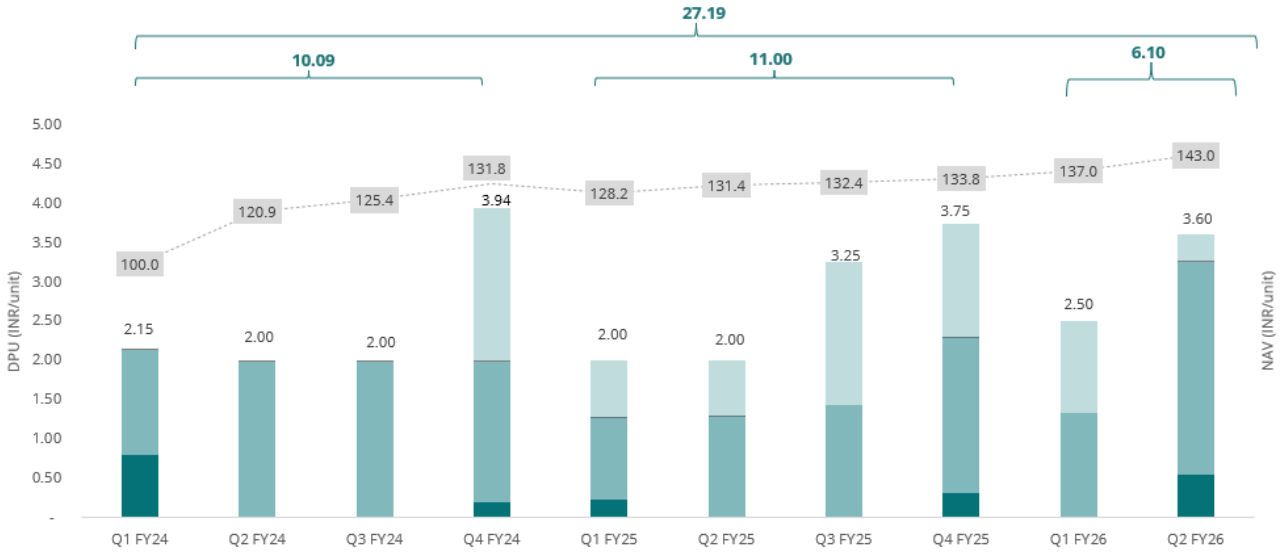


Note: Number of unique unitholders by name as per Beneficiary Position.

Further, as of December 31, 2025, our Unitholder base stood at 656 Unitholders.

Consistent Distributions

We have had a consistent track record of quarterly distributions since our listing. Each financial year, we have distributed, at least quarterly, a minimum of 90% of the net distributable cash flows of the Trust available for distribution to our Unitholders, as required under the InvIT Regulations. Our consolidated net distributable cash flows during the six months ended September 30, 2025, and the Financial Year 2025 aggregated to ₹7,484.76 million and ₹10,823.81 million, respectively. Our cumulative distributions since listing have totalled ₹35,897.35 million (representing a cumulative distribution per unit ("**DPU**") of ₹27.19), as of September 30, 2025. The chart below provides a breakdown of our cumulative distributions per unit since listing until the quarter ended September 30, 2025:



Since listing until September 30, 2025, we have delivered an average annual DPU yield of 9.52% (computed as the average of DPU yield for Financial Year 2024, Financial Year 2025 and six months ended September 30, 2025 (annualized), with DPU yield being computed as DPU divided by the average traded price of the Units on the BSE), with a total XIRR of 25.09%, according to the Industry Report. For further details, please see "*Distributions*" on page 385.

Sustainability

We have also integrated a comprehensive environmental, social and governance ("**ESG**") framework into our business and financing strategy. Our sustainability priorities are embedded across our asset operations. In February 2025, we issued India's

first sustainability-linked bond in the road infrastructure sector, with coupon performance linked to defined ESG targets for greenhouse gas emission intensity, circularity in materials and gender diversity. The average coupon rate of our NCDs was 7.67% per annum, payable quarterly, as of September 30, 2025. We have adopted sustainable construction and maintenance practices, including the use of reclaimed asphalt pavement, polymer-modified bitumen and other low-carbon materials, together with rainwater harvesting, afforestation initiatives such as the Miyawaki plantation method, energy efficient procurement, efficient lighting solutions, solar panel installations, HVAC replacements, electric vehicle adoptions and are further exploring alternative fuels.

Financial Information

The table below sets out certain of our financial information for the periods and financial years indicated:

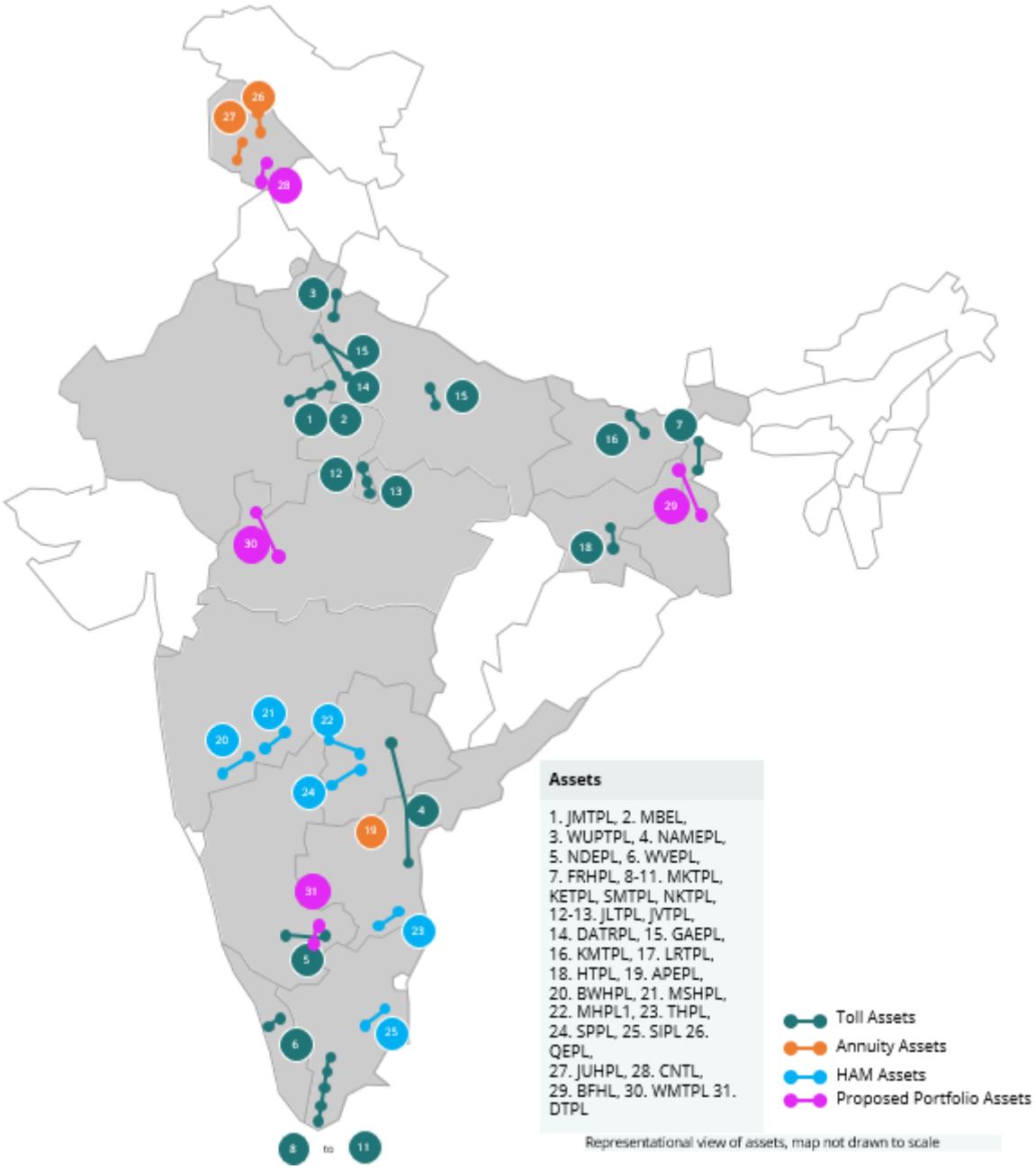
Particulars	For the six months ended September 30, 2025	For the Financial Year		
		2025	2024	2023[#]
Enterprise Value/AUM *(₹ in million)*	365,199.18	322,657.15	258,106.00	-
Revenue from operations *(₹ in million)*	19,958.97	33,071.44	29,161.37	-
Total income *(₹ in million)*	20,651.59	34,531.52	30,741.05	-
EBITDA *(₹ in million)*	15,116.37	23,797.00	13,688.56	(277.88)
Adjusted EBITDA* *(₹ in million)*	15,116.37	23,797.00	19,560.43	(277.88)
Net distributable cash flows *(₹ in million)*	7,484.76	10,823.81	10,761.77	-
Net Asset Value per Unit *(₹)*^	143.00	132.86	126.64	-
DPU *(₹)*	6.10	11.00	10.09	-
Net Debt to AUM ratio *(%)*	47.37%	44.65%	33.65%	-
Share of Fixed rate borrowings *(%)*	28.63%	21.19%	11.16%	

* *Adjusted EBITDA is computed as follows: Total comprehensive income less Trust Group's expenses other than Finance costs, Tax expense, Impairment of Intangible Assets, Depreciation and Amortization and Exceptional items as appearing in the Consolidated Statement of Profit and Loss.*

[#] *The Existing Portfolio Assets were acquired on April 17, 2023 as part of the initial formation transaction, prior to our listing on April 19, 2023.*

^ *Net Asset Value per Unit considers only ordinary units and does not account for the reclassification of subordinate units to ordinary units.*

The map below sets forth the location of our Existing Portfolio Assets and Proposed Portfolio Assets:



Our Existing Portfolio

Our Existing Portfolio Assets have a weighted average residual concession life (weighted on the basis of pre-major maintenance EBITDA ("**pre-MM EBITDA**")) of 18.44 years as of September 30, 2025 and a weighted average operating history (weighted on the basis of pre-MM EBITDA, assuming commencement of operations ("**COD**") as the beginning date) of 8.71 years as of September 30, 2025. The Enterprise Value/AUM, as of September 30, 2025, was ₹283.28 billion for the 18 assets acquired at the time of our listing, ₹50.91 billion for the six HAM assets and a BOT asset acquired between June 2024 and February 2025, and ₹31.01 billion for the two BOT annuity assets acquired during June 2025. The aggregate Enterprise Value/AUM of our Existing Portfolio Assets was ₹365,199.18 million.

The table below sets forth an overview of the Existing Portfolio Assets:

Project SPV	Type of concession	Concessioning authority	Project length and number of lanes	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)[3]	Revenue from operations for the six months ended September 30, 2025	Revenue from operations for the Financial Year 2025	Enterprise Value/AUM as of September 30, 2025
Andhra Pradesh Expressway	BOT (Annuity)	NHAI	74.6 kms 4 lanes	Telangana and Andhra Pradesh	1.00 years	₹169.05 million	₹1,520.62 million	₹1,001.35 million

Project SPV	Type of concession	Concessioning authority	Project length and number of lanes	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)[3]	Revenue from operations for the six months ended September 30, 2025	Revenue from operations for the Financial Year 2025	Enterprise Value/AUM as of September 30, 2025
Private Limited ("**APEPL**") [2]								
DA Toll Road Private Limited ("**DATRPL**")	BOT	NHAI	179.5 kms 6 lanes	Uttar Pradesh, Haryana and Delhi	18.37 years	₹3,128.60 million	₹6,047.88 million	₹76,804.93 million
Farakka – Raiganj Highways Private Limited ("**FRHPL**") [1]	DBFOT	NHAI	100.1 kms 4 lanes	West Bengal	15.58 years	₹1,319.45 million	₹2,539.65 million	₹27,240.00 million
Ghaziabad Aligarh Expressway Private Limited ("**GAEPL**")	BOT	NHAI	126.3 kms 6 lanes	Uttar Pradesh	13.72 years	₹2,030.34 million	₹4,127.38 million	₹35,502.00 million
Hazaribagh Tollway Private Limited ("**HTPL**")	TOT	NHAI	73.5 kms 4 lanes	Jharkhand	25.05 years	₹717.94 million	₹1,285.25 million	₹20,546.00 million
Jaipur Mahua Tollway Private Limited ("**JMTPL**")	BOT	NHAI	109.1 kms 4 lanes	Rajasthan	5.69 years	₹1,197.56 million	₹2,586.63 million	₹7,890.00 million
Jhansi – Lalitpur Tollway Private Limited ("**JLTPL**")	TOT	NHAI	49.7 kms 4 lanes	Uttar Pradesh	20.05 years	₹519.71 million	₹990.84 million	₹12,687.00 million
Jhansi – Vigakhet Tollway Private Limited ("**JVTPL**")	TOT	NHAI	49.3 kms 4 lanes	Uttar Pradesh	20.05 years	₹362.35 million	₹690.72 million	₹7,926.00 million
Kanyakumari – Etturavattam Tollway Private Limited ("**KETPL**")	TOT	NHAI	64.2 kms 4 lanes	Tamil Nadu	25.05 years	₹470.78 million	₹693.98 million	₹10,558.50 million
Kotwa – Muzaffarpur Tollway Private Limited ("**KMTPL**")	TOT	NHAI	80.0 kms 4 lanes	Bihar	20.55 years	₹601.79 million	₹1,152.15 million	₹14,341.00 million
Lucknow – Raebareli Tollway Private Limited ("**LRTPL**")	TOT	NHAI	70.0 kms 4 lanes	Uttar Pradesh	25.05 years	₹341.74 million	₹689.11 million	₹8,403.15 million
Madurai – Kanyakumari Tollway Private Limited ("**MKTPL**")	TOT	NHAI	52.3 kms 4 lanes	Tamil Nadu	20.05 years	₹1,052.51 million	₹1,136.77 million	₹16,275.00 million
Mahua Bharatpur Expressways Limited ("**MBEL**")	BOT	NHAI	57.3 kms 4 lanes	Rajasthan	5.72 years	₹574.17 million	₹1,159.84 million	₹3,984.00 million
Nanguneri – Kanyakumari Tollway Private Limited ("**NKTPL**")	TOT	NHAI	63.5 kms 4 lanes	Tamil Nadu	25.50 years	₹522.86 million	₹680.05 million	₹14,474.60 million
Nelamangala Devihalli Expressway Private Limited ("**NDEPL**")	BOT	NHAI	80.3 kms 4 lanes	Karnataka	7.33 years	₹585.46 million	₹1,129.52 million	₹4,859.00 million
Salaipudhur – Madurai Tollway	TOT	NHAI	63.5 kms 4 lanes	Tamil Nadu	25.05 years	₹498.66 million	₹746.47 million	₹11,404.00 million

Project SPV	Type of concession	Concessioning authority	Project length and number of lanes	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025)[3]	Revenue from operations for the six months ended September 30, 2025	Revenue from operations for the Financial Year 2025	Enterprise Value/AUM as of September 30, 2025
Private Limited ("**SMTPL**")								
Walayar Vadakkencherry Expressways Private Limited ("**WVEPL**")	DBFOT (Toll)	NHAI	53.5 kms 4 lanes	Kerala	11.85 years	₹564.24 million	₹1,081.69 million	₹9,349.00 million
Western UP Tollway Private Limited ("**WUPTPL**")	BOT	NHAI	78.1 kms 4 lanes	Uttar Pradesh	0.73 years	₹862.38 million	₹1,694.53 million	₹31.00 million
Borgaon Watambare Highways Private Limited ("**BWHPL**") [2]	HAM (Annuity)	NHAI	52.0 kms 4 lanes	Maharashtra	10.98 years	₹294.49 million	₹304.31 million	₹3,799.00 million
Mangalwedha Solapur Highways Private Limited ("**MSHPL**") [2]	HAM (Annuity)	NHAI	55.9 kms 4 lanes	Maharashtra	11.20 years	₹315.23 million	₹404.05 million	₹4,114.85 million
Mangloor Highways Private Limited ("**MHPL**") [2]	HAM (Annuity)	NHAI	49.0 kms 4 lanes	Telangana	11.21 years	₹247.62 million	₹374.06 million	₹2,818.00 million
Tirumala Highways Private Limited ("**THPL**") [2]	HAM (Annuity)	NHAI	61.1 kms 6 lanes	Andhra Pradesh	10.61 years	₹316.16 million	₹593.60 million	₹4,926.00 million
Srirangam Infra Private Limited ("**SIPL**") [2]	HAM (Annuity)	NHAI	38.7 kms 4 lanes	Tamil Nadu	10.66 years	₹268.89 million	₹470.09 million	₹3,765.00 million
Shankarampet Projects Private Limited ("**SPPL**") [2]	HAM (Annuity)	NHAI	46.8 kms 4 lanes	Telangana	11.01 years	₹283.72 million	₹508.91 million	₹4,177.00 million
N.A.M. Expressway Private Limited ("**NAMEPL**")	DBFOT (Toll)	Government of Andhra Pradesh and Telangana	212.9 kms 4 lanes	Andhra Pradesh and Telangana	14.15 years	₹1,673.30 million	₹463.34 million	₹27,312.00 million
Quazigund Expressway Private Limited ("**QEPL**") [2]	DBFOT (Annuity)	NHAI	16.0 kms 4 lanes	Jammu and Kashmir	5.68 years	₹613.59 million	Nil	₹18,837.80 million
Jammu Udhampur Highway Private Limited ("**JUHPL**") [2]	BOT (Annuity)	NHAI	48.0 kms 4 lanes	Jammu and Kashmir	5.71 years	₹426.39 million	Nil	₹12,173.00 million

(1) FRHPL toll fee revenue includes 100% share of overloading revenue. However, only 25% of the overloading revenue is credited to the FRHPL account, and the remaining 75% is credited to the erstwhile owner of FRHPL.

(2) APEPL, BWHPL, MSHPL, MHPL, THPL, SIPL, SPPL, QEPL and JUHPL are annuity assets and accordingly, revenue from operations corresponds to annuity income.

(3) Residual Concession Life represents actual residual life for each asset, after accounting for any extensions granted by or which may be granted by the relevant concessioning authority. Our concession agreements allow changes to the assets' concession periods based on actual traffic/revenue relative to target benchmarks, with specific multipliers for adjustments. Our estimations for residual concession life are based on our contracts and independent traffic studies.

Proposed Portfolio Acquisition Transactions

Cube Highways and Infrastructure II Pte. Ltd. ("**CH-II**") and CH-V, members of the Cube Group, hold 100% of the equity shares of each of Baharampore Farakka Highways Limited, Devanahalli Tollway Private Limited and Chenani - Nashri Tunnelway Limited, and 95% of the equity shares of Western MP Infrastructure & Toll Roads Private Limited, wherein Express Way Developers Limited, a third party, currently holds 5% of the equity shares (collectively, the "**Proposed Portfolio Assets**"). Prior to the completion of the Offer, the Trust, acting through the Investment Manager and Trustee, shall acquire from CH-II and CH-V, and CH-II and CH-V shall transfer to the Trust, in exchange for Units, the aforementioned equity shareholding of each of the Proposed Portfolio Assets held by both CH-II and CH-V (including at least 95% of the equity shares of WMTPL),

together with their nominees. Further, please note that the proposed acquisition of equity shares of the Proposed Portfolio Assets (including at least 95% of the equity shares of WMTPL) is subject to satisfaction of certain conditions precedent specified under the Commitment Letter. For further details, please see "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" and "*Related Party Transactions - Commitment Letter*" on pages 56 and 417, respectively. The aggregate Enterprise Value/AUM of the Proposed Portfolio Assets was ₹72,925.32 million, as of March 31, 2026.

The table below sets forth an overview of the Proposed Portfolio Assets:

SPV	Type of concession	Concessioning authority	Project length and number of lanes	State/Union Territory	Residual Concession Life (in years, as of September 30, 2025) (1)	Revenue from operations for the Financial Year 2025	AUM as of March 31, 2026(3)
Baharampore Farakka Highways Limited ("**BFHL**")	DBFOT	NHAI	100.6 kms 4 lanes	West Bengal	15.34 years(4)	₹2,086.94 million	₹20,192.81 million
Western MP Infrastructure & Toll Roads Private Limited ("**WMTPL**")	BOT	Madhya Pradesh Road Development Corporation	124.2 kms 4 lanes	Madhya Pradesh	12.57 years	₹2,361.35 million	₹15,721.65 million
Devanahalli Tollway Private Limited ("**DTPL**")	DBFOT	NHAI	22.1 kms 6 lanes	Karnataka	6.29 years	₹3,237.77 million	₹14,764.77 million
Chenani-Nashri Tunnelway Limited ("**CNTL**")	DBFOT (Annuity)	NHAI	10.8 kms (2) 2 lanes	Jammu and Kashmir	6.44 years	₹3,389.02 million	₹22,246.10 million

(1) Residual Concession Life represents actual residual life for each asset, after accounting for any extensions granted by or which may be granted by the relevant concessioning authority. Our concession agreements allow changes to the assets' concession periods based on actual traffic/revenue relative to target benchmarks, with specific multipliers for adjustments. Our estimations for residual concession life are based on our contracts and independent traffic studies.

(2) As per the annuity letter dated February 2025, it includes ~1.9 kms of additional approach roads.

(3) As per the Valuation Report.

(4) Please note that the extension for the concession period is yet to be approved by the NHAI.

Right of First Offer Assets ("ROFO Assets")

The Existing Portfolio Assets and the Proposed Portfolio Assets will together comprise our Portfolio Assets. Further, the Trust (acting through the Investment Manager) also has the ability to acquire new projects through (i) a right of first offer ("**ROFO**") with our Sponsor in accordance with the right of first offer agreement dated March 17, 2026, ("**ROFO Agreement**" and such assets, the "**ROFO Assets**"); and (ii) through other acquisitions in terms of the Investment Policy. For further details, please see "*Corporate Governance*" and "*Related Party Transactions*" on pages 179 and 410, respectively. The aggregate revenue from operations for the ROFO Assets was ₹8,805.92 million for the Financial Year 2025.

The table below sets forth an overview of the ROFO Assets:

Particulars	Kokhraj Handia Expressway Private Limited ("KHEPL")	Malayagiri Highways Private Limited ("MHPL2")	Delhi Hapur Meerut Expressway Private Limited ("DHMEPL")
Equity Shareholders	CH –V	CH –V	CH –V
Project Connecting	Kokhraj to Handia	Binjabahal to Teliebani	NCR to Meerut and Hapur
Granting Authority	NHAI	NHAI	NHAI
State	Uttar Pradesh	Odisha	Delhi, Uttar Pradesh
Highway	NH19	NH49	NE3 and NH9
Project Length (Km)	84.5 km	71.6 km	82.0 km
No. of toll plazas	6	1	9
Lane configuration	4 lane	4 lane	6 lane
Toll Plazas ("TP")	Closed Tolling: TP1: Kokhraj toll plaza TP2: Shingverpur TP3: Nawabganj TP4: Soraon TP5: Sahson TP6: Handia toll plaza	TP 1: Bideibadkudar	Closed Tolling: TP1: Sarai Kale Khan TP2: Indirapuram TP3: Dundahera TP4: Dasna TP5: Rasoolpur Sikrod TP6: Bhojpur

Particulars	Kokhraj Handia Expressway Private Limited ("KHEPL")	Malayagiri Highways Private Limited ("MHPL2")	Delhi Hapur Meerut Expressway Private Limited ("DHMEPL")
			TP7: Zainuddinpur (under construction) TP8: Kashi Toll Plaza (main line) TP9: Chhajarsi Toll Plaza (main line) (NH09)
Concession Period	20 Years	20 Years	20 Years
Residual Concession Life (as of September 30, 2025) [(1)]	18.50 Years	18.50 Years	18.50 Years
Toll/Annuity	Toll	Toll	Toll
Revenue from operations for the Financial Year 2025	₹2,542.44 million	₹999.15 million	₹5,264.33 million
Appointed Date	April 1, 2024	April 1, 2024	April 1, 2024
Concession End Date	March 31, 2044	March 31, 2044	March 31, 2044
Current Status	100% operational	100% operational	100% operational

(1) Residual Concession Life represents actual residual life for each asset, after accounting for any extensions granted by or which may be granted by the relevant concessioning authority. Our concession agreements allow changes to the assets' concession periods based on actual traffic/revenue relative to target benchmarks, with specific multipliers for adjustments. Our estimations for residual concession life are based on our contracts and independent traffic studies.

Parties to the Trust

The Investment Manager is responsible for managing the Trust and its Portfolio Assets, as well as undertaking investment decisions relating to us and our assets. The cumulative experience of the directors and employees of the Investment Manager in fund management, advisory services, or infrastructure development exceeds 30 years as of September 30, 2025. The Investment Manager is responsible for defining our strategic direction, including with respect to future acquisitions, divestments, or asset enhancements. For further details, please see "*Parties to the Trust – The Investment Manager – Cube Highways Fund Advisors Private Limited*" on page 155.

The Trustee, Axis Trustee Services Limited, is a trusteeship company registered with SEBI as a debenture trustee under the Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993, as amended. On behalf of our Unitholders, the Trustee is responsible for (a) ensuring that our business objectives and investment policies comply with the provisions of the InvIT Regulations and other applicable law, and (b) monitoring the activities of the Investment Manager (in terms of the Investment Management Agreement) and the Project Manager (in terms of the Project Implementation and Management Agreement). For further details, please see "*Parties to the Trust – The Trustee – Axis Trustee Services Limited*" on page 144.

The Project Manager, Cube Highways and Transportation Assets Advisors Private Limited, undertakes operations and management of the Portfolio Assets, including advising the Trustee on such matters, ensuring compliance with the respective concession agreements and project documents, making arrangements for appropriate maintenance, overseeing the progress of development, status of approvals and other aspects of the projects of the Portfolio Assets. The Project Manager has been appointed pursuant to the Project Implementation and Management Agreement dated January 2, 2023. For further details, please see "*Parties to the Trust – The Project Manager – Cube Highways and Transportation Assets Advisors Private Limited*" on page 168.

Recent Developments

Pursuant to a resolution dated February 27, 2026, the board of directors of the Investment Manager has approved to replace the existing Project Manager, Cube Highways and Transportation Assets Advisors Private Limited, and appointed Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new Project Manager of the Trust, subject to the receipt of necessary approvals, including approval of the National Highways Authority of India and completion of the applicable regulatory and contractual formalities. The change in Project Manager will take effect from the date of execution of the New PIMA, subject to the above approvals and has not been completed as of the date of this Draft Offer Document.

On January 30, 2026, the Investment Manager has published the unaudited financial results of the Trust for the quarter and nine months ended December 31, 2025, on a standalone and consolidated basis. In addition to the publication of the financial results, the board of directors of the Investment Manager also approved and remitted distributions to Unitholders (as of the relevant record date). Further, the board of directors of the Investment Manager also considered and noted the updated valuation report of the Existing Portfolio Assets as of December 31, 2025, as issued by the Valuer. Based on these published results, set out below are updates to the financial and operational information of the Trust as of and for the nine months ended December 31, 2025 compared to the nine months ended December 31, 2024:

Financial information

Particulars	As of and for the nine months ended December 31,	
	2025	2024
Enterprise Value/AUM *(₹ in million)*	360,929.45	290,292.00
AUM Toll vs Annuity [(1)]	86%:14%	79%:21%
Revenue from operations *(₹ in million)*	30,767.23	24,611.23
Revenue from toll assets (*₹ in million*)	25,998.57	21,062.04
Revenue from toll assets, as a percentage of revenue from operations (*%*)	84.50%	85.58%
Revenue from annuity assets (*₹ in million*)	4,768.66	3,549.19
Revenue from annuity assets, as a percentage of revenue from operations (*%*)	15.50%	14.42%
Total income *(₹ in million)*	31,695.72	25,746.41
EBITDA *(₹ in million)*	23,063.68	18,069.21
EBITDA attributable to toll assets (*₹ in million*) [(2)]	19,983.42	16,067.85
EBITDA attributable to toll assets, as a percentage of consolidated EBITDA (*%*)[(2)]	86.65%	88.93%
EBITDA attributable to annuity assets (*₹ in million*)	3,584.31	2,290.09
EBITDA attributable to annuity assets, as a percentage of consolidated EBITDA (%)[(2)]	15.54%	12.67%
Net distributable cash flows *(₹ in million)*	11,846.08	8,136.88
Net Asset Value per Unit *(₹)*	142.7	132.4
Distributions per unit *(₹ per unit)*	10.20	7.25
Cumulative distribution *(₹ per unit)*	31.29	21.09
Share of Fixed rate borrowings *(in %)*	28.71%	14.00%
Net borrowing ratio (*%*)[(3)]	46.86%	39.12%
Borrowings (*₹ in million*)[(4)]	178,834.52	126,978.68
Additional debt headroom (as a % of AUM)	23.14%	30.88%
Weighted average cost of borrowings (*%*)	7.72%	8.25%
Fixed-rate borrowings (*%*)	28.71%	14.00%

Notes:

(1) This includes 18 toll assets and 9 annuity assets (6 HAM and 3 annuity assets) as of December 31, 2025.

(2) The cumulative percentage of EBITDA attributable to our toll and annuity assets exceeds 100.00% of our consolidated EBITDA, as Trust-level expenses are not considered in the calculation of EBITDA attributable to individual assets.

(3) Net Debt includes interest accrued as well as promoter loan of WVEPL and pass through payment for QEPL, net of cash, AUM includes 27 assets.

(4) Borrowings are on an undiscounted basis and include accrued interest on borrowings.

Operational information

Particulars	As of December 31, 2025
Returns	
Dividend per unit yield (%) [(1)(2)(3)]	10.91%
Net asset value CAGR (%) [(3)]	14.05%
Asset features	
Residual concession (Existing & Proposed Portfolio Assets) (in years)[(4)]	17.34
Operating History (Existing & Proposed Portfolio Assets) (in years) [(4)]	9.27
Credit Rating	AAA[(5)]

Notes:

(1) Distribution per ordinary unit.

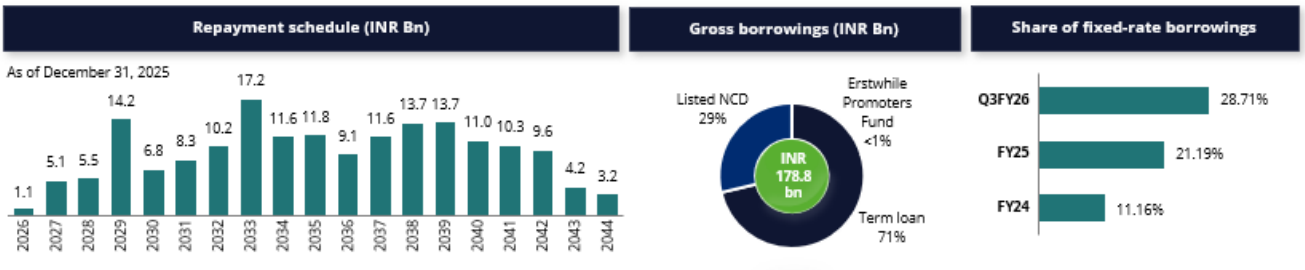
(2) Average of DPU yield for the Financial Year 2024, Financial Year 2025 and the nine months ended December 31, 2025 (Annualized); DPU Yield = DPU / Average traded price (BSE).

(3) Privately listed on BSE/NSE on April 19, 2023.

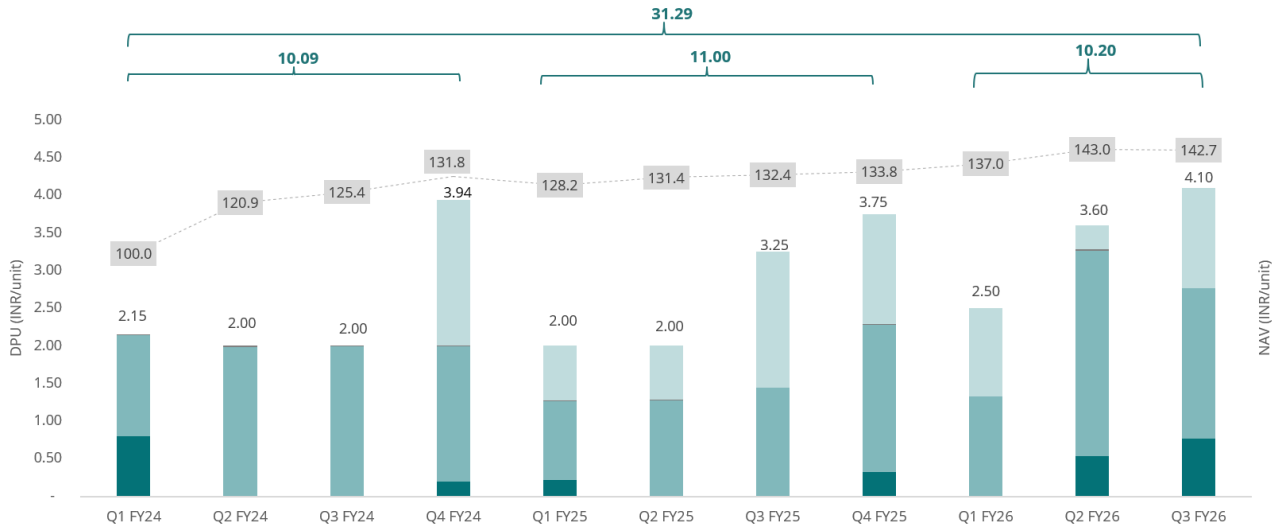
(4) Calculated as Weighted Average using Aggregate sum of Pre-MM EBITDA of the respective SPVs over their operating life of the project, as of December 31, 2025" as weights; concession end date as per valuation report as of September 30, 2025, for existing assets and concession end date as per valuation report as of March 31, 2026, for proposed assets.

(5) Our debt facilities have been rated (i) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for term loan and bank guarantee; (ii) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for non-convertible debentures; (iii) AAA/Stable by ICRA on September 1, 2025 for term loan and bank guarantee; (iv) AAA/Stable by ICRA on September 1, 2025 for, non-convertible debentures; (v) AAA/Stable by CRISIL Ratings Limited on March 5, 2026 for term loan and bank guarantee – long term; and (vi) A1+ by Crisil Ratings Limited on March 5, 2026, for term loan and bank guarantee – short term.

Repayment profile



Distributions



Further, set out below are updates in relation to revenue from operations from our Existing Portfolio Assets for the nine months ended December 31, 2025, as compared to the corresponding period in the preceding year:

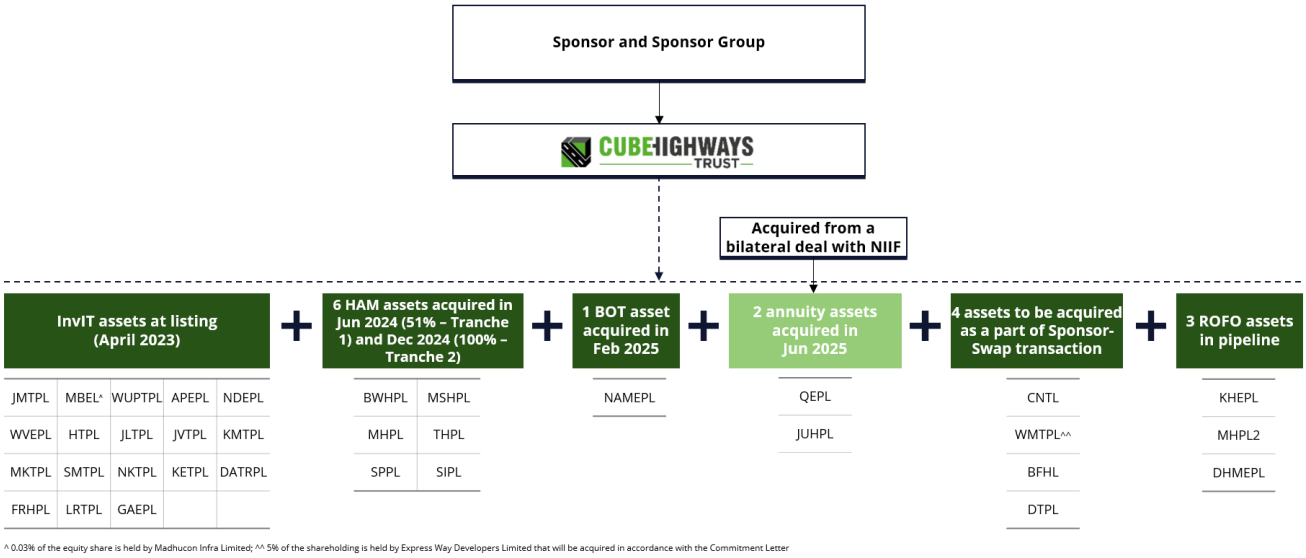
Project SPV	Revenue from operations for the nine months ended December 31, 2025	Revenue from operations for the nine months ended December 31, 2024
Andhra Pradesh Expressway Private Limited ("**APEPL**")	₹266.87 million	₹1,363.94 million
DA Toll Road Private Limited ("**DATRPL**")	₹4,870.42 million	₹4,471.88 million
Farakka – Raiganj Highways Private Limited ("**FRHPL**")	₹1,972.69 million	₹1,831.57 million
Ghaziabad Aligarh Expressway Private Limited ("**GAEPL**")	₹3,335.29 million	₹3,139.39 million
Hazaribagh Tollway Private Limited ("**HTPL**")	₹1,104.74 million	₹936.41 million
Jaipur Mahua Tollway Private Limited ("**JMTPL**")	₹1,810.07 million	₹1,887.97 million
Jhansi – Lalitpur Tollway Private Limited ("**JLTPL**")	₹798.05 million	₹742.54 million
Jhansi – Vigakhet Tollway Private Limited ("**JVTPL**")	₹556.16 million	₹517.97 million
Kanyakumari – Etturavattam Tollway Private Limited ("**KETPL**")	₹675.28 million	₹517.43 million
Kotwa – Muzaffarpur Tollway Private Limited ("**KMTPL**")	₹933.94 million	₹855.3 million
Lucknow – Raebareli Tollway Private Limited ("**LRTPL**")	₹528.2 million	₹473.95 million
Madurai – Kanyakumari Tollway Private Limited ("**MKTPL**")	₹1,396.6 million	₹846.63 million
Mahua Bharatpur Expressways Limited ("**MBEL**")	₹893.48 million	₹840.11 million
Nanguneri – Kanyakumari Tollway Private Limited ("**NKTPL**")	₹734.9 million	₹510.38 million
Nelamangala Devihalli Expressway Private Limited ("**NDEPL**")	₹921.71 million	₹845.48 million
Salaipudhur – Madurai Tollway Private Limited ("**SMTPL**")	₹719.17 million	₹553.72 million
Walayar Vadakkencherry Expressways Private Limited ("**WVEPL**")	₹864.45 million	₹807.59 million

Project SPV	Revenue from operations for the nine months ended December 31, 2025	Revenue from operations for the nine months ended December 31, 2024
Western UP Tollway Private Limited ("**WUPTPL**")	₹1,347.32 million	₹1,283.72 million
Borgaon Watambare Highways Private Limited ("**BWHPL**")	₹444.09 million	₹354.07 million
Mangalwedha Solapur Highways Private Limited ("**MSHPL**")	₹455.67 million	₹398.54 million
Mangloor Highways Private Limited ("**MHPL**")	₹361.93 million	₹340.44 million
Tirumala Highways Private Limited ("**THPL**")	₹449.14 million	₹403.15 million
Srirangam Infra Private Limited ("**SIPL**")	₹405.92 million	₹333.73 million
Shankarampet Projects Private Limited ("**SPPL**")	₹400.86 million	₹355.32 million
N.A.M. Expressway Private Limited ("**NAMEPL**")	₹2,536.10 million	Nil
Quazigund Expressway Private Limited ("**QEPL**")	₹1,115.00 million	Nil
Jammu Udhampur Highway Private Limited ("**JUHPL**")	₹869.18 million	Nil

Strengths

The Investment Manager believes the following to be the key strengths of the Trust:

Dedicated growth vehicle and access to a strong pipeline of ROFO Assets and other future growth opportunities



We have a differentiated growth structure comprising the Trust and our Sponsor-level growth platform, comprising CH-V and other affiliates of the Cube Group (together, the "**GrowthCo vehicle**"). We believe this framework has offered a robust growth proposition, in which assets are acquired by Sponsor Group entities and stabilised and de-risked prior to potential transfer to the Trust. This integrated Sponsor-level GrowthCo vehicle may facilitate direct dropdowns from the Cube Group to the Trust. Since listing in April 2023, we have demonstrated a consistent record of expansion, adding nine assets over two years and increasing our Enterprise Value/AUM to ₹365,199.18 million as of September 30, 2025.

We believe that the addition of four Proposed Portfolio Assets as part of our proposed portfolio will further reduce leverage, enhance yield and strengthen diversification across geographies, concession structures, and revenue profiles. These benefits include improvements in average distribution yield, enhancements in NAV, and an expansion of available debt capacity, all while contributing to the Trust's revenue from operations. In addition to these financial contributions, as set out in the Traffic Reports, the toll assets out of the Proposed Portfolio Assets, (being BFHL, WMTPL and DTPL), are strategically located on established freight and passenger corridors and are characterised by stable operating histories and predictable cash flows, with moderate to long remaining concession periods. These assets have been under the Growth Co-vehicle's stewardship and have undergone operational stabilisation measures, including optimising tolling processes, enhancing maintenance and safety practices, and aligning reporting and governance standards, to support smoother integration into the Trust.

We also benefit from our ROFO Agreement with our Sponsor, under which three identified assets are currently available for potential acquisition, subject to the conditions set forth in the ROFO Agreement. Beyond the identified ROFO pool, the GrowthCo vehicle continuously evaluates and acquires suitable assets using the Cube Group's sector expertise, financial capacity, and established relationships with developers, lenders, and government stakeholders. Also see "*—Overview – ROFO Assets*" on page 280.

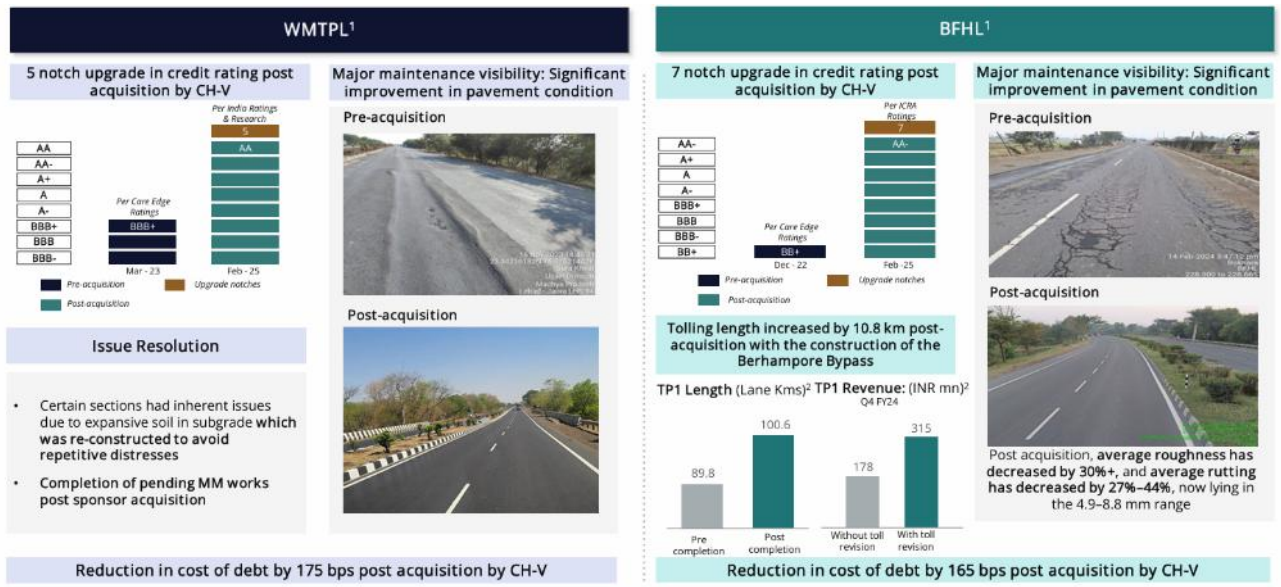
We believe that the above arrangements enhance our ability to pursue disciplined growth through stable, cash-generating assets, thereby supporting long-term stability of distributions and sustained portfolio growth.

Case Study: Derisking of assets through Sponsor-led initiatives and stabilization prior to transfer to the Trust

After acquiring Western MP Infrastructure & Toll Roads Private Limited ("**WMTPL**") and Baharampore-Farakka Highways Limited ("**BFHL**"), our Sponsor implemented a structured de-risking programme to address technical and operational issues that had constrained performance.

In BFHL, several sections suffered inherent pavement weaknesses arising from expansive subgrade soils, which had previously caused repetitive distress. However, our Sponsor was able to achieve operational consistency through pavement restoration, drainage correction and reinstatement of structural elements, ensuring the corridor met concession requirements before its proposed transfer to the Trust.

Both WMTPL and BFHL experienced meaningful improvements in credit quality following these interventions. WMTPL achieved a five-notch upgrade in credit rating, while BFHL achieved a seven-notch upgrade in credit rating between the pre-acquisition and post-acquisition review periods. These measures were also accompanied by reductions in the cost of debt by 175 bps and 165 bps for WMTPL and BFHL, respectively. BFHL also recorded a 10.8 km increase in tolling length, driven by the correction of tollable sections and the restoration of full-length compliance. Across both assets, we reduced average roughness levels, demonstrating improvements in carriageway condition.



Source: Credit rating documents; Roughness & Rutting - NSV findings; Cost of debt - Financial Statements; Tolling Length - Toll notifications. Note:
1. WMTPL = Western MP Infrastructure and Toll Roads Private Limited, BFHL = Baharampore - Farakka Highways Limited
2. Post the revision of toll fees at TP1 in December 2023, the actual revenue was INR 315 Mn for Q4 FY24; had the toll revision not happened the revenue for Q4 FY24 would have been ~INR 178 Mn

Large and diversified portfolio of highway assets

We have a large, geographically diversified portfolio of toll road and annuity assets, comprising the 27 Existing Portfolio Assets, with an additional four Proposed Portfolio Assets proposed to be acquired prior to the completion of the Offer, totaling 31 Portfolio Assets across 13 states and one union territory in India. The Existing Portfolio Assets have an aggregate of 8,754.03* lane kilometers (covering 2,005.04 kilometers in distance) and the Proposed Portfolio Assets have an aggregate of 1,056.68 lane kilometers (covering 257.72 kilometers in distance), each as of September 30, 2025.

** This is represented as 8,816 kms in the Industry Report which is prior to descoping adjustments.*

According to the Traffic Reports, several of our assets lie on nationally significant highway corridors, including sections of the North–South Corridor (NH-44) and key stretches that form part of the Delhi–Agra–Jaipur Golden Triangle, while others are located on important east–west and regional freight routes. The Traffic Consultants noted that these corridors carry a mix of long-distance freight, including construction materials, petroleum products, agricultural produce, and manufactured goods, alongside substantial passenger movement driven by commuting, inter-city travel and tourism. Across individual assets, the Traffic Reports highlight the presence of industrial clusters, agricultural belts and major urban centres, which together support sustained traffic volumes and long-term corridor relevance. We believe that this diversity limits concentration risk and aligns our revenues with multiple segments of the real economy. For example, roads serving industrial regions such as Sikandrabad and Aligarh carry significant volumes of construction materials, manufactured goods and metals, while other corridors (including long-distance routes such as Farakka–Raiganj and the southern NH-44 stretches) carry a mix of passenger traffic, tourism movements and long-haul freight. The resulting portfolio traffic mix, with approximately 72.00% passenger and 28.00% commercial vehicles (based on daily average vehicle count for the period between April 2025 and September 2025), provides a stable base that responds positively to both consumption and investment-led growth.

Case Study: Portfolio Diversification Provides Stability in Toll Revenues

Our Existing Portfolio Assets of 27 road assets, spread across 12 Indian states and one union territory, demonstrate that diversification across geography, corridor type, asset type, and traffic composition reduces revenue volatility. For instance, during the Financial Year 2025, although a few assets located in southern and northern India experienced temporary traffic moderation due to disruptions from maintenance works, removal of temporary traffic and regional monsoon, the portfolio as a whole recorded a year-on-year 6.2% growth in traffic and 8.0% growth in revenue from operations during the same period. This resilience was driven by the offsetting performance of assets located in high-growth corridors in northern and eastern India, such as the Delhi–Agra, Ghaziabad–Aligarh, and Madurai–Kanyakumari stretches.

Our concession arrangements provide a stable contractual framework with provisions that support long-term cash flow visibility, including annual WPI-linked adjustments to toll rates for toll projects and potential extensions of concession periods in certain projects upon meeting prescribed target traffic thresholds. Each Existing Portfolio Asset and Proposed Portfolio Asset has entered into a long-term concession agreement with the NHAI or state concessioning authority with tenors ranging between 20 and 30 years. As of September 30, 2025, the Existing Portfolio Assets had a weighted-average residual concession life (weighted by pre-MM EBITDA) of approximately 18.44 years.

Our assets are operated under various types of concessions, with a balanced mix of toll- and annuity-revenue-generating assets. Details of our revenue from toll assets and annuity assets during the periods and financial years indicated are set out below:

Particulars	For the six months ended September 30,		For the Financial Year		
	2025	2024	2025	2024	2023[#]
Revenue from operations (*₹ in million*)	19,958.97	16,115.97	33,071.44	29,161.37	-
Revenue from toll assets (*₹ in million*)	16,237.33	13,332.09	28,275.30	24,715.17	-
Revenue from toll assets, as a percentage of revenue from operations (*%*)	81.35%	82.73%	85.50%	84.75%	-
Revenue from annuity assets (*₹ in million*) ^	2,900.86	2,370.26	4,135.70	400.32	-
Revenue from annuity assets, as a percentage of revenue from operations (*%*)^	14.53%	14.71%	12.51%	1.37%	-
EBITDA *(₹ in million)*	15,116.37	11,643.09	23,797.00	13,688.56	(277.88)
Adjusted EBITDA (*₹ in million*) **	15,116.37	11,643.09	23,797.00	19,560.43	(277.88)
Adjusted EBITDA attributable to toll assets (*₹ in million*)	13,134.02	10,392.71	21,646.75	19,565.91	-
Adjusted EBITDA attributable to toll assets, as a percentage of consolidated Adjusted EBITDA (*%*)* ^	86.89%	89.26%	90.97%	100.03%	-
Adjusted EBITDA attributable to annuity assets (*₹ in million*)	2,274.92	1,432.56	2,618.00	266.34	-
Adjusted EBITDA attributable to annuity assets, as a percentage of consolidated Adjusted EBITDA (%)* ^	15.05%	12.30%	11.00%	1.36%	-

* *The cumulative percentage of Adjusted EBITDA attributable to our toll and annuity assets exceeds 100.00% of our consolidated Adjusted EBITDA, as Trust-level expenses are not considered in the calculation of Adjusted EBITDA attributable to individual assets.*

** *Adjusted EBITDA is computed as follows: Total comprehensive income less Trust Group's expenses other than Finance costs, Tax expense, Impairment of Intangible Assets, Depreciation and Amortization and Exceptional items as appearing in the Consolidated Statement of Profit and Loss.*

\# *The Existing Portfolio Assets were acquired on April 17, 2023, as part of the initial formation transaction, prior to our listing on April 19, 2023.*

^ *Represents Operation & Maintenance Income, Renewal and overlay income and Finance Income on annuity receivables.*

As set out below, our assets have demonstrated resilient traffic growth, with a weighted average historical traffic CAGR of approximately 5.85% across toll projects, reflecting the strength of the corridors in which our assets operate. Further, traffic across toll assets is expected to grow approximately 4.67% between the Financial Years 2026-2052, according to the Traffic Reports.

SPV	Average Traffic volumes during (in PCUs)						
	Year of COD[1]	Six months ended September 30, 2025	Financial Year 2025 (n)	Financial Year 2024	Financial Year 2023	Period (in years)	CAGR (%)
JMTPL	18,698	34,859	37,992	35,285	31,073	13	5.61%
MBEL	18,261	30,537	31,221	29,144	28,118	13	4.21%
WUPTPL	30,856	39,052	38,919	39,682	37,112	13	1.80%
GAEPL	21,130	34,654	32,211	27,976	24,609	9	4.80%
NDEPL	15,363	31,469	30,031	28,755	27,754	12	5.74%
FRHPL	20,029	32,575	32,490	31,680	30,679	8	6.23%
WVEPL	17,874	39,460	38,956	39,149	36,717	9	9.04%
DATRPL	21,610	55,440	55,855	53,663	51,645	12	8.24%
JLTPL	16,814	21,055	21,020	19,439	18,632	4	5.74%
JVTPL	15,844	19,664	19,582	18,143	17,520	4	5.44%
LRTPL	22,844	18,325	19,124	17,605	18,336	4	-4.35%
KMTPL	23,852	23,780	23,649	22,839	22,533	4	-0.21%
HTPL	21,973	30,875	28,933	24,349	21,582	4	7.12%
MKTPL	28,281	38,491	35,035	33,179	31,064	4	5.50%
KETPL	16,615	21,711	20,509	19,098	17,344	4	5.40%
SMTPL	14,207	19,285	17,964	16,639	15,094	4	6.04%
NKTPL	16,535	21,327	19,470	18,913	18,090	4	4.17%
NAMEPL	13,571	23,984	22,354	21,068	19,824	9	5.70%

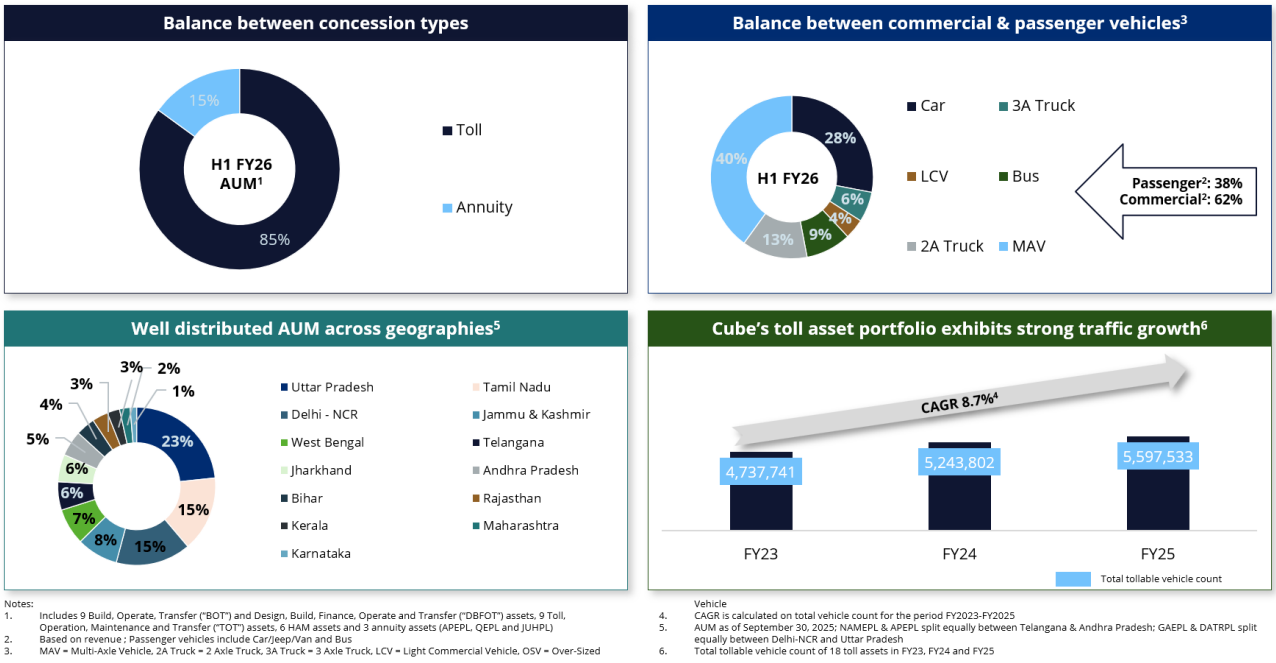
SPV	Average Traffic volumes during (in PCUs)						
	Year of COD[1]	Six months ended September 30, 2025	Financial Year 2025 (n)	Financial Year 2024	Financial Year 2023	Period (in years)	CAGR (%)
Portfolio CAGR (%)[(2)]							**5.85%**

Notes:

1. *COD is the Commercial Operation Date, i.e., Financial Year 2012 for JMTPL, MBEL, WUPTPL; Financial Year 2013 for NDEPL, DATRPL; Financial Year 2016 for GAEPL, WVEPL; Financial Year 2017 for FRHPL; Financial Year 2021 for JLTPL, JVTPL, LRTPL, KMTPL, HTPL, MKTPL, KETPL, SMTPL, NKTPL, NAMEPL.*
2. *Portfolio CAGR is calculated as a weighted average of individual SPV AUMs, as of March 31, 2025.*

As of September 30, 2025, our Existing Portfolio Assets recorded a weighted average annual daily tollable traffic of 35,404 PCUs, based on AUM-weighted and toll-length-adjusted calculations. Traffic composition was led by cars (66%), followed by multi-axle vehicles (14%), 2-axle trucks (7%), buses (6%), LCVs (5%), and 3-axle trucks (2%). For the period from April 1, 2025 to September 30, 2025, our Existing Portfolio Assets registered a traffic growth of 6.7%, with electronic toll collection penetration at 96.70%.

Further, the charts below provide an overview of the traffic characteristics of the Existing Portfolio Assets as of September 30, 2025, by concession model, vehicle type and state:



Notes:
1. Includes 9 Build, Operate, Transfer ("BOT") and Design, Build, Finance, Operate and Transfer ("DBFOT") assets, 9 Toll, Operation, Maintenance and Transfer ("TOT") assets, 6 HAM assets and 3 annuity assets (APEPL, QEPL and JUHPL)
2. Based on revenue ; Passenger vehicles include Car/Jeep/Van and Bus
3. MAV = Multi-Axle Vehicle, 2A Truck = 2 Axle Truck, 3A Truck = 3 Axle Truck, LCV = Light Commercial Vehicle, OSV = Over-Sized Vehicle
4. CAGR is calculated on total vehicle count for the period FY2023-FY2025
5. AUM as of September 30, 2025; NAMEPL & APEPL split equally between Telangana & Andhra Pradesh; GAEPL & DATRPL split equally between Delhi-NCR and Uttar Pradesh
6. Total tollable vehicle count of 18 toll assets in FY23, FY24 and FY25

Differentiated and proven M&A capabilities

We are an active acquirer of road assets in India, with a proven ability to identify, evaluate and integrate projects across diverse concession models. Since our listing on the Stock Exchanges in April 2023, we have expanded our portfolio from 18 to 27 assets through acquisitions, increasing our Enterprise Value/AUM from ₹236,807.96 million as of June 30, 2023 (being the first quarter of our listing on the Stock Exchanges) to ₹365,199.18 million as of September 30, 2025. These include the acquisition of six hybrid annuity model projects (acquired from members of the Sponsor Group), which contribute to a balanced mix of government-back annuity income and traffic linked toll revenue, a BOT toll asset (i.e., NAMEPL, also acquired from our Sponsor) which is strategically located on the North-South freight corridor with stable revenues, and two annuity assets in Jammu & Kashmir (acquired from the National Investment and Infrastructure Fund ("**NIIF**")), which has diversified our revenue mix into annuity based assets and expanded our platform beyond Sponsor-led acquisitions.

Cube Highways and Infrastructure II Pte. Ltd. ("CH-II") and CH-V, members of the Cube Group, hold 100% of the equity shares of each of Baharampore Farakka Highways Limited, Devanahalli Tollway Private Limited and Chenani - Nashri Tunnelway Limited, and 95% of the equity shares of Western MP Infrastructure & Toll Roads Private Limited, wherein Express Way Developers Limited, a third party, currently holds 5% of the equity shares (collectively, the "Proposed Portfolio Assets"). Prior to the completion of the Offer, the Trust, acting through the Investment Manager and Trustee, shall acquire from CH-II and CH-V, and CH-II and CH-V shall transfer to the Trust, in exchange for Units, the aforementioned equity shareholding of each of the Proposed Portfolio Assets held by both CH-II and CH-V (including at least 95% of the equity shares of WMTPL), together with their nominees. Further, please note that the proposed acquisition of equity shares of the Proposed Portfolio Assets (including at least 95 % of the equity shares of WMTPL) is subject to satisfaction of certain conditions precedent specified under the Commitment Letter. For further details, please see "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" and "*Related Party Transactions - Commitment Letter*" on pages 56 and 417, respectively.

Our investment decisions are guided by a rigorous evaluation framework that considers expected internal rates of return, corridor and traffic growth potential, concession life, capital efficiency, and portfolio synergies. Each prospective acquisition is also subject to diligence covering technical, legal, financial and ESG parameters.

Our Investment Manager has a dedicated M&A and project finance team with specialised deal-making capabilities and a broad network of relationships, enabling it to execute transactions bilaterally. Our Sponsor, as part of the Cube Group, has also established an active M&A platform in India's roads sector, with a demonstrated record of acquiring and managing high-quality toll and annuity assets. The Cube Group has successfully executed several marquee transactions, including large TOT bundle acquisitions from the NHAI and bilateral acquisitions from leading developers, resulting in a diversified road portfolio in India. Further, our Sponsor (along with its affiliates) has in-house experience in key areas of asset appraisal, evaluation and selection and due diligence, including traffic forecasting and technical assessment, legal diligence, financial diligence and ESG assessment, which enables it to make informed early assessments of opportunities.

Case Study: Yield Accretion through Debt-Led Acquisitions

In February 2025, we signed definitive agreements with the NIIF to acquire two annuity-based road projects, Quazigund Expressway Private Limited and Jammu Udhampur Highway Private Limited, both located in Jammu and Kashmir. The transaction, valued at an enterprise value of approximately ₹33.46 billion, was completed in June 2025. These projects have a residual concession life of about 6 years as of September 30, 2025, and generate fixed semi-annual annuities from NHAI, providing steady cash flows unlinked to traffic performance.

We believe that this acquisition demonstrated our ability to execute large, accretive transactions within a disciplined leverage framework. The acquired assets were operational and cash-generating at the time of acquisition, allowing for immediate contribution to distributable cash flows. The transaction diversified our portfolio into northern India and further balanced our revenue mix between toll and annuity streams, improving both yield and resilience against macroeconomic and traffic-cycle variations.

Strong portfolio construction capabilities

Our portfolio construction philosophy has been centred on acquiring assets with established operating histories, proven performance and long residual concession life. The average operating history of our Existing Portfolio Assets is 8.71 years, and the residual concession life is 18.44 years as of September 30, 2025 (weighted by pre-MM EBITDA). Our Portfolio reflects a balance between toll, annuity, and HAM assets, a strong commercial vehicle mix, and exposure to resilient and passenger corridors, all of which contribute to stable cash flows. Many of our assets are located contiguously, enabling us to capture economies of scale, particularly in maintenance and procurement. This geographic clustering allows our Project Manager to deploy shared resources efficiently, streamline logistics, and maintain consistent service standards across adjoining corridors.

We believe that we follow a meticulous and disciplined approach to acquisitions. Each potential investment undergoes comprehensive screening and due diligence, including financial, traffic, technical, legal, and environmental assessments. We believe that our disciplined bidding strategy prioritises quality over quantity and aligns with our long-term return objectives, rather than being driven solely by expansion for scale, and that this prudence has enabled us to construct our asset portfolio with a clear focus on maximizing long-term returns while ensuring risk-adjusted diversification across geographies, asset types, and traffic profiles. We also incorporate data-driven valuation models, engineering assessments, lifecycle cost forecasts and operational risk analysis into our acquisition framework, ensuring a high level of underwriting discipline and long-term portfolio resilience. Our strategy emphasizes acquiring operating assets with predictable traffic behaviour, demonstrated revenue track records, and favourable risk-return profiles.

Our portfolio construction philosophy is anchored in a disciplined, traffic-led approach that prioritizes resilience, network stability, and long-term value creation. We focus on assets with strong, stable traffic fundamentals—particularly those insulated from network changes, benefiting from high captive shares, and located in geographies with limited alternative routes. We believe that we apply a structured corridor selection framework that evaluates historical traffic patterns, industrial and agricultural activity, logistics linkages, competing route risk, regional economic growth, and long-term structural demand drivers. As per the framework, our historical traffic growth has been 8.7% CAGR in absolute vehicle count, and 5.99% CAGR in PCU terms, during the Financial Year 2023-2025. Our approach combines proprietary traffic models with detailed corridor-level analytics to assess elasticity, commodity flows, seasonal variations, network behaviour, and the impact of planned infrastructure.

Our strategy emphasizes exposure to major growth corridors, especially the country's North–South traffic corridor, which has seen rising economic activity and infrastructure expansion. At the same time, we consciously avoid assets vulnerable to local disruptions, counterparty risks, or construction-related challenges, ensuring that our portfolio remains robust through economic cycles.

Our Project Manager's capability to execute and complete residual construction works provides additional flexibility in asset selection. We have successfully acquired and completed assets requiring limited balance works, such as DATRPL and GAEPL. Furthermore, certain assets within our portfolio, such as Farakka–Raiganj Highways Private Limited, Walayar Vadakkencherry Expressways Private Limited and Madurai–Kanyakumari Tollway Private Limited, are situated in regions where natural or geographic barriers limit the development of competing routes. This enhances their long-term exclusivity and traffic stability. We have benefitted from the continued expansion of infrastructure projects across central India, which has shifted north–south freight and passenger flows eastwards (Source: Traffic Reports), resulting in higher through-traffic volumes across our Portfolio.

Together, we believe that our disciplined acquisition philosophy, deep technical and commercial capabilities, and data-driven corridor strategy have resulted in a portfolio constructed for resilience, diversification, and sustainable yield growth.

Advanced asset management and maintenance expertise

We follow a lifecycle-based approach to asset management, combining advanced engineering practices, data-driven monitoring and centralized procurement. Our approach emphasizes preventive and predictive maintenance, using advanced modelling and analytics to anticipate distress and plan timely interventions that reduce lifecycle costs. Over successive maintenance cycles, our major maintenance costs have remained stable or declined, reflecting the effectiveness of our data-driven planning and execution framework.

Our procurement is centrally managed, enabling us to benefit from economies of scale by negotiating optimal commercial terms with our vendors. We also have a dedicated team for bitumen procurement, given its importance to our overall maintenance strategy. Our procurement strategy is calibrated through a strategic mix of bundling, long-term master service agreements, and vendor partnerships, ensuring both cost efficiency and assured quality. We also have the experience and capability to use advanced construction materials, resulting in higher resilience and durability of our road assets. For example, we use materials such as polymer-modified bitumen ("**PMB**") and highly modified asphalt ("**HiMA**"), thereby providing high-riding quality to the users, which can reinforce toll-paying behaviour.

Our in-house systems (such as Road-Aid and HiRate) provide real-time visibility on asset conditions, while predictive maintenance tools allow us to optimise interventions and reduce lifecycle costs. We have in-house software development capabilities, having developed proprietary applications such as Road-Aid, BuildAid, HiRate, and AI-powered inventory mapping systems, as well as pavement distress identification and compliance monitoring systems.

We use advanced testing methodologies, such as falling weight deflectometers (which measure pavement deflection and structural strength) and network survey vehicles (with integrated laser profilometers to measure pavement roughness and texture), for data-driven analysis and proactive maintenance. These tests provide extremely accurate micro-level data, which we analyse to understand the structural and functional condition of each pavement segment. Based on such data, we can devise a major maintenance strategy that addresses immediate stress points and life-cycle load patterns. Our maintenance strategy relies on targeted, segment-specific interventions based on structural assessments, traffic loading patterns and pavement condition analysis. Several of our assets have demonstrated the effectiveness of this approach in reducing lifecycle costs, minimising disruption and prolonging pavement life. Also see "*—Technology*" on page 337.

We have an in-house research and development ("**R&D**") centre with experienced researchers and engineering professionals that conducts materials research, develops innovation pilots, and collaborates with industry and authorities. Our R&D function is also supported by MINDS (Mentoring Innovation and New Developments in Science), our in-house innovation framework launched in 2023 to identify, mentor and deploy new technologies and process improvements. Further, we have an R&D connect portal designed for the submission and review of proposals.

In addition, our Investment Manager and Project Manager have entered into an expert services agreement with Cube Highways Technologies Private Limited ("**Cube Tech**"). Under the expert services agreement, Cube Tech provides technical, traffic, safety, and operational advisory support to each Existing Portfolio Asset, including engineering oversight, major maintenance planning, TMS/ATMS operations, and periodic structural assessments. These services are delivered under a defined governance framework in which Cube Tech works under the Investment Manager's directions, ensures compliance with applicable laws and concession requirements, and maintains a dedicated team to support portfolio-wide performance.

Our Project Manager has a dedicated team of maintenance professionals overseeing more than 8,000 lane kilometers of highway maintenance.

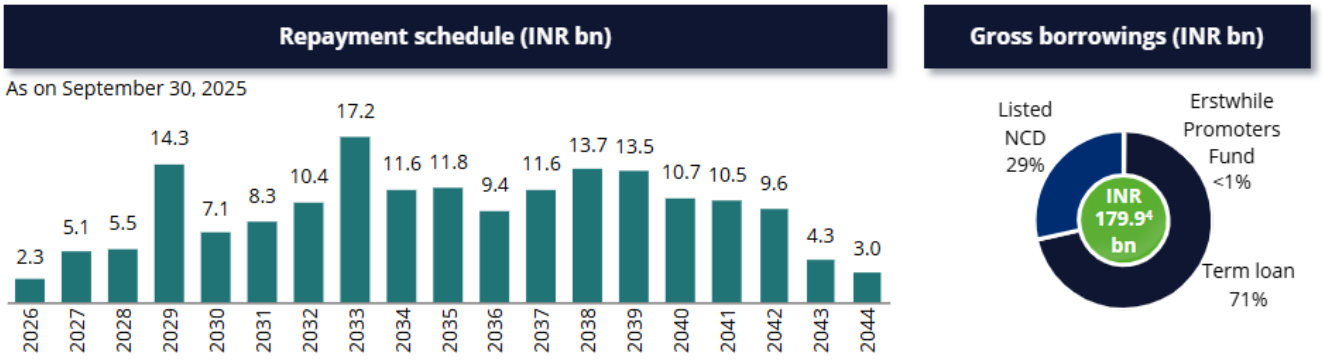
The Project Manager also benefits from the Sponsor's approach of employing a tactical mix of in-house and outsourcing maintenance operations based on the strategic importance of the function. Thus, while the Project Manager maintains control over key functions of strategy, design and procurement, it outsources routine maintenance, cleaning and horticulture to third-party vendors.

Strong corporate finance capabilities

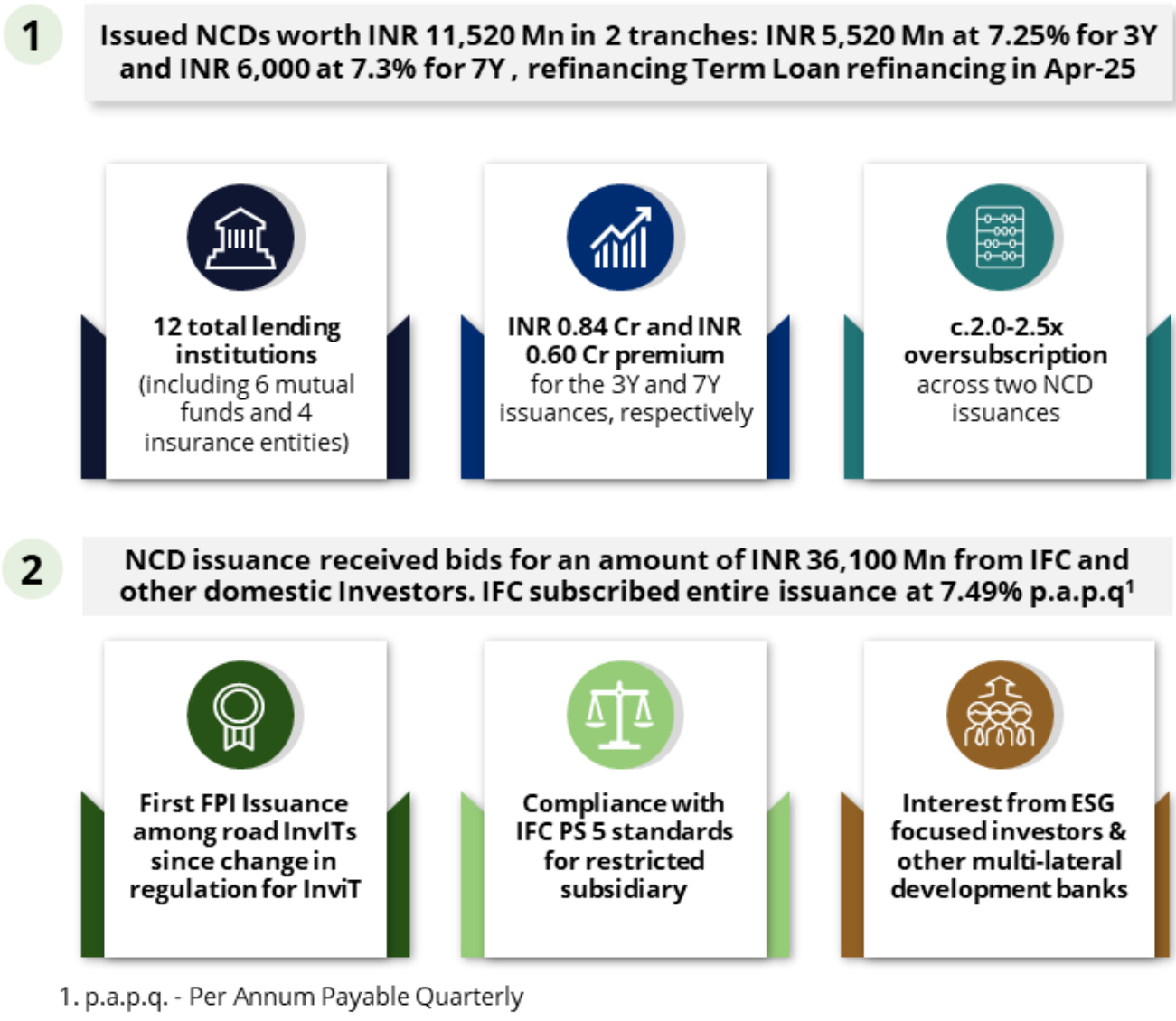
We believe we have strong corporate finance capabilities, developed and reinforced over time through a deep understanding of the regulatory and commercial framework governing highway construction and operations in India. We maintain relationships with a range of lenders, and the subscribers to our listed debt instruments include mutual funds, insurance companies, and pension funds. We also engage with and maintain lending relationships with leading infrastructure-focused financial institutions, non-banking financial companies, and domestic and international development finance institutions. We believe that these strategic relationships enhance our access to long-term capital on competitive terms, enabling us to pursue innovative financing solutions and maintain a resilient capital structure.

Leveraging our understanding of the road infrastructure sector in India and our lending relationships, in February 2025, we issued India's first sustainability-linked bond ("**SLB**") in the road sector, which was anchored by IFC with an investment of approximately ₹8,600 million. This was a pioneering transaction, the first SLB issued by a road InvIT in India, and it showcases

our ability to access innovative sources of capital while diversifying our capital base. Further, in April 2025, we successfully placed a seven-year listed non-convertible debenture issuance, which was oversubscribed and priced at a premium. Set out below are details of our borrowings and repayment schedule, each as of September 30, 2025:



Borrowings include interest accrued of ₹163.74 million and erstwhile promoters fund of ₹266.91 million. The above metrics have been presented in accordance with Indian GAAP and not Ind AS.



Our debt facilities have been rated (i) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for term loan and bank guarantee; (ii) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for non-convertible debentures; (iii) AAA/Stable by ICRA on September 1, 2025 for term loan and bank guarantee; (iv) AAA/Stable by ICRA on September 1, 2025 for, non-convertible debentures; (v) AAA/Stable by CRISIL Ratings Limited on March 5, 2026 for term loan and bank guarantee – long term; and (vi) A1+ by Crisil Ratings Limited on March 5, 2026, for term loan and bank guarantee – short term. As of September 30, 2025, 28.63% of our consolidated borrowings were at fixed rates, compared to 21.19% as of March 31, 2025 and 11.16% as of March 31, 2024. Our financing strategy remains focused on achieving an optimal balance between fixed- and floating-rate exposures to maintain resilience across rate cycles.

We actively manage our capital structure to maintain a conservative leverage profile, with a net borrowing ratio of 47.37% as of September 30, 2025, which provides debt headroom. Our refinancing initiatives have also consistently reduced the weighted average cost of debt, from 8.23% as of June 30, 2023 (the first quarter of our listing) to 7.75% as of September 30, 2025.

Experienced leadership and institutional backing

Our Investment Manager and Project Manager are led by an experienced management team with an established track record in the Indian infrastructure sector. The Investment Manager is led by Vinay Chandramouli Sekar, Chief Executive Officer, who has over 16 years of experience in infrastructure financing and advisory services, and Pankaj Vasani, Chief Financial Officer. Our Project Manager is led by Bovin Kumar, Chief Executive Officer, who has over 25 years of experience in the roads sector, and Dr. C.S. Bhagavan Raju, Chief Operating Officer, who has over 32 years of experience in the roads sector. Each of our senior management team members brings significant technical, operational, compliance, and sectoral experience across road infrastructure development, asset management, and execution.

As a result, the Investment Manager's and Project Manager's teams have deep knowledge and experience in managing road projects in the infrastructure sector. The Investment Manager and Project Manager have also invested in a team of qualified professionals with diverse academic backgrounds and work experience.

In addition, the Board of Directors of the Investment Manager include professionals such as Upendra Kumar Sinha, former Chairman of the Securities and Exchange Board of India; Surinder Chawla, senior banking and finance expert; Jayesh Ramniklal Desai, an experienced chartered accountant and corporate advisor; and Fereshte Dhunjishaw Sethna, a distinguished legal professional. The Board also includes Sponsor nominees from the Trust's institutional investors: Sandeep Lakhanpal, Helly Bharat Ajmera, and Raviraj Vipul Acharya. This experienced Board provides oversight and strategic guidance, strengthening our governance framework.

Our Sponsor is part of the Cube Group, one of India's largest road infrastructure platforms with a proven track record of developing, acquiring and managing more than 30 highway assets across the country. We believe we benefit from the Cube Group's technical, financial and operational experience, established M&A capabilities and demonstrated success in large-scale acquisitions such as NHAI TOT bundles, providing a strong foundation for sustainable portfolio growth.

Attractive sector fundamentals with a favourable policy environment

According to the Industry Report, the transport infrastructure budget in India has expanded significantly between the Financial Year 2020 and the Financial Year 2026, with the budgetary outlay for roads increasing from ₹684 billion in the Financial Year 2020 to an estimated ₹2.7 trillion in the Financial Year 2026. Roads have historically accounted for the largest share of India's infrastructure investments, ranging from 43–53% between the Financial Year 2020 and the Financial Year 2025.

Under Bharatmala Pariyojana Phase I, 26,425 km have been awarded and 19,826 km constructed by February 28, 2025, with a total expenditure of ₹4.92 trillion, including 6,669 km of greenfield corridors awarded and 4,610 km completed. The Industry Report further highlights the sector's centrality, noting that roads carry approximately 87% of passenger traffic and 60% of freight traffic in the country.

According to the Industry Report, the long-term policy roadmap is guided by Vision 2047, formulated by MoRTH in alignment with the Viksit Bharat aspirations. The plan envisages developing 50,000 km of high-speed corridors by 2040, expanding to 200,000–230,000 km by 2047, thereby creating a seamless, efficient national road network. This is expected to significantly reduce logistics costs, improve competitiveness, and support India's transition into a developed economy. Further, Total infrastructure investments are expected to nearly double from ₹47.8 trillion during Financial Year 2019-24 to ~₹93 trillion in Financial Year 2025-30. For further details on the market opportunity for the road infrastructure industry in India, please see "*Industry Overview*" on page 196.

Investment, Risk and Capital Management Strategies

Our principal business strategies, which are proposed to be implemented by the Investment Manager, are set out below:

Active asset management to drive growth and yield

The Investment Manager employs an active asset management strategy across the existing assets to drive portfolio growth and yield. In particular, the Investment Manager seeks to maintain or improve our net distributable cash flows by, among other initiatives, minimizing revenue leakage, optimising costs, capital structuring, refinancing, formulating and adopting policies and procedures, and structuring investments to address regulatory considerations. The Project Manager assists the Investment Manager by carrying out the operations, management and maintenance of the projects in accordance with the relevant concession agreement and the Project Implementation and Management Agreement and by procuring, operating and maintaining the relevant project's toll management systems, improving the effectiveness of routine and major maintenance activities and instituting controls on administrative expenditures and overheads.

Our active management initiatives include strengthening in-house operations and maintenance capabilities, enhancing mechanization to reduce manual dependency, and deploying advanced equipment to improve efficiency and consistency of outcomes. We are progressively supported by digital inventory controls to improve procurement efficiency and reduce

downtime across sites. Commodity price volatility is mitigated through strategic long-term contracts and supplier diversification. Our ongoing technology adoption (spanning predictive maintenance tools, IoT-enabled monitoring systems and automated toll management processes) supports cost optimization, transparency and reliability across the portfolio.

Calibrated expansion of the portfolio

The Investment Manager also intends to opportunistically expand the Trust's portfolio by acquiring ROFO Assets from the Sponsor (and its affiliates) and selected third-party assets. The Investment Manager believes it can leverage our Sponsor's network of relationships, extensive knowledge, experience, and expertise in the roads sector in India to implement its acquisition strategy, acquiring operational road projects and projects that may require last-mile construction. The Investment Manager may evaluate opportunities to expand the portfolio without compromising on the operation and management of the Existing Portfolio Assets while providing attractive cash flows and yield and opportunities for future income and capital appreciation for our Unitholders.

In the medium term, the Trust expects to benefit from a strong pipeline of M&A opportunities, supported by the Government's sustained use of the hybrid annuity model as a key procurement mechanism and NHAI's ongoing monetization of completed highway assets through successive TOT rounds, according to the Industry Report. The Trust also benefits from the ROFO Agreement pursuant to which it holds a ROFO over three assets currently held by the Sponsor.

Case Study: Leveraging our Growth Co-vehicle, M&A strengths, active asset management approach and corporate finance capabilities for sustainable growth over the last two years

Since listing in April 2023, we have demonstrated a consistent record of expansion, adding nine assets within two years and increasing our Enterprise Value/AUM to ₹365.19 billion as of September 30, 2025. Crucially, we were able to utilize our existing debt headroom to fund these acquisitions, as set out below:

Asset	Net Debt to AUM ratio (pre-acquisition*) (%)	Net Debt to AUM ratio (post-acquisition) (%)
HAM SPVs (1)	33.65%	38.00%
NAMEPL	39.80%	44.65%
NIIF SPVs (2)	44.65%	49.62%

* *The pre- and post-acquisition ratios above correspond to the quarter-end numbers prior to and following the relevant acquisition.*

(1) HAM SPVs include BWHPL, MSHPL, MHPL, SIPL, SPPL and THPL.

(2) NIIF SPVs include QEPL and JUHPL.

Implementing prudent capital management policies

The Investment Manager has instituted and implemented a capital management strategy that it believes is consistent with its objective of maximizing distributions to our Unitholders. To achieve these objectives, the Investment Manager aims to ensure optimal capital structures for the Trust and the Existing Portfolio Assets, thereby maximising cash distributions to Unitholders while retaining adequate flexibility to acquire assets in the future.

We have demonstrated an ability to access diverse sources of capital, including term loans, listed NCDs, other bonds, short-term instruments such as commercial paper, and innovative instruments, such as India's first sustainability-linked bond in the road sector. As of September 30, 2025, 28.63% of our total consolidated borrowings (undiscounted) are at fixed interest rates, and 71.37% are at floating rates, reflecting a balanced capital structure. As of September 30, 2025, our total consolidated borrowings (undiscounted) were less than 49% of the total value of the Trust's consolidated assets, in compliance with the InvIT Regulations. As a result, our consolidated balance sheet provides flexibility to incur additional debt, if required, to support the Investment Manager's strategy of acquiring additional assets.

Embedding sustainability and ESG practices in our business model

ESG principles are embedded across our financing, asset management, and operational decision-making processes. Our approach is guided by our Environmental and Social Due Diligence Policy. This framework ensures that our investments, operations, and stakeholder engagements contribute to responsible growth. By engaging suppliers, subcontractors, road users, employees, communities, and government authorities through comprehensive due diligence, open communication, and regular consultations, we strive to ensure adequate stakeholder involvement in our business practices.

Our financing and capital allocation decisions reflect our commitment to sustainable development. In February 2025, we issued India's first sustainability-linked bond in the roads sector, anchoring our financing to measurable ESG performance indicators. At the asset level, we have integrated sustainable construction and maintenance technologies that reduce emissions and extend lifecycle performance. We have successfully implemented CCPR and HiMA to reuse materials and improve pavement durability. We are also focused on scaling the adoption of recycled and locally sourced materials, solar energy generation, and water conservation systems at our project sites, while continuing afforestation initiatives, including Miyawaki plantations, to offset emissions and enhance biodiversity. We are also implementing procurement standards for energy-efficient electrical equipment, deploying high-performance lighting solutions, and launching additional solarisation projects across additional SPVs. Initiatives to upgrade HVAC systems and expand our fleet of electric vehicles reflect our effort to reduce emissions and

improve asset lifecycle performance. We are also exploring the use of alternative fuels in our business, such as natural gas DG sets.

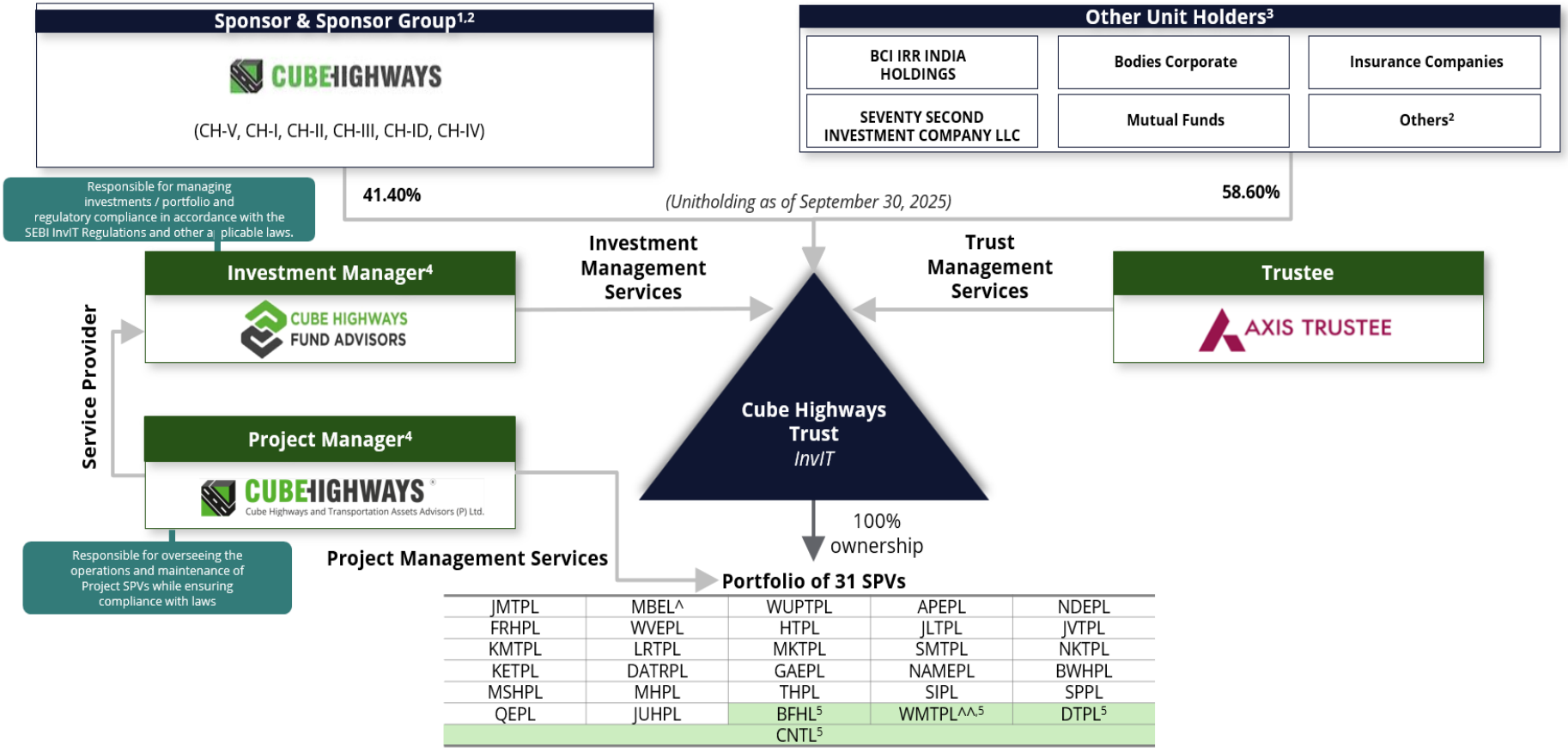
Our social priorities remain centred on safety, inclusivity, and local development. We have introduced route patrols to improve highway safety, and achieved high safe man-hours in the Financial Year 2025. We intend to further enhance these systems through predictive analytics and data-led interventions. We will also continue to strengthen local employment and livelihood programs, with a focus on training, upskilling, and expanding gender participation across our workforce and project contractors.

We endeavour to uphold our standards of governance by continuously enhancing our compliance, risk management, and disclosure systems. ESG oversight remains integrated at the Board and management levels, ensuring that strategic decisions are transparent, ethical, and aligned with stakeholder expectations.

Structure of the Cube Highways Trust

The Cube Highways Trust was settled on December 7, 2021, in accordance with the provisions of the Indian Trusts Act, 1882, and the Trust is registered with SEBI as an InvIT pursuant to the InvIT Regulations. The original trust deed has been amended and restated, most recently pursuant to the Amended and Restated Trust Deed dated March 11, 2024. The Trust's principal investment objectives are to carry on the activities of, and to make investments as an infrastructure investment trust, as permissible in terms of the InvIT Regulations and in accordance with the InvIT Documents, to the extent applicable. For more details on the investment objectives of the Trust, see "*Overview of the Trust – Investment Objectives"* on page 36.

Set out below is a chart of the Cube Highways Trust's current structure and Project SPV holding pattern:



^ 0.03% of the equity share is held by Madhucon Infra Limited; ^^ 5% of the shareholding is held by Express Way Developers Limited that will be acquired in accordance with the Commitment Letter

1. Cube Highways and Infrastructure V Pte. Ltd. (CH-V), Cube Highways and Infrastructure Pte. Ltd. (CH-I), Cube Highways and Infrastructure II Pte. Ltd. (CH-II), Cube Highways and Infrastructure III Pte. Ltd.(CH-III), Cube Highways and Infrastructure I-D Pte. Ltd. (CH-I-D) and Cube Mobility Investments Pte Ltd. (CH=IV)
2. CH-V is the sponsor of the Trust and balance all entities are member of the sponsor group as per the SEBI (InvIT) Regulations.
3. Includes Individuals, Trusts, Alternate Investment Fund, Foreign Portfolio Investor, Financial Institutions / Banks, Non-resident Indians
4. IM & PM are associates of Sponsor
5. Proposed Portfolio Assets

Summary of our Toll Roads

The details of our build-operate-transfer ("**BOT**") and design-build-finance-operate-transfer ("**DBFOT**") Roads are as follows:

Particulars	JMTPL	MBEL	WUPTPL	NDEPL	GAEPL	WVEPL	DATRPL	FRHPL	NAMEPL
Project stretch	Jaipur-Mahua	Mahua-Bharatpur	Meerut to Muzaffarnagar	Nelamangla-Devihalli	Ghaziabad-Aligarh	Walayar-Vadakkenchery	Delhi-Agra	Farakka- Rajganj	Narketpalli-Addanki-Medarmetla
Geographic location (state)	Rajasthan	Rajasthan	Uttar Pradesh	Karnataka	Uttar Pradesh	Kerala	Uttar Pradesh and Haryana	West Bengal	Andhra Pradesh and Telangana
Number of lanes	4	4	4	4	6	4	6	4	4
National/State Highway Number (New | Old)	NH21 | NH11	NH21 | NH11	NH334 | NH58	NH75 | NH48	NH91 | NH34	NH544 | NH47	NH19 | NH2	NH12 | NH34	SH2
Project length (km)	109.1	57.3	78.1	80.3	126.3	53.5	179.5	100.1	212.9
Number of toll plazas	2	2	1	2	2	1	3	2	3
Toll plazas	Rajadhok and Sikandra	Amoli and Ludhawai	Siwaya	Doddakarenhalli and Karbylu	Luharli and Somna	Pampampallam	Gadpuri, Karman and Mahuvan	Lakshmipur and Gazole	Madgulapally, Tummala Cheruvu and Elchuru
Appointed date	March 20, 2006	April 10, 2006	March 7, 2006	January 5, 2008	February 25, 2011	May 18, 2013	October 16, 2012	February 3, 2011	January 18, 2011
Commercial operations date (COD)[(1)]	March 9, 2015	September 13, 2009	June 2, 2016	May 11, 2024	April 23, 2022, for 4/6 laning of Ghaziabad-Aligarh Section of NH-34 (NH-91) from km.23.600 to km. 149.900 November 28, 2025, for 4/6 laning of Ghaziabad-Aligarh Section of NH-34 (NH-91) from km.23.600 to km. 149.900	October 31, 2015	Not received	March 25, 2022	Not received

Particulars	JMTPL	MBEL	WUPTPL	NDEPL	GAEPL	WVEPL	DATRPL	FRHPL	NAMEPL
Tolling history (as of September 30, 2025) (in years)	16.01	16.40	13.94	13.26	10.27	9.92	12.96	8.95	11.56
End of concession[(2)]	June 9, 2031	June 21, 2031	June 25, 2026	January 29, 2033	June 20, 2039	May 17, 2033	February 12, 2044	May 1, 2041	November 26, 2039
Residual Concession Life (as of September 30, 2025) (in years)	5.69	5.72	0.73	7.33	13.72	11.85	18.37	15.58	14.15
O&M Handover Date	Not applicable								

(1) As per the provisions of the concession agreement, the commercial operations date (COD) of the project highway shall be the date on which the independent consultant has issued the final completion certificate or the provisional certificate certifying completion of the project highway as per the relevant terms of the concession agreement. The project highway shall enter into commercial service on COD, upon which the concessionaire shall be entitled to demand and collect fees in accordance with the relevant provisions of the concession agreement.

(2) The concession period is specified under the concession agreements entered into by the respective SPVs with the grantors (the NHAI or the relevant state authorities). However, the concession period may vary depending upon the achievement of conditions relating to target traffic or target revenue generated at the target date specified in the concession agreement. For the purposes of estimation of variation in the concession period at each reporting period, the Trust evaluates the contractual entitlement to variations in concession period on a case-to-case basis, taking into account the provisions of the concession agreement of the respective SPVs, the facts and circumstances giving rise to such variations and the status of the approvals for such variation. Estimating variation in the concession period under Appendix C of Ind AS 115 requires a careful analysis of the specific service concession arrangement. For estimation of the concession period, we consider future traffic estimates with the help of an independent expert, assessment of outcomes with respect to disputes/arbitration with the relevant grantor for the SPVs, claims for variation in concession period on account of Target Traffic, among others, based on the legal advice received, discount rates, revenue growth rate and inflation and other economic factors, as considered relevant. Based on the above, we have considered variation in concession period for certain SPVs for the purpose of estimating amortization of Intangible Assets- Toll Road Carriageway, estimating fair value of net assets of SPVs and also for determination of recoverable amounts for Intangible Assets- Toll Road Carriageway of SPVs.

The details of our toll-operate-transfer ("**TOT**") Roads are as follows:

Particulars	MKTPL	KETPL	SMTPL	NKTPL	JLTPL	JVTPL	KMTPL	LRTPL	HTPL
Project stretch	Madurai-Kanyakumari	Madurai-Kanyakumari	Madurai-Kanyakumari	Madurai-Kanyakumari	Jhansi-Lalitpur	Jhansi-Lalitpur	Kotwa-Muzaffarpur	Lucknow-Raebareli	Hazirabagh-Ranchi
Geographic location (state)	Tamil Nadu	Tamil Nadu	Tamil Nadu	Tamil Nadu	Uttar Pradesh	Uttar Pradesh	Bihar	Uttar Pradesh	Jharkhand
Number of lanes	4	4	4	4	4	4	4	4	4
National Highway Number (New | Old)	NH44 | NH7	NH44 | NH7	NH44 | NH7	NH44 | NH7	NH44 | NH26	NH44 | NH26	NH27 | NH28	NH30 | NH24-B	NH33 | NH20
Project length (km)	52.3	64.2	63.5	63.5	49.7	49.3	80.0	70.0	73.8
Tollable length[(1)]	68.8	69.3	84.6	75.6	81.7	60	85.7	77.8	86
Number of toll plazas	1	1	1	1	1	1	1	1	1
Toll plazas	Kappalur	Etturvattam	Salaipudhur	Nanguneri	Babina	Vighakhet	Parsoni Khem	Dakhina Sekhpur	Pundag

Particulars	MKTPL	KETPL	SMTPL	NKTPL	JLTPL	JVTPL	KMTPL	LRTPL	HTPL
Appointed date / commercial operations date (COD)	October 20, 2020	October 20, 2020	October 20, 2020	October 20, 2020	October 20, 2020	October 20, 2020	October 14, 2020	October 20, 2020	October 20, 2020
Tolling history (as of September 30, 2025) (in years)	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76
End of concession[(2)]	October 18, 2045	October 18, 2050	October 18, 2050	March 31, 2051	October 18, 2045	October 18, 2045	April 18, 2046	October 18, 2050	October 18, 2050
Residual Concession Life (as of September 30, 2025) (in years) [(3)]	20.05	25.05	25.05	25.50	20.05	20.05	20.55	25.05	25.05
O&M Handover Date	Not applicable	Not applicable	Not applicable	Not applicable	March 2027	March 2027	Not applicable	March 2029	March 2028

(1) Tollable length is determined as per the NHAI notifications published in the National Gazette and is used as the basis for the toll rate of each of the roads. The formula is 10 x length of roads + 1.5 x length of bypasses.

(2) The concession period is specified under the concession agreements entered into by the respective SPVs with the grantors (the NHAI or the relevant state authorities). However, the concession period may vary depending upon the achievement of conditions relating to target traffic or target revenue generated at the target date specified in the concession agreement. For the purposes of estimation of variation in the concession period at each reporting period, the Trust evaluates the contractual entitlement to variations in concession period on a case-to-case basis taking into account the provisions of the concession agreement of the respective SPVs, the facts and circumstances giving rise to such variations and the status of the approvals for such variation. Estimating variation in the concession period under Appendix C of Ind AS 115 requires a careful analysis of the specific service concession arrangement. For estimation of the concession period, we consider future traffic estimates with the help of an independent expert, assessment of outcomes with respect to disputes/arbitration with the relevant grantor for the SPVs, claims for variation in concession period on account of Target Traffic, among others, based on the legal advice received, discount rates, revenue growth rate and inflation and other economic factors, as considered relevant. Based on the above, we have considered variation in concession period for certain SPVs for the purpose of estimating amortization of Intangible Assets- Toll Road Carriageway, estimating fair value of net assets of SPVs and also for determination of recoverable amounts for Intangible Assets- Toll Road Carriageway of SPVs.

(3) The Residual Concession Life is indicative in nature, and in accordance with the relevant concession agreement, the actual term of the concession is dependent on the revenue generated by each road.

The details of our hybrid annuity model ("**HAM**") and Annuity Roads are as follows:

Particulars	APEPL	BWHPL	MSHPL	MHPL	THPL	SIPL	SPPL	QEPL	JUHPL
Project stretch	Kothakota-Kurnool	Borgaon - Watambare	Mangalwedha - Solapur	Mangloor-Telangana/Maharashtra Border	Chittoor - Mallavaram	Trichy- Kallagam	Ramsanpalle - Mangloor	Quazigund - Banihal	Jammu - Udhampur
Geographic location (state/union territory)	Andhra Pradesh and Telangana	Maharashtra	Maharashtra	Telangana	Andhra Pradesh	Tamil Nadu	Telangana	Jammu and Kashmir	Jammu and Kashmir
Number of lanes	4	4	4	4	6	4	4	4	4
National Highway Number (New | Old)	NH44 | NH7	NH166	NH166	NH161	NH140	NH81 | NH227	NH161	NH44 | NH1A	NH44 | NH1A

Particulars	APEPL	BWHPL	MSHPL	MHPL	THPL	SIPL	SPPL	QEPL	JUHPL
Project length (km)	74.6	52.0	55.9	49.0	61.1	38.7	46.8	16.0	48.0
Appointed date	September 15, 2009	April 22, 2021	May 23, 2019	April 12, 2019	January 4, 2019	March 1, 2019	May 2, 2019	June 5, 2011	June 16, 2011
Commercial operations date (COD)	September 9, 2022	March 1, 2023	March 1, 2023	October 27, 2025	June 8, 2023	June 15, 2023	June 21, 2022	December 15, 2022	May 31, 2018
End of concession	September 30, 2026	September 23, 2036	December 13, 2036	December 14, 2036	May 9, 2036	May 29, 2036	October 4, 2036	June 4, 2031	July 16, 2031
Residual Concession Life (as of September 30, 2025) (in years)	1.00	10.98	11.20	11.21	10.61	10.66	11.01	5.68	5.71
Annuity payment received in the Financial Year 2025 *(in ₹ million)***	1,130.40	1003.18	1,081.82	805.98	1,535.82	1,056.55	1,051.11	4,900.00	4,038.00
Number of annuity payments received (as of September 30, 2025)	33	8*	7	7	8	8	7	19	23
Number of annuity payments to be received (as of September 30, 2025)	2	22	22	23	22	22	23	11	11

* *An annuity due on September 23, 2025 and received on October 3, 2025, has been considered in the number of annuity payments received.*

** *Annuity payments received from HAM Assets are presented in terms of the amounts payable to each of the respective assets under the terms of the respective concession agreement and are not Ind AS metrics of revenue. Payments are subject to adjustments based on CPI linking factors and other factors set out in the respective concession agreements.*

Also see "– *Our Existing Portfolio*", "*Summary of the Concession Agreements*" and "*Capitalization Statement*" on pages 284, 343, and 384, respectively, for further details of the ownership structure of our assets, the terms of our assets' concession agreements and the capital structure of our Portfolio Assets.

Description of build, operate and transfer and design, build, finance, operate and transfer toll roads

1. **Jaipur-Mahua Tollway Private Limited**

Overview of the Project and the Concession

On September 23, 2005, NHAI and Jaipur-Mahua Tollway Private Limited ("**JMTPL**") entered into the JMTPL Concession Agreement whereby JMTPL was engaged, on a build, operate and transfer ("**BOT**") basis, to widen a portion of NH 21 (erstwhile NH11) in Rajasthan from two lanes to four lanes with an overall length of 109.1 kilometers (the "**JMTPL Project**").

JMTPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the JMTPL Project in accordance with the JMTPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the JMTPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to Traffic Consultants, the JMTPL Project is located in Rajasthan and connects the state capital, Jaipur, to Mahwa. It forms part of a key east–west movement corridor linking southern Rajasthan, including Udaipur, Bhilwara and Chittorgarh, with Uttar Pradesh and eastern India. The corridor serves major urban centres such as Jaipur, Agra, Alwar and Bharatpur and lies on an alignment that supports long-distance movements.

Passenger traffic on the JMTPL Project is supported by local movements between Jaipur, Agra, Alwar and Bharatpur, as well as tourism-related travel, since the JMTPL Project forms part of the Golden Triangle corridor connecting Delhi NCR, Agra and Jaipur. Goods traffic comprises agricultural commodities, construction-related materials including stone and sand, and a range of consumption-related freight. Heavy commercial vehicles (3A/MAV) primarily support long-distance flows between western and eastern India, and the Traffic Consultants observed a recovery in both passenger and goods traffic in recent months.

The Dausa–Lalsot corridor connects to the Asset between the two toll plazas, functioning as an important feeder, while the Tonk–Lalsot–Dausa corridor provides an alternate route for medium-distance movements and has contributed to increased traffic at Sikandra, with some redistribution at Rajadhok. For longer-distance traffic between Gujarat and southern Rajasthan and Uttar Pradesh, an established parallel route exists via NH27 through Chittorgarh, Kota and Jhansi.

The 67-km Bandikui to Jaipur Ring Road spur (part of the Delhi-Mumbai Expressway) opened in July 2025, and, as noted in the Traffic Reports, this incremental traffic for TP2 has diverted to the spur (as can be seen in the FY26YTD traffic at Rajadhok), as the new link offers a faster and shorter route between Delhi and Jaipur. The Traffic Consultants further stated that the spur has been open to the public since July 2025 and is expected to lead to a further decline in traffic on Rajadhok as it provides a faster alternate route, and that since the Bandikui spur allows traffic to bypass Rajadhok and not Sikandra, the magnitude of the impact at Rajadhok is larger.

Several network upgrades influence traffic along the JMTPL Project. Completion of the southern bypass of the Agra Ring Road is expected to improve service for long-distance traffic toward Kanpur and Lucknow. Operational sections of the Delhi–Mumbai Expressway, including the Delhi–Sohna–Dausa–Lalsot section and connectivity via NE4 and the Faridabad bypass, provide alternative routes for movements between Lalsot, Jaipur, Faridabad and Delhi. These changes have contributed to some redistribution of traffic, although increased CJV volumes at Sikandra are observed due to pilgrimage-related travel to nearby temples. Overall, the Traffic Consultants consider the corridor to serve major regional centres and to benefit from strong underlying growth drivers.

The map below illustrates the location of the JMTPL project and the corridor it covers:

2. **Mahua Bharatpur Expressways Limited**

Overview of the Project and the Concession

On October 13, 2005, NHAI and Madhucon Agra-Jaipur Express Limited (the erstwhile concessionaire) entered in a concession agreement whereby Madhucon Agra-Jaipur Express Limited was engaged, on a BOT basis, to widen a portion of NH 21 (erstwhile NH11) in Rajasthan from two lanes to four lanes with an overall length of 57.3 kilometers (the "**MBEL Project**").

MBEL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the MBEL Project in accordance with the MBEL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the MBEL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to Traffic Consultants, the MBEL Project is strategically located within the Delhi–Agra–Jaipur "Golden Triangle". The road connects Rajasthan and Uttar Pradesh supporting both short- and long-distance travel.

Traffic growth along the MBEL Project is supported by several structural and regional demand drivers. Material for the under-construction Agra–Gwalior Expressway is also being sourced through the MBEL corridor.

Operational enhancements have also supported improved throughput on the corridor. The introduction of electronic tolling through FASTag has increased compliance and lane productivity. Overall, the Traffic Consultants considered MBEL to be well-positioned within a high-demand regional corridor driven by tourism, commuter traffic, and industrial freight, with sustained long-term growth potential supported by both structural and local economic factors.

The map below illustrates the location of the MBEL Project and the corridor it covers:

3. **DA Toll Road Private Limited**

Overview of the Project and the Concession

On July 16, 2010, NHAI and DA Toll Road Private Limited ("**DATRPL**") entered into a concession agreement whereby DATRPL was engaged, on a design, build, finance, operate and transfer ("**DBFOT**") basis, for six-laning of the Delhi-Agra portion of NH 19 (erstwhile NH2) in Delhi, Uttar Pradesh and Haryana with a total length of 179.5 kilometers (the "**DATRPL Project**").

DATRPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the DATRPL Project in accordance with the DATRPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the DATRPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

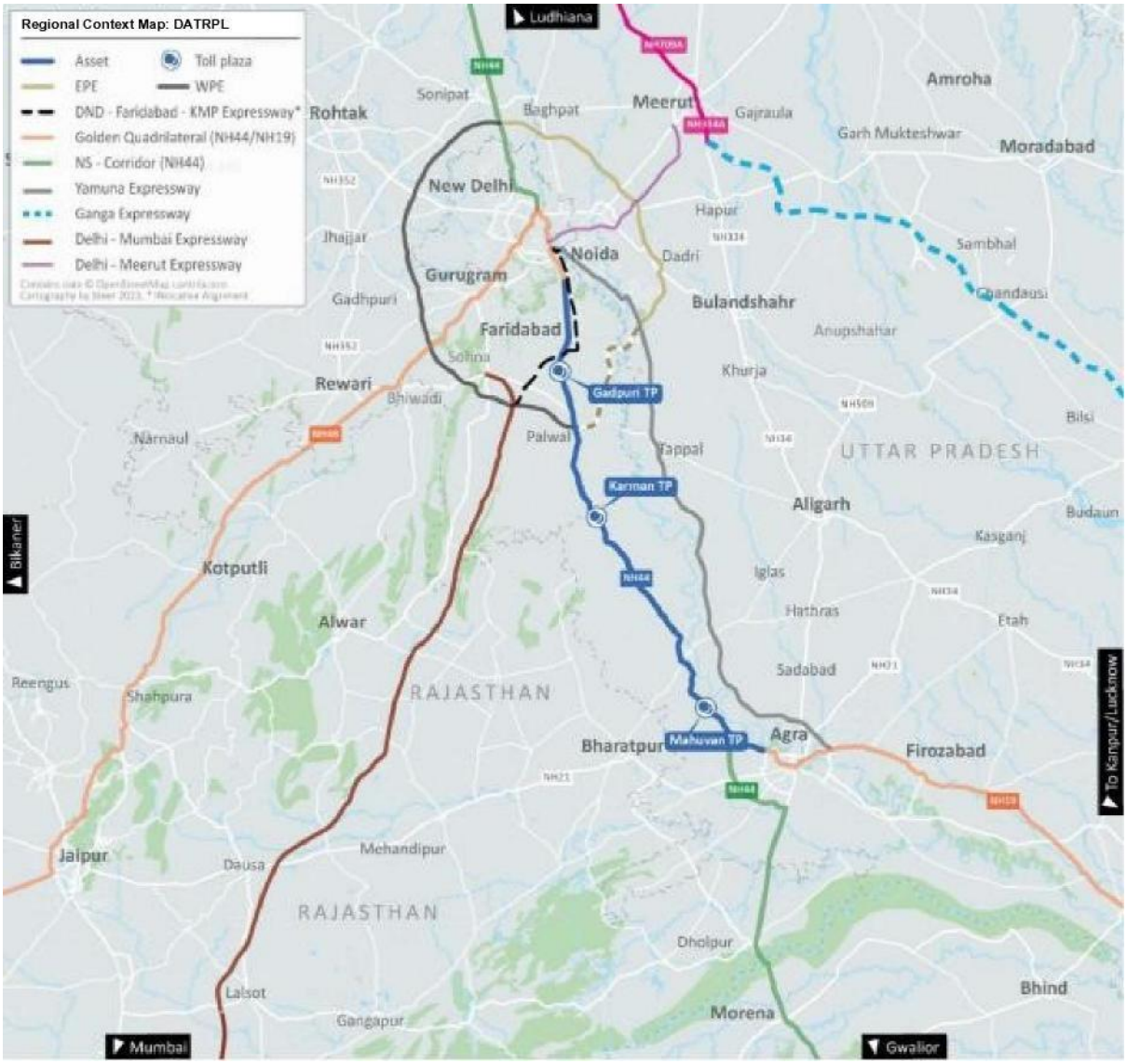
According to the Traffic Consultants, the DATRPL Project is situated in the states of Haryana and Uttar Pradesh and connects the Central National Capital Region, including Delhi, to Agra in the south via Palwal and Mathura. The DATRPL Project forms a 179.5 km section of the NH19/NH44 corridor (erstwhile NH2) and operates three toll plazas at Gadpuri, Karman and Mahuvan. The DATRPL Project lies on a critical segment of the Grand Trunk Road, which forms part of Asian Highway 1 and supports both east–west and north–south long-distance movement. East–west travel links Kashmir through to the India–Bangladesh border, while north–south movements connect major centres from Srinagar to Kanyakumari.

Passenger traffic along the corridor is supported by daily commuting between Delhi NCR and satellite towns such as Faridabad and Palwal. Mathura is an important pilgrimage destination and along with leisure traffic to Agra, a major domestic and international tourist destination.

The surrounding network includes several alternate and feeder routes. The Palwal–Tappal–Aligarh corridor provides an alternate east–west connection toward Lucknow, while NH27 via Chittorgarh, Kota and Jhansi offers a parallel long-distance east–west route. The Traffic Consultants also note that traffic between Greater Noida industrial areas and Agra, or regions further south, makes extensive use of the Yamuna Expressway, and that forthcoming connectors to the Eastern Peripheral Expressway are expected to improve access to the DATRPL Project.

The Delhi–Mumbai Expressway introduces a competing north–south long-distance route and is expected to attract a portion of through traffic as sections progressively become operational. The Ganga Expressway is anticipated to compete for certain east–west movements once fully operational, while the Yamuna Expressway–EPE connector is expected to generate positive spill-over effects on the km. 94 and km. 164 plazas by improving regional bypass options for traffic destined to the northern parts of Delhi NCR.

The map below illustrates the location of the DATRPL Project and the corridor it covers:



4. **Nelamangala Devihalli Expressway Private Limited**

Overview of the Project and the Concession

On July 9, 2007, the NHAI and Lanco Devihalli Highways Limited (the erstwhile concessionaire) entered into a concession agreement whereby Lanco Devihalli Highways Limited was engaged, on a BOT basis, for four-laning of the carriageway on the Nelamangala junction in Karnataka with an overall length of 80.3 kilometers (the "**NDEPL Project**"). Since Lanco Devihalli Highways Limited was unable to meet its debt obligations under its financing agreements, Nelamangala Devihalli Expressway Private Limited ("**NDEPL**") was substituted as the concessionaire for the concerned road.

NDEPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the NDEPL Project in accordance with the NDEPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the NDEPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the NDEPL Project is situated in the southern state of Karnataka and connects Bengaluru to Mangaluru along National Highway 75 ("**NH75**"). It is one of three key sections of this corridor, along with the Devihalli–Hassan and Hassan–Mangaluru stretches, and includes two toll plazas: one at Doddakarenahalli

near Nelamangala, close to Bengaluru, and the other at Karbylu near Devihalli. The NDEPL Project provides critical connectivity between Bengaluru and the port city of Mangaluru.

Leisure and tourism-related travel between Bengaluru, Hassan, Madikeri, Mangaluru and Commercial traffic includes consumption-based agro-related commodities in light goods vehicles and petroleum products transported in bullet tankers. Key trip generators include the Bharat Petroleum Corporation Limited bottling plant at Solur, the Hindustan Petroleum Corporation Limited bottling plant at Yediyur and petroleum-refining and port facilities in Mangaluru. Historically robust economic growth in the state, reflected by Karnataka's GSDP CAGR of 7.4% between the Financial Year 2012 and the Financial Year 2024.

Upgrades to Bengaluru airport, broader economic development in the Bengaluru metropolitan region, and improvements to the Shiradi Ghat section of NH75 are contributing to the observed growth. The planned development of the Gundya–Sakleshpur tunnel between Hassan and Mangaluru is also expected to enhance service levels on the corridor.

The map below illustrates the location of the NDEPL Project and the corridor it covers:

5. **Walayar Vadakkencherry Expressways Private Limited**

Overview of the Project and the Concession

On September 17, 2012, the NHAI and KNR Walayar Tollways Private Limited (the erstwhile concessionaire) entered into a concession agreement whereby KNR Walayar Tollways Private Limited was engaged, on a DBFOT basis, for four-laning of the carriageway on the Walayar-Vadakkencherry section of NH 544 (erstwhile NH 47) in Kerala with an overall length of approximately 54 kilometers (the "**WVEPL Project**").

WVEPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the WVEPL Project in accordance with the WVEPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the WVEPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the WVEPL Project comprises an approximately 54 km section of NH 544 between Walayar and Vadakkencherry in Kerala, with a single toll plaza located at Pampampallam near the Kerala–Tamil Nadu border. The corridor forms part of the broader Salem–Kochi national highway system, providing an important inter-state connection between Tamil Nadu's industrial belt and Kerala's major consumption centres.

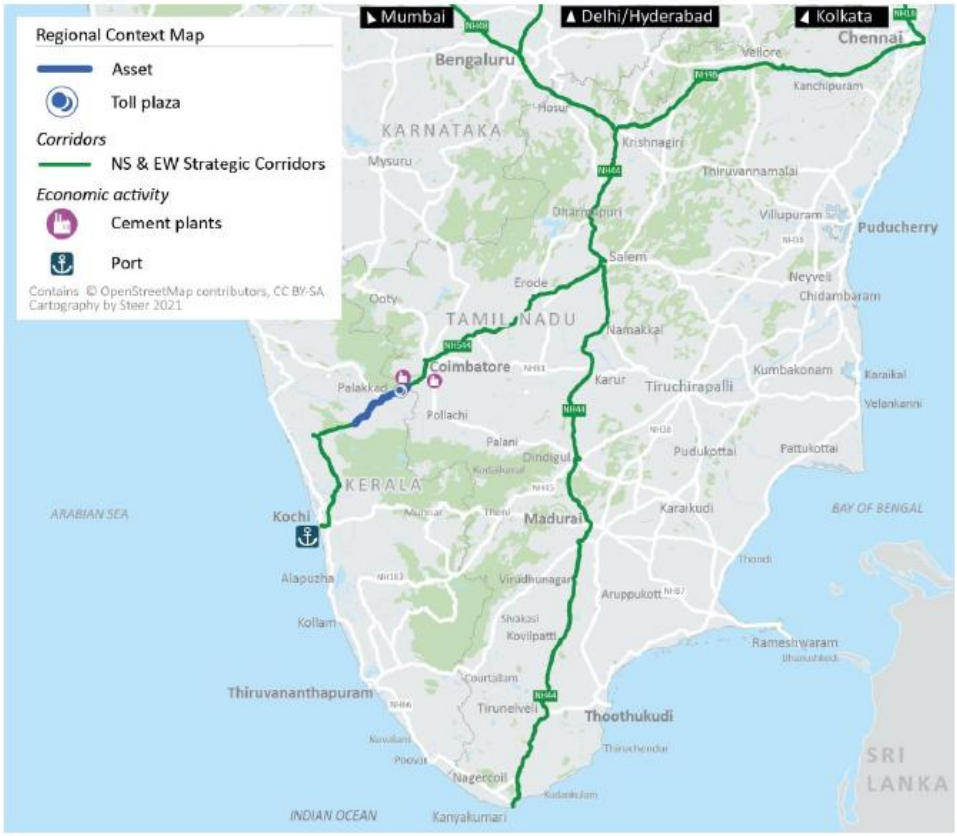
The WVEPL Project supports a mix of passenger and freight traffic. Passenger flows include intercity movement between Palakkad, Thrissur and Kochi, as well as cross-border trips between Kerala and Coimbatore. Freight

movement is underpinned by significant cross-border trade, with commodities such as cement, steel, petroleum products and agricultural goods moving between Coimbatore's industrial clusters and Kerala's consumption markets. The Traffic Consultants highlighted that the corridor also functions as a key highway connecting Salem in Tamil Nadu to Kochi in Kerala, reinforcing its role as an integral part of the NH544 east-west corridor.

Traffic growth is supported by structural demand drivers. Kerala's high population density, increasing vehicle ownership and dependence on other states for meeting its demand for agricultural products and construction material. Commercial traffic is strengthened by economic activity in the Coimbatore–Palakkad industrial region and Kerala's import-driven economy, while passenger traffic benefits from continued tourism and regional commuting.

Overall, the Traffic Consultants consider the WVEPL corridor to be a critical inter-state link within the Salem–Kochi highway system, characterised by strong long-term economic drivers on both sides of the border.

The map below illustrates the location of the WVEPL Project and the corridor it covers:



6. **Farakka-Raiganj Highways Private Limited**

Overview of the Project and the Concession

On July 19, 2010, the NHAI and Farakka-Raiganj Highways Private Limited ("**FRHPL**") entered into the FRHPL Concession Agreement whereby FRHPL was engaged, on a BOT basis, for four-laning of the carriageway on the Farakka-Raiganj junction in West Bengal with an overall length of 100.1 kilometers (the "**FRHPL Project**").

FRHPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the FRHPL Project in accordance with the FRHPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the FRHPL Concession Agreement, please see, "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to Traffic Consultants, the FRHPL Project is located in West Bengal and connects the cities of Farakka and Raiganj, providing intermediate connectivity to Malda. The FRHPL Project lies on the NH12 north–south corridor. The corridor is situated close to the international border with Bangladesh, and is connected to major land ports at Mahadipur and Hili via NH512. The FRHPL Project, therefore, forms part of a strategic long-distance national freight route.

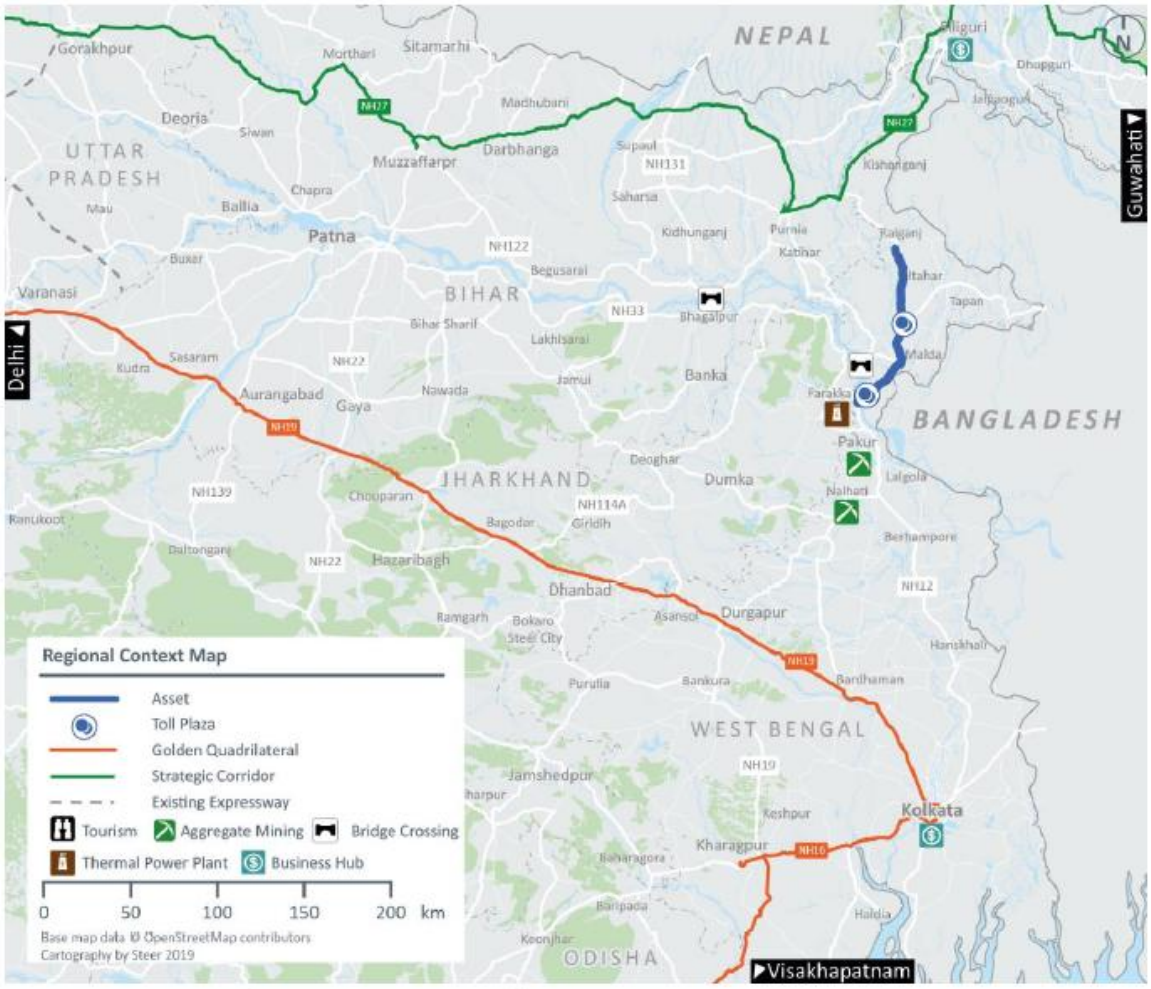
Traffic using the corridor is predominantly commercial, serving goods movement across West Bengal, the north-eastern states, Bihar, Jharkhand and parts of southern India. The FRHPL Project covers short-distance movements within Malda and Murshidabad districts, medium-distance movements between southern and northern West Bengal

(including Pakur in Jharkhand and Malda and Bangladesh), and long-distance movements between Kolkata and the north-eastern region. Trip patterns reflect the corridor's role in supporting the distribution of agricultural commodities, construction materials, petroleum products and manufactured goods.

The corridor's location at the southern end of the Farakka Barrage (the only river-crossing available on NH12 in the region) makes it a critical funnelling point for both medium- and long-distance traffic. All traffic between Kolkata/Durgapur/Bardhaman and Kishanganj/north-east India must traverse this crossing.

Recent improvements to the NH12 corridor north of the FRHPL Project, including completion of the Dalkhola bypass, full 4-laning of the Raiganj–Dalkhola section, and opening of the Raiganj bypass and ROB. Conversely, the future completion of the Sahibganj Bridge across the Ganges may divert a portion of specific OD pairs from Financial Year 2028 onward, primarily short- and medium-distance trips. Recovery of Bangladesh-bound traffic.

The map below illustrates the location of the FRHPL Project and the corridor it covers:



7. **Western UP Tollway Private Limited**

Overview of the Project and the Concession

On September 9, 2005, the NHAI and Western UP Tollway Private Limited ("**WUPTPL**") entered in a concession agreement whereby Western UP Tollway Limited was engaged, on a BOT basis, for four laning of the carriageway of Meerut to Muzaffarnagar section of NH 334 (erstwhile NH 58) in Uttar Pradesh with an overall length of 77.8 kilometers (the "**WUPTPL Project**").

WUPTPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the WUPTPL Project in accordance with the WUPTPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the WUPTPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

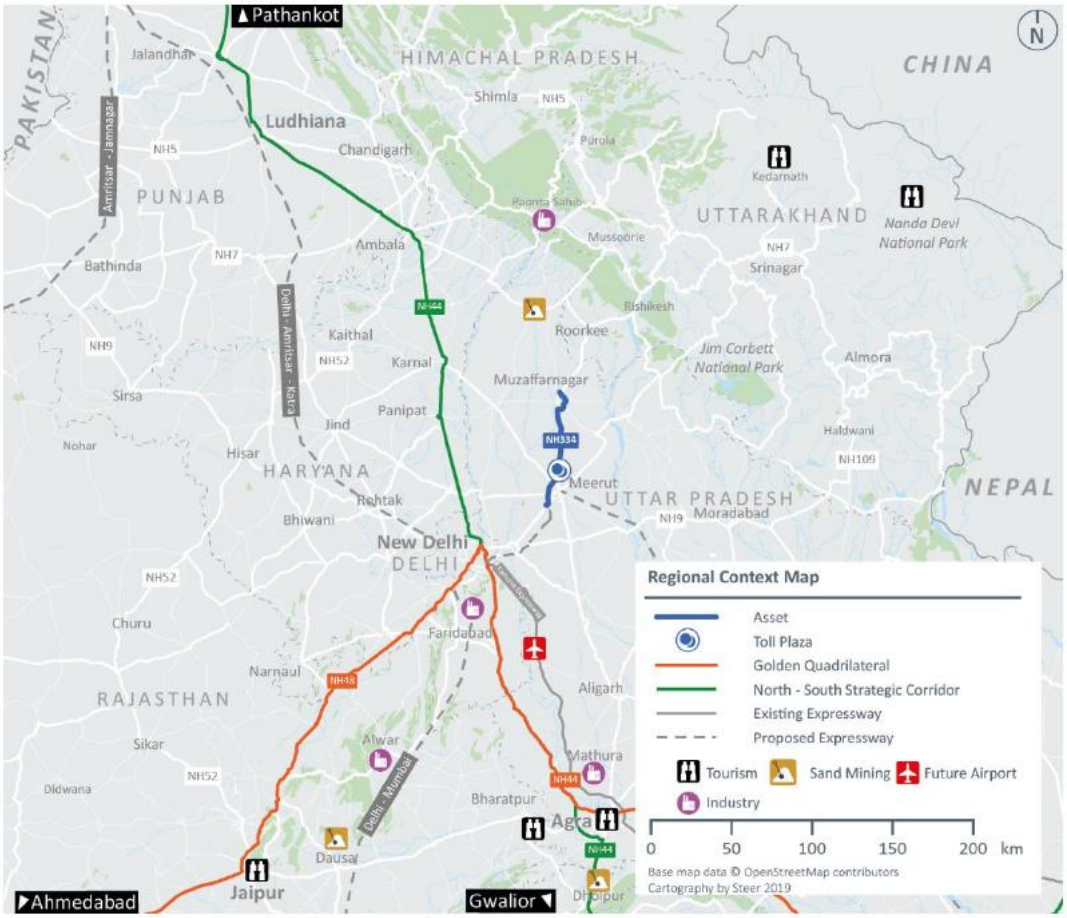
Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the WUPTPL Project lies in the state of Uttar Pradesh and connecting the state capital of Dehradun with the NCR. Traffic on the corridor comprises a combination of short-, medium- and long-distance movements. This section also attracts a significant volume of tourism, including pilgrimages to centres such

as Dehradun, Haridwar, Rishikesh, Auli, and Badrinath/Kedarnath. Commercial traffic is substantial and comprises a mix of goods vehicles transporting, among others, agricultural produce, construction materials, manufactured goods.

The Traffic Consultants also noted that the WUPTPL Project benefits from strong underlying economic drivers in Uttar Pradesh, including population growth, urbanisation, tourism flows and a large consumption market, all of which contribute to sustained long-term demand.

The map below illustrates the location of the WUPTPL Project and the corridor it covers:



8. **Ghaziabad Aligarh Expressway Private Limited**

Overview of the Project and the Concession

On May 20, 2010, the NHAI and Ghaziabad Aligarh Expressway Private Limited ("**GAEPL**") entered into the GAEPL Concession Agreement whereby GAEPL was engaged, on a BOT basis, for four-laning of the carriageway on the Ghaziabad-Aligarh section of NH 91 in Uttar Pradesh with an overall length of 126.3 kilometers (the "**GAEPL Project**").

GAEPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the GAEPL Project in accordance with the GAEPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the GAEPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

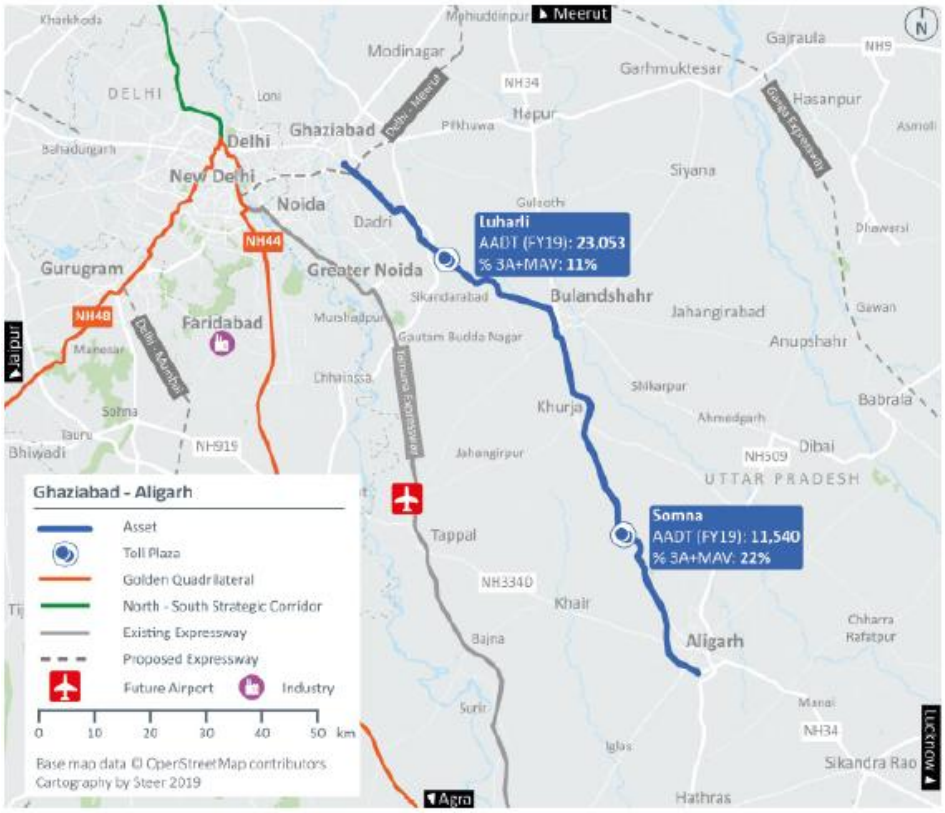
Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the GAEPL Project is located in western Uttar Pradesh and connects the cities of Ghaziabad and Aligarh via Khurja and Bulandshahr. It forms a 126.3-km six-lane segment of NH 91. The GAEPL Project includes two toll plazas: Luharli (TP1) near Ghaziabad and Somna (TP2) near Aligarh. The corridor underwent significant upgrades in October 2023, when six-laning was completed, and in July 2025.

Local traffic includes trips between the urban centres of Ghaziabad, Khurja, Bulandshahr, Sikandrabad and Aligarh, as well as daily commuting into Delhi–NCR. Industrial activity along the corridor materially influences traffic patterns. Commercial traffic also includes vehicles transporting construction materials, petroleum products and manufactured items between Ghaziabad, Sikandrabad, Bulandshahr and Aligarh. TP2 Somna exhibits a higher share of medium- and long-distance freight, including flows to and from Kanpur, Etawah and other eastern UP districts, as well as goods originating from industries in Aligarh.

For long-distance movements between Delhi and Lucknow, users may choose among parallel highways, including NH 9 (Old NH 24), the NH2/NH19 corridor, and the combination of the Yamuna Expressway and Agra–Lucknow Expressway. Medium-distance users southeast of the GAEPL Project have access to upgraded highway networks, such as the four-lane Aligarh–Kanpur section. The Traffic Consultants also identified local leakage routes near TP1 and TP2, which historically enabled toll evasion; a check plaza operated between August 2023 and September 2024 reduced leakage, and the newly commissioned staggered TP1 plaza is expected to further improve compliance.

The map below illustrates the location of the GAEPL Project and the corridor it covers:



9. **N.A.M. Expressway Private Limited**

Overview of the Project and the Concession

On July 23, 2010, the relevant state authorities in Andhra Pradesh and Telangana and N.A.M. Expressway Private Limited ("**NAMEPL**") entered into the NAMEPL Concession Agreement whereby NAMEPL was engaged, on a BOT basis, for the design, engineering, construction, development, finance, operation and maintenance of the Narketpally-Addanki-Medarametla Road (SH-2) from Km. 0.000 to 212.500 in the state of Andhra Pradesh under Public Private Partnership on DBFOT (toll) basis (the "**NAMEPL Project**").

NAMEPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the NAMEPL Project in accordance with the NAMEPL Concession Agreement. For further details on the NAMEPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

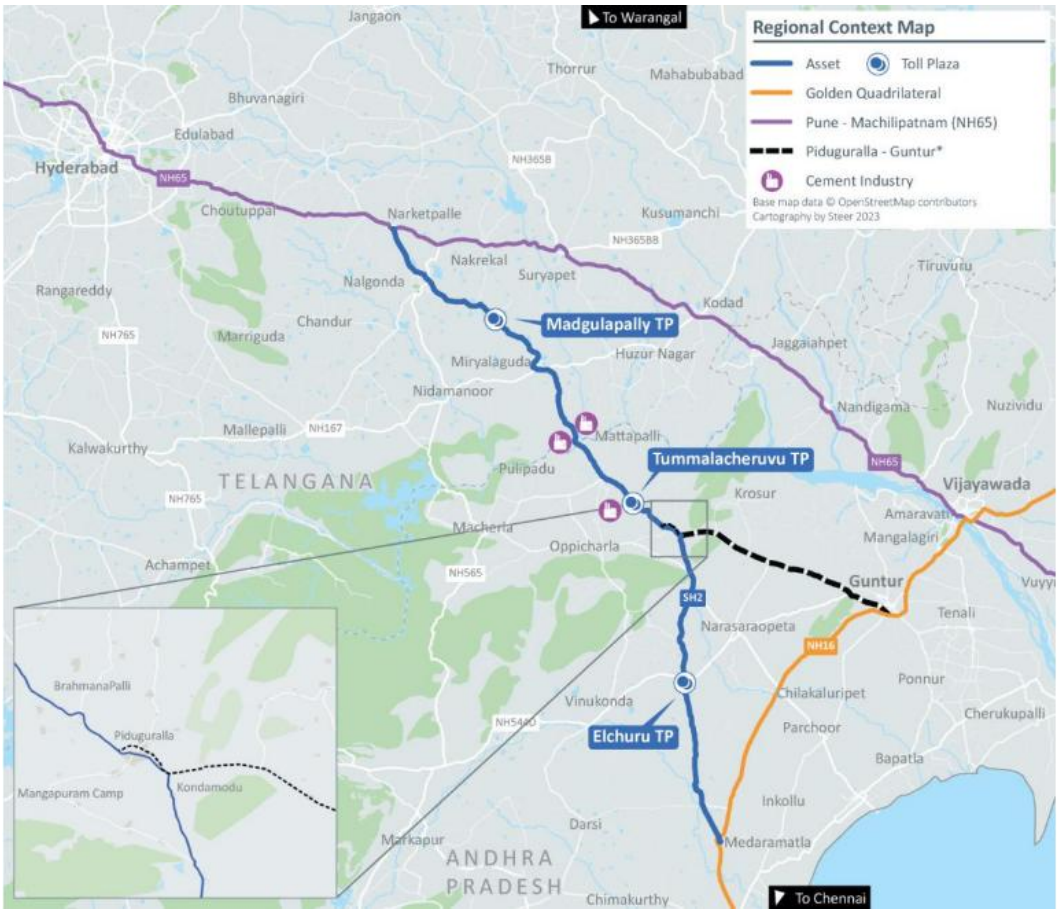
Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the NAMEPL Project is an interstate corridor connecting southeastern Telangana with northern Andhra Pradesh along State Highway 2 (new SH-36 in AP). The NAMEPL Project runs from Narketpally in Nalgonda district to Medarametla in Prakasam district, spanning 212.5 km, and includes three toll plazas (Madgulapally (TP1), Tummalacheruvu (TP2) and Elchuru (TP3)) in increasing order of distance from Hyderabad.

Long-distance traffic includes flows along multiple national corridors that use SH-2 as an intermediate connector, such as the NH44–SH2–NH16 corridor linking northern India (Delhi, Haryana, Punjab, Uttarakhand) with Chennai, the NH65–SH2–NH16 corridor linking Mumbai with Chennai, and the NH52–SH2–NH16 corridor linking Gujarat and Rajasthan with Chennai.

The NAMEPL Project also carries medium-distance inter-regional movement between Hyderabad, Vijayawada, and cement-production centres located along and near the corridor. The Traffic Consultants further identified medium-distance movements between SH2 and NH16. In addition, short-distance trips occur between Hyderabad.

The map below illustrates the location of the NAMEPL Project and the corridor it covers:



Description of toll, operate and transfer toll roads

1. Kotwa – Muzaffarpur Tollway Private Limited

Overview of the Project and the Concession

On December 27, 2019, NHAI and Kotwa-Muzaffarpur Tollway Private Limited ("**KMTPL**") entered into the KMTPL Concession Agreement whereby KMTPL was engaged, on a toll, operate and transfer ("**TOT**") basis, for the project highway in Bihar with an overall length of 80.0 kilometers (the "**KMTPL Project**"). KMTPL has the sole and exclusive right from the Appointed Date (as defined under the KMTPL Concession Agreement) to undertake tolling activities. For further details on the KMTPL Concession Agreement, please see "*Summary of the concession Agreements*" on page 343.

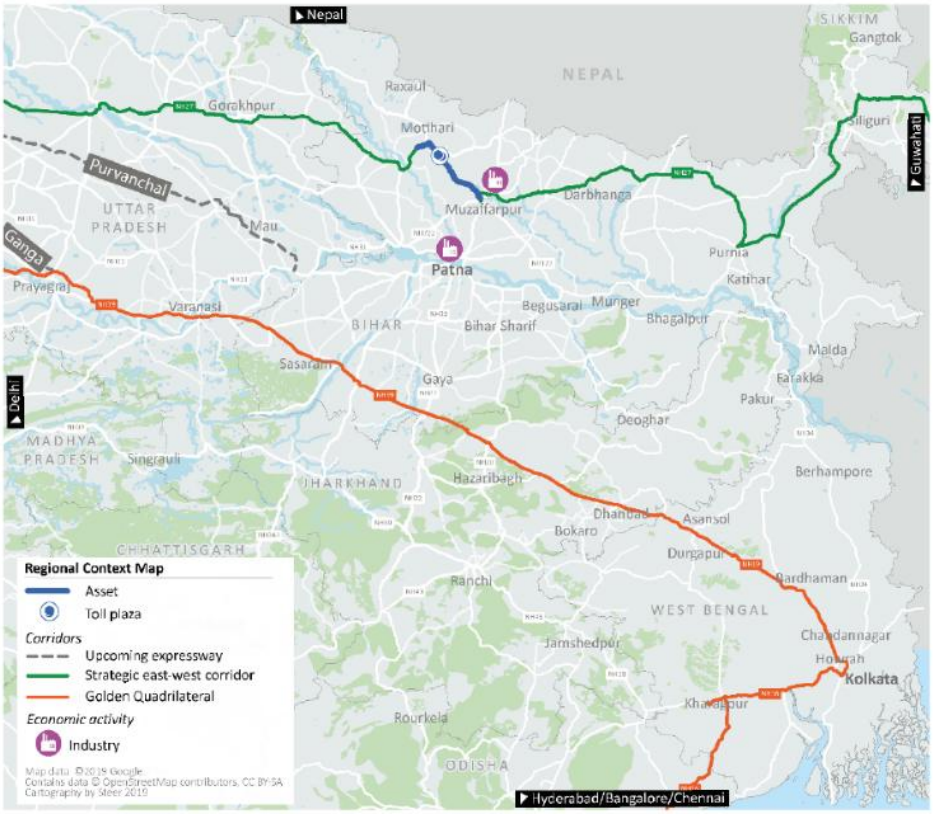
Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the KMTPL Project is situated in Bihar and forms part of National Highway 27, connecting Kotwa near Motihari with Muzaffarpur. The Traffic Reports state that the corridor lies along the East–West movement axis, serving traffic flows between Uttar Pradesh and parts of north India, West Bengal and the north-eastern states. The Traffic Consultants also noted that the route provides connectivity to Nepal, and that a number of industrial and fuel-distribution projects in the region contribute to movement along the corridor.

The Traffic Consultants identified SH74 as an alternate connection between Muzaffarpur and NH27, describing it as a state highway running through towns and villages, providing an attractive shorter-distance option. The report notes that vehicles travelling from Uttar Pradesh and western regions toward the north-eastern states may use this alternate route to save time and tolls. The Traffic Consultants also observed that users travelling toward Darbhanga or eastwards may join SH74 at Rampur Khajuria and exit via Kesariya, Chakia or Motipur, depending on their origin and destination.

The Traffic Consultants noted that the 568-km Gorakhpur–Siliguri Expressway, approved in 2025, will run through Gorakhpur, Gopalganj, Champaran, Kotwa, Muzaffarpur and Siliguri, providing a high-speed alternative route between Uttar Pradesh, Bihar and West Bengal. Because the alignment runs parallel to the KMTPL Project, the Traffic Reports state that once the expressway becomes operational, long-distance trips moving east–west may divert to the new corridor.

The map below illustrates the location of the KMTPL Project and the corridor it covers:



2. Lucknow-Raebareli Tollway Private Limited

Overview of the Project and the Concession

On December 27, 2019, NHAI and Lucknow-Raebareli Tollway Private Limited ("**LRTPL**") entered in the LRTPL Concession Agreement whereby LRTPL was engaged, on a TOT basis, for the project highway in Uttar Pradesh with an overall length of 70.0 kilometers (the "**LRTPL Project**"). LRTPL has the sole and exclusive right from the Appointed Date (as defined under the LRTPL Concession Agreement) to undertake tolling activities and with effect from the O&M Handover Date (as defined under the LRTPL Concession Agreement). For further details on the LRTPL Concession Agreement, please see, "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

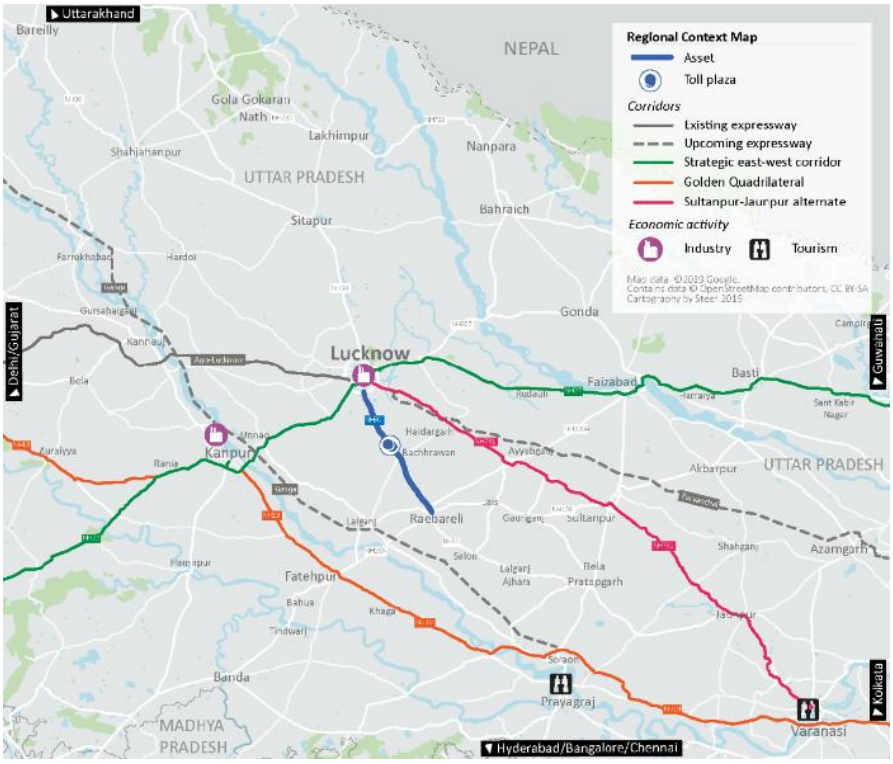
According to the Traffic Consultants, the LRTPL Project is situated in the state of Uttar Pradesh, connecting the state capital Lucknow to Raebareli in the south-central part of the state. The Traffic Reports note that the LRTPL Project forms a part of NH 30, is 70 km long and contains one toll plaza, Dakhina Sekhpur, located at Km 42.5 closer to Lucknow. The corridor lies within a regional road network that links Lucknow to important cities such as Prayagraj, Varanasi and Mirzapur.

The Traffic Consultants stated that the LRTPL Project caters to short-distance trips undertaken mainly by passenger vehicles for work, business and tourism/pilgrimage, with movement predominantly local between Lucknow, Raebareli, Prayagraj, Varanasi and Mirzapur. The Traffic Reports also note that LCVs cater to local consumption demand generated by the two major centres, Lucknow and Raebareli, and that short-distance MAV trips feed into that demand and carry significant quantities of cement from nearby cement factories.

The Traffic Reports also identify long-distance trips undertaken by heavy trucks travelling between Punjab, Haryana, Uttar Pradesh, West Bengal and Jharkhand, carrying commodities such as agricultural and grocery items, metal, cement, petroleum and manufactured items. Origin–destination analysis shows that several key OD pairs include movement between Lucknow, Raebareli, Prayagraj, Varanasi, and other districts in Uttar Pradesh.

The Traffic Consultants highlighted several network developments that influence the LRTPL Project. The upcoming 594 km Ganga Expressway connecting Meerut and Prayagraj is expected to be operational by Q4 FY26, and will pass through districts including Raebareli and Prayagraj, benefitting long- and medium-distance users making end-to-end trips. The corridor also experiences periodic increases in passenger traffic during the Kumbh and Ardha-Kumbh festivals in Prayagraj, with higher car and bus volumes observed in festival years.

The map below illustrates the location of the LRTPL Project and the corridor it covers:



3. Madurai Kanyakumari Tollway Private Limited, Kanyakumari-Etturavattam Tollway Private Limited, Salaipudhur-Madurai Tollway Private Limited and Nanguneri-Kanykakumari Tollway Private Limited (collectively referred to as "MK")

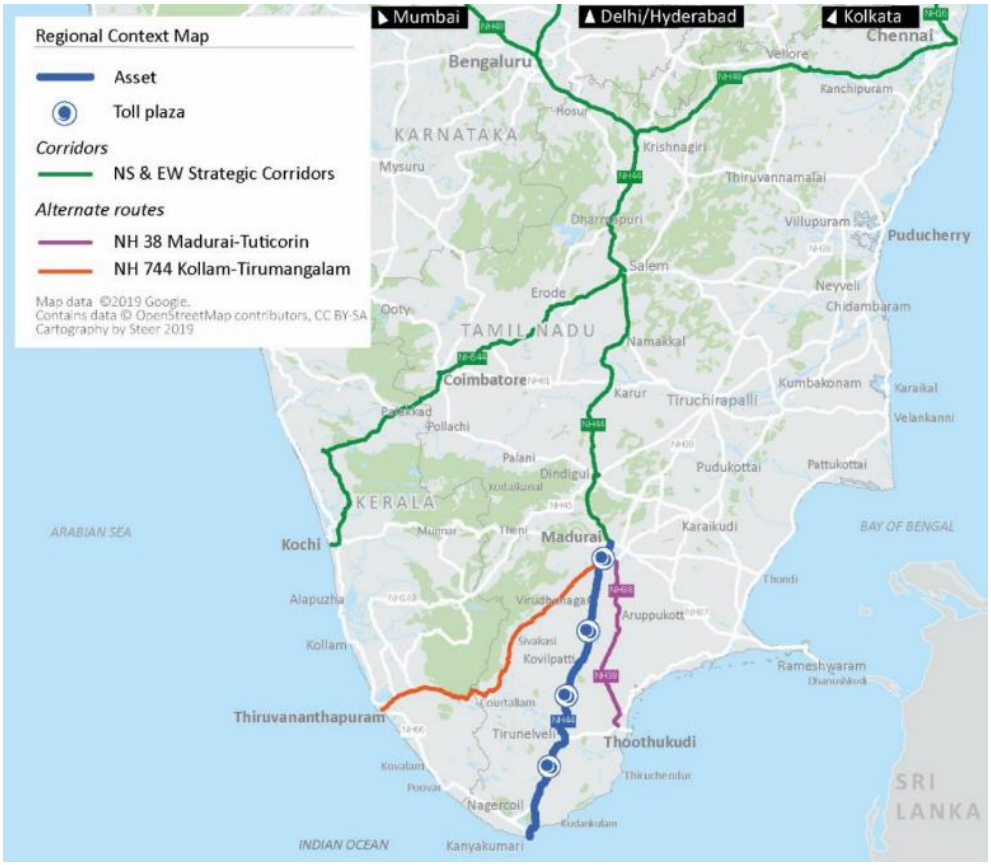
Overview of the Project and the Concession

On December 27, 2019, each of the entities of MK entered into individual concession agreements with NHAI whereby each was engaged, on a TOT basis, for the project highway in Tamil Nadu with an overall length of approximately 243.0 kilometers (the "**MK Project**"). Each of these entities has the sole and exclusive right from the Appointed Date (as defined under the respective concession agreements) to undertake tolling activities on its individual stretches. For further details on these concession agreements, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the MK Project together covers the Madurai–Kanyakumari section of NH-44. Traffic along the MK Project comprises a mix of short-, medium-, and long-distance movements. Passenger vehicle trips are primarily driven by commuting within southern Tamil Nadu, inter-city travel between Madurai and tourism- and pilgrimage-related travel to locations such as Kanyakumari. Commercial traffic includes agricultural produce, construction materials, and manufactured goods. The Traffic Reports identify that the MK Project serves movements coming from both ends of the corridor.

The map below illustrates the location of the MK Project and the corridor it covers:



4. Jhansi-Lalitpur Tollway Private Limited and Jhansi-Vigakhet Tollway Private Limited

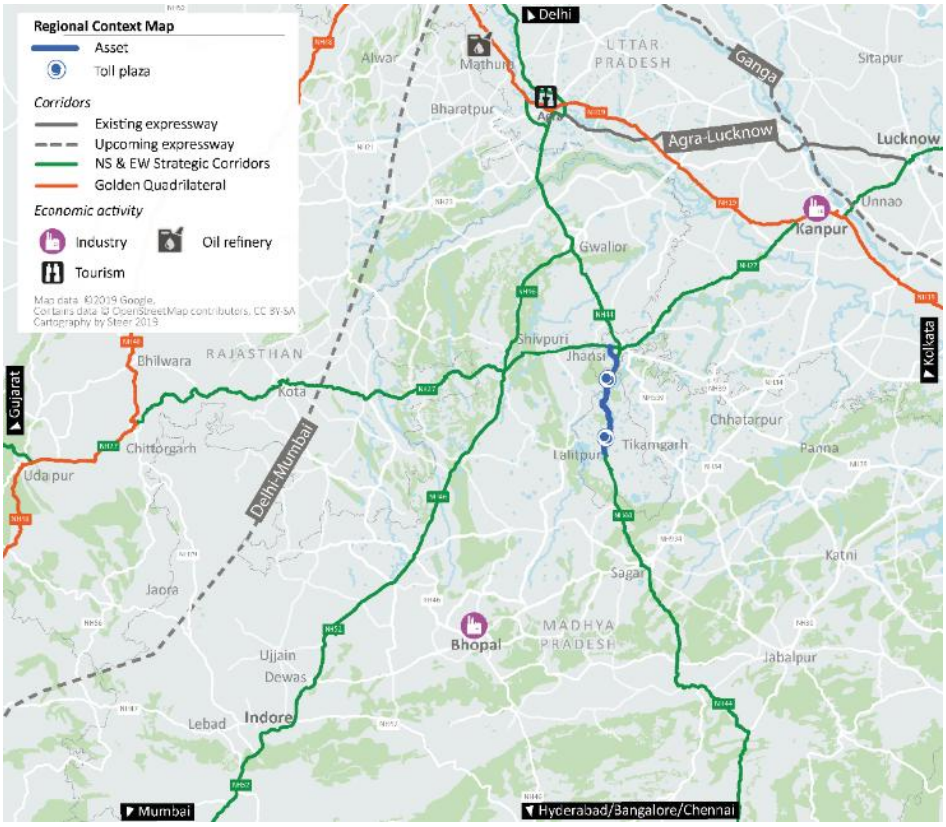
Overview of the Project and the Concession

On December 27, 2019, NHAI and Jhansi-Lalitpur Tollway Private Limited ("**JLTPL**") and Jhansi-Vigakhet Tollway Private Limited ("**JVTPL**") entered into the JLTPL Concession Agreement and JVTPL Concession Agreement, respectively, whereby JLTPL and JVTPL were engaged, on a TOT basis, for the project highway in Uttar Pradesh with an overall length of 99.0 kilometers (each referred to as the "**JLTPL Project**" and "**JVTPL Project**", respectively and together, the "**JL Project**"). JLTPL and JVTPL have the sole and exclusive right from the Appointed Date (as defined in the JLTPL Concession Agreement and JVTPL Concession Agreement, respectively) to undertake tolling activities (on their individual stretches) and with effect from the O&M Handover Date (as defined in the JLTPL Concession Agreement and JVTPL Concession Agreement, respectively). For further details on the JLTPL Concession Agreement and JVTPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to Traffic Consultants, the JL Project comprises a 99-km section of NH-44 (old NH-25/26) in Uttar Pradesh, connecting Jhansi with Lalitpur. The Traffic Reports describe NH-44 as a major national north–south corridor serving movements between Jammu & Kashmir in the north and Kanyakumari in the south, and note that this route also connects important economic centres including New Delhi, Gwalior, Nagpur, Hyderabad, Bengaluru and Chennai. The Traffic Consultants identified the JL Project as part of a strategic corridor that supports regional and long-distance travel.

The Traffic Consultants noted that the assets carry short-distance passenger trips between Jhansi, Orchha, Talbehat and Lalitpur, including work, business, and local intercity travel within the Bundelkhand region. The corridor also serves tourism and pilgrimage movements, reflecting Jhansi's historical significance and the presence of religious and cultural destinations in the region. Passenger movement is predominantly intra-state and regional. The Traffic Reports state that heavy trucks undertake long-distance movements from Punjab, Haryana and Delhi in the north, transporting commodities such as agricultural products, manufacturing inputs. The map below illustrates the location of the JL Project and the corridor it covers:



5. Hazaribagh Tollway Private Limited

Overview of the Project and the Concession

On December 27, 2019, NHAI and Hazaribagh Tollway Private Limited ("**HTPL**") entered into the HTPL Concession Agreement, under which HTPL was engaged, on a TOT basis, for the project highway in Jharkhand with an overall length of 73.8 kilometers (the "**HTPL Project**"). HTPL has the sole and exclusive right from the Appointed Date (as defined in the HTPL Concession Agreement) to undertake tolling activities, with effect from the O&M Handover Date (as defined in the HTPL Concession Agreement). For further details on the HTPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

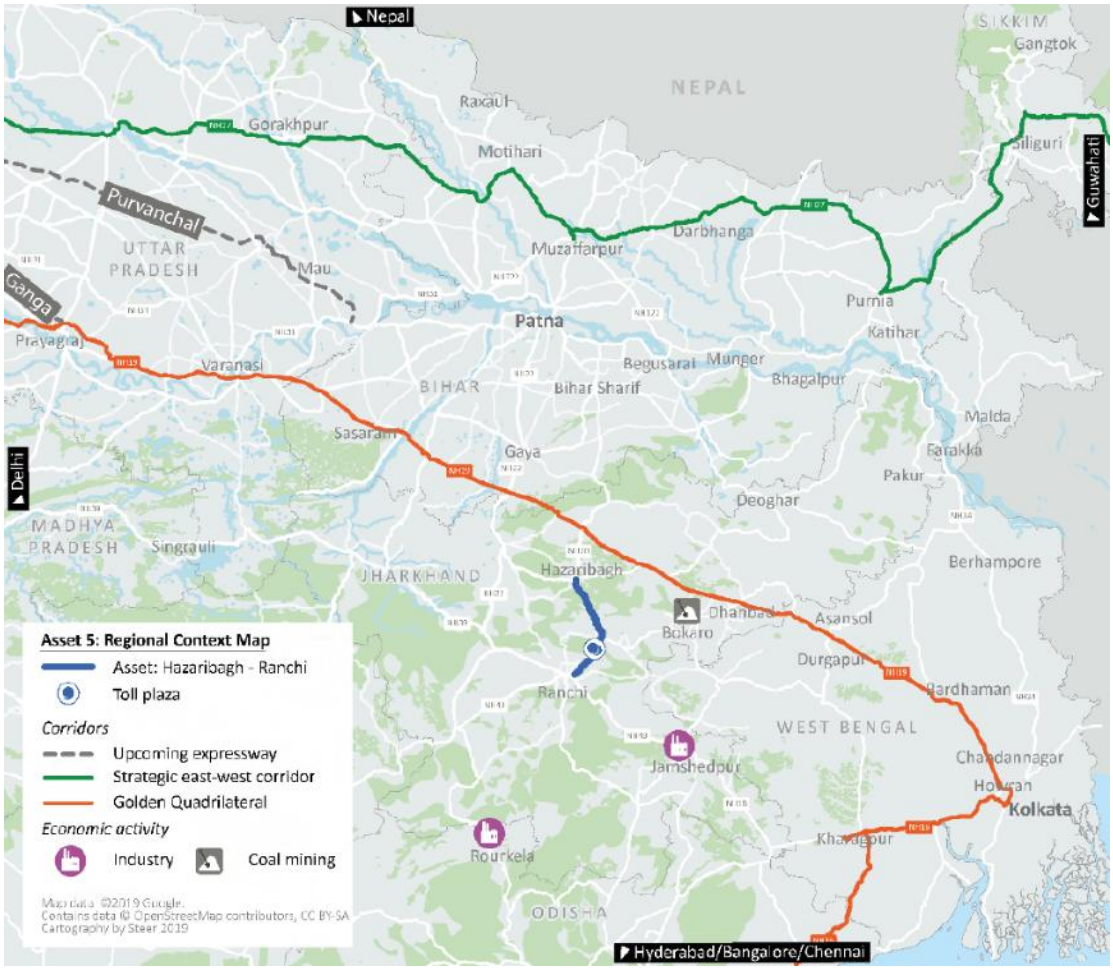
Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the HTPL Project connects Ranchi and Hazaribagh in the state of Jharkhand along NH 20 (erstwhile NH 33). Traffic on the HTPL Project is described as diverse, comprising short-, medium- and long-distance movements. Passenger traffic includes commuting between Ranchi, Ramgarh and Hazaribagh, and the Origin Destination (OD) survey shows that 34% of CJV trips are Ranchi–Ramgarh and 24% are Ranchi–Hazaribagh. Passenger movements also include tourism flows to destinations within Jharkhand.

OD commodity-distribution tables show meaningful shares of construction materials (up to 24%), petroleum products (up to 14%), and metals (up to 37%), as well as substantial proportions of empty return trips across categories, consistent with resource-based freight flows.

The Traffic Reports further identify long-distance freight movements between southern West Bengal, Bihar and southern/central India, reflecting the HTPL Project's role in connecting multiple regional economies. The Traffic Consultants also highlighted ongoing and upcoming network changes, including the Gola–Ormanjhi section expected by March 2026, the Gola–Bokaro section by December 2025, and a proposed Varanasi–Ranchi–Kolkata greenfield expressway that will cross north of Ramgarh and is not expected to divert significant existing flows on the HTPL Project.

The map below illustrates the location of the HTPL Project and the corridor it covers:



Description of Hybrid Annuity Model and Annuity Toll Roads

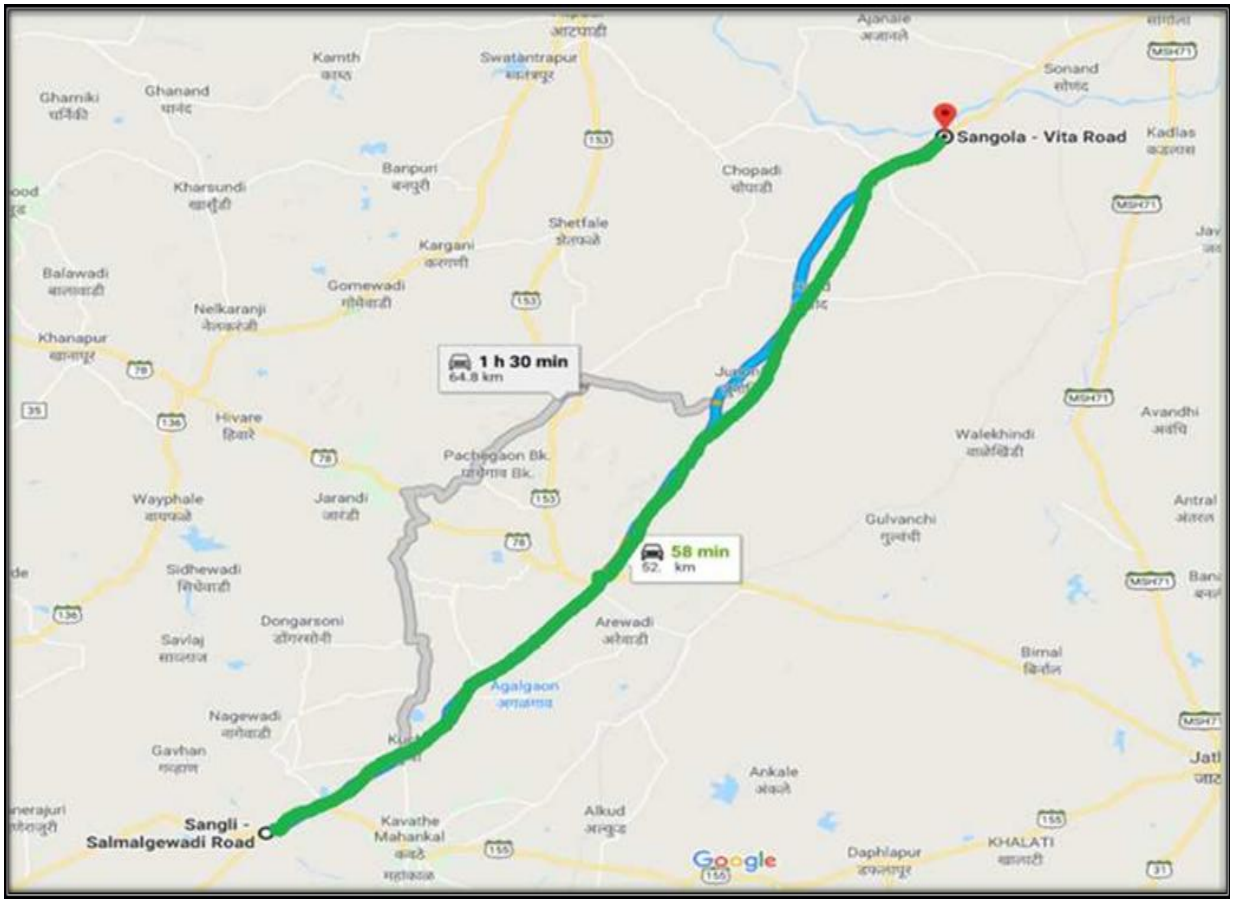
1. Andhra Pradesh Expressway Private Limited

Andhra Pradesh Expressway Private Limited ("**APEPL**") is a part of NH-44 (erstwhile NH 7), between Kothakota in Telangana and Kurnool in Andhra Pradesh (from km. 136+077 in Kothakota to km. 210+699 in Kurnool) in the state of Telangana on a Hybrid Annuity Model. The map below illustrates the location of the APEPL project and the corridor it covers:

2. Borgaon Watambare Highways Private Limited

Borgaon Watambare Highways Private Limited ("**BWHPL**") entered into a concession agreement on May 10, 2018, with the NHAI for the development, maintenance and management of a stretch of National Highway from Sangli to Solapur (Package-II: Borgaon to Watambare) section (from existing chainage km. 219.956 to chainage km. 272.394/Design chainage km. 224.000 to chainage km. 276.000) of NH166 in the state of Maharashtra on a Hybrid Annuity Model (the "**BWHPL Project**").

The map below illustrates the location of the BWHPL Project and the corridor it covers:

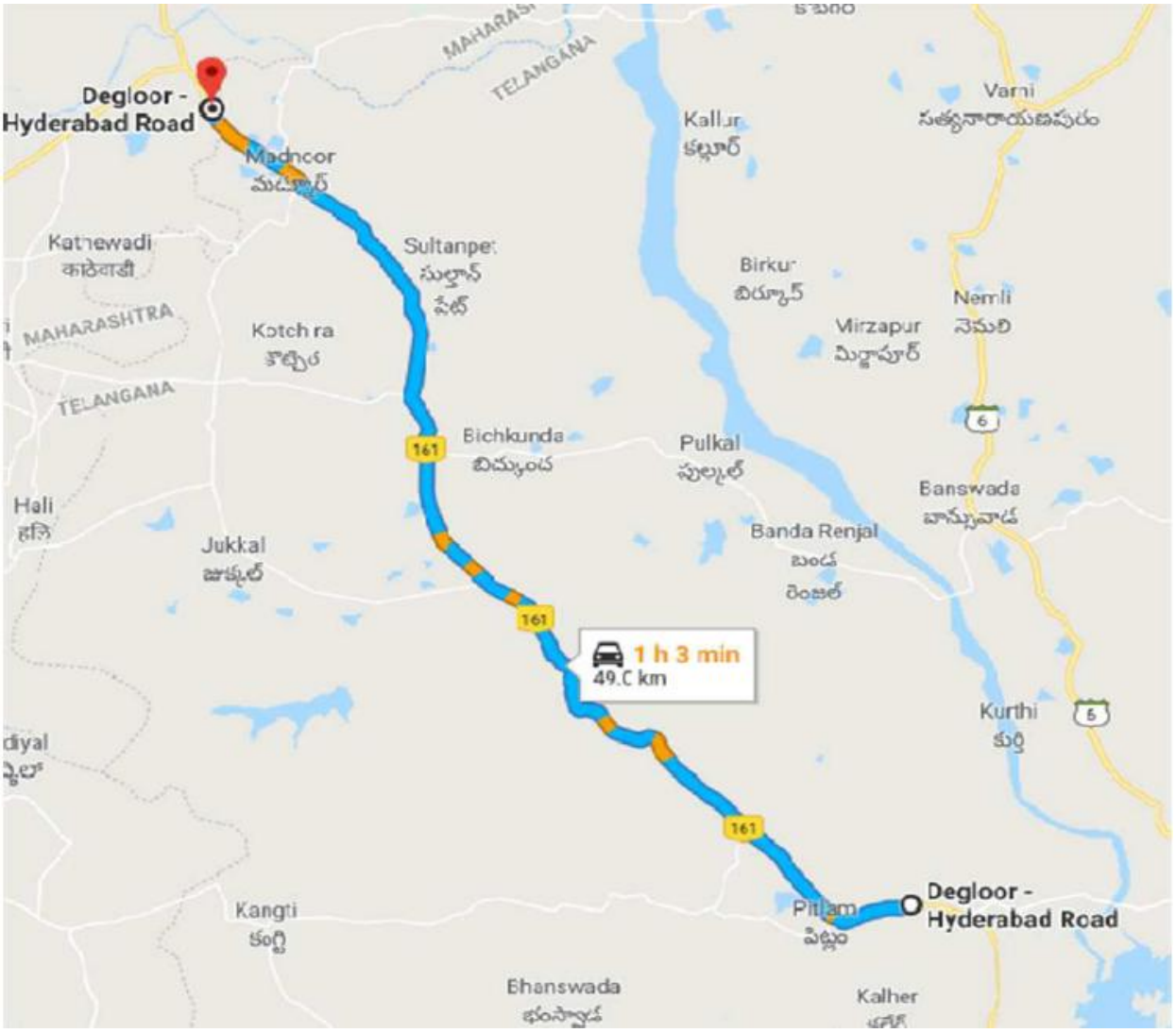


3. Mangalwedha Solapur Highways Private Limited

Mangalwedha Solapur Highways Private Limited ("**MSHPL**") entered into a concession agreement on May 10, 2018 with the NHAI for the development, maintenance and management for a stretch of National Highway from Sangli to Solapur (Package-IV: Mangalwedha to Solapur) section (from existing chainage km. 314.969 to chainage km. 370.452/Design chainage km. 321.600 to chainage km. 378.100) of NH166 in the state of Maharashtra on HAM (the "**MSHPL Project**"). The map below illustrates the location of the MSHPL Project and the corridor it covers:

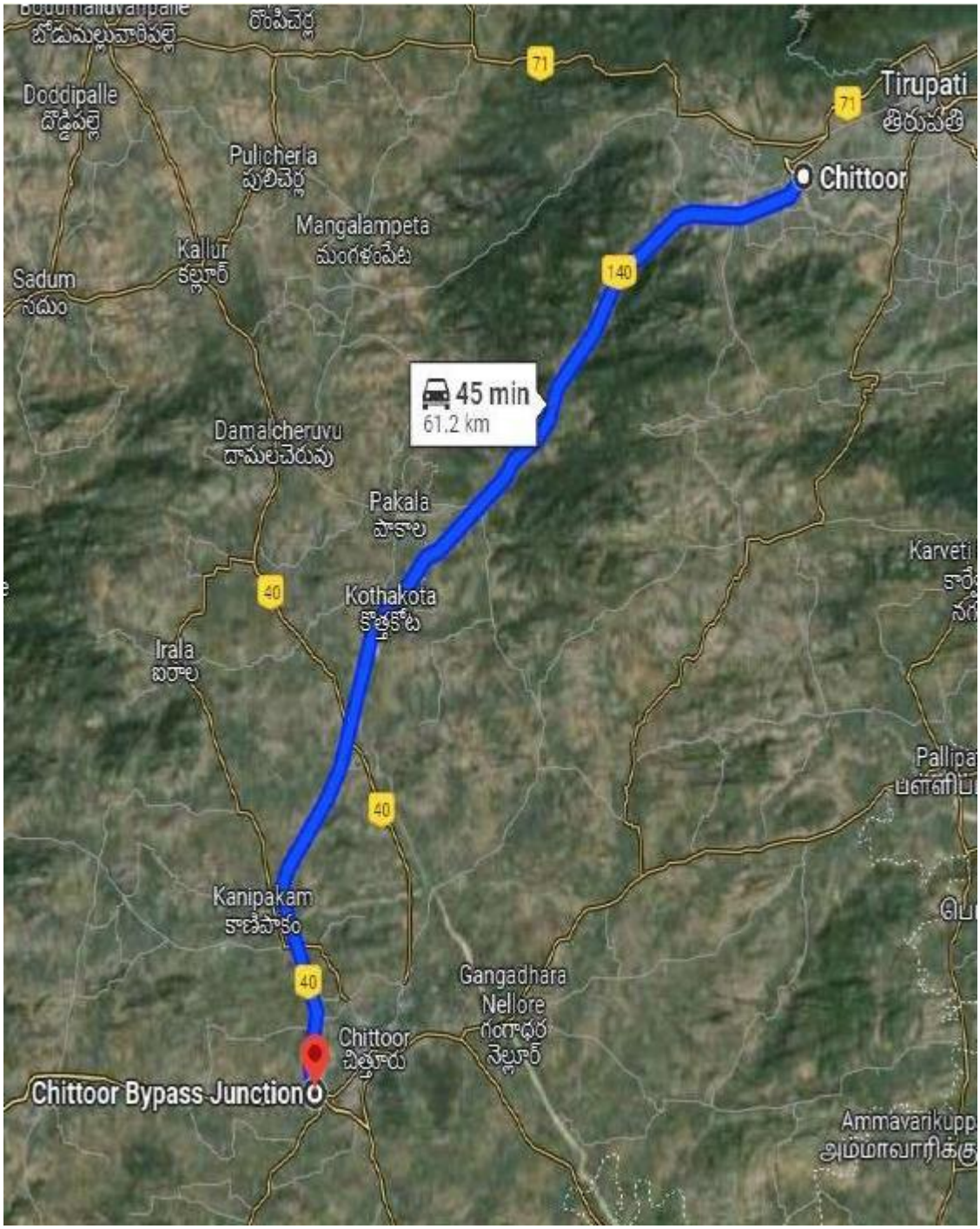
4. Mangloor Highways Private Limited

Mangloor Highways Private Limited ("**MHPL**") entered into a concession agreement on May 9, 2018, with the NHAI for the development, maintenance and management of a stretch of National Highway from Mangloor to Telangana/Maharashtra border section (Existing km. 91.350 to 140.873/Design km. 86.788 to km. 135.751) of NH161 in the state of Telangana under Bharatmala Pariyojana on HAM (the "**MHPL Project**"). The map below illustrates the location of the MHPL Project and the corridor it covers:



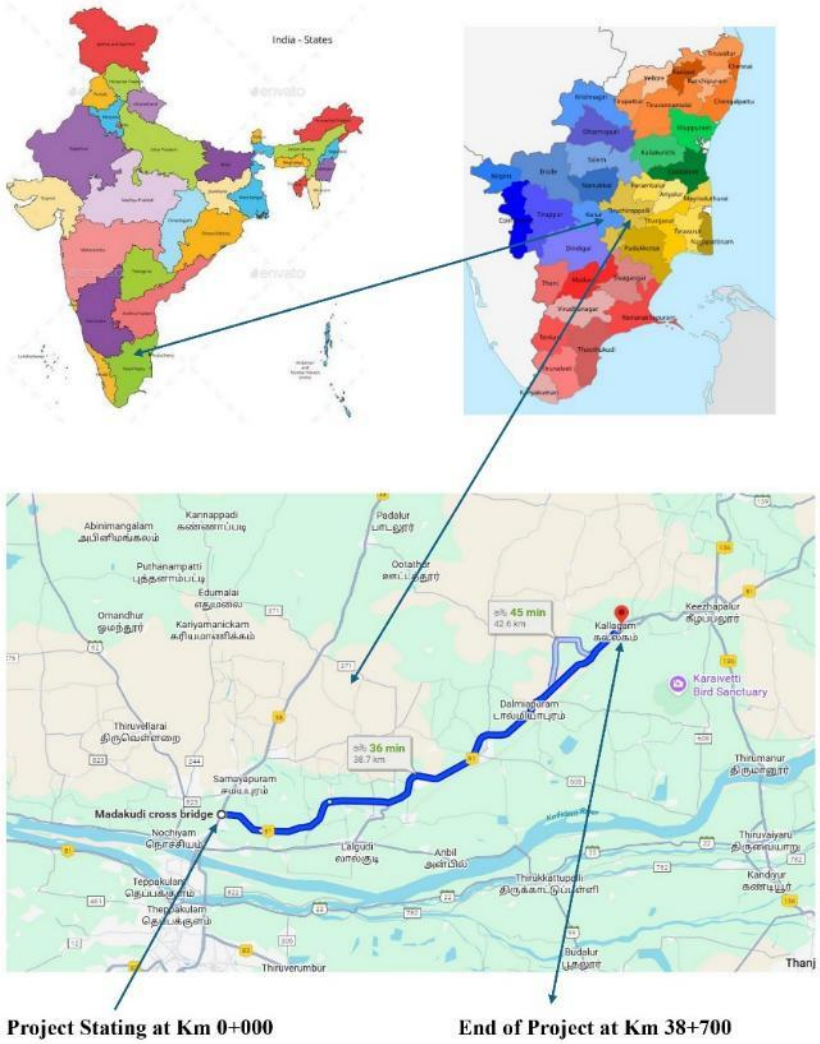
5. Tirumala Highways Private Limited

Tirumala Highways Private Limited ("**THPL**") entered into a concession agreement on May 9, 2018, with the NHAI for the development, maintenance and management of a stretch of National Highway from Chittor to Mallavaram section [(from existing km. 158.000 to km. 41.800/Design km. 0.000 to km. 61.128)] of NH-140 in the state of Andhra Pradesh under Bharatmala Pariyojana on HAM (the "**THPL Project**"). The map below illustrates the location of the THPL Project and the corridor it covers:



6. Srirangan Infra Private Limited

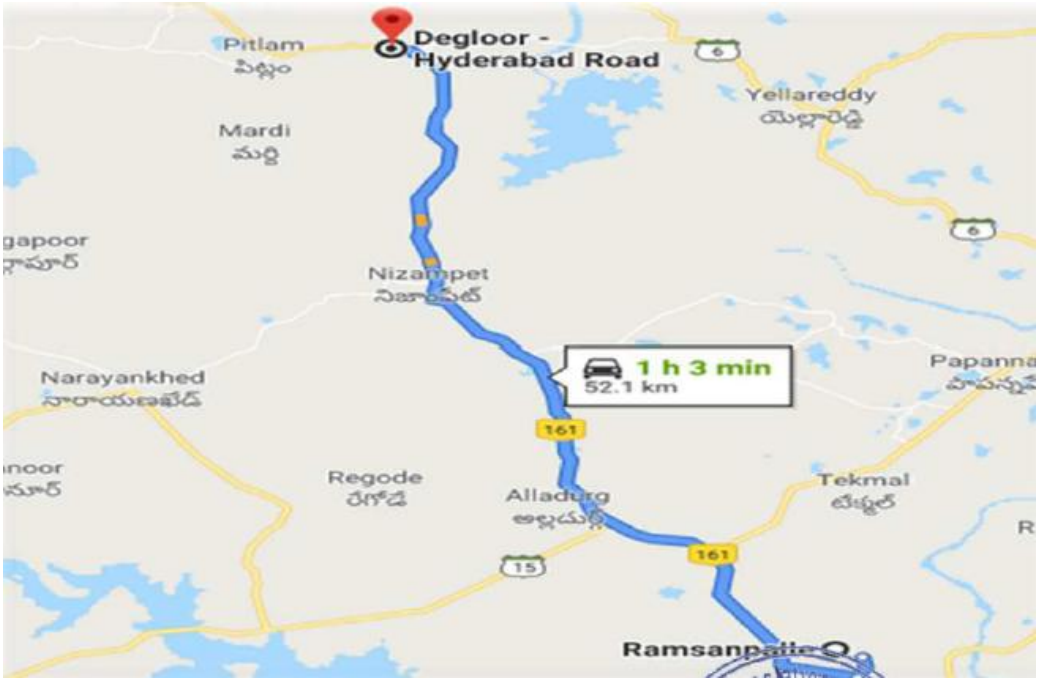
Srirangam Infra Private Limited ("**SIPL**") entered into a concession agreement on April 11, 2018, with the NHAI for the development, maintenance and management of a stretch of National Highway from Trichy to Kallagam section (from km. 0.000 to km. 38.700) of NH227 in the state of Tamil Nadu under Bharatmala Pariyojana on HAM (the "**SIPL Project**"). The map below illustrates the location of the SIPL Project and the corridor it covers:



Four Laning of Tiruchirappalli (Km.0+000) to Kallagam (Km.38+700) Section of NH-81

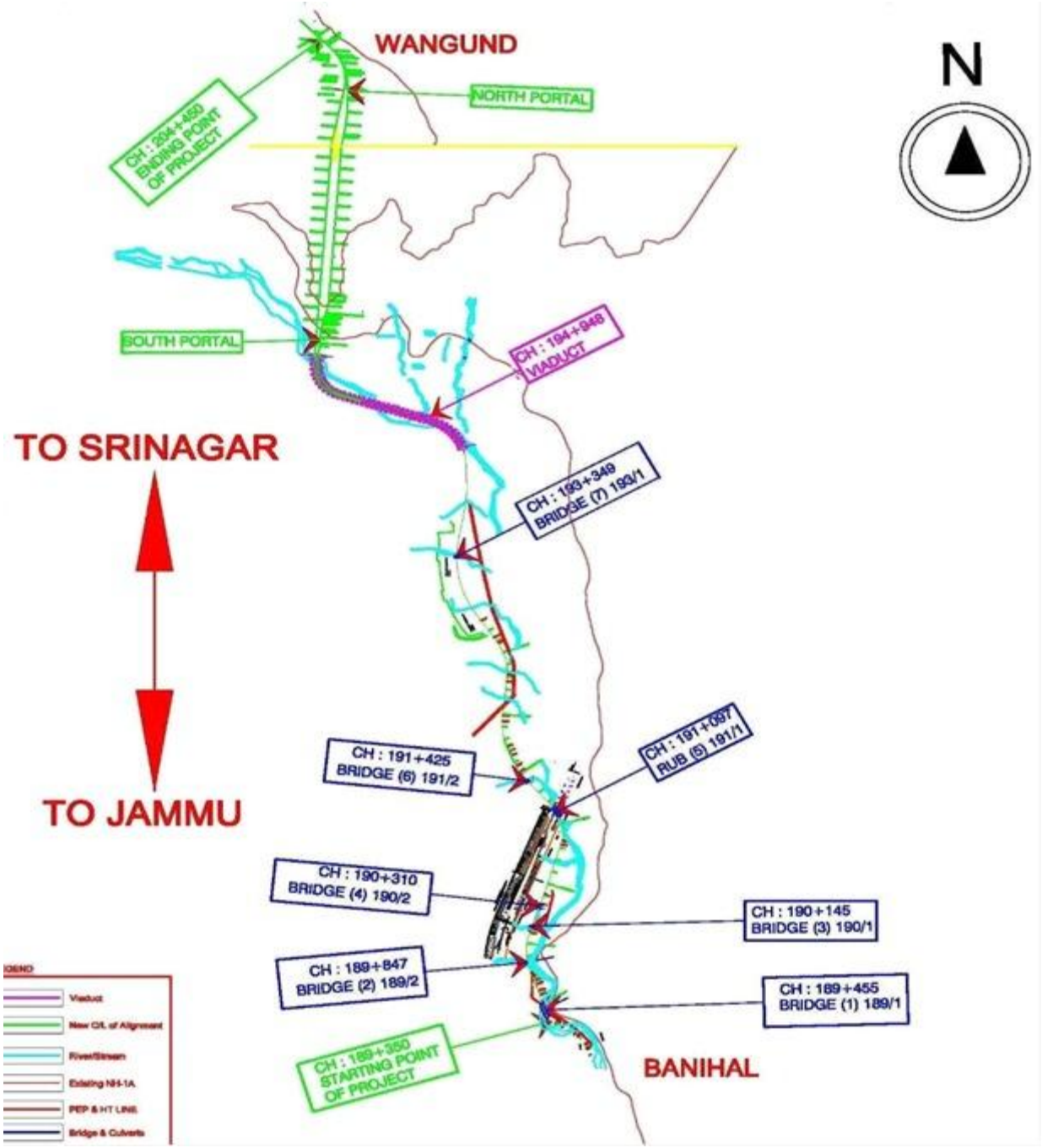
7. Shankarampet Projects Private Limited

Shankarampet Projects Private Limited ("**SPPL**") entered into a concession agreement on May 9, 2018, with the NHAI for the development, maintenance and management of a stretch of National Highway from Ramsanpalle village to Mangloor village section (from existing km. 44.757 to km. 91.350/Design km. 39.980 to km. 86.788) of NH 61 in the state of Telangana under Bharatmala Pariyoana on HAM (the "**SPPL Project**"). The map below illustrates the location of the SPPL Project and the corridor it covers:



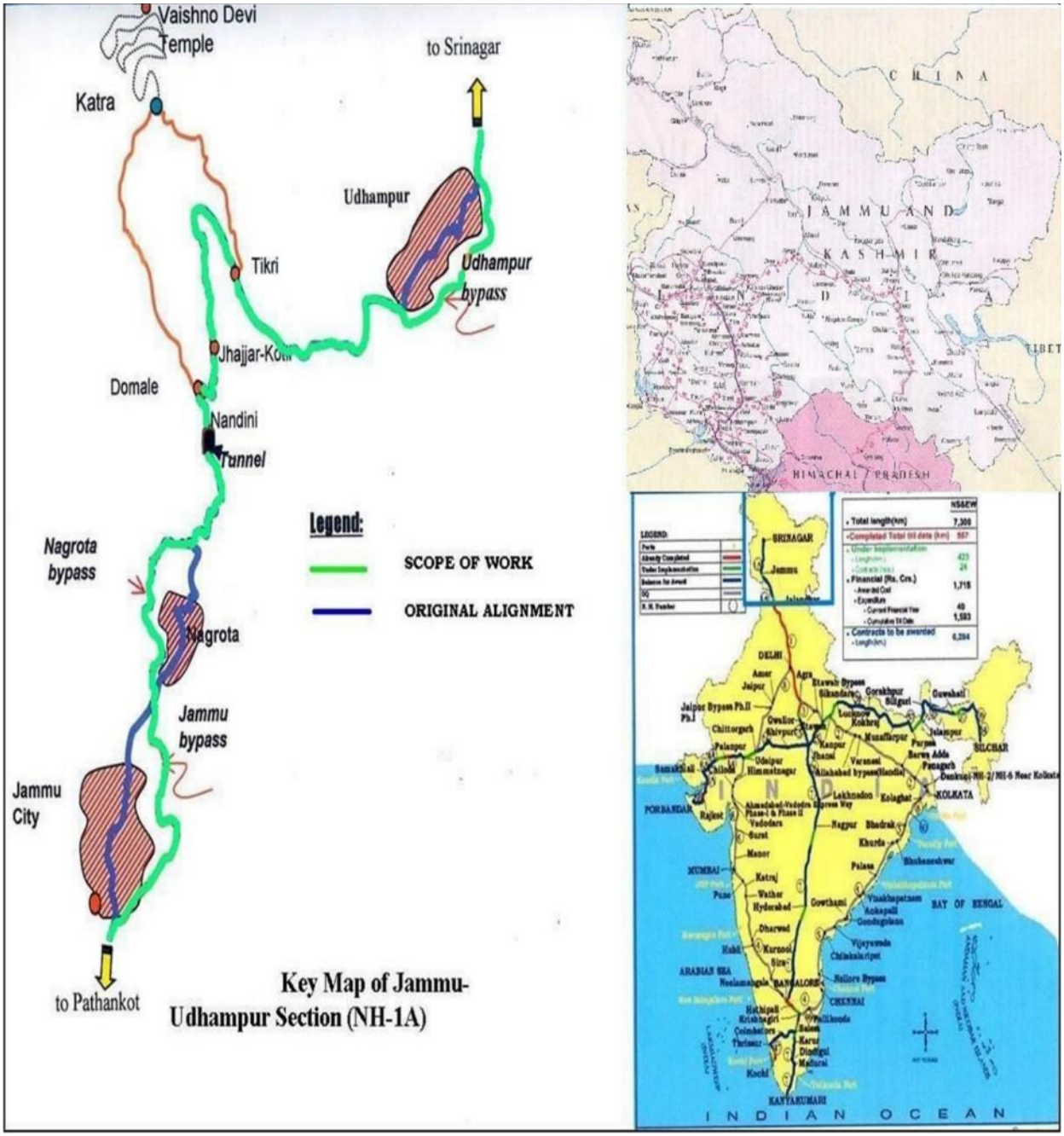
8. Quazigund Expressway Private Limited

Quazigund Expressway Private Limited ("**QEPL**") entered into a concession agreement dated July 13, 2010, for development and maintenance of NH-1A from 189.350 km to 204.700 km, including 2 tunnels (2 Lane) of 0.69 kms and 8.45 kms (approx. 15.25 km) on the Quazigund - Banihai section of NH 1A in Jammu & Kashmir on DBFOT on an annuity basis. The map below illustrates the location of the QEPL Project and the corridor it covers:



9. Jammu Udhampur Highway Private Limited

Jammu Udhampur Highway Private Limited ("**JUHPL**") entered into a concession agreement dated July 19, 2010, for the development and maintenance of NH-1A from km 15.000 to km 67.000 (approx. 64.58 km) on the Jammu - Udhampur section by four-laning on DBFOT on an annuity basis. The map below illustrates the location of the JUHPL Project and the corridor it covers:



Proposed Portfolio Assets

A summary of the Proposed Portfolio Assets is set forth below:

Particulars	BFHL	WMTPL	DTPL	CNTL
Project stretch	Baharampore-Farakka	Lebad-Jaora	Hebbal-Bengaluru	Chenani-Nashri
Geographic location (State)	West Bengal	Madhya Pradesh	Karnataka	Jammu and Kashmir
Number of lanes	4	4	6	2 for tunnel 4 for approach road
National/State Highway Number (New | Old)	NH12	SH31	NH44 | NH7	NH1A
Operating Model	Toll	Toll	Toll	Annuity
Concessioning authority	NHAI	Madhya Pradesh Road Development Corporation	NHAI	NHAI
Project length (km)	100.6	124.2	22.1	10.9 (which includes an additional ~1.9 km of approach roads)
Asset type	DBFOT	BOT	DBFOT	Annuity
Number of toll plazas	2	2	1 and 1 check plaza	*Not relevant as this asset is an annuity asset*
Toll plazas	Shibpur and Chandermore	Chokala and Chikliva	Devanahalli	*Not relevant as this asset is an annuity asset*

Particulars	BFHL	WMTPL	DTPL	CNTL
Appointed date	February 3, 2011	February 25, 2008	April 25, 2011	May 23, 2011
Commercial operations date	June 22, 2024	Section-I: October 30, 2010 (km. 0+000 to km. 66+250) Section-II: August 29, 2011 (km. 66+250 to km. 124+150)	December 20, 2025	March 8, 2017
Operational history (as of September 30, 2025) (in years)	11.38	14.09	11.42	8.56
Concession period	25 years + 5 years of extension (till 2041) (2)	25 years + 5.2 years of extension (till 2038) (3)	20 years + 267 days of extension (4)	20 years
Concession end date (original)	February 2, 2036	February 24, 2033	April 24, 2031	March 8, 2032
End of concession	February 2, 2041	April 27, 2038	January 16, 2032	March 8, 2032
Residual Concession Life (as of September 30, 2025) (in years) (1)	15.3	12.6	6.3	6.4
Revenue from operations during the Financial Year 2025 *(in ₹ million)* (6)	2,086.94	2,361.35	3,237.77	N.A.
Receipt of Annuity during the Financial Year 2025 *(in ₹ million)* (7)	Nil	Nil	Nil	6,350.40 (receivable semi-annually) (5)
Toll Escalation Mechanism	Fixed 3% +40%WPI	Fixed 7%	Fixed 3% +40%WPI	Not Applicable
Historical Traffic, 3-year CAGR (FY22-FY25) (%)	6.6%	10.0%	27.1%	Not Applicable

1. *Residual Concession Life represents actual residual life for each asset, after accounting for any extensions granted by or which may be granted by the relevant concessioning authority. Our concession agreements allow changes to the assets' concession periods based on actual traffic/revenue relative to target benchmarks, with specific multipliers for adjustments. Our estimations for residual concession life are based on our contracts and independent traffic studies, as of September 30, 2025.*
2. *As of September 30, 2025, the Independent Engineer has proposed an extension of the concession period by five years on account of effect of variation in traffic growth as per Clause 29.2 of the CA. The proposed extension is subject to approval of the authority.*
3. *As on September 30, 2025, an aggregate extension of 5.2 years has been received on accord of traffic (effect of variation in traffic growth, COVID-19, and demonetization).*
4. *As on September 30, 2025, an aggregate extension of 267 days has been received on account of COVID-19.*
5. *Receipt of annuity during the Financial Year 2025.*
6. *Pertains to DBFOT/ BOT Assets*
7. *Pertains to Annuity Asset*

A summary of the key features of the Proposed Portfolio Assets is set out below.

1. **Baharampore-Farakka Highways Limited**

Overview of the Project and the Concession

On June 28, 2010, the NHAI and Baharampore-Farakka Highways Limited ("**BFHL**") entered into a concession agreement whereby BFHL was engaged for the four-laning of the Baharampore-Farakka section of NH-34 from 191.416 km to 294.684 km in the state of West Bengal under NHDP Phase III on a DBFOT toll basis (the "**BFHL Project**").

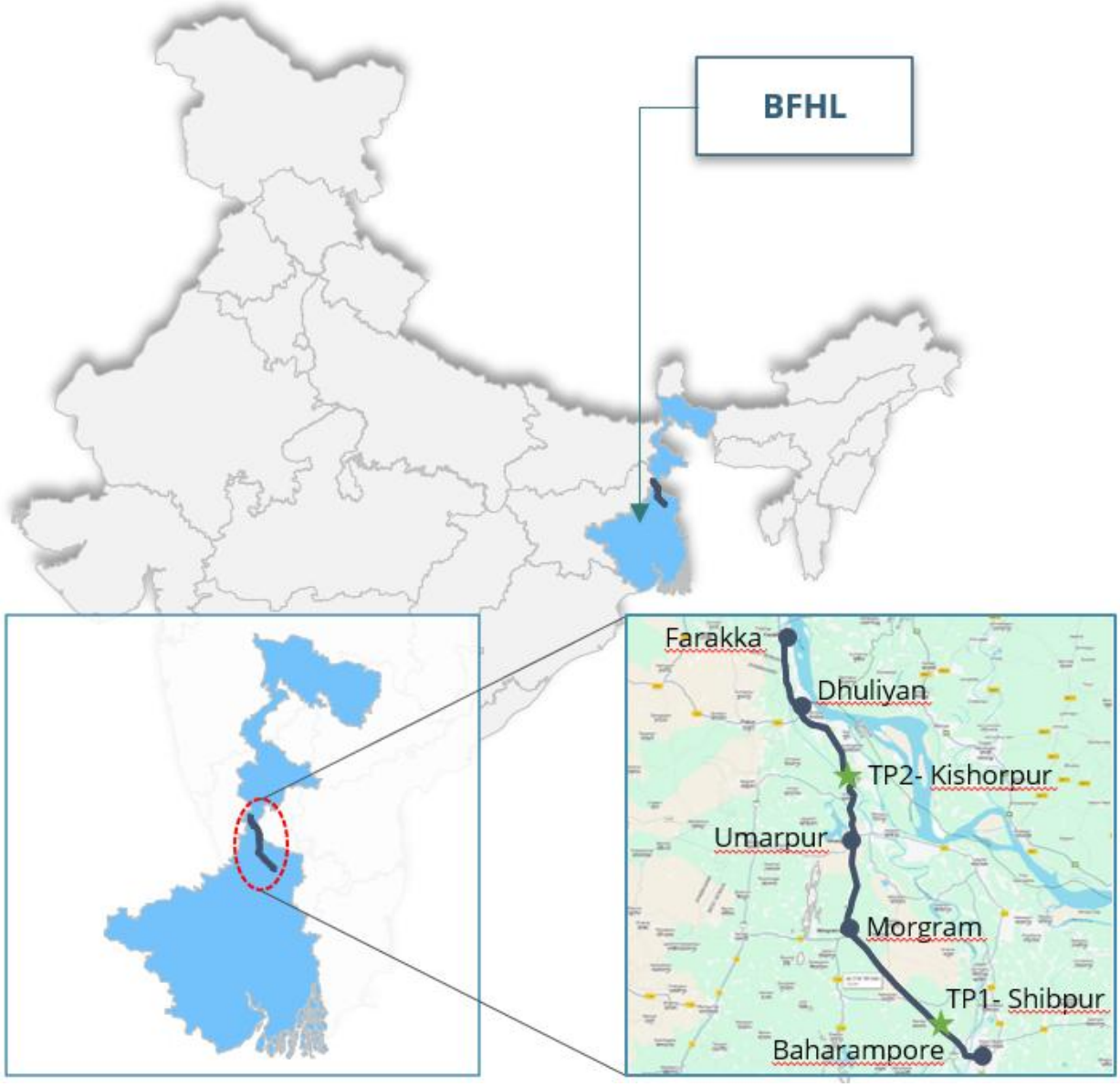
BFHL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the BFHL Project in accordance with the BFHL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the BFHL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to Traffic Consultants, the Berhampore to Farakka is a 90 kms, four-lane stretch on NH-12 (the "**Project Road**"). The Project Road connects Kolkata, the state capital, with Siliguri and Darjeeling, which are major tourist attractions. The project section part of NH-12 stretches from Dalkhola in the northern part of West Bengal to Bakkhali in the south, linking all significant hubs within the state. The section serves as the primary access route to the North-eastern states and is a vital artery for West Bengal. Additionally, this corridor is a crucial link to Northeast India, and its closeness to Bangladesh further establishes it as an essential route for international trade. TP01 is largely influenced by CJV traffic, which is plying mostly between Malda, Farakka, Behrampore and Kolkata, accounting for about 43% of total tollable traffic in the Financial Year 2025, followed by MAV traffic, which accounts for about 32%. The plaza, in terms of PCUs, has observed growth of 8.2% over the period from Financial Year 2025 to Financial Year 2019. It is important to note that traffic flow in the project section has a distinct character due to movement from industries and stone mining, which differs from that of other plazas. The main commodities transported along the project section include stone aggregates and sand, sourced from Nalhati, Rampurhat, Pakur and Sainthia, mainly destined for Kolkata,

Siliguri and Bangladesh. Around the project influence area, there are significant industrial establishments, including a thermal power plant operated by the National Thermal Power Corporation in Farakka and a cement manufacturing facility operated by Ambuja Cement, while Jangipur features a large food processing park adjacent to the BFHL section and the Industrial Park in Behrampore serves as a vital manufacturing centre.

The map below illustrates the location of the BFHL Project and the corridor it covers:



2. **Western MP Infrastructure & Toll Roads Private Limited**

Overview of the Project and the Concession

On August 30, 2007, the Madhya Pradesh Road Development Corporation (the "**MPRDC**") and Western MP Infrastructure & Toll Roads Private Limited ("**WMTPL**") entered into a concession agreement whereby WMTPL was engaged for four laning of Lebad-Jaora, a section of SH-31 from 0 km to 125 km in the state of Madhya Pradesh on a BOT basis (the "**WMTPL Project**").

WMTPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the WMTPL Project in accordance with the WMTPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. For further details on the WMTPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

According to the Traffic Consultants, the Lebad–Jaora segment of State Highway 31 is a ~125-kilometer, four-lane corridor that enhances connectivity between Indore and key destinations in Rajasthan and Maharashtra, including Udaipur, Jaipur, and Mumbai. It serves as a critical east–west link between NH48 and NH52, facilitating traffic among major economic hubs. The corridor features two toll plazas and supports two industrial clusters (Pithampur and

Indore), which host diverse industries such as pharmaceuticals, textiles, and automotive and related ancillaries. It primarily carries freight traffic, especially agricultural commodities such as wheat, as Madhya Pradesh is a significant wheat producer, and the region around the project road is a major producer of garlic and cotton. The route also handles substantial courier services connecting major cities like Delhi-NCR, Mumbai, and Bengaluru. The WMTPL Project connects the industrial catchment region around Indore/Pithampur with Maharashtra and Rajasthan and plays a vital role in regional trade, business, and passenger movement. Freight composition is led by agricultural commodities, largely transported by LCV/Minibus and 2-axle trucks, while heavier multi-axle vehicles primarily move construction inputs, especially cement, marble, and associated powders, originating around Nimbahera and Jaipur and heading toward Indore, Ujjain, and Badnawar. The corridor also facilitates significant courier and parcel flows connecting Delhi-NCR, Mumbai, and Bengaluru. Commercial vehicles account for approximately 43% of the overall traffic mix, and the corridor has an operating track record of over 15 years.

The map below illustrates the location of the WMTPL Project and the corridor it covers:

3. **Devanahalli Tollway Private Limited**

Overview of the Project and the Concession

On April 30, 2010, the NHAI and Devanahalli Tollway Private Limited ("**DTPL**") entered into a concession agreement whereby DTPL was engaged, on a DBFOT basis, for upgradation, operation and maintenance of 534.720 km to 556.840 km of the Hyderabad Bangalore section of NH-7 in Karnataka under NHDP Phase VII on a DBFOT basis (the "**DTPL Project**").

DTPL has the sole and exclusive right to demand, collect and appropriate tolls payable by vehicles using the DTPL Project in accordance with the DTPL Concession Agreement and at the rates set out in the National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended. According to the IMHCL database, DTPL is the

toll plaza in the country with the highest vehicle traffic. For further details on the DTPL Concession Agreement, please see "*Summary of the Concession Agreements*" on page 343.

Corridor and Network Description and Traffic Characteristics

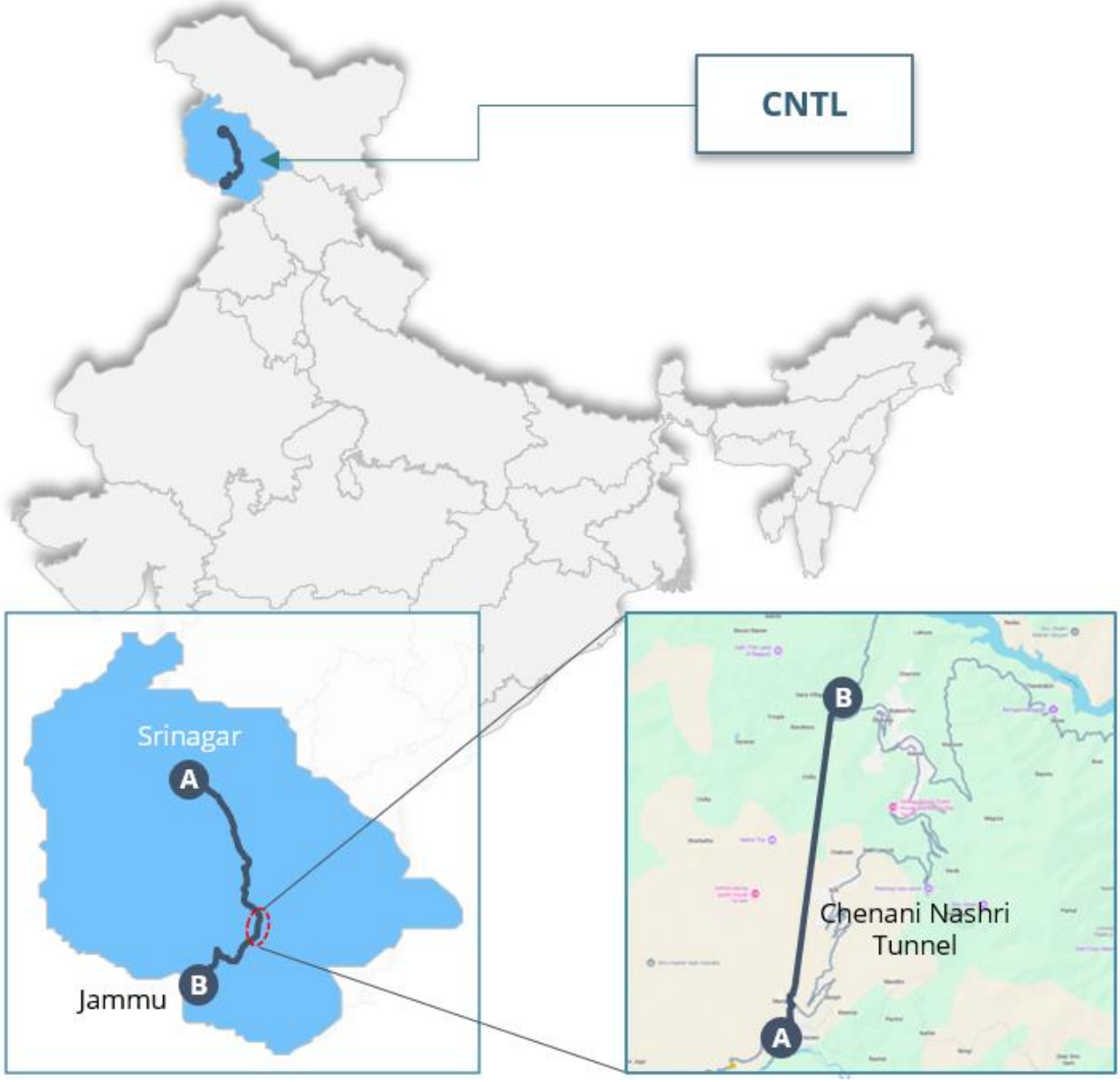
According to Traffic Consultants, the Devanahalli–Hebbal is a 6-lane, 22.12 km-long stretch on NH-44 in the state of Karnataka, connecting the city of Bengaluru to Kempegowda International Airport and to traffic moving towards Hyderabad and further north. The project stretch serves as the primary road to the Bengaluru airport from Bengaluru city, and the traffic composition of the stretch largely comprises passenger traffic originating and destined for the airport. The said project stretch is part of NH-44, a major north–south national highway from Srinagar in Jammu & Kashmir to Kanyakumari in Tamil Nadu, providing seamless connectivity for long-distance traffic travelling between northern and southern India. Bengaluru district is a major industrial hub with a diverse range of industries, including IT and ITeS, biotechnology, aerospace, automotive, and manufacturing. The district is home to several major traffic generators, such as IT parks, industrial estates, and logistics facilities. Origin–destination analysis indicates that Karnataka contributes to about 96.1% of car traffic and about 80.3% of 3-axle and multi-axle vehicle traffic, reflecting the predominantly regional nature of passenger movements and a mix of regional and interstate freight flows. The analysis of freight movement across the toll plaza reveals that the major commodities being transported include agri produce, construction materials, iron and steel products and consumer foods and products, while courier and parcel traffic forms a significant proportion of commercial traffic due to the presence of multiple warehousing units in proximity to the project road.

The map below illustrates the location of the DTPL Project and the corridor it covers:

4. **Chenani-Nashri Tunnelway Limited**

On June 28, 2010, the NHAI and Chenani-Nashri Tunnelway Limited ("**CNTL**") entered into a concession agreement whereby CNTL was engaged, on an annual annuity basis (payable semi-annually), for development and maintenance of NH-1A from 89 km to 130 km including a 2 lane 9 km long tunnel with parallel escape tunnel on the Chenani – Nashri section of NH-1A in the State of Jammu & Kashmir on design, build, finance, operate and transfer on DBFOT Annuity basis (the "**CNTL Project**").

According to the PIB press release, CNTL is India's longest highways tunnel. The map below illustrates the location of the CNTL project and the corridor it covers:



For further details, please see "*Related Party Transactions - Commitment Letter*" on page 417.

Environment, health and safety

The Existing Portfolio Assets and Proposed Portfolio Assets are required to meet certain health, safety and environmental specifications and standards in the operation and maintenance of the projects, and are subject to a number of laws and regulations relating to health, safety and environmental protection. The Existing Portfolio Assets and Proposed Portfolio Assets are also required to adhere to various labour and workplace-related laws and regulations in India. The Existing Portfolio Assets and Proposed Portfolio Assets have policies and procedures in place to ensure that the operation and maintenance of the Projects conform to existing health, safety and environmental regulatory standards and that adequate employees' compensation and group medical insurance policies are maintained.

Health, safety, and environmental compliance are an integral part of our operations. The Existing Portfolio Assets and Proposed Portfolio Assets maintain safety management systems. We have conducted regular internal and third-party environmental and safety audits at three of our Portfolio Assets, and have implemented standardized protocols for road user and worker safety. Comprehensive health and well-being programs are provided for on-site personnel, supported by employees' compensation and group medical insurance. The Project Manager has also aligned operational practices with global ESG benchmarks and continues to monitor progress through digital dashboards and periodic reporting to the Investment Manager.

We continued to strengthen road user safety through the deployment of route-patrolling vehicles and enhanced emergency response systems, as well as the standardization of work-zone safety layouts across all Project SPVs. Regular safety training and toolbox sessions are conducted, and our digital safety dashboards enable real-time tracking of incidents and near-miss reporting, supporting proactive risk mitigation and behavioural safety improvements.

Environmental stewardship forms a key component of our asset management practices. Our Existing Portfolio Assets have implemented a range of sustainable construction technologies, including CCPR and HiMA, to reduce greenhouse gas emissions and extend pavement life. We have also expanded the use of recycled and refurbished materials, introduced solar-powered lighting across toll plazas and administrative facilities, and initiated the use of electric vehicles in patrolling and maintenance operations.

The Investment Manager has adopted an Environmental and Social Due Diligence ("**ESDD**") Policy, which provides a comprehensive system for assessing, managing and monitoring environmental and social risks. These frameworks are applied both prior to and after acquisitions, ensuring that all investments are evaluated for compliance with Indian regulatory requirements, IFC Performance Standards, and the UN Sustainable Development Goals. The ESDD Policy requires a detailed review of Environmental Impact Assessments, environmental and social management systems, and ongoing performance monitoring for all infrastructure assets. These procedures ensure that both existing and future projects are benchmarked against high environmental and social performance standards and that any identified gaps are addressed through corrective action plans. Each of the Existing Portfolio Assets are required to implement our Environment and Social Management System (ESMS) and adopt standardized SOPs and related policies. These systems ensure consistent governance and compliance across all operating sites. On-ground implementation is ensured through the delivery of in-house periodic training and sensitisation on ESMS and SOPs, EHS, environmental regulatory compliance, and sustainability to SPVs and contractor staff.

We undertake comprehensive measurement of our Scope 1, Scope 2 and Scope 3 greenhouse gas emissions in accordance with the GHG Protocol. In addition to portfolio-wide emissions accounting, we also quantify the greenhouse gas reductions attributable to our adoption of sustainable operating and maintenance practices, including material circularity and resource-efficient periodic maintenance. We have implemented decarbonisation initiatives across our Existing Portfolio Assets and continue to align our operations to reduce Scope 1 and Scope 2 emissions over time, supported by the systems, processes and governance embedded in our ESG framework.

Through our Livelihood Enhancement Programme at two of the Existing Portfolio Assets (namely, GAEPL and NAMEPL), we supported displaced communities along project corridors with skills training and employment facilitation. At GAEPL, 415 affected people were compensated for their losses, and in the year 2023, 24 vulnerable families were resettled into permanent housing. Through the Livelihood Enhancement Programme at NAMEPL, a total of 1,007 households were supported in agriculture and allied sectors, livestock, and microenterprise. These initiatives were complemented by community health and safety initiatives such as the RAAHI eye check-up programme for highway users, our TB Mukt Bharat Initiatives, solar street lighting initiatives and the distribution of winter clothing to local communities.

Together, these initiatives demonstrate our commitment to maintaining the highest standards of environmental sustainability, workplace safety, and community responsibility, aligned with international best practices and our long-term objective of sustainable value creation.

Operations and maintenance

Under the concession agreements, the Existing Portfolio Assets and Proposed Portfolio Assets are required to operate and maintain the project highways and tunnelways in accordance with the concession agreement either by itself, or through an O&M contractor. Typically, the operation and maintenance obligations include:

- permitting safe, smooth and uninterrupted flow of traffic during normal operating conditions;
- collecting and appropriating fees from the applicable dates;
- minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway by providing rapid and effective response and maintaining liaison procedures with emergency services;
- undertaking periodic preventive and routine maintenance, including prompt repairs of potholes, cracks, joints, drains, line markings, lighting and signage, and cleaning and maintenance of sapling plantations;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, repairs and refurbishment of tolling system and hardware and other equipment;
- the protection of the environment and the provision of equipment and materials; and
- maintaining a public relations unit to interface with and attend to suggestions from concerned authorities and law enforcement agencies to preserve the legal right of way on the highway.

In performing these functions, the Project Manager employs advanced digital systems such as Road-Aid, which enables real-time monitoring of road conditions and maintenance activities, and our proprietary HiRate application, which provides multi-

parameter asset rating and benchmarking of performance standards across our portfolio. The Project Manager's role extends well beyond its obligations under the Project Implementation and Management Agreement and regulatory requirements under the InvIT Regulations, reflecting its capabilities in digital integration, data-driven decision-making and proactive lifecycle management.

Optimization initiatives for operational costs

Our operational optimization initiatives have enabled us to maintain stable O&M expenses across the Existing Portfolio Assets. This stability in O&M expenses was as a result of multiple initiatives across maintenance, insurance, staffing, tolling operations, energy use and technology systems.

- We conducted routine maintenance through leveraging Road-AID-enabled predictive and preventive maintenance, which improved asset tracking and reduced costs. A focus on bulk procurement, localized solutions and specification improvements has helped maintain quality while reducing costs.

- Insurance expenses have been reduced by aggregating renewals across more assets and negotiating premiums.

- SPV staffing costs have been managed through multi-skilled roles, centralized payroll administration, efficiency-linked bonuses, and streamlined staffing across contiguous assets to reduce redundancies.

- For tolling, security, incident management and vehicle operations, we used centralized procurement and biometric-linked payments to improve efficiency. Technology integration, including Road-AID, helps reduce manpower requirements. Real-time monitoring is used to curb non-operational vehicle use and fuel waste, and we are phasing in electric vehicles to reduce fuel costs in an environment responsible manner going forward.

- For ROW horticulture, we have engaged local vendors for more competitive rates and faster turnaround. We have also reduced our reliance on other vendors in an effort to reduce logistics expenses.

- For electricity and diesel, we have deployed LED lighting, smart timers and solar pilots at plazas to reduce energy costs, and carried out regular energy audits and load-reduction initiatives to stabilize consumption and costs.

- TMS / ATMS system expenses were controlled through predictive maintenance and condition-based monitoring to extend uptime and reduce repair frequencies. We have entered into long-term contracts to keep annual costs stable and minimize our year-to-year increases.

Bitumen procurement initiatives

Bitumen is a critical input in our major maintenance ("**MM**") and resurfacing programmes. We have developed an integrated procurement strategy that combines bulk procurement, supplier diversification, and in-house processing capabilities to ensure cost efficiency, quality consistency and security of supply across our Existing Portfolio Assets. Despite an increase in bitumen prices since 2020, we have effectively managed our MM costs and avoided a proportionate increase in MM costs, through our procurement strategies. We procure base bitumen largely through long-term arrangements with a national bitumen supplier, under which we receive fixed bulk discounts to prevailing refinery prices. Our supplier's nationwide footprint provides location flexibility and reduces logistical variability. As a preferred customer, we have been able to mitigate supply shortages that may arise during refinery maintenance shutdowns or peak seasonal demand. In addition to domestic procurement, we supplement supply through direct imports where appropriate.

To reduce input cost volatility and avoid dependence on any single supplier, we have engaged multiple qualified vendors for key raw materials. A diversified vendor base also supports competitive pricing and reduces counterparty concentration risk. We maintain regular rate negotiations based on performance, volume commitments and payment history, securing discounts for larger offtake and timely payments. Contract structures typically include escalation clauses tied to market indices, which provide predictable pricing and reduce the risk of operational disruption.

For polymer-modified bitumen ("**PMB**") and emulsions, we have established long-term memorandum of understanding ("**MOUs**") with a leading polymer supplier for the supply of high-vinyl grade polymer at a fixed spread over international monomer prices, ensuring the continuity of additive supply, which is essential for PMB-based maintenance works. We have also entered into MOUs with other vendors for PMB and emulsion modification at fixed rates per tonne. These engagements enhance quality assurance and support lifecycle-cost optimisation, particularly for long-tenure concession assets. Each PMB project includes a secondary modifier to ensure uninterrupted supply in the event of disruptions at the primary processing unit.

Taken together, these measures have enabled us to manage pricing volatility, ensure quality control from source to site, and maintain a stable MM cost profile across maintenance cycles.

We take various measures to ensure bitumen quality control, including testing at various stages of the value chain, GPS monitoring, and sealing bitumen tankers at the source. Further, to account for annual maintenance shutdowns at domestic refineries and to ensure a continuous supply of bitumen, we import it directly from suppliers. We also deploy advanced materials such as 30–40 mm PMB overlays, micro-surfacing and cold-recycling technologies where appropriate, based on asset-specific

engineering diagnostics. Our data-driven models are enriched with NSV, FWD, ATCC, OD/TVC, and sensor streams, helping determine the optimal material, thickness, alignment, and timing of interventions.

Toll collection system and operations

Tolls are collected for each journey by a vehicle through toll plazas. Signs displaying the toll rates for the Toll Road assets are posted at the toll booths, and tolls can be paid electronically or in cash.

Electronic toll collection

In 2014, an electronic toll collection ("**ETC**") system based on radio-frequency identification ("**RFID**") technology was introduced in India. FASTags (an RFID-based cashless payment mechanism) were affixed on windscreens to auto-debit toll fees from a linked account, without requiring vehicles to stop for transactions. This ETC based on RFID gained wider adoption following an Indian transport ministry directive in January 2019, which mandated that all user fee plazas be made ETC-compliant. The GoI has also made FASTag mandatory at toll plazas.

During the six months ended September 30, 2025 and the Financial Year 2025, all 27 toll plazas on Existing Portfolio Assets had more than 96.00% ETC collection rate.

Cash

Tolls are paid in cash by toll collectors at manual toll booths.

Monitoring

Toll collection

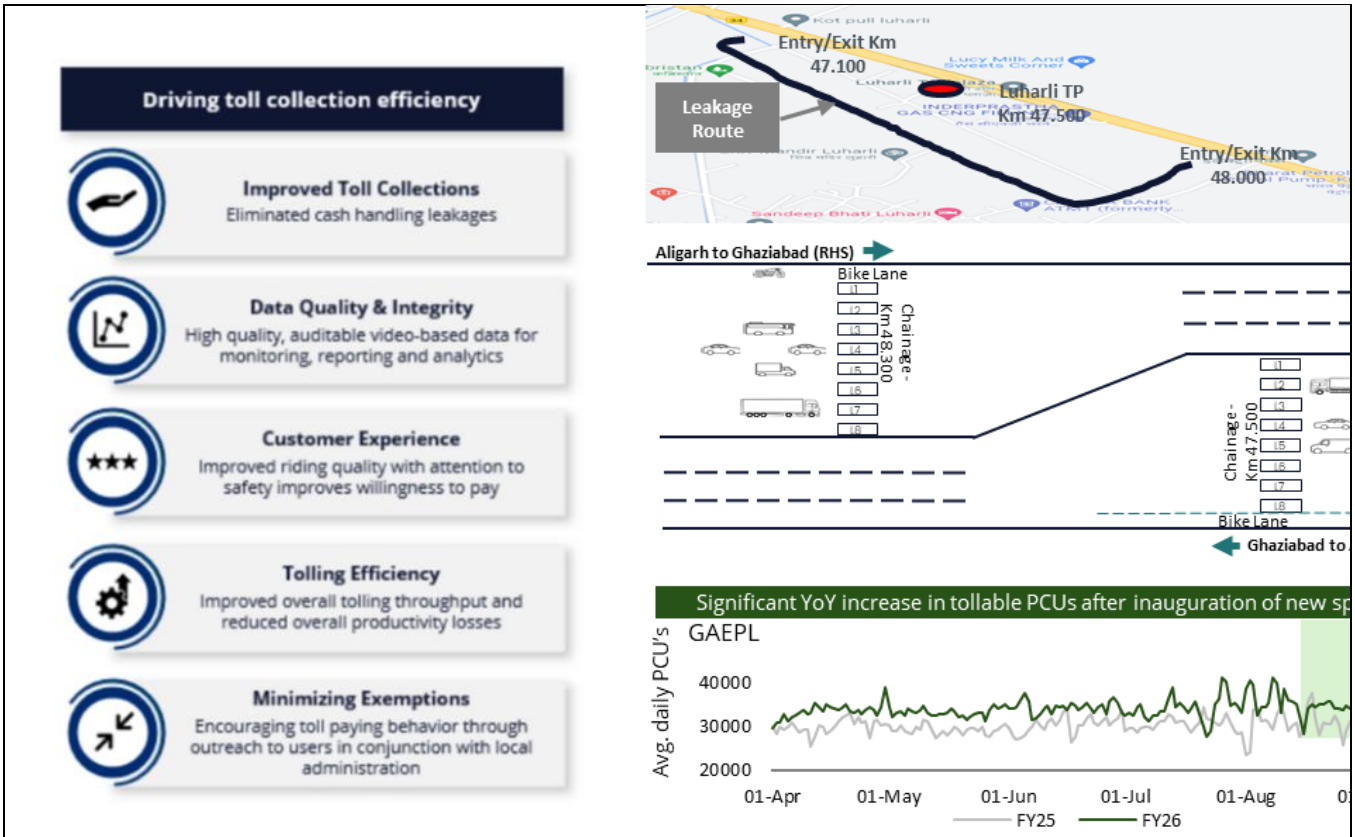
Payments at the toll plazas, both electronic and cash, are processed through an electronic toll collection system that supports RFID, wallets, UPI, cards, and cash-based transactions. The electronic toll collection system collects and stores traffic and payment data through system-generated reports, thereby reducing the need for manual operation. The electronic toll collection system consists of revenue collection software, a barrier gate, smart card readers, license plate image-capturing cameras and lane monitoring cameras, a fully automatic vehicle counting-cum-classifier, RFID readers/antennas, a validation system, communication channels, and traffic control equipment. All our toll plazas are equipped to process near-real-time transactions through API communications with acquirer banks.

For identifying categories of vehicles and to charge an appropriate toll rate, automatic vehicle identification based on video cum artificial intelligence ("**AI**") cameras/infrared sensors is deployed. Automatic Vehicle Classification and Counting enables the collection of variable amounts of tolls depending on the class of motor vehicles and serves as a traffic information system. The Existing Portfolio Assets and Proposed Portfolio Assets use weigh-in-motion technology (Medium Speed WIMs) for projects where weight-based toll collection is mandated. Weight-based tolling systems are integrated with the fully automatic toll collection system to enhance revenue controls.

We have transitioned to an in-house Toll Management System ("**TMS**") that integrates revenue collection, reconciliation, and FASTag data, thereby reducing third-party dependency. There is also a backup power supply system in each lane, toll plaza, and server room to ensure no interruption in power supply at the toll plazas, maintaining a stable power supply for critical operations of our in-house TMS. Servers used in the toll collection systems at the toll plazas are capable of real-time uploading of transaction data from TMS and performing an automatic daily backup to prevent any toll data loss and to enable system recovery, which would allow the Existing Portfolio Assets and Proposed Portfolio Assets to collect variable amounts of tolls depending on the class of motor vehicles and serves as a traffic information system. To monitor the TMS, a dedicated team is deployed at the toll plazas along with an annual maintenance contract with respective system integrators.

Only authorized persons have access to the toll collection systems and their servers, and their activities are recorded for security purposes. The Existing Portfolio Assets and Proposed Portfolio Assets are responsible for operating the toll collection systems at their toll plazas and for taking regular preventive and corrective measures to maintain these systems.

Case study: Toll collection initiatives



Upon acquiring new toll road assets, our teams deploy digital tools, including FASTag-based automated collections, booth cameras, AI-enabled vehicle classification, automated number plate recognition, and sensor-supported classification systems, to improve toll collection accuracy and the customer experience. At GAEPL, these measures reduced the "exemptions and violations" share of vehicles, leading to improvements in tollable traffic volumes.

We also deploy physical and engineering interventions where required. A notable example is the Luharli split-plaza implementation, where the asset experienced leakage due to a diversion route that allowed vehicles to bypass toll collection. Following engineering redesign, we installed check plazas at both ends of the leakage route and converted the existing plaza into a split-plaza arrangement, enabling complete capture of through traffic, as the new plazas captured some of the diverted traffic. This increased tolling capacity from 10 to 15 lanes, and post-integration, the asset achieved approximately 15% year-on-year growth in tollable PCUs, reduced queuing, and enhanced revenue compliance.

Technology

We, through the Project Manager, have adopted a technology-driven approach to the operations and maintenance of our portfolio assets. Our digital systems and proprietary platforms enable predictive maintenance, operational transparency, and standardised asset management across all Existing Portfolio Assets. The Existing Portfolio Assets can utilise a number of analytics tools and software applications, such as:

- *Road-Aid*: a centralized, app-based Road Asset Management System used across all Project SPVs to monitor asset performance in real time. Road-Aid digitizes maintenance workflows, enables seamless ticketing and reporting, and provides dashboards that track daily operations, inspection cycles, and response times. The platform integrates photographic evidence, geotagging, and performance information to improve accountability and transparency in field operations;

- *HiRate*: an in-house digital rating and assessment system that objectively evaluates the condition of road assets and their maintenance status. HiRate combines on-ground audit data and technical performance parameters to generate a standardized performance score for each project, supporting data-based prioritization of maintenance interventions and benchmarking across the portfolio;

- *Build-Aid*: a digital construction quality management system that facilitates real-time progress tracking, quality testing, and compliance monitoring during major maintenance and rehabilitation works. The platform provides automated alerts for deviations, ensures adherence to specifications, and enables faster decision-making during execution; and

- *Setu Sthiti*: a structure audit application designed in accordance with Indian Roads Congress standards, used for real-time bridge and structure inspections. The app automates data capture, generates inspection reports and bills of quantities, and ensures compliance with asset integrity and safety standards.

In addition, dashcam footage from patrolling vehicles is processed using AI-based defect-detection algorithms to identify cracks, potholes, and signage deficiencies. These insights are used to schedule maintenance proactively and reduce manual intervention. These systems enable rapid customisation and real-time data flow between the Project Manager and our Project SPVs for performance tracking. These tools help ensure the timely completion of maintenance and construction activities and minimal disruption for commuters.

Our current pavement distress identification AI model can identify cracks based on approximate crack width in black, grey, and rigid pavement. Machine learning and AI have also been implemented to analyse video from route-patrolling vehicles, ensuring compliance with employee PPE and road safety standards at maintenance project work zones.

In addition to these platforms, the Project Manager employs automated vehicle tracking systems, geospatial mapping, and cloud-based data storage to provide real-time visibility into field operations. Predictive analytics are used to forecast material requirements, optimize major maintenance cycles, and improve lifecycle cost management.

Our maintenance programme also incorporates non-destructive testing and sensor-based inspection technologies, including falling weight deflectometers, laser profilers, and network survey vehicles to assess pavement condition and ride quality. These technologies, combined with data collected through Road-Aid and HiRate, form the backbone of a predictive maintenance model that enhances pavement life and reduces unplanned outages.

Collectively, these technology systems allow the Project Manager to ensure consistent O&M quality, enhance road user experience, improve cost efficiency, and maintain safety across our portfolio.

Research & development

We have established a dedicated, state-of-the-art research and development ("**R&D**") platform to institutionalize innovation across our Portfolio Assets and enhance operational performance. Our R&D infrastructure comprises a pavement laboratory, an AI laboratory, an in-house data centre, and a learning and development centre, enabling us to evaluate materials, test engineering hypotheses, and scale technology-led initiatives across assets. These facilities support our ongoing and future projects in advanced pavement technologies, structural health monitoring, durability studies, traffic engineering, AI-based modelling, and automation applications.

Our R&D function is supported by MINDS (Mentoring Innovation and New Developments in Science), our in-house innovation framework launched in 2023 to identify, mentor and deploy new technologies and process improvements. MINDS enables cross-functional teams to collaborate on engineering, digital, operational and sustainability projects, creating a structured funnel for ideation, testing, piloting, and scaling. Since its launch, the MINDS programme has evaluated a wide range of proposals, including pavement rehabilitation solutions, automated data capture systems, road safety analytics, and O&M optimisation tools.

Traffic and motorway assistance services

Traffic assistance

Each Existing Portfolio Asset and Proposed Portfolio Asset is required to conduct regular patrolling and to regulate and maintain traffic order within their projects. Patrol vehicles continuously move along the project stretch to regulate traffic and conduct surveillance. Helpline numbers are also displayed alongside the projects to enable communication between road users and the control room in case of emergencies, and the Existing Portfolio Assets and Proposed Portfolio Assets are required to maintain the emergency telephone system.

In terms of our standard operating procedures, in the case of a vehicle breakdown or traffic accident, the control room is required to announce the occurrence via mobile phones or handsets to instruct a mobile supervisor and a recovery supervisor to proceed to the scene immediately, and file relevant reports with the police if personal injury is involved. At the scene of a traffic accident or vehicle breakdown, the mobile supervisor is required to report the incident to the control room, take safety precautions, and provide first aid to injured persons, if any. The recovery supervisor must determine whether the vehicle can be recovered on site or whether recovery vehicles must be deployed for towing. The traffic officer is required to stop traffic, close the affected lane where necessary, and direct trapped vehicles to other unaffected lanes.

Case Study: Route Patrol Vehicle Modernization Initiative

We implemented a modernization programme for our Route Patrol Vehicle ("**RPV**") fleet to strengthen incident response and standardise service quality across the Portfolio. The initiative addressed earlier challenges related to inconsistent operating procedures, vehicle design limitations and non-standardised equipment, and introduced updated RPV layouts with colour-theory-based uniforms, closed-cabinet storage, and revised inventory aligned with NHAI policy. Uniform SOPs, improved coordination across incident-management teams and optimized staffing were rolled out nationwide, resulting in faster, safer and more reliable on-road incident management and a consistent standard of service across all SPVs.

Further, we have implemented an ATMS that integrates CCTV, automatic incident detection, and variable message signs to monitor traffic and road safety conditions along the corridor.

Competition

As all toll revenues depend on toll receipts and are affected by changes in traffic volumes, the amount of revenue generated by the Existing Portfolio Assets, Proposed Portfolio Assets and future road projects will depend on a number of factors which can influence the level of traffic volume on those particular toll roads, including competition from other roads that operate in the same area, as well as from other modes of transportation (such as railways and airplanes).

We face competition from other road operators, financial investors, private equity funds and other InvITs in acquiring lucrative concessions for existing and future projects. In respect of opportunities, the Trust depends on the reputation of the Sponsor and the execution ability of the Investment Manager and Project Manager, which face competition from both domestic and international entities in the roads and highways infrastructure sector, as most of the contracts awarded by the Government and state governments are awarded on a competitive bidding basis and subject to satisfaction of other prescribed pre-qualification criteria. While service quality, technological capacity and performance, health and safety records and personnel, as well as reputation and experience, are important considerations in award decisions, price is a major factor in most tender awards. The ability of the Sponsor and Investment Manager to bid for and win major infrastructure development projects also depends on experience in executing large projects, strong engineering capabilities for technically complex projects, and sufficient financial resources and/or the ability to access funds.

Management

The Trust is managed by qualified personnel of the Investment Manager. These personnel have management and operational experience in the roads and highways sector. For further details about the Investment Manager, please see "*Parties to the Trust – The Investment Manager – Cube Highways Fund Advisors Private Limited*" on page 155.

The Investment Manager, in consultation with the Trustee, has appointed a majority of the directors of the Project SPVs and, as applicable, will appoint a majority of the directors of the Proposed Portfolio Assets in accordance with the InvIT Regulations. The Existing Portfolio Assets' and Proposed Portfolio Assets' boards of directors have formed (or will form, as applicable) the relevant committees required for their respective operations and as required under applicable law. For details, please see the section entitled "*Corporate Governance*" on page 179.

Our Project Manager has end-to-end, in-house expertise across multiple aspects of road asset management and investment, as set out below:

- *Traffic and Toll management*: The Project Manager's team undertakes in-house traffic forecasting supported by advanced traffic management systems ("**ATMS**") and traffic management platforms that integrate AI- and image-based sensors, enabling automated vehicle classification, toll data validation and cash-management controls. Its systems incorporate real-time monitoring, incident detection and safety analytics, improving traffic flow, revenue assurance and enforcement;

- *Design and engineering*: The engineering team performs pavement and structural design reviews and ensures compliance with Indian Roads Congress, MoRTH and concession requirements. The team also focuses on road efficiency, safety engineering and construction innovation, including evaluation of materials and technologies across corridors;

- *Technology development:* The Project Manager maintains an in-house IT team that develops and maintains custom software and digital tools supporting seamless operational workflows, analytics and data-driven decision-making. This includes AI/ML applications for pavement distress identification, asset inventory mapping and automated safety-compliance monitoring;

- *Operations and maintenance*: Predictive and preventive maintenance systems are deployed, supported by ATMS-driven road-safety tracking and real-time condition monitoring. Standardised processes and digital tools enable consistent execution of routine and major maintenance across assets;

- *Procurement*: Procurement is centrally managed to ensure cost efficiency, quality control and vendor accountability, including a dedicated bitumen procurement team to ensure supply reliability and material integrity. ESG-aligned procurement practices promote ethical sourcing, waste minimisation and carbon reduction;

- *Legal, finance, HR and compliance*: In-house legal, finance, HR and compliance functions ensure unified policy enforcement, streamlined approvals, and faster cycle times across budgeting, contracting, payroll and regulatory compliance. Cross-functional coordination is supported by dedicated committees guiding governance, planning and execution; and

- *Sustainability and ESG*: The Project Manager integrates ESG risk management across the asset lifecycle, including pre-acquisition environmental due diligence, implementation of ESMS and SOPs, sustainability training, internal inspections, and continuous monitoring. ESG considerations are embedded in procurement, O&M, safety and stakeholder engagement.

Seasonality

Traffic volume typically shows seasonal variation, temporarily slowing during the monsoon season and increasing during holiday and festive seasons. While the northern parts of India experience monsoon rains from June or July to September or October every year, the southern parts of India, especially the coastal parts of Andhra Pradesh, experience monsoon rains even during October to December. The monsoon season may also restrict the Trust's ability to carry out activities related to the operation and maintenance of its toll roads. For further details on risk associated with seasonality, please see "*Risk Factors – Risks Relating to Our Business and Industry – Our business will be subject to seasonal fluctuations, which may adversely affect our cash flows"* on page 96.

Insurance

The Trust's operations are subject to hazards inherent in providing operations and maintenance services, such as the risk of equipment failure, workplace accidents, fire, earthquakes, floods, and other force majeure events. This includes hazards that may cause injury and loss of life, damage and destruction of property, equipment and environmental damage. The Existing Portfolio Assets' and Proposed Portfolio Assets' principal types of insurance coverage include comprehensive or commercial general liability, employees' compensation insurance, group medical insurance, and industrial all-risk insurance, to the extent applicable to their respective operations. The Investment Manager and the Trustee confirm that the amount of insurance that each Portfolio Asset presently maintains represents an adequate and appropriate level of coverage required to insure its business and operations and assets, in accordance with the relevant concession agreement and industry standards in India and as available on commercial and reasonable terms, and that they will perform regular assessment on the adequacy of insurance coverage on a yearly basis.

Employees

As of September 30, 2025, our Existing Portfolio Assets, the Investment Manager, and the Project Manager employed an aggregate of 983 employees, while the Proposed Portfolio Assets employed an aggregate of 86 employees. The table below shows the number of employees employed by each of the Existing Portfolio Assets, the Proposed Portfolio Assets, the Investment Manager and the Project Manager:

S. No.	Name of Entity	Number of Employees
1.	Investment Manager	12
2.	Project Manager	185
	Existing Portfolio Assets	
3.	Andhra Pradesh Expressway Private Limited	13
4.	DA Toll Road Private Limited	79
5.	Farakka – Raiganj Highways Private Limited	37
6.	Ghaziabad Aligarh Expressway Private Limited	62
7.	Hazaribagh Tollway Private Limited	15
8.	Jaipur Mahua Tollway Private Limited	52
9.	Jhansi – Lalitpur Tollway Private Limited	22
10.	Jhansi – Vigakhet Tollway Private Limited	21
11.	Kanyakumari – Etturavattam Tollway Private Limited	29
12.	Kotwa – Muzaffarpur Tollway Private Limited	33
13.	Lucknow – Raebareli Tollway Private Limited	27
14.	Madurai – Kanyakumari Tollway Private Limited	33
15.	Mahua Bharatpur Expressways Limited	43
16.	Nanguneri – Kanyakumari Tollway Private Limited	31
17.	Nelamangala Devihalli Expressway Private Limited	36
18.	Salaipudhur – Madurai Tollway Private Limited	32
19.	Walayar Vadakkencherry Expressways Private Limited	24
20.	Western UP Tollway Private Limited	30
21.	Borgaon Watambare Highways Private Limited	11
22.	Mangalwedha Solapur Highways Private Limited	14
23.	Mangloor Highways Private Limited	11
24.	Tirumala Highways Private Limited	13
25.	Srirangam Infra Private Limited	14
26.	Shankarampet Projects Private Limited	15
27.	N.A.M. Expressway Private Limited	73
28.	Quazigund Expressway Private Limited	9
29.	Jammu Udhampur Highway Private Limited	7
	Proposed Portfolio Assets	
30.	Baharampore Farakka Highways Limited	36
31.	Western MP Infrastructure & Toll Roads Private Limited	33
32.	Devanahalli Tollway Private Limited	17
33.	Chenani-Nashri Tunnelway Limited	5

Our personnel base employed at our Investment Manager and Project Manager, stood at 197 employees as of September 30, 2025, compared to 203 as of March 31, 2025 and 212 as of March 31, 2024. A majority of our Investment Managers and Project Managers employees have backgrounds in engineering, operations or finance, with 26% of employees being post-graduates and 71% being graduates and professionals, as of September 30, 2025. Further, the Investment Manager's and Project Manager's teams cover a broad range of functions, as set out below:

Function	Number of Employees
Technology and IT	44
Maintenance	26
Operations	20
ESG	12
HR	12
Compliance	11
Finance and Accounts	7
M&A and Project Finance	5
Traffic	3
Other functions	57
Total	**197**

Similarly, our SPV-level workforce has grown in line with our expanding AUM, reflecting operational requirements across our assets. Our Existing Portfolio Assets employee headcount stood at 786 as of September 30, 2025, having grown from 752 as of March 31, 2025 and 590 as of March 31, 2024. As of September 30, 2025, 21% of our SPV employees were post-graduates, with 65% being graduates and professionals, and the remaining being non-graduates. The functional composition of our SPV employee base is weighted towards core operational and maintenance roles, as set out below:

Function	Number of Employees
On-ground operations	473
Maintenance execution	183
Finance and Accounts	50
Safety	16
M&A and Project Finance	7
Compliance	4
Other functions	53
Total	**786**

We track workforce productivity relative to the scale of our asset base, measured as the ratio of AUM to total employees. Since our listing, this ratio has steadily increased, from ₹321.83 million per employee as of March 31, 2024, to ₹337.86 million per employee as of March 31, 2025, to ₹371.51 million per employee as of September 30, 2025, reflecting the disciplined growth of our platform. Further, as of September 30, 2025, we have employed 4,996 contractual staff members.

We have continued to advance initiatives on workforce welfare, gender diversity, and community engagement. During the Financial Year 2025, the Investment Manager introduced "Cube Care," an employee well-being programme that included annual health check-ups, digital access to medical reports, and regular "Wellness Wednesday" awareness sessions. We also maintain comprehensive group medical, life and accident insurance coverage for all employees, ensuring financial protection and workplace security. We further strengthen employee engagement through our "Cube Kutumb" initiative, which promotes inclusion and collaboration by organising family events and cross-functional interactions at project sites. During the Financial Year 2025, 29.60% of our Investment Manager and Project Manager corporate employees were women. The overall number of women employees in our Existing Portfolio Assets, including SPV personnel, the Investment Manager, and the Project Manager, was 8.34% as of September 30, 2025.

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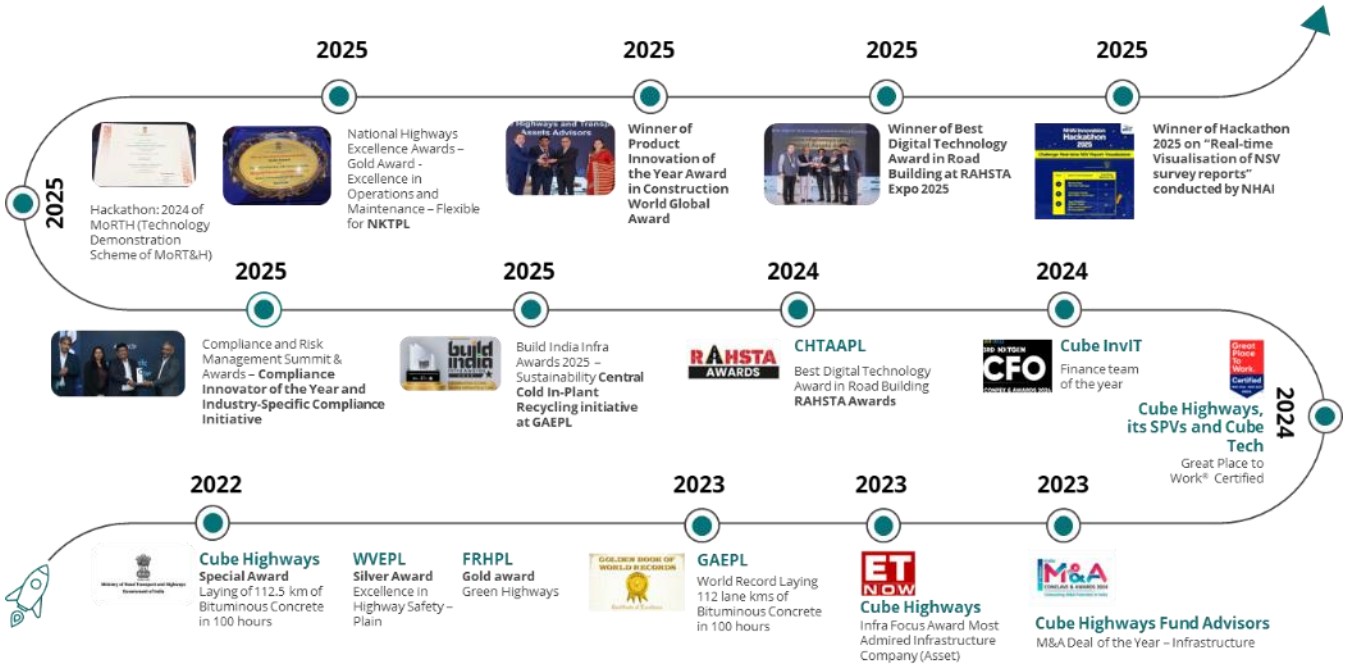
Awards and Achievements

Set out below is a timeline of awards and achievements received by us:



Properties

The Investment Manager's registered office is located at B-376, Upper Ground Floor, Nirman Vihar, New Delhi 110 092. The Investment Manager conducts its administrative and reporting activities from its corporate office located on the 19th Floor, Unit No. 1901, Tower B, World Trade Tower, Plot No. C-1, Sector -16, Noida, Uttar Pradesh 201 301. Also, please see the section entitled "*Description of the Portfolio Assets*" on page 40 for details of the registered offices of the Existing Portfolio Assets and Proposed Portfolio Assets.

Under the terms of the concession agreements, title to the roads and related infrastructure, such as toll plazas and monitoring posts, remains with the NHAI or the relevant state concessioning authority for the duration of the concession period. During the concession period, the Existing Portfolio Asset and Proposed Portfolio Asset are licensed to use the roads and related infrastructure, which constitute the concession assets. The Existing Portfolio Assets and Proposed Portfolio Assets are entitled to income on a toll-collection or annuity basis. Upon the expiration of a concession period, each Existing Portfolio Asset and Proposed Portfolio Asset is required to transfer possession of its concession assets to the NHAI or the relevant state concessioning authority.

SUMMARY OF KEY AGREEMENTS

Summary of the Concession Agreements

The following are brief descriptions of the concession agreements entered into by the Portfolio Assets. The descriptions and summaries of the concession agreements below are indicative and have been categorized based on the nature of the project, i.e. (i) TOT assets; (ii) BOT/DBFOT assets; (iii) BOT annuity assets; and (iv) HAM assets, and they are not, nor do they purport to be, full, complete or exhaustive descriptions and summaries. Certain terms used in this section have the meaning as assigned to such terms in the respective concession agreements. Copies of these concession agreements shall be made available for inspection at the principal place of business of the Cube Highways Trust at B-376, Upper Ground Floor, Nirman Vihar, New Delhi 110 092, from 10:00 A.M. to 5:00 P.M., on all Working Days from the date of filing the Offer Document until the date of the Bid/Offer Closing Date. For further details, please see the section entitled 'Material Contracts and Documents for Inspection' on page 503.

TOT SPVs

Certain Portfolio Assets, namely, LRTPL, JLTPL, JVTPL, KMTPL, HTPL, MKTPL, KETPL, SMTPL, and NKTPL (collectively, the "**TOT SPVs**") hold projects based on the toll, operation, maintenance and transfer model and accordingly, have entered into concession agreements with NHAI.

The concession agreements for the TOT SPVs include the following:

(i) the LRTPL Concession Agreement executed between LRTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the stretch in the state of Uttar Pradesh from 12.70 km to 82.70 km for a total length of 70 km and all project assets for a concession fee of ₹ 4,305,660,000;

(ii) the JLTPL Concession Agreement executed between JLTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Jhansi Lalitpur Package 1 stretch in the state of Uttar Pradesh from km 00+000 to 49+700 km for a total length of 49.700 km for a concession fee of ₹ 4,537,128,000;

(iii) the JVTPL Concession Agreement executed between JVTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Jhansi Lalitpur Package 2 stretch in the state of Uttar Pradesh from 49+700 km to 99+005 km for a total length of 49.305 km for a concession fee of ₹ 2,729,795,000;

(iv) the KMTPL Concession Agreement executed between KMTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Kotwa-Muzzaffarpur stretch in the state of Bihar from km 440.000 to 520.000 km for a total length of 80.000 km for a concession fee of ₹ 6,881,478,000;

(v) the HTPL Concession Agreement executed between HTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Hazaribagh Ranchi stretch in the state of Jharkhand from km 41+500 to 115+290 km for a total length of 73+790 km for a concession fee of ₹ 9,378,502,000;

(vi) the MKTPL Concession Agreement executed between MKTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 1 stretch in the state of Tamil Nadu from 00+000 km to 52+300 km for a total length of 52.300 km for a concession fee of ₹ 6,667,151,000;

(vii) the KETPL Concession Agreement executed between KETPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 2 stretch in the state of Tamil Nadu from 52+300 km to 116+500 for a total length of 64.200 km for a concession fee of ₹ 4,609,806,000;

(viii) the SMTPL Concession Agreement executed between SMTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 3 stretch in the state of Tamil Nadu from km 116+500 to km 180+000 for a total length of 63.500 km for a concession fee of ₹ 4,806,288,000; and

(ix) the NKTPL Concession Agreement executed between NKTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement, for tolling operation, management, maintenance and transfer of the existing road comprising of the Madurai Kanyakumari Package 4 stretch in the state of Tamil Nadu from km 180+000 to km 243+470 for a total length of 63.470 km for a concession fee of ₹ 6,194,192,000.

The concession agreements entered into by the TOT SPVs are substantially similar. Accordingly, a summary of the key terms of the concession agreements entered into by the TOT SPVs has been set out below:

1. *Operations & Maintenance:*

   The TOT SPVs are required, on and from the O&M Handover Date (as defined in the relevant concession agreements), to operate and maintain the project highway by themselves, or through O&M contractors and if required, modify, repair, improvements to the project highway held by them ("**Project Highways**") to comply with specifications and standards mentioned in the concession agreements, good industry practice, applicable laws and applicable permits as specified in the concession agreement and more specifically to comply with the following ("**Maintenance Requirements**"):

   a) permitting safe, smooth and uninterrupted flow of traffic during normal operating conditions;

   b) collecting and appropriating the fees, from the applicable date;

   c) minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway;

   d) undertaking periodic preventive and routine maintenance, including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and traffic control devices;

   e) undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;

   f) protection of the environment and provision of equipment and materials therefore;

   g) preventing with the assistance of concerned law enforcement agencies, unauthorised entry to and exit from the project highway;

   h) operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the project highway;

   i) maintaining a public relations unit to interface with and attend to suggestions from the users, government agencies, media and other agencies;

   j) adherence to the safety standards set out in the respective concession agreement; and

   k) ensure conformity with maintenance requirements provided under the schedule to the concession agreements.

2. *Change of Scope:*

   In accordance with the concession agreements, change of scope ("**COS**") means: (a) any change in the specifications and standards; (b) omission of any work from the scope of the project; provided that NHAI shall not omit any work under this provision in order to get it executed by any other person; (c) any additional works or services which are not included in the scope of the project, including any associated tests as per the respective concession agreements.

   The payment for COS shall be made by NHAI. NHAI is required to make an advance payment to the TOT SPVs amounting to 20% of the cost of COS, as agreed between the parties, and in the event of a dispute over the COS cost, 20% of the cost assessed by the independent engineer appointed under the concession agreement.

3. *Insurance:*

   The TOT SPVs are required to maintain, at no cost to NHAI, during the concession period, insurance of such types and such maximum amounts as may be considered necessary or prudent in accordance with good industry practices to cover third-party claims and force majeure events and as required under applicable law. NHAI is required to be designated as "co-insured" under such insurance. Such insurance must include a waiver of the insurer's right of subrogation against, among others, NHAI. The failure by the TOT SPVs to maintain such insurance entitles NHAI to recover the cost of such insurance from the TOT SPVs.

4. *Escrow Account:*

   The TOT SPVs are required to open an escrow account with an escrow bank, and all funds, constituting the financing package, fees and other revenues in respect of the project highway as well as all payments made by NHAI are required to be credited to such escrow account. The concession agreements also provide for the order of disbursement and appropriation of funds during the concession period and upon termination.

5. *Effect of force majeure:*

Upon the occurrence of any force majeure event, as defined in the TOT SPVs Concession Agreements prior to the appointed date, as provided for in the concession agreement, the period for achieving the appointed date would be extended by a period equal in length to the duration of the force majeure event.

If any force majeure event occurs after the appointed date and, the TOT SPVs are unable to collect fee despite making best efforts or it is directed by NHAI to suspend the collection thereof during the subsistence of such force majeure event, the concession period would be extended by a period, equal in length to the period during which the TOT SPVs were prevented from collection of fee on account thereof; provided that in the event of partial collection of fee where the daily collection is less than 90% of the average daily fee, as defined in the respective concession agreements, NHAI would extend the concession period in proportion to the loss of fee on a daily basis (loss of 25% in collection of fee as compared to the average daily fee for four days shall entitle the TOT SPVs to extension of one day in the concession period).

Allocation of costs arising out of Force Majeure

Upon the occurrence of any force majeure event prior to the appointed date, the parties to the TOT SPVs Concession Agreements shall bear their respective costs and no party shall be required to pay to the other party any costs thereof. Upon occurrence of a force majeure event after the appointed date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:

- upon occurrence of a Non-Political Event, as defined in the TOT SPVs Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;

- upon occurrence of an Indirect Political Event, as defined in the TOT SPVs Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by TOT SPVs, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to TOT SPVs; and

- upon occurrence of a Political Event, as defined in the TOT SPVs Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by NHAI to TOT SPVs.

Force Majeure Costs may include interest payments on debt, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the force majeure event, but shall not include loss of fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the TOT SPVs Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination

If a force majeure event subsists for a period of 120 days within a continuous period of 365 days, either party to the respective concession agreement would be entitled to terminate the concession agreement.

6. *Compensation for breach of Concession Agreement*

The party in material breach or default of the concession agreement is required to compensate the non-defaulting party for all direct costs suffered by the non-defaulting party, as a result of such material breach or default. No compensation would be payable for material breach or default in respect of items for which damages are expressly provided for in the respective concession agreement (or for any consequential losses incurred by NHAI in case of the default by the TOT SPVs).

Extension of Concession Period

a) If a material default or breach of the concession agreement by NHAI leads to suspension of or reduction in the collection of fee, NHAI is required to, in addition to payment of compensation, extend the concession period with such extension being equal in duration to the period by which the collection of the fee remained suspended.

b) In the event of a reduction in the collection of fees where the daily collection is less than 90% of the Average Daily Fee, as defined in the respective concession agreement, NHAI is required, in addition to paying compensation, to extend the concession period in proportion to the daily loss of fee.

7. *Termination*

If any of the defaults specified under the concession agreement occur (the **"TOT SPV Defaults"**), and the TOT SPVs fail to cure the same within the cure period set thereunder, or where no cure period is specified within a cure period of

60 days, the TOT SPV would be deemed to be in default of the concession agreement. Some of the key TOT SPV Defaults are specified below:

a) the performance security, as specified in the relevant concession agreement, is encashed/appropriated and the TOT SPV fails to replenish or provide fresh performance security within a cure period of 15 (fifteen) days;

b) subsequent to the replenishment or furnishing of fresh performance security in accordance with the concession agreement, the TOT SPV fails to cure, within a cure period, the concessionaire default for which whole or part of the performance security was appropriated;

c) the TOT SPV abandons or manifests an intention to abandon the operation and maintenance without the prior written consent of NHAI;

d) the TOT SPV fails to roll over, renew and furnish a new bank guarantee performance security subject to and in accordance with the concession agreement, at least three months prior to the expiry of the subsisting bank guarantee;

e) the TOT SPV is in breach of the maintenance requirements or the safety requirements, as specified in the concession agreement;

f) a breach of any of the project agreements by the TOT SPV has caused a material adverse effect;

g) the TOT SPV repudiates the concession agreement or otherwise takes any action or evidences or conveys an intention not to be bound by the concession agreement;

h) the TOT SPV has failed to make any payment to NHAI within the period specified in the concession agreement;

i) the TOT SPV creates any encumbrance in breach of the concession agreement;

j) a change in ownership has occurred in breach of the provisions of the respective concession agreement;

k) there is a transfer, pursuant to law, either of (i) the rights and/or obligations of the TOT SPV under any of the project agreements, or of (ii) all or part of the assets or undertaking of the TOT SPV, and such transfer causes a material adverse effect as specified in the concession agreement;

l) an execution levied on any of the assets of the TOT SPV has caused a material adverse effect;

m) the TOT SPV is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for the TOT SPV or for the whole or material part of its assets that has a material bearing on the project;

n) the TOT SPV has been, or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause, in the reasonable opinion of NHAI, a material adverse effect;

o) any representation or warranty of the TOT SPV which is, as of the date of the concession agreement, found to be materially false, incorrect or misleading;

p) any petition for the winding up of the TOT SPV is passed or is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 days of the date thereof or TOT SPV is ordered to be wound up by a court, except if there is an amalgamation or reconstruction, and the property, assets and undertaking of the TOT SPV are transferred to the amalgamated or reconstructed entity and such entity has unconditionally assumed the obligations of the TOT SPV under the concession agreement and provided that: (i) such entity has the technical capacity and operating experience to perform its obligations under the respective concession agreement; (ii) such entity has the financial standing to perform its obligations under the respective concession agreement and has a credit worthiness at least as good as that of the TOT SPV; and (iii) each of the project agreements remains in full force and in effect.

q) TOT SPV submits to NHAI any statement, notice or other document, in written or electronic form, which has a material effect on NHAI's rights, obligations or interests and which is false in material particulars;

r) TOT SPV have failed to fulfil any obligation, for which failure termination has been specified in the concession agreement;

s) TOT SPV commits a default in complying with any other provision of this concession agreement if such default causes a material adverse effect on NHAI;

t) an escrow default has occurred and the TOT SPV fails to cure the default within a cure period of 15 days;

Upon occurrence of the TOT SPV Default and expiry of the relevant cure period (or 60 days where no cure period is specified), NHAI is entitled to terminate the concession agreement.

NHAI's Default: In the event any of the defaults specified below occur (the "**NHAI Defaults**"), and NHAI fails to cure such default within a cure period of 90 days or such longer period as has been expressly provided in the concession agreement, NHAI would be deemed to be in default: Some of the key NHAI Defaults are as follows:

a) NHAI commits a material default in complying with any of the provisions of the concession agreement and such default has a material adverse effect on the TOT SPV (as defined in the relevant concession agreement);

b) NHAI repudiates the concession agreement or otherwise takes any action that amounts to or manifests an irrevocable intention not to be bound by the concession agreement; or

c) the state government commits a material default in complying with the provisions of the respective state support agreement if such default has a material adverse effect on the TOT SPV and the breach continues for a period of 90 days from the date of notice given on behalf of the TOT SPV to NHAI.

Upon occurrence of NHAI Default and expiry of the 90 (ninety) day cure period or such longer period as prescribed, the Concessionaire shall be entitled to terminate the respective concession agreement.

8. *Indemnity:*

Indemnity by TOT SPVs

The TOT SPVs are required to fully indemnify NHAI and the NHAI Indemnified Persons (as defined in the TOT SPVs Concession Agreements) from and against any and all loss and/or damages arising out of or with respect to:

a) any loss, damage, cost and expense, whether arising out of any breach by the TOT SPV of any of its obligations under the concession agreement or any related agreement or on account of any defect or deficiency in the provision of services by the TOT SPVs to any user or from any negligence of the TOT SPV;

b) failure of the TOT SPV to comply with applicable laws and applicable permits (as defined in the relevant concession agreement);

c) payment of taxes required to be made by the TOT SPV in respect of the income or other taxes of the TOT SPV's contractors, suppliers and representatives;

d) non-payment of amounts due as a result of materials or services furnished to the TOT SPV or any of its contractors, which are payable by the TOT SPV or any of its contractors; and

e) claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by the TOT SPV or by the TOT SPV's contractors.

NHAI Indemnity

NHAI is required to indemnify the TOT SPV against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature arising out of (i) defect in title and/or the rights of NHAI in the land comprised in the site, and/or (ii) breach by NHAI of any of its obligations under the concession agreements or any related agreement, which materially and adversely affect the performance by the TOT SPV of its obligations under the concession agreements unless by reason of the TOT SPV's own negligence or omission.

BOT/DBFOT SPVs

The Portfolio Assets, including JMTPL, MBEL, WUPTPL, NDEPL, FRHPL, WVEPL, DATRPL, GAEPL, NAMEPL, BFHL, WMTPL, and DTPL (collectively, the "**BOT/DBFOT SPVs**"), holding projects based on build, operate transfer ("**BOT**") and design, build, finance, operate, transfer ("**DBFOT**") model and accordingly, have entered into concession agreements with NHAI ("**BOT/DBFOT SPVs Concession Agreements**"), as set out below:

(i) the JMTPL Concession Agreement executed between JMTPL and NHAI dated September 23, 2005, as amended from time to time, read with the relevant supplementary agreement, for improvement, operation and maintenance, rehabilitation and strengthening of the existing 2-lane road and widening to a 4-lane divided highway of the Mahua-Jaipur section of NH-11 from km 120.000 to km 228.000 in the state of Rajasthan on a BOT basis under NHDP Phase - IIIA;

(ii) the WUPTPL Concession Agreement executed between WUPTPL and NHAI dated September 9, 2005, as amended from time to time, read with the relevant supplementary agreement, for design, engineering, financing, procurement, construction, completion, operation and maintenance of existing 2 lane road and widening to 4 lane divided highway

of Meerut Muzaffarnagar section of NH 58 from km 52.250 to km 131 in the State of Uttar Pradesh on a BOT basis under NHDP Phase – IIIA;

(iii) the MBEL Concession Agreement executed between MBEL and NHAI dated October 13, 2005, as amended from time to time, read with the relevant supplementary agreement, for design, engineering, financing, procurement, construction, completion, operation and maintenance of existing 2 lane road and widening to 4 lane divided highway of km 63.000 to km 120.000 of NH-11 (Bharatpur-Mahua section) in the state of Rajasthan on a BOT basis under NHDP Phase IIIA;

(iv) the DATRPL Concession Agreement executed between DATRPL and NHAI dated July 16, 2010, as amended from time to time, read with the relevant supplementary agreement, for six-laning of the Delhi-Agra section of NH-2 from 20.500 km to 200.00 km (179.500 km length) in the state of Haryana/ Uttar Pradesh under NHDP Phase V on a BOT basis;

(v) the NDEPL Concession Agreement executed between Lanco Devihalli Highways Limited and NHAI dated July 9, 2007, and endorsed in favour of NDEPL pursuant to the endorsement agreement dated January 11, 2021 entered into between NDEPL and NHAI, as amended from time to time, read with the relevant supplementary agreement, for design, engineering, construction, development, finance, operation and maintenance of Nelamangala Junction on NH-4 with NH-48 to Devihalli from 28.200 km to 110.000 km of NH-48 in the state of Karnataka under NHDP Phase IIIA on a BOT basis;

(vi) the FRHPL Concession Agreement executed between FRHPL and NHAI dated July 19, 2010, as amended from time to time, read with the relevant supplementary agreement, for four-laning of the Farakka-Raiganj section of NH-34 from 295.00 km to 398.00 km in the state of West Bengal under NHDP Phase III as a DBFOT toll basis;

(vii) the WVEPL Concession Agreement executed between WVEPL and NHAI dated September 17, 2012, as amended from time to time, read with the relevant supplementary agreement, for four-laning of Walayar-Vadakkancherry section in Kerala (182.250 km to 240.000 km of NH-47) – package NS-2/BOT/KL-2 on DBFOT (Toll) basis under NHDP Phase II in the state of Kerala;

(viii) the GAEPL Concession Agreement executed between GAEPL and NHAI dated May 20, 2010, as amended from time to time, read with the relevant supplementary agreement, for the design, engineering, construction, development, finance, operation and maintenance of the Ghaziabad Aligarh section of NH-91 from km 23.600 to km 140.200 in the state of Uttar Pradesh under NHDP Phase III on a BOT basis;

(ix) the NAMEPL Concession Agreement executed between NAMEPL and the relevant state authorities in Andhra Pradesh dated July 23, 2010, as amended from time to time between NAMEPL and the relevant state authorities in Andhra Pradesh and Telangana for the design, construction, finance, operation and maintenance of the Narketpally-Addanki-Medarametla Road (SH-2) from Km. 0.000 to 212.500 in the State of Telangana and Andhra Pradesh under Public Private Partnership on DBFOT (Toll) basis;

(x) the BFHL Concession Agreement executed between BFHL and NHAI dated June 28, 2010, as amended from time to time, read with the relevant supplementary agreement, for four-laning of the Baharampore-Farakka section of NH-34 from 191.416 km to 294.684 km in the state of West Bengal under NHDP Phase III on DBFOT basis;

(xi) the WMTPL Concession Agreement executed between WMTPL and Madhya Pradesh Road Development Corporation dated August 30, 2007, as amended from time to time for four-laning of Lebad-Jaora, a section of SH-31 from 0 km to 125 km in the state of Madhya Pradesh on a BOT basis;

(xii) the DTPL Concession Agreement executed between DTPL and NHAI dated April 30, 2010, as amended from time to time, read with the relevant supplementary agreement, for upgradation, operation and maintenance of 534.720 km to 556.840 km of the Hyderabad Bangalore section of NH-7 in Karnataka under NHDP Phase VII on DBFOT basis.

The BOT/DBFOT SPVs Concession Agreements are substantially similar with minor differences in some of the terms. Accordingly, a summary of the key terms of the BOT/DBFOT SPVs Concession Agreements has been set out below:

1. *Operations and Maintenance*

BOT/DBFOT SPVs are required to, operate and maintain the project, either by itself or through a contractor, including by modifying, repairing or otherwise making improvements to the project to comply with the requirements set out in the BOT/DBFOT SPVs Concession Agreement, the minimum maintenance requirements set out in Schedules to the BOT/DBFOT SPVs Concession Agreement, good industry practices and applicable laws and permits. The BOT/DBFOT SPVs' operations and maintenance obligations include:

a) permitting the safe, smooth and uninterrupted flow of traffic during normal operating conditions;

b) charging, collecting and retaining fee in accordance with the BOT/DBFOT SPVs Concession Agreement;

c) minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project by providing rapid and effective responses and maintaining liaison procedures with emergency services;

d) undertaking routine maintenance, including repairs of potholes, cracks, concrete joints, drains, line markings, lighting and signage;

e) undertaking major maintenance, including resurfacing of pavements, repairs to structures, repairs and refurbishment of tolling systems, hardware and other equipment;

f) carrying out periodic preventive maintenance to the project including the tolling system;

g) preventing, with the assistance of the concerned law enforcement agencies, unauthorized entry to and exit from the project;

h) preventing, with the assistance of the concerned law enforcement agencies, encroachments on the project and preserving the right of way of the project;

i) maintaining a public relations unit to interface with and attend to suggestions from users of the project, the media, government agencies and other external agencies; and

j) adhering to the safety standards as set out in the BOT/DBFOT SPVs Concession Agreement.

2. *Change in Scope*

The concessioning authorities are entitled to issue a change in scope order and require the BOT/DBFOT SPVs to perform additional work and services, or delete any portion of the works and services to be performed by the BOT/DBFOT SPVs, provided that such changes do not require any increase / reduction in expenditure exceeding 5% of the total project cost as provided in the BOT/DBFOT SPVs Concession Agreement and do not adversely affect the COD of the Project ("**CoS**"). In the BOT/DBFOT SPVs Concession Agreements executed with NHAI, the cost of the CoS is required to be borne by NHAI if the CoS involves an increase in the bill of quantities, and NHAI can recover the amounts as certified by the independent consultant if the CoS involves a decrease in the bill of quantities. NHAI may require the BOT/DBFOT SPVs to undertake CoS pending resolution of the dispute between the parties regarding the costs.

3. *Insurance*

BOT/DBFOT SPVs are required to maintain at no cost to the concessioning authority, during the construction and operation period under the BOT/DBFOT SPVs Concession Agreement, insurance of such types and such amounts as may be considered necessary in accordance with good industry practice and as required under the financing documents and applicable law. Such insurance must include a waiver of any right of subrogation of the insurers against, among others, the concessioning authority. The failure by BOT/DBFOT SPVs to maintain such insurance will entitle the concessioning authority to recover the cost of such insurance from such BOT/DBFOT SPV.

4. *Escrow Account*

The funds from the project lenders, fee collected and disbursements or payments by the concessioning authority in exercise of its rights under the BOT/DBFOT SPVs Concession Agreement, subject to any deductions and appropriation, will be deposited into the escrow account. The bank/escrow agent is required make payments from the escrow account in the order of priority set out thereunder each month, or proportionately if not due in that particular month, during the concession period. Such order cannot be modified without the prior written consent of the concessioning authority.

5. *Indemnities*

BOT/DBFOT SPVs are required to indemnify the concessioning authority, its officers, servants, agents, subsidiaries and contractors (the "**Indemnified Persons**") against any and all loss and damages arising out of the BOT/DBFOT SPVs failure to: (i) comply with applicable laws and permits; (ii) make payment of taxes relating to its contractors, suppliers and representatives, income or other taxes required to be paid by the BOT/DBFOT SPVs without reimbursement under the BOT/DBFOT SPVs Concession Agreement; or (iii) make payment of amounts due resulting from materials or services provided to the BOT/DBFOT SPVs or its contractors which are payable by any such party. In addition, the BOT/DBFOT SPVs are required to indemnify the Indemnified Persons from and against any and all damages they may suffer as a result of demands, claims, suits or proceedings arising out of claims of infringement of any patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any material, information, design or process used by the BOT/DBFOT SPVs or its contractors.

6. *Miscellaneous*

The concession agreements entered into by the BOT/DBFOT SPVs contain clauses in relation to force majeure, compensation of breach of agreements and termination which are substantially similar to the clauses in the concession agreements entered into by the TOT SPVs. For details, please see the section entitled "*Summary of Key Agreements – Summary of Concession Agreements*" on page 343.

Annuity SPVs

Annuity SPVs Concession Agreements, as set out below:

(i) APEPL entered into a concession agreement dated March 20, 2006, as amended from time to time, read with the relevant supplementary agreement, for development and maintenance of NH-7 from km 135.469 to km 211.000 covering 74.653 kms in the State of Andhra Pradesh on BOT Annuity basis.

(ii) JUHPL entered into a concession agreement dated July 19, 2010, as amended from time to time, read with the relevant supplementary agreement, for the development and maintenance of NH-1A from km 15.000 to km 67.000 (approx. 64.58 km) on the Jammu - Udhampur section by Four-Laning on design, build, finance, operate and transfer on BOT Annuity basis;

(iii) QEPL entered into a concession agreement dated July 13, 2010, as amended from time to time, read with read with the relevant supplementary agreement, for development and maintenance of NH-1A from 189.350 km to 204.700 km including 2 tunnels (2 Lane) of 0.69 kms and 8.45 kms (approx. 15.25 km) on the Quazigund - Banihai section of NH 1A in the Jammu & Kashmir on design, build, finance, operate and transfer on DBFOT Annuity basis.

(iv) CNTL entered into a concession agreement dated June 28, 2010, as amended from time to time for development and maintenance of NH-1A from 89 km to 130 km including a 2 lane 9 km long tunnel with parallel escape tunnel on the Chenani – Nashri section of NH-1A in the State of Jammu & Kashmir on design, build, finance, operate and transfer on DBFOT Annuity basis.

The Annuity SPVs Concession Agreements are substantially similar with minor differences. Accordingly, a summary of the key terms of the Annuity SPVs Concession Agreements have been set out below:

1. *Operations & Maintenance*

Annuity SPVs are required to operate and maintain the project highway by itself, or through O&M contractors and if required, modify, repair, make improvements to the project highway to comply with specifications and standards mentioned in the Schedule of the Annuity SPVs Concession Agreements, minimum maintenance requirements set forth in the Schedule of the Annuity SPVs Concession Agreements, good industry practices, applicable laws and applicable permits and more specifically to comply with the following among others:

a) permitting safe, smooth and uninterrupted flow of traffic during normal operating conditions;

b) allowing NHAI collect and appropriate the fees;

c) minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway;

d) undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, line/pavement marking, lighting and signage among others;

e) undertaking major maintenance such as resurfacing of pavements, repairs to structures, and other equipment among others;

f) carrying out periodic preventive maintenance to project highway;

g) preventing with the assistance of concerned law enforcement agencies unauthorised use of the project highway;

h) preventing with the assistance of the concerned law enforcement agencies encroachments on the project highway; and

i) adherence to the safety standards and requirements set out in the Annuity SPVs Concession Agreements.

2. *Performance Security*

Annuity SPVs has provided to NHAI a bank guarantee (the "**Performance Security**"). As per the Annuity SPVs Concession Agreements, NHAI can encash and appropriate the Performance Security as damages in case of default or failure to meet the conditions under the Annuity SPVs Concession Agreements.

3. *Annuity*

Under the Annuity SPVs Concession Agreements, Annuity SPVs is entitled to annuity from the occurrence of COD, for the period set out in the Annuity SPVs Concession Agreements. NHAI has agreed and undertaken under the Annuity SPVs Concession Agreements to pay to Annuity SPVs, on each annuity payment date.

4. *Consideration*

In consideration of the grant of the concession, Annuity SPVs are required to pay in advance to NHAI a sum of ₹1 per annum during the term of the Annuity SPVs Concession Agreements.

5. *Change in scope of work*

NHAI is entitled to request further improvements to the Portfolio Assets and project highway, subject to a limit mentioned in the Annuity SPVs Concession Agreements, during the operations period in the form of a COS order which is required to make the project highway comply with the latest specifications and standards mentioned in the Schedule of Annuity SPVs Concession Agreements, and good industry practice, applicable laws and applicable permits during the entire operations period as set forth in the Annuity SPVs Concession Agreements.

6. *Limitations on shareholding changes*

The Annuity SPVs Concession Agreements requires that change in the equity shareholding shall be only as provided for in the Annuity SPVs Concession Agreements.

7. *Insurance*

Annuity SPVs are required to maintain, at no cost to NHAI, during the construction and operation period under the Annuity SPVs Concession Agreements, insurance of such amounts as may be considered necessary in accordance with good industry practices and as required under the financing documents and applicable law. Such insurance must include a waiver of any right of subrogation of the insurers against, among others, NHAI. The failure by Annuity SPVs to maintain such insurance entitles NHAI to recover the cost of such insurance from Annuity SPVs.

8. *Escrow Account*

Annuity SPVs are required to open an escrow account with an escrow bank and all funds, constituting the financing package for meeting the total project cost, are required to be credited to such escrow account. During operations period all annuity, and any other payment which becomes payable by NHAI to Annuity SPVs is required to be exclusively deposited therein. The Annuity SPVs Concession Agreements also provides for order of appropriation of funds in case of termination of such agreement.

9. *Indemnities*

Annuity SPVs is required to indemnify NHAI, its officers, servants, agents, subsidiaries and contractors (the "**NHAI Indemnified Persons**") against any and all loss and damages arising out of the Annuity SPVs' failure to: (i) comply with applicable laws and permits; (ii) make payment of taxes relating to its contractors, suppliers and representatives, income or other taxes required to be paid by Annuity SPVs; or (iii) make payment of amounts due resulting from materials or services provided to Annuity SPVs or its contractors which are payable by any such party. In addition, Annuity SPVs is required to indemnify NHAI Indemnified Persons from and against any and all damages they may suffer as a result of demands, claims, suits or proceedings arising out of claims of infringement of any patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any material, information, design or process used by Annuity SPVs or its contractors. Annuity SPVs is required to make every reasonable effort to restrain or secure the suspension of any temporary restraint order or preliminary injunction that may be granted in any suit, claim or proceedings. If any part of the project is held to constitute an infringement, Annuity SPVs is required to also promptly make every reasonable effort to secure a license for NHAI, at its own cost, failing which, Annuity SPVs is required to, at its own expense and without affecting the specifications and standards mentioned in Schedule D of the Annuity SPVs Concession Agreements, replace the affected work, or part or process thereof with non-infringing work or parts or processes, or modify the same so that it becomes non-infringing.

10. *Effect of force majeure event:*

If a force majeure event, as defined in the Annuity SPVs Concession Agreements subsists for a period of 180 days or more within a continuous period of 365 days, either party may in its sole discretion terminate the Annuity SPVs Concession Agreements by giving termination notice to the other party.

If any force majeure event occurs: (a) before COD, the dates set forth in the Scheduled Project Completion Date (*as defined in the Annuity SPVs Concession Agreements)*, and the concession period can be extended by the period for which such force majeure event shall subsist. The Annuity SPVs Concession Agreements does not provide for extension of the Concession Period in such a scenario.

11. *Termination*

Annuity SPVs' event of default

The Annuity SPVs Concession Agreement may be terminated on the occurrence of Annuity SPVs' default or NHAI's default. Annuity SPVs will be deemed to be in default if, among other things:

a) it fails to achieve any milestones (as described in the Annuity SPVs Concession Agreements) within the period set out in the Annuity SPVs Concession Agreements and such failure is not cured within the time period mentioned in the Annuity SPVs Concession Agreements;

b) it is in material breach of the Annuity SPVs Concession Agreements;

c) it creates any encumbrance, charge or lien, except as permitted under the Annuity SPVs Concession Agreements;

d) the single entity / consortium, as applicable, selected for the project is required to hold (i) 51% during the construction period and for 3 years after the commercial operations date of the project; (ii) 26% for the rest of the operations period. If there is a change in shareholding and the same is not rectified within 90 days of its occurrence it will constitute an event of default under Annuity SPVs Concession Agreements;

e) there is a transfer of either (i) the rights and/or obligations of Annuity SPVs under any of the project agreements; or (ii) of all or a material part of the assets or undertaking of Annuity SPVs except for such transfer which, in the reasonable opinion of NHAI, does not affect the ability of Annuity SPVs to perform, and Annuity SPVs has the financial and technical capacity to perform its material obligations under the project agreements;

f) a resolution is passed by the shareholders of Annuity SPVs for its voluntary winding up;

g) Annuity SPVs is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for Annuity SPVs or for any of its property that has a material bearing on the project;

h) any petition for the winding up of Annuity SPVs is admitted by a court of competent jurisdiction or Annuity SPVs is ordered to be wound up by the court;

i) it is in material breach of any of the project agreements;

j) an event of default by Annuity SPVs under any of the financing documents or any of the senior lenders to the project has recalled its loan under any of the financing documents;

k) unless such abandonment (i) is as a result of an occurrence of a force majeure event and such force majeure event is continuing or (ii) results from a breach of obligations by NHAI; and/or

l) Annuity SPVs delays any payment that is due under the Annuity SPVs Concession Agreements and the delay exceeds 90 days.

NHAI's event of default:

Annuity SPVs may terminate the Annuity SPVs Concession Agreements by giving 90 days' notice in writing to NHAI. NHAI will be deemed to be in default of the Annuity SPVs Concession Agreements if:

a) NHAI is in material breach of the Annuity SPVs Concession Agreements, causing a material adverse effect on the Annuity SPVs and such breach is not rectified or effective steps are not taken by NHAI for curing such breach within 90 days of receipt of notice;

b) NHAI repudiates the Annuity SPVs Concession Agreements or otherwise evidences its irrevocable intention not to be bound by it; or

c) The government or any governmental agency has acted or omitted to act thereby creating circumstances that have a material adverse effect on the performance of the Annuity SPVs obligations and have failed to cure such material adverse effect within 90 days of receipt of notice by NHAI; or NHAI has delayed in making any payment due under the Annuity SPVs Concession Agreements and such delay exceeds 90 days.

In the event of termination, NHAI may be required to pay certain termination payments to Annuity SPVs, subject to the cause for termination and as set out in the Annuity SPVs Concession Agreements. Termination payments become due and payable to Annuity SPVs within the specified time period of a demand being made by Annuity SPVs. If NHAI fails to pay the termination payments, NHAI is required to pay interest.

HAM SPVs

The Portfolio Assets including SIPL, MHPL, BWHPL, MSHPL, SPPL and THPL (collectively, the "**HAM SPVs**") are holding projects based on hybrid annuity models and accordingly, have entered into concession agreements with NHAI ("**HAM SPVs Concession Agreements**"), as set out below:

(i) the SIPL Concession Agreement executed between SIPL and NHAI dated April 11, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising Km. 311.516 (existing chainage of NH 45) to Km. 39.100 (existing chainage of NH 227) [Design chainage from Km. 0.000 to Km. 38.70] of Thiruchirapalli to Kallagam Section of NH 227 [Total Design Length = 38.700 Km] in the State of Tamil Nadu under NHDP Phase-IV;

(ii) the MHPL Concession Agreement executed between MHPL and NHAI dated May 9, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of NH-161 from Mangloor (Design Km. 86.788/Existing Km. 91.350) to Telangana/Maharashtra Border (Design Km. 135.751 / Existing Km. 140.873) (Design Length = 48.963 Km) in the state of Telangana under Bharatmala Pariyojana on Hybrid Annuity Model;

(iii) the BWHPL Concession Agreement executed between BWHPL and NHAI dated May 10, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of Sangli-Solapur section of NH-166 from design chainage Km. 224.000 to Km. 276.000 existing Ch. 219.956 to Ch. 272.394 – (Package – II: Borgaon to Watambare of length 52 km) in the state of Maharashtra on Hybrid Annuity Model;

(iv) the MSHPL Concession Agreement executed between MSHPL and NHAI dated May 10, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of Sangli- Solapur (Package IV: Mangalwedha to Solapur) Section of NH-166 from existing Ch.Km. 314.969 to Ch. 370.452 (Design Ch. Km. 321.600 to Km. 378.100) of length 56.500 Km in the state of Maharashtra on Hybrid Annuity Model;

(v) the SPPL Concession Agreement executed between SPPL and NHAI dated May 9, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of NH-161 from Ramsanpalle village (Design Km. 39.980/ Existing Km. 44.757) to Mangloor village (Design Km. 86.788/ Existing Km. 91.350) (Design Length = 46.808 Km) in the State of Telangana under the Bharatmala Pariyojana on Hybrid Annuity Model; and

(vi) the THPL Concession Agreement executed between THPL and NHAI dated May 9, 2018, as amended from time to time, read with the relevant supplementary agreement, for construction, O&M of the project at the site, comprising of NH-140 from Chittor (Design Km. 0.000/Existing Km 158.000 of Nh-4) to Mallavaram (Design Km. 61.128/Existing Km 41.800 of NH-140) (Design Length = 61.128 Km) in the State of Andhra Pradesh under Bharatmala Pariyojana on Hybrid Annuity Model.

The HAM SPVs Concession Agreements are substantially similar. Accordingly, a summary of the key terms of the HAM SPVs Concession Agreements has been set out below:

1. *Bid Project Cost and Annuity Payments*

The bid project cost, as defined in the HAM SPVs Concession Agreements ("**Bid Project Cost**"), is subject to variation in the price index occurring after the reference index date immediately preceding the Bid Date.

NHAI has paid a portion of the completion cost, as specified in the HAM SPVs Concession Agreements ("**Completion Cost**") as payments during construction period. The remaining shall be due and payable in biannual installments over a period of 15 years commencing from commercial operation date ("**Annuity Payments**"). Each of the biannual installments, as provided in the HAM SPVs Concession Agreements, shall be paid along with the interest as specified in the HAM SPVs Concession Agreements.

2. *Change of Scope*

NHAI may require the provision of additional works and services which are not included in the scope of the Project as contemplated by the HAM SPVs Concession Agreements (the "**Change of Scope**"). Within 7 days, NHAI shall make an advance payment to HAM SPVs in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the independent engineer, as defined in the HAM SPVs Concession Agreements ("**Independent Engineer**"). NHAI shall disburse to HAM SPVs such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. HAM SPVs shall be entitled to nullify any Change of Scope order if it causes the cumulative costs relating to all the Change of Scope orders to exceed 10% of the Bid Project Cost in any continuous period of 3 years immediately preceding the date of such Change of Scope order or if such cumulative costs exceed 25% of the Bid Project Cost at any time during the concession period.

3. *O&M*

HAM SPVs shall operate and maintain the Project, in accordance with the HAM SPVs Concession Agreements either by itself, or through the O&M contractor, as defined in the HAM SPVs Concession Agreements ("**O&M Contractor**"), and if required, modify, repair or otherwise make improvements to the Project to comply with provisions of the HAM SPVs Concession Agreements applicable laws, applicable permits and conform to specifications, standards and good industry practice. The obligations of HAM SPVs, among other things, shall include:

- procuring and ensuring safe, smooth and uninterrupted use of the Project, including prevention of loss or damage thereto, during normal operating conditions;
- carrying out periodic preventive maintenance of the Project;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, markings, lighting, signage and other control devices;
- undertaking major maintenance such as resurfacing, repairs to structures, and repairs and refurbishment of system and equipment;
- protection of the environment and provision of equipment and materials thereof; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project and for providing safe, smooth and uninterrupted use of the Project.

4. *Maintenance manual*

No later than 90 days prior to the scheduled completion date, as defined in the HAM SPVs Concession Agreements, HAM SPVs shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual, as defined in the HAM SPVs Concession Agreements (the "**Maintenance Manual**"), for the regular and preventive maintenance of the Project in conformity with the specifications and standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

5. *Maintenance programme*

On or before COD and no later than 45 days prior to the beginning of each accounting year during the operation period, as defined in the HAM SPVs Concession Agreements , HAM SPVs shall provide to NHAI and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, Maintenance Manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project;
- intervals at which HAM SPVs shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and
- intervals for major maintenance works and the scope thereof.

6. *Obligations relating to change in ownership*

HAM SPVs shall not undertake or permit any change in ownership, except with the prior written approval of NHAI. Notwithstanding anything to the contrary contained in the HAM SPVs Concession Agreements, HAM SPVs agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of 25% or more of the total equity of HAM SPVs; or
- acquisition of any control directly or indirectly of the board of directors of HAM SPVs by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on HAM SPVs, and undertakes that it

shall not give effect to any such acquisition of equity or control of the board of directors of HAM SPVs without such prior approval of NHAI. It has been expressly agreed that approval of NHAI hereunder shall be limited to national security and public interest perspective, and NHAI shall endeavour to convey its decision thereon expeditiously. It has also been agreed that NHAI shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve HAM SPVs from any liability or obligation under the HAM SPVs Concession Agreements.

7. *Indemnities*

- HAM SPVs shall indemnify, defend, save and hold harmless NHAI and its officers, servants, agents, government instrumentalities and government owned and/or controlled entities/enterprises, (the "**NHAI Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by HAM SPVs of any of its obligations under the HAM SPVs Concession Agreements or any related agreement or on account of any defect or deficiency in the provision of services by HAM SPVs to NHAI or to any user or from any negligence of HAM SPVs under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the HAM SPVs Concession Agreements on the part of NHAI Indemnified Persons.

- HAM SPVs shall fully indemnify, hold harmless and defend NHAI and NHAI Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:

    - failure of HAM SPVs to comply with applicable laws and applicable permits, each as defined in the HAM SPVs Concession Agreements ("**Applicable Laws**" and "**Applicable Permits**");

    - payment of taxes required to be made by HAM SPVs in respect of the income or other taxes of HAM SPVs' contractors, suppliers and representatives; or

    - non-payment of amounts due as a result of materials or services furnished to HAM SPVs or any of its contractors which are payable by HAM SPVs or any of its contractors.

- HAM SPVs shall fully indemnify, hold harmless and defend NHAI Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by HAM SPVs or by HAM SPVs' contractors in performing the obligations of HAM SPVs or in any way incorporated in or related to the Project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, HAM SPVs shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, HAM SPVs shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authorising continued use of the infringing work. If HAM SPVs is unable to secure such licence within a reasonable time, HAM SPVs shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

8. *Suspension of HAM SPVs' rights*

Upon occurrence of a HAM SPVs default, as defined in the HAM SPVs Concession Agreements ("**HAM SPVs Default**"), NHAI shall be entitled, without prejudice to its other rights and remedies under the HAM SPVs Concession Agreements including its rights of termination, as defined in the HAM SPVs Concession Agreements ("**Termination**"), thereunder, to (i) suspend all rights of HAM SPVs under the HAM SPVs Concession Agreements, and pursuant thereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). Suspension hereunder shall be effective forthwith upon issue of notice by NHAI to HAM SPVs and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from HAM SPVs and the lenders' representative, as defined in the HAM SPVs Concession Agreements ("**Lenders' Representative"**), NHAI shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of senior lenders, as defined in the HAM SPVs Concession Agreements ("**Senior Lenders**"), shall be entitled to substitute HAM SPVs under and in accordance with the substitution agreement, as defined in the HAM SPVs Concession Agreements ("**Substitution Agreement**"), and upon receipt of notice thereunder from the Lenders' Representative, NHAI shall withhold Termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

9. *Effect of force majeure event on the Concession*

- Upon the occurrence of any force majeure event prior to the appointed date, each as defined in the HAM SPVs Concession Agreements ("**Force Majeure Event**" and "**Appointed Date**"), the period for fulfilment of conditions precedent and achieving financial close, as defined in the HAM SPVs Concession Agreements ("**Conditions Precedent**"). shall be extended by a period equal in length to the duration of the Force Majeure Event.

- At any time after the Appointed Date, if any Force Majeure Event occurs:

  - before COD, the construction period and the dates set forth in the project completion schedule, as defined in the HAM SPVs Concession Agreements (**"Project Completion Schedule")** shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or

  - after COD, HAM SPVs shall be entitled to receive Annuity Payments plus interest due and payable under the HAM SPVs Concession Agreements.

  Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of NHAI, if any.

10. *Allocation of costs arising out of Force Majeure*

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the HAM SPVs Concession Agreements shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.

- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:

  - upon occurrence of a non-political event, as defined in the HAM SPVs Concession Agreements ("**Non-Political Event**"), the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;

  - upon occurrence of an indirect political event, as defined in the HAM SPVs Concession Agreements ("**Indirect Political Event**"), all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by HAM SPVs, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to HAM SPVs; and

  - upon occurrence of a political event, as defined in the HAM SPVs Concession Agreements ("**Political Event**"), all Force Majeure Costs attributable to such Political Event shall be reimbursed by NHAI to HAM SPVs.

  Force Majeure Costs may include interest payments on debt due, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include any costs which are expressly under any provision of the HAM SPVs Concession Agreements or debt repayment obligations, and for determining such costs, information contained in the financial package, as defined in the HAM SPVs Concession Agreements ("**Financial Package**"), may be relied upon to the extent that such information is relevant.

11. *Divestment Requirements*

Upon Termination of HAM SPVs Concession Agreements, HAM SPVs shall comply with and conform to the following requirements, amongst others:-

- notify NHAI forthwith the location and particulars of all project assets, as defined in the HAM SPVs Concession Agreements ("**Project Assets**");

- deliver forthwith the actual or constructive possession of the Project, free and clear of all encumbrances, save and except to the extent set forth in the Substitution Agreement;

- cure all Project Assets, including the road, bridges, structures and equipment, of all defects and deficiencies so that the Project is compliant with the maintenance requirements, provided that in the event of Termination during the construction period, all Project Assets shall be handed over on 'as is where is' basis after bringing them to a safe condition;

- deliver and transfer relevant records, reports, intellectual property and other licences pertaining to the Project and its design, engineering, construction, operation and maintenance, including all programmes and manuals pertaining thereto, and complete 'as built' drawings as on the transfer date, as defined in the HAM SPVs Concession Agreements ("**Transfer Date**");

- transfer and/or deliver all Applicable Permits to the extent permissible under Applicable Laws;

- execute such deeds, conveyance, documents and other writings as NHAI may reasonably require for conveying, divesting and assigning all the rights, title and interest of HAM SPVs in the Project Assets, including manufacturers' warranties in respect of any plant or equipment and the right to receive outstanding insurance claims to the extent due and payable to NHAI, absolutely unto NHAI or its nominee; and

- comply with all other requirements as may be prescribed or required under Applicable Laws for completing the divestment and assignment of all rights, title and interest of HAM SPVs in the Project, free from all encumbrances, absolutely unto NHAI or to its nominees.

12. *Termination for HAM SPVs Default*

Subject to the provisions of the HAM SPVs Concession Agreements , in the event that any of the defaults specified below shall have occurred, and HAM SPVs fails to cure the default within the mentioned cure period set forth below, or where no cure period is specified, then within a cure period of 60 days, HAM SPVs shall be deemed to be in default of the HAM SPVs Concession Agreements (the "**HAM SPVs Default**"), unless the default has occurred as a result of any breach of the HAM SPVs Concession Agreements by NHAI or due to Force Majeure Event. The defaults referred to shall include, among other things, the following:

- The performance security, as defined in the HAM SPVs Concession Agreements ("**Performance Security**"), has been encashed and appropriated in accordance with the HAM SPVs Concession Agreements and HAM SPVs fails to replenish or provide fresh Performance Security within a cure period of 15 days;

- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the HAM SPVs Concession Agreements, HAM SPVs fails to meet any Condition Precedent or cure the HAM SPVs Default, as the case may be, for which whole or part of the Performance Security was appropriated, within a cure period of 120 days;

- HAM SPVs does not achieve the latest outstanding project milestone due in accordance with the provisions of the HAM SPVs Concession Agreements and continues to be in default for 120 days;

- upon occurrence of a financial default, as defined in the HAM SPVs Concession Agreements ("**Financial Default**"), the Lenders' Representative has by notice required NHAI to undertake Suspension or Termination, as the case may be, in accordance with the Substitution Agreement and HAM SPVs fails to cure the default within the cure period specified;

- HAM SPVs abandons or manifests intention to abandon the construction or operation of the Project without the prior written consent of NHAI;

- HAM SPVs is in breach of the maintenance requirements or the safety requirements as the case may be;

- HAM SPVs has failed to fulfil any obligation, for which failure termination has been specified in the HAM SPVs Concession Agreements;

- HAM SPVs has failed to make any payment to NHAI within the period specified in the HAM SPVs Concession Agreements; and

- a change in ownership has occurred in breach of the provisions of the HAM SPVs Concession Agreements.

Upon occurrence of a HAM SPVs Default, NHAI shall be entitled to terminate the HAM SPVs Concession Agreements by issuing a termination notice, as defined in HAM SPVs Concession Agreements ("**Termination Notice**"), to HAM SPVs; provided that before issuing the Termination Notice, NHAI shall by a notice inform HAM SPVs of its intention to issue such Termination Notice and grant 15 days to HAM SPVs to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the Termination Notice.

13. *Termination for NHAI Default*

HAM SPVs may terminate the HAM SPVs Concession Agreements on account of occurrence of a default by the NHAI which is not rectified within the cure period of 90 days or such longer period as has been expressly provided in this HAM SPVs Concession Agreements (the "**NHAI Default**") and includes – (i) material default causing a material

adverse effect on HAM SPVs; (ii) the failure to make any payment due to HAM SPVs; (iii) repudiation of the HAM SPVs Concession Agreements etc.

HAM SPVs may, under the HAM SPVs Concession Agreements , upon occurrence of a NHAI Default, subject to the provisions of Substitution Agreement, terminate the HAM SPVs Concession Agreements by issuing a Termination Notice to NHAI; provided that before issuing the Termination Notice, HAM SPVs shall by notice inform NHAI of its intentions to issue the Termination Notice and grant 15 days to NHAI to make a representation, and may after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the Termination Notice.

14. *Defects liability after termination*

HAM SPVs shall be responsible for all defects and deficiencies in the Project for a period of 120 days after Termination, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project during this period. In the event that HAM SPVs fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by NHAI, NHAI shall be entitled to get the same repaired or rectified at the risk and cost of HAM SPVs so as to make the Project conform to the maintenance requirements. All costs incurred by NHAI in this regard shall be reimbursed by HAM SPVs to NHAI within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, NHAI shall be entitled to recover the same from the funds retained in the escrow account or from the performance guarantee, in accordance with the provisions of the HAM SPVs Concession Agreements. A sum equal to 15% of the Annuity Payment due and payable immediately preceding the Transfer Date will be retained in the escrow account for a period of 120 days after Termination for meeting the liabilities, arising out of or in connection with the HAM SPVs Concession Agreements. Independent Engineer will carry out an inspection of the Project at any time between 210 and 180 days prior to the Termination and if it recommends that the status of the Project is such that a sum larger than the amount of 15% as stipulated above will be retained in the escrow account and for a period longer than the aforesaid 120 days, the amount recommended by the Independent Engineer shall be retained in the escrow account for the period specified by it. HAM SPVs will have option to provide to NHAI a performance bank guarantee of equal amount in lieu of retention in accordance with the HAM SPVs Concession Agreements.

INFORMATION CONCERNING THE UNITS

Unitholding of the Trust as of December 31, 2025:

Category	Category of Unitholders	Number of Units held	As a percentage of total outstanding Units (%)	No. of Units mandatorily held		Number of Units pledged or otherwise encumbered*	
				No. of Units	As a % of total Units held	No. of Units	As a % of total Units held
(A)	**Sponsor(s)/ Investment Manager/ Project Manager and their associates/related parties and Sponsor Group, as may be applicable**						
(1)	**Indian**						
(a)	Individuals / HUF	0	0	0	0	0	0
(b)	Central/State Govt.	0	0	0	0	0	0
(c)	Financial Institutions/Banks	0	0	0	0	0	0
(d)	Any Other(specify)						
	Bodies Corporates	0	0	0	0	0	0
	Indian unit holding Sub-Total (A) (1)	0	0	0	0	0	0
(2)	**Foreign**						
(a)	Individuals (Non-Resident Indians / Foreign Individuals)		0	0	0	0	0
(b)	Foreign government		0	0	0	0	0
(c)	Institutions		0	0	0	0	0
(d)	Foreign Portfolio Investors		0	0	0	0	0
(e)	Any Other(specify)						
	Corporate Body – Foreign Bodies	556,381,123	41.40	201,610,464	36.24	201,610,464	36.24
	Foreign unit holding Sub - Total (A) (2)	556,381,123	41.40	201,610,464	36.24	201,610,464	36.24
	Total unit holding of Sponsor and Sponsor Group (A) = (A)(1)+(A)(2)	**556,381,123**	**41.40**	**201,610,464**	**36.24**	**201,610,464**	**36.24**
(B)	**Public Holding**						
(1)	**Institutions**						
(a)	Mutual Funds	59,350,000	4.42				
(b)	Financial Institutions/Banks	7,825,000	0.58				
(c)	Central/State Govt.	0	0				
(d)	Venture Capital Funds	0	0				
(e)	Insurance Companies	42,600,000	3.17				
(f)	Provident/pension funds	0	0				
(g)	Foreign Portfolio Investors	8,329,072	0.62				
(h)	Foreign Venture Capital investors	0	0				
(i)	Any Other(specify)						
	Alternative Investment Fund	23,675,000	1.76				
	Bodies Corporate (FB)	329,884,567	24.54				
	Institutions unit holding Sub- Total (B) (1)	471,663,639	35.09				
(2)	**Non-Institutions**						
(a)	Central Government/State Governments(s)/President of India	0	0				
(b)	Individuals	66,816,000	4.97				
(c)	NBFCs registered with RBI	0	0				
(d)	Any Other(specify)						
	Trusts	16,275,000	1.21				
	Non Resident Indians	2,100,000	0.16				
	Clearing Members	0	0				
	Bodies Corporates	230,834,000	17.17				
	Non-Institutions Sub-Total (B) (2)	316,025,000	23.51				
	Total Public Unit holding (B) = (B)(1)+(B)(2)	787,688,639	58.60				
	Total Units Outstanding (C) = (A) + (B)	1,344,069,762	100				

Note: The Trust has 656 Unitholders as on December 31, 2025

* *Please note that the pledge over 78,044,436 units was subsequently released as intimated to the Stock Exchanges on February 17, 2026.*

Unitholding of the Trust

Particulars	Number of Units*
Units	
Units issued and outstanding prior to this Offer	1,344,069,762
Units issued and outstanding after this Offer	[●]*#

* *To be updated in the Final Offer Document prior to filing with SEBI and the Stock Exchanges.*

\# *The total Units issued and outstanding after this Offer will increase pursuant to Swap Transaction. Please refer to the section entitled "Description of the Portfolio Assets" on page 40.*

Unitholders holding more than 5% of the Units as on December 31, 2025

Sr. No.	Name of Unit Holders*	Pre-Offer		Post-Offer*	
		Number of Units	Percentage of holding (%)	Number of Units	Percentage of holding (%)
1.	Cube Highways and Infrastructure III Pte. Ltd.	279,654,900	20.81	[●]	[●]
2.	BCI IRR India Holdings Inc.	249,241,294	18.54	[●]	[●]
3.	Cube Mobility Investments Pte. Ltd.	172,597,336	12.84	[●]	[●]
4.	Cube Highways and Infrastructure II Pte. Ltd.	104,128,887	7.75	[●]	[●]
5.	Larsen and Toubro Limited	89,175,000	6.63	[●]	[●]
6.	Seventy Second Investment Company LLC	80,643,273	6.00	[●]	[●]

* *To be updated in the Final Offer Document prior to filing with SEBI and the Stock Exchanges.*

Unitholding of the Sponsor and the Sponsor Group

The members of the Sponsor Group currently hold 556,381,123 Units as on the date of this Draft Offer Document. Further, the Units to be held by the Sponsor and CH-II (member of the Sponsor Group) will be allotted to the Sponsor and the CH-II (member of the Sponsor Group) pursuant to the Swap Transaction, prior to the Allotment of the Units in the Offer.

CH-V, being the Sponsor, does not hold any Units of the Trust as on the date of filing this Draft Offer Document. Further, certain Selling Unitholders, who are the members of the Sponsor Group have offered a portion of their Units in the Offer for Sale, subject to the Sponsor and Sponsor Group holding Units aggregating to 15% of the total issued and outstanding Units on a post-Offer basis.

The total Units issued and outstanding after this Offer will increase pursuant to Swap Transaction. Please refer to the section entitled "*Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust*" on page 56.

Unitholding of the Investment Manager, Project Manager and Trustee

The Trustee, Investment Manager and Project Manager do not hold any Units and shall not acquire any Units in this Offer.

Unitholding of the directors of the Investment Manager

As on the date of this Draft Offer Document, none of the directors of the Investment Manager holds any Units or proposes to hold any Units in the Trust.

Sponsor and Sponsor Group lock-in

In terms of the InvIT Regulations, the Sponsor and the Sponsor Group are required to, collectively, hold not less than 15% (fifteen per cent) of the Units for a period of three years from the Listing Date. Accordingly, 15% of the units held by the Sponsor Group continue to be locked-in until April 19, 2026.

The Units held by the Sponsor and the Sponsor Group shall be locked-in as follows, in accordance with the InvIT Regulations:

From the beginning of 4th year after the date of listing pursuant to the initial offer and till the end of 5th year from the date of listing pursuant to the initial offer	5% of total Units issued and allotted by the Trust post August 18, 2023# (including the allotment by way of the Swap Transaction) or ₹ 500 crores, whichever is lower*
From the beginning of 6th year after the date of listing pursuant to the initial offer and till the end of 10th year from the date of listing pursuant to the initial offer	3% of total Units issued and allotted by the Trust post August 18, 2023# (including the allotment by way of the Swap Transaction) or ₹ 500 crores, whichever is lower*
From the beginning of 11th year after the date of listing pursuant to the initial offer and till the end of 20th year from the date of listing pursuant to the initial offer	2% of total Units issued and allotted by the Trust post August 18, 2023# (including the allotment by way of the Swap Transaction) or ₹ 500 crores, whichever is lower*
After completion of the 20th year from the date of listing pursuant to the initial offer	1% of total Units issued and allotted by the Trust post August 18, 2023# (including the allotment by way of the Swap Transaction) or ₹ 500 crores, whichever is lower*

* *Provided that the maximum value of Units to be held by the Sponsor and Sponsor Group for compliance with the above shall not exceed ₹500 crores or such other value as may be decided by SEBI from time to time wherein such valuation shall be based on the latest available asset value of the Trust.*

\# *The requirement for this lock-in on the units held by the Sponsor and Sponsor Group was introduced vide the Securities and Exchange Board of India (Infrastructure Investment Trusts) (Second Amendment) Regulations, 2023, with effect from August 18, 2023.*

The Sponsor and the Sponsor Group currently hold 556,381,123 Units, (i) aggregating to 41.40 % of the total outstanding Units as on the date of this Draft Offer Document; and (ii) aggregating to [●] % of the Units on a post-Offer basis.

The Sponsor and the Sponsor Group, undertake and agree to lock in its unitholding in the manner specified in the InvIT Regulations and the InvIT Master Circular.

In terms of the InvIT Regulations, the locked-in units held by the Sponsor or its Sponsor Group entities may be transferred only amongst such Sponsor or its Sponsor Group entities subject to the condition that lock-in on such units shall continue for the remaining period with the transferee and such transferee shall not be eligible to transfer such units till the lock-in period has expired. In the case of an InvIT with multiple sponsors, the locked-in units held by a sponsor or its sponsor group entities can be transferred only among such sponsor or its sponsor group entities and shall not be transferred to any other sponsor or its sponsor group entities. Provided further that in case of a change in sponsor, locked-in units held by the outgoing sponsor or its sponsor group entities may be transferred to the incoming sponsor or its sponsor group entities, subject to the condition that the incoming sponsor or its group entities shall meet the minimum unitholding requirements after the transfer.

Anchor Investor lock-in

Any Units Allotted to Anchor Investors in the Offer shall be locked-in for a period of 30 days from the date of Allotment.

Strategic Investor lock-in

The Units Allotted to Strategic Investors in the Offer shall be locked-in for a period of 180 days from the date of listing of the Units.

USE OF PROCEEDS

The object of the Offer is for conversion of the Trust from a privately listed infrastructure investment trust to a publicly listed infrastructure investment trust through an Offer for Sale of up to [●] Units of the Trust at an Offer Price of ₹ [●] per Unit, aggregating up to ₹ 50,000 million.

The Trust will not receive any proceeds of the Offer ("**Offer Proceeds**"). The Selling Unitholders will be entitled to the entirety of the proceeds of the Offer after deducting their respective portion of the Offer related expenses and the relevant taxes thereon.

The details of the Offer for Sale are set out below:

Sr. No.	Name of the Selling Unitholder	Maximum no. of Offered Units* and amount proposed to be raised pursuant to the Offer	Date of consent letter	Date of corporate action / board resolution
1.	BCI IRR India Holdings Inc.	Up to [●] Units, aggregating up to ₹ 10,725.00 Million	March 17, 2026	February 24, 2026
2.	BCI IRR India Holdings Limited Partnership	Up to [●] Units, aggregating up to ₹ 275.00 Million	March 17, 2026	February 24, 2026
3.	Cube Highways and Infrastructure II Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 15,098.70 Million	March 17, 2026	March 17, 2026
4.	Cube Highways and Infrastructure III Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 6,055.70 Million	March 17, 2026	March 17, 2026
5.	Cube Mobility Investments Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 12,908.40 Million	March 17, 2026	March 17, 2026
6.	Seventy Second Investment Company LLC	Up to [●] Units, aggregating up to ₹ 4,937.20 Million	March 17, 2026	March 17, 2026

* *With respect to the Units offered by the Selling Unitholders in the Offer for Sale, the Selling Unitholders, have held Units for a period of at least one year immediately preceding the date of this Draft Offer Document and are free from any encumbrance or lock-in on the date of this Draft Offer Document*

For further details of the Units proposed to be offered by the Selling Unitholders, please see the section entitled "*The Offer*" on page 33.

Offer Expenses

The total expenses of this Offer are estimated to be approximately ₹ [●] million ("**Offer Expenses**"). The Offer Expenses consist of fee and commissions payable to the Book Running Lead Managers, fee payable to legal counsels, fee payable to Banker to the Offer, Registrar to the Offer, fee payable to Trustee, Valuer, SEBI (filing of the Offer Documents), Stock Exchanges, Depositories, Technical Consultant, Traffic Consultants, Auditor and such other intermediaries, printing and stationary costs, and all other incidental and miscellaneous expenses for listing the Units on the Stock Exchanges pursuant to the Offer. The Offer Expenses shall be proportionately divided amongst the Selling Unitholders, except for the listing fees and statutory audit fees to be paid to the statutory auditor of the Trust, which shall be borne by the Trust. The break-up for the Offer Expenses is as follows:

(In ₹ million)

Activity	Estimated Expenses (₹ in million) [(1)]	As a % of total estimated Offer related Expenses*	As a % of Offer Size*
Fees and commissions to advisors to for Offer[(2)]	[●]	[●]	[●]
Fee payable to others	[●]	[●]	[●]
Total estimated Offer Expenses	[●]	[●]	[●]

(1) To be determined on finalization of the Offer Price and updated in the Final Offer Document prior to filing with SEBI and the Stock Exchanges.
(2) Includes selling commission.

For ease of operations, if required, the Offer Expenses, at the outset, may be borne by the Sponsor and/or the Investment Manager and/or such other parties on behalf of the Trust, and the Investment Manager (on behalf of the Trust) agrees that it will reimburse the Sponsor and/or the Investment Manager and/ or such other parties for all such expenses as may be incurred by the Sponsor or the Investment Manager on actual basis, from the Offer Expenses portion.

Selling Commissions

Selling commission on the Non-Institutional Investor Portion, which is procured by Members of the Syndicate (including their Sub-syndicate Members), SCSBs, RTAs and CDPs would be as set forth:

Non-Institutional Bidders* [●] % of the Amount Allotted* (plus applicable taxes)

* *Amount Allotted is the product of the number of Units Allotted and the Offer Price.*

Selling commission payable to the SCSBs will be determined on the basis of the bidding terminal id as captured in the Bid book of BSE or NSE.

No processing fees shall be payable by the Investment Manager to the SCSBs on the applications directly procured by them.

Processing fees payable to the SCSBs of ₹10 per valid application (plus applicable taxes) for processing the Bid cum Application Form for Non-Institutional Bidders (excluding UPI Bids) which are procured by the members of the Syndicate/sub-Syndicate/Registered Broker/RTAs/CDPs and submitted to SCSB for blocking.

1. Brokerage, selling commission and processing/uploading charges on the portion for Non-Institutional Bidders which are procured by members of the Syndicate (including their sub-Syndicate Members), RTAs and CDPs or including by using UPI Mechanism or using 3-in-1 type accounts linked online trading, demat & bank account provided by some of the brokers which are members of Syndicate (including their sub-syndicate Members) would be as follows:

Non-Institutional Bidders*	[●] % of the Amount Allotted* (plus applicable taxes)

   * *Amount Allotted is the product of the number of Units Allotted and the Offer Price.*

   The selling commission payable to the Syndicate/sub-Syndicate Members will be determined on the basis of the application form number/series, provided that the application is also bid by the respective Syndicate/sub-Syndicate Member. For clarification, if a Syndicate ASBA application on the application form number/series of a Syndicate/sub-Syndicate Member, is bid by an SCSB, the Selling Commission will be payable to the SCSB and not the Syndicate/sub-Syndicate Member.

2. Uploading Charges payable to members of the Syndicate (including their sub-Syndicate Members), RTAs and CDPs on the applications made by Bidders using 3-in-l accounts/Syndicate ASBA mechanism which are procured by them and submitted to SCSB for blocking would be as follows:

   ₹ [●] plus, applicable taxes, per valid application bid by the Syndicate (including their sub-Syndicate Members), RTAs and CDPs.

   The selling commission and bidding charges payable to Registered Brokers, the RTAs and CDPs will be determined on the basis of the bidding terminal id as captured in the Bid Book of BSE or NSE.

3. Selling commission/uploading charges payable to the Registered Brokers on the portion for Non-Institutional Bidders which are directly procured by the Registered Broker and submitted to SCSB for processing, would be as follows:

Portion for Non-Institutional Bidders *	[●] per valid application (plus applicable taxes)

   * *Based on valid applications.*

4. Uploading charges/Processing fees for applications made by UPI Bidders using the UPI Mechanism would be as under:

Members of the Syndicate/RTAs/CDPs/	[●] per valid application (plus applicable taxes)
Registered Brokers	
Sponsor Bank(s)	[●] per valid application (plus applicable taxes)

   Processing fees for applications made by UPI Bidders using the UPI mechanism for each valid Bid cum application form. The Sponsor Banks shall be responsible for making payments to the third parties such as remitter bank, NPCI and such other parties as required in connection with the performance of its duties under the SEBI circulars, the Syndicate Agreement and other applicable laws.

   All such commissions and processing fees set out above shall be paid as per the timelines in terms of the Syndicate Agreement and the Cash Escrow and Sponsor Bank Agreement.

   The processing fee for applications made by UPI Bidders using the UPI mechanism may be released to the remitter banks (SCSBs) only after such banks provide a written confirmation on compliance with SEBI circular no. SEBI/HO/DDHS/DDHS_Div3/P/CIR/2022/085 dated June 24, 2022.

FINANCIAL INDEBTEDNESS AND DEFERRED PAYMENTS

The details of indebtedness of the Trust as at December 31, 2025:

Sr. No.	Particulars	Principal Amount outstanding, as on December 31, 2025 (in ₹ million)
1.	***Cube Highways Trust***	
	Secured Borrowings	
	Term Loan	126,619.13
	Non - Convertible Debt Securities	49,935.21
2.	***Existing Portfolio Assets***	
	MBEL	
	Non – Convertible Debt Securities	1,044.79
	Unsecured Borrowings	
	WVEPL	150.99
	QEPL	15.92
	Total Borrowings	**1,77,766.04**
3.	***Proposed Portfolio Assets***	
	DTPL	
	Secured Borrowings	4,679.04
	Unsecured Borrowings	-
	Total Borrowings	**4,679.04**
	BFHL	
	Secured Borrowings	6,585.61
	Unsecured Borrowings	2,289.00
	Total Borrowings	**8,874.61**
	WMTPL	
	Secured Borrowings	4,245.67
	Unsecured Borrowings	550.00
	Total Borrowings	**4,795.67**
	CNTL	
	Secured Borrowings	15,161.16
	Unsecured Borrowings	1,984.76
	Total Borrowings	**17,145.91**

The details of the indebtedness, with a brief description of certain material covenants of the relevant financing agreements, are provided below:

Principal terms of the borrowings availed by the Trust including bank guarantees (InvIT Loans):

1. *Tenor:* The tenors of the borrowings availed by the Trust range from 18 to 20 years. Further, the tenor for the bank guarantees is 12 months and higher.

2. *Purpose:* The purpose for the various loans availed by the Trust are as follows:

   (a) Senior debt facility documents: Towards various repayment and refinancing of existing facilities, among other purposes listed in the facility agreements

   (b) Short-term loan facility: Towards cash flow mismatch and general corporate purposes

   (c) Bank guarantee: Towards debt service reserve amount and performance guarantee

   (d) Overdraft facility: Towards the working capital requirement

3. *Interest:* The interest for the borrowings availed by the Trust is the lending rate for each period which is the aggregate of the spread and the relevant benchmark rate. Further, in case of one of the bank guarantees, interest at the rate of 2% + MCLR per annum will be charged on amount outstanding in case of delay in payment.

4. *Security:* The borrowings availed by the Trust are secured and the bank guarantees are both secured and unsecured. The secured borrowings are secured by, among other things:

   (a) A first ranking *pari passu* security interest, by way of hypothecation on the following:

      (i) on all movable assets and the receivables of the Trust in relation to certain Existing Portfolio Assets

         a. all receivables of the Trust from certain Existing Portfolio Assets;

         b. loans and advances made by the Trust to certain Existing Portfolio Assets except for the excluded SPVs (*as defined in the relevant facility agreements*);

         c. the interest and principal repayment of loans advanced by the Trust;

d. dividends and any other amounts to be paid / payable by certain Existing Portfolio Assets to the Trust;

e. inventories, contractual rights, securities, patents, trademarks, other intellectual property, equipment and/or insurances (in each instance, if any); and

f. all other current assets of the Trust, including all the Trust's tangible and intangible assets, including but not limited to its goodwill, undertaking and uncalled capital, both present and future.

(ii) all the accounts and all other bank accounts of the Trust in which the free cashflows from certain Existing Portfolio Assets owned by the Trust will be deposited/ credited or any other account opened/ maintained by the Trust in relation to certain Existing Portfolio Assets.

(b) A first ranking exclusive security interest, by way of hypothecation on the DSRA (as defined below), in respect of the debt securities, standing to the credit of debt service reserve account;

(c) An agreement to assign the loans advanced by the Trust to certain Existing Portfolio Assets, (except for the excluded SPVs, *as defined in the relevant facility agreements*) and securities created by the Trust in respect of such loans granted by the Trust;

(d) A pledge of all bonds, non-convertible debentures, or any other security (except the equity shares) of certain Existing Portfolio Assets, (other than the excluded SPVs, *as defined in the relevant facility agreements*), held by the Trust;

(e) A pledge of 100% equity shares on a fully diluted basis of certain Existing Portfolio Assets (except for the excluded SPVs, *as defined in the relevant facility agreements*), held by the Trust, other than the nominees' shares.

(f) A negative lien, other than on permitted disposals, on the immovable and movable assets (including current assets and cash flows) of certain Existing Portfolio Assets (except for the excluded SPVs, *as defined in the relevant facility agreements*), subject to the rights of the authorities under the respective concession agreements.

(g) A non-disposal undertaking by Cube Highways (*as defined in the facility agreement*) regarding the non-disposal of the NDU units, to be released upon expiry of a period of 3 years from the initial drawdown date and upon the Trust achieving a DSCR of at least 1.25 in any fiscal year after the expiry of 3 years from the initial drawdown date, as evidenced by compliance certificate issued in this regard by an independent chartered accountant to the satisfaction of the facility agent.*

* *The above security is specifically for the senior debt facility tranche I.*

(h) A pledge of bonds, non-convertible debentures, or any other security (except equity shares) of the excluded SPVs, *as defined in the relevant facility agreements*, held by the Trust and pledge over 100% of certain SPVs and 99.97% of certain SPVs as set out in the relevant senior debt facility documents and 100% of the equity shared of the other excluded SPVs, *as defined in the relevant facility agreements*.

(i) A contractual arrangement to ensure that the security trustee is appointed as the irrevocable agent of the Trust under the loans and advances granted/ proposed to be granted by the Trust to certain Existing Portfolio Assets, except the excluded SPVs, *as defined in the relevant facility agreements*.

5. *Prepayment premium:* The senior debt facility documents provide the Trust with the right to prepay the lenders the outstanding amounts in part or in full. The Trust is required to provide 30 (thirty) days written notice to the lenders and prepay the outstanding principal amount with prepayment premium at the rate of 0.50% on the principal amount being prepaid. No prepayment premium shall be payable by the Trust as per the conditions prescribed in the facility agreements, which include, among other things:

(a) prepayment is made at the instance of the lenders or upon acceleration of the loans by the lenders (in accordance with the terms of the facility agreement) or any prepayment is made by the Trust to cure breach of any financial covenants;

(b) prepayment is made from internal accruals/contribution by the unitholders of the Trust, with a prior written notice of at least 30 (thirty) days to the lenders;

(c) prepayment is made pursuant to the occurrence of a mandatory prepayment event;

(d) prepayment is made upon exercise of the put option by any lender.

6. *Negative Covenants:* Under the senior debt facility documents, the Trust on behalf of itself and certain Existing Portfolio Assets, confirms that, until the final settlement date, it shall not take any action contemplated under the negative covenants section unless prior written consent of the lenders is obtained, which include, among others:

   (a) any change in its capital structure (including any change in the shareholding pattern) other than as contemplated under the financing documents.

   (b) change of control in certain Existing Portfolio Assets.

   (c) any material change in the scope of the projects other than as permitted under the terms of the concession agreement, the general nature of its business or operations resulting in adverse impact on the ability of the Trust to meet its obligations or substantial change in the technical, financial aspects of the projects resulting in material adverse effect.

   (d) certain Existing Portfolio Assets shall not revalue its assets and properties as reflected in the books of accounts of the Trust as of agreement date, other than as may be permitted under the accounting principles and/ or the relevant concession agreement.

   (e) amend constitutional documents such that it causes or is likely to cause a material adverse effect/affects the rights of the lender under the financing documents. The investment manager and certain Existing Portfolio Assets shall not amend its memorandum and articles of association, which materially impacts the interests of the lenders except if required by law.

   (f) certain Existing Portfolio Assets shall not undertake any new acquisition/investment or advance any funds or place deposits with any person except permitted acquisition, permitted investment, permitted indebtedness, and/ or normal trade credit or security deposits in the ordinary course of business as permitted under the project documents.

   (g) the Trust shall not contract, create, incur, assume or suffer to exist any financial indebtedness other than permitted indebtedness, provided the Trust has complied with the permitted indebtedness conditions prescribed in the facility agreements.

   (h) the Trust shall not make any restricted payments unless the restricted payment conditions as prescribed under the facility agreement are satisfied.

7. *Event of default:* The following events, among other things, shall constitute as an event of default:

   (a) non-payment of amounts due on the relevant due date;

   (b) incorrectness of any material representation or warranty made by the Trust; and

   (c) any form of government action as specified in the relevant facility agreements against all or substantial part of the Trust's properties resulting in downgrade of the credit rating of the Trust to AA- or below within 30 days of occurrence of such event.

   (d) Additionally, the following events, among others, shall be declared as an event of default by the senior lenders under the senior debt facility documents:

      i. failure to perform any material obligations under the financing documents which has not been cured within 30 (thirty) days of such breach;

      ii. breach of financial covenants by the Trust which has not been cured within the prescribed time period;

      iii. declaration of an event of default on account of payment default under the documents in relation to financial indebtedness availed by the Trust.

      iv. declaration of an event of default under certain Existing Portfolio Assets' financing documents leading to downgrade in credit rating of the Trust to AA- or below;

      v. change of control occurring without the prior consent of the lenders or in contravention of the facility document

      vi. one or more event(s) having a material adverse effect;

8. *Consequences of default:* Upon occurrence of an event of default and failing to cure such default within the cure period provided, the lender may, among other things, exercise the following rights:

   (a) cancellation of the facilities as permitted in the relevant facility agreements;

(b) acceleration of the repayment obligations as permitted in the relevant facility agreements;

(c) exercise of other remedies as permitted or available under the facility agreements.

Principal terms of the non-convertible debentures issued by the Trust:

1. *Tenor:* The tenor of the debt security is for a period commencing from the relevant deemed date of allotment till the relevant final redemption date.

2. *Purpose:* Towards repayment of existing debt amongst others as prescribed in the debt security trust deeds.

3. *Face value:* The face value of each senior, secured, rated, listed, redeemable, non-convertible debt securities is ₹100,000.

4. *Security:* The outstanding dues, are secured by, amongst others:

   (a) A first ranking *pari passu* security interest, by way of hypothecation on the following:

      (i) on all movable assets and the receivables of the Trust in relation to certain Existing Portfolio Assets

         a. all receivables of the Trust from certain Existing Portfolio Assets;

         b. loans and advances made by the Trust to certain Existing Portfolio Assets except for the relevant excluded SPVs, *as defined in the relevant facility agreements*;

         c. the interest and principal repayment of loans advanced by the Trust;

         d. dividends and any other amounts to be paid / payable by certain Existing Portfolio Assets to the Trust;

         e. inventories, contractual rights, securities, patents, trademarks, other intellectual property, equipment and/or insurances (in each instance, if any); and

         f. all other current assets of the Trust, including all the Trust's tangible and intangible assets, including but not limited to its goodwill, undertaking and uncalled capital, both present and future.

      (ii) all the accounts and all other bank accounts of the Trust in which the free cashflows from certain Existing Portfolio Assets owned by the Trust will be deposited/ credited or any other account opened/ maintained by the Trust in relation to certain Existing Portfolio Assets.

   (b) A first ranking exclusive security interest, by way of hypothecation on the DSRA (as defined below), in respect of the debt securities, standing to the credit of debt service reserve account.

   (c) An agreement to assign the loans advanced by the Trust to certain Existing Portfolio Assets (except for the excluded SPVs, *as defined in the relevant facility agreements*) and securities created in favour of the Trust in respect of such loans granted by the Trust.

   (d) A pledge of all bonds, non-convertible debentures, or any other security (except the equity shares) of certain Existing Portfolio Assets (other than the excluded SPVs, *as defined in the relevant facility agreements*) held by the Trust.

   (e) A pledge of 100% equity shares on a fully diluted basis of certain Existing Portfolio Assets (except for the excluded SPVs, *as defined in the relevant facility agreements*), held by the Trust, other than the nominees' shares.

   (f) A negative lien, other than on permitted disposals, on the immovable and movable assets (including current assets and cash flows) of certain Existing Portfolio Assets (except for the excluded SPVs, *as defined in the relevant facility agreements*), subject to the rights of the authorities under the respective concession agreements.

   (g) A pledge of bonds, non-convertible debentures, or any other security (except equity shares) of excluded SPVs, *as defined in the relevant facility agreements*, held by the Trust and pledge over 100% equity shares of certain SPVs and 99.97% equity shared of certain other SPVs as set out in the relevant debt security trust deed and a pledge over 100% of the equity shared of the other excluded SPVs, *as defined in the relevant facility agreements*, in each case other than the nominee's shares.

(h) A contractual arrangement to ensure that the security trustee is appointed as the irrevocable agent of the Trust under the loans and advances granted/ proposed to be granted by the Trust to certain Existing Portfolio Assets, except the excluded SPVs, *as defined in the relevant facility agreements*.

5. *Mandatory Redemption Event, inter alia, shall mean:*

a. The debt securities cease to have a valid credit rating from any credit rating agency; or

b. Any application or petition is filed for corporate insolvency resolution or bankruptcy or dissolution or liquidation or winding up against certain Existing Portfolio Assets under the Insolvency and Bankruptcy Code, 2016 or any other such prevailing applicable law and such application results in a downgrade in the credit rating of the Trust to AA- or below as determined by a credit rating agency. Such credit rating shall be obtained within 30 (thirty) days of occurrence of such event; or

c. Cessation of business by any of the relevant Existing Portfolio Assets, which results in a downgrade in the credit rating of the Trust or the debt securities to AA- or below as determined by any credit rating agency. Such credit rating shall be obtained within 30 (thirty) days of occurrence of such event; or

d. Termination of any concession agreement and upon such termination, the credit rating of the Issuer as determined by any credit rating agency falls below the AAA credit rating; or

6. *Voluntary Redemption:*

a. The Trust may redeem together with coupon, additional interest and other outstanding dues (in full or part, as the case may be) *inter alia* as below:

i. The debt securities held by all the debt security holders, within 120 (one hundred and twenty) days of the credit rating of the Trust or the debt securities being downgraded to AA or below by any credit rating agency, with prior written notice of at least 30 (thirty) business days';

ii. The debt securities held by all the debt security holders, pursuant to the occurrence of a mandatory redemption events;

7. *Negative Covenants:*

a. *Change in Control:* The Trust shall not permit and shall ensure that the relevant Existing Portfolio Assets shall not permit any of the relevant Existing Portfolio Assets change of control.

b. *Bank Accounts:* The Trust shall not and shall ensure that the relevant Existing Portfolio Assets shall not open any bank account other than those contemplated by the escrow agreement or the supplementary escrow agreement, financing documents executed by the excluded SPVs, *as defined in the relevant facility agreements*, and in relation to the excluded facilities (as specified in the facility agreement) till the same are not closed in accordance with the terms of the debt documents, as applicable.

c. *New Acquisition/Investment:* The Trust shall not and ensure that the relevant Existing Portfolio Assets shall not undertake any new acquisition/ investment or advance any funds or place deposits with any person except any permitted acquisition, permitted investment, permitted indebtedness, and/ or normal trade credit or security deposits in the ordinary course of business as permitted under the project documents.

d. *Indebtedness:* The Trust shall not contract, create, incur, assume or suffer to exist any financial indebtedness other than permitted indebtedness, provided the Trust has complied with the permitted indebtedness conditions prescribed in the facility agreements. The Trust does not require prior written consent of the secured parties to avail any permitted indebtedness.

8. *Debt Service Reserve Account ("**DSRA**"):*

a. The reserve amount required to be maintained in such form and manner as specified in the debt document and as provided in the escrow agreement and relevant supplementary escrow agreement, equivalent to the aggregate of the redemption amount/repayment instalment and the coupon/interest payable in the next 3 months to the debt security holders and the additional reserve amounts (if required to be maintained as per the specific agreement).

b. In the event of a downgrade in the external credit rating of the Trust by a credit rating agency to AA or below, which is continuing, the Trust shall have ensured that the DSRA is the aggregate of an amount equivalent to the redemption amount/repayment instalment and the coupon/interest payable in respect of the debt securities during the subsequent 2 fiscal quarters and the additional reserve amounts (if required to be maintained as per the specific agreement).

c. Such debt service reserve amount is required to be maintained by the specified Existing Portfolio Assets in the form of permitted investments. In the event the Trust is required to maintain the debt service reserve amount, the Trust may provide a bank guarantee in the same form and manner specified in the agreement or any other format from a scheduled commercial bank with a minimum rating as specified in the specific agreement.

9. *Events of Default:* The following events, among other things, shall constitute an event of default:

(i) Non-payment of any redemption amount, coupon, default payment charges, non-compliance charges or fee or any other amounts due and payable by the Trust on the relevant due date;

(ii) Non-performance of (a) any material obligations under any debt documents or breach of material terms and conditions of the debt documents (other than the financial covenants) and such failure has not been cured within the specified time period; (b) breach of any financial covenants and not cured to the satisfaction of the majority debt security holders; (c) any insurance contract is not or ceases to be in effect when it is required to be in effect;

(iii) Any event that may have a material adverse effect;

(iv) Cross default: (a) declaration of an event of default on account of payment default under the documents in relation to financial indebtedness availed by the Trust (b) declaration of an event of default under the relevant Existing Portfolio Assets' financing documents leading to downgrade in credit rating of the Trust to AA- or below;

(v) Non-creation of security within the stipulated time;

(vi) Incorrectness of any material representation or warranty made by the Trust and/or any of the relevant Existing Portfolio Assets in the debt document (or in any document delivered by or on behalf of the Trust);

(vii) Cessation of business by the Trust or certain Existing Portfolio Assets or a notice in writing or an action through authorised officers which can be construed as threatening to cease business;

(viii) Termination of any concession agreement by the relevant authority or the relevant Existing Portfolio Assets, or the occurrence of an event of default under any concession agreement which is not cured, where such termination or event of default results in downgrade of the credit rating of the Trust to AA- or below;

(ix) Downgrade of the external credit rating of the Trust or the debt securities, as determined by a credit rating agency, to AA(-) or below;

(x) Breach of any project documents/InvIT documents by any party thereto which adversely affects the ability of the Trust to perform its obligations under the debt documents.

(xi) Voluntary winding up of the Trust or any of the relevant Existing Portfolio Assets;

(xii) Any of the relevant Existing Portfolio Assets abandons their respective project resulting in credit rating of the Trust to downgrade to AA- or below;

(xiii) Certain facility documents provide for change of control occurring without the prior consent of the debt security holders or in contravention of the terms of the facility document as an event of default. Others provide for only change of control occurring without the prior consent of the debt security trustee as an event of default.

10. *Consequences of default*: upon the occurrence of an event of default the debt security holders may, among other things, exercise the following rights, provided the debt security holders have recourse only in relation to the relevant Existing Portfolio Assets over which they have security interest:

(i) declare all outstanding dues payable on demand;

(ii) to enter upon and take possession of the assets of the Trust comprised with the security;

(iii) to transfer the assets of the Trust in favour of the secured parties or such other person by way of lease, leave and license, sale or otherwise;

(iv) sue for creditors' process and/ or exercise rights with respect to the security;

(v) enforcement of security; and

(vi) exercise of other remedies as permitted or available under the debt documents.

(vii) exercise one or more rights available under the applicable laws.

This is an indicative list of the terms of the borrowings availed by the Trust and there may be additional terms, conditions and requirements under the various borrowing arrangements entered into by the Trust. Where applicable the term 'debt security holders' may include the relevant lenders.

Given the nature of these borrowings and the terms of prepayment, the aggregate outstanding borrowing amounts may vary from time to time.

This Draft Offer Document does not, directly or indirectly, relate to any invitation, offer or sale of any securities, instruments or loans (including listed non-convertible debentures, bonds or other debt securities, if any) that may be issued by the Trust after the Offer. Any person or entity investing in such issue or transaction by the Trust should consult its own advisors. Neither the Book Running Lead Managers, nor their associates or affiliates have any responsibility or liability for such issue or transaction by the Trust.

Principal terms of the non-convertible debentures issued by MBEL

MBEL has issued and allotted redeemable, listed, rated, secured non-convertible debentures of a nominal value of ₹ 1,000,000 each on a private placement basis, aggregating to ₹ 1,842 million comprising 13 series (the "**Series A Debentures**") and issued and allotted redeemable, listed, rated, secured non-convertible debentures of a nominal value of ₹ 1,000,000 each on a private placement basis, aggregating to ₹ 78 million comprising 3 series (the "**Series B Debentures**" and together with Series A Debentures, the "**Debentures**"). Series B NCDs have been redeemed.

The key terms of the debenture trust deed dated November 9, 2017, as amended on December 13, 2017, (the "**Deed**") entered into by MBEL and Catalyst Trusteeship Limited (the "**Debenture Trustee**") in relation to Debentures are as follows:

1. *Tenor:* Series A Debentures are issued for approximately 12.5 years from October 3, 2018, to March 29, 2030.

2. *Security:*

   (a) The debt in relation to the Series A Debentures shall be secured in favour of the Debenture Trustee by way of:

      (i) first pari-passu charge by way of hypothecation of:

         a. MBEL's tangible moveable assets (other than project assets as defined in the Deed); and

         b. the accounts (excluding the distribution account and DRR investments) and the permitted investments, any other receivables, monies received/ receivable under the O&M agreements or from any other person (whether as liquidated damages or otherwise), all other monies credited or liable to be credited to the accounts and the permitted investments, all money, claims or money proceeds or receivables of whatsoever nature arising howsoever and wheresoever, which are now due and owning or which may at any time hereafter during the continuance of the security created hereunder become due and owing to or acquired by MBEL in the course of its business, and the full benefit of all rights and remedies relating thereto, including but not limited to fees, deposit and all claims damages and other remedies for non-payment of the same and all claims under any insurance whether in addition to or by way of renewal, extension or replacement of any money previously deposited in or credited to the accounts (excluding the distribution account and the DRR investments) and the permitted investments or otherwise, together with any interest from time to time accruing in respect of such monies (hereinafter, referred to collectively as the "First Hypothecated Assets");

      (ii) first pari-passu charge-cum-assignment by way of security created through hypothecation/ charge by way of assignment or creation of charge over all of MBEL's rights, titles, interest, benefits, claims and demands under each of the:

         a. the insurance contracts (except to the extent they are not project assets) together with any receivables or insurance proceeds thereunder;

         b. the concession agreement of MBEL (in accordance with the substitution agreement); and

         c. the project documents (other than the concession agreement of MBEL) (including any guarantees. liquidated damages, performance bonds and letters of credit that may be provided by any counterparty to the project documents (other than the concession agreement of MBEL)) except to the extent they are not project assets, and hie authorisations in respect of the project including, without limitation, the right to compel performance thereunder, and to substitute, or to be substituted for, MBEL there under, exercise any rumination rights, and to commence and conduct either in the name of MBEL or in its own

name or otherwise any proceedings against any person in respect of any breach of the project documents (other than the concession agreement of MBEL) and the authorisations, to the extent capable of being charged and, including without limitation, rights and benefits to all amounts owing to, or received by, MBEL and all claims thereunder and all other claims of MBEL under or In any proceedings against all or any such persons and together with the right to further charge and/or assign any of the project documents (other than the concession agreement of MBEL) and the authorisations, to any person whether presently in existence or created hereafter (hereinafter, referred to collectively as the "**Second Hypothecated Assets**").

3. *Interest:* If payment of any amount due to a debenture holder is not made in accordance with the Deed, MBEL shall unconditionally pay a default interest which is a sum of 8.40% per annum (coupon rate) and 2% per annum, payable on such amount calculated on a daily basis.

4. *Mandatory redemption event:* The Deed provides for the following events as mandatory redemption events:

   (a) termination by MBEL of the concession agreement;

   (b) termination by the concessioning authority other than on the occurrence of a concessionaire event of default as described in the concession agreement;

   (c) concessioning authority awarding MBEL the concession to perform augmentation to the capacity of the project pursuant to the concession agreement or in the instance where MBEL has not submitted any proposal, the concessioning authority has awarded the concession for augmentation of the capacity of the project to a third person pursuant to the concession agreement.

5. *Negative Covenants:* The Deed provides that MBEL shall not affect any of the following, without the prior written consent of the Debenture Trustee, including but not limited to:

   (a) Capital Structure: any change in its capital structure (other than as contemplated under the debenture documents).

   (b) Merger: entering into any amalgamation, merger, demerger, or corporate reconstruction.

   (c) Guarantees and Indemnities: provide, or permit to subsist, any guarantee or indemnity in respect of any financial indebtedness obtained by any third.

   (d) Disposals: entering into any transaction (related or not, or voluntary or involuntary) to sell, lease, transfer or otherwise dispose of any material rights in relation to the project.

   (e) Constitutional documents: amend constitutional documents which adversely affects the rights of the debenture holders under the debenture documents.

   (f) Restricted payments: MBEL shall not, without the prior written consent of the Debenture Trustee upon an event of default continuing:

      (i) pay, repay or prepay any principal, interest or other amount on or in respect of or redeem, purchase or decrease any financial indebtedness owed as described in the Deed;

      (ii) declare, pay or make any dividend or other payment or distribution of any kind on or in respect of an of its shares; or

      (iii) reduce, return, purchase, repay, cancel or redeem any of its share capital.

6. *Events of Default:* The Deed provides the following events of defaults, amongst others:

   (a) non-payment of any amount payable by MBEL on the due date;

   (b) non-compliance with any obligations by MBEL under any debenture document;

   (c) any misrepresentation made or deemed to be made by MBEL in any debenture document;

   (d) occurrence of cross default;

   (e) inability to pay its debts;

   (f) moratorium is declared in respect of any indebtedness of MBEL;

(g) the Debenture Trustee determines that an event or circumstance that has occurred or exists has a material adverse effect;

(h) Occurrence of a debenture delisting event as defined in the Deed;

(i) the Debentures cease to be rated by any rating agency;

(j) the accounts are not established with the escrow bank or are not duly funded operated and maintained in accordance with the terms of the debenture documents;

(k) occurrence of a concessionaire event of default;

(l) cessation of business;

(m) abandonment of the project;

(n) suspension of the project

(o) any insurance required under the relevant transaction documents is not maintained or ceases to be in effect and has not been remedies within 25 business days.

7. *Consequences of default:* upon the occurrence of an event of default the debenture Trustee shall, among other things:

(a) accelerate the payment of the debt;

(b) substitute the company under the concession agreement as per the terms of the substitution agreement;

(c) declare by a written notice to MBEL, that the debt shall be due and payable forthwith;

(d) upon the security created pursuant to security documents having become enforceable, the Debenture Trustee shall, if directed by the debenture holders by a majority resolution, enforce any such security as per the terms thereof; and

(e) upon the security created pursuant to security documents having become enforceable, the Debenture Trustee shall, if directed by the debenture holders by a majority resolution, exercise such other rights and remedies as may be available to the Debenture Trustee under applicable law.

8. *Governing Law and Jurisdiction:* The Deed shall be governed by Indian law and the courts and tribunals in Delhi shall have exclusive jurisdiction.

NHAI, MBEL and Catalyst Trusteeship Limited have also entered into a substitution agreement dated June 05, 2018 (the "**Substitution Agreement**") for the benefit of the senior lenders and NHAI. Certain rights available to the senior lenders under the Substitution Agreement include, among other things:

1. *Substitution of the concessionaire by a selectee:* Catalyst may substitute the concessionaire by a selectee selected by the senior lenders in accordance with the Substitution Agreement and NHAI's approval.

2. *Interim protection of service and preservation of security:* the Senior lenders are entitled to institute protective legal proceedings for a receivership to maintain and protect the assets held as security upon the occurrence of an event of default as described in the Substitution Agreement.

3. *Senior lenders right to receive termination payment:* NHAI is entitled to deposit the termination payments into escrow account and the senior lenders shall be entitled to receive the same without further reference to or the consent of the concessionaire.

Principal terms of the unsecured borrowings availed by the Existing Portfolio Assets from their respective erstwhile holding company:

1. WVEPL:

Cube Highways and Infrastructure III Pte. Ltd ("**CH-III**") (erstwhile holding company of WVEPL) acquired 100% equity share capital of WVEPL from KNR Constructions Limited ("**KNR**" or "**Seller**") pursuant to the Share Purchase Agreement dated January 9, 2020, as amended by an amendment agreement dated September 18, 2020, (collectively referred to as the "**SPA**") entered into between CH-III, KNR and WVEPL. KNR agreed to waive a portion of the seller loan prior to the closing date. As per the seller loan agreement, the portion thus waived shall be determined as per the SPA and indicated to KNR in writing by WVEPL. It shall be confirmed by WVEPL prior to the closing date. After repayment of the redeemable seller loan, the portion of the seller loan (i.e., equal to the agreed holdback amount and the WC pass through amounts, as described in the seller loan agreement), shall remain outstanding. The agreed holdback amount is a cumulative sum of ₹617,496,000.

2. *QEPL:*

QEPL issued 28,000 unsecured and unlisted non-convertible debentures ("**NCD**") of face value of ₹10,000 each to National Investment and Infrastructure Fund (NIIF) (the erstwhile holding company of QEPL). Since then, 21,729 NCDs have been redeemed and 6,271 NCDs are outstanding as of June 11, 2025. Pursuant to the terms of the amendment agreement dated June 11, 2025, redemption of the outstanding debentures is contingent and shall be due & payable only on the occurrence of certain redemption events as defined in the said amendment agreement. Further, such NCD shall not carry any coupon but will be redeemed at a redemption premium to be calculated based on conditions defined in the amendment agreement. The final redemption date as per the amendment agreement is June 4, 2031, and if any of the redemption events do not occur by the final redemption date then such debentures shall be written off, as described in the amendment agreement. As per the amendment agreement these debentures are non-transferable and non-marketable, except to affiliates or associates of NIIF.

Principal terms of the borrowings availed by Proposed Portfolio Assets from external lenders:

3. *Tenor:*

(a) DTPL: the senior rupee term loan debt facility and the additional rupee term loan debt facility availed by DTPL have a door-to-door tenor of 4 years from the date of the facility agreement and shall be paid as per the amortisation schedule till December 31, 2029.

(b) BFHL: the senior rupee term loan debt facility and the additional rupee term loan debt facility availed by BFHL have a door-to-door tenor of 10 years and 1 month from the date of the facility agreements and shall be paid as per the amortisation schedule till December 31, 2033.

(c) WMTPL: the senior rupee term loan debt facility and the additional rupee term loan debt facility availed by WMTPL have a tenor of up to 10 years and 7 months from the date of the facility agreement and shall be paid as per the amortisation schedule till September 30, 2035.

(d) CNTL: The senior rupee term loan facility and the additional debt term loan facility availed by CNTL have a door-to-door tenor of up to 4 years and 6 months from the date of the facility agreements and shall be paid as per the amortisation schedule till March 8, 2030.

2. *Purpose:* the purpose of the various loans availed by the Proposed Portfolio Assets are as follows:

(a) Senior rupee term loan debt facility: Towards refinancing of the outstanding project debt under the existing facility and further as specified in the relevant facility agreement.

(b) Additional rupee term loan debt facility: Towards refinancing of the existing debt and further as specified in the relevant facility agreement.

3. *Interest:* The interest for the debt facilities is the aggregate of the relevant lender's benchmark rate plus spread as detailed in the schedule to the relevant facility agreements.

4. *Security:* The security shall rank on a first pari-passu basis among the senior rupee term loan debt facility lenders and on a second pari-passu basis among the additional rupee term loan debt facility lenders. The security includes, among other things:

(a) on all tangible movable assets (current and non-current assets) and all other moveable assets, present and future, save and except the Project Assets;

(b) on all intangible assets;

(c) assignment by way of security in, among others:

(i) all rights, title, interest and benefits under the concession agreement (as applicable) and all other project documents;

(ii) all right, title and interest of the borrower in, to and under all the clearances;

(iii) all the rights, title interest, benefits, claims and demands whatsoever by the borrower in any letter of credit, guarantee, performance bonds provided by any party;

(d) pledge over shares and each of the other instruments issued or subsisting by the relevant Proposed Portfolio Asset, including but not limited to any compulsory convertible debentures, compulsory convertible preference shares, optionally convertible debentures and non-convertible debentures issued by the relevant Proposed Portfolio Asset as detailed in the relevant facility agreement.

5. *Mandatory Prepayment*:

(a) For DTPL: DTPL shall be required to mandatorily prepay the loans to the extent outstanding, in full or in part, upon the occurrence of the following events, among other:

(i) the receipt of proceeds resulting from the expiration, termination or revocation of the concession agreement, provided that termination payments shall be first utilized towards repayment of outstanding debt towards the debenture holders;

(ii) the receipt of the proceeds resulting from the expropriation;

(iii) receipt of any insurance proceeds for the project following a force majeure event, if any.

(b) For BFHL, WMTPL, and CNTL: the relevant Proposed Portfolio Asset shall make mandatory prepayments of the outstanding amount under the facilities upon the occurrence of the following events among others:

(i) in the event of termination of the concession agreement;

(ii) if at any time it becomes or will become unlawful or contrary to any applicable law or any regulation in any applicable jurisdiction for the relevant lenders to perform any of its obligations as under the facility agreement or to fund or maintain its participation in the facilities.

6. *Prepayment:*

(a) DTPL: DTPL has the option to prepay the loans, in part or in full, with all interests and other charges and monies due and payable to the lenders up to the date of such prepayment along with a premium at the rate of 1% of the amounts proposed to be prepaid except in situations detailed in the facility agreements.

(b) For BFHL, WMTPL, and CNTL: the relevant Proposed Portfolio Asset shall be entitled to prepay the relevant lender in part of full till the final settlement date upon giving a prior written notice of 30 days.

7. *Repayment:*

(a) For DTPL: DTPL shall repay the principal amounts as per the amortization schedule from the first repayment date as detailed in the facility agreement.

(b) For BFHL, and WMTPL: The relevant Proposed Portfolio Asset agrees that the principal amount of the facilities shall be repaid in quarterly instalments, payable in arrears, on the last day of the fiscal quarter as detailed in the repayment schedule in the relevant facility agreements.

(c) For CNTL: for both the senior debt facility and the additional debt facility the relevant borrower agrees that the principal amount of the facility shall be repaid in half yearly instalments, payable in arrears, as per the repayment schedule detailed in the facility agreement and if such last day is not a business day, then the business day immediately preceding such last day, commencing from the first repayment date.

8. *Negative Covenants:* The borrower shall not undertake any of the following actions, among others, without prior written consent:

(a) change the general nature of its business;

(b) wind up/ liquidate its affairs or take any steps for voluntary winding up or liquidation or dissolution;

(c) make any material changes to the memorandum and articles which adversely impacts the rights of the lenders;

(d) abandon or agree to abandon the project;

9. *Event of default:* The following events, among other things, shall constitute as an event of default:

(a) failure to pay any repayment instalment, interest or any other amounts as specified in the relevant facility agreements;

(b) one or more events conditions or circumstances shall occur or exist which have a material adverse effect;

(c) occurrence of an insolvency, bankruptcy or dissolution event as specified in the relevant facility agreements;

(d) failure to create security within the timeline specified in the related facility agreements;

(e) the borrower abandons the project

10. *Consequences of event of default:* Upon occurrence of an event of default, the lender may among other things, exercise the following rights:

(a) acceleration of any or all amounts payable to be due and payable immediately in full or in part;

(b) appoint 1 nominee director to the board of the borrower;

(c) convert the whole or part of the facility as specified in the relevant facility agreement into shares/share capital of the borrower;

11. *Governing law and jurisdiction:* The facility agreements are governed by Indian law and the courts and tribunals in New Delhi have jurisdiction.

Principal terms of the non-convertible debentures issued by DTPL:

The key terms of the amended and restated trust deed dated June 28, 2022 (the "**Deed**") entered into by DTPL and IDBI Trusteeship Services Limited (the "**Debenture Trustee**") in relation to Debentures are as follows:

1. *Tenor:* The tenor of the debentures extends until March 31, 2029, when final mandatory redemption must occur, though the debentures are being redeemed in quarterly instalments commencing from December 31, 2015.

2. *Security:* The Secured Obligations are secured by a comprehensive first-ranking security package in favour of the Debenture Trustee, comprising:

(a) first mortgage/charge on immovable properties (excluding project assets and specified Thane property);

(b) first charge on tangible movable assets (excluding project assets);

(c) first charge over bank accounts (including escrow account), funds, receivables and permitted investments (enforceable only to ensure crediting to escrow and application per the payment waterfall);

(d) first charge on intangible assets like goodwill and undertaking (excluding project assets, with proceeds subject to waterfall priority);

(e) assignment by way of security of rights in Project Documents, Clearances, guarantees and Insurance Contracts (enforceable through the Substitution Agreement);

(f) pledge of 51% of the Issuer's equity shares held by Sponsor (subject to concession agreement/NHAI approval constraints); and

(g) the lender's security package under the concession agreement including substitution rights and termination payments.

3. *Interest:* The Interest Rate is 8.25% (eight decimal two five percent) per annum per month payable monthly effective from 10 January 2022.

4. *Prepayment:* DTPL shall not prepay all or any part of any Financial Indebtedness availed by it, including the Debentures, except as permitted under the Debenture Documents.

5. *Voluntary Redemption:* DTPL is allowed to redeem the debentures out of internal accruals of the project once in a financial year and any prepayment made shall be on a pro rata basis with the other lenders.

6. *Negative Covenants:* The Deed provides that DTPL shall not affect any of the following, without the prior written consent of the Debenture Trustee and NHAI:

(a) Capital Structure: any change in its capital structure, mergers/demergers/amalgamations, entering into schemes of arrangement with shareholders/creditors, or dispose of Project Assets or secured property except in the ordinary course of business up to Rs. 20 lakhs per annum and subject to concession agreement provisions.

(b) Investments: any investments beyond permitted investments (except normal trade credit, security deposits, and employee advances), provide guarantees or undertake obligations on behalf of others, or enter into long-term contractual arrangements prejudicial to Debenture Holders' interests without Debenture Trustee approval.

(c) Expenditure and payments: Capital expenditure and fixed asset acquisition on lease are prohibited except as permitted under Debenture Documents or with Debenture Trustee approval, other than normal maintenance capital expenditure. Restricted Payments are prohibited unless Restricted Payment Conditions are complied with.

(d) Indebtedness: incur any secured or unsecured financial indebtedness (fund or non-fund based) beyond Permitted Indebtedness.

(e) Project Documents: cancel/terminate transaction documents, assign interests therein, waive defaults or enforcement rights, vary project documents (except contracts), petition for rescission/termination, enter into non-transaction document agreements, or change its fiscal year.

(f) Business Restrictions: undertake the project in accordance with project documents and cannot alter the scope beyond the concession agreement.

(g) Change in Management Control: Management control cannot change and sponsors must maintain at least 51% equity and voting rights until final settlement date.

(h) Constitutional documents: DTPL shall not amend or modify its memorandum of association and articles of association in a manner which adversely impacts the rights of Debenture Trustee.

7. *Restricted payments:* Restricted Payments covers dividends, distributions, share redemptions, payments to shareholders/sponsors for loans or dues, prepayment of debt, non-permitted investments, and certain commission reimbursements. Payments under key operational contracts (O&M, EPC, major maintenance, tolling) and project management fees within the base case business plan are excluded.

DTPL may make restricted payments subject to compliance with the restricted payment conditions and the escrow agreement provisions:

(a) All reserve requirements (including DSR for 3 months and MMR) must be met and balances maintained per the Supplementary Escrow Agreement;

(b) all redemption instalments and amounts due to secured parties must have been paid;

(c) no Event of Default (other than Potential Event of Default) or material adverse effect is continuing;

(d) Financial parameters (DSCR) must be met without considering temporary Sponsor fund infusions;

(e) debenture redemption must have commenced;

(f) payment must comply with applicable law;

(g) credit rating must not fall below BBB-; and

(h) no continuing force majeure event with material financial impact on the project.

8. *Events of Default:* The Deed provides events of default:

(a) non-payment of any amount payable by DTPL on the due date;

(b) non-compliance with material covenants obligations by DTPL under any debenture document;

(c) Commencement of liquidation, dissolution, bankruptcy or insolvency proceedings by the Issuer, or filing of petitions by creditors before the National Company Law Tribunal, with cure periods of 45 days for financial creditors and 60 days for other persons;

(d) failure to create or perfect security interests within the required timeframe, or any event that prejudices, imperils or depreciates the Security;

(e) Appointment of a receiver or similar officer over the Issuer or its material assets, unless set aside within 60 days. Attachment, execution or restraint on the Issuer's assets, unless set aside within 60 days;

(f) utilisation of debenture proceeds for any purpose other than specified in the Deed, or diversion of receivables to accounts other than the escrow account;

(g) abandonment of the Project by DTPL;

(h) any actual or potential default under any other financial indebtedness;

(i) expropriation, nationalisation, compulsory acquisition of Project assets, revocation or refusal to renew Clearances, or imposition of onerous conditions on clearances;

(j) invalidity, unenforceability, termination or repudiation of transaction documents, particularly the Concession Agreement, or any adverse amendments;

(k) unlawfulness or unenforceability of transaction document obligations, or requirements to amend or repudiate documents under applicable laws;

(l) failure to obtain, renew or maintain material clearances, or proceedings to revoke, terminate or suspend such clearances;

(m) any change in law materially prejudicing performance of transaction documents or the rights of Debenture Holders; and

(n) any misrepresentation made or deemed to be made by DTPL in any debenture document;

9. *Consequences of default:* The Deed provides consequences of default:

(a) The Debenture Trustee may declare the whole or part of the Debentures immediately due for redemption at the Redemption Amount, with all other Debenture Payments becoming immediately payable. The Trustee may cancel or suspend further drawings or terminate DTPLs right to make withdrawals;

(b) The Debenture Trustee may enforce all Security under the security documents, exercise remedies under the SARFAESI Act, 2002, and accelerate Sponsor's equity and contribution obligations. The Trustee may enter upon and take possession of the Issuer's assets, sell or liquidate any Secured Property, and redirect payments under Project Documents (including Insurance) directly to Secured Parties;

(c) The Trustee may require restructuring of the Issuer's management, appoint a nominee director, appoint independent auditors or consultants at the Issuer's cost, and examine books of accounts and inspect Project Assets;

(d) The Trustee may restrict payments via notice to the escrow bank, draw on Escrow Account balances, liquidate Permitted Investments and utilise amounts to repay Secured Obligations. The Issuer cannot make any payments without prior written consent of the Debenture Trustee upon occurrence of an Event of Default or Potential Event of Default;

(e) The Trustee may exercise all Issuer's rights under Project Documents, or stipulate additional conditions, appoint a Nominated Company in lieu of the Issuer under the Concession Agreement, and disclose the Issuer's and directors' names to RBI, CIBIL and other agencies or publish them as defaulters; and

(f) All Trustee expenses for preservation, enforcement, collection and inspection after an Event of Default are payable by the Issuer on demand. The Issuer must facilitate the exercise of all Debenture Holders'/Trustee's rights to the extent permissible under Applicable Law.

10. *Governing Law and Jurisdiction:* The Deed shall be governed by Indian law and the courts and tribunals in Delhi shall have non-exclusive jurisdiction.

Principal terms of the non-convertible debentures issued by BFHL & WMTPL:

Pursuant to non-convertible subscription agreements entered into between BFHL and Cube Highways and Infrastructure V Pte. Ltd. ("CH-V") dated April 19, 2023, May 19, 2023, and December 8, 2023, as amended on February 7, 2025, and between WMTPL and CH-V dated April 11, 2024, as amended on February 7, 2025 and March 6, 2025, respectively, CH-V has subscribed to unsecured, unlisted, redeemable, non-convertible debentures ("**NCDs**"). The key terms of the non-convertible debenture subscription agreements between BFHL and **CH-V**, and between WMTPL and CH-V, (the "**NCD Subscription Agreements**"), are as follows:

1. *Tenor:*

(a) For BFHL: The NCDs are compulsorily redeemable on February 2, 2041.

(b) For WMTPL: The NCDs are compulsorily redeemable on March 31, 2038.

2. *Security:* The NCDs are unsecured.

3. *Coupon:*

(a) For BFHL: The NCDs shall carry coupon at annual interest rate of 12.46%, as follows (i) quarterly till March 31, 2025, and (ii) annually from April 1, 2025, subject to latest benchmarking, annual compliances for transfer pricing and other applicable tax laws.

(b) For WMTPL: The NCDs shall carry coupon at annual interest rate of 13.2% per annum, payable annually, subject to latest benchmarking, annual compliances for transfer pricing and other applicable tax laws. The first date of accrual of interest shall be March 31, 2026

4. *Redemption:* The NCDs along with any accrued but unpaid interest on the NCDs can be redeemed any time prior to the redemption date subject to the requirement of retention of the subscription amount in India as set out in the relevant

regulations and applicable laws for period of 3 (three) years from the date of allotment or such other period as prescribed by applicable law.

5. *Governing Law and Jurisdiction:* The NCDs Subscription Agreements shall be governed by and interpreted in accordance with the laws of Singapore. Any dispute that arises shall be settled by institutional arbitration conducted and administered by the Singaporean International Arbitration Centre. The seat of arbitration shall be Singapore and there shall be only one arbitrator to be mutually agreed by the parties.

Principal terms of optionally convertible debentures issued by CNTL

Pursuant to a securities purchase agreement dated September 15, 2025, Cube Highways and Infrastructure II Pte. Ltd. ("**CH-II**") purchased optionally convertible debentures ("**OCDs**" and such agreement, the "**Agreement**"). Pursuant to a letter agreement entered into between CNTL and CH-II dated February 12, 2026, revisions were made to the face value and coupon rate applicable to the securities purchased. The key terms of the OCDs are as follows:

1. *Tenor:* The OCDs shall be redeemable on March 8, 2032, or such other prior date as may be agreed between the holder of the OCDs and CNTL.

2. *Security*: The OCDs shall be unsecured.

3. *Redemption:* Subject to mutual agreement between the holders of the OCDs and CNTL, the holders of OCD shall have the right to seek premature redemption, partially or fully, in quantum and/or in value, of the OCDs, on or before the end of the tenor.

4. *Conversion:* The OCDs may be converted at the instance of the holder of the OCDs on March 8, 2032, or subject to applicable law, such other extended date as may be agreed between them. Upon conversion, the OCDs shall be converted into such number of into equity shares, the conversion ratio for which shall be determined basis the fair market value of the equity shares as on the date such conversion. The equity shares thus issued shall each rank *pari passu* with the other equity shares of CNTL.

5. *Coupon Rate:* The OCDs bearing a coupon rate of 12.69% per annum payable on an annual basis and the first accrual of such revised coupon commences on and from March 31, 2026.

6. *Governing Law and Jurisdiction:* Any dispute arising out of or relating to the Agreement shall be governed by and construed in accordance with the laws of the Republic of India and the courts/tribunals in Mumbai shall have exclusive jurisdiction

Principal terms of borrowings availed by the Existing Portfolio Assets from the Trust

The debt financing provided by the Trust to the Existing Portfolio Assets comprises:

(i) unsecured subordinate loans; and

(ii) loans which, subject to the approval of the concessioning authority and the senior lenders, may be classified as (1) debt owed to a senior lender; or as (2) loans which are not classified as debt owed to a senior lender, which are secured by a first-ranking exclusive charge, *pari passu* to the charge created to secure the debt owed to the other senior lenders on, *inter alia* (a) the escrow account of certain Existing Portfolio Assets; (b) the rights, title, interest, claims and demands of certain Existing Portfolio Assets in its concession agreement, other project agreements, insurance policies and project clearances; and (c) all other movable assets of certain Existing Portfolio Assets.

The Existing Portfolio Assets have availed the debt financing by way of the Trust Loan Agreements. Senior loans and the other secured loans have been provided by the Trust out of the proceeds of the InvIT Loans and further debt availed by the Trust and are subject to consents, conditions and compliance with law, as may be applicable.

The principal terms of the Trust Loan Agreements are as follows:

Facility	i. Senior loan/secured loan of ₹ ₹98,930.00 million as on December 31, 2025, (collectively, the "**Secured Loan**"); and ii. Subordinated unsecured loan of ₹75,618.46 million as on December 31, 2025, ("**Subordinate Loan**").
Summary of financing documents executed by certain Existing Portfolio Assets	For Secured Loan: • Loan Agreements • Security trustee agreements • Escrow agreements*

	• Supplementary escrow agreements* • Unattested deed of hypothecations along with the corresponding power of attorneys • Substitution agreements* For Subordinate Loan, subordinated loan agreements have been entered into. * *The escrow agreements, supplementary escrow agreements and substitution agreements in relation to the Secured Loan have been executed subsequent to the first disbursement of the Secured Loan.*
Purpose	**Secured Loan:** Towards refinancing of the outstanding amounts under the existing debt arrangements of certain Existing Portfolio Assets. **Subordinate Loan:** Towards refinancing/redemption of the facilities availed by certain Existing Portfolio Assets from the Cube Group or any other purpose as may be agreed between the Trust and certain Existing Portfolio Assets. Certain Subordinate Loans are also for repayment of existing NCDs.
Terms of Repayment	**Secured Loan:** As per the repayment schedule specified under the facility agreement or earlier in accordance with the terms of the relevant facility agreement, only if (a) on the relevant principal repayment date(s), sufficient cashflows are available with certain Existing Portfolio Assets (which are available and permitted to be utilised towards repayment of such principal amounts, without such utilisation being in or resulting in a breach of the financing documents) to make such payments in full or part or (b) the Trust or its representative has sent a letter to the relevant Existing Portfolio Assets requesting it to make payment on the relevant repayment date. If the relevant Existing Portfolio Assets are unable to pay any portion of the principal amount due to the unavailability of sufficient cashflows, such an event shall not be a default or event of default under the facility agreement. If the Trust / Trust's representative has sent an intimation to the relevant Existing Portfolio Assets requesting it to make payment on the relevant repayment date, and the identified portfolio asset fails to make payment on the said repayment date, it shall be an event of default under the facility agreement, whether or not such failure is due to the unavailability of sufficient cashflows. **Subordinate Loan:** The relevant Existing Portfolio Assets shall repay the principal amount to the Trust on such date(s) as may be agreed between the relevant Existing Portfolio Assets and the Trust from time to time as and when surplus cash is available at the identified portfolio assets or in any case not later than the last day of the concession period (as defined in the concession agreement) and to the extent commercially feasible in line with the repayment schedule of the relevant InvIT loans/InvIT senior debt.
Interest Rate	**Secured Loan:** Certain Secured Loans carry interest at rates in the range of 11 to 15% per annum which may be reset on any interest reset date. Other Secured Loans carry interest as per the transfer pricing report. **Subordinate Loan:** Such rates as may be agreed between the Trust and the relevant Existing Portfolio Assets and be reset from time to time (subject to a benchmarking report being obtained for interest rate at every such instance) and such interest shall be payable from time to time subject to: (i) withholding of applicable taxes, if any, and (ii) availability of surplus cash flows at the relevant Existing Portfolio Assets.
Security for Secured Loan	Certain Secured Loans provide the following security: • First ranking exclusive charge on the Project Receivables (as defined in the facility agreements), both present and future; • First ranking exclusive charge over the escrow account (or any accounts in substitution thereof) of the relevant Existing Portfolio Assets opened in relation to its project and all receivables deposited therein from time to time; • First ranking exclusive charge or assignment over the rights, title and interest, claims and demands of the relevant Existing Portfolio Assets in (i) the concession agreement; (ii) any insurance policies taken out by the relevant Existing Portfolio Assets; (iii) the clearances in respect of its project; and (iv) each other project agreement, in each instance, pursuant to and in accordance with the provisions of the concession agreement and to the extent as provided in the Substitution Agreement (as defined in the facility agreements); and • First ranking exclusive charge on all other movable assets of the relevant Existing Portfolio Assets, both present and future (other than the project assets). Other Secured Loans provide the following security: • first charge on the relevant Existing Portfolio Assets' tangible moveable assets; • first charge over all accounts of the relevant Existing Portfolio Assets including the escrow account and the sub-accounts that may be opened;

	• a first charge on all intangible assets of the relevant Existing Portfolio Assets; and • assignment by way of security in: all the rights, title, interest, benefits, claims and demands whatsoever in the project agreements; rights title and interest in, to and under all the clearances; all the rights, title, interest, benefits, claims and demands whatsoever of the relevant Existing Portfolio Assets in any letter of credit, guarantee, and performance bond; and all rights, title, interest, benefits, claims and demands whatsoever of the relevant Existing Portfolio Assets under all insurance contracts;
Premature Payment for Secured Loan	• The relevant Existing Portfolio Assets shall be entitled to prepay the outstanding facility in full or in part, without any prepayment penalty, only with the prior written consent of the Trust. The relevant Existing Portfolio Assets shall not be entitled to prepay the outstanding facility in its entirety ahead of the repayment schedule, except with the prior written consent of the Trust's representative or pursuant to the conditions for mandatory pre-payment under the relevant facility agreement. However, arrears which have not been paid as per the repayment schedule shall be permitted to be paid, and any prepayments not resulting in complete prepayment / repayment of the facility, shall be permitted in accordance with the terms of the financing documents. • The relevant Existing Portfolio Assets shall mandatorily repay the facility in full or in part, without payment of any prepayment premium from the proceeds (to the extent indicated below, net of all taxes, costs and expenses incurred in claiming/recovering such amounts) from any event as mentioned in the Secured Loan facility agreement, such as: - any proceeds from the sale / disposal of any material project assets (other than the proceeds from sale / disposal in the normal course of business to the extent of ₹ 10 million in a financial year); - any expiration payment received in connection with any clearance under any project agreement, to the extent of the expiration payment; - any insurance proceeds received pursuant to claims made, as set out in the facility agreement to the extent not applied by it towards repair, renovation, restoration, reinstatement or replacement of the project assets, provided such amount is in excess of ₹ 20 million per claim. This shall not apply to proceeds of insurance in relation to business interruption leading to the loss of revenue or profit, as long as the servicing of the facility on the respective due dates, has continued during the period of business interruption including up to receipt of insurance claims, workers/employee liability insurance, public liability/personal injury insurance, directors and officers insurance, or any third party insurance proceeds; - the proceeds resulting from the expropriation or other takeover event by any Governmental Authority of the project assets of the relevant Existing Portfolio Assets, to the extent of the proceeds received; - the proceeds, resulting from an arbitral or judicial award in connection with any project agreement of the relevant Existing Portfolio Assets, as set out in the facility agreement; - all proceeds of any Termination Payments (as defined in the facility agreement); and - all proceeds of buy-out payments received from the relevant authority under the relevant concession agreement or other project agreements.
Representations and Warranties	Some of the key representations and warranties made by the relevant Existing Portfolio Assets, which are deemed to be repeated by the relevant Existing Portfolio Assets on each date until the final settlement date, are, amongst others, as follows: • it is a company, duly incorporated and validly existing under the laws of India and has all corporate powers and all material governmental licenses, authorizations, consents and approvals required to carry on its business and the project; • the execution, delivery and performance by it of the financing documents and the consummation of the transactions contemplated hereby by the relevant Existing Portfolio Assets is within its corporate powers and have been duly authorized by all necessary corporate action and the obligations expressed to be assumed by the relevant Existing Portfolio Assets under each financing document are legal, valid, binding and enforceable against it; • the execution, delivery and performance of the financing documents do not and will not contravene or conflict with (i) the certificate of incorporation or (ii) its articles or memorandum of association or (iii) the concession agreement; and (iv) any provision of any law, regulation, judgment, injunction, order, decree, approval or clearance binding upon it;
Covenants	**Secured Loan:** The relevant Existing Portfolio Assets shall not, without the prior written consent of Trust, among other things:

	• amend its constitutional documents, if such amendment affects the rights of the Trust; • propose or participate in the bidding process for any enhancement or a change in scope of the project, if such enhancement or change is not permitted under the concession agreement; • take any action or fail to take any action which materially affects the security; • take any action which may result in change in control of the relevant Existing Portfolio Assets; • avail any indebtedness, provide any security other than the permitted indebtedness; • prepay in full, the facilities and all amount due under the financing documents. **Subordinate Loan:** The relevant Existing Portfolio Assets shall at all times: • comply with all applicable laws and • preserve and maintain its corporate existence, legal structure, legal name, rights, privileges, and franchises.
Events of Default for Secured Loan	Some of the key events or circumstances upon the occurrence of any of which the Trust will be entitled to declare an event of default by providing a written notice to the relevant Existing Portfolio Assets are, amongst others, as follows: • Non-payment of principal: The relevant Existing Portfolio Assets defaults in the payment of the principal amounts under the facility on the dates on which such principal amounts are due and payable, in accordance with the facility agreement. • Non-payment of interest: The relevant Existing Portfolio Assets defaults in the payments, when due and payable, in accordance with the facility agreement, to the Trust, of any interest payment owing in relation to the facility. • Non-performance: The relevant Existing Portfolio Assets defaults or commits a material breach in the performance of any condition, obligation or agreement (other than a default covered under any other provisions of clauses for payment default) under any financing document and the same is not cured in the opinion of the Trust within a period of 30 days. • Cross-default: An event of default (howsoever defined or described) occurs and is continuing under the InvIT senior debt, as defined in the facility agreement. • Security: The security required to be created under the terms of the facility agreement is not created and perfected within the timelines stipulated therein or the occurrence of any material event or circumstance that is prejudicial to or materially imperils or materially depreciates the security created or to be created.
Consequences of Event of Default under the loan agreements pertaining to the Secured Loan	• If an event of default has occurred, the Trust / Trust's representative may, *inter alia*, accelerate the repayment of the outstanding amounts under the facility and all other amounts outstanding in relation thereto by delivery of a written notice to the relevant identified portfolio asset (the "**EOD Notice**"). Upon receipt of the EOD Notice, all amounts outstanding under the facility (including accrued interest) shall become due and payable by the relevant Existing Portfolio Assets with immediate effect and shall be repaid immediately upon the issue of the EOD Notice. The Trust and/or the Investment Manager shall be entitled to cancel the undrawn facility and/or pursue any other legal remedy for any other relief as may be available to them under applicable law and any financing document. • On and from the occurrence of an event of default, the Trust / Trust's representative shall have the right to enforce the security towards repayment of the outstanding amounts owed / payable to the finance parties, as defined in the facility agreement, and enforce its rights under the memorandum of hypothecation. • Notwithstanding the foregoing, upon occurrence of an event of default (other than certain specified defaults), the Trust / Trust's representative may waive such event of default at its sole discretion subject to the terms specified under the facility agreement. Certain events of default may only be waived by the Trust's representative. On the occurrence and during the continuation of an event of default, the Trust shall take any action under the financing documents only with the prior written consent of the Trust's representative.
Rights of the Lenders' Representatives pertaining to the Secured Loan	The Trust (in its capacity as the lender in respect of the Secured Loan) has appointed SBICAP Trustee Company Limited (the "**Lender's Representative**"), to act as the lenders' representative for the benefit of the Trust (in its capacity as the lender in respect of the Secured Loan), under and in respect of the relevant concession agreement and any financing document to which the Lender's Representative is required to be a party in its capacity as the lenders' representative of the Trust (in its capacity as the lender in respect of the Secured Loan).

Jurisdiction	Delhi/New Delhi
Governing Laws	India

Leverage

In accordance with and subject to the InvIT Regulations, the provisions of the Trust Deed, and the borrowing policy adopted by the Investment Manager, the aggregate consolidated borrowings and deferred payments of the Trust may be up to 70% of the aggregate of the Portfolio Assets, subject to the conditions prescribed under Regulation 20 of the InvIT Regulations.

For details of the capital structure of the Portfolio Assets, including any borrowings or deferred payments with respect to the Portfolio Assets prior to the Offer and post-Offer, on a standalone and consolidated basis, please refer to the sections entitled "*Description of the Portfolio Assets – Acquisition of the Portfolio Assets by the Trust*" and "*Financial Indebtedness and Deferred Payments*" on pages 56 and 364 respectively.

Post-Offer Indebtedness of the Trust

The post-Offer consolidated borrowings and deferred payments of the Trust will be in accordance with the InvIT Regulations and the Borrowing Policy. The indebtedness and deferred payments of the Trust, on a consolidated basis, shall not exceed 55%, as approved by the Unitholders by way of resolution dated April 17, 2025, subject to any additional indebtedness incurred after listing of Units pursuant to the Offer, in accordance with applicable laws.

Status of lender consents

The Trust and the Proposed Portfolio Assets have availed debt from certain third-party lenders and consents from the respective lenders are required for and in connection with the Offer and the Swap Transaction. As on the date of the Draft Offer Document, (i) the Trust has received the required consent and confirmations from its lenders; and (ii) the Proposed Portfolio Assets have received the consents and confirmations from their respective lenders, except from one lender, in relation to the change in shareholding of the Proposed Portfolio Assets, among others. While there are no consent requirements for a majority of the Existing Portfolio Assets, we have received a lender consent from MBEL's external lender for change in sponsor as required under the relevant financing documents. Separately, please note that pursuant to the proposed change in the project manager, additional lender consents may have to be obtained by the Trust and the Portfolio Assets prior to the change in the Project Manager. For further details, please see the section titled "*Risk Factors - If we fail to receive or comply with the terms of the consents issued by the lenders and regulatory authorities for the transfer of the Proposed Portfolio Assets to the Trust or are not successful in integrating these assets or fail to realize the anticipated benefits of the acquisition of such assets, our business, financial condition, results of operations and cash flows may be adversely affected.*" on page 88.

Borrowing Policy

The Investment Manager shall ensure that all funds borrowed in relation to the Trust comply with the InvIT Regulations. Accordingly, the Investment Manager has formulated a borrowing policy outlining the process for borrowing funds in relation to the Trust. For further details, please see the section entitled "*Corporate Governance – Investment Manager – Policies of the Board of Directors of the Investment Manager in relation to the Trust – Borrowing Policy of the Trust*" on page 187.

Proposed Financial Indebtedness

The Investment Manager intends to maintain an optimal mix of debt and equity to provide the Trust with flexibility to manage its risk exposure, and implement its strategies. Accordingly, post the Swap Transaction and the Offer, the Trust may avail external credit facilities to repay the term loans, non-convertible debentures/optionally convertible debentures or any other securities in the nature of debt of the relevant Proposed Portfolio Assets. For further details, please see the section entitled "*Risk Factors - The Trust's ability to enter into, and/or complete, the Trust loan arrangements in respect of the Proposed Portfolio Assets may be delayed or may not be achieved, which could delay or reduce upstreaming of cash flows to the Trust and adversely affect distributions to Unitholders*" on page 107.

PERFORMANCE OF THE TRUST VIS-À-VIS THE PROJECTIONS AT THE TIME OF INITIAL OFFER

Set out below is the comparison of the actual performance of the Trust in Fiscals 2024, 2025 and six-month period ended on September 2025 against the projections made in the final placement memorandum dated April 17, 2023, as required under Chapter 14 of the InvIT Master Circular:

(In ₹ million, unless stated otherwise)

Particulars	Six-month period ended on September 2025		Fiscal 2025		Fiscal 2024	
	Projected	Actual	Projected	Actual	Projected	Actual
Projected revenue from operations						
Jaipur-Mahua Tollway Private Limited	1,620.20	1,197.56	3,059.02	2,586.62	2,647.02	2,287.38
Mahua Bharatpur Expressways Limited	774.03	574.17	1,394.72	1,159.85	1,219.94	1,027.06
Western UP Tollway Private Limited	1,077.98	862.37	1,938.07	1,694.54	1,750.82	1,651.62
Andhra Pradesh Expressway Private Limited	169.28	169.05	1,124.30	1,520.62	1,094.70	395.49
Ghaziabad Aligarh Expressway Private Limited	1,772.65	2,030.34	3,230.81	4,127.38	4,874.48	6,938.40
Nelamangala Devihalli Expressway Private Limited	711.26	585.47	1,273.48	1,129.52	1,125.73	1,001.60
Farakka-Raiganj Highways Limited	1,636.67	1,319.44	2,934.21	2,539.64	2,646.99	2,284.13
DA Toll Road Private Limited	3,772.96	3,128.61	6,886.99	6,047.90	6,377.41	5,500.97
Walayar Vadakkencherry Expressways Private Limited	587.14	564.24	1,059.53	1,081.68	961.19	1,023.06
Hazaribagh Tollway Private Limited	658.86	717.94	1,181.95	1,285.25	1,063.09	1,020.39
Jhansi-Lalitpur Tollway Private Limited	535.92	519.71	961.74	990.84	872.10	861.53
Jhansi-Vigakhet Tollway Private Limited	377.02	362.35	675.11	690.72	615.31	601.55
Lucknow-Raebareli Tollway Private Limited	536.79	341.74	948.34	689.11	851.99	595.05
Kotwa-Muzaffarpur Tollway Private Limited	745.11	601.79	1,329.19	1,152.15	1,199.02	1,045.53
Madurai-Kanyakumari Tollway Private Limited	678.99	1,052.51	1,213.14	1,136.77	1,088.62	1,031.82
Kanyakumari-Etturavattam Tollway Private Limited	382.39	470.79	688.33	693.98	627.67	618.38
Salaipudhur-Madurai Tollway Private Limited	404.22	498.66	722.56	746.47	655.75	650.75
Nanguneri-Kanyakumari Tollway Private Limited	404.48	522.86	726.71	680.05	654.63	626.66
Revenue from operations (A)	**16,845.90**	**15,519.60**	**31,348.20**	**29,953.09**	**30,326.46**	**29,161.37**
Net cashflow from operating activities						
Jaipur-Mahua Tollway Private Limited	1,250.45	908.88	2,396.19	1,362.55	1,489.18	1,435.13
Mahua Bharatpur Expressways Limited	561.09	397.05	1,020.40	657.07	180.42	397.64
Western UP Tollway Private Limited	537.43	558.84	1,534.26	1,070.64	1,411.49	1,347.24
Andhra Pradesh Expressway Private Limited	478.35	561.10	463.02	41.61	489.89	1,099.29
Ghaziabad Aligarh Expressway Private Limited	1,518.19	1,653.36	2,754.18	3,107.40	2,501.00	2,094.32
Nelamangala Devihalli Expressway Private Limited	537.77	447.60	977.36	882.63	860.75	688.31
Farakka-Raiganj Highways Limited	1,365.02	1,063.62	2,431.49	2,082.54	2,196.73	1,763.05
DA Toll Road Private Limited	3,234.78	2,503.85	6,010.99	5,097.43	5,590.47	4,175.33
Walayar Vadakkencherry Expressways Private Limited	473.95	448.50	847.92	828.09	771.30	772.44
Hazaribagh Tollway Private Limited	592.06	658.49	1,058.42	1,174.16	949.15	913.40
Jhansi-Lalitpur Tollway Private Limited	480.34	462.94	858.96	907.37	777.19	786.60
Jhansi-Vigakhet Tollway Private Limited	328.92	316.11	586.08	609.65	532.95	518.93
Lucknow-Raebareli Tollway Private Limited	473.29	282.88	831.10	602.67	743.80	470.48
Kotwa-Muzaffarpur Tollway Private Limited	601.56	463.26	1,060.91	880.38	948.67	768.76
Madurai-Kanyakumari Tollway Private Limited	562.81	717.75	996.31	909.39	886.69	807.37
Kanyakumari-Etturavattam Tollway Private Limited	270.90	337.11	479.49	495.74	432.42	466.32
Salaipudhur-Madurai Tollway Private Limited	299.88	365.14	527.14	545.70	473.00	472.26
Nanguneri-Kanyakumari Tollway Private Limited	303.29	347.23	537.31	453.87	477.78	407.45
Cube Highways Trust – Standalone	(192.97)	(372.32)	(351.08)	(628.18)	(317.88)	(680.87)
Net cashflow from operating activities	**13,677.06**	**12,121.39**	**25,020.45**	**21,080.71**	**21,395.00**	**18,703.48**

Notes:

(1) Please note that following the Listing Date, the Trust has acquired nine additional road assets. As these acquisitions occurred subsequent to the issuance of the Final Placement Memorandum dated April 17, 2023, projections relating to such assets were not included therein. Accordingly, the projections in the table above are not comparable with the actual revenue from operations and cash flows from operations for the year ended March 31, 2025, and the half year ended September 30, 2025.

(2) For the year ended March 31, 2024, the actual revenue from operations and cash flows from operations reflect the period post-acquisition of the assets by the Trust i.e. with effect from April 17, 2023.

(3) The full-year projection for the year ending March 31, 2026, was provided at the time of the initial offer in the Final Placement Memorandum dated April 17, 2023. The same has been prorated for the half year ended September 30, 2025.

CAPITALISATION STATEMENT

The following table sets forth the Trust's capitalization (including any borrowing or deferred payment) as of September 30, 2025, on the basis of amounts derived from the Audited Consolidated Financial Statements, and as adjusted for the Offer. This table should be read in conjunction with the sections entitled "*Management's Discussion and Analysis of Financial Position and Results of Operations*", "*Summary Audited Consolidated Financial Information of the Trust*" and "*Risk Factors*" on pages 389, 58 and 87, respectively.

For the Trust on a consolidated basis:

Particulars	Pre-Offer as at September 30, 2025 (in ₹ million)	As adjusted for Offer* (in ₹ million)
Current Borrowings	5,122.29	[●]
Non-current borrowings	1,73,852.76	[●]
Interest accrued but not due on borrowings	163.74	[●]
Total debt (A)	**1,79,138.79**	[●]
Unit capital	1,34,396.03	[●]
Other equity	(27,980.23)	[●]
Total equity (B)	**1,06,415.80**	[●]
Debt to equity ratio (A)/(B)	**1.68**	[●]

** The above capitalization statement has been adjusted for Offer expense and has not been adjusted for any other subsequent expense. Remains subject to full subscription and allotment of Units.*

For details related to debt payment history, see Note 56 of Audited Consolidated Financial Statements for the half year ended September 30, 2025. For further details in relation to the the borrowings and deferred payments and capitalization statement of the Portfolio Assets, see "*Financial Indebtedness*" on page 364.

DISTRIBUTION

Statements contained in this section entitled "Distribution" that are not historical facts are forward-looking statements. Such statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those that may be projected. Under no circumstances should the inclusion of such information herein be regarded as a representation, warranty or prediction with respect to the accuracy of the underlying assumptions by the Trustee, the Sponsor, the Investment Manager, the Book Running Lead Managers or any other person. Bidders are cautioned not to place undue reliance on these forward-looking statements that are stated only as at the date of this Draft Offer Document. For details in relation to such forward-looking statements, please see the section entitled "Forward-Looking Statements" on page 31.

The net distributable cash flows of the Trust (the "**Distributable Income**") are based on the cash flows generated by it, including from the underlying operations undertaken by the special purpose vehicles and any holding companies held by the Trust (together, the " **InvIT Assets**") and any return of capital in accordance with the policy on distribution. For details of the business and operations presently undertaken by the InvIT Assets, please see the section entitled "*Our Business*" on page 280. Presently, cash flows receivable by the Trust may be in the form of dividend, interest income, gains, principal repayment or other income received from the InvIT Assets in relation to any debt sanctioned by the Trust, or a combination of both.

Distribution Policy and Applicable Law

In terms of the InvIT Regulations, not less than 90% of the net distributable cash flows of the InvIT Assets, shall be distributed to the Trust in proportion of its holding in such InvIT Assets, subject to applicable provisions in the Companies Act, 2013, as amended, and not less than 90% of the net distributable cash flows of the Trust shall be distributed to the Unitholders.

Further, in terms of the InvIT Regulations, with regard to distribution of net distributable cash flows by any Holding Company to the Trust, 100% of cash flows received by the Holding Company from underlying SPVs shall be distributed to the Trust (net of any expenses and applicable taxes including withholding taxes) and with respect to the cash flows generated by a Holding Company on its own, not less than 90% of such net distributable cash flows shall be distributed by the Holding Company to the Trust. If the net distributable cash flow generated by the Holdco on its own is negative, the Holdco may adjust it against the cash flows received from its underlying SPVs, provided that it makes appropriate disclosures in this regard to the Unitholders in such form and manner as may be specified by the SEBI.

The Trust shall distribute the distributable income with an endeavour to distribute 100% of the distributable income to its Unitholders. Such distribution and the distributions mentioned in the Distribution Policy shall be declared and made once every quarter of a financial year or such other period as mandated under the InvIT Regulations, Income Tax Act, 1961 and other applicable laws. The distribution, when made, shall be made in Indian Rupees. All distributions to the Unitholders shall be made in compliance with the InvIT Regulations. The amount actually received by the Unitholders will be subject to taxes and other statutory deductions as applicable. The Investment Manager shall be responsible for deducting all applicable taxes from all payments made by the Investment Manager and depositing them with the relevant governmental agency, if stipulated, in the manner specified under the InvIT Regulations.

Given that there is currently no regulatory framework that has been prescribed for the redemption, buy back of units of the Trust or reduction of capital, no distributions shall be made to the Unitholders by way of redemption or buy back of units, return of unit capital or reduction of unit capital, prior to a period of four years from the date of allotment in the initial offer by the Trust.

For details on the risks relating to distribution, please see the section entitled "*Risk Factors– Risks Relating to our Business and the Concession Agreements - We may not be able to make regular distributions to Unitholders or the level of our distributions may fall.*" on page 89.

Method of calculation of Distributable Income

Subject to the InvIT Regulations and other applicable laws and accounting standards, it is clarified that, for the purpose of calculation of the distributable income, the cash flows of the Trust shall be classified into two parts:

1. Dividend, interest, treasury income and capital gains of the Trust ("**Income Bucket A**"). All expenditures of the Trust (including, amongst others, interest expenses and fees payable to the Investment Manager, the ("**Expenditures**") shall be paid out of Income Bucket A, proportionately towards various income streams; and

2. Capital repayments to the Trust ("**Income Bucket B**"). Any capital outflows (including, among others, principal repayments by the Trust on its borrowings and capital infusions into the SPVs, referred to as the ("**Capital Outflows**") shall be paid out of Income Bucket B. If any expenses are directly attributable to this bucket, they can be reduced from this bucket.

In the event the cash flows in Income Bucket A are not sufficient to meet the Expenditures set out above, such Expenditures shall be paid of Income Bucket B. Similarly, in the event the cash flows in Income Bucket B are not sufficient to meet the Capital Outflows set out above, such Capital Outflows shall be paid of Income Bucket A. The Distributable Income calculated on the basis of Income Bucket A shall be further classified as interest, dividend, gains, or other income in the ratio of the inflows.

In accordance with the InvIT Master Circular the framework for computation of NDCF by InvITs and its Holdcos/SPVs shall be as under:

(a) Calculation of the net distributable cash flows at HoldCo/Project SPV level:

Description
Cash flow from operating activities as per Cash Flow Statement of HoldCo/ SPV
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework (refer note 1 and 8 below) (relevant in case of Hold Cos)
Add: Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: • Applicable capital gains and other taxes; • related debts settled or due to be settled from sale proceeds; • directly attributable transaction costs; • proceeds reinvested or planned to be reinvested as per Regulation 18(7)(a) of the InvIT Regulations or any other relevant provisions of the InvIT Regulations.
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re-invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently.
Less: Finance cost on Borrowings as per Profit and Loss Account excluding finance cost on any shareholder debt / loan from Trust. The amortization of any transaction costs can be excluded provided such transaction costs have already been deducted while computing NDCF of previous period when such transaction costs were paid
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i) loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii) terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii) terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, or (iv) agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v) statutory, judicial, regulatory, or governmental stipulations; – (refer note 2)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years (refer note 9)
NDCF for HoldCo/SPVs

Note: Distribution of up to 90% of the above NDCF as per the InvIT Regulations is subject to compliance of Companies Act.

(b) Calculation of the net distributable cash flows at the Trust level:

Description
Cashflows from operating activities of the Trust
Add: Cash flows received from SPV's / Investment entities which represent distributions of NDCF computed as per relevant framework (refer note 1 and 8 below)

Description
Add: Treasury income / income from investing activities of the Trust (interest income received from FD, any investment entities as defined in Regulation 18(5), tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs/Holdcos or Investment Entity adjusted for the following: • applicable capital gains and other taxes; • related debts settled or due to be settled from sale proceeds; • directly attributable transaction costs; • proceeds reinvested or planned to be reinvested as per Regulation 18(7)(a) of the InvIT Regulations or any other relevant provisions of the InvIT Regulations
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs/ Hold cos or Investment Entity not distributed pursuant to an earlier plan to re-invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently
Less: Finance cost on Borrowings as per Profit and Loss Account. However, amortization of any transaction costs can be excluded provided such transaction costs have already been deducted while computing NDCF of previous period when such transaction costs were paid
Less: Debt repayment at Trust level (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt in any form or funds raised through issuance of units)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with financial institution, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, or (iv). agreement pursuant to which the Trust operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations; - (refer note 2)
Less: any capital expenditure on existing assets owned / leased by the InvIT, to the extent not funded by debt / equity or from contractual reserves created in the earlier years (refer note 9)
NDCF at Trust Level

Notes/ Other Rules:

1. *NDCF computed at SPV level for a particular period to be added under this line item, even if the actual cashflows from SPV to InvIT has taken place post that particular period, but before finalization and adoption of accounts of the InvIT.*
2. *The Trust retains the option to distribute any surplus amounts, unless such surplus is required to create reserves for any subsequent period. However, any reserve created out of debt funds at the time of availing debt as per the terms of the financing documents shall not be reduced.*
3. *The option to retain 10% distribution under Regulation 18(6) needs to be computed by taking together the retention done at HoldCo, SPV level and Trust level.*
4. *Surplus cash available in InvITs/HoldCos/SPVs due to:*
   a. *10% of NDCF withheld in line with the Regulations in any earlier year or half year or*
   b. *Such surplus being available in a new Holdco/SPV on acquisition of such HoldCo/SPV by InvIT or*
   c. *Any other reason, excluding if such surplus cash is available due to any debt raise*

   could be considered for distribution by the HoldCo/SPV to the InvIT/Holdco, or by the InvIT to its Unitholders in part or in full. Also, such distribution of surplus funds shall be separately disclosed after the NDCF computation for the respective period.
   Provided that with regard to the point 4 (ii) above, if an acquisition of such SPV was funded by external debt, then surplus cash available with such SPV should first be used to repay such external debt. after such debt repayment, remaining surplus, if any, can be used for distribution.
5. *Similarly, any restricted cash (disclosed as such) should not be considered for NDCF computation by the SPV or InvIT (e.g. unspent CSR balance for any year deposited in a separate account as per Companies Act which will be utilized in subsequent years, DSRA reserve, major maintenance reserve etc).*
6. *Further, it is expressly provided that no Trust or SPVs can distribute any cashflows by obtaining external debt, except to the extent clarified in note 2 and 7 (this will exclude any working capital / OD facilities obtained by Trust/ SPVs as part of Treasury management / working capital purposes as long as they are squared off within the quarter).*
7. *Further, it is also clarified that Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for transaction costs or repayment of debt taken for such assets or other items as mentioned above which is intended to be reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations, could be temporarily parked in Overdraft accounts or used to repay any additional/ unrelated debt. Further if such proceeds are not intended to be reinvested as per the timeline provided in the Regulations and*

such fresh issue proceeds are to be distributed back to Unitholders, then redrawing such temporarily parked funds to distribute such fresh issue proceeds will not be considered as a contravention of note 6 above.

8. *Cash flows received from HoldCos / SPV's / Investment entities which represent distributions of NDCF computed as per relevant framework at the Trust and/ or HoldCo level for further distribution to Unitholders shall exclude any such cash flows used by the Trust and/ or HoldCo for onward lending to any other SPVs / Investment entities/ HoldCo to meet operational / interest expenses or debt servicing of such entities.*
9. *Capital expenditure include amounts incurred and paid towards asset enhancement and are capitalized to asset value in the financial statements including lease payments. It is further clarified that Existing Assets as referred to in this line item includes any new structure / building / other infrastructure constructed on an existing infrastructure as set which is already a part of the InvIT.*
10. *Debt repayment at Trust level will not be reduced from NDCF to the extent such debt is refinanced at the HoldCo/SPV level and such proceeds from refinancing have been transferred by the HoldCo/SPV to the Trust for such debt repayment.*
    Similarly, debt repayment at HoldCo/SPV level will not be reduced from NDCF to the extent such debt is refinanced at the Trust level and such proceeds from refinancing have been transferred by the Trust to the HoldCo/SPV for such debt repayment.
11. *Investment Manager of the InvIT is required to ensure the following while making distributions:*
    a. *The period of making distribution should be followed consistently whether on a half-yearly/quarterly/monthly basis and the same should be part of distribution policy of the InvIT which should be disclosed in the offer document, annual report and the website of InvIT.*
    b. *The distribution policy should prescribe the frequency of the distribution. Further, for each distribution, it should be ensured that cash flows from all assets, whether held by InvIT or any of the underlying SPVs or HoldCos, are being distributed together.*
    c. *The first quarterly distribution out of the NDCF computed for a financial year (or period thereof) should be minimum 90% / 100% as mandated in the InvIT Regulations. Thereafter, minimum distribution requirement should be met on a cumulative basis for the subsequent distributions out of the NDCF for such financial year.*
    d. *In case of any change in distribution policy other than regulatory changes, unitholder approval shall be required where votes cast in favour of the resolution are more than fifty percent of the total vote cast.*

In terms of the InvIT Regulations, if the distribution is not made within five working days from the record date where the record date shall be two working days from the date of the declaration of distribution, excluding the date of declaration and the record date, the Investment Manager shall be liable to pay interest to the Unitholders at the rate of 15% per annum or such other rate as may be specified under applicable law, till the distribution is made. Such interest shall not be recovered in the Management Fees of the Investment Manager or in the form of fee or any other form payable to the Investment Manager by the Trust. For risks in relation to distribution, please see the section entitled "*Risk Factors*" on page 87.

Conflict with NDCF Laws (as defined under the Distribution Policy)

The Distribution Policy shall not contradict the provisions of the InvIT Regulations and other applicable laws. In the event of any discrepancy, the provisions of the InvIT Regulations and other applicable laws shall prevail over the provisions of the Distribution Policy.

Amendment

Any amendment or variation to the Distribution Policy shall be undertaken by the IM Board, in compliance with applicable law. Notwithstanding the above, the Distribution Policy will stand amended to the extent of any change in applicable law, including any amendment to the InvIT Regulations, without any action from the Investment Manager or approval of the Unitholders of the Trust.

Distributions by Trust

The details of distributions declared by the Trust are provided below:

(₹ per Unit)

Sr. No.	Record Date	Total Distribution*	Cumulative distribution till date*
1.	August 11, 2023	2.15	31.29
2.	November 16, 2023	2.00	
3.	February 13, 2024	2.00	
4.	May 24, 2024	3.94	
5.	August 09, 2024	2.00	
6.	November 04, 2024	2.00	
7.	February 04, 2025	3.25	
8.	June 02, 2025	3.75	
9.	August 04, 2025	2.50	
10.	November 04, 2025	3.60	
11.	February 04, 2026	4.10	

* *Note: Figures have been rounded off to two decimal places*

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion of our financial condition and results of operations together with our Audited Consolidated Financial Statements as of and for the six months ended September 30, 2025 and September 30, 2024, and the Financial Years 2025, 2024 and 2023, including the related notes, schedules and annexures. The Audited Consolidated Financial Statements are prepared in accordance with Indian Accounting Standards, which differ in certain material respects from IFRS and U.S. GAAP. See "Risk Factors – Significant differences exist between Ind AS and other accounting principles, such as IFRS and U.S. GAAP, which may be material to your assessment of our results of operations, financial condition and cash flows" on page 124.

This discussion contains forward-looking statements that involve risks and uncertainties and reflect our current view with respect to future events and financial performance. Actual results may differ from those anticipated in these forward-looking statements as a result of factors such as those set forth under "Forward-looking Statements" and "Risk Factors" beginning on pages 31 and 87, respectively.

Unless otherwise stated, references in this section to "we", "our" or "us" are to the Cube Highways Trust, together with the Existing Portfolio Assets. The Trust acquired 51% of the shareholding in Borgaon Watambare Highways Private Limited, Mangalwedha Solapur Highways Private Limited, Mangloor Highways Private Limited, Srirangam Infra Private Limited (formerly known as KNR Srirangam Infra Private Limited), Shankarampet Projects Private Limited (formerly known as KNR Shankarampet Projects Private Limited) and Tirumala Highways Private Limited (formerly known as KNR Tirumala Infra Private Limited) (collectively, the "HAM SPVs") on June 4, 2024, and acquired the remaining 49% shareholding in the HAM SPVs on December 3, 2024. Further, the Trust acquired 100% of the shareholding in N.A.M. Expressway Private Limited ("NAMEPL") on February 12, 2025. Thereafter, the Trust acquired 100% of the shareholding in Quazigund Expressway Private Limited ("QEPL") and Jammu Udhampur Highway Private Limited ("JUHPL" and together with QEPL, the "NIIF SPVs") on June 12, 2025. Accordingly, the HAM SPVs, NAMEPL and the NIIF SPVs have been accounted for as subsidiaries in our Audited Consolidated Financial Statements with effect from June 4, 2024, February 12, 2025 and June 12, 2025, respectively. In addition, prior to the completion of the Offer, the Trust will acquire from certain members of the Cube Group, together with its nominees (pursuant to the Swap Transactions), 100% of the equity shares of each of Baharampore Farakka Highways Limited, Devanahalli Tollway Private Limited and Chenani-Nashri Tunnelway Limited, and from certain members of the Cube Group, together with its nominees (pursuant to Swap Transactions), at least 95% of the equity shares of Western MP Infrastructure & Toll Roads Private Limited, which are highway and tunnelway project SPVs that own assets in the states of West Bengal, Karnataka, the union territory of Jammu and Kashmir and the state of Madhya Pradesh, respectively (the "Proposed Portfolio Assets"), subject to fulfilment of the applicable conditions precedent. As of the date of this Draft Offer Document, 5% of WMTPL's shareholding is held by Express Way Developers Limited. The acquisition of such 5% shareholding of WMTPL is subject to the satisfaction of certain conditions precedent specified in the Commitment Letter. For further details, please see "Description of the Portfolio Assets - Acquisition of the Proposed Portfolio Assets by the Trust" and "Related Party Transactions - Commitment Letter" on pages 56 and 417, respectively.

We have included certain non-Ind AS financial measures and other performance indicators relating to our financial performance and business in this Draft Offer Document, each of which is a supplemental measure of our performance and liquidity and not required by, or presented in accordance with, Ind AS, IFRS or U.S. GAAP. Furthermore, such measures and indicators are not defined under Ind AS, IFRS, U.S. GAAP, or other accounting standards, and therefore should not be viewed as substitutes for performance, liquidity, or profitability measures under those standards. In addition, such measures and indicators are not standardised, and a direct comparison between companies may not be possible. Other companies or InvITs may calculate these measures and indicators differently from us, limiting their usefulness as a comparative measure. Although such measures and indicators are not performance measures calculated in accordance with applicable accounting standards, our management believes they are useful to investors in evaluating our operating performance. Investors are cautioned against placing undue reliance on such information in making an investment decision and must evaluate such information in the context of the Audited Consolidated Financial Statements.

*Industry, macro-economic and market data, and all industry-related statements in this section have been extracted or derived from the report titled "Assessment of the Indian Road Sector" prepared and released by the Industry Expert, which has been commissioned and paid for by the Investment Manager on behalf of the Trust (the "**Industry Report**"). Investors must rely on their independent examination of the Trust, and should not place undue reliance on, or base their investment decision solely on, this information. Also, please see the section entitled "Risk Factors – We have relied on data derived from third-party reports, which are based on certain estimates and assumptions and are subject to the limitations set out therein" on page 115 for details of risks in relation to commissioned reports.*

Overview

We are an Indian infrastructure investment trust sponsored by Cube Highways and Infrastructure V Pte. Ltd. and established with the objective of acquiring and operating road assets in India. We are engaged in implementing the public-private partnership model in India's highways sector to operate and manage highways in association with the central and state governments. We are registered with SEBI under the InvIT Regulations, and our Units have been listed on the Stock Exchanges since April 19, 2023.

As of September 30, 2025, through our Existing Portfolio Assets, we operate 27 road assets aggregating to 8,754* lane kilometers and 2,005 kilometers in distance across 12 states and one union territory in India. As of such date, our Existing Portfolio Assets had a weighted average residual concession period of 18.44 years (weighted on the basis of pre-MM EBITDA), and we maintained Enterprise Value/AUM aggregating to ₹365,199.18 million, exhibiting year-on-year AUM growth of 25.23% since September 30, 2024. This growth has corresponded with a 43% increase in our NAV per Unit from listing in April 2023 through September 30, 2025, at a CAGR of 15.70%. We operate our assets under different types of concessions, with a balanced mix of toll and annuity income. As of September 30, 2025, among our Portfolio Assets, our Toll AUM to Annuity AUM ratio was 85:15. Further, as of September 30, 2025, our Portfolio Assets (including the Proposed Portfolio Assets) had an average residual concession period of 17.59 years and operating history of 9.02 years. In addition, prior to the completion of the Offer, the Trust will acquire from certain members of the Cube Group (pursuant to Swap Transactions), 100% of the equity shares of three highway and tunnelway project SPVs that own assets in the states of West Bengal and Karnataka and the union territory of Jammu and Kashmir and at least 95% of the equity shares of another highway project SPV that owns assets in Madhya Pradesh and up to 100% (subject to certain conditions specified in the Commitment Letter). Upon completion of the Swap Transactions, we will operate 31 road assets (aggregating to 9,811 lane kilometers, as of September 30, 2025) across 13 states and one union territory in India.

** This is represented as 8,816 kms in the Industry Report which is prior to descoping adjustments.*

We were initially sponsored by Cube Highways and Infrastructure Pte. Ltd. and Cube Highways and Infrastructure III Pte. Ltd. Following a change in our sponsor, we are currently sponsored by CH-V. Our Sponsor invests in road and highway projects, as well as other select infrastructure sectors in India, focusing on acquiring mature, cash-generating highway assets, stabilizing and derisking them, and operating them while focusing on delivery of returns to our investors. Additionally, CH-V is an active growth vehicle of the Cube Group, with a strong track record of acquiring, operating, and integrating complex and diverse road assets across India. Our Sponsor holds a portfolio of six operational road assets spanning 2,148 lane kilometers, as of September 30, 2025. Our Sponsor and Sponsor Group are a part of the Cube Group, which is an institutionally-owned road infrastructure platform backed by a diversified investor base, including I Squared Capital (through ISQ Fund III Asia Infrastructure Holdings Pte. Ltd), Platinum Rock, BCI and MIC (through Seventy Second Investment Company LLC). We have raised ₹134,406.97 million in unit capital (excluding issue expenses of ₹10.94 million) since our settlement, and our Unitholders include several marquee investors, including BCI and MIC (through wholly owned subsidiaries) and a variety of domestic mutual funds and insurance companies, among others.

Our debt facilities have been rated (i) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for term loan and bank guarantee; (ii) AAA/Stable by India Ratings & Research Private Limited on August 14, 2025 for non-convertible debentures; (iii) AAA/Stable by ICRA on September 1, 2025 for term loan and bank guarantee; (iv) AAA/Stable by ICRA on September 1, 2025 for, non-convertible debentures; (v) AAA/Stable by CRISIL Ratings Limited on March 5, 2026 for term loan and bank guarantee – long term; and (vi) A1+ by Crisil Ratings Limited on March 5, 2026, for term loan and bank guarantee – short term.

Since our listing as a private InvIT in April 2023, our Unitholder base has expanded significantly, from 40 Unitholders as of April 28, 2023 to over 400 Unitholders as of September 30, 2025, reflecting increased investor participation from non-institutional investors alongside traditional institutional categories, including corporates, mutual funds, financial institutions and insurance companies.

We have had a consistent track record of quarterly distributions since our listing. Each financial year, we have distributed, at least quarterly, a minimum of 90% of the net distributable cash flows of the Trust available for distribution to our Unitholders, as required under the InvIT Regulations. Our consolidated net distributable cash flows during the six months ended September 30, 2025 and the Financial Year 2025 aggregated to ₹7,484.76 million and ₹10,823.81 million, respectively. Our cumulative distributions since listing have aggregated to ₹35,897.35 million (representing cumulative DPU of ₹27.19), as of September 30, 2025. Since listing until September 30, 2025, we have delivered an average annual DPU yield of 9.52% (computed as the average of DPU yield for Financial Year 2024, Financial Year 2025 and six months ended September 30, 2025 (annualized), with DPU yield being computed as DPU divided by the average traded price of the Units on the BSE), with a total XIRR of 25.09%, according to the Industry Report. For further details, please see "*Distributions*" on page 385.

Significant Factors Affecting Our Financial Condition and Results of Operations

Traffic volumes and toll collections

Our results of operations are substantially dependent on our portfolio of toll-based road assets, with revenue generated from toll assets contributing to 81.35% and 85.50% of our revenue from operations for the six months ended September 30, 2025 and the Financial Year 2025, respectively. The operation of toll roads principally involves toll collection and maintenance. Toll revenues generated by each toll road asset will be influenced by factors such as traffic volume by vehicle category, vehicle weight, applicable toll rates, and distance travelled. The volume of traffic on these assets is influenced by a range of macroeconomic, regional, and asset-specific factors, including national and state GDP growth, industrial and agricultural output, consumer spending, vehicle ownership trends, and patterns of commodity movement. Other important factors include seasonal variations, regional connectivity, the quality of competing routes, fuel prices, and toll rate revisions as notified by applicable concessioning authorities, including the National Highways Authority of India (the "**NHAI**").

During the Financial Year 2025, our toll portfolio demonstrated resilient performance, supported by a favourable economic environment and continued industrial expansion along key corridors. Weighted average daily traffic across our toll assets increased by approximately 5.85% year-on-year, while average daily tollable traffic stood at 34,629 Passenger Car Units ("**PCUs**"). This translated into toll revenue growth of approximately 8.00% year-on-year, driven by both higher traffic volumes and an improved mix of commercial vehicle categories. In the six months ended September 30, 2025, our portfolio continued to exhibit strong momentum, with a 6.7% year-on-year increase in traffic volumes and a 10.00% increase in toll revenues compared to the six months ended September 30, 2024.

According to the Traffic Reports, several of our assets lie on nationally significant highway corridors, including sections of the North–South Corridor (NH-44) and key stretches that form part of the Delhi–Agra–Jaipur Golden Triangle, while others are located on important east–west and regional freight routes. The Traffic Consultants noted that these corridors carry a mix of long-distance freight, including construction materials, petroleum products, agricultural produce, manufactured goods and essential commodities, alongside substantial passenger movement driven by commuting, inter-city travel and tourism. Across individual assets, the Traffic Reports highlight the presence of industrial clusters, agricultural belts, cross-border trade flows and major urban centres, which together support sustained traffic volumes and long-term corridor relevance. This diversity limits concentration risk and aligns our revenues with multiple segments of the real economy. For example, roads serving industrial regions such as Sikandrabad and Aligarh carry significant volumes of construction materials, manufactured goods and metals, while other corridors (including long-distance routes such as Farakka–Raiganj and the southern NH-44 stretches) carry a mix of passenger traffic, tourism movements and long-haul freight. The resulting portfolio traffic mix, with approximately 72.00% passenger and 28.00% commercial vehicles (on a weighted-average basis, based on traffic data from the Traffic Reports), provides a stable base that responds positively to both consumption- and investment-led growth.

In recent years, we have observed a positive elasticity between traffic growth and regional GDP. For example, the Ghaziabad–Aligarh Expressway (GAEPL) and Farakka–Raiganj Highways (FRHPL) corridors benefited from increased freight volumes following industrial expansion in nearby clusters. The completion of six-laning projects and the elimination of bottlenecks along NH91 and other corridors further enhanced service levels and contributed to traffic growth. Our operational performance also reflects improvements in tolling efficiency, supported by the widespread adoption of Electronic Toll Collection (through FASTag), which accounted for approximately 96.00% of transactions across our plazas in the six months ended September 30, 2025.

While the long-term trend in traffic growth remains positive (according to the Traffic Reports), performance may vary across assets and time periods due to external factors, such as regional administrative disruptions or temporary diversions during construction. Longer-term factors include the commissioning of alternate routes and expressways such as the Ganga Expressway and the Shamli–Gorakhpur Expressway, which may divert a portion of through traffic from certain corridors.

In summary, the performance of our toll portfolio and, therefore, our overall results of operations, depends on sustained economic growth, vehicle movement across key industrial and consumption corridors, and continued efficiency in tolling operations. A sustained slowdown in macroeconomic activity, changes in traffic composition, or the development of competing routes could adversely affect toll collections and the results of our operations, while improvements in industrial output, logistics integration, and regional connectivity are expected to drive steady growth in toll revenue over the medium- to long-term. Also see "*Risk Factors – Our toll collections and traffic volumes are subject to uncertainties, including competing roads, exemptions, toll leakage, changes in vehicle mix, and government directives, which could adversely affect our business, results of operations, financial condition and cash flows*" on page 91.

Portfolio composition and acquisition of new assets

Our results of operations are significantly influenced by the composition and scale of our portfolio, as well as the timing and performance of asset acquisitions and integrations. As an InvIT operating in the road sector, our income profile is determined by the mix of toll-based and annuity-based projects within the portfolio, each with distinct cash flow characteristics, revenue visibility, and operating cost profiles. Also see "*Our Business – Our Existing Portfolio*" on page 284.

Since privately listing on the Stock Exchanges in April 2023, we have expanded our portfolio from 18 to 27 operating road assets, increasing our Enterprise Value/AUM from ₹236,807.96 million at the time of listing to ₹365,199.18 million as of September 30, 2025. This expansion reflects the implementation of our calibrated growth strategy of acquiring operating, de-risked assets from the Cube Group and select third parties, while maintaining conservative leverage and prioritizing accretive transactions. Our Existing Portfolio now spans approximately 2,005 kilometres (8,754* lane kilometres) across 12 Indian states and one union territory, providing us with broad geographic and economic diversification. Several of our assets are located in contiguous or clustered regions, such as the Madurai–Kanyakumari corridor, Uttar Pradesh–Delhi belt, and South Andhra cluster, which enables optimized manpower planning, centralized procurement, and standardized O&M practices.

** This is represented as 8,816 kms in the Industry Report which is prior to descoping adjustments.*

Further, we have completed several strategic acquisitions that enhanced our portfolio since listing, including:

- the acquisition of six HAM SPVs, namely, Borgaon Watambare Highways Private Limited, Mangalwedha Solapur Highways Private Limited, Mangloor Highways Private Limited, Srirangam Infra Private Limited, Shankarampet Projects Private Limited and Tirumala Highways Private Limited;

- the acquisition of N.A.M. Expressway Private Limited ("**NAMEPL**"), a 212.9 km toll road connecting Andhra Pradesh and Telangana, financed through India's first sustainability-linked bond in the road sector, raising ₹8,600.00 million from the IFC; and

- the subsequent acquisition of two annuity-based projects, Quazigund Expressway Private Limited and Jammu Udhampur Highway Private Limited, from the National Investment and Infrastructure Fund in June 2025, with a combined enterprise value of approximately ₹33,464.41 million.

The integration of annuity and HAM assets enhances revenue stability, reduces exposure to short-term traffic volatility, and improves the predictability of our net distributable cash flows.

The timing of acquisitions and the pace of capital deployment are critical determinants of our consolidated performance. Newly acquired assets typically contribute only partially in their first reporting period due to transaction-closing timelines, integration costs, and the harmonization of accounting and maintenance practices. In the Financial Year 2025, for instance, our consolidated income reflected only partial-period contributions from the HAM SPV and NAMEPL acquisitions, while acquisition-related financing and transaction costs were fully recognised in the same period. Over time, upon these assets stabilizing and achieving full-period operations, their contribution to cash flow and distributions is expected to increase.

Our growth strategy is guided by capital allocation and the evaluation of assets under our ROFO Agreement with our Sponsor. These arrangements provide a visible pipeline of future acquisitions and refinancing opportunities, enabling us to pursue selective expansion while maintaining portfolio quality. The acquisition of the ROFO Assets and other third-party opportunities will depend on prevailing market conditions, regulatory approvals, and our targeted leverage levels. We also intend to acquire the Proposed Portfolio Assets prior to the completion of the Offer. As of September 30, 2025, our Net Borrowing ratio stood at 47.37%, providing adequate headroom to fund future acquisitions and capital expenditure.

Going forward, our results of operations will depend on the successful integration and operation of these newly acquired assets, the continued execution of our M&A pipeline, and our ability to identify and acquire accretive assets that meet our investment criteria. While expansion increases our scale and diversification, it may also result in short-term increases in borrowing costs, transaction expenses, and integration overheads. Also see "*Risk Factors – There can be no assurance that we will be able to successfully undertake future acquisitions of road assets or efficiently manage the infrastructure road assets we have acquired or may acquire in the future*" on page 106.

Operating and maintenance costs

Our results of operations are significantly influenced by the level, timing, and efficiency of operating and maintenance ("**O&M**") expenditure incurred across our portfolio assets. These costs primarily comprise operation of toll plazas, routine and periodic maintenance, safety management, and administrative expenses related to the Existing Portfolio Assets and the Project Manager. O&M expenditure directly affects our EBITDA margins, which stood at 73.20% and 68.91% in the six months ended September 30, 2025 and the Financial Year 2025, respectively, reflecting our focus on disciplined cost management and lifecycle-based maintenance practices.

Operating costs vary by asset type, concession model, and maintenance cycle stage. For toll assets, major cost components include toll collection system management, manpower and security costs, periodic and emergency repairs, and technology-related expenses such as surveillance, communication, and toll automation. For hybrid annuity and annuity assets, the O&M framework is governed by fixed-payment contracts, ensuring predictable cost outflows and stable margins. The diversity of our asset base, therefore, provides a natural hedge against volatility in individual cost categories.

We actively manage O&M costs through centralized procurement, data-driven maintenance planning, and a mix of in-house oversight and outsourced execution. Our Project Manager employs a lifecycle management strategy that emphasizes preventive and predictive maintenance over reactive interventions. Advanced technologies such as Road-Aid, HiRate, and the Structure Audit App enable real-time monitoring of road condition, inventory, and performance. These digital platforms standardise inspection protocols, generate data-driven ratings, and enable faster decision-making on maintenance priorities. The adoption of such systems across our portfolio has materially reduced unplanned interventions and improved asset reliability.

A significant component of our maintenance costs is material procurement, particularly bitumen, cement, and aggregates, which are subject to commodity price fluctuations. To mitigate this, the Project Manager operates a centralised procurement system with long-term supply arrangements, quality-testing laboratories, and logistics tracking to ensure consistent supply and cost control. Our dedicated bitumen procurement team sources high-quality polymer-modified bitumen and highly modified asphalt blends to enhance pavement performance and reduce lifecycle costs. We also deploy sustainable materials, such as Reclaimed Asphalt Pavement and cold in-place recycling, which reduce both costs and the carbon footprint while extending pavement life.

The Project Manager's centralized O&M oversight team continuously benchmarks asset-level performance and cost structures against comparable assets within the portfolio. Cost efficiency is also achieved through standardized contract structures, regional clustering of maintenance operations, and joint procurement across SPVs. For example, in southern India, contiguous assets along the Madurai–Kanyakumari corridor share plant, equipment, and manpower resources, enabling better cost absorption and productivity gains.

While operating and maintenance costs are expected to increase moderately in absolute terms, in line with inflation and portfolio expansion, their proportion to total revenue is expected to remain stable due to ongoing efficiency improvements, technology adoption, and economies of scale. Over the medium term, our continued focus on predictive maintenance, material innovation, and digital process integration is expected to preserve our high operating margins and support consistent cash generation. Also see "*Risk Factors – We may be subject to increases in costs, including operation and maintenance costs, which we cannot recover by increasing toll fees or annuity income under the relevant concession agreements*" on page 100.

Financing costs, refinancing activity and leverage management

Our consolidated results of operations are influenced by the level and structure of our borrowings, the cost and tenor of our debt and the efficiency with which the Investment Manager manages refinancing and leverage across the Trust and its Project SPVs. Financing costs primarily include interest expenses on bank loans and listed non-convertible debentures, as well as transaction and arrangement fees related to refinancing, sustainability-linked financing, and working capital facilities.

We follow a conservative approach to capital management aimed at maintaining stable cash flows and preserving our credit quality. We actively monitor leverage metrics and maintain internal thresholds well within the regulatory limits prescribed under the InvIT Regulations. As of September 30, 2025, our Borrowings stood at ₹179,923.44 million, translating into a Net Borrowing ratio of 47.37%, which provides adequate headroom for future acquisitions and capital expenditure. We are rated 'Ind AAA/Stable' by India Ratings & Research Private Limited on August 14, 2025, 'ICRA AAA (Stable)' by ICRA Limited on September 1, 2025, and 'CRISIL AAA/Stable' by CRISIL Ratings Limited on February 10, 2026. As of September 30, 2025, 28.63% of our consolidated borrowings were at fixed rates, compared to 21.19% as of March 31, 2025 and 11.16% as of March 31, 2024. Our financing strategy remains focused on achieving an optimal balance between fixed- and floating-rate exposures to maintain resilience across rate cycles.

Our refinancing initiatives have also consistently reduced the weighted average cost of debt, from 8.23% as of June 30, 2023 (the first quarter of our listing) to 7.75% as of September 30, 2025. During the Financial Year 2025, we raised ₹48,790 million of long-term debt through a combination of term loans and fixed-coupon NCDs to refinance project-level borrowings associated with newly acquired HAM assets and the NAMEPL project. In April 2025, we further issued two tranches of AAA-rated secured NCDs aggregating to ₹11,520.00 million, with three-year and seven-year tenors and coupons of 7.25% and 7.30%, respectively, both to institutional investors such as insurance companies, pension funds, and mutual funds.

Going forward, the trajectory of financing costs will depend on macroeconomic conditions, movements in benchmark interest rates, and market demand for infrastructure credit instruments. While the near-term interest rate environment remains stable, we continue to manage exposure through active duration matching, hedging where appropriate and prudent liquidity management. Sustained refinancing activity, disciplined leverage management, and diversification of funding sources are expected to support predictable interest coverage and stable distributions to Unitholders. Also see "*Risk Factors – Our ability to refinance our debt and maintain access to long-term funding is crucial to our business, and adverse conditions in the debt markets, regulatory restrictions or downgrades in our credit ratings could adversely affect our liquidity and consequently our business, results of operations, financial condition and ability to make distributions*" on page 95.

Major maintenance and lifecycle management

Our financial performance is affected by the timing, cost, and scope of major maintenance ("**MM**") activities across our portfolio as well as by the continued adoption of advanced technologies that extend asset life and reduce lifecycle costs. Major maintenance is typically performed every five to seven years, depending on pavement condition, traffic loads, and concession requirements. It comprises large-scale resurfacing, structural rehabilitation, and restoration of pavement quality, safety furniture, and signage. These costs are cyclical and can result in year-on-year variations in operating margins and net distributable cash flows depending on the number of projects undergoing maintenance in a given period.

We manage our portfolio using a lifecycle-based asset management approach that integrates predictive modelling, material innovation, and digital monitoring systems. The Project Manager undertakes engineering planning and quality assurance under standardized operating procedures to ensure consistency across all assets. Preventive maintenance is prioritized over corrective interventions, minimizing traffic disruptions and unplanned expenditures. This approach has allowed us to maintain a high level of serviceability while preserving strong operating margins across cycles.

The timing of MM cycles across multiple SPVs can therefore influence consolidated performance, with higher-activity years temporarily reducing reported EBITDA and net cash flows on toll assets. We maintain MM provisions at the SPV level and plan major works in a phased manner to smooth expenditure over the concession lifecycle.

The integration of digital monitoring and innovative materials has also produced measurable cost savings. Standardization of O&M contracts and supply arrangements across clusters, such as the southern corridor comprising the Madurai–Kanyakumari, Kanyakumari–Etturavattam, and Salaipudhur–Madurai assets, has lowered procurement and execution costs while maintaining quality consistency. Continuous feedback from inspection data and field performance informs the recalibration of maintenance intervals, improving capital efficiency and asset longevity. Also see "*Risk Factors – Our concession agreements contain mandatory capacity augmentation and major maintenance obligations, which could increase our costs and reduce traffic during works, thereby adversely affecting our business, results of operations, financial condition and cash flows*" on page 94.

Macroeconomic, regulatory and policy environment

Our performance is influenced by overall macroeconomic conditions and infrastructure investment trends in India. The growth of toll and annuity revenues is correlated with national and regional GDP, industrial activity, consumption, and logistics demand. According to the Industry Report, India's real GDP grew by 6.5% in the Financial Year 2025, supported by public investment, resilient consumption, and strong services exports, and is expected to maintain a growth trajectory of 6-7% between the Financial Years 2026 and 2030. Rising manufacturing and e-commerce activity, along with expanding trade flows, continues to support traffic growth on key freight corridors where our portfolio is concentrated. The direction of inflation, fuel prices, and interest rates also affects travel costs and borrowing levels, which can influence operating margins and cash generation.

Our Existing Portfolio Assets operate under concession agreements with the NHAI or relevant state authorities, and the Trust is governed by the InvIT Regulations and the circulars issued thereunder. These frameworks determine toll revisions, leverage thresholds, and distribution policies that shape our results of operations. While we believe that India's policy environment remains stable and supportive of infrastructure investment, changes in toll calculation factors, fiscal priorities, or regulatory requirements could affect cash flows.

Key Components of our Statement of Profit and Loss

The key components of our statement of profit and loss are described below:

Income

Total income consists of revenue from operations, realized/unrealized gain on mutual funds, interest on fixed deposits and other income.

Revenue from operations. Revenue from operations consists of revenue from toll fee collections, construction income, operation and maintenance income, finance income on annuity receivables, revenue from additional work (net of related cost), renewals and overlay income, and claims for compensation from NHAI.

Realized/unrealized gain on mutual funds. Realized/unrealized gain on mutual funds consists of capital gains on redemption and gains recognized at FVTPL on investments in mutual funds.

Interest on fixed deposits. Interest on fixed deposits consists of interest income generated from fixed deposits.

Other income. Other income consists of interest on income tax refund, income from the sale of scrap, insurance claim received, profit on the sale/write off of property, plant and equipment (net), liabilities no longer required written back / remission in loan liability and miscellaneous income.

Expenses

Total expenses consist of cost of construction, operation and maintenance expenses, employee benefits expense, depreciation and amortization expense, legal & professional fees, finance costs, investment management fees, project management fees, trustee fees, custodian fees, insurance expense, audit fees (including for subsidiaries), valuation expense, impairment charge towards impairment of intangible assets, and other expenses.

Cost of construction: Cost of construction refers primarily to the costs incurred for construction undertaken to expand highway stretches mandated under the Concession Agreement.

Operation and maintenance expenses: Operation and maintenance expenses consist of periodic major maintenance expenses, repair and maintenance of carriageway, toll operation expenses, security charges, vehicle hire charges, power and fuel, route patrolling expenses, professional charges, site and miscellaneous expenses.

Employee benefits expense. Our employee benefits expenses consist of salaries and wages, gratuity expenses, contributions to provident and other funds, and staff welfare expenses.

Depreciation and amortization expenses. Our depreciation and amortization expenses consist of depreciation of property, plant and equipment, depreciation of investment property and amortization of intangible assets.

Legal and professional fees. Our legal and professional fees consist of fees for internal audit, traffic and technical studies, credit ratings, tax advisory and support, due diligence, litigation and legal opinions, environmental studies, secretarial audit and advisory, financial reporting tools and ancillary services, and others.

Finance costs. Our finance costs consist of interest on financial liabilities classified at amortized cost (term loans, non-convertible debentures, and optionally convertible debentures), interest on delayed payment to MSME vendors, other interest costs, unwinding of interest (on processing fees, on major maintenance / infrastructure upgrade, and on unsecured loan) and other borrowing costs. Other borrowing costs include bank guarantee commission, fixed arranger fees, and others.

Investment Management Fees. Our investment management fees refer to the fees we pay to the investment manager under the investment management agreement dated July 24, 2024.

Project Management Fees. Our project management fees refer to the fees we pay to the project manager pursuant to the project implementation and management agreement dated January 2, 2023.

Trustee Fees. Our trustee fees refer to fees paid to the Trustee.

Custodian Fees. Our custodian fees refer to fees paid to the custodian.

Insurance Expense. Our insurance expense refers to costs incurred to obtain and maintain insurance policies for our business, including comprehensive or commercial general liability, workers' compensation, group medical, and industrial all-risk insurance.

Audit Fees (including subsidiaries). Our audit fees consist of payments to auditors for their audit services, other services such as certification, and out-of-pocket expenses.

Valuation Expense. Our valuation expense refers to fees paid to the valuer.

Impairment Charge Towards Impairment of Intangible Assets. Our impairment charge for intangible assets refers to impairment losses recognised when the carrying amount of intangible assets exceeds their recoverable amount.

Other expenses. Our other expenses consist of expenses relating to rent, rates and taxes, advertising expenses, travelling and conveyance, printing and stationary, communication expenses, penalty to NHAI for delay in execution of major maintenance expenses, impairment loss allowance on trade receivables/unbilled revenues, doubtful advance/balances written off, allowance for doubtful advances, bad debts written off (net of adjustments from impairment loss allowance on trade receivables), information technology related cost, royalty expenses, net loss on foreign currency transaction, corporate social responsibility expense, loss on write-off of property, plant and equipment (net), and miscellaneous expenses.

Tax expenses

Tax expenses consist of current tax, tax for earlier years, and deferred tax.

Results of Operations

The following table sets forth select financial data from our Audited Consolidated Financial Statements for the six months ended September 30, 2025 and 2024 and the Financial Years 2025, 2024 and 2023, the components of which are also expressed as a percentage of total income for such periods and years:

Particulars	For the six months ended September 30,			
	2025		2024	
	(₹ in million)	*(% of total income)*	*(₹ in million)*	*(% of total income)*
Income				
Revenue from operations	19,958.97	96.65%	16,115.97	95.41%
Other income	692.62	3.35%	774.58	4.59%
Total income (I)	**20,651.59**	**100.00%**	**16,890.55**	**100.00%**
Expenses				
Cost of construction	112.72	0.55%	411.81	2.44%
Operation and maintenance expenses	3,870.75	18.74%	3,709.25	21.96%
Employee benefits expense	346.01	1.68%	244.44	1.45%
Finance costs	7,471.31	36.18%	5,372.68	31.81%
Depreciation and amortisation expense	7,084.72	34.31%	6,397.72	37.88%
Other expenses	1,205.74	5.84%	881.96	5.22%
Total expenses (II)	**20,091.25**	**97.29%**	**17,017.86**	**100.75%**
Profit / (Loss) before tax (III = I - II)	**560.34**	**2.71%**	**(127.31)**	**(0.75%)**
Tax expense/(income)				
Current tax	221.45	1.07%	164.29	0.97%
Tax for earlier period	4.52	0.02%	-	-
Deferred tax	(72.48)	(0.35%)	(31.24)	(0.18%)
Total tax expenses/(income) (IV)	**153.49**	**(0.35%)**	**133.05**	**(0.18%)**
Profit / (Loss) for the period (V = III - IV)	**406.85**	**1.97%**	**(260.36)**	**(1.54%)**

Six months ended September 30, 2025 compared to the six months ended September 30, 2024

Our results of operations for the six months ended September 30, 2025, compared to the six months ended September 30, 2024, were primarily driven by the movements set out below.

Total Income. Our total income increased by 22.27% to ₹20,651.59 million for the six months ended September 30, 2025, from ₹16,890.55 million for the six months ended September 30, 2024, primarily due to higher revenue from operations.

Revenue from Operations. Our revenue from operations increased by 23.85% to ₹19,958.97 million for the six months ended September 30, 2025, from ₹16,115.97 million for the six months ended September 30, 2024, primarily due to (i) increase in revenue from toll fee collections to ₹16,237.33 million for the six months ended September 30, 2025 from ₹13,332.09 million for the six months ended September 30, 2024, mainly on account of (a) an increase in toll revenue arising from revision in toll rates and higher traffic volumes during the six months ended September 30, 2025, (b) the acquisition of NAMEPL on February 12, 2025; (ii) increase in income from annuity assets to ₹2,900.86 million for six months ended September 30, 2025 from ₹1,395.44 million for the six months ended September 30, 2024, mainly on account of the acquisition of QEPL and JUHPL on June 12, 2025; (iii) increase in income from claims from TNSTC amounting to ₹708.06 million for the six months ended September 30, 2025. These increases were partially offset by decrease in construction income and income from renewals and overlay amounting to ₹299.09 million and ₹974.82 million, respectively, on account of reduced six-laning work required to be undertaken in GAEPL and no MMR work required to be undertaken in APEPL in the six months ended September 30, 2025 in comparison to six months ended September 30, 2024.

Other income. Other income decreased by 10.58% to ₹692.62 million for the six months ended September 30, 2025, from ₹774.58 million for the six months ended September 30, 2024, primarily due to decreases in (i) net gain on investments measured at fair value through profit and loss, which declined by 69.11% to ₹57.67 million from ₹186.72 million and (ii) net gain on sale of mutual funds, which declined by 23.71% to ₹235.21 million from ₹308.32 million, for the six months ended September 30, 2025, compared to the corresponding period in 2024. These decreases were partially offset by increases in (i) liabilities no longer required to be written back, which increased by 45.93% to ₹42.26 million from ₹28.96 million, and (ii) interest on financial assets carried at amortised cost – bank deposits, which increased by 38.08% to ₹288.75 million from ₹209.12 million.

Total expenses. Our total expenses increased by 18.06% to ₹20,091.25 million for the six months ended September 30, 2025, from ₹17,017.86 million for the six months ended September 30, 2024, primarily due to increases in employee benefits expense, finance costs, depreciation and amortization expense, other expenses and operation and maintenance expenses.

Cost of construction. Our cost of construction decreased by 72.63% to ₹112.72 million for the six months ended September 30, 2025 from ₹411.81 million for the six months ended September 30, 2024, primarily due to a decrease in the construction work undertaken in GAEPL due to substantial completion of six-laning works during the six months ended September 30, 2024, as compared to the relatively small proportion of six-laning construction work left to be undertaken in GAEPL during the six months ended September 30, 2025.

Operation and maintenance expenses. Operation and maintenance expenses increased by 4.35% to ₹3,870.75 million for the six months ended September 30, 2025 from ₹3,709.25 million for the six months ended September 30, 2024, primarily due to increases in (i) repair and maintenance of carriageway to ₹1,094.75 million for the six month ended September 30, 2025 from ₹779.86 million for the six months ended September 30, 2024, mainly on account of the acquisition of NAMEPL, QEPL and JUHPL on February 12, 2025 and June 12, 2025, respectively; (ii) toll operation expenses mainly on account of acquisition of NAMEPL and increase in minimum wages rate; and (iii) vehicle hiring, power and fuel charges. These increases were partially offset by a decrease in periodic major maintenance expenses.

Employee benefits expense. Employee benefits expense increased by 41.55% to ₹346.01 million for the six months ended September 30, 2025 from ₹244.44 million for the six months ended September 30, 2024, primarily due to increases in salary and wages to ₹288.98 million for the six month ended September 30, 2025 from ₹223.12 million for the six months ended September 30, 2024, mainly on account of (i) the acquisition of the NAMEPL, QEPL and JUHPL on February 12, 2025 and June 12, 2025, respectively, leading to an overall increase in our employee strength; and (ii) annual salary increments for employees. Our employee headcount increased to 983 as of September 30, 2025 from 891 as of September 30, 2024.

Finance costs. Finance costs increased by 39.06% to ₹7,471.31 million for the six months ended September 30, 2025, as compared to ₹5,372.68 million for the six months ended September 30, 2024, primarily due to (i) an increase in interest on term loans to ₹5,112.96 million for the six months ended September 30, 2025 from ₹4,406.61 million for the corresponding prior period; and (ii) an increase in interest on non-convertible debentures to ₹1,654.27 million for the six months ended September 30, 2025 from ₹647.48 million for the corresponding prior period, both arising due to higher term loans and non-convertible debentures availed to refinance the external debt of NAMEPL, QEPL and JUHPL, as well as to fund ongoing capital expenditure of our business; and (iii) increased due to interest expense of ₹207.13 million incurred on account of the issuance of Commercial Paper during the period.

Depreciation and amortization expense. Depreciation and amortization expense increased by 10.74% to ₹7,084.72 million for the six months ended September 30, 2025 from ₹6,397.72 million for six months ended September 30, 2024, primarily due to (i) the acquisition of the NAMEPL on February 12, 2025; (ii) the acquisition of QEPL and JUHPL on June 12, 2025; and (iii) the impact of purchase price allocations at the consolidated level for the NAMEPL, QEPL and JUHPL acquired.

Other expenses. Other expenses increased by 36.71% to ₹1,205.74 million for the six months ended September 30, 2025, from ₹881.96 million for the six months ended September 30, 2024. This increase was primarily due to increases in (i) project management fees by 47.09% to ₹444.88 million for the six month ended September 30, 2025 from ₹302.45 million for the six months ended September 30, 2024 and increase in investment management fees by 29.32% to ₹205.20 million for the six months ended September 30, 2025 from ₹158.67 million for the six months ended September 30, 2024, primarily due to (a) the acquisition of NAMEPL with effect from February 12, 2025; (b) the acquisition of QEPL and JUHPL with effect from June

12, 2025; and (c) an increase in toll revenue pursuant to toll rate revisions during the six months ended September 30, 2025; (ii) custodian fees by 66.50% to ₹4.00 million for six months ended September 30, 2025, from ₹2.40 million for six months ended September 30, 2024; (iii) audit fees (including for subsidiaries) by 19.42% to ₹34.35 million for the six months ended September 30, 2025, from ₹28.76 million for the six months ended September 30, 2024, primarily due to the audit fees incurred for NAMEPL, QEPL and JUHPL, which were acquired after the six months ended September 30, 2024; (iv) valuation expense by 26.84% to ₹5.41 million for the six months ended September 30, 2025, from ₹4.26 million for the six months ended September 30, 2024; (v) miscellaneous expenses to ₹40.75 million for the six months ended September 30, 2025 from ₹5.32 million for the six months ended September 30, 2024; (vi) increase in rent expense by 70.95% to ₹3.59 million for the six months ended September 30, 2025 from ₹2.10 million for the six months ended September 30, 2024; and (vii) corporate social responsibility expense by 38.23% to ₹32.00 million for the six months ended September 30, 2025 from ₹23.15 million for the six months ended September 30, 2024.

These increases were partially offset by decreases in (i) net loss on foreign currency transactions, which declined to nil from ₹0.08 million, (ii) loss on write-off of property, plant and equipment, which declined by 74.29% to ₹0.09 million from ₹0.35 million, (iii) insurance expense, which declined by 6.56% to ₹107.33 million from ₹114.86 million, (iv) legal and professional fees, which declined by 4.51% to ₹161.58 million from ₹169.21 million, and (v) rates and taxes, which declined by 3.02% to ₹10.61 million from ₹10.94 million, for the six months ended September 30, 2025, compared to the corresponding period in 2024

Tax expenses. Total tax expenses increased by 15.36% to ₹153.49 million for the six months ended September 30, 2025, from expenses of ₹133.05 million for the six months ended September 30, 2024. For the six months ended September 30, 2025, we incurred a current tax of ₹221.45 million, tax for earlier years of ₹4.52 million and earned a deferred tax credit of ₹72.48 million. For the six months ended September 30, 2024, we incurred a current tax of ₹164.29 million and a deferred tax credit of ₹31.24 million. The changes in our deferred tax credits were primarily due to the JUHPL acquisition.

Profit / (Loss) for the period. As a result of the foregoing, our profit/(loss) for the period increased significantly to a profit for the period of ₹406.85 million for the six months ended September 30, 2025, from a loss for the period of ₹260.36 million for the six months ended September 30, 2024.

Particulars	Financial Year					
	2025		2024		2023	
	(₹ in million)	*(% of total income)*	*(₹ in million)*	*(% of total income)*	*(₹ in million)*	*(% of total income)*
Income						
Revenue from operations	33,071.44	95.77%	29,161.37	94.86%	-	NA
Other income	1,460.08	4.23%	1,579.68	5.14%	-	NA
Total income (I)	**34,531.52**	**100.00%**	**30,741.05**	**100.00%**	**-**	NA
Expenses						
Cost of construction	634.14	1.84%	4,025.77	13.10%	-	NA
Operation and maintenance expenses	7,554.62	21.88%	5,046.42	16.42%	-	NA
Employee benefits expense	514.68	1.49%	429.66	1.40%	-	NA
Finance costs	11,171.01	32.35%	8,731.29	28.40%	-	NA
Depreciation and amortization expense	13,129.12	38.02%	11,825.72	38.47%	-	NA
Impairment of intangible assets	-	-	5,871.87	19.10%	-	NA
Other expenses	2,031.08	5.88%	1,678.77	5.46%	277.88	NA
Total expenses (II)	**35,034.65**	**101.46%**	**37,609.50**	**122.34%**	**277.88**	NA
(Loss) before tax (III = I - II)	**(503.13)**	**(1.46%)**	**(6,868.45)**	**(22.34%)**	**(277.88)**	NA
Tax expense/(income)						
Current tax	367.11	1.06%	287.41	0.93%	-	NA
Tax for earlier years	18.54	0.05%	5.40	0.02%	-	NA
Deferred tax	(531.58)	(1.54%)	(102.11)	(0.33%)	-	NA
Total tax expense/(income) (IV)	**(145.93)**	**(1.54%)**	**190.70**	**(0.33%)**	**-**	NA
(Loss) for the year (V = III - IV)	**(357.20)**	**(1.03%)**	**(7,059.15)**	**(22.96%)**	**(277.88)**	NA

Financial Year 2025 compared to Financial Year 2024

Our results of operations for the Financial Year 2025 compared with the Financial Year 2024 were primarily driven by the movements set out below.

Total Income. Our total income increased by 12.33% to ₹34,531.52 million for the Financial Year 2025, from ₹30,741.05 million for the Financial Year 2024, primarily due to higher revenue from operations.

Revenue from Operations. Our revenue from operations increased by 13.41% to ₹33,071.44 million for the Financial Year 2025, from ₹29,161.37 million for the Financial Year 2024, primarily due to an increase in revenue from toll fee collections to ₹28,275.30 million for the Financial Year 2025 from ₹24,715.17 million for the Financial Year 2024, mainly on account of (i) an increase in toll revenue arising from revision in toll rates and higher traffic volumes during the Financial Year 2025, (ii) the acquisition of toll assets on April 17, 2023, which resulted in a full-year impact on revenue from operations for the Financial Year 2025, as compared to the period between April 17, 2023 to March 31, 2024 for the Financial Year 2024, and (iii) the acquisition of N.A.M Expressway Private Limited on February 12, 2025.

The increase in revenue from operations was also due to increases in (i) operation and maintenance income to ₹1,862.68 million for the Financial Year 2025 from ₹294.65 million for the Financial Year 2024, and (ii) finance income on annuity receivables to ₹1,106.90 million for the Financial Year 2025 from ₹105.68 million for the Financial Year 2024, both of which were on account of the acquisition of the HAM SPVs on June 4, 2024. Further, the increase in revenue from operations was also on account of an increase in renewals and overlay income to ₹1,166.12 million for the Financial Year 2025 from nil for the Financial Year 2024, on account of major maintenance work undertaken in APEPL in accordance with the financial asset model under applicable accounting standards.

Other income. Other income decreased by 7.57% to ₹ 1,460.08 million for the Financial Year 2025 from ₹1,579.68 million for the Financial Year 2024 primary due to decreases in (i) realized/unrealized gain on mutual funds by 17.73% to ₹835.36 million for the Financial Year 2025 from ₹1,015.38 million for the Financial Year 2024, primarily due to lower closing cash balances as at March 31, 2025 and lower average cash balances during the Financial Year 2025 following the utilization and distribution of funds to Unitholders, which resulted in a corresponding decrease in income from investments during the Financial Year 2025; and (ii) interest on fixed deposits by 7.29% to ₹403.34 million for the Financial Year 2025 from ₹435.04 million for the Financial Year 2024, primarily due to lower closing cash balances as at March 31, 2025 and lower average cash balances during the Financial Year 2025, following the utilization and distribution of funds to Unitholders, which resulted in a corresponding decrease in income from investments during the Financial Year 2025.

The decreases were partially offset by an increase in insurance claims received to ₹76.47 million for the Financial Year 2025 from ₹24.57 million for the Financial Year 2024. The increase in other income is also due to an increase in interest on income tax refund to ₹30.99 million for the Financial Year 2025 from ₹8.28 million for the Financial Year 2024.

Total expenses. Our total expenses decreased by 0.16% to ₹35,034.65 million for the Financial Year 2025, from ₹37,609.50 million for the Financial Year 2024, primarily due to lower construction costs.

Cost of construction. Our cost of construction decreased by 84.25% to ₹634.14 million for the Financial Year 2025 from ₹4,025.77 million for the Financial Year 2024, primarily due to the construction work undertaken in GAEPL being substantially completed during the Financial Year 2024, as compared to the relatively small proportion of six-laning construction work left to be undertaken in GAEPL during the Financial Year 2025.

Operation and maintenance expenses. Operation and maintenance expenses increased by 49.70% to ₹7,554.62 million for the Financial Year 2025 from ₹5,046.42 million for the Financial Year 2024, primarily due to an increase in periodic major maintenance expense to ₹3,298.54 million for the Financial Year 2025 from ₹1,663.92 million for the Financial Year 2024, mainly on account of (i) higher maintenance expenses recognized in relation to APEPL during the Financial Year 2025, as no provision was made in APEPL for future major maintenance cycles of annuity assets beyond Financial Year 2025, (ii) higher maintenance expenses recognized in relation to Ghaziabad Aligarh Expressway Private Limited, DA Toll Road Private Limited, Jaipur Mahua Tollway Private Limited, Nelamangala Devihalli Expressway Private Limited and Walayar Vadakkencherry Expressways Private Limited during the Financial Year 2025, as maintenance work towards these Project SPVs were only partially completed during the Financial Year 2024, and (iii) an increase in provision for maintenance expenses relating to N.A.M Expressway Private Limited, which was acquired on February 12, 2025.

The increase in operation and maintenance expenses was also on account of an increase in repair and maintenance of carriageway to ₹2,083.61 million for the Financial Year 2025 from ₹1,603.79 million for the Financial Year 2024, mainly on account of (i) the acquisition of the HAM SPVs on June 4, 2024, and (ii) the acquisition of toll assets on April 17, 2023, which resulted in a full-year impact on operation and maintenance expenses for the Financial Year 2025, as compared to the period between April 17, 2023 to March 31, 2024 for the Financial Year 2024.

Employee benefits expense. Employee benefits expense increased by 19.79% to ₹514.68 million for the Financial Year 2025 from ₹429.66 million for the Financial Year 2024, primarily due to an increase in salary and wages to ₹458.90 million for the Financial Year 2025 from ₹389.40 million for the Financial Year 2024, mainly on account of (i) the acquisition of the HAM SPVs on June 4, 2024, leading to an overall increase in our employee strength, (ii) the acquisition of toll assets on April 17, 2023, which resulted in a full-year impact on employee benefits expense for the Financial Year 2025, as compared to the period between April 17, 2023 to March 31, 2024 for the Financial Year 2024, and (iii) annual salary increments for employees. Our employee headcount increased to 955 as of March 31, 2025, from 802 as of March 31, 2024.

Depreciation and amortization expense. Depreciation and amortization expense increased by 11.02% to ₹13,129.12 million for the Financial Year 2025 from ₹11,825.72 million for Financial Year 2024, primarily due to (i) the acquisition of the HAM SPVs on June 4, 2024, (ii) the acquisition of toll assets on April 17, 2023, which resulted in a full-year impact on depreciation and amortization expense for the Financial Year 2025, as compared to the period between April 17, 2023 to March 31, 2024 for the Financial Year 2024, and (iii) the impact of purchase price allocations at the consolidated level for the HAM SPVs acquired during the Financial Year 2025.

Finance costs. Finance costs increased by 27.94% to ₹11,171.01 million for the Financial Year 2025 from ₹8,731.29 million for the Financial Year 2024, primarily due to (i) an increase in interest on financial liabilities classified at amortized cost for term loans to ₹9,123.24 million for the Financial Year 2025 from ₹7,672.86 million for the Financial Year 2024, and (ii) an increase in interest on financial liabilities classified at amortized cost for non-convertible debentures to ₹1,475.60 million for the Financial Year 2025 from ₹655.03 million for the Financial Year 2024, both of which were on account of an increase in term loans and non-convertible debentures availed at the Trust level, to refinance the external debt of HAM SPVs and to fund

ongoing capital expenditure of our business. The increase in finance costs was also due to an increase in other borrowing costs to ₹267.45 million for the Financial Year 2025, from ₹82.10 million for the Financial Year 2024, on account of higher interest expense incurred on borrowings related to the acquisition of HAM SPVs

Impairment charge towards impairment of intangible assets. Impairment charge towards impairment of intangible assets decreased significantly to nil for Financial Year 2025 from ₹5,871.87 million for Financial Year 2024, primarily due to impairment of intangible assets recognized during the Financial Year 2024, in relation to the following assets: Western UP Tollway Private Limited, Ghaziabad Aligarh Expressway Private Limited, Nelamangala Devihalli Expressway Private Limited, Farakka-Raigani Highways Private Limited and Lucknow-Raebareli Tollway Private Limited.

Other expenses. Other expenses increased by 20.98% to ₹ 2,031.08 million for the Financial Year 2025, from ₹1,678.77 million for Financial Year 2024, primarily due to increase in: (i) legal and professional fees by 24.94% to ₹356.19 million for the Financial Year 2025 from ₹285.09 million for Financial Year 2024, primarily due to a one-time professional fee incurred for detailed designs, traffic studies and cost studies, in relation to new projects during the Financial Year 2025; (ii) project management fees by 36.18% to ₹738.31 million for the Financial Year 2025 from ₹542.14 million for the Financial Year 2024 and investment management fees increased by 10.85% to ₹331.64 million for the Financial Year 2025 from ₹299.17 million for the Financial Year 2024 primarily due to (a) the acquisition of the HAM SPVs on June 4, 2024, (b) the acquisition of toll assets on April 17, 2023, which resulted in a full-year impact on project management fees for the Financial Year 2025, as compared to the period between April 17, 2023 to March 31, 2024 for the Financial Year 2024, and (c) an increase in toll revenue pursuant to toll rate revisions during the Financial Year 2025; (iii) custodian fees by 34.47% to ₹4.72 million for Financial Year 2025 from ₹3.51 million for Financial Year 2024; (iv) insurance expense by 1.06% to ₹220.04 million for the Financial Year 2025 from ₹217.74 million for the Financial Year 2024; (v) audit fees (including for subsidiaries) by 10.28% to ₹65.63 million for the Financial Year 2025 from ₹59.51 million for the Financial Year 2024, primarily due to the audit of the HAM SPVs, and NAMEPL which were acquired during the Financial Year 2025; (vi) rates and taxes by 93.65% to ₹22.87 million for the Financial Year 2025 from ₹11.81 million for the Financial Year 2024; (vii) corporate social responsibility expense by 70.34% to ₹26.59 million for the Financial Year 2025 from ₹15.61 million for the Financial Year 2024; and (viii) royalty expenses by 58.77% to ₹76.45 million for Financial Year 2025 from ₹48.15 million for Financial Year 2024.

These increases were partially offset by a decrease in valuation expense by 17.13% to ₹12.53 million for the Financial Year 2025 from ₹15.12 million for the Financial Year 2024, primarily attributable to lower valuation fees incurred for fewer assets acquired during the Financial Year 2025, compared to the Financial Year 2024.

Tax expenses. Tax expenses decreased by 336.63% to a credit of ₹145.93 million for the Financial Year 2025 from expenses of ₹190.70 million for the Financial Year 2024. For the Financial Year 2025, we incurred current tax of ₹367.11 million, tax for earlier years of ₹18.54 million and earned a deferred tax credit of ₹531.58 million. For the Financial Year 2024, we incurred current tax of ₹287.41 million, tax for earlier years of ₹5.40 million and earned a deferred tax credit of ₹102.11 million. The changes in our deferred tax credits were primarily due to (i) acquisition of HAM SPVs and NAMEPL; (ii) deferred tax assets created in MBEL and JMTPL on MAT credit entitlement and provision for major maintenance expenses; and (iii) reversal of deferred tax created on equity component of OCD in DATRPL.

Loss for the year. As a result of the foregoing, our loss for the year decreased by 94.94% to ₹357.20 million for the Financial Year 2025 from ₹7,059.15 million for the Financial Year 2024.

Financial Year 2024 compared to Financial Year 2023

For the Financial Year 2023, except for investment management fees, trustee fees, audit fees and other expenses, the amounts for the other line items, as set out in the table under "- *Results of Operations*" on page 395 above, was nil, as the Trust was only constituted in 2022 and acquired assets and was privately listed on the Stock Exchanges on April 19, 2023.

Total Income. Our total income for the Financial Year 2024 was ₹30,741.05 million, and comprised revenue from operations, realized/unrealized gain on mutual funds, interest on fixed deposits and other income.

Revenue from Operations. Our revenue from operations for the Financial Year 2024 was ₹29,161.37 million, primarily comprising toll fee collections of ₹24,715.17 million, construction income of ₹4,025.77 million, operation and maintenance income of ₹294.64 million, and finance income on annuity receivables of ₹105.68 million.

Other income. Other income for the Financial Year 2024 was ₹1,579.68 million, and primarily comprised of realized/unrealized gain on mutual funds for the Financial Year 2024 of ₹1,015.38 million, interest income from fixed deposits of ₹435.04 million, liabilities no longer required written back / remission in loan liability of ₹79.00 million, insurance claim received of ₹24.57 million and income from sale of scrap of ₹10.25 million.

Total expenses. Our total expenses for the Financial Year 2024 was ₹37,609.50 million, and primarily comprised depreciation and amortization expense, finance costs, impairment charge of impairment of intangible assets, operation and maintenance expenses, and cost of construction.

Cost of construction. Our cost of construction for the Financial Year 2024 was ₹4,025.77 million, incurred with respect to six-laning work undertaken in GAEPL.

Operation and maintenance expenses. Operation and maintenance expenses for the Financial Year 2024 was ₹5,046.42 million, and primarily comprised periodic major maintenance expense of ₹1,663.92 million, repair and maintenance of carriageway of ₹1,603.79 million and toll operation expenses of ₹745.06 million.

Employee benefits expense. Employee benefits expense for the Financial Year 2024 was ₹429.66 million, and primarily comprised salary and wages of ₹389.40 million.

Depreciation and amortization expense. Depreciation and amortization expense for the Financial Year 2024 was ₹11,825.72 million, and primarily comprised amortization of intangible assets of ₹11,777.07 million.

Finance costs. Finance costs for the Financial Year 2024 were ₹8,731.29 million, and primarily comprised interest on financial liabilities classified at amortized cost for term loans of ₹7,672.86 million and interest on financial liabilities classified at amortized cost for non-convertible debentures of ₹655.03 million.

Impairment charge towards impairment of intangible assets. Impairment charge towards impairment of intangible assets for the Financial Year 2024 was ₹5,871.87 million, and primarily comprised impairment of intangible assets recognized for the following assets: Western UP Tollway Private Limited, Ghaziabad Aligarh Expressway Private Limited, Nelamangala Devihalli Expressway Private Limited, Farakka-Raigani Highways Private Limited and Lucknow-Raebareli Tollway Private Limited.

Other expenses. Other expenses for the Financial Year 2024 were ₹1,678.77 million and other expenses for the Financial Year 2023 were ₹277.88 million. Other expenses primarily comprise of: (i) legal and professional fees for the Financial Year 2024 was ₹285.09 million, and primarily comprised internal audit fee, traffic and technical study, credit rating fee, legal cases/opinion fee, due diligence fee, loans/investment manager fee/project manager fee benchmarking/assessment fee, environment study, payroll services, actuarial services, compliance filings, secretarial audit fee, GST/direct tax filings, financial reporting tool and ancillary services; (ii) investment management fees were ₹299.17 million for the Financial Year 2024 as compared to ₹273.88 million for the Financial Year 2023, and primarily comprised investment management fees paid to Cube Highways Fund Advisors Private Limited, the investment manager, pursuant to the investment management agreement dated March 11, 2022; (iii) project management fees for the Financial Year 2024 were ₹542.14 million and primarily comprised project management fees we paid to the project manager pursuant to the project implementation and management agreement dated January 2, 2023; (iv) custodian fees for the Financial Year 2024 were ₹3.51 million; (v) insurance expense for the Financial Year 2024 was ₹217.74 million and primarily comprised expenses for obtaining and maintaining our insurance policies; (vi) audit fees (including for subsidiaries) for the Financial Year 2024 were ₹59.51 million, and primarily comprised payments to auditors for their services as auditors for statutory audit and limited review of ₹46.34 million. Audit fees (including for subsidiaries) for the Financial Year 2023 was ₹1.06 million; (vii) valuation expense for the Financial Year 2024 was ₹15.12 million; and (viii) trustee fees remained the same at ₹0.94 million for the Financial Years 2024 and 2023.

Liquidity and Capital Resources

For the six months ended September 30, 2025 and 2024 and for the Financial Years 2025, 2024 and 2023, we financed our working capital and capital expenditure requirements primarily through cash generated from operations, and borrowings such as term loans and non-convertible debentures. As of September 30, 2025, we had cash and cash equivalents of ₹7,501.28 million.

Cash flows

The following table summarizes our cash flows data for the six months ended September 30, 2025, and the Financial Years 2025, 2024 and 2023:

Particulars	For the six months ended September 30,		For the Financial Year		
	2025	2024	2025	2024	2023
	(₹ in million)				
Net cash generated from[/(used in)] operating activities (I)	17,646.10	10,716.49	29,163.58	18,699.46	-
Net cash [generated from]/(used in) investing activities (II)	(4,700.03)	(96.24)	(3,019.42)	(10,328.89)	-
Net cash [generated from]/(used) in financing activities (III)	(19,009.07)	(14,086.35)	(21,865.02)	(12,240.50)	-
Net increase / (decrease) in cash and cash equivalents (IV = I + II + III)	**(6,063.00)**	**(3,466.10)**	**4,279.13**	**(3,869.93)**	**-**
Cash and cash equivalents at the beginning of the period / year	**8,163.86**	**2,415.24**	**2,415.24**	**-**	**-**
Cash and cash equivalents acquired on asset acquisition	4,877.55	1,400.95	1,469.49	6,285.17	-
Cash and cash equivalents at the end of the period / year	**6,978.41**	**350.09**	**8,163.86**	**2,415.24**	**-**

Operating activities

Net cash generated from operating activities was ₹17,646.10 million for the six months ended September 30, 2025. While our profit before tax was ₹560.34 million for the six months ended September 30, 2025, we had operating cash flows before working capital changes and other adjustments of ₹14,596.87 million, which was primarily adjusted for:

- depreciation and amortisation expense of ₹7,084.72 million; and
- finance costs of ₹7,471.31 million.

This was further adjusted for working capital changes and other adjustments, which primarily consisted of:

- decrease in financial assets and non-financial assets of ₹3,435.59 million;
- increase in provisions of ₹1,364.07 million;
- increase in trade receivables of ₹795.37 million; and
- decrease in financial liabilities and non-financial liabilities of ₹477.08 million.

As a result, cash flow generated from operating activities post working capital changes for the six months ended September 30, 2025, was ₹18,043.90 million before adjusting for income tax paid (net) of ₹397.80 million.

Net cash generated from operating activities was ₹29,163.58 million for the Financial Year 2025. While our loss before tax was ₹503.13 million for the Financial Year 2025, we had operating cash flows before working capital changes and other adjustments of ₹22,555.20 million, which was primarily adjusted for:

- depreciation and amortisation expense of ₹13,129.12 million; and
- finance costs of ₹11,171.01 million.

This was further adjusted for working capital changes and adjustments, which primarily consisted of:

- decrease in financial assets and non-financial assets of ₹4,363.99 million,
- increase in provisions of ₹1,570.82 million, and
- decrease in trade receivables of ₹542.58 million.

As a result, cash flow generated from operating activities, post working capital changes, for the Financial Year 2025 was ₹29,255.12 million, before adjusting for income tax paid (net) of ₹91.54 million.

Net cash generated from operating activities was ₹18,699.46 million for the Financial Year 2024. While our loss before tax was ₹6,868.45 million for the Financial Year 2025, we had an operating cash flow before working capital changes and other adjustments of ₹18,084.38 million, which was primarily adjusted for:

- depreciation and amortization expense of ₹11,825.72 million,
- finance costs of ₹8,731.29 million, and
- impairment of intangible assets (net) of ₹5,871.87 million.

This was further adjusted for working capital changes and adjustments, which primarily consisted of:

- decrease in financial liabilities and non-financial liabilities of ₹1,605.42 million,
- decrease in trade payables of ₹597.79 million, and
- decrease in trade receivables of ₹151.16 million.

As a result, cash flow generated from operating activities post working capital changes for the Financial Year 2024 was ₹19,066.56 million before adjusting for income tax paid (net) of ₹367.10 million.

Net cash generated from operating activities was nil for the Financial Year 2023.

Investing activities

Net cash used in investing activities was ₹4,700.03 million for the six months ended September 30, 2025. This was primarily due to investments in SPVs of ₹10,112.88 million and payments towards property, plant and equipment & intangible assets

(after adjustment for increases/decreases in capital work-in-progress, intangible assets under development (net) and advances for capital expenditure) of ₹499.94 million. This was partially offset by movement in bank balances (including deposits) not considered cash and cash equivalents (net) of ₹5,386.09 million, the redemption of mutual funds (net) of ₹235.21 million, and interest received of ₹291.49 million.

Net cash used in investing activities was ₹3,019.42 million for the Financial Year 2025. This was primarily due to investment in SPVs of ₹17,884.00 million, payment towards property, plant and equipment & intangible assets (after adjustment of increase/decrease in capital work-in progress, intangible assets under development (net) and advances for capital expenditure) of ₹1,928.97 million and movement in bank balances (including deposits) not considered as cash and cash equivalents (net) of ₹738.53 million. This was partially offset by investment/(redemption) from mutual funds (net) of ₹ 16,841.17 million and interest received of ₹574.98 million.

Net cash used in investing activities was ₹10,328.89 million for the Financial Year 2024. This was primarily due to payment towards property, plant and equipment & intangible assets (after adjustment of increase/decrease in capital work-in progress, intangible assets under development (net) and advances for capital expenditure) of ₹5,107.58 million, movement in bank balances (including deposits) not considered as cash and cash equivalents (net) of ₹3,287.78 million and redemption from mutual funds (net) of ₹2,187.13 million. This was partially offset by interest received of ₹255.51 million.

Net cash generated from investing activities was nil for the Financial Year 2023.

Financing activities

Net cash used in financing activities was ₹19,009.07 million for the six months ended September 30, 2025. This was primarily due to repayment of long-term borrowings of ₹44,774.01 million, repayment of short-term borrowings of ₹13,292.87 million, interest paid (including interest capitalized) of ₹7,444.66 million and payment of distributions to unitholders of ₹8,364.38 million. This was partially offset by proceeds from long-term borrowings of ₹41,720.00 million and proceeds from short-term borrowings of ₹13,292.87 million.

Net cash used in financing activities was ₹21,865.03 million for the Financial Year 2025. This was primarily due to repayment of long-term borrowings of ₹44,094.23 million, payment of distributions to unitholders of ₹14,758.71 million, and interest paid (including interest capitalized) of ₹11,593.73 million, which was partially offset by proceeds from long-term borrowings of ₹48,790.00 million.

Net cash used in financing activities was ₹12,240.50 million for the Financial Year 2024. This was primarily due to repayment of long-term borrowings of ₹133,798.23 million, interest paid (including interest capitalized) of ₹16,683.62 million, and payment of distributions to unitholders of ₹7,935.63 million, which was partially offset by proceeds from long-term borrowings of ₹108,800.00 million and proceeds from issue of unit capital of ₹38.025.92 million.

Net cash generated from financing activities was nil for the Financial Year 2023.

Financial indebtedness

As at September 30, 2025, we had total borrowings of ₹178,975.05 million, comprising non-current borrowings of ₹173,852.76 million and current borrowings of ₹5,122.29 million. See "*Financial Indebtedness*" on page 364.

Capital and other commitments

As at September 30, 2025, our estimated amount of contracts remaining to be executed on the capital account not provided for (net of advance) was ₹100.27 million. We do not have any other long-term commitments or material non-cancellable contractual commitments/contracts, which may have a material impact on the Audited Consolidated Financial Statements.

The table below sets forth our remaining contractual maturities of financial liabilities as of September 30, 2025:

Particulars (undiscounted)	Less than 1 year	1–2 years	2-5 years	More than 5 years	Total
	(*₹ in million*)				
Borrowings	5,122.29	5,338.63	27,801.08	141,497.69	179,759.69
Trade payables	2,318.03	-	-	-	2,318.03
Other financial liabilities	1,640.82	2.11	-	-	1,642.93
Total	**9,081.14**	**5,340.74**	**27,801.08**	**141,497.69**	**183,720.65**

Contingent liabilities and claims

The following table sets forth our contingent liabilities and claims as of September 30, 2025:

Particulars	As of September 30, 2025
	(₹ in million)
Claims against the Trust Group not acknowledged as debt	
a) In respect of Income-tax matters, disputed by SPVs	562.56

Particulars		As of September 30, 2025
		(₹ in million)
b)	In respect of Indirect tax matters (VAT/Entry tax/Service tax/GST) disputed by SPVs [(1)]	4,361.56
c)	Damages/Penalties levied by NHAI/Independent engineer on account of default/deficiencies in terms of the concession agreement	20.61
d)	Revenue claim levied by state authority (in terms of the SPA entered between the SPVs and erstwhile promoters, these matters are covered under specific indemnity from erstwhile promoters)	114.40
e)	In respect of Stamp Duty matters, disputed by SPVs [(2)]	932.70
f)	Civil suits related to accident claim and land encroachment matter at one SPV	7.70

(1) Includes GST demand of ₹3,571.72 million (inclusive of interest and penalty) received by certain HAM SPVs alleging liability to GST on the entire Bid Project Cost amount up front on receipt of the completion certificate, in relation to which the SPVs have filed a writ before the High Court/proceedings are underway before the relevant appellate authority/jurisdictional authority. In terms of the SPA entered into between the SPVs and the erstwhile promoters, these matters are covered by the specific indemnity from the erstwhile promoters.

(2) In light of a Supreme Court decision in Rewa Tollway P. Limited v. The State of Madhya Pradesh & ORS., we have reassessed stamp duty obligations (including for stamp duty matters disputed by certain SPVs referred above) for the concession agreements entered into by the SPVs with NHAI, considering inter-alia, types of concession agreement (DBFOT/BOT/TOT/HAM/Annuity), rights under terms and conditions of the concession agreements, indemnity under the Share Purchase Agreements entered by we at the time of acquisition of the SPVs, jurisdiction of the relevant authority, and status of ongoing proceedings. Based on the assessment above, supported by the legal advice, we do not expect the ultimate outflow of resources embodying economic benefits to materially affect the financial performance and position of our Company.

(3) The management of the Group assess all material claims in the nature of demands and the show cause notices ("SCNs"), including intimation prior to SCNs, relating to Income tax, Indirect taxes and other litigations against the Group and based on legal advice in certain cases, evaluates whether it is probable, possible or remote ("PPR"). The Group discloses contingent liabilities as matters assessed as possible. The relevant SPVs are contesting the aforesaid notices/order before various authorities and are confident that the matters will be decided in favor of the SPVs and ultimately no liability is likely to be devolved on the respective SPVs.

Capital expenditures

Our historical capital expenditures were, and we expect our future capital expenditures to be, primarily for infrastructure upgradation works. For the six months ended September 30, 2025, and for the Financial Years 2025, 2024 and 2023, our capital expenditures were ₹499.94 million, ₹1,928.97 million, ₹5,107.58 million and nil, respectively.

Monthly toll revenues

Set out below are the toll revenues of our toll assets (both Current Portfolio Assets and Proposed Portfolio Assets) for the months of October 2025, November 2025, December 2025, January 2025 and February 2026:

Project SPV*	Monthly toll revenue *(₹ in million)*				
	October 2025	November 2025	December 2025	January 2026	February 2026
DATRPL	519.73	626.20	595.57	565.26	569.54
FRHPL	195.66	222.86	234.73	245.20	242.22
GAEPL	370.85	487.79	420.20	381.42	416.86
HTPL	117.76	134.13	133.47	131.33	133.12
JMTPL	181.92	215.80	214.79	210.35	203.15
JLTPL	84.42	95.54	98.39	96.69	95.55
JVTPL	59.41	65.77	68.63	67.22	66.13
KETPL	60.39	71.96	71.98	72.66	63.66
KMTPL	100.12	113.39	118.64	107.48	103.48
LRTPL	51.91	68.89	65.67	60.31	62.20
MKTPL	102.10	120.44	121.51	121.42	108.88
MBEL	94.98	110.21	114.12	111.94	105.22
NKTPL	58.23	72.78	78.14	77.66	63.80
NDEPL	105.42	118.07	111.87	106.64	102.91
SMTPL	63.29	75.89	78.92	81.55	68.26
WVEPL	93.30	99.75	107.15	107.97	93.18
WUPTPL	132.99	195.45	156.50	150.89	151.41
NAMEPL	273.28	287.89	301.64	303.49	294.50
BFHL	152.14	174.72	190.52	191.03	194.10
WMTPL	273.02	286.46	294.80	287.12	280.18
DTPL	306.72	318.82	321.13	319.84	319.87

* *Monthly revenues for annuity and HAM assets have not been included in the table above, given that payments are received by these assets on a half-yearly or annual basis.*

In an annuity project model, the respective concessioning authority pays a fixed amount semi-annually as an annuity pursuant to the applicable concession agreement. Income from the project is thus assured to the extent of the annuity to be collected under the concession agreement, thereby reducing our risk of income fluctuations resulting from changes in traffic volumes. Accordingly, monthly toll revenue collections are not applicable to our HAM and annuity toll roads.

Off-Balance Sheet Commitments and Arrangements

We do not have any off-balance sheet arrangements, derivative instruments, swap transactions or relationships with affiliates or other unconsolidated entities or financial partnerships that would have been established for the purpose of facilitating off-balance sheet arrangements.

Quantitative and qualitative analysis of financial risks

We are exposed to a variety of financial risks, including credit, liquidity, and market risks.

Credit risk

Credit risk represents the risk of financial loss to us if a counterparty to a financial instrument fails to meet its contractual obligations. It arises principally from our cash and cash equivalents, other bank balances, trade receivables, unbilled revenue, and other financial assets. Our maximum exposure to credit risk is limited to the carrying amount of these financial assets.

Credit risk management

We establish an allowance account for impairment that reflects our estimate of losses on our financial assets. The main component of this allowance is estimated losses associated with specific counterparties. The allowance account is used to provide for impairment losses.

Credit risk relating to cash and cash equivalents and bank deposits is managed by transacting only with highly rated banks and by diversifying deposits and accounts across multiple banks. Other financial assets measured at amortized cost include security deposits, annuity receivables, receivables from related parties, and others. We manage the credit risk associated with these assets by continuously monitoring their recoverability, while internal control systems ensure that exposures remain within defined limits. As at the reporting date, there are no significant concentrations of credit risk. The maximum exposure to credit risk is represented by the carrying amount of each financial asset presented in our balance sheet.

The table below sets out the reconciliation of loss allowance for trade receivables, unbilled revenue, and other financial assets from the beginning to the end of the reporting periods/years:

Particulars	As of September 30,		As of March 31,		
	2025	2024	2025	2024	2023
	(₹ in million)				
Opening Balance	**201.25**	**183.56**	**183.56**	**-**	**-**
Additions on account of acquisition	-	-	-	143.97	-
Movement in expected credit loss allowance on trade receivables calculated at lifetime expected credit losses	18.11	-	19.20	42.70	-
Reversal in expected credit loss allowance on trade receivables and advances	(21.86)	-	-	-	-
Adjustment against bad debts written off	-	(9.48)	(1.51)	(3.11)	-
Closing Balance	**197.50**	**174.08**	**201.25**	**183.56**	**-**

In the case of the majority of our trade receivables, the counterparties are government undertakings and, as such, do not present significant credit risk. However, we estimate the expected credit loss based on a specific identified basis. In respect of disputed trade receivables as of September 30, 2025, aggregating to ₹523.26 million relating to the pre-acquisition period, we have withheld an amount of ₹410.54 million payable to erstwhile shareholders, and for the remaining amount of ₹112.72 million, we will be indemnified by the erstwhile shareholders.

Other financial assets measured at amortized cost include security deposits, annuity receivables, receivables from related parties, and other assets. We manage the credit risk associated with these financial assets by continuously monitoring their recoverability, while our internal control systems ensure that exposures remain within defined limits.

Liquidity risk

Liquidity risk is the risk that we may encounter difficulty meeting our present or future obligations associated with financial liabilities that must be settled by delivering cash or another financial asset. We are exposed to liquidity risk arising from borrowings, trade payables, and other financial liabilities. We measure and manage this risk by forecasting cash flows and monitoring our funding requirements on an ongoing basis.

Our approach to managing liquidity is to ensure, as far as possible, that we always have sufficient liquidity to meet our liabilities as they fall due, without incurring unacceptable losses or risking damage to our reputation. We ensure that adequate funds are available to meet expected operational expenses and service financial obligations.

Our objective is to maintain optimal liquidity at all times to meet cash and collateral requirements. We require funds for both short-term operational needs and long-term investment programs, primarily in growth projects. To achieve this, we closely monitor our liquidity position and maintain a robust cash management system. We aim to minimize liquidity risk by generating sufficient cash flows from operations, supplemented by available cash and cash equivalents, liquid investments, and committed funding facilities.

Accordingly, we believe that our revenue, along with proceeds from financing activities, will continue to provide the necessary funds to meet our short-term liquidity requirements. We also prepare cash flow projections and maintain an appropriate level of liquid assets to ensure that liquidity needs are met in a timely manner.

Market risk

Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Our exposure to interest rate risk relates primarily to our short-term debt obligations with floating interest rates. Our policy is to minimize interest rate risk in long-term financing. We are exposed to changes in market interest rates through variable-rate bank borrowings.

Liabilities

Our policy is to minimize exposure to interest rate cash flow risk on long-term financing. As at the reporting date, we are exposed to changes in market interest rates arising from bank borrowings with variable interest rates.

Financial Assets

Our fixed deposits are carried at amortized cost and are fixed-rate. Accordingly, they are not subject to interest rate risk as defined in Ind AS 107 *"Financial Instruments: Disclosures"*, since neither their carrying amounts nor future cash flows will fluctuate due to changes in market interest rates.

Price risk

Exposure

We require various commodities such as cement, bitumen, steel, and other construction materials for the implementation (construction, operation, and maintenance) of our projects. These materials are exposed to price risk. However, we manage our exposure to price fluctuations through bulk purchasing and effective negotiations.

Our exposure to price risk also arises from investments held and classified at fair value through profit or loss. To manage price risk associated with these investments, we diversify our portfolio through fixed-rate instruments, such as bank deposits and mutual fund (Growth Schemes) investments.

Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate due to changes in foreign exchange rates. We have no significant exposure to foreign exchange rate risk.

Other qualitative factors

Related party transactions

We have in the past entered into, and will likely continue to enter into, transactions with several related parties in the ordinary course of our business. For further details of our related party transactions and procedures for dealing with and approval of related party transactions, see "*Related Party Transactions*" on page 410.

The impact of all acquisitions of assets from related parties undertaken by us during the six month period ended September 30, 2025 and Financial Years 2025, 2024 and 2023, is reflected in the Audited Consolidated Financial Statements. Please refer to Annexure D (*Audited Consolidated Financial Statements*).

Dependence on a few suppliers or customers

We do not have any material dependence on a single or a few suppliers or customers.

Significant economic changes

Other than as described above under "— *Significant Factors Affecting our Financial Condition and Results of Operations*" on page 390, to the knowledge of our management, there are no other significant economic changes that materially affect or are likely to affect our income from continuing operations.

Unusual or infrequent events or transactions

Except as disclosed in this Draft Offer Document, to our knowledge, there have been no "unusual" or "infrequent" events or transactions that have in the past, or may in the future, affect our business operations or future financial performance.

Known trends or uncertainties

Our business has been affected and we expect will continue to be affected by the trends identified above in "*— Significant Factors Affecting our Financial Condition and Results of Operations*" on page 390 and the uncertainties described in "*Risk Factors*" on page 87. To our knowledge, except as described or anticipated in this Draft Offer Document, there are no known factors which we expect will have a material adverse impact on our revenues or income from continuing operations.

Future relationship between cost and income

Other than as described in this Draft Offer Document, to the knowledge of our management, there are no known factors that might affect the future relationship between costs and revenues.

New products or business segments

Other than as described in "*Our Business — Strategies*" on page 298, there are no new products or business segments in which we operate or propose to operate.

Competitive conditions

We operate in a highly competitive industry, and we expect competition in our industry from existing and potential competitors to intensify. For details, please see the discussions of our competition in the sections entitled "*Risk Factors*", "*Our Business*" and "*Industry Overview*" on pages 87, 280 and 196, respectively.

Seasonality

Our business is affected by seasonal variations. For further details, see "*Risk Factors – Our business will be subject to seasonal fluctuations, which may adversely affect our cash flows*" on page 96.

Sufficiency of Working Capital

The Trust will raise funds through appropriate manner to meet its working capital requirements. The Investment Manager confirms that the Trust will have the ability to meet its working capital requirements for at least 12 months from the completion of the Offer.

Critical accounting judgments, estimates and assumptions

The preparation of our consolidated financial statements requires us to make judgements, estimates, and assumptions that affect reported amounts of assets, liabilities, income, and expenses. We believe our estimates are prudent and reasonable; however, actual results may differ, and any such differences are recognised in the period in which they arise. Examples include:

Classification of unitholders' funds as equity

We have presented our Unit Capital as "Equity" in accordance with the InvIT Regulations, rather than as a compound financial instrument. This presentation reflects the substance of the unitholders' interest in the Trust.

Fair valuation and disclosures

The InvIT Master Circular issued under the InvIT Regulations requires us to disclose our net assets at fair value and total returns at fair value. In estimating the fair value of our investments in subsidiaries, which constitute a substantial portion of our net assets, we engage independent, qualified external valuers to perform the valuations.

Our Investment Manager works closely with these valuers to determine the appropriate valuation techniques and inputs to the valuation models. Wherever possible, we use inputs derived from observable market data; however, where such data is not available, significant judgement is applied in determining fair values.

These judgements include considerations such as projected future cash flows, traffic estimates, assessment of variations in concession periods for certain subsidiaries based on Target Traffic (subject to regulatory approvals), discount rates, revenue growth, inflation, taxation, and other relevant economic factors. Changes in assumptions relating to these factors could materially impact the fair value estimates.

Applicability of service concession arrangement (SCA) accounting to the concessionaire arrangements entered into by the SPVs

We have determined that Appendix C to Ind AS 115 – Revenue from Contracts with Customers, relating to Service Concession Arrangements, is applicable to the SPVs which provides an accounting by the operators of public to private service concession arrangements. Our SPVs have entered into concession agreements with the National Highways Authority of India ("**NHAI**") or the respective State Highway Authorities (collectively referred to as "**the Authority**"), under which the SPVs participate in Design, Build, Finance, Operate and Transfer ("**DBFOT**"), Toll Operate Transfer ("**TOT**"), or Hybrid Annuity Model ("**HAM**") projects for toll road infrastructure. Upon completion of the concession period, the SPVs are required to transfer the constructed infrastructure, i.e., the toll roads, to the Authority.

Accordingly, SPVs other than APEPL, AJUHPL, QEPL and HAM SPVs have recognised intangible assets in accordance with our accounting policies.

For APEPL, AJUHPL, QEPL and HAM SPVs, the accounting for receivables under the SCA ("financial assets") requires allocation of consideration between construction and operation and maintenance ("**O&M**") activities. Revenue related to O&M activities is recognised based on estimated future operating and maintenance cash flows. Estimating these cash flows requires us to make significant judgements and assumptions, particularly relating to expected future expenses and inflation. We periodically review and update these estimates by comparing actual results to previous forecasts to ensure reliability and consistency.

*Assessment of concession period under Service Concession Arrangements ("**SCA**")*

The concession period is defined under the SCA agreements entered into by our respective SPVs with the grantor (i.e., NHAI or the relevant State Authorities). However, the actual concession period may vary depending on the achievement of conditions relating to Target Traffic or Target Revenue specified in the respective agreements.

At each reporting date, we evaluate the contractual entitlement to any variation in the concession period on a case-by-case basis. This evaluation considers the specific terms of each concession agreement, the facts and circumstances leading to such variations, and the current status of approvals required for those variations.

Estimating the concession period under Appendix C to Ind AS 115 – Revenue from Contracts with Customers requires careful judgement and analysis of each individual arrangement. In making these estimates, we consider several factors, including:

- future traffic projections prepared with the assistance of independent experts,
- potential outcomes of ongoing disputes or arbitration with the grantor relating to claims for variation in the concession period due to Target Traffic considerations,
- relevant legal advice obtained, and
- key assumptions such as discount rates, revenue growth rates, inflation, and other economic factors.

Based on this assessment, we have considered variations in concession periods for certain SPVs for the purpose of estimating:

- the amortization of Intangible Assets – Toll Road Carriageway,
- the fair value of SPV net assets, and
- the recoverable amounts of the related intangible assets.

*Amortization of Rights under Service Concession Arrangements ("**SCA**"), i.e. Intangible Assets- Toll Road Carriageway*

Certain Existing Portfolio Assets (viz. MBEL, JMTPL, WUPTPL, and GAEPL) that hold toll collection rights under SCAs which commenced before April 1, 2014, recognise amortization of intangible assets related to these arrangements based on the proportion of actual revenue earned during the period to the total of actual revenue earned and projected revenue expected to be earned over the remaining concession period. The future revenue projections are based on our assumptions regarding traffic growth, concession period (as discussed above), and inflation factors used to assess toll fee escalations. These projections are supported by periodic studies conducted by independent third-party consultants for each SPV.

For other Existing Portfolio Assets with toll collection rights under SCAs that commenced on or after April 1, 2014, the related intangible assets are amortised over their estimated useful lives, which correspond to the concession period.

We review the estimated useful life of the Rights under Service Concession Arrangements and the underlying revenue projections at the end of each reporting period. Any changes in these estimates are accounted for prospectively.

Provision for periodic maintenance (overlay expenses)

We estimate and provide for our contractual obligations under the Service Concession Arrangements (SCAs) with NHAI to restore the infrastructure to a specified level of serviceability at periodic intervals during the concession period or before it is handed over to NHAI. These estimates are supported by purchase orders or work orders placed or proposed to be placed, based on road survey reports issued by independent field experts and the major maintenance strategy or methodology approved by the Independent Consultant appointed by NHAI. The estimated costs are determined using various assumptions, including the current condition of the infrastructure (such as roads and pavements), expected timing of expenditures, inflation in material costs, applicable discount rates, and relevant government policies. Accordingly, we exercise significant judgement in evaluating and validating these assumptions. The provision for such expenses is reviewed and reassessed annually.

Provision for improvement works

Certain SPVs estimate and recognise contract liabilities for unavoidable obligations to improve or upgrade infrastructure, as required under the Concession Agreements with NHAI. These estimates are supported by purchase or work orders placed or proposed, based on road survey reports issued by independent field experts. The estimated costs are determined using various assumptions, including the current condition of the infrastructure (such as roads and pavements) and inflation in material costs. We apply significant judgement in evaluating these factors to ensure that the provision reflects the most reliable estimate of the obligations to be undertaken.

Income taxes and deferred tax

We exercise significant judgement in determining income tax provisions, including assessing whether specific tax positions are probable of being sustained upon examination by the tax authorities. Tax assessments often involve interpreting complex tax laws and regulations, which may only be resolved over extended periods.

We also apply significant judgement in determining the amount of deferred tax assets that can be recognised, based on the likely timing and level of future taxable profits, as well as our tax planning strategies.

We review the carrying amount of our deferred tax assets (net) at the end of each reporting period. Deferred tax assets relating to carried forward losses and minimum alternate tax (MAT) credits are recognised to the extent that sufficient taxable temporary differences are available against which such losses and credits can be utilised. Further, deferred tax assets are recognised to the extent of deferred tax liabilities, provided there is reasonable certainty that future taxable income will be available to utilise temporary differences.

We have not recognised deferred tax assets or liabilities on deductible temporary differences and tax losses that reverse or originate during the tax holiday period under Section 80-IA of the Income-tax Act, 1961, as estimated based on our future projections.

Deferred tax assets and liabilities are classified as non-current assets and non-current liabilities, respectively.

Accounting for the acquisition of Subsidiaries

We have applied the optional concentration test under Ind AS 103 – *Business Combinations* and concluded that the acquired set of activities and assets does not constitute a business. This is because substantially all of the fair value of the gross assets acquired is concentrated in Intangible Assets – Rights under Service Concession Arrangements (for SPVs other than APEPL and HAM SPVs) and Receivables under Service Concession Arrangements (for APEPL and HAM SPVs), which share similar risk characteristics.

Accordingly, we have accounted for this transaction as an asset acquisition in accordance with the applicable requirements of Ind AS 103.

Impairment of financial assets

Our impairment provision for financial assets is based on assumptions regarding the risk of default and expected loss rates. We apply judgement in developing these assumptions and in selecting the inputs used for impairment calculations, taking into account both prevailing market conditions and forward-looking information available at the end of each reporting period.

Impairment of intangible assets - Rights under Service Concession Arrangements

We assess the value in use of our intangible assets by estimating their future cash flows. These estimated cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimated cash flows have not been adjusted.

Wherever possible, we use inputs derived from observable market data. However, where such inputs are not readily available, we apply significant judgement in determining fair values. The recoverable amounts for intangible assets are based on the value in use of the underlying SPVs, as determined by an independent valuer using the discounted cash flow method.

This process involves considerable management judgement in respect of several key assumptions, including:

- estimation of future cash flows;
- determination of the concession period, considering the relevant terms of the Service Concession Arrangement (SCA) that allow for modifications of the period;
- traffic forecasts developed with the assistance of independent experts;
- evaluation of outcomes of disputes or arbitration with the grantor relating to SPV claims for variation in concession periods due to Target Traffic, supported by legal advice; and
- assumptions relating to discount rates, revenue growth rates, inflation, and other economic factors.

The cash flow forecasts are derived from projections covering the remaining SCA period of each SPV.

Accounting for compound financial instruments

Certain SPVs within our structure have issued Unsecured, Optionally Convertible Debentures (OCDs) on a private placement basis to various related party subscribers in prior years. During the current year, the OCD holders requested premature redemption of the debentures at face value, along with accrued but unpaid interest.

We allocated the total consideration paid for the redemption of the OCDs between the liability and equity components of the instruments as of the redemption date, in accordance with the requirements of Ind AS 32 – *Financial Instruments: Presentation*.

Useful lives of property, plant, and equipment

We review the useful lives of our property, plant, and equipment at each reporting date to ensure that they reflect the expected utility of the assets to us. Any adjustments resulting from this review are accounted for prospectively to ensure that the depreciation charge appropriately reflects the pattern of economic benefits derived from the assets.

Obligations relating to employee benefits

Our employee benefit obligations depend on several factors that are determined on an actuarial basis, using various assumptions. The key assumptions used in determining the net cost or income include the discount rate, inflation rate, and mortality assumptions. Any changes in these assumptions can have a material impact on the carrying amount of our employee benefit obligations.

Changes in accounting policies and recent accounting pronouncements

There have been no changes in our accounting policies during the six months ended September 30, 2025, and during the Financial Years 2025, 2024, and 2023.

As of the date of this Draft Offer Document, there are no recent accounting pronouncements that have had a material effect on our financial condition or results of operations.

Significant developments occurring after September 30, 2025

- *Change in Project Manager:* Pursuant to a resolution dated February 27, 2026, the board of directors of the Investment Manager has approved to replace the existing Project Manager, Cube Highways and Transportation Assets Advisors Private Limited, and appoint Cube Highways Asset & Project Advisory Private Limited (which is a wholly owned subsidiary of the IM) as the new Project Manager of the Trust, subject to the receipt of necessary approvals, including approval of the National Highways Authority of India and completion of applicable regulatory and contractual formalities. The change in Project Manager will come into effect from the date of execution of the New PIMA, subject to the above approvals.

- *Publication of quarterly results for the nine months ended December 31, 2025, approval of distributions and publication of quarterly valuation report*: On January 30, 2026, the Investment Manager has published the unaudited financial results of the Trust for the quarter ended December 31, 2025, as well as the nine months ended December 31, 2025, on a standalone and consolidated basis. In addition to publication of the financial results, the board of directors of the Investment Manager also approved and remitted distributions to Unitholders (as of the relevant record date). Further, the board of directors of the Investment Manager also considered and noted the updated valuation report of the Existing Portfolio Assets as of December 31, 2025, as issued by the Valuer. Also see "*Our Business – Recent Developments*" on page 288.

- *Facility Agreement dated March 9, 2026:* The Trust, acting through the Investment Manager, entered into a facility agreement dated March 9, 2026, with the National Bank for Financing Infrastructure and Development for a senior debt facility of ₹6,370 million.

Except as disclosed above and elsewhere in this Draft Offer Document, to the Investment Manager's knowledge, no circumstances have arisen since the date of the last financial statements included in this Draft Offer Document which materially and adversely affect, or is likely to affect, our operations or profitability or the value of our assets or our ability to pay our liabilities within the next twelve months.

RELATED PARTY TRANSACTIONS

In terms of Regulation 2(1)(zv) of the InvIT Regulations, related party shall be as defined as under the Companies Act, 2013 or under the applicable accounting standards and shall also include: (i) Parties to the Trust; and (ii) promoters, directors, and partners of the Parties to the Trust. Further, related parties also include such persons and entities as defined under the applicable accounting standards, namely Ind AS 24 on "*Related Party Disclosures*" ("**Related Parties**"), in relation to related party transactions. For further details in relation to related party transactions, please see the Annexure D entitled "*Audited Consolidated Financial Statements*". The Parties to the Trust may, from time to time, enter into related party transactions in accordance with applicable law.

Procedure for dealing with Related Party Transactions

To ensure proper approval, supervision and reporting of the transactions between the Trust and its Related Parties, the IM Board has adopted the policy on related party transactions ("**RPT Policy**"), pursuant to its resolution dated July 11, 2022, to regulate the transactions between the Trust and its Related Parties. The key terms of the RPT Policy are provided below:

(i) In accordance with the InvIT Regulations, the Investment Manager will ensure that all related party transactions shall be:

(a) on an arm's length basis in accordance with the Income Tax Act, 1961 and Companies Act, 2013;

(b) in accordance with the relevant accounting standards;

(c) in the best interest of the Unitholders;

(d) consistent with the strategy and investment objectives of the Trust; and

(e) compliant with applicable law.

(ii) The Investment Manager will ensure that all related party transactions, other than the transactions set out below, are on an arm's length basis, pursuant to a benchmarking report obtained from a Big 4 Accounting Firms:

(a) acquisition of assets by the Trust;

(b) related party transactions undertaken between the Trust and the Portfolio Assets, including any borrowings availed by the Portfolio Assets from the Trust; and

(c) any fees paid by the Trust or the Portfolio Assets to the Investment Manager or Project Manager pursuant to the Investment Management Agreement, Project Implementation and Management Agreement and any shared services agreement executed by the Trust.

(iii) Review and approval of related party transactions:

(a) In the first instance, the Audit Committee shall be responsible for the approval or any subsequent modification of all transactions of the Trust with Related Parties and shall recommend the same to the IM Board.

(b) Each transaction which is identified as a related party transaction shall be pre-approved by the IM Board prior to entering into such transaction.

(c) The IM Board may grant omnibus approval for related party transactions subject to limits on quantum and nature as determined by the IM Board; however, no omnibus approval may be granted for related party transactions that are not on an arm's length basis as determined above. Each such omnibus approval shall be valid for a period not exceeding one year from the date of such approval, and related party transactions undertaken after the expiry of such period shall require fresh approval of the IM Board. The IM Board shall review, on a quarterly basis, the details of related party transactions entered into by the Trust pursuant to the omnibus approval.

(iv) The Investment Manager will establish an internal control system so as to ensure that all future related party transactions are compliant with the InvIT Regulations and applicable accounting standards. Further, the Investment Manager shall convene meetings of the Unitholders in accordance with Regulation 22 of the InvIT Regulations, and maintain records pertaining to such meetings in the manner prescribed. The Investment Manager shall also ensure compliance with any additional guidelines issued in this regard by SEBI and other relevant regulatory, statutory or governmental authorities from time to time.

(v) In addition to any other requirement that may be prescribed in terms of the InvIT Regulations or other applicable laws, all related party transactions to be entered into in the future will be decided by the IM Board after the examination of the nature of the transaction and its supporting documents or such other data as may be deemed necessary by the IM Board. Subject to point (ii) above, all related party transactions, (i) shall be on arm's length terms, and (ii) shall be notified to the IM Board prior to entering into the transaction, as soon as practicable, with relevant documents showing

how the Investment Manager determined such related party transaction to be on an arm's length basis, and in the case of any related party transaction with an aggregate value over US$ 500,000 or outside the ordinary course of business, at least ten (10) business days prior to entry into such related party transaction, following which the IM Board may require information to satisfy itself of the arm's length nature of the transaction.

(vi) Subject to the provisions of applicable law, any director, being a Related Party to a transaction and/or if he or the person who nominated him as a director has any interest in a transaction, shall not be involved in the decision making in respect of the relevant related party transaction and will recuse himself/herself and abstain from discussion and review / voting of the related party transaction.

(vii) The Investment Manager will ensure that if the total value of all the related party transactions in a financial year pertaining to acquisition or sale of assets, whether directly or through a holding company or SPV, or investments into securities, exceeds 5% of the value of the assets of the Trust or any other applicable threshold prescribed by the InvIT Regulations, approval from the Unitholders shall be obtained prior to entering into any such subsequent transaction with any Related Party, in accordance with the Regulation 22 of the InvIT Regulations.

(viii) The Investment Manager will ensure that if the value of the funds borrowed from Related Parties in a financial year exceeds 5% of the total consolidated borrowings of the Trust, any holding company and the SPVs, or any other applicable threshold prescribed by the InvIT Regulations, approval from the Unitholders shall be obtained prior to entering into any such subsequent transaction with any Related Party, in accordance the InvIT Regulations.

(ix) As a general rule, the Audit Committee must demonstrate to the IM Board that future related party transactions satisfy the criteria set out in (i) above at the time of recommending the same for the approval of the IM Board.

(x) The Investment Manager will maintain a register to record all related party transactions entered into by the Trust and the basis on which they are entered into.

(xi) The Investment Manager will also incorporate into its internal audit plan a review of all related party transactions entered into by the Trust during each financial year, including a review of the implementation of the agreements relating to related party transactions, including any right of first offer or right of first refusal arrangements, to acquire assets from the Sponsor(s).

(xii) The IM Board shall review at least quarterly in each financial year the related party transactions entered into during such quarter to ascertain that the guidelines and procedures established to monitor the related party transactions have been complied with. Provided that any person who is a Related Party interested in the related party transaction, as well as an Associate of such Related Party, who forms a part of the IM Board, shall not review such related party transactions in which he or his Associate is interested.

(xiii) While considering voting on a related party transaction which requires approval of the Unitholders, voting by any person who is a Related Party in such transaction as well as Associate of such person(s) shall not be considered on the specific issue.

Potential Conflict of Interest

(i) Subject to the applicable law and RPT Policy, all resolutions in writing of the IM Board in relation to matters concerning related party transactions of the Trust must be approved by more than 50% of the Directors on the IM Board eligible to vote on such related party transactions.

(ii) Where matters concerning the Trust relate to transactions entered into or to be entered into by the Investment Manager for and on behalf of Trust with a Related Party, the IM Board is required to consider the terms of the transactions to satisfy itself that the transactions are conducted in accordance with the parameters set out in the policy, including by way of obtaining a benchmarking report, if required, as set out above.

(iii) As part of its review of the internal audit reports at least quarterly in each financial year, the IM Board will review the internal audit reports of the implementation of the share purchase agreements to acquire assets from the Sponsor(s), to ensure compliance. The review will include an examination of supporting documents and such other data deemed necessary to the IM Board.

Disclosure and Reporting

(i) The Investment Manager shall submit to the Trustee, quarterly reports on the activities of the Trust, including the status of compliance with the requirements specified under the InvIT Regulations in relation to related party transactions, within such time as may be prescribed in the InvIT Regulations and applicable law.

(ii) Related party transactions shall be disclosed: (a) in the offer document with respect to any such transactions entered into prior to the offer of units and any such proposed transactions subsequent to the offer; and (b) to the Stock Exchanges and the Unitholders periodically, in accordance with the InvIT Regulations and the agreements to be entered into with the Stock Exchanges in relation to the listing of the Units. In respect of any related party transaction,

the Investment Manager shall adequately disclose the details of any fees or commissions received or to be received by such Related Party(ies) to the Stock Exchanges.

(iii) Where any of the Related Parties have an interest in a business which competes or is likely to compete, either directly or indirectly, with the activities of the Trust, the details required to be disclosed as per the InvIT Regulations shall be disclosed in any offer document, as applicable and in accordance with the InvIT Regulations.

(iv) In accordance with the InvIT Regulations, the annual report to be submitted by the Investment Manager to all Unitholders, electronically or by physical copies, and to the Stock Exchanges within three months from the end of the financial year, shall contain, inter alia, details of all related party transactions, including acquisitions or disposal of any projects, directly or through SPVs during the year, the value of which exceeded one percent of value of the assets of the Trust.

Related Party Transactions

Present and On-going Related Party Transactions

Related Party Transactions of the Trust in relation to the setting up of the Trust and this Offer

A number of transactions with certain Related Parties have been entered into in relation to the Trust. The Trustee and the Investment Manager confirm that the following related party transactions have been, or shall be, entered into, on an arm's length basis in accordance with the relevant accounting standards, in the best interest of the Unitholders, consistent with the strategy and investment objectives of the Trust. Please refer to Annexure D "*Audited Consolidated Financial Statements*" for a description of such related party transactions.

(A) Trust Deed

Please see the section entitled "*Parties to the Trust – Key Terms of the Trust Deed*" on page 145 for a description of the terms of the Trust Deed.

(B) Investment Management Agreement

Please see the section entitled "*Parties to the Trust – Key Terms of the Investment Management Agreement*" on page 157 for a description of the terms of the Investment Management Agreement.

(C) Project Implementation and Management Agreement

Please see the section entitled "*Parties to the Trust – Key Terms of the Project Implementation and Management Agreement*" on page 170 for a description of the terms of the Project Implementation and Management Agreement.

(D) Trust Loan Agreements

Please see the section entitled "*Financial Indebtedness and Deferred Payments – Principal terms of the borrowings availed by the Trust including bank guarantees*" on page 364 for a description of the terms of the Trust Loan Agreements.

(E) ROFO Agreement

The Sponsor (the "**Seller**") and the Trust, acting through the Investment Manager have entered into a right of first offer ("**ROFO**") agreement on March 17, 2026, (hereinafter known as "**ROFO Agreement**"), in relation to the grant of the right of first offer on the assets held by the Seller and identified under the ROFO Agreement, in favour of the Trust on the terms and conditions of the ROFO Agreement. Certain key terms of the Agreement are as follows:

1. *Right of First Offer:*

   Subject to the Seller's ability to transfer any or all of the securities held by the Seller ("**ROFO Securities**"), to certain permitted affiliates or to subscribe to securities issued by the Relevant ROFO SPVs to the Seller or its permitted affiliates without triggering the ROFO process, the Trust shall have a ROFO all the ROFO Securities, in Kokhraj Handia Expressway Pvt. Ltd., Delhi Hapur Meerut Expressway Pvt. Ltd., and Malayagiri Highways Pvt. Ltd., as specified in the ROFO Agreement ("**Relevant ROFO SPVs**"). Such right of first offer will be available to the Trust from within 3 years following the date of the execution of the ROFO Agreement ("**Term**"). However, the Seller may sell or transfer all or any part of the ROFO Securities to an affiliate which is not: (a) incorporated in or based out of India; or (b) a SEBI registered infrastructure investment trust, during the Term of the ROFO Agreement without following such obligations set out regarding the ROFO process in the ROFO Agreement.

2. Offer:

During the Term, if the Seller intends to sell the ROFO Securities, it shall deliver a written notice ("**ROFO Notice**") to the Investment Manager (acting for and on behalf of the Trust) setting out an invitation to the Trust to make an offer for the acquisition of all (and not less than all) of the ROFO Securities within 150 days from the date of the ROFO Notice. Further, the Seller shall ensure that it provides a ROFO Notice to the Trust for acquisition of all securities of each Relevant ROFO SPVs, at least once prior to end of Term. Additionally, the Seller shall provide information that is reasonably requested by the Trust by way of a due diligence questionnaire delivered by the Trust within a period of 7 days. The Trust shall complete the due diligence of the assets of the Relevant ROFO SPVs within 60 days from the date of the ROFO Notice and bear all the costs incurred for its advisors in relation to such due diligence exercise.

Within a period of 150 days from the date of the ROFO Notice, or such other time as may be mutually agreed in writing between the Parties, the Trust shall have the right but not the obligation to send a notice ("**ROFO Response Notice**") to the Seller either: (a) making an irrevocable binding offer (subject to unitholder approval) to purchase all, and not less than all, of the ROFO Securities and specifying: (i) the price per ROFO Security at which the Trust is offering to purchase all the ROFO Securities ("**ROFO Price**"); and (ii) any other terms that impact the price and the overall consideration of the offer by the Trust, including the manner in which the consideration for the acquisition of the ROFO Securities will be discharged; or (b) indicating its refusal to purchase the ROFO Securities.

In the event the Trust is interested in the purchase of all, and not less than all, of the ROFO Securities, the Trust shall make an irrevocable binding offer (subject to unitholder approval) within a period of 150 days from the date of the ROFO Notice, or such other time as may be mutually agreed in writing. Further, the terms of the offer for the ROFO Securities shall be binding on the Trust for a period of 195 days from the date of the ROFO Response Notice ("**ROFO Acceptance Period**"), unless amended by written mutual agreement between the Parties. The Seller and Trust shall discuss the terms of the binding offer for a period of 15 days and within the aforesaid timeline the Seller shall inform the Trust whether it intends to accept the offer of the Trustor scout for other offers from third parties.

3. *Acceptance:*

In the event that the Seller has not been able to procure a binding offer from a third party transferee in the manner set out in paragraph 4 below or has elected not to sell the ROFO Securities to a third party transferee after receipt of the binding offer from such third party transferee, or in any other case, the Seller shall have the right to accept the Trust's offer by delivering a notice, prior to the expiry of the ROFO Acceptance Period, to the Trust, confirming acceptance of the Trust's offer to purchase the ROFO Securities at the ROFO Price (the "**ROFO Acceptance Notice**"). The Parties agree and acknowledge that in the event that the Seller does not issue the ROFO Acceptance Notice prior to the expiry of the ROFO Acceptance Period, then the terms of the offer made by the Trust for the ROFO Securities in the ROFO Response Notice shall be deemed to have been rejected. Upon receipt of the ROFO Acceptance Notice by the Trust, the sale of the ROFO Securities shall be completed within a period as may be mutually decided in writing by the Trust and the Seller, subject to receipt of all consents, unitholder approvals for the Trust (if applicable) and corporate approvals of the Seller.

4. *Non-acceptance:*

If the Seller decides to scout for offers from third parties, the Seller shall be entitled to market and sell the ROFO Securities to any third party transferee for a period of 180 days from the date of the intimation it provides to the Trust and it will need to procure a binding offer from such third-party for the transfer of all of the ROFO Securities to such third party transferee at a price which is higher than the ROFO Price (if applicable) by at least 5% within the aforesaid period of 180 days. In the event that the Seller has not been able to procure binding offer in the manner mentioned, or has elected not to sell the ROFO Securities to a third party transferee in pursuance of the binding offer procured from third party transferee, or in any other case, the Seller shall have the right to accept the offer of the Trust.

5. *Representation and Warranties:*

(i) Each party is duly organized and validly existing under applicable law, and has the right, power and authority to execute, deliver and perform the ROFO Agreement.

(ii) The ROFO Agreement has been duly executed and delivered by such party and, assuming the due authorization, execution and delivery by all other parties hereto, constitutes valid and binding obligations of such party enforceable against such party in accordance with its terms, subject to any insolvency proceedings.

(iii) The execution and delivery of the ROFO Agreement by such party and the performance by such party of its obligations under the ROFO Agreement has been duly and validly authorized by all necessary corporate action and does not require any further authorization or consent of any third party;

(iv) The execution, delivery and performance by such party of the ROFO Agreement, and the compliance by it with the provisions of the ROFO Agreement will not result in:

a. a breach of, or constitute a default under, any, agreement or instrument to which such party is a party or by which such party is bound; or

b. result in a violation of its constitutional documents; or

c. contravene any Applicable Law to which it is subject, or any order, writ, injunction or decree of any court or Governmental Authority to which it is subject.

(v) No liquidation, dissolution, winding up, commencement of bankruptcy, insolvency, liquidation or similar proceedings, whether voluntary or involuntary, with respect to it is pending or has been pending, or to the knowledge of such party, threatened.

6. *Termination:*

The ROFO Agreement shall be effective on and from the date of the execution of the ROFO Agreement and continue to be valid and in full force and effect for a period of 3 years from the date of the execution of the ROFO Agreement, or such other period as may be mutually agreed, and unless terminated in accordance with the provisions of the ROFO Agreement.

(F) Shared Services Agreement

Please see the section entitled "*Parties to the Trust - Shared Services Agreement*" on page 173 for a description of the terms of the Shared Services Agreement.

(G) Reimbursement Agreements

(a) Cube Highways and Infrastructure V Pte. Ltd. ("**Reimbursing Party**") has entered into a reimbursement agreement dated September 9, 2024 with Hazaribagh Tollway Private Limited, Jhansi–Vigakhet Tollway Private Limited, Kanyakumari-Etturavattam Tollway Private Limited, Lucknow-Raebareli Tollway Private Limited, Madurai-Kanyakumari Tollway Private Limited, Nanguneri-Kanyakumari Tollway Private Limited, Salaipudhur-Madurai Tollway Private Limited, Kotwa-Muzaffarpur Tollway Private Limited, Jhansi-Lalitpur Tollway Private Limited, DA Toll Road Private Limited, Walayar Vadakkencherry Expressways Private Limited, Andhra Pradesh Expressway Private Limited, Farakka Raiganj Highways Private Limited, Jaipur-Mahua Tollway Private Limited, Mahua Bharatpur Expressways Limited, Western UP Tollway Private Limited, Nelamangala Devihalli Expressway Private Limited and Ghaziabad Aligarh Expressway Private Limited ("**Incurring Parties**") in relation to reimbursement of certain costs (the "**Reimbursement Agreement**"), effective from March 21, 2023 ("**Effective Date**"). The parties to the Reimbursement Agreement have agreed that, amongst other things:

(i) The Reimbursing Party shall reimburse specific expenses incurred by the Incurring Parties, DA Toll Road Private Limited and Walayar Vadakkencherry Expressways Private Limited, on behalf of the Reimbursing Party from the Effective Date to the date of the Reimbursement Agreement, as set out in the Reimbursement Agreement, within 15 days of the receipt of the reimbursement request ("**Incurred Expense**").

(ii) If an Incurring Party incurs additional expenses on behalf of the Reimbursing Party, the Incurring Party shall be required to send a reimbursement request to the Reimbursing Party along with all supporting and necessary documentation and the Reimbursing Parties may, at their sole discretion, reimburse any Incurring Party within 15 days of receipt of the reimbursement request.

(iii) The Reimbursement Agreement shall remain valid and in full force and effect until mutually terminated in writing or terminated by any of the parties involved by giving 15 days prior written notice to the other party.

(b) The Investment Manager has entered into a reimbursement agreement dated March 28, 2025 with the Project Manager in relation to reimbursement of certain costs (the "**Reimbursement Agreement**") in relation to the sharing of the units located at 12th Floor, Tower B, Building 9, DLF Cyber City, DLF Phase III, Gurugram – 122002, Haryana, India used as an office space allocated to the Investment Manager ("**Managed Office**") along with the managed services rendered by Skootr Global Private Limited. The parties to the Reimbursement Agreement have agreed that, amongst other things:

(i) The Project Manager shall reimburse specific costs and expenses incurred by the Investment Manager on a cost-to-cost based recovery of expense as set out in the Reimbursement Agreement, within 30 days of the receipt of the invoice from the Investment Manager.

(ii) The Reimbursement Agreement shall remain valid and in full force and effect until mutually terminated in writing or terminated by any of the parties involved by giving 15 days prior written notice to the other party.

(H) Expert Services Agreement

Cube Highways Technologies Private Limited (the "**Service Provider**"), Cube Highways Trust (the "**Trust**", acting through its investment manager, Cube Highways Fund Advisors Private Limited, the "**Investment Manager**"), Cube Highways and Transportation Assets Advisors Private Limited (the "**Project Manager**") and the Persons listed in the certain Portfolio Assets (the "**Project SPVs**") have entered into an Expert Services Agreement dated February 17, 2026 (hereinafter known as "**Agreement**"), in relation to expert, advisory and support services to be provided by the Service Provider to the Project SPVs. The Investment Manager and the Project Manager appointed the Service Provider, to provide Services in relation to the Project SPVs, in accordance with the terms and conditions of the Agreement. Certain key terms of the Agreement are as follows:

1. Provision of Services:

The Service Provider shall, either directly or through the appointment and supervision of appropriate agents, which may be persons directly employed by the Project SPVs ("**Agents**"), and in compliance with the respective concession agreement and applicable law, provide such expert, advisory and support services in relation to the Project SPVs, as may be requested by the Investment Manager and/or the Project Manager from time to time, including, in relation to the project management functions to be performed by the Project Manager under the PIMA (collectively the "**Services**").

The Services include, without limitation: supervision of the engineering, procurement and construction works in relation to major maintenance, balance works and positive change of scope works; providing expert advisory and due diligence services in relation to traffic, safety, technical and other related matters in connection with assets/SPVs proposed to be acquired by the InvIT; conducting periodic reviews and assessment of structures and preparation of detailed estimates for repair and rehabilitation works; undertaking monitoring, operation and maintenance of the toll management system (TMS); undertaking planning, implementation, operation and maintenance of the Advance Traffic Management System (ATMS); and providing ongoing expert services in relation to traffic, safety, technical, environmental, health and other related operational matters.

2. Covenants:

The Service Provider shall develop, train and maintain a dedicated service team for providing the Services either directly or through the appointment and supervision of Agents ("**Team**"), and shall employ an adequate number of employees with adequate and appropriate experience to provide the Services. The Service Provider shall be responsible to the Investment Manager for the performance of the Team and all team members shall not be considered to be the employees of the Investment Manager/Project SPVs. The Service Provider shall at all times be solely responsible for the payment of compensation of the Team. The Service Provider shall at all times perform the Services strictly in accordance with the Agreement and shall: act in good faith; provide continuous access to the Investment Manager and the Project SPV(s) to all data and information pertaining to the Services; exercise the level of skill, care, attention and diligence as may reasonably be expected of an experienced, professional, prudent and competent third party; not cause to be done any act in violation of applicable law or the Agreement; act within the parameters laid down in the Agreement; and ensure that all Services are performed in a manner that does not infringe any applicable law.

3. Fee:

In consideration of the Services to be rendered by the Service Provider, either directly or through the appointment and supervision of Agents, in accordance with the terms of the Agreement and applicable law, each Project SPV agrees to pay fees as set out in Agreement from its funds, on an arm's length basis, to the Service Provider. Each of the Project SPVs shall pay a fee (calculated annually) equal to 0.35% of the standalone revenue of the Project SPV received from operations ("**Revenue Fee**"), and in addition, each Project SPV agrees to pay a discretionary fee of up to 0.2% of the standalone revenue of the Project SPV received from operations subject to the Service Provider achieving the specified key performance indicators prescribed by the board of directors of the Investment Manager for the relevant financial year. The fee for the Fiscal 2026 shall be paid pursuant to the mechanism prescribed under the Agreement.

The Service Provider shall raise invoices on a monthly basis for the Services provided to each Project SPV during each month in Indian Rupees, and all invoices will be at an arm's length price, based on a benchmarking study, and shall be payable within thirty (30) days upon receipt thereof. The Service Provider may charge a delay interest at the rate of 12% per annum in case of failure of the Project SPV to make the payment within the time mentioned.

4. *Representations and Warranties:*

Each Party represents and warrants to the other Party that:

(i) it has the full power and authority to enter into, execute and deliver the Agreement and to perform the transactions contemplated thereby and is duly incorporated or organised and validly existing under the laws of the jurisdiction of its incorporation or organisation;

(ii) the execution and delivery by it of the Agreement and the performance by it of the obligations contained therein has been duly authorised by all necessary corporate or other action;

(iii) the Agreement constitutes legal, valid and binding obligations, enforceable against it in accordance with its terms, except to the extent such enforceability may be limited by applicable bankruptcy, insolvency, reorganisation, moratorium or other laws of general application affecting the enforcement of creditors' rights generally and general principles of equity;

(iv) the execution, delivery and performance of the Agreement by such Party and the consummation of the transactions contemplated thereby will not result in a breach of, or constitute a default under, any agreement or instrument to which it is a party or by which it is bound, or violation of its constitutional documents or contravene any provision of any applicable law, or any order, writ, injunction or decree of any court or Governmental Authority to which such Party may be subject; and no liquidation, dissolution, winding up, commencement of bankruptcy, insolvency, liquidation or similar proceedings, whether voluntary or involuntary, with respect to it is pending or has been pending, or to the knowledge of such Party, threatened.

5. *Termination:*

The Agreement shall remain valid and effective, unless terminated by the Parties in accordance with the provisions thereof or extended by mutual consent expressed in writing by the Parties, until such time as the last of the concession agreements is in force ("**Validity Period**"), and the Agreement shall be terminated in respect of a particular Project SPV, upon termination of the relevant concession agreement entered into by such Project SPV.

Prior to the expiry of its Validity Period, the Agreement may be terminated:

(i) by the Investment Manager, for any one or more Project SPV(s), by delivery of a written notice to the Service Provider at any time, upon breach of any of the terms, covenants, conditions or provisions of the Agreement by the Service Provider and a failure of the Service Provider to remedy the said breach within a period of 60 days or such other period as may be mutually agreed to cure such breach; or

(ii) by any Party by delivery of a written notice to the other Party upon the bankruptcy of such other Party or if winding up or liquidation proceedings whether voluntary or involuntary are commenced or admitted against such other Party (and such proceedings persist for a period of more than three months).

In case of early termination of the Agreement prior to the expiry of the Validity Period for any one or more Project SPV(s), the Service Provider shall be entitled to and the relevant Project SPV(s) shall be liable to pay to the Service Provider the Fee accrued up to the effective date of termination within a period of 7 business days from the date of receipt of demand failing which the Fee shall attract interest at the rate of 12%.

6. *Damages for Failure to Perform:*

In the event of failure or default by the Service Provider ("**Defaulting Party**"), the other Party ("**Aggrieved Party**") will be entitled to recover damages from the Defaulting Party and such damages shall be based on actual loss or actual damage incurred by the Aggrieved Party. The maximum liability of the Service Provider in each financial year shall be limited to the Fee paid to the Service Provider for the immediately preceding one financial year, in accordance with the terms of the Agreement. In the event that whole or part of the Services are performed through Agents, the Service Provider will be responsible for ensuring their compliance with the terms of the Agreement and any failure or default by the Agents will be considered a failure or default by the Service Provider.

7. *Governing Law and Dispute Resolution:*

The Agreement shall be governed by and interpreted in accordance with the laws of India and the Parties agree to submit to the exclusive jurisdiction of the courts in New Delhi. Disputes or differences between Parties arising out of or in connection with the Agreement shall, if not amicably settled within 30 days of reference to either Party, be resolved through arbitration in accordance with the Indian Arbitration and

Conciliation Act, 1996, whereby collectively, the Project Manager, Investment Manager and the Project SPV(s) shall nominate one arbitrator and the Service Provider shall nominate one arbitrator and the two arbitrators so appointed shall appoint the third or presiding arbitrator, with each Party bearing its costs and expenses of preparing and presenting its case and Parties sharing the costs of the conduct of arbitration including arbitrator fee equally, unless otherwise provided by the award. The venue of the arbitration shall be New Delhi.

(I) Commitment Letter

The Investment Manager (acting on behalf of Cube Highways Trust) (the "**Purchaser**"), the Trustee, Cube Highways and Infrastructure V Pte. Ltd. ("**CH V**"), and Cube Highways and Infrastructure II Pte. Ltd. ("**CH II**"), (CH II and CH V, each individually referred to as the "**Seller**"), WMTPL, BFHL, DTPL and CNTL have entered into a binding commitment letter dated March 17, 2026 ("**Commitment Letter**") to acquire 100% of the equity share capital of BFHL and DTPL, at least 95% of the equity share capital of WMTPL (subject to Conditions Precedents detailed below) (BFHL, DTPL and WMTPL, together the "**CH V Target Companies**") and 100% of the equity share capital of CNTL ("**CNTL**", together with the CH V Target Companies, the "**Target Companies**", and the Purchaser, the Sellers and the Target Companies are collectively referred to as the "**Parties**"). The Parties have agreed to execute a share purchase agreement substantially in the format provided under the Commitment Letter and execute such other transaction documents required to be executed for consummating the proposed transaction (collectively with the transaction document, the "**Transaction Documents**").

The consideration structure for the Proposed Portfolio Assets, as approved by the Unitholders pursuant to the Postal Ballot Notice dated January 30, 2026 (read together with the investor presentation annexed thereto), provides that the aggregate consideration payable by the Purchaser shall comprise up to 288.41 million Units for the Proposed Portfolio Assets (other than CNTL) and up to 98.6 million Units for CNTL, in each case determined in accordance with the Commitment Letter.

Key terms of the Commitment Letter are as follows:

The Purchaser commits to acquire the agreed equity share capital of the relevant Proposed Portfolio Assets ("**Relevant Sale Shares**"), each on a fully-diluted basis, from the relevant Seller, in each case, in exchange of issuance of consideration units to the relevant Seller on the closing date (in conjunction with the Allotment), and subsequently within 5 business days from the relevant closing date, infuse a loan, by way of a shareholder loan ("**Trust Loan**") and repay the non-convertible debentures/optionally convertible debentures or any other securities in the nature of debt held by the relevant Sellers in the relevant Proposed Portfolio Assets ("**Sellers' debt**") , in each case, in the manner prescribed under such Transaction Documents.

1. *Purchase Consideration:*

   The aggregate consideration to be discharged by the Purchaser shall be in accordance with the relevant schedule included in the Commitment Letter. In respect of CNTL, the Net Cash (*as defined in the Commitment Letter*) position shall be determined based on certificates delivered by CH II as of March 31, 2026, and up to ten business days prior to execution of the relevant share purchase agreement and the Purchaser and CH II shall mutually agree on the adjustments to the Net Cash for CNTL within five business days of receipt of each such certificate.

   The Relevant Purchase Consideration (*as defined in the Commitment Letter*) for CH V Target Companies shall further be subject to adjustments for delays in closing, whereby the base consideration units shall increase by 1.54 million Units for each month (or pro rata for any part thereof) of delay beyond March 31, 2026, and, the base consideration units shall correspondingly reduce by 0.6 million units for every ₹ 1increase in the Offer Price above ₹140 per unit, with the allocation of such adjustments among WMTPL, BFHL and DTPL to be mutually agreed between the Purchaser and CH V.

   The Relevant Purchase Consideration for CNTL shall also be subject to adjustments for delays in closing, whereby the CNTL Equity Value (*as defined in the Commitment Letter*) shall increase by 0.34 million units for each month (or pro rata for any part thereof) of delay beyond March 31, 2026, and, the CNTL Equity Value shall correspondingly reduce by 0.21 million units for every ₹1 increase in the Offer Price above ₹ 140 per unit.

2. *Conditions Precedent:*

   Execution of the Transaction Documents shall be conditional upon the fulfilment of all the Conditions Precedent set out in the Commitment Letter by CH II and CNTL ("**CH II Conditions Precedent**") in relation to CNTL, the fulfilment of all the Conditions Precedent set out in the Commitment Letter by CH V and the CH V Target Companies ("**CH V Conditions Precedent**", together with the CH II Conditions Precedent, the "**Sellers Conditions Precedent**") in relation to CH V Target Companies, and the fulfilment of all the Conditions Precedent set out in the Commitment Letter by the Purchaser ("**Purchaser Conditions Precedent**"), in each case, on or before the Long Stop Date. The "**Long Stop Date**" means September 30,

2026, and in the event that the Conditions Precedent have not been satisfied by the Parties on or prior to September 30, 2026, the "**Long Stop Date**" shall stand extended until March 31, 2027 (or such other date mutually agreed in writing by the Parties) and references to the "**Long Stop Date**" shall stand revised to mean March 31, 2027 (or such other date as mutually agreed by the Parties). Such fulfilment should be to the satisfaction of the relevant Parties (acting reasonably), unless otherwise waived in writing by such Parties (where such waiver is permitted under Applicable Law).

Without prejudice to the above, with respect to WMTPL, in the event CH V does not acquire the remaining 5% (five percent) of the equity share capital of WMTPL (currently held by Express Way Developers Limited) in the manner set out in the schedule of the Commitment Letter and prior to the execution of the relevant Transaction Documents, CH V and WMTPL shall ensure that an agreement/undertaking in accordance with the requirements under Regulation 18(3) or Regulation 18(3A) of the InvIT Regulations is executed between the Purchaser and Express Way Developers Limited prior to the execution of the relevant Transaction Documents.

The Sellers Conditions Precedent include, amongst others: confirmation that no material adverse effect has occurred; warranties remaining true and correct, obtaining all requisite corporate approvals; approval from NHAI or the relevant concessioning authority for change in shareholding of each of the relevant Target Companies; provision of valuation reports, necessary forms are filed and approvals are obtained from Reserve Bank of India and fair market value certificates pursuant to the Foreign Exchange Management Act, 1999, obtaining approval from the National Company Law Tribunal (for the proposed capital reduction by DTPL); and settlement of the ongoing dispute (between WMTPL and MPRDC) regarding computation of premium amounts (for periods prior to and post March 31, 2026), including procurement of a written confirmation from MPRDC (in a form reasonably acceptable to the Purchaser) on the agreed methodology for calculation and payment of additional concession fee/premium amounts in line with the vendor model shared on March 18, 2025.

The Purchaser Conditions Precedent include, amongst others: obtaining all requisite corporate approvals, receiving approval from NHAI or relevant concessioning authority for infusion of the Trust Loan, if applicable, and obtaining approval from the Competition Commission of India and the Reserve Bank of India to the extent applicable.

Upon successful completion and confirmation of the conditions precedent in accordance with the terms of the Commitment Letter, Parties will execute the respective Transaction Documents.

3. *Interim Covenants:*

During the interim period (being, in respect of the CH V Target Companies, the period from October 1, 2025 until the earlier of: (i) the date of execution of the relevant share purchase agreement pertaining to the transfer of the Relevant Sale Shares; or (ii) the date of termination of the Commitment Letter; and in respect of CNTL, the period from the date of the execution of the Commitment Letter until the earlier of: (a) the date of execution of the relevant share purchase agreement for the transfer of the Relevant Sale Shares; or (b) the date of termination of the Commitment Letter (the "**Interim Period**"), the relevant Proposed Portfolio Asset shall carry on its business in the ordinary course of business and in accordance with applicable law; and provide the Purchaser with reasonable access to its sites and any such information requested for compliance with applicable law. The relevant Sellers and the relevant Proposed Portfolio Asset shall notify the Purchaser of any event or circumstance which results, in their reasonable opinion, in a Material Adverse Effect (as defined in the Commitment Letter) , and the Purchaser shall notify the other Parties of any event or circumstance which results in a Purchaser material adverse effect (*defined as a Purchaser MAE in the Commitment Letter*). Further, the relevant Seller and the relevant Proposed Portfolio Asset shall notify the Purchaser and include the relevant details in the disclosure letter of the occurrence of any event or circumstance which, in their reasonable opinion, results in the breach of certain interim period-related requirements specified in the Commitment Letter. During the Interim Period, except as otherwise required by the Commitment Letter or with the prior written consent of the Purchaser, the relevant Proposed Portfolio Asset shall not undertake any of the actions set out in the Commitment Letter which, *inter alia*, includes: (a) transfer or encumber all or any portion of the Relevant Sale Shares or Sellers' Debt held by the relevant Seller in the relevant Proposed Portfolio Asset; (b) incur any indebtedness in respect of the relevant Proposed Portfolio Asset or drawdown or prepay or refinance any indebtedness other than as provided for in the Commitment Letter; (c) provide any loans, indemnities or any guarantees outside the ordinary course of business; (f) undertake any action that results in change in control of the relevant Proposed Portfolio Asset; and (g) augment, expand or otherwise change the nature of the project. Further, each of the Proposed Portfolio Asset shall deliver their respective audited financial statements for the financial year ending March 31, 2026 within fifteen business days from the date of completion of such audit.

4. *Representations and Warranties:*

Each party warrants that it is duly organised and validly existing; has due corporate power and authority for the execution of the Commitment Letter; the execution and performance of the Commitment Letter comply with its constitutional documents and does not constitute a breach of any applicable law; and it has all necessary corporate approvals to discharge its obligations.

5. *Warranty and Indemnity Insurance:*

The Purchaser shall be obliged to procure a warranty and indemnity insurance policy from an underwriter before the Long Stop Date ("**W&I Insurance**") and in any event prior to execution of the share purchase agreements, the costs of which shall be borne by the Purchaser, provided that the Seller shall reimburse the Purchaser for such costs borne by the Purchaser. During the Interim Period, the Sellers and the Proposed Portfolio Assets shall provide to the Purchaser any information reasonably requested in relation to procurement of the W&I Insurance.

6. *Termination:*

The Commitment Letter may be terminated by mutual consent of the Parties in writing; by the Purchaser if a material adverse effect has occurred and has not been cured within 30 business days; by any Seller if a Purchaser MAE has occurred and has not been cured within 30 business days; by any of the Parties if they fail to reach mutual agreement in relation to the W&I Insurance; by the relevant Seller or the Purchaser if they mutually decide to terminate the Commitment Letter in relation to acquisition of the CNTL Sale Shares or the acquisition of the CH V Sale Shares (in the manner provided in the Commitment Letter); or by the Purchaser in case of material breach of the Interim Covenants. The Commitment Letter shall terminate automatically upon execution of all Transaction Documents.

7. *Exclusivity:*

During the Interim Period, neither the Sellers nor the Proposed Portfolio Assets shall, without the prior written consent of the Purchaser, directly or indirectly:

(i) solicit, initiate or otherwise encourage any Person (other than the Purchaser) to enter into any Restricted Transaction (*as defined in the Commitment Letter*), and

(ii) enter into any discussions or negotiations or binding agreements with any Person (other than the Purchaser) in relation to any Restricted Transaction

The Sellers and the Proposed Portfolio Assets shall promptly terminate any discussions or negotiations relating to a Restricted Transaction in which it is currently engaged.

8. *Governing Law and Dispute Resolution:*

The Commitment Letter shall be governed by and construed in accordance with the laws of India, and all disputes shall be submitted to arbitration in accordance with Singapore International Arbitration Centre Rules, 2016 by way of arbitration by a sole arbitrator appointed jointly by the Parties to the dispute, with the seat and venue of arbitration being Singapore.

Acquisition of the Existing Portfolio Assets by the Trust

Existing Related Party SPAs

The relevant members of the Cube Group (i.e. Cube Highways and Infrastructure Pte. Ltd., Cube Highways and Infrastructure III Pte. Ltd., CH-II, CH-ID and Cube Mobility Investments Pte Ltd.) (each referred to as a "**Seller**"), the Trustee (acting on behalf of the Trust), the Investment Manager and certain Existing Portfolio Assets have entered into Existing Related Party SPAs pursuant to which the Trust has purchased and the relevant Seller has sold the entire issued*, subscribed and paid-up share capital of the relevant Existing Portfolio Asset*, at the time of the Trust's private listing and subsequent thereto. Pursuant to certain of these Existing Related Party SPAs, the Trust (acting through the Investment Manager) has also executed assignment agreements with the relevant Sellers in relation to the underlying share purchase agreements through which the relevant Existing Portfolio Assets were acquired by the Cube Group.

** In case of MBEL, Madhucon Infra Limited holds 0.03% of the shares and a letter agreement in accordance with the InvIT Regulations has been entered into.*

Acquisition of the Proposed Portfolio Assets by the Trust

Share Purchase Agreements

The Sponsor, in respect of BFHL, DTPL and WMTPL, and Cube Highways and Infrastructure II Pte. Ltd. ("**CH-II**"), in respect of CNTL (the Sponsor and CH-II, individually, the "**Seller**" under their respective Share Purchase Agreements), together with the Trust acting through its Investment Manager (the "**Purchaser**"), the Trustee and each of WMTPL, BFHL, DTPL and CNTL (each, a "**Company**" and collectively, the "**Companies**"), propose to enter into four Share Purchase Agreements for the

purchase by the Trust, and the sale by the applicable Seller and its nominees, as applicable, of 100% of the issued, paid-up and subscribed share capital of BFHL and DTPL, and at least 95 % of the issued, paid-up and subscribed share capital of WMTPL, on a fully diluted basis.

Closing (*as defined in the respective Share Purchase Agreement*) shall occur on a date mutually agreed between the Parties and, failing such agreement, within 45 days from the date of execution of the agreements ("**Agreement Date**") and in any event prior to the Long Stop Date (*as defined in the respective Share Purchase Agreement*) ("**Closing Date**").

Key terms of the proposed Share Purchase Agreements, in respect of each Proposed Portfolio Assets, are as follows:

1. *Sale and purchase:*

   (i) The Purchaser shall purchase from the Seller and its nominees, and the Seller and its nominees shall sell to the Purchaser, on the Closing Date, the Sale Shares (*as defined in the respective Share Purchase Agreement*), in consideration of issuance of the Units of the Purchaser ("**Consideration Units**"), free and clear of any encumbrances and together with all rights attaching thereto, as part of the public offer of Units in accordance with Chapter 14 (read with Chapter 2) of the InvIT Master Circular, such that the Purchaser shall, upon transfer of the Sale Shares on the Closing Date, receive full legal and beneficial ownership of the Sale Shares and all rights thereto; and the Seller shall, upon issuance of the Consideration Units on the Closing Date, receive full legal and beneficial ownership of the Consideration Units and all rights thereto.

   (ii) The Consideration Units payable by the Purchaser to the Seller shall be such number of Units payable against the purchase of the Sale Shares as determined in accordance with the provisions of the relevant Share Purchase Agreement.

   (iii) Further, the Purchaser shall also, within five working days from the Closing Date infuse a loan, by way of a shareholder loan, into the Company ("**Trust Loan**") and shall cause the Company to repay the outstanding debt of the Company by way of subscription to securities including non-convertible debentures, optionally convertible debentures or any other securities in the nature of debt issued by the Company to the relevant Seller and the interest accruing thereon and any other indebtedness of the Company towards the Seller ("**Seller Debt**"), in accordance with the provisions of the Share Purchase Agreement.

   (iv) The Share Purchase Agreements in relation to BFHL and WMPTL, include revenue-linked adjustment to purchase consideration (subject to RBI approval), under which the Sponsor shall compensate the Trust if the actual average revenues for Fiscal 2027 and 2028 (extrapolated for Fiscal 2028 (as applicable)) fall below the agreed thresholds. For BFHL, the expected revenue is ₹2,671.40 million and for every ₹ 1 million difference between the expected revenue and the actual revenue up to ₹171.43 million, an amount equal to 30,630 Units *multiplied by* offer price *plus* applicable interest shall be payable to the Purchaser. For WMTPL, the expected revenue is ₹2,908.00 million and for every ₹1 million difference between the expected revenue and the actual revenue up to ₹100 million, an amount equal to 42,875 Units *multiplied by* offer price *plus* applicable interest shall be payable to the Trust. The payment to the Trust is proposed to be undertaken through an escrow mechanism (subject to RBI approval) wherein a bank guarantee of an adequate quantum will be deposited by the Sponsor. In case any amount is payable to the Trust, the Sponsor will fund the escrow for the relevant amount, or the Trust will invoke the bank guarantee to recover the relevant quantum. In case, RBI approval for the aforesaid payment to the Trust under the Share Purchase Agreements in relation to BFHL and WMTPL is not received, the aforesaid construct will not be applicable and agreed base units will be reduced based on realistic value of pre-agreed earnout units as mutually agreed.

2. *Conditions precedent*

   (i) The Parties acknowledge that the applicable conditions precedent required to be fulfilled by the Seller and the Company in accordance with the Commitment Letter, previously signed by the Parties, have been completed by the Seller and the Company to the satisfaction of the Purchaser (acting reasonably); and all conditions precedent required to be fulfilled by the Purchaser have been completed by the Purchaser to the satisfaction of the Seller (acting reasonably), unless otherwise waived in writing by the relevant party (where such waiver is permitted under applicable law), in each case in accordance with the terms of and in the manner set out in the Commitment Letter. For further details, please see the "*Related Party Transactions– Commitment Letter*" on page 417 for a description of the terms of the Commitment Letter.

   (ii) Further, the finalisation of the basis of allotment pursuant to the InvIT Regulations should have occurred prior to the Closing Date in accordance with the InvIT Regulations.

3. *Interim Period Covenants*

   During the the period between the Agreement Date and the earlier of (i) the Closing Date; or (ii) termination of the Agreement, the relevant Seller is obliged to ensure that the Company operates its business in the ordinary course and in compliance with applicable laws, project documents and material contracts. The Seller and the Company are required to promptly notify the Purchaser of any event resulting in a Material Adverse Effect (*as defined below*) and

ensure adherence to the interim period covenants, with no restricted actions undertaken without the Purchaser's consent. Further, the Seller and the Company must not solicit or engage in any Restricted Transaction (*as defined in the respective Share Purchase Agreement*) and must terminate any ongoing discussions relating to such transactions.

4. *Closing*

(i) Closing shall occur remotely via the electronic exchange of documents and signatures, or at the registered office of the Company or any other place as may be mutually decided by the Parties, by the Closing Date.

(ii) On the Closing Date, each of the Purchaser, the Seller and the Company shall undertake actions in the sequence as set out in the provisions of the Share Purchase Agreement. The obligations of each of the Parties in relation to Closing are interdependent on each other. Closing shall not occur unless all of the obligations specified are complied with and are fully effective. All actions to be taken and all documents to be executed and delivered by the Parties at Closing shall be deemed to have been taken and executed simultaneously, and no actions shall be deemed to have been taken nor documents executed or delivered until all such actions have been taken, executed and delivered.

(iii) It is agreed that the Company and the Seller shall notify the Purchaser in writing of the aggregate outstanding amount of Seller Debt (including accrued interest) payable by the Company to the Seller at least 15 working days prior to the date of infusion of the Trust Loan. Within the 5 working days from the Closing Date, the Purchaser shall disburse the Trust Loan to the Company's bank account and simultaneously cause the Company to utilise the Trust Loan to repay the Seller Debt in full.

(iv) On the Closing Date with respect to the respective Share Purchase Agreements for acquisition of WMTPL, BFHL and DTPL, the Sponsor, the relevant Company and the Purchaser shall execute an assignment agreement in an agreed form ("**Assignment Agreement**"), pursuant to which any rights (including indemnification rights) and certain obligations of the Sponsor under the Erstwhile SPAs pursuant to which the Sponsor acquired these companies, shall be assigned to the Purchaser. Key details in relation to the assignment of the Erstwhile SPAs are given below:

a. The amended and restated share purchase agreement for WMTPL dated February 13, 2024, has been executed amongst the Sponsor, Express Way Developers Limited, and WMTPL. The agreement provides for the acquisition of 95% of the equity shares of WMTPL (with an additional 5% to be acquired at a subsequent closing). This agreement contains an express indemnification framework in favour of the Sponsor, which indemnity rights are proposed to be assigned to the Trust pursuant to the Assignment Agreement.

b. The share purchase agreement for BFHL dated February 15, 2023, read with the amendment dated March 24, 2023, has been executed amongst the Sponsor, HCC Concessions Limited, Hindustan Construction Company Limited, HCC Infrastructure Company Limited, and BFHL. This agreement provides for the Sponsor's acquisition of 100% of the equity shares of BFHL. This agreement contains an express indemnification framework in favour of the Sponsor, which indemnity rights are proposed to be assigned to the Trust pursuant to the Assignment Agreement.

c. The share purchase agreement for DTPL dated February 7, 2025, read with the amendment dated June 4, 2025, has been executed amongst the Sponsor, National Infrastructure Fund acting through its investment manager National Investment and Infrastructure Fund Limited, Athaang Infrastructure Private Limited, and DTPL. The agreement provides for the Sponsor's acquisition of 100% of the equity shares of DTPL. This agreement contains an express indemnification framework in favour of the Sponsor, which indemnity rights are proposed to be assigned to the Trust pursuant to the Assignment Agreement.

5. *Representations and warranties*

(i) The Seller represents and warrants to the Purchaser and the Investment Manager that each of the warranties provided by the Seller are true and correct as at the Agreement Date and with reference to the facts and circumstances then existing as on the Closing Date. The Seller and the Company represent, among other things, that ("**Seller Warranties**"):

a. The Seller and the Company is duly incorporated and validly existing under the laws of the relevant jurisdiction of their incorporation or organization, and has the right, power and authority to enter into, execute, deliver and perform its obligations under the Share Purchase Agreement.

b. The execution and delivery by each of the Seller and the Company of the Share Purchase Agreement and the performance of each of their obligations thereunder has been duly and validly authorized by all necessary corporate action and does not require any further approvals of any third party including any governmental authority. Upon execution and delivery by each Party, the Share Purchase

Agreement constitutes legal, valid and binding obligations of the Seller and the Company, enforceable against each of them in accordance with their terms.

c. The execution, delivery and performance of the Share Purchase Agreement by the Seller and the Company will not breach any material contract or the concession agreement, contravene any court or governmental order, create any encumbrance over the Sale Shares, or violate their memorandum and articles of association.

d. No liquidation, dissolution, winding up, commencement of bankruptcy, insolvency or similar proceedings, whether voluntary or involuntary, with respect to the Seller or the Company is pending before any court or tribunal in respect of which the Seller or the Company has been summoned in writing, or threatened in writing.

e. The Sale Shares represent 100% of the issued and paid-up equity share capital of the Company, except in the case of WMPTL, where they represent at least 95 % of the issued and paid-up equity share capital (subject to the fulfilment of certain conditions precedent in the Commitment Letter).

f. The Seller (along with the Seller Nominees) is the legal and ultimate beneficial owner of the Sale Shares, free of all encumbrances, and has the right to exercise all voting rights over such Sale Shares. The Purchaser (along with its nominees) will, upon occurrence of Closing, become the sole legal and ultimate beneficial owner of the Sale Shares, free from all encumbrances.

g. All of the outstanding and issued shares are duly authorised, validly issued, allotted and transferred, duly stamped and fully paid-up, and were issued in compliance with all applicable laws and the charter documents of the Company. There is no liability on the Seller to pay any additional contributions on the Sale Shares.

h. Other than the Seller Debt and Sale Shares, the Company has not issued any other securities of any nature whatsoever, and has not agreed to buy-back, repay or redeem any securities or otherwise reduce its share capital.

i. Except as provided in the transaction documents, there are no agreements or rights relating to the issuance, sale or purchase of any shares, no pre-emptive or similar rights over the Sale Shares, and no voting trusts or other arrangements affecting the voting of the Sale Shares.

j. Neither the Seller nor the Company is in violation of any applicable anti-corruption laws or policies, and there are no ongoing law-enforcement investigations relating to anti-corruption matters involving the Company.

k. All financial statements and management accounts have been prepared in accordance with applicable accounting standards and give a true and fair view of the Company's assets, liabilities and state of financial affairs.

l. All existing litigations, proceedings, suits, arbitrations and mediations involving the Company are fully and accurately disclosed through the disclosure letter shared.

m. Each material contract is validly executed, in full force and effect, and binding and enforceable in accordance with its terms; there is no subsisting concessionaire event of default under the concession agreements.

n. The Company has no subsidiaries and holds no direct or indirect ownership interest or control in any other entity, corporation, partnership, joint venture or association.

o. All statutory registers and records are up-to-date, complete, accurate, maintained in accordance with applicable law, and in the possession or control of the Company; the Sale Shares are held in dematerialised form.

p. All insurable risks are covered by appropriate policies of a type and amount that are usual and customary for the business, all premiums have been paid, and all policies are in full force and effect at Closing.

q. All outstanding financing facilities have been duly authorised, registered in accordance with applicable law, and applied for the purpose for which they were obtained. All debts receivable by the Company will realise their full value in the normal course of collection, there has been no breach of any subsisting financing agreement, and no financing facility is dependent on third-party guarantees other than those from parent or sponsor companies.

r. The Company is in full compliance with all applicable tax obligations, including transfer pricing, goods and services tax, stamp duty and withholding tax, with India being the sole jurisdiction in which it files or is required to file tax returns; the Company has never entered into any arrangement with a view to avoiding or reducing any tax liability.

(ii) The Purchaser hereby represents and warrants to the Company and the Seller that each of the representations and warranties, as specified in the Share Purchase Agreement, is true and correct as at the Agreement Date. The Purchaser represent, among other things, that ("**Purchaser Warranties**"):

a. It is duly incorporated, validly existing, fully authorised to execute and perform its obligations under the Share Purchase Agreement, and execution thereof will not breach any material contract, contravene any court order or applicable law, or trigger any insolvency proceedings.

b. It is not in breach of any applicable anti-corruption laws or policies, and the Consideration Units to be issued to the Seller will be duly and validly issued, fully paid-up, free from all encumbrances (subject to applicable lock-in restrictions), and ranking pari passu with all existing units of the same class.

c. Upon the issuance and allotment of the Consideration Units to the Seller, the Seller shall be the sole legal and beneficial owner of the Consideration Units, and shall have good, valid and marketable title to the Consideration Units, and shall be entitled to all rights accorded to the holder of the Consideration Units under the Share Purchase Agreement, charter documents of the Purchaser and the applicable law.

d. Neither the Purchaser nor any person duly authorised by the Purchaser on its behalf, has done, committed or omitted to do any act, deed, matter or thing, pursuant to which any of the Consideration Units can be forfeited, cancelled, extinguished or rendered void or voidable or otherwise adversely affected in validity or enforceability.

(iii) No representations or warranties, express or implied, are given or relied upon by either party beyond those expressly set out as Seller Warranties or Purchaser Warranties in the Share Purchase Agreement, and each party's reliance is strictly limited to the warranties provided within the four corners of the Share Purchase Agreement.

6. *Indemnification*

(i) Subject to Closing having occurred and to the limitations set out in the relevant Share Purchase Agreement, the Seller agrees to indemnify, defend and hold harmless the Purchaser, the Company, the Investment Manager and their respective directors ("**Indemnified Party(ies)**") from and against Losses (*as defined in the respective Share Purchase Agreement*) arising out of any breach of any of the Seller Warranties, fundamental warranties or specific indemnity matter (as specified in the relevant Share Purchase Agreement) ("**Specific Indemnity Matter**"). Further, given that the Parties have agreed that a warranty and indemnity insurance policy ("**W&I Insurance**") shall be in place to cover all Seller Warranties (in accordance with the terms of the W&I Insurance) other than fundamental warranties of the Seller and Identified Warranties (*as defined in the relevant Share Purchase Agreement, including, amongst others, leakage/locked box matters and interim covenant breaches*), the Seller's liability for indemnity is effectively limited to breaches of such fundamental warranties and Specific Indemnity Matters. Further, the Seller's maximum aggregate liability is capped as per the provisions of the Share Purchase Agreement.

(ii) Any direct claim for breach of a fundamental warranty or a Specific Indemnity Matter must be made by written notice to the Seller within the applicable claim period, specifying in reasonable detail the amount of loss, the circumstances giving rise to it, details of any third party from whom the Indemnified Party is entitled to recover such sums (whether in full or in part) and the relevant Share Purchase Agreement's provisions basis which the claim is being made. Upon receipt of such notice, the Seller shall have the time period as set out under the Share Purchase Agreement to cure the breach (where capable of cure), object to the claim with stated reasons and/or seek further information. Where the breach is incapable of cure or remains uncured and undisputed at the expiry of that period, the Seller shall make payment to the indemnified party within the time period specified under the provisions of the Share Purchase Agreement. Further, any objects to such a notice of claim must be raised in the manner specified in the Share Purchase Agreement.

(iii) Where an Indemnified Party receives a claim from a third party in respect of which it is entitled to seek indemnification for breach of a fundamental warranty or a Specific Indemnity Matter, it must notify the Seller in writing within the time period set out under the Share Purchase Agreement with all available relevant details such as the circumstances giving rise to the claim and the relevant Share Purchase Agreement provisions basis which the claim is being made. Within the specified period of receipt, the Seller may either accept the claim or dispute the claim in accordance with the Share Purchase Agreement's dispute resolution procedures, and in all cases the Parties shall cooperate and provide each other with all reasonable assistance, records and information in connection with the defence or prosecution of such claim.

(iv) The maximum aggregate liability of the Seller for breaches of fundamental warranties shall not exceed 100% of the purchase consideration plus one hundred percent 100% of the Seller Debt paid by the Purchaser, with individual caps applicable to each Specific Indemnity Matter. Further, all claims must be notified within the applicable claim period (being 10 years from the Closing Date for fundamental warranties and the specific period set out against each Specific Indemnity Matter).

7. Passthrough Payments

The entire monetary and economic benefit of certain claims, the Passthrough Claims (*as defined in the relevant Share Purchase Agreement*) shall belong solely to the Seller post-Closing.

8. *Termination*

(i) The Share Purchase Agreement is effective from the Agreement Date and shall continue to be valid and in full force and effect unless terminated in accordance with the termination clause. Prior to Closing, the Share Purchase Agreement may be terminated by the mutual written consent of the Seller and the Purchaser.

(ii) Prior to Closing, the Purchaser may also terminate by written notice in the event that a material adverse effect (as specified in the Share Purchase Agreement) ("**Material Adverse Effect**") occurs after the Agreement Date and, if curable, has not been remedied to the Purchaser's reasonable satisfaction within the set out time period of the Seller notifying the Purchaser of such occurrence. Correspondingly, prior to Closing, the Seller may terminate by written notice if a Purchaser Material Adverse Effect occurs after the Agreement Date and, if curable, has not been remedied to the Seller's reasonable satisfaction within the set out time period of the Purchaser notifying the Seller of such occurrence.

(iii) If the Closing does not occur within 45 days of the Agreement Date and in any event prior to the Long Stop Date (*as defined in the respective Share Purchase Agreement*) for any reason other than a breach of the Share Purchase Agreement or the other transaction share purchase agreements, any party shall have the right to terminate the Share Purchase Agreement and the other transaction share purchase agreements with immediate effect by written notice, without incurring any liability or obligation to the other parties, and upon such termination each party shall, save as provided for in the survival clause, be released from its respective obligations and from any claims, liabilities or rights arising from the Share Purchase Agreement and the other transaction share purchase agreements, except for any claims arising from or relating to any breach of the Share Purchase Agreement or the other transaction share purchase agreements prior to such termination. Where, however, failure to close by the Long Stop Date is attributable to a breach of the Share Purchase Agreement or the transaction share purchase agreements, the non-defaulting party shall have the right to terminate with immediate effect by written notice, and such termination shall be without prejudice to any other rights and remedies available to the non-defaulting party under applicable law or equity. Prior to exercising any termination right upon expiry of the Long Stop Date, the Parties are required to discuss in good faith and agree in writing on the way forward within a specified number of days of the expiry of the Long Stop Date, failing which the termination rights become exercisable.

Borrowings from Related Parties

Borrowings in the form of inter-corporate deposits, and other short term and subordinated loans were provided by CH-II and CH-V to the Proposed Portfolio Assets For details, please see the section entitled "*Financial Indebtedness and Deferred Payments*" on page 364.

Related Party Transactions of the Portfolio Assets in relation to their registered office

The Project Manager has entered into a license agreement dated July 25, 2025, for a term of three years in relation to its registered office. The Project Manager has sub licensed the said premises to the Investment Manager and NKTPL, SMTPL, SPPL, THPL, APEPL, BWHPL, DATRPL, FRHPL, GAEPL, HTPL, JLTPL, JMTPL, JVTPL, KETPL, KMTPL, LRTPL, MHPL, MKTPL, MSHPL, NAMEPL, NDEPL, QEPL, WUPTPL, WVEPL, SIPL, MBEL, and JUHPL, for using the said premises as their registered office.

For details of risks involved with respect to such related party transactions, please see the section entitled "*Risk Factors –The Trust and the Existing Portfolio Assets have entered into certain related party transactions and expect to continue to enter into related party transactions and there can be no assurance that such transactions will not have an adverse effect on our results of operations and financial condition*" on page 119.

Potential Conflicts of Interest

The Investment Manager has established procedures to address conflicts of interest. For further details on management of potential conflicts of interest, please see the section entitled "*Related Party Transactions – Procedure for dealing with Related Party Transactions*" on page 410.

REGULATIONS AND POLICIES

The following description is a summary of certain sector specific laws currently in force in India, which are applicable to the business of the Portfolio Assets, and the Trust, in the road infrastructure sector. The information summarized in this section has been obtained from statutes, regulations, publications, and sector-specific policies available in the public domain. The description set out below is not exhaustive and is intended only to provide general information to Bidders; it is neither designed as, nor intended to substitute for, professional legal advice or regulatory approvals. The interpretations provided hereinbelow, are subject to modification or clarification by subsequent legislative, judicial or administrative decisions. For information regarding regulatory approvals obtained by the Portfolio Assets and the Trust, please see the section entitled "Regulatory Approvals" on page 437.

Regulatory Framework on Road Infrastructure

The regulatory framework in India in the highways sector, implemented on a public-private partnership ("**PPP**") basis, mainly derives its source from the primary legislations of National Highways Authority of India Act, 1988 (the "**NHAI Act**") and the National Highways Act, 1956 (the "**NH Act**") enacted by the Indian parliament, each as amended or supplemented. The Ministry of Road Transport and Highways is discussing with various state governments the implementation of an artificial intelligence powered traffic management system that would include AI for traffic monitoring and GIS mapping for asset management, aiming to leverage AI to optimise traffic flow and enhance road safety across the country.

The National Highways Act, 1956

The policy of the MoRTH, in implementing the NH Act, is to vest the MoRTH with the power to declare a national highway and for acquisition of land for this purpose. The GoI, by notification, can declare the intention to acquire any land for a 'public purpose' as envisaged by the law, and such land can be used for building, maintenance, management and operation of the declared national highways throughout the country. The NH Act prescribes the procedure for such land acquisition. The procedure includes, *inter alia*, a declaration of intention to acquire, entering and surveying such land, hearing objections, a declaration of acquisition, and the power to take possession. The NH Act also provides for payment of compensation to owners and any other person whose right of enjoyment or ownership in the land has been affected. The NH Act vests MoRTH with the power to appoint a competent authority for the effective implementation of the NH Act and its policies. The said appointed authority retains the right and power to (a) survey, make any inspection, valuation or enquiry; (b) take levels; (c) dig or bore into sub-soil; (d) set out boundaries and intended lines of work; (e) mark such levels, boundaries and lines placing marks and cutting trenches; or (f) do such other acts or things as may be laid down by rules made in this behalf by that government.

All the notified national highways shall vest in the name of the Union and for the purposes, shall include all lands appurtenant thereto and all the bridges, culverts, tunnels and other enlisted constructions under the said NH Act. The Central Government shall assume the responsibility of maintaining and construction of national highways in proper condition in accordance to the law. The Central Government also retains the right to levy a fee over the services and benefits rendered in relation to the use of such national highways.

The GoI is responsible for the development and maintenance of national highways. However, it may direct that such functions may also be exercised by the government of a state in which the highway is located or by any officer or authority subordinate to the GoI or to the state government. Further, the GoI has the power to enter into an agreement with any person for the development and maintenance of a part or whole of the highway. Such a person would have the right to collect and retain fees at such rates as may be notified by the GoI and will also have the powers to regulate and control the traffic, for proper management of the highway, in accordance with the provisions of the Motor Vehicles Act, 1988, as amended. The GoI also has the power to make rules for carrying out the purposes of the NH Act.

The National Highways (Amendment) Act, 2017, entails the competent authority to issue reports to the Central Government in respect of any land (either acquired or proposed to be acquired) which is, either under incorrect revenue record or which is not required due to change in geometry or alignment of the construction, to issue order for the de notification of such land from the acquisition for development and maintenance of the national highway. In pursuance of the foregoing amendment to the statute, the National Highways Rules, 1957, have been amended to ensure the exercise of the power under the NH Act. These rules provide for periodic regulatory compliance and reporting standards to be followed by the competent authority in reporting to the Central Government.

The National Highways Authority of India Act, 1988

The NHAI Act was enacted in pursuance of the powers of the Central Government for appointing a competent authority under the NH Act and provides for the constitution of an authority for the development, maintenance and management of national highways and for matters connected therewith or incidental thereto. In accordance with the NHAI Act, the GoI carries out development and maintenance of the national highways through NHAI. Subject to the provisions of the NHAI Act, the NHAI has the power to enter into and perform any contract necessary for the discharge of its functions. The NHAI has the power to acquire any land to discharge its functions, and such acquired land will be deemed to be land needed for a 'public purpose'. The NHAI Act prescribes a limit in relation to the value of the contracts that may be entered into by NHAI. However, the NHAI may enter into contracts exceeding the specified value, on obtaining prior approval of the GoI. The NHAI Act provides that the contracts for acquisition, sale, or lease of immovable property on behalf of the NHAI cannot exceed a term of 30 years unless previously approved by the GoI.

NHAI's objective is to ensure that all contract awards and procurements conform to best industry practices with regard to transparency of processes and the adoption of bid criteria to ensure healthy competition in contract awards. In accordance with the NHAI Act, the NHAI shall consist of a full-time chairman, not more than 6 full time members and not more than 6 part time members who being appointed by the Central Government. Additionally, various project implementation units headed by a project director have been set at various sites to oversee the timely completion of the projects.

In view of the challenging task of construction, development, and management of national highways being undertaken by NHAI, the Committee on public undertakings selected the subject "National Highways Authority of India (NHAI)" for comprehensive examination and report. The National Highways Authority of India (Amendment) Act, 2013, received the assent of the President of India on September 10, 2013, and aimed to increase the institutional capacity of NHAI to help it execute the powers delegated to it. The National Highways Development Project ("**NHDP**") was launched in 1998 with the objective of developing roads to international standards that facilitate the smooth flow of traffic. The NHDP envisages the creation of roads with enhanced safety features, better riding surface, grade separator and other salient features.

As per the NHAI works manual, 2006, NHAI's mandate is the time and cost bound implementation of the NHDP. The sources of finance available to the NHAI include fund assistance from external funding agencies like the World Bank, International Bank of Reconstruction and Development and the Asian Development Bank. NHAI's role encompasses involving the private sector in the provision, maintenance, and operation of the national highways.

Financing of the NHDP

The GoI, under the Central Road and Infrastructure Fund Act, 2000 created a fund which is required to be utilized for the development and maintenance of national highways (the "**Central Road Fund**"). Section 18 of the NHAI Act also provides for the creation of a separate NHAI Fund. Any capital grant or aid received, loan taken, borrowing made, or any other sum received by the NHAI is credited to the NHAI Fund. Certain sources for financing of the NHDP are through dedicated accruals under the Central Road Fund by levy of cess on fuel as well as involving the private sector and encouraging public-private partnerships. The NHDP is also financed through long-term external loans from the International Bank of Reconstruction and Development, the Asian Development Bank and the Japan Bank for International Cooperation as well as through tolling of roads for different projects undertaken by the NHAI.

Private Participation in NHDP

In an effort to attract private sector participation in the NHDP, the NHAI has issued model concession agreements ("**MCAs**") which have been formulated by Planning Commission of India or NITI Aayog and other departments of Central Government where a private entity, being the concessionaire, is, through an international competitive bidding ("**ICB**") process, awarded a concession (in form of a bundle of licenses) to build, own, operate and collect toll on a road for a specified period of time. The concession to develop highway projects is given by the NHAI or other governmental authorities under various models of PPP like:

(i) Build, Operate, Transfer (BOT)/ Design, Build, Finance, Operate and Transfer (DBFOT) – In this model, the entire designing, financing and construction is undertaken by the concessionaire at its own cost. The concessionaire is entitled to collect toll or receive annuity payments from the NHAI, as the case may be, during the concession period after the construction of the highway project. The bid for the project may either be selected basis the lowest grant wanted by the private developer from the NHAI or the highest premium the private developer is willing to pay to NHAI, in the form of additional concession fee. The concessionaire at the end of the concession period transfers the highway project to the NHAI (free of charge and clear of all encumbrances). The concessionaire's investment in the highway project is recovered directly through user fees collected by way of tolls or annuity. Under the BOT model, the projects which are generally not viable based on toll revenue alone, the NHAI or the relevant governmental authority provides concessionaire with a capital grant upto certain percentage of the project cost to increase the viability of projects and the quantum of such grant is determined on a case to case basis. For certain projects with high traffic volumes, concessionaire also offers a negative grant (i.e., premium) to the NHAI.

(ii) Hybrid Annuity Model (HAM) – In this model, the NHAI or the relevant governmental authority invests 40% (forty percent) of the construction cost of the project in five equal instalments and the balance amount is infused by the concessionaire. The private developer recovers his investment in the form of annuity payments received by it over the concession life. Additionally, there is no traffic risk for the private developer under HAM model because the toll is collected by the NHAI or relevant governmental authorities unlike the BOT model where the private developer collects it.

(iii) Toll, Operate and Transfer (TOT) – In this model, the road projects which are in operational phase are awarded by the NHAI or relevant governmental authorities to the concessionaire. The NHAI passes on the toll collection rights and operation and maintenance obligations to the concessionaire against payment of upfront concession fees quoted by the concessionaire as a part of the bidding process.

The bidding for the projects takes place in two stages as per the process provided below:

1. in the pre-qualification (RFQ) stage, the NHAI selects certain applicants on the basis of technical and financial expertise, prior experience in implementing similar projects and previous track record; and

2. in the bidding (RFP) stage, the NHAI invites financial bids from the pre-qualified applicants at the RFQ-stage on the basis of which the concession is awarded to the successful bidder by the NHAI for implementation of the project.

The GoI, under the Central Road and Infrastructure Fund Act, 2000 created a fund which is required to be utilized for the development and maintenance of national highways (the "**Central Road Fund**"). Section 18 of the NHAI Act also provides for the creation of a separate NHAI Fund. Any capital grant or aid received, loan taken, borrowing made, or any other sum received by the NHAI is credited to the NHAI Fund. Certain sources for financing of the NHDP are through dedicated accruals under the Central Road Fund by levy of cess on fuel as well as involving the private sector and encouraging public private partnerships. The sources of finance available to the NHAI also include fund assistance from external funding agencies like the International Bank of Reconstruction and Development and the Asian Development Bank. NHAI's role encompasses involving the private sector in provision, maintenance, and operation of the national highways.

In accordance with the MCAs for projects above ₹1,000 million, the concessionaire meets the upfront cost and expenditure on annual maintenance and recovers the entire cost along with the interest from toll collections during the concession period. As per the 'Guidelines for Investment in Road Sector' issued by MoRTH in 2009, in order to increase the viability of projects, a capital grant of up to 40% of the project cost is provided by the NHAI or the GoI. The quantum of grant is determined on a case to case basis and typically constitutes the bid parameter in Build, Operate, Transfer ("**BOT**") projects which are generally not viable based on toll revenue alone. For certain projects with high traffic volumes, concessionaire also offers a negative grant (i.e., premium) to the NHAI. The concessionaire at the end of the concession period transfers the road back to the Government (free of charge and clear of all encumbrances). The concessionaire's investment in the road is recovered directly through user fees collected by way of tolls. As per the MCAs for annuity-based projects, the concessionaire is required to meet the entire upfront cost (no grant is paid by the NHAI or the GoI) and the expenditure on annual maintenance for annuity based projects. The concessionaire recovers the entire investment through pre- determined annuity payments to be made by the NHAI or the GoI. Furthermore, MoRTH approved certain amendments to the model concession agreement, inter-alia, in relation to deferment of premium payments.

Exit Policy

The CCEA in May 2015 approved a comprehensive exit policy framework with the objective to mobilize funds in the market. In pursuance thereto, NHAI, vide Circular No. NHAI/1103/CGM(FA)/4/2015 dated June 9, 2015 permitted divestment of 100% equity by concessionaires/developers after two years of completion of construction to facilitate unlocking of funds for new infrastructure projects. The equity divested is required to be invested by promoters in new projects. This comprehensive exit policy framework is expected to harmonize certain conditions across all concessions signed prior to 2009 with the policy framework for post 2009 contracts which permit divestment of equity up to 100%, two years after completion of construction. In line with the spirit of quoted circular, the NHAI issued another circular dated September 9, 2015 followed by the circular dated November 19, 2015, on the same subject, allowing the promoter to use the proceeds from the sale of divested equity of the concessionaire in one or more of the following:

(i) to reinvest in incomplete NHAI projects;

(ii) to reinvest any other highway projects;

(iii) any other power sector projects; or

(iv) to retire their debt to financial institutions in any other infrastructure projects.

Relaxation in the 'change in ownership' clause in Hybrid Annuity Model (HAM) projects

The MoRTH, *vide* circular dated November 10, 2020 and November 27, 2020, read along with the NHAI circular dated December 31, 2020, amended the MCAs in respect of project implemented under the HAM model, and permitted the selected bidder/consortium members, for the new as well as subsisting national highways project under the HAM-model, to transfer their equity six months after COD is achieved for the respective project.

Rationalized Compensation

The CCEA in November 2015 approved a policy for rationalized compensation to concessionaires for languishing national highway projects in BOT mode for delays that are not attributable to the concessionaires. Under the policy, the NHAI is authorized to allow an extension of the concession period for BOT (Toll) projects while keeping the original operation period unchanged. The NHAI has also been authorised to pay compensatory annuities to the concessionaire corresponding to the actual period of delay that is not attributable to the concessionaire upon successful completion of the project. In these cases, the construction period will be enhanced but the tenure of the concession will remain unchanged.

One Time Fund Infusion Scheme

The CCEA in October 2015 gave its approval to the NHAI for a one-time infusion of funds with the purpose of reviving and physically completing stalled projects in the advanced stages of completion. As per the policy, the amount of funds required in each case shall be approved by NHAI on a case to case basis.

Bidder Information

MoRTH has developed the Bidder Information Management System ("**BIMS**") to streamline the process of pre-qualification of bidders for EPC mode of contracts for all national highway works, with enhanced transparency and objectivity. BIMS works as a data base of bidder information that covers basic details, civil works experience, cash accruals and network, and annual turnover so that bidders' pre-qualification can be assessed based on evaluation parameters like threshold capacity and bid capacity from already stored data and the technical evaluation can be carried out in a faster manner.

Land Acquisition

While land is acquired for national highway projects under the NH Act, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (the "**Land Acquisition Act**") must also be complied with. MoRTH has issued comprehensive guidelines on land acquisition for national highways taking into account the applicability of the Land Acquisition Act.

Arbitral Awards

Cabinet committee of economic affairs ("**CCEA**") on August 31, 2016 approved various measures to revive the construction sector. An office memorandum dated September 5, 2016 was issued by the National Institute for Transforming India with certain proposals. On November 20, 2019, the CCEA approved certain proposals in relation to the arbitrations by or against government entities, for the effective implementation of the CCEA's decision on August 31, 2016 on its initiatives to revive the construction sector. Initially, the CCEA had approved the proposal that government agencies will be required to pay 75% of the arbitral award to the concessionaire against a bank guarantee, in cases where the award already announced is challenged. However, pursuant to a press release dated November 20, 2019, the CCEA approved, *inter alia*, that where a government entity has challenged an arbitral award, resultant of which the amount of the arbitral award has not been paid, 75% of such award will be paid by the government entity to the contractor or the concessionaire against a bank guarantee only for the said 75% and not for its interest component. In relation to interest payable to the government entity, if a subsequent court order required the refund of 75% of the amount, the payment of such amounts will be required to be made as per the court orders.

The NHAI through policy circulars dated April 9, 2021 and May 26, 2021 and MoRTH through letter dated December 18, 2019 provide for expedited mechanism for settlement of claims arising out of projects via establishment of Conciliation of Independent Experts. The Department of Expenditure, Ministry of Finance has also launched the Vivad Se Vishwas II (Contractual Dispute) Scheme detailing a one-time settlement initiative for resolving pending contractual disputes involving the Government of India or its related entities. Disputes where the award by court/ arbitral tribunal is only for monetary value was eligible for settlement under this scheme.

Control of National Highways (Land and Traffic) Act, 2002

The Control of National Highways (Land and Traffic) Act, 2002 (the "**Control of NH Act**") provides for control of land within national highways, right of way and traffic moving on national highways and also for removal of unauthorised occupation thereon. In accordance with the provisions of the Control of NH Act, the Central Government has established highway administrations. Under the Control of NH Act, all land that forms part of a highway which vests in the Central Government, or that which does not already vest in the Central Government but has been acquired for the purpose of highways shall be deemed to be the property of the Central Government. The Control of NH Act prohibits any person from occupying any highway land or discharging any material through on such land without the permission of the highway administration. The Control of NH Act permits the grant of lease and license for use of highway land for temporary use.

The Building and Other Construction Workers (Regulation of Employment and Conditions of Services) Act, 1996 and Central Rules, 1998

The Building and Other Construction Workers (Regulation of Employment and Conditions of Services) Act, 1996 (the "**BOCW Act**") and Rules provides to standardise the working conditions and service terms for construction workers, mandate safety standards at construction site to minimise accidents and provide welfare benefits like pensions, medical assistance and maternity benefits through a dedicated fund. Under the BOCW Act, all establishments form a part that employs ten or more building workers on any day in the preceding year. However, the BOCW Act would not be applicable to the establishments that are covered under the Factories Act, 1948 or the Mines Act,1952.

Applicable Rules

As per the NH Act and the NHAI Act, the Central Government is empowered to make rules in order to further the objects of NH Act and NHAI Act. In exercise of such power, the Central Government has framed certain rules which are, amongst others, as follows:

- The National Highways Rules, 1957, as amended;
- National Highways Authority of India (Budget, Accounts Audit, Investment of Funds and Powers to enter Premises) Rules, 1990, as amended;

- The National Highways (Manner of Depositing the Amount by the Central Government with Competent Authority for Acquisition of Land) Rules, 1998;
- The National Highways Tribunal (Procedure for Appointment as Presiding Officer of the Tribunal) Rules, 2003, as amended;
- The National Highways Tribunal (Procedure) Rules 2003;
- National Highways Authority of India (The Term of Office and Other Conditions of Service of Members) Rules, 2003, as amended;
- The Central Road Fund (State Roads) Rules, 2007;
- The National Highways Tribunal (Financial and Administrative Powers) Rules, 2004;
- The National Highways Tribunal (Procedure for Investigation of Misbehaviour or Incapacity of Presiding Officer) Rules, 2003;
- The National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended;
- The Highway Administration Rules, 2004;
- The National Highways (Collection of Fees by any person for the use of Section of National Highways/Permanent Bridges/Temporary bridge on National Highways) Rules, 1997
- The National Highways (Fee for the use of National Highways and Permanent Bridge public Funded Project) Rules, 1997;
- The National Highways (Rate of Fee) Rules, 1997;
- C.E.A. (Measures Relating to Safety and Electric Supply) Regulations, 2010;
- Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations, 2023;
- Indian Electricity Rules, 1956; and
- The Central Motor Vehicle Rules, 1989, as amended.

Other legislations relevant to the road sector

In addition to the above, there are also certain other legislations that are relevant to the road sector which include:

- the Road Transport Corporation Act, 1950;
- Central Road and Infrastructure Act, 2000;
- Central Road and Infrastructure Fund Act, 2000; and
- National Highways (Temporary Bridges) Rules, 1964.

Environmental Compliances and Regulations

Infrastructure projects must also ensure compliance with environmental legislations such as the Water (Prevention and Control of Pollution) Act, 1974 ("**Water Pollution Act**"), the Air (Prevention and Control of Pollution) Act, 1981 ("**Air Pollution Act**") and the Environment Protection Act, 1986, as amended ("**Environment Act**", together with the Water Pollution Act and the Air Pollution Act, the "**Environment Protection Acts**"). The Water Pollution Act aims to prevent and control water pollution. This legislation provides for the constitution of a central pollution control board ("**Central Pollution Control Board**" or "**CPCB**") at the Central level and state pollution control boards ("**State Pollution Control Boards**" or "**SPCBs**", together with the Central Pollution Control Board, the "**PCBs**") at the State levels. The functions of the CPCB includes, among other things, coordination of activities of the SPCBs, collecting data relating to water pollution and the measures devised for the prevention and control of water pollution and prescription of standards for streams or wells. The SPCBs are responsible for, among other things, the planning for programmes for prevention and control of pollution of streams and wells, collecting and disseminating information relating to water pollution and its prevention and control, inspection of sewage or trade effluents, works and plants for their treatment and to review the specifications and data relating to plants set up for treatment and purification of water, laying down or annulling the effluent standards for trade effluents and for the quality of the receiving waters, and laying down standards for treatment of trade effluents to be discharged. These authorities issue consent to establish and consent to operate which are to be required to be renewed periodically. These authorities also have the power of search, seizure and investigation if the authorities are aware of or suspect violation of such regulations. This legislation prohibits any

person from establishing any industry, operation or process or any treatment and disposal system, which is likely to discharge trade effluent into a stream, well or sewer, or bring into use any new or altered outlet for discharge of sewage or begin to make any new discharge of sewage without taking prior consent of the SPCBs.

In context of the environmental compliances and regulations, the National Green Tribunal Act, 2010, as amended is an important legislation which provides for the establishment of a National Green Tribunal for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.

In accordance with the Forest (Conservation) Act, 1980, as amended, state governments are not permitted to make any order de-reserving any reserved forest or directing the use of forest land for a non-forest purpose, or assignment of any forest land through lease or otherwise to any private person or corporation without the approval of the GoI. The Ministry of Environment, Forest and Climate Change ("**MoEF**") mandates the Environment Impact Assessment ("**EIA**") must be conducted for specified projects. In the process, the MoEF receives proposals or the setting up of projects and assesses their impact on the environment before granting clearances to the projects.

The EIA Notification S.O. 1533, issued on September 14, 2006 (the "**EIA Notification**") as amended and amended from time to time, under the provisions of the Environment Protection Act, prescribes that new construction of specified projects require prior environmental clearance from the MoEF. The environment clearance must be obtained from MoEF according to the procedure specified in the EIA Notification. No construction work or preparation of land by the project management except for securing the land, relating to the setting up of a specified project can be undertaken until such clearance is obtained. Under the EIA Notification, the environmental clearance process for new projects consists of four stages – screening, scoping, public consultation and appraisal. After completion of public consultation, the applicant is required to make appropriate changes in the draft 'EIA Report' and the 'Environment Management Plan.' The final EIA Report has to be submitted to the concerned regulatory authority for appraisal. The regulatory authority is required to give its decision within 105 days of the receipt of the final EIA Report. The EIA Guidance Manual for Highways, 2010 explains the four stages of the environmental clearance process and the contents of the EIA Report required to be submitted by highway projects.

Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, as amended, impose an obligation and duty on the owners and operators of any facility or industry with a capability to create hazardous materials to safely dispose of such material in transport and other means of collecting and storing. Each occupier and operator of any facility generating hazardous waste is required to obtain an approval from the relevant state pollution control board for collecting, storing and treating the hazardous waste.

Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy, 2015

In September 2015, MoRTH has launched Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy, 2015, which will require road developers to earmark 1% of a project's total cost for planting of trees and shrubs along the national highways. Under this policy, the maintenance of such plantations will be outsourced through a bidding process to plantation agencies. MoRTH/NHAI will appoint the authorized agency for empanelment of such plantation agencies.

Public Liability Insurance Act, 1991 read with Public Liability Insurance (Amendment) Rules, 2024

The Public Liability Insurance Act, 1991 (the "**Public Liability Act**"), imposes liability on the owner or controller of hazardous substances for any damage arising out of an accident involving such hazardous substances. A list of 'hazardous substances' covered by the legislation has been enumerated by the GoI by way of a notification. The owner or handler is also required to take out an insurance policy insuring against liability under the legislation. The Public Liability Insurance (Amendment) Rules, 2024 mandate the employer to contribute a sum equal to the premium paid on the insurance policies towards the Environmental Relief Fund.

Labour Laws and Other Regulations

The Government has consolidated 29 separate labour laws into four comprehensive labour codes: the Code on Wages, 2019, the Industrial Relations Code, 2020, the Code on Social Security, 2020, and the Occupational Safety, Health and Working Conditions Code, 2020 to modernize and streamline India's labour law framework. Its objectives include improving the ease of doing business, fostering job creation, and ensuring every worker's safety, health, and social and wage security. This key reform is the move toward single registration, single license, and single return, designed to reduce compliance burdens and support employment growth. The four Codes took effect on November 21, 2025. During the transition, relevant provisions of existing labour acts and their associated rules, regulations, notifications, standards, and schemes will continue to apply. Below are the details of the above-mentioned four labour codes:

(i) *The Code on Wages, 2019* (enacted by the parliament of India and assented to by the President of India on August 8, 2019) seeks to simplify, consolidate, and rationalize the provisions of four existing laws-the Payment of Wages Act, 1936; the Minimum Wages Act, 1948; the Payment of Bonus Act, 1965; and the Equal Remuneration Act, 1976. Under the Code, all workers to receive a statutory right minimum wage payment. Minimum wages and timely payment will

ensure financial security. It aims to strengthen workers' rights while promoting simplicity and uniformity in wage-related compliance for employers.

(ii) *The Industrial Relations Code, 2020* (enacted by the Parliament of India and assented to by the President of India on September 28, 2020) has been prepared after amalgamating, simplifying and rationalizing the relevant provisions of the Trade Unions Act, 1926, the Industrial Employment (Standing Orders) Act, 1946 and the Industrial Disputes Act, 1947. The Code acknowledges the fact that survival of worker depends upon survival of industry. In this backdrop, it simplifies laws related to trade unions, conditions of employment in industrial establishment or undertaking, investigation and settlement of industrial disputes.

(iii) *The Code on Social Security, 2020* (enacted by the Parliament of India and assented to by the President of India on September 28, 2020) incorporates existing nine Social Security Acts which are; the Employee's Compensation Act, 1923; the Employees' State Insurance Act, 1948; the Employees' Provident Funds and Miscellaneous Provisions Act, 1952; the Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959; the Maternity Benefit Act, 1961; the Payment of Gratuity Act, 1972; the Cine-Workers Welfare Fund Act, 1981; the Building and Other Construction Workers' Welfare Cess Act, 1996 and; the Unorganised Workers' Social Security Act, 2008. The Code extends social security to all workers-including unorganized, gig, and platform workers-covering life, health, maternity, and provident fund benefits, while introducing digital systems and facilitator-based compliance for greater efficiency.

(iv) *The Occupational Safety, health and Working Conditions Code, 2020* (enacted by the Parliament of India and assented to by the President of India on September 28, 2020) has been drafted after amalgamation, simplification and rationalization of the relevant provisions of the 13 Central Labour Acts- the Factories Act, 1948; the Plantations Labour Act, 1951; the Mines Act, 1952; the Working Journalists and other Newspaper Employees (Conditions of Service and Miscellaneous Provisions) Act, 1955; the Working Journalists (Fixation of Rates of Wages) Act, 1958; the Motor Transport Workers Act, 1961; the Beedi and Cigar Workers (Conditions of Employment) Act, 1966; the Contract Labour (Regulation and Abolition) Act, 1970; the Sales Promotion Employees (Conditions of Service) Act, 1976; the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979; the Cine-Workers and Cinema Theatre Workers (Regulation of Employment) Act, 1981; the Dock Workers (Safety, Health and Welfare) Act, 1986 and; the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996. The Code balances the twin objectives of safeguarding worker rights and safe working conditions, and creating a business-friendly regulatory environment. This will spur economic growth and employment thereby, making India's labour market more efficient, fair, and future-ready.

In addition to the above, various state shops and commercial establishments acts are also applicable to the Portfolio Assets.

Other applicable law

Transfer of Property Act, 1882 ("TP Act")

The TP Act establishes the general principles relating to transfer of property in India. It forms a basis for identifying the categories of property that are capable of being transferred, the persons competent to transfer property, the validity of restrictions and conditions imposed on the transfer and the creation of contingent and vested interest in the property and mortgage of immovable property. It also provides for the rights and liabilities of the buyer and seller in a transaction of sale of immovable property. The TP Act also governs lease agreements, including the rights and liabilities of the lessor and the lessee

Registration Act, 1908 ("Registration Act")

The Registration Act requires for compulsory registration of certain documents, including documents relating to the conveyance of immovable property. A document must be registered within four months from the date of is execution and must be registered with the sub-registrar within whose sub-district the whole or some portion of the property is situated. A document will not affect the property comprised in it, or confer power to adopt or be treated as evidence of any transaction affecting such property (except as evidence of a contract in a suit for specific performance or as evidence of any collateral transaction not required to be affected by registered instrument

The Indian Stamp Act, 1899

Under the Indian Stamp Act, 1899, stamp duty is payable on instruments evidencing a transfer or creation or extinguishment of any right, title or interest in immovable property. Stamp duty must be paid on all instruments specified under the Stamp Act at the rates specified in the schedules to the Stamp Act. The applicable rates for stamp duty on instruments chargeable with duty vary from state to state.

Tax related legislations.

Income tax Act, 1961 ("**Income-tax Act**") is applicable to every company, whether domestic or foreign whose income is taxable under the provisions of this Act or Rules made there under depending upon its 'residential status' and 'type of income' involved. Every assessee, under the Income-tax Act, which includes a company, is required to comply with the provisions thereof, including those relating to tax deduction at source, advance tax, minimum alternative tax and like. The Income Tax Act is

repealed effective April 1, 2026, and replaced by the Income Tax Act, 2025. The new Act aims to restructure all provisions of the Income Tax Act.

Central Goods and Service Tax Act, 2017 ("**GST Act**") Integrated Goods and Services Act, 2017, and various state GST legislations

The GST regime was introduced vide the Constitution (One Hundred and First Amendment) Act, 2016 and provides for imposition of tax on the supply of goods or services and is levied at two levels, central GST through the Central Goods and Service Tax Act, 2017, and state GST through the State Goods and Services Tax Act, 2017, along with the Integrated Goods and Services Tax Act, 2017, for inter-state supply of goods or services. GST replaces a majority of indirect taxes and duties that are in place currently at the central and state levels and is applicable on all goods with the exclusion of alcohol for human consumption, electricity, sale of land, sale of buildings (subject to certain conditions) among others.

COMPANIES RELATED LEGISLATION

The Companies Act, *inter alia*, regulates the incorporation of companies, prescribes the roles and responsibilities of directors, shareholders and key managerial personnel and the procedure for undertaking various corporate actions by the company. Declaration of dividends by companies is regulated, among other sections, under Section 123 of the Companies Act. One of the conditions stated therein is that dividend can be declared by a company out of profits for the year or out of profits for the previous financial year, subject to compliance with the specified conditions, or out of money provided by the state or central government for the payment of dividend by the company. Also, dividend can be declared and paid only from the free reserves of the company. Similarly, a number of restrictions and conditions are set out in Section 68 of the Companies Act for undertaking a buy back by companies. For instance, a buy-back can be conducted by a company only from its free reserves, securities premium account or from proceeds of the issue of any shares or other specified securities subject to compliance with specified conditions. Further, a company is not permitted to undertake a buy-back of more than twenty five percent of the aggregate of paid-up capital and free reserves of the company in a particular financial year and no offer or buy-back can be made within a period of one year from the date of closure of the preceding offer or buy-back, if any.

The Competition Act, 2002

We are also required to comply with the Competition Act, 2002, as amended, which regulates practices having an appreciable adverse effect on competition in the relevant market in India and combinations (including mergers, amalgamations and acquisitions) in excess of certain thresholds.

The Electricity Act, 2003 (the "**Electricity Act**")

The Electricity Act is the central legislation which covers, amongst others, generation, transmission, distribution, trading and use of electricity and prescribes technical standards in relation to the connectivity of generating companies with the grid. Under the Electricity Act, the transmission, distribution and trade of electricity are licensed activities that require licenses from the Central Electricity Regulatory Commission (the "**CERC**"), concerned State Electricity Regulatory Commissions (the "**SERCs**") or a joint commission (constituted by an agreement entered into by two or more state governments or the central government in relation to one or more state governments, as the case may be).

As per provisions of the Electricity Act, generating companies are required to establish, operate and maintain generating stations, tie-lines, sub-stations and dedicated transmission lines. Further, the generating companies may supply electricity to any licensee, or even directly to consumers subject to availing open access to the transmission and distribution systems and payment of transmission charges, including wheeling charges and open access charges, as may be determined by the concerned electricity regulatory commission. In accordance with Section 7 of the Electricity Act, a generating company may establish, operate and maintain a generating station without obtaining a licence under the Electricity Act if it complies with the technical standards relating to connectivity with the grid prescribed under clause (b) of Section 73 of the Electricity Act. Under the Electricity Act, the SERCs are required to promote co-generation and generation of electricity from renewable sources of energy and sale of electricity to any person. The Electricity Act further requires the SERCs to specify, for the purchase of electricity from renewable sources, a percentage of the total consumption of electricity within the area of a distribution licensee. Additionally, Electricity Rules, 2005 (the "**Electricity Rules**") also prescribe a regulatory framework for developing captive generating plants. Pursuant to the Electricity Rules, a power plant shall qualify as a captive power plant only if not less than 26% of ownership is held by captive users and not less than 51%of the aggregate electricity generated in such plant, determined on an annual basis, is consumed for captive use. In case of a generating station owned by a company formed as a special purpose vehicle, the electricity required to be consumed by the captive user(s) are to be determined with reference to such unit or units in aggregate identified for captive use and not with reference to the generating station as a whole, and the equity shares to be held by the captive user(s) in the generating station must not be less than 26% of the proportionate equity of the company related to the generating unit or units identified as the captive generating plant. Additionally, the Electricity (Amendment) Rules, 2023 were notified on June 30, 2023.The amendment introduced rules pertaining to a person or entity functioning as a licensee under the previous act and continues to function as a licensee and where the duration of the license is not prescribed, in such cases the period of the license shall be 25 years from the date of the coming into force of the act. Further the license shall be renewed for a period of 25 years at a time or for a lesser period, if requested by the licensee.

National Logistics Policy, 2022 (the "National Logistics Policy" or "NLP")

The National Logistics Policy aims to create a seamless and integrated logistics systems in India, including improving efficiency and reducing costs in cargo delivery, increasing the share of logistics in the GDP, and creating employment opportunities in the sector. NLP includes the development of multi-modal transportation infrastructure, the creation of the National Logistics Portal for single-window access to all the logistics-related information, promoting e-commerce logistics solutions, and using technology for logistics operations. The multi-modal transportation system includes roads, railways, ports, airports, and inland waterways to improve the speed and efficiency of cargo delivery. The National Logistics Portal will provide a platform for all logistics related information, including tariffs ad regulations. The National Logistics Policy aims to transform the logistics sector in India into an efficient, and cost effective system that drives growth and creates new employment opportunities

PM Gati Shakti –National Master Plan for Multi-modal Connectivity

The 'PM Gati Shakti –National Master Plan for Multi-modal Connectivity' was introduced on October 13, 2021. This is proposed to be implemented as a digital platform to bring 16 ministries together for integrated planning and coordinated implementation of infrastructure connectivity projects. The approach shall be driven by seven engines, namely, roads, railways, airports, ports, mass transport, waterways, and logistics infrastructure for economic transformation, seamless multimodal connectivity, and logistics efficiency. The proposed policy aims to benefit the logistics industry by bringing the data exchange among all mode operators on a 'unified logistics interface platform' ("**ULIP**"), designed for 'application programming interface' ("**API**"). If implemented, this shall provide for efficient movement of goods through different modes, reducing logistics cost and time, assisting 'just-in-time' inventory management, and in eliminating tedious documentation. Further, this will provide real time information to all stakeholders and improve international competitiveness. Open-source mobility stack, for organizing seamless travel of passengers, will also be facilitated.

Bharatmala Pariyojana;

Bharatmala Pariyojana program aims to optimize the efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through development of Economic Corridors, Inter Corridors and Feeder Routes, National Corridor Efficiency Improvement, Border and International connectivity roads, Coastal and Port connectivity roads and Green-field expressways. The umbrella program of Bharatmala Pariyojana also focuses on enhancing effectiveness of already built infrastructure, multi–modal integration, bridging infrastructure gaps for seamless movement and integrating National and Economic Corridors. The program was conceptualized to attain optimal resource allocation for a holistic highway development/improvement initiative. Recently, the Government has extended the deadline of the first phase of the project to 2027-2028 and revised its estimated cost to nearly ₹ 11 trillion.

Intellectual Property Laws

Certain laws relating to intellectual property rights such as trademarks protection under the Trademarks Act, 1999 (the "**Trade Marks Act**") and the Designs Act, 2000 (the "**Designs Act**") are applicable to us.

The Trade Marks Act provides for the process for making an application and obtaining registration of trademarks, better protection of trademarks and prevention of the use of fraudulent marks in India. The purpose of the Trade Marks Act is to grant exclusive rights to marks such as a brand, label, and heading and to obtain relief in case of infringement for commercial purposes as a trade description.

The Designs Act aims to consolidate and amend the law relating to protection of designs. The Designs Act regulates and protects the originality of an article's design and prohibits the piracy of registered designs. The Central Government also drafted the Designs Rules, 2001, under the authority of the Designs Act for the purposes of specifying certain prescriptions regarding the practical aspects related to designs such as payment of fees, register of designs, classification of goods, restoration of designs, etc.

Data Protection Laws:

The Digital Personal Data Protection Act, 2023 (the "DPDP Act")

The DPDP Act received the assent of the President of India on August 11, 2023, and has been notified on November 13, 2025 by the Ministry of Electronics and Information Technology. It seeks to provide for the processing of digital personal data in a manner that recognizes both the right of individuals to protect their personal data and the need to process such personal data for lawful and other incidental purposes. It defines personal data to mean any data about an individual who is identifiable by or in relation to such data ("**Personal Data**"). It further defines a data fiduciary to mean any person who alone or in conjunction with other persons determines the purpose and means of processing of personal data ("**Data Fiduciary**"), and a data principal to mean an individual to whom the Personal Data relates ("**Data Principal**").

The DPDP Act applies to the processing of digital Personal Data within India where the Personal Data is collected in digital form or where it is collected in a non-digital form and is subsequently digitised. It also applies to processing of digital Personal Data outside of India, if such processing is in connection with any activity related to offering of goods or services to Data Principals within India. The DPDP Act does not apply to Personal Data processed by an individual for any personal or domestic purpose, and Personal Data that is made publicly available by the Data Principal to whom such personal data relates or any

other person who is under an obligation under any law for the time being in force in India to make such Personal Data publicly available. As per the DPDP Act, a person may process the Personal Data of a Data Principal for a lawful purpose, for which the Data Principal has given her consent or for certain legitimate uses. It also provides for the establishment of a Data Protection Board of India for taking remedial actions and imposing penalties for breach of the provisions of the DPDP Act. It imposes restrictions and obligations on Data Fiduciaries in relation to dealing with personal data and levies penalties for breach of obligations prescribed under the DPDP Act.

The Motor Vehicles Act, 1988

The development, maintenance and management as well as control of the National Highways are regulated by the NH Act and the NHAI Act. Under the Motor Vehicles Act, 1988, some powers have been delegated to the Transport Department of the State Governments.

Section 138 of the Motor Vehicles Act, 1988 further empowers the State Governments to make rules for the control of traffic, including for the purpose of the removal and the safe custody of vehicles including their loads which have broken down or which have been left standing or have been abandoned on roads; the installation and use of weighing devices; the maintenance and management of wayside amenities complexes; the exemption from all or any of the provisions of relating to fire brigade vehicles, ambulances and other special classes or descriptions of vehicle, subject to such conditions as may be prescribed; the maintenance and management of parking places and stands and the fee, if any, which may be charged for their use; prohibiting the taking hold of or mounting of a motor vehicle in motion; prohibiting the use of foot-paths or pavements by motor vehicles, generally, the prevention of danger, injury or annoyance to the public or any person, or of danger or injury to property or of obstruction to traffic.

Motor Vehicles (Amendment) Act, 2019

The Motor Vehicles (Amendment) Act, 2019, is targeted towards bringing changes in the transport sector to encourage safer driving practices among Indian motor vehicle drivers. It proposes to create a National Road Safety Board, which has been notified by the MoRTH in September 2021. The National Road Safety Board shall be responsible for promoting road safety, innovation and adoption of new technology and for regulating traffic and motor vehicles.

Indian Trusts Act, 1882

The Indian Trusts Act, 1882, as amended ("**Trusts Act**") governs all private trusts in India.

The Trusts Act sets out the purpose for which private trusts can be established, the manner in which they may be created, executed and extinguished. The person creating a trust under the Trusts Act is the author of such trust, the person to whom the author grants the power and authority to regulate the trust is the trustee and the persons for whose benefit such trust has been created are the beneficiaries of such trust. The Trust Act sets out the rights, duties, liabilities and powers of the trustees and the beneficiaries vis-a-vis the trust. The Trust has been settled in accordance with the provisions of the Trusts Act. The Trust Act has been amended to expand the investment powers conferred upon trustees, thereby enabling more flexible investment strategies in the management of trust assets and to rationalise and improve the administrative and management processes relating to trust funds, with a view to enhancing efficiency and ensuring better governance of trust property.

Control of National Highways (Land and Traffic) Act, 2002

The Control of National Highways (Land and Traffic) Act, 2002 (the "**Control of NH Act**") provides for control of land within national highways, right of way and traffic moving on national highways and also for removal of unauthorised occupation thereon.

In accordance with the provisions of the Control of NH Act, the Central Government has established Highway Administrations. Under the Control of NH Act, all land that forms part of a highway which vests in the Central Government, or that which does not already vest in the Central Government but has been acquired for the purpose of highways shall be deemed to be the property of the Central Government. The Control of NH Act prohibits any person from occupying any highway land or discharging any material through on such land without the permission of the Highway Administration or any officer authorised by such administration. The Control of NH Act permits the grant of lease and license for use of highway land for temporary use.

Indian Tolls Act, 1851

In accordance with the Indian Tolls Act, 1851 (the "**Tolls Act**"), the state governments have been vested with the power to levy tolls at such rates as they deem fit, to be levied upon any road or bridge, made or repaired at the expense of the Central or any state government. The tolls levied under the Tolls Act, are deemed to be 'public revenue' and the collection of tolls can be placed under any person the State governments' deem fit. Such persons are enjoined with the same responsibilities as if they were employed in the collection of land revenue. Further, all police officers are bound to assist the toll collectors when required in the implementation of the Tolls Act. The Tolls Act further gives power for recovery of toll and exempts certain category of people from payment of toll.

National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended

The National Highways Fee (Determination of Rates and Collection) Rules, 2008 (the "**NH Fee Rules**"), regulates the collection of fee for the use of national highways. In accordance with the NH Fee Rules, the GoI may, by a notification, levy fee for use of any section of a national highway, permanent bridge, bypass or tunnel forming part of a national highway, as the case may be. However, the GoI may, by notification, exempt any section of a national highway, permanent bridge, bypass or tunnel constructed through a public funded project from levy of such fee.

The NH Fee Rules supersede the National Highways (Temporary Bridges) Rules, 1964, the National Highways (Collection of Fees by any Person for the Use of Section of National Highways/ Permanent Bridge/ Temporary Bridge on National Highways) Rules, 1997, the National Highways (Fees for the use of National Highways Section and Permanent Bridges Public Funded Project) Rules, 1997 and the National Highways (Rate of Fees) Rules, 1997 other than in respect of things done or omitted to be done under such rules prior to supersession. The NH Fee Rules do not apply to agreements and contracts executed or bids invited prior to the publication of such rules i.e. prior to December 5, 2008.

The collection of fee in case of a public funded project shall commence within 45 days from the date of completion of the project. The NH Fee Rules further provide for the base rate of fee applicable for the use of a section of the national highway for different categories of vehicles and the fees collected by the executing authority shall be remitted to the GoI. However, the GoI may, by notification, allow any or all of the executing authorities to appropriate the whole, or part of such fees for purposes as may be specified.

FASTag lanes on fee plazas is a policy initiative of the GoI in which there is an exclusive lane in the fee plaza for movement of vehicles fitted with FASTag. The FASTag is a device which is fitted on the front windscreen of vehicles to indicate online toll payment. The amended NH Fee Rules impose a penalty equivalent to two times the fee applicable if a vehicle not fitted with FASTag enters the exclusive FASTag lane. However, in case a user is unable to pay, due to malfunctioning electronic toll collection infrastructure, the user will be permitted to pass the fee plaza without payment. Further, the FASTag Rules, 2025 mandates that FASTag should be mandatory for all vehicles at toll plazas on national highways. However, in case of a non-compliance, a penalty is to be imposed.

The NH Fee rules were also amended to provide that the driver or owner of a mechanical vehicle which is loaded in excess of permissible load specified for its category, (i) shall not be permitted to use the national highway or cross the fee plaza until the excess load has been removed, and (ii) shall be liable to pay a fee to the toll collection agency equal to ten times of the fee applicable to such category of mechanical vehicle. However, in case no weighbridge has been installed at the toll plaza, no fee for overloading shall be levied. The Central Government, in exercise of its powers under the amended NH Fees Rules, 2008 has issued National Highways Fee (Determination of Rates and Collection) Amendment Rules, 2022, whereby the "closed user fee collection system" has been introduced. For this purpose, the executing authority may establish fee plazas on national highways.

The National Highways Fee (Determination of Rates and Collection) Rules, 2025, implemented from November 15, 2025, mandates that all vehicles must use FASTag or another notified digital method for toll payment. Vehicles entering a toll plaza without a valid FASTag will be subject to a higher fee like vehicles without a valid FASTag will be charged double the fee if paying in cash, and 1.25 times the fee if paying through Unified Payment Interface (UPI).

The National Highways Rules, 1957 (the "NH Rules")

The NH Rules provide that in situations where the estimate cost of the execution of any original work on a national highway exceeds ₹ 1,000,000, a detailed estimated of the cost is to be forwarded to the GoI. An application for allotment of funds for meeting expenditure on an original work on a national highway must also be made to the GoI. The executing agency of the highway is required to furnish monthly progress reports and a completion report on the conclusion of the work. The NH Rules also give the consulting engineer of the GoI the right to inspect the work while it is in progress or after completion.

National Monetisation Pipeline (NMP)

NITI Aayog has developed the pipeline, in consultation with infrastructure line ministries, based on the mandate for 'Asset Monetisation' for roads and highways, amongst others, under Union Budget 2021-22. The framework for monetisation of core asset monetisation has three key imperatives: (i) monetization of 'rights' not 'ownership' i.e. assets will be handed back to the government at the end of transaction life; (ii) brownfield de-risked assets and stable revenue streams; and (iii) structured partnerships under defined contractual frameworks with strict performance standards. This shall include selection of de-risked and brownfield assets with stable revenue generation profile with the overall transaction structured around revenue rights. The primary ownership of the assets under these structures shall be with the government.

Provisions under the Constitution of India and other legislations in relation to collection of toll

Entry 59, List II of Schedule VII read with Article 246 of the Constitution of India vests state governments with the power to levy tolls. Further, in accordance with the Tolls Act, state governments have been vested with the power to levy tolls at such rates as they deem fit.

Foreign Investment Regulations

Foreign investment in Indian securities is governed by the provisions of the FEMA, as amended, read with the applicable FEMA Rules, the FEMA (Mode of payment and Reporting of Non-Debt Instruments) Regulations, 2019 and the consolidated FDI Policy issued by the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government. Foreign investment is permitted (except in the prohibited sectors) either through the automatic route or the approval route, depending upon the sector in which foreign investment is sought to be made. Under the FEMA Rules and the current consolidated FDI Policy, effective from October 15, 2020, an infrastructure investment trust registered and regulated by the SEBI under the InvIT Regulations, being an 'investment vehicle', is permitted to receive foreign investment from a person resident outside India (subject to Press Note 3 (2020 series)), including an FPI or an NRI subject to the terms and conditions specified in the FEMA Rules.

Downstream investment by an infrastructure investment trust shall be regarded as indirect foreign investment if neither the sponsor nor the investment manager of such an infrastructure investment trust is Indian 'owned and controlled' as defined in FEMA Rules.

Downstream investment by an 'investment vehicle' shall have to conform to the sectoral caps and conditions/restrictions, if any, as applicable to the company in which the downstream investment is made as per the FDI Policy. Foreign investment of up to 100% through the automatic route is permitted in the infrastructure sector in India. An infrastructure investment trust that receives foreign investment shall be required to make such report and in such format to the RBI or to the SEBI as may be prescribed by them from time to time.

The payment for the units of an infrastructure investment trust acquired by a person resident or registered/ incorporated outside India shall be made by an inward remittance from abroad through banking channels or by way of swap of shares of an SPV, or out of funds held in a Non-resident External ("**NRE**") or Foreign Currency Non-resident Bank ("**FCNR(B)**") account maintained in accordance with the Foreign Exchange Management (Deposit) Regulations, 2016.

Further, any person who is a non-resident and holds units of an infrastructure investment trust in accordance with the FEMA Rules may pledge such units (i) in favour of a bank in India to secure the credit facilities being extended to the Indian company for bona fide purposes; (ii) in favour of an overseas bank to secure the credit facilities being extended to the person, or a person resident outside India who is the promoter of the Indian company or the overseas group company of the Indian company; (iii) in favour of a Non-Banking Financial Company registered with the RBI to secure credit facilities being extended to the Indian company for bona fide purposes; and (iv) subject to the authorized dealer bank satisfying itself of the compliance of the conditions stipulated by the RBI in this regard.

In addition to the above, compliance with the provisions of various tax-related legislations, intellectual-property related legislations and other applicable law for our day-to-day operations is also required.

REGULATORY APPROVALS

Provided below are the material consents, licenses, permissions, registrations and approvals from the Government, various governmental agencies and other statutory and/or regulatory authorities with which (i) the Trust and the Portfolio Assets can undertake the Offer, and the transactions contemplated in relation to the Offer; and (ii) the Trust and the Portfolio Assets can undertake their respective current business activities, as applicable. Unless otherwise stated, these approvals are valid as of the date of this Draft Offer Document. In the event that any of the approvals and licenses that are required for the Portfolio Assets' business operations expire in the ordinary course of business, the Portfolio Assets will apply for such renewal from time to time. For details in connection with the regulatory and legal framework within which the Trust and the Portfolio Assets operate, please see the section entitled "Regulations and Policies" on page 425.

A. Approvals in relation to the Offer and Swap Transaction

1. Resolutions dated January 30, 2026, passed by the board of directors of the Investment Manager in relation to the Offer and other incidental matters.

2. Resolutions dated February 20, 2026, passed by the Unitholders in relation to the Offer and other incidental matters.

3. Resolution dated February 20, 2026, passed by the Unitholders approving the proposed acquisition of the Portfolio Assets.

4. Consent letter dated March 17, 2026, read with resolution of the board of directors dated March 17, 2026, of Cube Highways and Infrastructure III Pte. Ltd. in relation to the Offer.

5. Consent letter dated March 17, 2026, read with resolution of the board of directors dated March 17, 2026, of Cube Mobility Investments Pte. Ltd. in relation to the Offer.

6. Consent letter dated March 17, 2026, read with resolution of the board of directors dated March 17, 2026, of Cube Highways and Infrastructure II Pte. Ltd. in relation to the Offer.

7. Consent letter dated March 17, 2026, read with resolution of the board of directors dated February 24, 2026, of BCI IRR India Holdings Inc. in relation to the Offer.

8. Consent letter dated March 17, 2026, read with resolution of the board of directors dated March 17, 2026, of Seventy Second Investment Company LLC in relation to the Offer.

9. Consent letter dated March 17, 2026, read with resolution of the board of directors dated February 24, 2026, of BCI IRR India Holdings Limited Partnership in relation to the Offer.

10. In-principle approval for the Offer from BSE dated [●].

11. In-principle approval for the Offer from NSE dated [●].

B. Approvals in relation to the Trust

1. Certificate of registration dated April 5, 2022, bearing registration number IN/InvIT/22-23/0022, issued by SEBI to the Trust pursuant to Regulation 3 of the InvIT Regulations, for registration of the Trust as an infrastructure investment trust.

2. The Trust has received final listing and trading approvals from BSE and NSE for the private listing of the Units pursuant to the letters dated April 18, 2023.

C. Material Business Approvals in relation to Portfolio Assets

I. *APEPL*

a. Certificate of Completion dated September 26, 2022, issued by Aarvee Associates Architects, Engineers and Consultants Private Limited, Independent Consultant for 4-laning of Kottakota-Kurnool section of NH-7 (km 135.469 to km 211.000) in the state of Andhra Pradesh on BOT (Annuity) basis.

b. Environment clearance dated May 19, 2006, issued by Ministry of Environment and Forest for upgrading existing 2 lane to 4 lane divided carriageway configuration of Kothakota to Kurnool section of NH-7 from existing km 135.469 to km 211.000 by NHAI.

c. Certificate of registration of establishment dated June 4, 2019, issued by Department of Labour, Government of National Capital Territory of Delhi.

d. Certificate of registration dated June 12, 2017, issued by Labour Department, Government of Telangana under Section 7(3) of Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.

e. No-objection certificate granted by Government of Telangana Ground Water Department, dated March 21, 2025, for ground water extraction from existing borewell, at base Camp Pullur toll Plaza Pullur toll Plaza valid until March 20, 2030.

f. No-objection certificate granted by Government of Telangana Ground Water Department, dated March 21, 2025, for ground water extraction from existing borewell, at office area for Pullur toll Plaza valid until March 20, 2030.

g. No-objection certificate granted by Government of Telangana Ground Water Department, dated July 10, 2025, for ground water extraction, at Pebbair village valid until July 9, 2030.

II. ***DATRPL***

a. Provisional certificate dated May 20, 2022, issued by URS Scott Wilson India Pvt. Ltd for six laning of Delhi-Agra section of NH-2 from Km 20.500 to Km 200 (Length 179.5 Km) in the States of Haryana and Uttar Pradesh.

b. Environment clearance dated July 23, 2012, issued by Ministry of Environment & Forests for widening and improvement of six-laning of Delhi-Agra section of NH-2 from km 20.500 to km 199.000 in the state of Haryana and Uttar Pradesh.

c. No-objection certificate dated February 10, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Mahuvan Mathura, Uttar Pradesh, valid until January 31, 2028.

d. No-objection certificate dated September 14, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Karman Mathura, Uttar Pradesh, valid until August 20, 2028.

III. ***BWHPL***

a. Certificate of completion dated March 1, 2023, issued by Dhruv Consultancy Services Limited, for four laning of Sangli-Solapur (Package-II: Borgaon to Watambare of length 52.000km.) section of NH-166 from Existing Ch. Km. 219.956 to Ch. 272.394 (Design chainage km. 224.000 to 276.000) of Length 52.000 km. in state of Maharashtra on Hybrid Annuity Mode.

b. Certificate of Exemption valid from January 30, 2024, issued by Department of Water Resources, River Development & Ganga Rejuvenation, Central Ground Water Authority, Ministry of Jal Shakti for Ground Water Withdrawal.

IV. ***MSHPL***

a. Certificate of Completion dated March 1, 2023, issued by Dhruv Consultancy Services Limited, for four laning of Sangli-Solapur (Package-IV: Mangalwedha to Solapur of length 56.500 km.) section of NH-166 from Existing Km 314.969 Design Chainage km 321.600) to existing km 370.452 (Design chainage km. 378.100) of Length 56.500 km. in state of Maharashtra on Hybrid Annuity Mode.

b. No-objection certificate dated April 9, 2024, for ground water extraction from existing borewell issued by Central Ground Water Authority Department of Water Resources, River Development and Ganga Rejuvenation Ministry of Jal Shakti, Govt. of India, valid until April 8, 2029.

c. Re-financing approval dated March 28, 2023, issued by NHAI for re-financing of existing debt and additional debt, as outstanding.

V. ***FRHPL***

a. Certificate of completion dated May 3, 2021, issued by URS Scott Wilson India Pvt Ltd. for four-laning of Farakka-Raiganj Section of NH-34 from Km 295.00 to Km 398.00 in the State of West Bengal.

b. Environment clearance dated September 16, 2008, issued by Ministry of Environment & Forests for widening and strengthening of existing 2 lane to 4/6 lane from Farakka to Raiganj section from km 295 to km 398 of NH-34 in the State of West Bengal.

c. Renewed Labour License dated March 6, 2017, issued by Ministry of Labour and Employment under Section 12(1) of the Contract Labour (Regulation and Abolition) Act, 1970.

d. Certificate of registration dated March 6, 2017, issued by Ministry of Labour and Employment under the Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.

VI. ***GAEPL***

a. Certificate of completion dated April 23, 2022, issued by M/s Theme Engineering Services Pvt. Ltd. Jaipur, for 4/6 laning of Ghaziabad-Aligarh Section of NH-34 (NH-91) from km.23.600 to km. 149.900 in the state of Uttar Pradesh on DBFOT - (BOT) basis under NHDP phase-III.

b. Environmental clearance dated March 3, 2009, issued by Ministry of Environment and Forest for 4/6 laning of NH-91 from Ghaziabad to Aligarh (Km 23.600 to km 139.000) in state of Uttar Pradesh.

c. No-objection certificate dated September 9, 2023, granted by the Ground Water Authority, Ministry of Jal Shakti, Government of Uttar Pradesh for water abstraction at toll plaza situated in Luharli village Gautam Buddh Nagar, Uttar Pradesh valid until September 4, 2028.

d. No-objection certificate dated April 2, 2024, granted by the Ground Water Authority, Ministry of Jal Shakti, Government of Uttar Pradesh for water abstraction at toll plaza situated at LHS of Luharli village Gautam Buddh Nagar, Uttar Pradesh valid until March 17, 2029.

e. No-objection certificate dated April 2, 2024, granted by the Ground Water Authority, Ministry of Jal Shakti, Government of Uttar Pradesh for water abstraction at toll plaza situated at RHS of Luharli village Gautam Buddh Nagar, Uttar Pradesh valid until March 17, 2029.

VII. ***HTPL***

a. Environment clearance dated February 19, 2007, issued by Ministry of Environment & Forests for 4/6 laning of Hazarbagh to Ranchi section on NH-33 in the state of Jharkhand.

VIII. ***JLTPL***

a. Environment clearance dated January 17, 2007, issued by Ministry of Environment & Forests for widening of 4/6 lane of Jhansi to Lalitpur of existing 2 lane from km 0/0 to km 94/0 in state of Uttar Pradesh.

b. No-objection certificate dated June 4, 2025, granted by the Ground Water Authority, Ministry of Jal Shakti, Government of Uttar Pradesh for extraction of ground water.

IX. ***JMTPL***

a. Certificate of completion dated March 9, 2015 issued by LEA Associates South Asia Pvt. Ltd., Consulting Engineers & Planners for improvement, operation, maintenance, rehabilitation and strengthening of existing 2-lane road and widening to 4-lane of divided highway of Mahua-Jaipur section of NH-11 from km 120.000 to 228.000 in the state of Rajasthan on build, operate and transfer basis under NHDP Phase-IIIA.

b. Environmental clearance vide letter dated August 1, 2006, issued by Ministry of Environment & Forest for rehabilitation and strengthening of existing 2-lane road and widening to 4-lane of divided highway of Mahua-Jaipur section of NH-11 from km 120.000 to 228.000 in the state of Rajasthan.

c. Consent to Establish dated August 20, 2018, issued by the Rajasthan State Pollution Control Board under Section 25 and Section 26 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 21(4) of the Air (Prevention and Control of Pollution) Act, 1981, for the Rajadhok Toll Plaza.

d. Consent to Establish dated 16 August 2018, issued by the Rajasthan State Pollution Control Board under Section 25 and Section 26 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 21(4) of the Air (Prevention and Control of Pollution) Act, 1981, for the Sikandra Toll Plaza.

e. Renewed license dated August 11, 2017, issued by Regional Labour Commissioner (Central), Government of India under rule 25(1) of the Contract Labour (R&A) Act, 1970, valid up to August 10, 2026.

f. Registration certificate dated December 31, 2014, under Section 7(3) of the Buildings and Other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996.

g. Exemption certificate dated October 14, 2025, issued by Central Ground Water Authority under the Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at Village Atta Bijori, Tehsil Dausa, District Dausa, Rajasthan.

h. Exemption certificate dated October 14, 2025, issued by Central Ground Water Authority under the Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at Village Khera Paharpur, Tehsil Sikrai, District Dausa, Rajasthan.

i. Exemption certificate dated October 14, 2025, issued by Central Ground Water Authority under the Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at Village Reta, Tehsil Sikrai, District Dausa, Rajasthan.

j. No objection certificate dated April 4, 2025, issued by Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority for toll plaza situated in Jhar village for withdrawal of groundwater valid till April 24, 2026.

k. No objection certificate dated April 4, 2025, issued by Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority for toll plaza situated in Bassi village for withdrawal of groundwater valid till April 24, 2026.

X. *JVTPL*

a. Environment clearance dated January 17, 2007, issued by Ministry of Environment & Forests.

b. No objection certificate dated September 05, 2023, issued by Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority for toll plaza situated in Bassi village for withdrawal of groundwater valid till August 28, 2028.

XI. *KETPL*

No material consents, licenses, permissions, registrations and approvals have been obtained for this asset.

XII. *SPPL*

a. Certificate of completion dated June 21, 2022, issued by, Centro de Estudious de Materials Control de Obra, SA in Association with Armenge Engineering and Management Consultants Pvt. Ltd**.** for supervision of four laning of NH - 161 from Ramsanpalle (Design Km 39.980 / Existing Km 44.757) to Mangloor (Design Km 86.788 / Existing Km 91.350) (Design Length = 46.808 Km) in the state of Telangana under Bharatmala Pariyojana on Hybrid Annuity Mode.

b. Registration certificate dated August 3, 2022, under Rule 24(1) of the Buildings and Other Construction Workers (Regulation of Employment and Condition of Service) Central Rules, 1998.

c. Labour License dated May 17, 2023, issued under Rule 25(1) of the Labour (Regulation and Abolition) Central Rules, 1971.

d. No-objection certificates dated September 2, 2024, granted by the Ground Water Department, Government of Telangana for ground water abstraction valid till September 1, 2029.

XIII. *SIPL*

a. Completion Certificate dated July 5, 2023, issued by MSV International. Inc, for Four laning of Tiruchirappalli (Km.0+000) to Kallagam (Km.38+700) section of NH-227 under Bharatmala Pariyojana on Hybrid Annuity Mode in the State of Tamil Nadu.

b. Renewed Labour License dated March 31, 2023, issued under Rule 25(1) of the Contract Labour (Regulation and Abolition) Central Rules, 1971.

XIV. *THPL*

a. Completion Certificate dated June 8, 2023, issued by MSV International. Inc Consultancy Services for Six laning of NH-140 from Chittoor (Design km: 0.000/Existing km: 158.000 of NH-4) to Mallavaram (Design km: 61.128 / Existing km:41.80 of NH-140) (Design length = 61.128 km) in the state of Andhra Pradesh under Bharatmala Pariyojana on Hybrid Annuity Mode.

b. Renewed licence dated July 19, 2022, issued by Assistant Labour Commissioner (Central), Hyderabad under Section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 for road maintenance from NH-40, Gandanki Toll Plaza, Chittoor to Mallavaram Section Km 158.000 of NH-4 to Km 41.800 valid up to July 18, 2026.

XV. *KMTPL*

a. No-objection certificate dated March 20, 2025, issued Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India, for ground water abstraction valid till September 27, 2026, for an existing well.

XVI. *LRTPL*

a. Environment clearance dated July 10, 2012, issued by Ministry of Environment & Forests for rehabilitation and up-gradation existing 2 lane to 4 lane with paved shoulders configuration of Lucknow-Raibareli Section of NH-24 B in the State of Uttar Pradesh.

b. No-objection certificate for ground water extraction from existing borewell dated February 8, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh.

XVII. *MBEL*

a. Completion Certificate dated September 13, 2009, issued by M/s. Aarvee Associates Architects Engineers and Consultants Pvt. Ltd., acting as Independent Consultant, for improvement, operation and maintenance, rehabilitation and strengthening of the existing 2-lane road and widening to 4-lane divided highway of Bharatpur–Mahua section of National Highway 11 (NH-11) from Km 63.00 to Km 120.00 in the State of Rajasthan, India, on BOT basis.

b. Environment clearance dated August 1, 2006, issued by Ministry of Environment & Forests rehabilitation and strengthening of the existing 2-lane road and widening to 4-lane divided highway of Bharatpur-Mahua section of National Highway 11 from km 63.00 to km 120.00 in the state of Rajasthan.

c. Consent issued by Rajasthan State Pollution Control Board under the Section 25 and Section 26 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 21(4) of the Air (Prevention and Control of Pollution) Act, 1981 for the Ludhwai and Amoli Toll Plazas established on the project highway.

d. Renewed certificate of registration issued by the Licensing Officer and Assistant Labour Commissioner, GOI *vide* its letter dated September 13, 2022, under the Contract Labour (Regulation and Abolition) Act, 1970 valid up to October 4, 2026.

e. Registration certificate dated July 12, 2016, under Section 7(3) of the Buildings and Other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996.

f. Exemption certificate dated January 06, 2026, issued by Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority for toll plaza situated in Amoli village Bharatpur, Rajasthan for abstraction of groundwater.

g. Exemption certificate dated January 02, 2026, issued by Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority for toll plaza situated in Halena village Bharatpur, Rajasthan for abstraction of groundwater.

h. Exemption certificate dated December 29, 2025, issued by Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority for toll plaza situated in Ludhawai village, Bharatpur, Rajasthan for abstraction of groundwater.

i. Renewal of No objection certificate dated April 4, 2025, issued by Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority for toll plaza situated in Allapur village, Bharatpur, Rajasthan for withdrawal of groundwater valid till April 24, 2026.

XVIII. *MKTPL*

No material consents, licenses, permissions, registrations and approvals have been obtained for this asset.

XIX. *MHPL*

a. Completion Certificate dated October 27, 2025, issued by MSV International Inc. in association with Armenge Engineering Pvt. Ltd., acting as Independent Engineer, for four laning of NH-161 from Mangloor (Design Km 86.788 / Existing Km 91.350) to Telangana/Maharashtra Border (Design Km 135.751 / Existing Km 140.873) (Design Length = 48.963 km) in the State of Telangana under Bharatmala Pariyojana on Hybrid Annuity Mode.

b. Renewed license dated September 11, 2023, issued by under Rule 25(1) of the Contract Labour (Regulation and Abolition) Central Rules, 1971 valid till September 10, 2026.

c. No-objection certificate dated October 7, 2024, granted by Ground Water Department, Government of Telangana to MHPL for groundwater abstraction valid till October 6, 2029.

XX. *NAMEPL*

a. Provisional Certificate dated September 27, 2024, issued by LEA Associates South Asia Pvt. Ltd for Operation and Maintenance of Narketpally - Addanki - Medarametla Road (SH-2) from Km.0.000 to Km 212.500 in the State of Telangana and Andhra Pradesh.

b. Renewed licence dated March 19, 2025, issued by the Registering/Licensing Officer, Government of Andhra Pradesh Labour Department under the Contract Labour (Regulation and Abolition) Act, 1970.

c. Certificate of registration of commercial establishment dated May 2, 2020, by Department of Labour National Territory Delhi under the Delhi Shops & Establishment Act, 1954.

d. Certificate of registration of commercial establishment dated January 1, 2019, issued by Labour Department, Uttar Pradesh under U.P. Dookan Aur Vanijya Adhishthan Adhiniyam, 1962.

e. Consent dated August 2, 2017, for establishment issued under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974.

f. Consent dated September 2, 2017, issued under Section 25 and 26 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981.

g. Consent to establish and operate dated April 8, 2019, issued for establishment and operation of 2 diesel generator sets of 180 KVA and 125 KVA capacities respectively at Thummalacheruvu Toll Plaza, Thummalacheruvu Village, Piduguralla Mandal, Guntur District, Andhra Pradesh,

h. Consent to establish and operate dated June 12, 2019, for establishment and operation of 2 diesel generator sets of 180 KVA and 125 KVA capacities respectively at Elchuru Toll Plaza, Santhamanagaluru Mandal, Prakasam District, Andhra Pradesh.

i. Certificate dated October 25, 2018, issued by the Tahsildar, Piduguralla Mandal, Guntur District, certifying utilization of ground water from the existing borewell at Survey No. 251, Thummalacheruvu, Piduguralla Mandal, Km. 110+200 LHS Thummalacheruvu Toll Plaza.

j. Certificate dated October 25, 2018, issued by the Tahsildar, Santhamaguluru Mandal, certifying utilization of ground water from the existing borewell at Survey No. ROW, Elchuru, Santhamaguluru Mandal, Km. 168+200 RHS at Elchuru Toll Plaza.

k. No-Objection Certificate dated May 9, 2025, issued by the District Ground Water Officer, Nalgonda, Ground Water Department, Government of Telangana, under the Telangana Ground Water (Regulation and Control of Development and Management) Act, 2004 (TGWALTA), for ground water extraction from an existing borewell at Modugulapally Toll Plaza.

XXI. ***NDEPL***

a. Completion Certificate dated May 11, 2024, issued by M/s. Feedback Infra Pvt. Ltd. in joint venture with M/s. Satra Services & Solutions Pvt. Ltd. in association with M/s. Saadhya Infra Solutions LLP, acting as Independent Consultant, , for design, construction, development, finance, operation and maintenance of the Nelamangala Junction on NH-4 with NH-48 to Devihalli Section of NH-48 (new NH-75) from Km 28.200 to Km 110.000, in the State of Karnataka, on BOT basis

b. Environment Clearance dated March 13, 2007, issued by Ministry of Environment & Forests for upgradation of existing 2 lane road from Nelamangala to Bommanhalli (28.200 km to 107.900 km) to 4/6 laning of NH-48 in the state of Karnataka under NHDP phase III by NHAI.

c. No objection certificate dated May 24, 2005, granted by Karnataka Ground Water Authority bearing number KGWAN1267136360 for extraction of groundwater at the toll plaza located at Nagamangala taluk, valid for a period of five years from December 31, 2030.

d. Approval dated May 24, 2022, issued by District Groundwater Directorate, Bengaluru Rural District to permit the utilization of borewell for drinking purposes.

XXII. ***NKTPL***

a. No objection certificate dated July 6, 2023, issued by Water Resource Department, Government of Tamil Nadu for withdrawal of groundwater valid for a period of three years.

b. No objection certificate dated July 11, 2025, issued by Water Resource Department, Government of Tamil Nadu for withdrawal of groundwater valid for a period of three years.

XXIII. ***SMTPL***

a. Renewal of No objection certificate dated July 14, 2025, issued by Water Resource Department, Public Works Department, Government of Tamil Nadu for withdrawal of groundwater valid until November 22, 2027.

XXIV. ***WVEPL***

a. Completion Certificate dated October 31, 2015, issued by AECOM Asia Company Limited, for four laning of Varanasi-Aurangabad section of NH-2 from Km 285.411 to Km 378.500 (Length 93.089 km) in the State of Uttar Pradesh on Design, Build, Finance, Operate and Transfer (DBFOT)

b. Environment Clearance dated September 15, 2008, issued by Ministry of Environment and Forests for widening and strengthening of 4/6 laning of WVEPL from 182.250 km to 240.000 km in the State of Kerala by NHAI.

c. Renewed licence dated October 6, 2023, issued by Assistant Labour Commissioner (Central), Ernakulam under Section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 valid up to October 5, 2026

d. Permission dated February 8, 2010, issued by Deputy Conservator of Forests, Social Forestry Division, Palakkad under Order No. P3-1815/2009 for cutting of 4,365 trees (712 trees from Mangalam Palam to Erimayoor, 2,005 trees from Erimayoor to Palakkad, and 1,648 trees from Palakkad to Walayar) for widening of NH-47.

e. No-objection certificate dated April 7, 2025, for ground water extraction from existing borewell issued by Central Ground Water Authority, Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Government of India.

XXV. ***WUPTPL***

a. Completion Certificate dated June 2, 2016, issued by Unihorn (India) Pvt. Ltd., for four laning of Meerut-Muzaffarnagar section of NH-58 from Km 52.25 to Km 130.56 in the State of Uttar Pradesh on Build, Operate and Transfer (BOT) basis.

b. Certificate of Registration of Employer dated March 23, 2018, issued by the Assistant Labour Commissioner, Muzaffarnagar, Labour Department, Government of Uttar Pradesh, under Section 7(3) of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996

c. No-objection certificate dated October 9, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Khatauli Muzaffar Nagar Uttar Pradesh, valid until March 3, 2028.

d. No-objection certificate dated April 14, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Siwaya Meerut, Uttar Pradesh, valid until March 18, 2028.

e. No-objection certificate dated April 14, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Siwaya, Meerut, Uttar Pradesh, valid until March 18, 2028.

f. No-objection certificate dated April 6, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Walidpur village Meerut, Uttar Pradesh, valid until March 18, 2028.

g. No-objection certificate dated April 14, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Walidpur village Meerut, Uttar Pradesh, valid until March 18, 2028.

h. No-objection certificate dated October 9, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Siwaya Meerut, Uttar Pradesh, valid until March 18, 2028.

i. No-objection certificate dated October 9, 2023, issued by Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh, for ground water extraction from existing borewell at toll plaza situated in Siwaya village Meerut, Uttar Pradesh, valid until March 18, 2028.

XXVI. ***JUHPL***

a. Completion Certificate dated May 31, 2018, issued by TPF Getinsa Eurostodious S.L for four laned Jammu Udhampur Section from Km 15.000 (Jammu Bypass) to Km 67.000 on BOT (Annuity) in the state of Jammu and Kashmir.

b. Environment clearance dated August 31, 2010, issued by Ministry of Environment & Forests for rehabilitation and strengthening to 4/6-laning of Jammu-Udhampur Section including Nagrota Bypass and Udhampur Bypass of NH-1A from km 9.7 to km 72.750 in the State of Jammu & Kashmir.

c. Amendment to Environment clearance dated May 3, 2013, issued by Ministry of Environment & Forests for waiver of condition No. XVIII (prohibition of blasting of rocks) of the clearance dated August 31, 2010, for rehabilitation and strengthening to 4-laning of Jammu-Udhampur Section of NH-1A from km 15.000 (Jammu Bypass) to km 67.000 (Udhampur) in the State of Jammu & Kashmir.

d. Certificate of registration dated February 22, 2024, issued by Assistant Labour Commissioner, Jammu under the Jammu & Kashmir Shops & Establishment Act, 1966 valid up to March 31, 2026.

e. Certificate of registration of employer dated April 20, 2023, issued by Registering Officer, Regional Labour Commissioner (Central), Jammu under Section 7(3) of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.

f. Licence dated April 28, 2023, issued by the Government of India, Office of the Licensing Officer, under Rule 25(1) of the Contract Labour (Regulation and Abolition) Central Rules, 1971.

XXVII. ***QEPL***

a. Completion Certificate dated December 15, 2022, issued by ISAN Corporation in JV with Chaitanya Projects Consultancy Pvt. Ltd., for four laning of Quazigund to Banihal Section of NH-1A from Km 189.350 to Km 205.618, including one Tunnel (2-lane) of 8.45 kms and one Viaduct of 1.424 kms length on DBFOT (Annuity) basis in the Union Territory of Jammu & Kashmir.

b. Environment clearance dated July 13, 2007, issued by Ministry of Environment & Forests for 4/6 laning of Banihal to Quazigund from Km 188.000 to Km 220.700 section of NH-1A in the State of Jammu and Kashmir by National Highway Authority of India.

c. Certificate of registration dated April 6, 2021, issued by Assistant Labour Commissioner (Central), Jammu under Section 7 of the Contract Labour (Regulation and Abolition) Act, 1970 valid up to April 6, 2026.

d. Certificate of registration of employer dated July 14, 2020, issued by Registering Officer, Regional Labour Commissioner (Central), Jammu under Section 7(3) of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 valid up to July 13, 2030.

e. Certificate of registration dated June 14, 2024, issued by Public Health Engineering Department, Jal Shakti Department, Government of Jammu and Kashmir for borewell connection at Qazigund Banihal tunnel near Control Room Building, Nowgam, Tehsil Banihal, District Ramban.

XXVIII. ***DTPL***

a. Completion Certificate dated December 20, 2025, issued by M/s. L.N. Malviya Infra Projects Pvt. Ltd. in association with M/s. Infratech Civil Solutions Consultant, acting as Independent Engineer, for upgradation, operation and maintenance of the Hyderabad–Bangalore Section of NH-7 from Km. 534.720 to Km. 556.840 in the State of Karnataka under NHDP Phase-VII on Design, Build, Finance, Operate and Transfer (DBFOT) Toll basis.

b. Renewed licence dated December 7, 2021, issued by Assistant Labour Commissioner (Central), Bangalore under Section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 for construction and maintenance at Devanahalli Toll Plaza valid up to December 6, 2026.

c. Current user registration certificate issued by Senior Geo-Scientist and Member Secretary, District Ground Water Office, Bangalore Rural District, Government of Karnataka for existing borewell registered for drinking water purpose at Devanahalli Toll Plaza, Bangalore.

XXIX. ***BFHL***

a. Completion Certificate dated June 22,2024, issued by URS Scott Wilson India Private Limited, for four laning of Baharampore-Farakka section of NH-34 from Km 191.700 to Km 292.300 (Length 100.600 km) in the State of West Bengal on Design, Build, Finance, Operate and Transfer (DBFOT).

b. Environmental Clearance dated August 19, 2008, issued by the Ministry of Environment & Forests for widening and strengthening of existing 2-lane to 4/6 laning of Berhampur to Farakka Section from Km 193 to Km 295 of NH-34 in the State of West Bengal.

c. Renewed licence dated December 1,2025, issued by Assistant Labour Commissioner (Central), Kolkata under Section 12 of the Contract Labour (Regulation and Abolition) Act, 1970. Will expire on December 6, 2026.

d. Confirmation dated July 18, 2024, from office of the Geologist, Geological Sub-Division No. III/B, for exemption from obtaining a permit for ground water extraction from existing borewells operated along the Section of NH-34 from Km 191.700 to Km 292.300 in the State of West Bengal.

XXX. ***WMTPL***

a. Renewed licence dated December 26, 2025, issued by the District Labour Office, Dhar, Government of Madhya Pradesh, under Section 12(1) of the Contract Labour (Regulation and Abolition) Act, 1970.

b. Renewed licence dated January 2, 2026, issued by the District Labour Office, Ratlam, Government of Madhya Pradesh, under Section 12(1) of the Contract Labour (Regulation and Abolition) Act, 1970.

c. Completion Certificate dated August 29, 2011, issued by Artefact Projects Ltd. for four-laning of the 2nd homogeneous section (Km. 66+250 to 124+150) of state highway no. SH-31.

d. Confirmation dated July 13, 2007, from office of Ministry of Environment and Forests for four-laning of Lebad–Ratlam–Jaora Road (State Highway-31) from Km 0 to Km 125 in the State of Madhya Pradesh that does not attract the requirements of the environmental impact assessment.

e. Exemption certificate dated October 22, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at LHS of the toll plaza situated in Chhokala, Badnawar, Madhya Pradesh.

f. Exemption certificate dated October 22, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at RHS of the toll plaza situated in Chhokala, Badnawar, Madhya Pradesh.

g. Exemption certificate dated October 22, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at RHS of the toll plaza situated in Chikliya, Ratlam, Madhya Pradesh.

h. Exemption certificate dated July 30, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at RHS of the toll plaza situated in Chikliya, Badnawar, Madhya Pradesh.

i. Exemption certificate dated December 29, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at RHS of the toll plaza situated in Nagda Chhokala Toll Plaza, Tehsil Badnawar, Dist-Dhar, Madhya Pradesh.

j. Exemption certificate dated December 30, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at KM 121.160 LHS Public Toilet Block, Piploda, Dist-Ratlam, Madhya Pradesh.

k. Exemption certificate dated December 30, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at KM 121.200 RHS Public Toilet Block, Piploda, Dist-Ratlam, Madhya Pradesh.

l. Exemption certificate dated December 29, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at KM 60.100 LHS Public Toilet Block, village Multan, Dist-Dhar, Badnawar, Madhya Pradesh.

m. Exemption certificate dated December 29, 2025, issued by Central Ground Water Authority under Department of Water Resources, River Development and Ganga Rejuvenation, Government of India for ground water abstraction at KM 81.800 LHS Public Toilet Block, village Dharad, Dist-Ratlam, Ratlam, Madhya Pradesh

n. No objection certificate for Ground Water Abstraction dated February 12, 2026, issued by the Central Ground Water Authority, Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, Government of India, for abstraction of fresh ground water from one proposed borewell at Km 79.00, SH-31, Chikiliya Toll Plaza, PO Bilpank, District Ratlam, Madhya Pradesh.

o. No Objection Certificate for Ground Water Abstraction dated February 24, 2026, issued by the Central Ground Water Authority, Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, Government of India, for abstraction of fresh ground water from one proposed borewell at Km 41.500, Village Chokala, Tehsil Badnawar, District Dhar, Madhya Pradesh.

XXXI. ***CNTL***

a. Completion Certificate dated March 8, 2017, issued by TPF Getinsa Eurostudios, S.L. in association with Segmental Consulting and Infrastructure Advisory (P) Limited, for two/four-laning of Chenani-Nashri section of NH-1A from Km 89.00 to Km 130.00 (new alignment) including 9 km long tunnel (2-lane) with parallel

escape tunnel in the State of Jammu and Kashmir on Design, Build, Finance, Operate and Transfer (DBFOT) Annuity basis.

b. No-objection certificate dated March, 2 2020 issued by Executive Engineer PHE (M) G.W.D. Division Jammu, Government of Jammu and Kashmir for bore well drilled at Chenani Nashri Tunnel, Chenani-North Portal.

c. No-objection certificate dated March, 2 2020 (Bore Well No. 2) issued by Executive Engineer PHE (M) G.W.D. Division Jammu, Government of Jammu and Kashmir for bore well drilled at Chenani Nashri Tunnel, Chenani-North Portal.

d. No-objection certificate dated March, 2 2020 (Bore Well No. 3) issued by Executive Engineer PHE (M) G.W.D. Division Jammu, Government of Jammu and Kashmir for bore well drilled at Chenani Nashri Tunnel, Chenani-North Portal.

D. Approvals applied for, but not yet received

As on the date of this Draft Offer Document, there are no approvals required to be obtained by the Trust and the Portfolio Assets, for which applications have been made, but approvals have not been received, other than as described below:

(i) Application dated February 6, 2026, to NHAI in relation to transfer of 100% shareholding of BFHL.

(ii) Application dated February 6, 2026, to NHAI in relation to transfer of 100% shareholding of CNTL.

(iii) Application dated February 6, 2026, to NHAI in relation to transfer of 100% shareholding of DTPL.

(iv) Application dated October 8, 2025, to MPRDC in relation to transfer of 100% shareholding of WMTPL.

(v) Application dated 3rd March 2026, to NHAI, for availing refinancing facility from the Trust to repay the outstanding debt of CNTL.

(vi) Application dated 28 February 2026, to NHAI, for availing refinancing facility from the Trust to repay the outstanding debt of BFHL

(vii) Application dated 2 March 2026, to NHAI, for availing refinancing facility from the Trust to repay the outstanding debt of DTPL

(viii) Application dated March 7, 2026, to NHAI, for the proposed change in the project manager for Existing Portfolio Assets, except NAMEPL.

(ix) Application for No-Objections certificates dated December 21, 2020, submitted by APEPL to the Mandal Revenue Officer, Jogulamba, Gadwal District and the Mandal Revenue Officer, Vanaparthi District for extraction of ground water.

(x) Application dated April 15, 2018, submitted by APEPL to the Mandal Revenue Officer, Vanaparthi District for extraction of ground water.

(xi) Application for No-Objections certificates dated March 24, 2023, submitted by WVEPL to the Ground Water Authority for abstraction of ground water.

(xii) Application for No-Objections certificates dated March 24, 2023, submitted by WVEPL to the Ground Water Authority for abstraction of ground water.

(xiii) Application for No-Objections certificates dated November 17, 2025, submitted by JMTPL to the Ground Water Authority for abstraction of ground water.

(xiv) Application for No-Objections certificates dated May 14, 2025, submitted by MHPL to the Ground Water Department, government of Telangana.

(xv) Application for No-Objections certificates dated May 30, 2025, submitted by GAEPL to the Ground Water Authority for abstraction of ground water.

(xvi) Application for No-Objections certificates dated May 30, 2025, submitted by GAEPL to the Ground Water Authority for abstraction of ground water.

(xvii) Application for No-Objections certificates dated March 12, 2025, submitted by SIPL to the Ground Water Authority, Tamil Nadu for abstraction of ground water.

(xviii) Application for No-Objections certificates dated September 23, 2024; submitted by SIPL to the Ground Water Authority, Tamil Nadu for abstraction of ground water.

(xix) Application, for No-Objections certificates dated February 17, 2026, submitted by DTPL to the Ground Water Authority for abstraction of ground water.

(xx) Application for No-objection certificates dated February 6, 2026, for extraction of groundwater abstraction from 2 borewells for WMTPL.

(xxi) Application for No-Objections certificates dated October 16, 2024, submitted by QEPL to the Ground Water Authority for abstraction of ground water.

(xxii) Application to the RBI dated March 10, 2026 in relation to proposed acquisition of the Proposed Portfolio Assets as per the terms of the Commitment Letter.

E. Approvals for which applications are yet to be made

As on the date of this Draft Offer Document, and other than as set out below, there are no approvals required to be obtained by the Trust and the Portfolio Assets, for which applications are yet to be made:

(i) Application to the CCI in relation to proposed acquisition of the Proposed Portfolio Assets as per the terms of the Commitment Letter.

In addition to the material approvals disclosed above, we may, from time to time, obtain certain other approvals, licenses, registrations, and clearances as may be required under applicable laws, rules, and regulations, including but not limited to shops and establishment registrations, forest clearances, and such other approvals and permissions as may be necessary.

Except as stated in this section, there is no material civil litigation, criminal litigation or actions by regulatory authorities, in each case involving the Portfolio Assets, the Trust, the Sponsor, the Investment Manager, the Project Manager, or any of their respective Associates (excluding certain investee companies that operate independently of Cube Group (operating in India)), the Sponsor Group and the Trustee, that are currently pending as on the date of this Draft Offer Document.

For the purpose of this section, details of all criminal and regulatory actions involving the Trust (including the Portfolio Assets), the Sponsor, the Investment Manager, the Project Manager, or any of their respective Associates, the Sponsor Group and the Trustee, that are currently pending have been disclosed. All criminal matters involving the Trust (including the Portfolio Assets), the Sponsor, the Investment Manager, the Project Manager, or any of their respective Associates, the Sponsor Group and the Trustee, that are currently pending, if any, have been disclosed. Further, any civil matter involving an amount equivalent to, or more than, the amounts as disclosed below, in respect of the Trust (including the Portfolio Assets), the Sponsor, the Project Manager, the Investment Manager and each of their respective Associates, the Sponsor Group and the Trustee has also been disclosed. Details of proceedings related to direct and indirect taxes involving the Trust and its Associates, the Portfolio Assets, the Sponsor and its Associates, the Sponsor Group, the Investment Manager and its Associates, the Project Manager and its Associates, and the Trustee, have been disclosed in a consolidated manner, indicating the number of cases and the total amount.

For the Trust (including the Existing Portfolio Assets), the total consolidated income of the Trust and the Existing Portfolio Assets for the financial year ended March 31, 2025, was ₹ 34,531.52 million. Accordingly, in respect of the Trust, its Associates (apart from entities which are Associates of the Sponsor, Investment Manager or Project Manager) and each of the Portfolio Assets, all outstanding civil matters which involve an amount equal to or exceeding ₹ 1,726.57 million (being 5% of the total consolidated income as on March 31, 2025) have been considered material. Additionally, all cases where an adverse outcome would materially and adversely affect the business, operations or financial position or reputation of each of the Trust or the Portfolio Assets, irrespective of the amount involved, may also be identified as material litigation and disclosed.

Additionally, all outstanding claims and penalties involving the Portfolio Assets, as considered material by the board of the Investment Manager, have been disclosed individually, and all other outstanding non-material claims and penalties have been disclosed in a consolidated manner.

For the Sponsor, the total assets of the Sponsor for the Financial Year ended December 31, 2024, was ₹ 72,032.66 million. Accordingly, in respect of the Sponsor and its Associates (including common Associates of the Sponsor, Project Manager or Investment Manager) and the Sponsor Group, all outstanding civil matters which involve an amount equal to or exceeding ₹ 1,080.49 million (being approximately 1.5% of the total assets for the Financial Year ended December 31, 2024) have been considered material.

For the Investment Manager, the total net worth as on December 31, 2025, was ₹ 319.60 million. Accordingly, in respect of the Investment Manager and its Associates, all outstanding civil matters which involve an amount equal to or exceeding ₹ 15.98 million (being 5% of the total net worth as on December 31, 2025) have been considered material.*

For the Project Manager, the total consolidated income for Fiscal 2025 was ₹ 1,001.51 million Accordingly, in respect of the Project Manager and its Associates (excluding common Associates of the Sponsor, Project Manager or Investment Manager), all outstanding civil matters which involve an amount equal to or exceeding ₹ 50.07 million (being 5% of the total consolidated income for Fiscal 2025) have been considered material.

For the Trustee, the total profit after tax for Fiscal 2025 was ₹ 215.53 million. Accordingly, in respect of the Trustee, all outstanding civil matters which involve an amount equal to or exceeding ₹ 10.78 million (being 5% of the profit after tax for Fiscal 2025) have been considered material.

For entities which are common Associates of any of the Sponsor, the Investment Manager and the Project Manager, where the above-mentioned materiality thresholds in relation to the Sponsor, the Investment Manager and the Project Manager apply, all outstanding civil matters which involve an amount equal to or exceeding ₹ 1,080.49 million (being the higher of the thresholds (in terms of amount) applicable to the Sponsor, the Investment Manager and the Project Manager) have been considered material.

Additionally, all outstanding cases involving the Sponsor, Investment Manager, the Project Manager or any of their Associates or the Sponsor Group, where an adverse outcome would materially and adversely affect the business, operations or financial position or reputation of the Sponsor, its Associates, the Sponsor Group, the Investment Manager or the Project Manager, irrespective of the amount involved, have been considered as material and disclosed.

Further, in cases where outcome of one litigation impacts one or more other litigations, which individually are below materiality threshold, but collectively are above the threshold, such cases will also be disclosed.

**Net worth means the aggregate value of the paid-up share capital and all reserves created out of the profits (securities premium account and debit or credit balance of profit and loss account) after deducting the aggregate value of the accumulated losses, deferred expenditure and miscellaneous expenditure not written off as per the audited balance sheet but does not include reserves created out of revaluation of assets, write-back of depreciation and amalgamation*

I. Litigation and Regulatory Actions against the Trust and its Associates

As on the date of this Draft Offer Document, there are no outstanding criminal litigation, non-ordinary course regulatory actions or material civil litigation against the Trust and its Associates (not being, the Portfolio Assets).

II. Litigation involving the Portfolio Assets

Material civil proceedings filed against the Portfolio Assets

DATRPL

(i). Karan Singh Dalal and others ("**Petitioners**") have filed a writ petition against DATRPL and NHAI ("**Respondents**") before the High Court of Punjab and Haryana ("**High Court**"), alleging illegal and wrongful grant of provisional certificate of completion of an establishment of a toll plaza at Gadpuri, Haryana. The Petitioners have sought the fulfilment of certain obligations under the concession agreement entered into between the Respondents pertaining to six-laning of DATRPL project highway and the shifting of the said toll plaza away from the Arohi Model School, Gadpuri, Haryana. The Hon'ble High Court *vide* order dated December 5, 2023, ordered to list the matter before Division Bench of the High Court. The division bench of the High Court ("**Division Bench**") on August 9, 2024, took on record the Petitioners' affidavit, treating the petition as a public interest litigation. The matter is currently pending before the Division Bench.

(ii). Tej Pal and others ("**Plaintiffs**") have filed a plaint against DATRPL and State of Haryana ("**Defendants**") before the Court of Civil Judge (Senior Division), Palwal ("**Court**") seeking permanent injunction against the Defendants to restrain them from carrying out construction on certain lands which is alleged to be owned by the gram panchayat. The Court, by way of its order dated May 21, 2022 ("**Order**"), has rejected the plaint stating that the Plaintiffs do not have any cause of action. The Plaintiffs have preferred an appeal against the Order before the District and Sessions Court, Palwal and the said appeal is currently pending.

NKTPL and SMTPL

(i). V. Maharajan ("**Petitioner**") has filed a writ petition against NKTPL, SMTPL and NHAI and others ("**Respondents**") before the High Court of Madras alleging, amongst other things, improper road maintenance and repair works at the road stretch between Madurai and Kanyakumari and lack of adequate facilities and amenities. The Petitioner sought the issuance of directions for the repair and maintenance of the stretch between Madurai and Kanyakumari and suspension of collection of toll fees at the Salaidupur toll plaza and the Nanguneri toll plaza till such repair and maintenance works are ongoing. This matter has not been admitted yet.

Material civil proceedings filed by the Portfolio Assets

MHPL

(i) MHPL, MSHPL and BWHPL ("**Claimants**") have initiated arbitration proceedings before the Singapore International Arbitration Centre ("**SIAC**"). In these proceedings, MHPL has raised a claim for an amount of ₹ 1,926.38 million against Dilip Buildcon Limited ("**Respondent**"). The Claimants have alleged, *inter alia,* losses suffered by them due to the inability of the Respondent to finish balance works under the share purchase agreement and the engineering, procurement and construction agreement executed between the parties. Subsequently, in its statement of counterclaim, the Respondent raised certain contentions against the Claimant, alleging, *inter alia*, breach of obligation to pass on tax credit benefits and breach of confidentiality. The Respondent has filed the statement of reply to defence to counterclaim before the SIAC. The matter is currently pending before the SIAC.

MSHPL

(i) MSHPL and certain other SPVs ("**Claimants**") have initiated arbitration proceedings before the Singapore International Arbitration Centre. In these proceedings, MSHPL has raised a claim for an amount of ₹ 653.32 million against Dilip Buildcon Limited ("**Respondent**"). For details, please see the section entitled "*Legal and Other Information – Material civil proceedings filed by the Portfolio Assets – MHPL (ii)*".

BWHPL

(i) BWHPL and certain other SPVs ("**Claimants**") have initiated arbitration proceedings before the Singapore International Arbitration Centre. In these proceedings, BWHPL has raised a claim for an amount of ₹ 264.92 million against Dilip Buildcon Limited ("**Respondent**"). For details, please see the section entitled "*Legal and Other Information – Material civil proceedings filed by the Portfolio Assets – MHPL (ii)*".

MKTPL

(i) MKTPL, SMTPL, KETPL and NKTPL ("**Petitioners**") have filed a writ petition against Tamil Nadu State Transport Corporation ("**Respondent**") before the High Court of Madras ("**High Court**"). MKTPL sought redressal for the loss of revenue of ₹ 1,337.57 million. Since Fiscal year 2020, buses operated by the Respondent have been plying through the toll plazas operated by the Petitioners without payment of the applicable user fee under the National Highway Fee (Determination of Rates and Collection) Rules, 2008 issued by the Ministry of Road Transport and Highways. The High Court, *vide* order dated July 31, 2025, directed the Respondent to pay the outstanding dues to the Petitioners. Subsequently, the parties reached an understanding regarding the payment of such dues, and the dues have been paid. However, the same is yet to be recorded by the High Court, and the matter continues to remain pending before the High Court.

SMTPL

(i) SMTPL and certain other SPVs ("**Petitioners**") have filed a writ petition against Tamil Nadu State Transport Corporation ("**Respondent**") before the High Court of Madras. SMTPL sought redressal for the loss of revenue of ₹ 208.42 million. For details, please see the section entitled "*Legal and Other Information – Material civil proceedings filed by the Portfolio Assets – MKTPL (i)*".

KETPL

(i) KETPL and certain other SPVs ("**Petitioners**") have filed a writ petition against Tamil Nadu State Transport Corporation ("**Respondent**") before the High Court of Madras. KETPL sought redressal for the loss of revenue of ₹ 223.51 million. For details, please see the section entitled "*Legal and Other Information – Material civil proceedings filed by the Portfolio Assets – MKTPL (i)*".

NKTPL

(i) NKTPL and other SPVs ("**Petitioners**") have filed a writ petition against Tamil Nadu State Transport Corporation ("**Respondent**") before the High Court of Madras. NKTPL sought redressal for the loss of revenue of ₹ 373.43 million. For details, please see the section entitled "*Legal and Other Information – Material civil proceedings filed by the Portfolio Assets – MKTPL (i)*".

Others

(i). Certain persons ("**Petitioners**") have filed separate cases against some of the Portfolio Assets before various civil courts, consumer courts and other authorities, *inter alia*, (i) alleging excess collection of toll; (ii) challenging acquisition of land used for the Portfolio Assets; and (iii) challenging certain encroachment notices served upon the Petitioners. These matters are currently pending.

(ii). Certain persons have filed separate labour cases against some of the Portfolio Assets before various civil and labour courts in relation to, amongst other things, wrongful termination of employment and increase in salaries. These matters are currently pending.

Criminal proceedings involving the Portfolio Assets

DATRPL

(i) The State of Haryana ("**Complainant**") has initiated criminal proceedings against Rajesh Madaan, the project manager of DATRPL ("**Respondent**"), amongst others, before the District Court, Faridabad ("**Court**"). A first information report was filed against the Respondent under sections 279, 337, 338 and 304A of the Indian Penal Code, 1860, as amended, in relation to the death of the son of Manoj Kumar Wadhwa in a road accident allegedly due to potholes on the road forming part of DATRPL's project. A petition for setting aside the chargesheet has been filed before the Court. Basis the said petition, the Court has granted a stay on any further proceedings against the Respondent. The matter is currently pending.

(ii) Giriraj Kishore ("**Complainant**") has filed a complaint against Rajesh Madaan ("**Accused 1**") and the concerned team leader of the independent engineer ("**Accused 2**") before the Court of Judicial Magistrate, Chhata, Mathura ("**Court**"), alleging commission of mischief in connection with the incomplete execution of drainage infrastructure works of the National Highway Delhi-Mathura Road. It is alleged that Accused 1 and Accused 2 intentionally diverted drainage water towards the Complainant's agricultural land, resulting in significant damage to both a boundary wall and standing crops. The Court, upon initial review, found *prima facie* evidence of malfeasance and mischief. Subsequently, the Court has issued summons to Accused 1 in this matter. The matter is currently pending.

MBEL

(i). The Labour Enforcement Officer ("**Plaintiff**") has filed two separate cases against MBEL (erstwhile Madhucon Agra Jaipur Expressway Limited) ("**Accused**") before the Civil Court, Bair District, Bharatpur ("**Civil Court**"), alleging non-compliance under Sections 23 and 24 of the Contract Labour (Regulation and

Abolition) Act, 1970. The Plaintiff has also filed another case before the Civil Court under Section 22 of the Minimum Wages Act, 1948 for non-payment of minimum wage to a worker as stipulated under the aforesaid Act. The matters are currently pending.

(ii). Saroj Devi ("**Complainant**") has filed a criminal case against Brijendra Singh ("**Accused**") before the Court of Additional Chief Judicial Magistrate, Mahwa ("**CJM**"), alleging that the Accused has unlawfully constructed certain tanks in front of her property, thereby obstructing her right of way. It is further alleged by the Complainant that despite repeated representations, the officials of MBEL failed to take any action to remove the said encroachment and are purportedly acting in collusion with the Accused. The CJM refused to take cognizance of the matter. The Complainant has challenged the order of the CJM before the Court of Additional District and Sessions Judge, Mahwa, Dausa. The matter is currently pending.

(iii). Rajendra Singh ("**Complainant**") has lodged a first information report against employees of MBEL ("**Accused**") alleging physical altercation and misconduct on the part of the Accused. Upon completion of the investigation, the police filed a closure report. Aggrieved by the said closure report, the Complainant preferred a protest petition seeking cognizance of the alleged offences. The matter is currently pending.

(iv). Suresh Kumar ("**Complainant**") has filed a complaint against Anoop Singh, a member of the toll collection staff of MBEL ("**Accused**"), before the District Court, Bharatpur ("**Court**") alleging that the Accused has physically assaulted him and used derogatory language directed at his caste constituting an offence under the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989, read with the Indian Penal Code, 1860. The Accused has received a notice of appearance from the police for the aforesaid case. The matter is currently pending.

MHPL

(i) Ismail Shaik ("**Complainant**") has lodged a first information report ("**FIR**") against Rajinder Bhati, the ex-project head for MHPL ("**Accused**"), alleging the death of his father due to the negligence of the Accused. The Complainant has alleged that high mud mounds in the vicinity of NH-161 were not removed by the maintenance authorities due to which, the deceased while being on one of these mud mounds came into contact with a live electricity line due to the proximity of the mound to the said line, which resulted in his death by electrocution. A response to the FIR has been filed by the Accused. The matter is currently pending.

MSHPL

(i) MSHPL ("**Plaintiff**") has lodged a criminal complaint against Rohit Sharma ("**Accused**"), proprietor of M/s Rajdeep Enterprises before the Court of Chief Judicial Magistrate, Solapur ("**Court**"), under Section 138 read with Section 142 of the Negotiable Instruments Act, 1881, alleging dishonour of cheque in relation to an inadvertent error of credit of ₹ 318,544 by the Plaintiff in the bank account of the Accused. The matter is currently awaiting listing before the Court.

NDEPL

(i) Venkatalakshmamma ("**Complainant**") has filed a first information report ("**FIR**") against Hari Babu, a toll supervisor employed by NDEPL ("**Accused**"), alleging negligence on the part of the Accused to ensure proper road maintenance due to which the Complainant's husband, a pedestrian, lost his life. Aggrieved by the said FIR, the Accused filed a writ petition before the High Court of Karnataka, Bangalore ("**Court**") for quashing of the FIR and the Court has granted a stay on the FIR. The matter is currently pending.

WUPTPL

(i) The State of Uttar Pradesh has filed a criminal case against Brijesh Singh, the manager of Sivaya Toll Plaza operated by WUPTPL ("**Applicant**"), before the High Court of Allahabad ("**Court**"). It was alleged that the Applicant negligently maintained the road infrastructure resulting in the complainant sustaining injuries. In response, the Applicant has filed an application before the Court stating that his role is strictly limited to the operation of the toll collection plaza under a contractual agreement, and that he bears no duty or responsibility for the maintenance of the road. The Court granted a stay on the proceedings thereby preventing any coercive action against the Applicant. The matter is currently pending.

SIPL

(i) Benita Mary ("**Complainant**") has filed a criminal complaint against Ramesh Vadivel ("**Accused**"), alleging that the Complainant, who was employed as a paramedic with SIPL, was sexually harassed by the Accused, her manager. The Accused filed a petition for anticipatory bail before the High Court of Madras ("**Court**"). The Court granted anticipatory bail to the Accused. The matter is currently pending.

GAEPL

(i). GAEPL has filed various FIRs in relation to damage to structures and assets on the project highway. These matters are currently pending.

Other matters considered material by the board of directors of the Investment Manager

APEPL

(i) APEPL ("**Claimant**") has initiated arbitration proceedings against NHAI ("**Respondent**") under the APEPL Concession Agreement. The Claimant has disputed the minimum thickness of bituminous concrete overlay requirement under the APEPL Concession Agreement, during the second and third periodic maintenance, respectively, and raised claims with respect to the costs incurred for the additional thickness of overlay work it has undertaken, as per the directions of the Respondent. The Claimant has claimed that the requirement to lay the increased thickness has resulted in additional costs aggregating to approximately ₹ 312.10 million, which it seeks to recover along with interest and costs. The Respondent has denied all claims, asserting that the overlay thickness it directed was technically sufficient and that the Claimant, having carried out the works in accordance with those directions in earlier maintenance periods without objection, is estopped from challenging such direction and seeking to recover additional costs for works in subsequent periods. The matter is currently pending before the arbitral tribunal.

BWHPL

(i) BWHPL ("**Claimant**") has initiated arbitration proceedings against NHAI ("**Respondent**") under the BWHPL Concession Agreement. The Claimant has raised claims against the Respondent for the release of balance annuity payments, delay in release of payments, additional expenditure incurred due to extension of construction period and reimbursement of costs for mobilisation of machinery, among others, for a claim amount of ₹ 3,367.95 million along with applicable interest and costs. The Respondent has filed a statement of defence and a statement of counter claim against the Claimant. The Respondent has raised counter claims against the Claimant for license fee for unauthorised use of NHAI land, toll revenue loss, and damages for breach of maintenance obligations, among others, for a counter claim amount of ₹ 3,618.38 million along with applicable interest and costs. The matter is currently pending before the arbitration tribunal.

FRHPL

(i) FRHPL ("**Claimant**") has issued a notice to NHAI ("**Respondent**") for initiation of arbitration proceedings under the FRHPL Concession Agreement. The Claimant has raised claims against the Respondent for the delay in the issuance of the provisional completion certificate for the additional Non-PCOD stretches by the Respondent, which although intended to be issued with effect from April 01, 2021, was actually received by the Claimant on May 03, 2021, resulting in the Claimant incurring revenue loss for the period from April 01, 2021 to May 02, 2021. The Claimant claims a total revenue loss of ₹ 248.20 million, comprising of a principal revenue loss of ₹ 170.47 million and interest of ₹ 77.73 million calculated up to June 30, 2025. Subsequently, the Claimant proposed to resolve the matter through the CCIE mechanism, and the Respondent has consented to the same. The matter has been placed for resolution through conciliation before the Conciliation Committee of Independent Experts ("**CCIE**"). The matter is currently pending before the CCIE.

(ii) FRHPL ("**Claimant**") has issued a notice to NHAI ("**Respondent**") for initiation of conciliation proceedings under the FRHPL Concession Agreement. The Claimant has disputed the reduction of the concession period by the Respondent. The Respondent has stated that the actual traffic on the project highway being higher than the target traffic under the FRHPL Concession Agreement would warrant a reduction in the concession period by 10% i.e. 3 years. The Claimant has proposed limiting of such reduction in the concession period to 6.13%, and has requested a conciliation meeting with the Chairman of NHAI, failing which the Claimant reserves it's right to invoke arbitration under the provisions of the FRHPL Concession Agreement. The matter is currently pending.

MHPL

(i) MHPL ("**Claimant**") has initiated arbitration proceedings against NHAI ("**Respondent**"). The Claimant has disputed the recommendation made by the project director of NHAI for recovering an amount of ₹ 279.2 million paid by the Respondent to the Claimant as a part of the milestone payments (during the construction phase), from the crystalized annuity, operations and maintenance payment. The project director of the Respondent had alleged that the Claimant had adopted a wrong consumer price index due to which the amount paid to the Claimant was in excess of the amount which was actually due. The Claimant has refuted this and stated that the adopted index was as per the Respondent's policy. Further, the Claimant has also disputed a penalty of ₹ 1,347.84 million levied by the Respondent on the recommendation of the independent engineer for default in carrying out repair and rectification work as per the provisions of the MHPL Concession Agreement. The Claimant has refuted this and stated that the default in carrying out repair and rectification work is not attributable to the Claimant. The Respondent has filed a counterclaim for a total claim amount of ₹ 5,243.67 million (including interest as on 31.05.2024) in this matter. The matter is currently pending before the arbitration tribunal.

MSHPL

(i) MSHPL ("**Claimant**") has initiated arbitration proceedings against NHAI ("**Respondent**") under the MSHPL Concession Agreement. The Claimant has raised claims against the Respondent seeking compensation for the Respondent's delay in declaration of the 'appointed date', additional expenditure incurred by the Claimant due to extension of the construction period, compensation for the Respondent's failure to provide encumbrance-free right of way, and for payment of disputed amounts, among others, for a total claim amount of ₹ 4,122.74 million. The matter is currently pending before the arbitral tribunal.

SIPL

(i) SIPL ("**Claimant**") has issued a notice to NHAI ("**Respondent**") for initiation of arbitration proceedings under provisions of the SIPL Concession Agreement. The Claimant has raised claims against the Respondent for additional impact due to changes in excise duty rates on diesel up to December 2022 and the application of discount on change of scope works, for a total claim amount of ₹ 253.28 million. As part of its notice, the Claimant has appointed a nominee arbitrator who is not on the empanelled list of Society for Affordable Redressal of Disputes ("**SAROD**"), taking the position that whilst the arbitration is to be conducted under SAROD rules, the Claimant is under no contractual or legal obligation to nominate its arbitrator from SAROD's notified panel of arbitrators. The Respondent has raised an objection to this nomination on the ground that the SAROD rules are binding on both parties and mandate selection of arbitrators from SAROD's notified panel of arbitrators, and has reserved its right to challenge the appointment before an appropriate court. The matter is currently pending.

SPPL

(i) SPPL ("**Claimant**") has issued a notice to NHAI ("**Respondent**") for initiation of arbitration proceedings under provisions of the SPPL Concession Agreement. The Claimant has raised claims against the Respondent for additional impact due to change in rates of excise duty on diesel, application of discount on change of scope works, the adoption of centre-wise CPI(W) for Hyderabad circle in place of the All-India Average CPI(W), and labour cess deducted on change of scope bills. As part of its notice, the Claimant has appointed a nominee arbitrator who is not on the empanelled list of Society for Affordable Redressal of Disputes ("**SAROD**"), taking the position that whilst the arbitration is to be conducted under SAROD rules, the Claimant is under no contractual or legal obligation to nominate its arbitrator from SAROD's notified panel of arbitrators. The Respondent has raised an objection to this nomination on the ground that the SAROD rules are binding on both parties and mandate selection of arbitrators from SAROD's notified panel of arbitrators, and has called upon the Claimant to initiate arbitration in accordance with the SAROD Rules.The appointment of arbitrators is presently ongoing, and the matter is currently pending.

THPL

(i) THPL ("**Claimant**") has issued a notice to NHAI ("**Respondent**") for initiation of arbitration proceedings under provisions of the THPL Concession Agreement. The Claimant has raised claims against the Respondent for differential payment against CPI(W) of Central against CPI(W) of Andhra Pradesh, compensation on account of increase in royalty from February 2, 2020 to August 4, 2021, damage claim for delayed handing over of land, and claims for existing road maintenance after PCOD, among others, for a total claim amount of ₹ 1,965.63 million. The Claimant has also filed an arbitration petition before the High Court of Delhi ("**High Court**"), challenging the Respondent's directions concerning the appointment of the nominee arbitrator in relation to this matter. The said petition was dismissed by the High Court, vide order dated August 29, 2025. Subsequently, the Claimant has filed a Special Leave Petition before the Supreme Court of India seeking grant of special leave to appeal against the order passed by the High Court. The matter is currently pending.

WMTPL

(i) WMTPL ("**Claimant**") has initiated arbitration proceedings against Madhya Pradesh Road Development Corporation Ltd. ("**Respondent**") and others before the Arbitration Tribunal, Madhya Pradesh ("**Arbitration Tribunal**") under the WMTPL Concession Agreement. The Claimant has disputed the calculation and payment of the additional concession fee alleged to be payable by the Claimant for a total claim amount of ₹ 582.12 million. Prior to the initiation of arbitration, the parties had engaged in conciliation proceedings before the Principal Secretary, Public Works Department, Government of Madhya Pradesh, which concluded with a Conciliation Award ("**Award**") in favour of the Claimant's interpretation of the disputed concession fee provisions. However, the Award was not acted upon by the Respondent, which led the Claimant to initiate arbitration in the present matter. The matter is currently pending before the Arbitration Tribunal.

(ii) WMTPL ("**Claimant**") has issued a notice to Madhya Pradesh Road Development Corporation Ltd. ("**Respondent**") for initiation of conciliation proceedings under the WMTPL Concession Agreement. The Claimant has disputed interest amounts on certain penalties imposed by the Respondent *vide* a demand notice dated October 20, 2023. The Claimant has disputed the interest amount of ₹ 104.26 million levied on the

delayed payment of change of scope and the interest amount of ₹ 20.17 million levied on delayed payment of road safety fund by the Respondent for a total disputed amount of ₹ 124.41 million. The matter is currently pending.

WVEPL

(i) WVEPL ("**Claimant**") has initiated arbitration proceedings against NHAI ("**Respondent**") for the extension of the concession agreement executed between the Claimant and Respondent, citing a shortfall in actual traffic vis-à-vis target traffic as per the provisions of the concession agreement. The Claimant claimed for an extension of the concession period by 1,423 days as against the Respondent's recommendation to reduce the concession period by 1.5 years. The matter is currently pending before the arbitration tribunal.

Others

Certain Portfolio Assets have received certain claims, notices and penalties from regulatory authorities, including *inter alia* NHAI, MoRTH and other governmental authorities, as well as from certain third parties, in relation to matters such as interest claims, toll fee revisions, electricity charges for de-scoped road lengths, target traffic–related issues, and other similar matters. The relevant Portfolio Assets are contesting these non-material claims and penalties before the appropriate authorities, and these matters are currently pending.

Regulatory proceedings involving Portfolio Assets

(i). The office of the Registration and Stamps Department, Government of Telangana has issued notices to APEPL and KMC Constructions Limited ("**KMC**") in relation to the inadequate stamping of the EPC contract entered into between APEPL and KMC. APEPL is contesting the aforesaid notices.

(ii). The Collector, Aligarh ("**Collector**") issued a notice on February 15, 2016 to GAEPL under Sections 33/47 A of the Indian Stamp Act, 1899 ("**Notice**"), in relation to the stamp duty of the concession agreement entered into between GAEPL and NHAI. Subsequently, the Collector, issued an *ex parte* recovery order against GAEPL on February 25, 2020. On October 13, 2020, the Collector passed the impugned order directing the payment of deficient stamp duty amounting to ₹ 456.39 million, along with a penalty of ₹ 4.56 million and applicable interest. In response, GAEPL challenged the Collector's order before the High Court of Allahabad ("**High Court**"). The High Court granted a stay on the Notice, thereby preventing any coercive action against GAEPL for the duration of the proceedings *vide* its order dated December 18, 2020. This matter is currently pending.

(iii). The Office of the Additional District Magistrate (Finance and Revenue), Meerut ("**ADM**") has issued notices on October 31, 2019 and December 13, 2019 to WUPTPL under sections 33 and 47A of the Indian Stamp Act, 1899 in relation to the deficit payment of stamp duty on the concession agreement executed between WUPTPL and NHAI. The notices have alleged transfer of immovable property *vide* the concession agreement and have imposed a stamp duty amounting to ₹ 251.3 million. In response thereto, WUPTPL has filed its written submissions and an application for deferment of adjudication in the present matter, considering that identical issues are sub-judice before the High Court at Allahabad and the High Court of Lucknow. This matter is currently pending.

(iv). The Assistant Inspector General (Registration), Lalitpur, Uttar Pradesh issued a notice to JVTPL under Section 47A of the Indian Stamp Act, 1899, and Section 7(3) of the Uttar Pradesh Stamp (Valuation of Property) Rules, 1997 ("**Notice**"), directing JVTPL to produce the original concession agreement executed between JVTPL and NHAI for the assessment of applicable stamp duty. JVTPL made a representation stating that the action was outside the jurisdiction of the Assistant Inspector General. Subsequently, JVTPL filed a writ petition before the High Court of Allahabad anticipating coercive action. The High Court of Allahabad granted a stay on the Notice thereby preventing any coercive action against JVTPL for the duration of the proceedings by its order dated March 15, 2024. This matter is currently pending.

(v). The Office of the District Registrar, Bengaluru (Stamps and Registration Department) ("**Registrar**") has issued notices dated November 8, 2024, and November 11, 2024 ("**Notices**"), to NDEPL directing NDEPL to produce the Agreement/Contract/Lease/License executed between NDEPL and NHAI for the assessment of applicable stamp duty. In response, NDEPL, has submitted formal responses requesting the withdrawal of the Notices on the grounds that the Notices were issued without jurisdiction and are alleged to be arbitrary. NDEPL has not received any further correspondence from the Registrar.

(vi). The Labour Department, Guntur, Andhra Pradesh ("**Labour Department**") has issued a notice dated March 29, 2025 to NAMEPL ("**Notice**") in relation to alleged failure of remittance of applicable labour cess. The Notice imposes a demand of ₹ 54.6 million, representing the alleged balance amount underpaid by NAMEPL pursuant to the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and the rules framed thereunder. NAMEPL has submitted comprehensive details of all labour cess payments previously made and sought the withdrawal of the Notice in response *vide* its

correspondence dated June 6, 2025. NAMEPL has not received any further correspondence from the Labour Department.

(vii). An industrial dispute has been instituted against NHAI and Quess Corporation Limited (an erstwhile third-party contractor responsible for incident management), arising from the termination of several staff members by Quess Corporation Limited. In connection with this matter, NHAI forwarded multiple summons, each pertaining to a different claimant/staff member, to JUHPL, the principal employer under the Contract Labour (Regulation and Abolition) Act, 1970, on May 7, 2025. The summons required JUHPL's appearance before the Central Government Industrial Tribunal-cum-Labour Court-2, Chandigarh, on July 15, 2025, for adjudication of the dispute under Sub-section (2A) of Section 10 of the Industrial Disputes Act, 1947. JUHPL *vide* its correspondence dated May 27, 2025, confirmed its intention to accede to NHAI's request to implead itself as a party in the forthcoming hearing. The process for formal impleadment in the matter is currently underway.

(viii). The Assistant Commissioner of Stamps (First) Lucknow ("**Assistant Commissioner**") has issued a notice dated October 30, 2025, to LRTPL ("**Notice**") alleging underpayment of the applicable stamp duty on the concession agreement executed with NHAI. The Notice imposes a demand of ₹ 999 million representing the alleged balance amount underpaid by LRTPL pursuant to the Indian Stamp Act, 1899, and the rules framed thereunder. LRTPL was notified to appear before the Assistant Commissioner and submit the original copy of the concession agreement for assessment. LRTPL has filed a writ petition dated December 12, 2025, before the High Court of Allahabad ("**High Court**") challenging the Notice. The High Court granted a stay on the Notice vide its order dated January 7, 2026. This matter is currently pending.

(ix). Certain Portfolio Assets have received notices from regulatory authorities, in relation to the stamp duty on the concession agreements entered into by such Portfolio Assets. The relevant Portfolio Assets are contesting the aforesaid notices and the order before various authorities and while these matters are currently pending, in accordance with the share purchase agreement through which the Cube Group acquired these Portfolio Assets, the erstwhile sellers are obligated to indemnify, defend and hold harmless the Portfolio Assets in relation to any payment of deficient stamp duty on the concession agreements.

(x). Certain Portfolio Assets have received notices, requests for information and summons from regulatory authorities, including the Economic Offences Wing, Palwal (in relation to deposit of amounts in a bank account during demonetization) and the Directorate General of GST Intelligence (in relation to allegations of non-payment of goods and services tax), which have been responded to. No further communication has been received in these matters.

III. Litigation involving the Sponsor, its Associates and the Sponsor Group (including common Associates of the Sponsor, the Project Manager and the Investment Manager)

Criminal proceedings involving the Sponsor, its Associates and the Sponsor Group

Cube Highways and Infrastructure III Pte. Ltd.

(i) Dilip Buildcon Limited ("**Complainant**") has lodged a complaint at Police Station Chuna Bhatti, Bhopal ("**Police Station**") against Cube Highways and Infrastructure III Pte. Ltd. ("**Respondent**"), alleging that the Respondent violated confidentiality and contractual provisions under a Share Purchase Agreement ("**SPA**") for acquisition of highway projects executed between the Complainant and the Respondent. The Complainant alleged that the Respondent issued a notice dated February 7, 2024, which was simultaneously shared with the National Stock Exchange, as well as with the Complainant's investors, business partners, and bankers This allegedly breached the confidentiality obligations under the SPA, resulting in a financial loss of approximately ₹ 1,915.41 million to the Complainant. In furtherance of the complaint, a notice under Section 91 of the Code of Criminal Procedure, 1973 dated October 21, 2024, was issued to the Respondent's representatives, George Crawford Curie, Deepan Hemant Kumar Shah, Puja Agarwal, and Richa Chawla. The Respondent has since submitted a response dated November 13, 2024, to the Investigating Officer. The matter is currently pending.

Cube Highways Technologies Private Limited

(i) Cube Highway Technologies Private Limited ("**Complainant**") initiated proceedings against Metro Infosys Private Limited & Ors. ("**Defendant**") due to dishonour of the cheques which were issued by the Defendant amounting to ₹ 1.50 million for the reason of "Payment stopped by Drawer." The proceedings are going on before the Additional Chief Judicial Magistrate (Court No. 3), Gautam Buddha Nagar, Uttar Pradesh.

Regulatory proceedings involving the Sponsor, its Associates and the Sponsor Group

*Delhi Hapur Meerut Expressway Private Limited ("**DHMEPL**")*

(i) The District Magistrate/Collector, Hapur ("**Collector**") issued a show cause notice on December 06, 2024 ("**Notice**") to DHMEPL as to why a stamp duty of ₹ 2,546.79 million along with penalty and interest should not be levied on the Concession Agreement. The Collector alleged that the Concession Agreement is a lease under the stamp duty and relied on the Judgement passed in the Matter of Rewa Tollway Private Ltd. Apprehending a demand notice and recovery and to quash the Notice, DHMEPL challenged the Notice before the High Court of Allahabad ("**High Court**"). The High Court *vide* Order dated January 23, 2025, granted a stay on the Notice thereby preventing any coercive action against DHMEPL for the duration of the proceedings. In the High Court, the Collector has filed its reply to the writ petition. DHMEPL is in the process of filing the rejoinder. This matter is currently pending.

*Malayagiri Highways Private Limited ("**MGHPL**")*

(i) The Office of Additional District Magistrate (HQ), Collector of Stamps, New Delhi ("**Authority**") issued a notice on December 5, 2025, alleging that MGHPL has issued shares but has not applied for adjudication of stamp duty payable thereon. The Authority has directed MGHPL to share copies of all the relevant documents including PAS-3, Allotment letter of NSDL/CSDL etc, proof of stamp duty paid, and details of all instruments executed under Article 19. MGHPL has already submitted its representation and has also made appeared before the Authority and made their submissions. The Authority has to make a final order on the same.

*Kokhraj Handia Expressway Private Limited ("**KHEPL**")*

(i) The Office of Additional District Magistrate (HQ), Collector of Stamps, New Delhi ("**Authority**") issued a notice on November 27, 2025, alleging that KHEPL has issued shares but has not applied for adjudication of stamp duty payable thereon. The Authority has directed KHEPL to pay the stamp duty at the prescribed rate of 0.1% as applicable in NCT of Delhi as per Schedule 1A of the Indian Stamp Act, 1899 on the value of shares issued, failing which recovery proceedings under the provisions of the Act shall be initiated by the Authority. KHEPL has already submitted its representation and has also made appeared before the Authority and made their submissions. The Authority has to make a final order on the same.

IV. Litigation involving the Investment Manager and its Associates

Please see the section entitled "*Legal and Other Information - Litigation involving the Sponsor and their Associates and the Sponsor Group (including common Associates of the Sponsor, the Project Manager and the Investment Manager)*" on page 455.

V. Litigation involving the Project Manager and its Associates

Please see the section entitled "*Legal and Other Information - Litigation involving the Sponsor and their Associates and the Sponsor Group (including common Associates of the Sponsor, the Project Manager and the Investment Manager)*" on page 455.

VI. Litigation involving the Trustee

Material civil and regulatory proceedings involving the Trustee

Show cause notice dated May 30, 2025, issued by SEBI under rule 4(1) of SEBI (Procedure for Holding Inquiry and Imposing Penalties) Rules, 1995 w.r.t role of Axis Trustee in the matter of Fit and Proper Criteria in relation to KMP of a REIT client.

Criminal proceedings involving the Trustee

There are no criminal litigations against the Trustee in its corporate capacity. However, a criminal application has been filed by Ganesh Benzoplast Limited, the security provider to certain NCDs praying for quashing of an FIR filed by the Axis Trustee Services Limited, on behalf of the debenture holders. The FIR was filed by the Trustee in its capacity as a debenture trustee, upon default and on instruction and on behalf debenture holders, before the DCP, Economic Offence Wing, New Delhi for alleged fraud and forgery by promoter, security provider and issuer of NCDs. The matter is currently pending.

Pending Criminal Litigation which are initiated by the Trustee

The Trustee in its various capacities acting as a trustee, debenture trustee, security trustee, among others, has initiated several proceedings against certain parties based on instructions received from its clients, as follows:

(i) Applications under Section 138 of Negotiable Instruments Act, 1881, based on the instructions of debenture holders/ lenders, in relation to dishonour of cheques. The matters are pending before various forums.
(ii) The Trustee, upon instructions of their client has filed an appeal under Section 26(1) of Prevention of Money Laundering Act, 2002 before the appellate tribunal against the order of the adjudicating authority in the matter OC No.2470 of 2024. The matter is currently pending.

VII. Taxation Proceedings

The details of all outstanding tax disputes involving the Portfolio Assets and against the Trust, Sponsor, the Sponsor Group, the Project Manager, the Investment Manager, their respective Associates and the Trustee are set forth below:

Name of the entity	Number of Proceedings	Amount Involved (in ₹ million)
Direct tax		
i. Trust	1	Nil
ii. Sponsor	Nil	Nil
iii. Investment Manager	Nil	Nil
iv. Project Manager	Nil	Nil
v. Sponsor Group and Associates of Sponsor / Project Manager / Investment Manager	15	15,996.42
vi. Portfolio Assets	118	44,798.76
vii. Trustee	1	32,549.00
Indirect tax		
i. Trust	Nil	Nil
ii. Sponsor	Nil	Nil
iii. Investment Manager	Nil	Nil
iv. Project Manager	Nil	Nil
v. Sponsor Group and Associates of Sponsor / Project Manager / Investment Manager	11	15,235.27
vi. Portfolio Assets	122	21,164.44
vii. Trustee	Nil	Nil

SECURITIES MARKET OF INDIA

The information in this section has been extracted from documents available on the website of SEBI and the Stock Exchanges and has not been prepared or independently verified by the Parties to the Trust or the Book Running Lead Managers or any of their respective affiliates or advisors. The information below is given for the benefit of investors in the Offer. Investors are advised to conduct their independent investigations and ensure that they are eligible to subscribe to, purchase or otherwise acquire the Units they Bid for under Indian laws or regulations.

The Indian Securities Market

India has a long history of organized securities trading. In 1875, the first stock exchange was established in Mumbai. The BSE and the NSE together, hold a dominant position among stock exchanges in terms of the number of listed companies, market capitalisation, and trading activity.

Stock Exchange Regulation

Indian stock exchanges are regulated primarily by SEBI, as well as by the Government acting through the Ministry of Finance, Capital Markets Division, under the Securities Contracts (Regulation) Act, 1956 ("**SCRA**") and the Securities Contracts (Regulation) Rules, 1957 ("**SCRR**"). SEBI, in exercise of its powers under the SCRA and the SEBI Act, notified the SCR (SECC) Regulations, which regulate *inter alia* the recognition, ownership and governance of stock exchanges and clearing corporations in India, and provide for minimum capitalisation requirements for stock exchanges. The SCRA, the SCRR and the SCR (SECC) Regulations, along with various rules, bye-laws and regulations of the respective stock exchanges, regulate the recognition of stock exchanges, the qualifications for membership thereof and the manner in which contracts are entered into, settled and enforced between members of the stock exchanges.

The SEBI Act empowers SEBI to regulate the Indian securities markets, including stock exchanges and intermediaries in the capital markets, to promote and monitor self-regulatory organisations, and to prohibit fraudulent and unfair trade practices. Regulations concerning minimum disclosure requirements by public companies, rules and regulations concerning investor protection, insider trading, substantial acquisitions of shares and takeover of companies, buy-backs of securities, employee stock option schemes, stockbrokers, merchant bankers, underwriters, mutual funds, foreign portfolio investors, credit rating agencies and other capital market participants have been notified by the relevant regulatory authority.

Listing and Delisting of Units

The InvIT Regulations provide for the listing and delisting of units of infrastructure investment trusts on the stock exchanges.

BSE

Established in 1875, it is the oldest stock exchange in India. In 1957, it became the first stock exchange in India to obtain permanent recognition from the Government under the SCRA. It has evolved over the years into its present status as one of the premier stock exchanges of India.

NSE

NSE was established by financial institutions and banks to provide nationwide online, satellite-linked, screen-based trading facilities with market-makers and electronic clearing and settlement for securities, including government securities, debentures, public sector bonds and units. It has evolved over the years into its present status as one of the premier stock exchanges of India. NSE was recognised as a stock exchange under the SCRA in April 1993 and commenced operations in the wholesale debt market segment in June 1994. The capital market (equities) segment commenced operations in November 1994 and operations in the derivatives segment commenced in June 2000.

Internet-based Securities Trading and Services

Internet trading takes place through order routing systems that route client orders to exchange trading systems for execution. Stockbrokers interested in providing this service are required to apply for permission from the relevant stock exchange and comply with the minimum conditions stipulated by SEBI. The NSE became the first exchange to grant approval to its members for providing internet-based trading services. Internet trading is possible on both the "equities" and the "derivatives" segments of the NSE.

Trading Hours

Trading on both the NSE and the BSE occurs from Monday to Friday, between 9:15 a.m. and 3:30 p.m. 1ST (excluding the 15 minutes pre-open session from 9:00 a.m. to 9:15 a.m. that has been introduced). The NSE and the BSE are closed on public holidays. The recognised stock exchanges have been permitted to set their own trading hours (in the cash and equity derivatives segments) subject to certain conditions.

Trading Procedure

In order to facilitate smooth transactions, the BSE replaced its open outcry system with BSE On-line Trading facility in 1995. This totally automated screen-based trading in securities and was put into practice nationwide. This has enhanced transparency in dealings and has assisted considerably in smoothening settlement cycles and improving efficiency in back-office work.

NSE has introduced a fully automated trading system called National Exchange for Automated Trading ("**NEAT**"), which operates on strict time/price priority, besides enabling efficient trade. NEAT has provided depth in the market by enabling large number of members all over India to trade simultaneously, narrowing the spreads.

Depositories

The Depositories Act provides a legal framework for the regulation of depositories in securities and for matters connected therewith or incidental thereto. Further, SEBI has framed regulations in relation to the registration of such depositories, the registration of participants as well as the rights and obligations of the depositories, participants, companies and beneficial owners.

RIGHTS OF UNITHOLDERS

The rights and interests of Unitholders are included in this Draft Offer Document and the InvIT Regulations. Under the Trust Deed and the Investment Management Agreement, these rights and interests are safeguarded by the Trustee and the Investment Manager, respectively. Any rights and interests of Unitholders as specified in this Draft Offer Document would be deemed to be amended to the extent of any amendment to the InvIT Regulations.

Face Value

The Units will not have a face value.

Beneficial Interest

Each Unit represents an undivided beneficial interest in the Trust. A Unitholder has no equitable or proprietary interest in the Portfolio Assets of the Trust and is not entitled to transfer the Portfolio Assets (or any part thereof) or any interest in the Portfolio Assets (or any part thereof) of the Trust. A Unitholder's right is limited to the right to require due administration of the Trust in accordance with the provisions of the Trust Deed and the Investment Management Agreement. The beneficial interest of each Unitholder shall be equal and limited to the proportion of the number of Units held by that Unitholder to the total number of Units.

Ranking

No Unitholder of the Trust shall enjoy superior voting or any other rights over another Unitholder. Further, the Units shall not have multiple classes. For details in relation to the Units, please see the section entitled "*Information Concerning the Units*" on page 359. Each Unit Allotted to the Unitholders shall have one vote for any decisions requiring a vote of the Unitholders.

Redressal of grievances

The Trustee shall periodically review the status of Unitholders' complaints and their redressal undertaken by the Investment Manager. The Investment Manager shall maintain records of the Unitholders' grievances and the actions taken thereon, including copies of correspondences made with the Unitholders and SEBI. The Stakeholders' Relationship Committee of the Investment Manager shall monitor the status of complaints and their redressal. For details, please see the "*terms of reference of the Stakeholders' Relationship Committee*" in the section entitled "*Corporate Governance*" on pages 179.

Distribution

The Unitholders holding Units shall have the right to receive distribution in accordance with the InvIT Regulations and in the manner provided in this Draft Offer Document. For details, please see the section entitled "*Distribution*" on page 385.

Meeting of the Unitholders

Meetings of Unitholders will be conducted in accordance with the InvIT Regulations.

Passing of resolutions

1. With respect to any matter requiring approval of the Unitholders:

   (i) a resolution shall be considered as passed when the votes cast by Unitholders, so entitled and voting, in favour of the resolution exceed a certain percentage as specified in the InvIT Regulations, of total votes cast;

   (ii) the voting threshold specified under the InvIT Regulations shall be calculated on the basis of Unitholders present and voting, unless otherwise specified. Further, The Unitholders voting through the electronic voting facility and postal ballot shall be counted for the determination of Unitholders present and voting;

   (iii) the voting may be done by postal ballot or electronic mode;

   (iv) a notice of not less than 21 days shall be provided to the Unitholders. However, a meeting of Unitholders may be called after giving shorter notice than 21 days, if consent, in writing or by electronic mode, is accorded thereto, (a) in case of an annual meeting, by not less than 95% of the Unitholders entitled to vote thereat, and (b) in case of any other meeting, by majority of the Unitholders in number entitled to vote thereat and who represent not less than 95% of such part of the units by value as gives a right to vote at the meeting;

   (v) voting by any Unitholder (including, the Sponsor in its capacity as a Unitholder), who is a related party in such transaction, as well as associates of such Unitholder(s) shall not be considered on the specific issue;

   (vi) the Investment Manager shall be responsible for all the activities pertaining to conducting of meeting of the Unitholder, subject to oversight by the Trustee. However, for issues pertaining to the Investment Manager, including a change in the Investment Manager, removal of Investment Manager or change in control of Investment Manager; the Trustee shall convene and handle all activities pertaining to conduct of the meetings.

Additionally, for issues pertaining to the Trustee, including change in Trustee, the Trustee shall not be involved in any manner in the conduct of the meeting; and

(vii) for all Unitholder meetings, the investment manager shall provide an option to the Unitholders to attend the meeting through video conferencing or other audio visual means and the option of remote electronic voting in the manner as may be specified by SEBI.

2. For the Trust:

(i) an annual meeting of all Unitholders shall be held not less than once a year within 120 days from the end of each financial year and the time between two meetings shall not exceed 15 months;

(ii) with respect to the annual meeting of Unitholders,

- any information that is required to be disclosed to the Unitholders and any issue that, in the ordinary course of business, may require approval of the Unitholders may be taken up in the meeting including:
  - latest annual accounts and performance of the Trust;
  - approval of auditors and fee of such auditors, as may be required;
  - latest valuation reports;
  - appointment of valuer, as may be required; and
  - any other issue; and
- for any issue taken up in such meetings which require approval from the Unitholders, votes cast in favour of the resolution shall be more than 50% of the total votes cast for the resolution unless otherwise specified under the InvIT Regulations.

3. Notwithstanding generally of the foregoing, in case of the following, approval from the Unitholders shall be required where the votes cast in favour of the resolution shall be more than 50% of the total votes cast for the resolution:

(i) any approval from the Unitholders required in terms of Regulation 18 (*Investment conditions and dividend policy)*, Regulation 19 (*Related Party Transactions*) and Regulation 21 *(Valuation of assets*) of the InvIT Regulations to the extent applicable;

(ii) any borrowings, in excess of the limits specified under Regulation 20(3) of the InvIT Regulations;

(iii) any transaction, other than any borrowing, the value of which is equal to or greater than 25% of the Portfolio Assets;

(iv) increasing period for compliance with investment conditions to one year in accordance with Regulation 18(5)(c) of the InvIT Regulations;

(v) any issue, in the ordinary course of business, which in the opinion of the Sponsor or the Trust or the Investment Manager, is material and requires approval of the Unitholders, if any; and

(vi) any issue for which SEBI or the designated stock exchange requires approval.

4. In case of the following, approval from the Unitholders shall be required where the votes cast in favour of the resolution shall be at least 60% of total votes cast for the resolution:

(i) any change in the Investment Manager including removal of the investment manager or change in control of the investment manager;

(ii) any material change in investment strategy or any change in the management fees of the Trust;

(iii) the Trustee and Investment Manager proposing to seek delisting of units of the Trust as per the InvIT Regulations;

(iv) any issue, not in the ordinary course of business, which in the opinion of the Sponsor or Investment Manager or the Trustee of the Trust requires approval of the Unitholders;

(v) any issue for which SEBI or the designated stock exchange requires approval;

(vi) any issue taken up on request of the Unitholders including:

a) removal of the Investment Manager and appointment of another investment manager to the Trust;

b) removal of the Auditors and appointment of another auditor to the Trust;

c) removal of the Valuer and appointment of another valuer to the Trust;

d) delisting of the Trust, if the Unitholders have sufficient reason to believe that such delisting would act in the interest of the Unitholders;

e) any issue which the Unitholders have sufficient reason to believe that is detrimental to the interest of the Unitholders; and

f) change in the Trustee, if Unitholders have sufficient reason to believe that acts of the Trustee are detrimental to the interest of Unitholders.

(vii) introduction of unit based employee benefit scheme after an initial offer in the manner and form set out under the InvIT Regulations.

(viii) with respect to the rights of the Unitholders under clause 4(vi) above:

(i) save as set out in (iii) below, not less than 25% of the Unitholders by value, other than any party related to the transactions and its associates, shall apply, in writing, to the Trustee for the purpose;

(ii) on receipt of such application, the Trustee shall require, with the Investment Manager to place the issue for voting in the manner as specified in the InvIT Regulations; and

(iii) with respect to clause 4(vi)(f) above, not less than 60% of the Unitholders by value shall apply, in writing, to the Trustee for the purpose.

5. In case of the following, approval from the Unitholders shall be required where approval from 75% of the Unit holders by value is required to be obtained:

(i) in case of any borrowing by an InvIT in terms of the limit specified in Regulation 20(3)(b) of the InvIT Regulations;

(ii) no person, other than sponsor(s), its related parties and its associates, shall acquire units of an InvIT which taken together with units held by such person and by persons acting in concert with such person in such InvIT, exceeds 25% of the value of outstanding InvIT units unless approval from 75%. of the unitholders by value excluding the value of units held by parties related to the transaction, is obtained. If the required approval is not received, the person acquiring the units shall provide an exit option to the dissenting unit holders to the extent and in the manner as may be specified by SEBI;

(iii) in case of any change in sponsor or inducted sponsor or change in control of sponsor or inducted sponsor or conversion to self-sponsored investment manager (calculation of 75% voting will exclude the value of units held by parties related to the transaction); and

(iv) conversion of privately listed InvIT to public InvIT.

Information rights

The Investment Manager, on behalf of the Trust, shall also submit such information to the Stock Exchanges and the Unitholders, on a periodical basis as may be required under the InvIT Regulations and the Listing Agreements with the Stock Exchanges. The Investment Manager (on behalf of the Trust) shall disclose to the Stock Exchanges, the Unitholders and SEBI, all such information and in such manner as specified under the InvIT Regulations and such other requirements as may be specified by SEBI. The Investment Manager, on behalf of the Trust, shall also provide disclosures or reports specific to the sector or sub-sector in which the Trust has invested or proposes to invest, in the manner as may be specified by SEBI.

Nomination Rights

Unitholder(s), holding not less than 10% of the total outstanding Units, either individually or collectively, shall be entitled to nominate one director on the IM Board.

Buyback and Delisting of Units

Any buyback or delisting of Units, shall be in accordance with the Trust Deed and the InvIT Regulations.

DILUTION

Dilution is the amount by which the Offer Price exceeds the NAV per Unit, immediately after the completion of this Offer. NAV per Unit is determined by subtracting the total liabilities of the Trust from the total assets of the Trust and dividing by the number of Units issued and outstanding immediately before this Offer.

The Trust has undertaken an Offer of [●] Units at an Offer Price of ₹ [●] for each Unit. The aggregate outstanding Units pursuant to the Offer will be [●] Units.

OFFER STRUCTURE

This Offer is being made through the Book Building Process and comprises an Offer for Sale of up to [●] Units of the Trust by the Selling Unitholders for cash at a price of ₹ [●] per Unit aggregating up to ₹ 50,000 million. This Offer shall constitute at least [●] % of the total outstanding Units on a post-Offer basis.

Particulars	Institutional Investors	Non-Institutional Investors	Strategic Investors[6]
Number of Units available for Allotment/Allocation [2]	Not more than [●] Units	Not less than [●] Units	Not less than [●] Units and not more than [●] Units, either jointly or severally with other Strategic Investors
Percentage of Offer Size available for Allotment/Allocation	Not more than 75% of the Offer Size (excluding the Strategic Investor Portion)[1]	Not less than 25% of the Offer Size (excluding the Strategic Investor Portion)	Not less than 5% of the Offer and not more than 25% of the Offer Size
Basis of Allotment/ Allocation if respective category is oversubscribed	Proportionate	Proportionate	Discretionary
Minimum Bid	Such number of Units that the Bid Amount exceeds ₹ [●] and in multiples of [●] Units thereafter	Such number of Units that the Bid Amount exceeds ₹ [●] and in multiples of [●] Units thereafter	[●] Units, either jointly or severally with other Strategic Investors, being not less than 5% of the Offer Size
Maximum Bid	Such a number of Units (in multiples of [●] Units) not exceeding the size of the Offer, subject to applicable limits (excluding the Strategic Investor Portion)	Such a number of Units (in multiples of [●] Units) not exceeding the size of the Offer, subject to applicable limits (excluding the Strategic Investor Portion)	Such a number of Units (in multiples of [●] Units) not exceeding 25% of the Offer Size
Mode of Allotment	Compulsorily in dematerialised form	Compulsorily in dematerialised form	Compulsorily in dematerialised form
Bid Lot	[●] Units and in multiples of [●] Units thereafter	[●] Units and in multiples of [●] Units thereafter	[●] Units and in multiples of [●] Units thereafter
Allotment Lot	[●] Units and in multiples of [●] Units thereafter	[●] Units and in multiples of [●] Units thereafter	[●] Units and in multiples of [●] Units thereafter
Trading Lot	One Unit	One Unit	One Unit
Who can apply[3]	(i) QIBs; or (ii) family trusts or systematically important NBFCs registered with RBI or intermediaries registered with SEBI, with a net-worth of more than ₹ 5,000 million, as per their last audited financial statements	Bidders other than Institutional Investors are eligible to apply in this Offer	(i) an institutional investor; or (ii) a foreign portfolio investor not covered under sub-clause (a); or (iii) a middle layer, upper layer and top layer non-banking finance company registered with the RBI; or (iv) such entities as SEBI may specify from time to time, who invest, either jointly or severally, not less than 5% of the total offer size of the InvIT or such amount as may be specified by the SEBI from time to time, subject to compliance with the applicable provisions, if any, of the Foreign Exchange Management Act, 1999 and the rules or

Particulars	Institutional Investors	Non-Institutional Investors	Strategic Investors[6]
			regulations or guidelines made thereunder.
Terms of Payment	Full Bid Amount shall be blocked by the SCSBs in the bank account of the ASBA Bidder that is specified in the Bid cum Application Form [4] [5]	For individual Non-Institutional Investors Bidding with a Bid Amount of up to ₹ 0.50 million or less and Bidding through the UPI Mechanism: Full Bid Amount shall be blocked by the Sponsor Bank in the bank account of the Non-Institutional Investor that is specified in the Bid cum Application Form; -Full Bid Amount shall be blocked by the SCSBs in the bank account of the ASBA Bidder that is specified in the Bid cum Application Form	Subscription price per Unit, payable by the Strategic Investors shall be set out in the Strategic Investor Unit Subscription Agreement and the entire subscription price shall be deposited in a special escrow account prior to opening of the Offer. See "*Offer Information*" on page 467 [5]

[1] *The Investment Manager, in consultation with the Book Running Lead Managers may allocate up to 60% of the Institutional Investor Portion to Anchor Investors on a discretionary basis.*

[2] *Subject to valid Bids being received at or above the Offer Price. This Offer will be made through the Book Building Process wherein not more than 75% of the Offer Size (excluding the Strategic Investor Portion) will be available for allocation on a proportionate basis to Institutional Investors, provided that the Investment Manager, in consultation with the Book Running Lead Managers may allocate up to 60% of the Institutional Investor Portion to Anchor Investors on a discretionary basis.*

[3] *In case of joint Bids, the Bid cum Application Form should contain only the name of the First Bidder whose name should also appear as the first holder of the beneficiary account held in joint names. The signature of only the First Bidder would be required in the Bid cum Application Form and such First Bidder would be deemed to have signed on behalf of the joint holders. Bidders are advised to consult their own advisors with respect to any restrictions or limitations that may be applicable to them, including any restrictions or limitations in relation to their ability to invest in the Units. By making a Bid (including any revision thereof), the Bidder will be deemed to have represented to the Investment Manager, the Trustee, the Book Running Lead Managers and the Syndicate Members that it is eligible to participate in the Offer and be Allotted Units under applicable law.*

[4] *Bid Amount shall be payable by the Anchor Investors at the time of submission of the Bid cum Application Forms. Any difference between the Anchor Investor Allocation Price and the Offer Price (in the event the Offer Price is higher) shall be paid within the Pay-in Date*

[5] *In case of ASBA Investors, the SCSBs shall be authorized to block such funds in the bank account of the Investor that are specified in the Bid cum Application Form*

[6] *Each Strategic Investor proposing to invest in the Offer shall enter into a Strategic Investor Unit Subscription Agreement with the Investment Manager (acting on behalf of the Trust) prior to filing of the Offer Document with the SEBI and the Stock Exchanges. The price at which the Strategic Investors agree to purchase the Units shall not be less than the Offer Price. In case the Offer Price is higher than the Strategic Investor Allocation Price, each Strategic Investor shall bring in the additional amount within two Working Days of the Pricing Date.*

In case of under-subscription in any investor category, the unsubscribed portion in either the Institutional Investor Portion or the Non-Institutional Investor Portion may be Allotted to Applicants in the other category at the discretion of the Investment Manager, in consultation with the Book Running Lead Managers and the Designated Stock Exchange.

Indicative Offer Timeline

Event	Indicative Date
Bid/ Offer Opening Date	[●][1]
Bid/ Offer Closing Date	[●][2]
Finalisation of the Basis of Allotment	[●]
Closing Date	[●]
Designated Date	[●]
Initiation of refunds	[●]
Public Listing Date	[●]

[1] *The Investment Manager may, in consultation with the Book Running Lead Managers, consider participation by Anchor Investors in accordance with the InvIT Regulations and InvIT Master Circular. The Anchor Investor Bidding Date shall be one Day prior to the Bid/ Offer Opening Date.*

[2] *The Investment Manager may in consultation with the Book Running Lead Managers, consider closing the Bid/ Offer Period for QIBs one Working Day prior to the Bid/ Offer Closing Date in accordance with the InvIT Regulations and InvIT Master Circular.*

The above timetable is indicative and does not constitute any obligation or liability on the Trust, the Investment Manager, the Trustee or the Book Running Lead Managers.

The Selling Unitholders confirms that it shall extend reasonable co-operation required by the Trust, the Investment Manager and the Book Running Lead Managers for the completion of the necessary formalities for listing and commencement of trading of the Units offered by the Selling Unitholders in the Offer on the Stock Exchanges within stipulated timeframe from the Bid/Offer Closing Date.

While the Investment Manager shall ensure that all steps for the completion of the necessary formalities for the commencement of trading of the Units on the Stock Exchanges are taken within 6 Working Days of the Bid/ Offer Closing Date, the timetable may change due to various factors, including any extension of the Bid/ Offer Period by the Investment Manager due to any revision(s) of the Price Band or any delay in receiving the final listing and trading

approval from the Stock Exchanges. The commencement of trading of the Units will be entirely at the discretion of the Stock Exchanges and in accordance with the applicable laws.

Except in relation to the Bids received from the Anchor Investors and Strategic Investors, Bids and any revision in Bids shall be accepted only between 10.00 a.m. and 5.00 p.m. (Indian Standard Time) during the Bid/ Offer Period (except the Bid/ Offer Closing Date) at the Bidding Centres and the Designated Branches mentioned on the Bid cum Application Form. Investors are not allowed to withdraw or lower their Bid (in terms of number of Units or the Bid Amount) at any stage. Bidders can make upward revisions in their Bids, subject to applicable law. It is clarified that Bids not uploaded on the electronic bidding system would be rejected. Due to limitation of the time available for uploading the Bids on the Bid/ Offer Closing Date, Investors are advised to submit their Bids one day prior to the Bid/ Offer Closing Date and, in any case, no later than 1.00 p.m. IST on the Bid/ Offer Closing Date. Any time mentioned in this Draft Offer Document is IST. Investors are cautioned that, in the event a large number of Bids are received on the Bid/ Offer Closing Date, some Bids may not get uploaded due to lack of sufficient time. Such Bids that cannot be uploaded will not be considered for allocation under the Offer. Bids will be accepted only on business days i.e. Monday to Friday (excluding any public holiday). None among the Trust, the Investment Manager, the Trustee, the Selling Unitholders or any member of the Syndicate is liable for any failure in uploading the Bids due to faults in any software/hardware system or otherwise.

In case of any discrepancy in the data entered in the electronic book *vis-à-vis* the data contained in the physical Bid cum Application Form, for a particular Investor, the details as per the Bid file received from the Stock Exchanges may be taken as the final data for the purpose of Allotment.

The Investment Manager, in consultation with the Book Running Lead Managers, reserves the right to revise the Price Band during the Bid/ Offer Period. In case the Price Band is revised, the Offer Period shall be extended for a minimum period of one Working Day, subject to the total Bid/ Offer Period not exceeding 30 days. However, in case of force majeure, banking strike or similar circumstances, the InvIT, for reasons to be recorded in writing, may extend the bidding (issue) period disclosed in the Offer Document, for a minimum period of three working days, subject to total bidding period not exceeding thirty days. The revised Price Band and Offer Period will be widely disseminated by notification to the SCSBs and Stock Exchanges, and also by indicating the change on the websites of the Trust, the Book Running Lead Managers, the Sponsor, the Investment Manager and the Stock Exchanges and at the terminals of the members of the Syndicate. In accordance with the InvIT Regulations, the Price Band cannot be revised more than two times during the Bid/ Offer Period.

OFFER INFORMATION

Below is a summary, intended to provide a general outline of procedures for bidding, application, payment, Allocation and Allotment of Units in this Offer. The procedure followed in this Offer may differ from the process provided below, and Bidders are presumed to have apprised themselves of the same from the Investment Manager and/or the Book Running Lead Managers.

Bidders are advised to inform themselves of any restrictions or limitations that may be applicable to them and are required to consult their respective advisers in this regard. Bidders that apply in the Offer will be required to confirm and will be deemed to have represented to the Trustee, the Investment Manager, the Book Running Lead Managers and their respective directors, officers, agents, affiliates and representatives that they are eligible under all applicable laws, rules, regulations, guidelines and approvals to acquire the Units. Bidders are also advised to make their independent investigations submitted in accordance with applicable laws and do not exceed the investment limits or maximum number of Units that can be held by them under applicable law or as specified herein. The Investment Manager, the Trustee, the Book Running Lead Managers, the Syndicate Member and their respective directors, officers, agents, affiliates and representatives accept no responsibility or liability towards any Bidder on whether such Bidder is eligible to acquire the Units. The Investment Manager, the Trustee, the Book Running Lead Managers and Syndicate Member do not accept any responsibility for the completeness and accuracy of the information stated in this chapter and are not liable for any amendment, modification or change in the applicable law which may occur after the date hereof.

Authority for the Offer

The Trust is eligible for the Offer in accordance with Regulation 14(6) read with Regulation 14(4) of the InvIT Regulations, as amended, Chapter 14 of the InvIT Master Circular, as amended from time to time. The Offer was authorised and approved by the IM Board's resolution dated January 30, 2026 and approved by the Unitholders by way of the resolution dated February 20, 2026.

The Offer for Sale has been authorized by the respective board of directors of each of the Selling Unitholders as mentioned below. Further, with respect to the Units offered by the Selling Unitholders in the Offer for Sale, each of the Selling Unitholders has held such Units for a period of at least one year immediately preceding the date of the Draft Offer Document provided that such Units shall be free from any encumbrance or lock-in on the date of filing of Draft Offer Document.

Name of the Selling Unitholder	Maximum no. of Offered Units* and amount proposed to be raised pursuant to the Offer	Date of consent letter	Date of board/committee approval
BCI IRR India Holdings Inc.	Up to [●] Units, aggregating up to ₹ 10,725.00 Million	March 17, 2026	February 24, 2026
BCI IRR India Holdings Limited Partnership	Up to [●] Units, aggregating up to ₹ 275.00 Million	March 17, 2026	February 24, 2026
Cube Highways and Infrastructure II Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 15,098.70 Million	March 17, 2026	March 17, 2026
Cube Highways and Infrastructure III Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 6,055.70 Million	March 17, 2026	March 17, 2026
Cube Mobility Investments Pte. Ltd.	Up to [●] Units, aggregating up to ₹ 12,908.40 Million	March 17, 2026	March 17, 2026
Seventy Second Investment Company LLC	Up to [●] Units, aggregating up to ₹ 4,937.20 Million	March 17, 2026	March 17, 2026

The Investment Manager has received the in-principle approval of BSE and NSE for the Offer dated [●] and [●] from the BSE and NSE, respectively. The Investment Manager has filed a copy of this Draft Offer Document and will file a copy of the Offer Document and Final Offer Document with SEBI and the Stock Exchanges.

The Units have not been and will not be registered, listed or otherwise qualified in any other jurisdiction outside India and may not be offered or sold, and Bids may not be made by persons in any such jurisdiction, except in compliance with the applicable laws of such jurisdiction. The Units shall not be offered or sold where such offer or sale would require registration, qualification or listing.

Bidders should note that Allotment to successful Bidders will only be in the dematerialized form. Application Forms which do not have the details of the Bidders' demat accounts including DP ID, PAN and Client ID will be treated as incomplete and rejected. Bidders will not have the option of receiving Units in physical form. The Units have been traded only on the dematerialized segment of BSE and NSE.

Offer Procedure

This section applies to all Bidders. All Bidders other than Anchor Investors and Strategic Investors shall mandatorily participate in the Offer through the ASBA process. Individual Non-Institutional Investors with a Bid Amount of ₹ 0.50 million or less may Bid using the UPI Mechanism. Bidders applying in this Offer should carefully read the provisions applicable to them before submitting a Bid through the ASBA process. All Bidders (other than Anchor Investors or Strategic Investors) are required to pay the full Bid Amount at the time of Bidding, by way of instructing the relevant SCSB or Sponsor Bank (in case of Bids through the UPI mechanism) to block the full Bid Amount at the time of Bidding. Anchor Investors are required to pay the full Bid Amount at the time of Bidding by making payment by electronic mode or in the case of Strategic Investors, in accordance with the terms of the applicable unit subscription agreement.

By making a Bid (including any revision thereof), the Bidder will be deemed to have represented to the Investment Manager, the Trustee, the Book Running Lead Managers and the Syndicate Member that it is eligible to participate in the Offer and be Allotted Units under applicable law. Bidders are also advised to make their independent investigations and ensure that their Bids are submitted in accordance with applicable laws and do not exceed the investment limits or maximum number of Units that can be held by them under applicable law or as specified herein.

Book Building Procedure

This Offer is being made through the Book Building Process, wherein not more than 75% of the Offer Size (excluding the Strategic Investor Portion) shall be available for allocation to Institutional Investors on a proportionate basis, provided that the Investment Manager may, in consultation with the Book Running Lead Managers, allocate up to 60% of the Institutional Investor Portion to Anchor Investors on a discretionary basis, in accordance with the InvIT Regulations and the InvIT Master Circular. Further, not less than 25% of the Offer Size (excluding the Strategic Investor Portion) shall be available for allocation on a proportionate basis to Non-Institutional Investors, subject to valid Bids being received at or above the Offer Price. In case of under-subscription in any category, the unsubscribed portion in any category may be Allotted to Bidders in the other category at the discretion of the Investment Manager in consultation with the Book Running Lead Managers and the Designated Stock Exchange.

The Offer may also include participation by Strategic Investors in accordance with the InvIT Regulations and InvIT Master Circular. In the event of participation by Strategic Investors, the size of the Offer will be adjusted to the extent of participation by Strategic Investors.

ASBA Bidders, are required to submit their Bids through the Designated Intermediaries including the SCSBs with whom the ASBA Account is maintained. Individual Non-Institutional Investors who are bidding with a Bid Amount of ₹ 0.50 million or less may Bid using the UPI Mechanism.

Bidders do not have the right to withdraw or lower their Bid (in terms of number of Units or the Bid Amount) at any stage. Bidders can only make upward revisions in their Bids, subject to applicable law.

Bidders should note that Allotment to successful Bidders will be only in the dematerialized form. Bid cum Application Forms which do not have the details of the Bidders' depository accounts including DP ID, PAN, UPI ID (for individual Non-Institutional Investors Bidding for a Bid Amount of ₹ 0.50 million or less using the UPI Mechanism) and Client ID will be treated as incomplete and may be rejected. Bidders will not have the option of receiving Allotment in physical form. On Allotment, the Units will be traded on the dematerialized segment of the Stock Exchanges only.

Bid cum Application Form

Copies of the Bid cum Application Form and the abridged Offer Document will be available at the offices of the Book Running Lead Managers, the Syndicate Members, if any, the principal place of business of the Trust and the Designated Intermediaries at the Bidding Centres. An electronic copy of the Bid cum Application Form will also be available on the websites of the SCSBs, NSE (www.nseindia.com) and BSE (www.bseindia.com). The Anchor Investor Application Forms and Strategic Investor Application Forms will be made available at the principal place of business of the Trust and the registered offices of each of the Investment Manager and the Book Running Lead Managers.

Bidders should use only the specified Bid cum Application Form bearing the stamp of a Designated Intermediary submitted at Bidding Centres (except in case of electronic Bid cum Application Forms), for the purpose of making a Bid in terms of the Offer Document. Bid cum Application Forms (other than electronic Bid Application Forms) not bearing such specified stamp are liable to be rejected. Prior to being issued to Bidders, such Bid cum Application Form will be serially numbered.

All Bidders (other than Anchor Investors and Strategic Investors) shall mandatorily participate in the Offer only through the ASBA process. Anchor Investors and Strategic Investors are not permitted to participate in the Offer through the ASBA process. All Bidders (other than Anchor Investors and Strategic Investors) must provide bank account details and authorization to block funds in the relevant space provided in the Bid cum Application Form and Bid cum Application Forms that do not contain such details will be rejected. ASBA Bidders, are required to submit their Bids through the Designated Intermediaries including the SCSBs with whom the ASBA Account is maintained.

UPI Bidders using the UPI Mechanism must provide the UPI ID in the relevant space provided in the ASBA Form. ASBA Forms for such UPI Bidders, that do not contain the UPI ID are liable to be rejected. UPI Bidders using the UPI Mechanism may also apply through the SCSBs and mobile applications using the UPI handles as provided on the website of SEBI. UPI Bidders using the UPI Mechanism may submit the Bid cum Application with SCSBs, Syndicate Member, Registered Stock Brokers, RTAs and Depository Participants along with details of their bank account for blocking of funds. The relevant intermediary is required to the upload the Bid on the Stock Exchange bidding platform and forward the Bid cum application Form to an SCSB for blocking of funds.

An ASBA Bidder shall use the ASBA Form obtained from the Designated Intermediaries for the purpose of making a Bid. In case an ASBA Bidder makes an application in physical form, the ASBA Bidder shall submit the ASBA Form with the relevant Designated Intermediary. In case an ASBA Bidder makes an application in electronic form, the ASBA Bidder shall submit the ASBA Form either through the internet banking facility available with the SCSB, or such other electronically enabled

mechanism for bidding and blocking funds in the ASBA Account held with SCSB, and accordingly registering such Bids. The SCSB shall block an amount in the ASBA Account equal to the Bid Amount specified in the ASBA Form.

For individual Non-Institutional Investors using UPI Mechanism, the Stock Exchanges shall share the bid details (including UPI ID) with Sponsor Bank(s) on a continuous basis to enable the Sponsor Bank(s) to initiate UPI Mandate Request to individual Non-Institutional Investors for blocking of funds. The Sponsor Bank(s) shall initiate request for blocking of funds through NPCI to individual Non-Institutional Investors, who shall accept the UPI Mandate Request for blocking of funds on their respective mobile applications associated with UPI ID linked bank account. The NPCI shall maintain an audit trail for every Bid entered in the Stock Exchanges bidding platform, and the liability to compensate the individual Non-Institutional Investors (Bidding through UPI Mechanism) in case of failed transactions shall be with the concerned entity (i.e., the Sponsor Bank, NPCI or the issuer bank) at whose end the lifecycle of the transaction has come to a halt. The NPCI shall share the audit trail of all disputed transactions/investor complaints to the Sponsor Bank(s) and the issuer bank. The Sponsor Bank(s) shall provide the audit trail to the Book Running Lead Managers to analyze the same and fix liability. To ensure that timely information is disseminated to investors, SCSBs shall send SMS alerts for mandate block and unblock.

The Sponsor Bank(s) will undertake a reconciliation of Bid responses received from Stock Exchanges and sent to NPCI and will also ensure that all the responses received from NPCI are sent to the Stock Exchanges platform with detailed error code and description, if any. Further, the Sponsor Bank(s) will undertake reconciliation of all Bid requests and responses throughout their lifecycle on daily basis and share reports with the Lead Managers. Sponsor Bank(s) and issuer banks shall download UPI settlement files and raw data files from the NPCI portal after every settlement cycle and do a three-way reconciliation with UPI switch data and UPI raw data. NPCI shall coordinate with issuer banks and Sponsor Bank(s) on a continuous basis.

The Bid cum Application form will contain information about the Bidder and the price and number of Units that the Bidder wishes to Bid for. Bidders will have the option to make a maximum of three Bids in the Bid cum Application Form and such options will not be considered multiple Bids.

On filing of the Final Offer Document with SEBI and the Stock Exchanges, the Bid cum Application Form will be treated as a valid application form for Allotment of the Units. On submission of the completed Bid cum Application Form to a Designated Intermediary or the Book Running Lead Managers (in case of Anchor Investors) or participation pursuant to Strategic Investor Unit Subscription Agreements, the Bidder (including any Strategic Investor and Anchor Investor), will be deemed to have authorized the Investment Manager to make the necessary changes in the Offer Document as may be required under the InvIT Regulations, and other applicable laws, for filing the Final Offer Document with SEBI and the Stock Exchanges without prior or subsequent notice of such changes to the Bidder.

The prescribed colour of the Bid cum Application Forms for various categories is as follows:

Category	Colour of Bid cum Application Form including Bid cum Application Form*
Resident Indians	[●]
Non-Residents, including Eligible NRIs and FPIs and multilateral and bilateral development financial institutions, excluding Strategic Investors and Anchor Investors, applying on a repatriation basis	[●]
Anchor Investors and Strategic Investors*	[●]

* *Bid cum Application Forms for Anchor Investors will be made available at the principal place of business of the Trust, the respective registered office of the Investment Manager and each of the Book Running Lead Managers.*

Designated Intermediaries shall submit/deliver the Bid cum Application Forms of Bidders (other than Anchor Investors) to the respective SCSBs where the Bidder has a bank account and shall not submit it to any non-SCSB Bank or Escrow Collection Bank (unless such Escrow Collection Bank is also an SCSB). For UPI Bidders using the UPI Mechanism, the Stock Exchanges shall share the Bid details (including UPI ID) with the Sponsor Bank(s) on a continuous basis to enable the Sponsor Bank(s) to initiate a UPI Mandate Request to such UPI Bidders for blocking of funds. Designated Intermediaries (other than SCSBs) shall not accept any ASBA Form from a UPI Bidder who is not Bidding using the UPI Mechanism.

Who can Bid?

Each Bidder should check if it is eligible to Bid under applicable law. Furthermore, certain categories of Bidders may not be permitted to Bid in the Offer or hold Units in excess of the limits specified under applicable law. Each Bidder (other than Anchor Investor and Strategic Investors) is required to Bid for a Minimum Bid Size in the range of ₹10,000 and ₹15,000.

The maximum subscription in the Offer from any investor other than the Sponsor, its related parties and its associates shall not exceed 25% of the total post-Offer outstanding Units.

The Parties to the Trust, and the Book Running Lead Managers are not liable for any amendment or modification or change to applicable laws, which may occur after the date of this Draft Offer Document. Bidders are advised to make their independent investigations and satisfy themselves that they are eligible to apply. Bidders are advised to ensure that any single application from them does not exceed the investment limits or maximum number of Units that can be held by them under applicable law.

The Trustee, the Valuer and the employees of the Valuer who were involved in the valuation of the Portfolio Assets are not permitted to Bid in this Offer.

The Units have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the "U.S. Securities Act") or any state securities laws in the United States and, unless so registered, may not be offered or sold within the United States, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the U.S. Securities Act and applicable state securities laws in the United States. Accordingly, the Units are only being offered and sold outside the United States in "offshore transactions", as defined in, and in reliance upon, Regulation S under the U.S. Securities Act and the applicable laws of the jurisdictions where those offers and sales occur. The Units have not been and will not be registered, listed or otherwise qualified in any other jurisdiction outside India and may not be offered or sold, and bids may not be made by persons in any such jurisdiction, except in compliance with the applicable laws of such jurisdiction. There will be no public offering of the Units in the United States.

Units Offered and Sold in this Offer

Each purchaser that acquires the Units offered pursuant to this Offer, by its acceptance of the Offer Document and of the Units offered pursuant to this Offer, will be deemed to have acknowledged, represented to and agreed with the Trust, Investment Manager, Sponsor and the Lead Managers that it has received a copy of this Draft Offer Document, the Offer Document and the Final Offer Document and such other information as it deems necessary to make an informed investment decision and that:

1. the purchaser is authorized to consummate the purchase of the Units offered pursuant to this Offer in compliance with all applicable laws and regulations;

2. the purchaser is not an affiliate of the Trust or a person acting on behalf of an affiliate;

3. the Trust will not recognize any offer, sale, pledge or other transfer of such Units made other than in compliance with the above-stated restriction; and

4. the purchaser acknowledges that the Trust, Sponsor, the Lead Managers, their respective affiliates and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations and agreements and agrees that, if any of such acknowledgements, representations and agreements deemed to have been made by virtue of its purchase of such Units are no longer accurate, it will promptly notify the Trust, and if it is acquiring any of such Units as a fiduciary or agent for one or more accounts, it represents that it has sole investment discretion with respect to each such account and that it has full power to make the foregoing acknowledgements, representations and agreements on behalf of such account.

Units offered and sold outside the United States in "offshore transactions" as defined in, and in reliance on, Regulation S

Participation by Associates and affiliates of the Book Running Lead Managers and Syndicate Members

The Book Running Lead Managers and the Syndicate Members are not entitled to Bid for Units in this Offer in any manner except towards fulfilling their underwriting obligations. However, associates and affiliates of the Book Running Lead Managers and Syndicate Members may Bid for Units in the Offer, either in the Institutional Investor Portion (excluding the Anchor Investor Portion and Strategic Investor Portion) or in the Non-Institutional Investor Portion, where allocation will be on a proportionate basis, either on their own account or on behalf of their clients. All categories of Bidders, including associates or affiliates of the Book Running Lead Managers, shall be treated equally for the purpose of allocation to be made on a proportionate basis. Neither the Book Running Lead Managers nor any associate of the Book Running Lead Managers and Syndicate Members (other than mutual funds sponsored by entities which are associate of the Book Running Lead Managers or insurance companies promoted by entities which are associate of the Book Running Lead Managers or pension funds of entities which are associate of the Book Running Lead Managers or Alternate Investment Funds (AIFs) sponsored by the entities which are associates of the Book Running Lead Managers or FPIs other than Category III FPIs sponsored by the entities which are associates of the Book Running Lead Managers) can apply in the Offer under the Anchor Investor Portion.

Bids by Anchor Investors

The Investment Manager, in consultation with the Book Running Lead Managers, may allocate up to 60% of the Institutional Investor Portion on a discretionary basis to the Anchor Investors, in accordance with the InvIT Regulations. The Strategic Investors may apply under the Anchor Investor Portion. The Institutional Investor Portion will be reduced in proportion to the allocation under the Anchor Investor Portion. Only Institutional Investors and Strategic Investors are eligible to invest in the Anchor Investor Portion. In the event of under-subscription in the Anchor Investor Portion, the balance Units will be added to the Institutional Investor Portion. In accordance with the InvIT Regulations and InvIT Master Circular, the key terms for participation in the Anchor Investor Portion are provided below:

(i) Anchor Investors are not permitted to participate in the Offer through the ASBA process. Anchor Investor Application Forms will be made available for the Anchor Investor Portion at the principal place of business of the Trust, and the registered offices of the Investment Manager and the Book Running Lead Managers.

(ii) A Bid by an Anchor Investor must be for a minimum of such number of Units so that the Bid Amount is at least ₹100 million. A Bid cannot be submitted for more than 60% of the Institutional Investor Portion.

(iii) The Bidding for Anchor Investors will open one day before the Bid/ Offer Opening Date and Allocation to Anchor Investors will be completed on the same day.

(iv) The Investment Manager, in consultation with the Book Running Lead Managers, will finalize allocation to the Anchor Investors on a discretionary basis, provided that the minimum number of Allottees in the Anchor Investor Portion will not be less than:

- two, where the allocation under Anchor Investor Portion is up to ₹ 2,500 million; and
- five, where the allocation under Anchor Investor Portion is over ₹ 2,500 million.

(v) Allocation to Anchor Investors will be completed on the same day as Anchor Investor Bid / Offer Period. The number of Units allocated to Anchor Investors and the Anchor Investor Allocation Price, will be made available on the websites of the Stock Exchanges, the Sponsor, the Investment Manager and the Book Running Lead Managers, prior to the Bid/Offer Opening Date.

(vi) If the Offer Price is higher than the Anchor Investor Allocation Price, the additional amount being the difference between the Offer Price and the Anchor Investor Allocation Price will be payable by the Anchor Investors within two days of the Bid/ Offer Closing Date. If the Offer Price is lower than the Anchor Investor Allocation Price, Allotment to successful Anchor Investors will be at the higher price, i.e., the Anchor Investor Allocation Price and the amount in excess of the Offer Price paid by Anchor Investors will not be refunded to them.

(vii) The Units Allotted in the Anchor Investor Portion will be locked in for a period of 30 days from the date of Allotment. However, the Units Allotted to the Strategic Investors will be locked in for a period of one year from the date of Allotment.

(viii) Bids made by Institutional Investors and Strategic Investors (where such Strategic Investors are Institutional Investors) Bidding under both the Anchor Investor Portion and the Institutional Investor Portion will not be considered as multiple Bids.

(ix) The Investment Manager, in consultation with the Book Running Lead Managers, reserves the right to reject any Bid received from Anchor Investors without assigning any reasons in accordance with the InvIT Regulations and InvIT Master Circular.

(x) Neither the Book Running Lead Managers nor any their associates, other than mutual funds sponsored by entities which are associates of the Book Running Lead Managers, insurance companies promoted by entities which are associates of the Book Running Lead Managers or pension funds of entities which are associates of the Book Running Lead Managers or AIFs sponsored by the entities which are associates of the Book Running Lead Managers or FPIs other than category III sponsored by the entities which are associates of the Book Running Lead Managers, shall apply under the Anchor Investors Portion. The parameters for selection of Anchor Investors will be clearly identified by the Book Running Lead Managers.

All Non-Resident Investors including Eligible NRIs and FPIs, should note that refunds, dividends and other distributions, if any, will be payable in Indian Rupees only and net of bank charges and / or commission. **There is no reservation for NRIs, FPIs and FVCIs and all Bidders will be treated on the same basis as other categories for the purpose of allocation.**

Anchor Investors cannot withdraw or lower the size of their Bids (in terms of number of Units or the Bid Amount) at any stage after submission of the Bid.

Bids by Strategic Investors

In accordance with the InvIT Regulations, the key terms for participation by Strategic Investors are provided below:

(i) The Strategic Investor(s) shall, either jointly or severally, invest not less than 5% and not more than 25% of the total Offer Size.

(ii) The Investment Manager, on behalf of the Trust, shall enter into a binding unit subscription agreement with the Strategic Investor(s) which propose(s) to invest in the Offer prior to the filing of the Offer Document.

(iii) Subscription price per Unit, payable by the Strategic Investor(s) shall be set out in the Strategic Investor Unit Subscription Agreement, and the entire subscription price shall be deposited in a special escrow account prior to opening of Offer in accordance with the terms of the unit subscription agreement.

(iv) The Strategic Investor Offer Price shall not be less than the Offer Price. In the event that the Offer Price is higher than the Strategic Investor Allocation Price, the Strategic Investor(s) shall bring in the additional amount within two Working Days of the determination of the Offer Price.

(v) If the Offer Price is lower than the Strategic Investor Allocation Price, the excess amount shall not be refunded to the Strategic Investor, and the Strategic Investor shall take Allotment at the price at which allocation was agreed to be made to it in the unit subscription agreement.

(vi) The commitment received from Strategic Investors and details of the unit subscription agreement, including the name of each Strategic Investor, the number of Units proposed to be subscribed by it or the investment amount, proposed subscription price per Unit shall be disclosed in the Offer Document.

(vii) The unit subscription agreement shall not be terminated except in the event the Offer fails to collect minimum subscription.

(viii) The Investment Manager, in consultation with the Lead Manager, in their absolute discretion, will decide the list of Strategic Investors to whom the provisional CAN or CAN will be sent pursuant to which the details of the Units allocated to them in their respective names will be notified to such Strategic Investors. The payment instruments for payment into the Escrow Account(s) should be drawn in favour of:

In case of resident Strategic Investors: [●]

In case of non-resident Strategic Investors: [●]

(ix) In accordance with the InvIT Regulations, the Units Allotted to Strategic Investors will be locked-in for a period of 180 days from the date of Allotment of the Units.

(x) Bids made by Strategic Investors (where such Strategic Investors are Institutional Investors) under both the Anchor Investor Portion and the Institutional Investor Portion will not be considered as multiple Bids; and

(xi) Bids by Strategic Investors (where such Strategic Investors are Non -Institutional Investors) under both the Anchor Investor Portion and Non-Institutional Investor Portion will not be considered as multiple Bids, subject to applicable limits

Bids by SEBI registered VCFs and AIFs

The SEBI VCF Regulations prescribe, amongst others, the investment restrictions on VCFs registered with SEBI under the said regulations. Further, the SEBI AIF Regulations prescribe, amongst others, the investment restrictions on AIFs. Further, VCFs which have not re-registered as an AIF under the SEBI AIF Regulations shall continue to be regulated by the SEBI VCF Regulations until the existing fund or scheme managed by the fund is wound up and such funds shall not launch any new scheme after the notification of the SEBI AIF Regulations. Additionally, VCFs and AIFs are subject to certain investment restrictions, including with respect to the percentage of investible funds held in each investee entity. Under the SEBI AIF Regulations, Category I and II AIFs are permitted to invest not more than 25% of the investable funds in one "investee company" (which includes the Trust) and Category III AIFs are permitted to invest not more than 10% of the investable funds in one "Investee company". Allotments made to VCFs and AIFs in the Offer are subject to the rules and regulations that are applicable to each of them respectively. There is no reservation for NRIs, FPIs and FVCIs and all Bidders will be treated on the same basis with other categories for the purpose of allocation.

Bids by Banking Companies

Bids may be made by banks as permitted by the RBI and are subject to conditions specified in the Master Direction- Reserve Bank of India (Financial Services provided by Banks) Directions, 2016 as amended from time to time. In case of Bids made by banking companies registered with the RBI, certified copies of (i) the certificate of registration issued by the RBI, and (ii) the approval of such banking company's investment committee are required to be attached to the Application Form. Banks may participate in public issuances by Trusts within the overall ceiling of 20% of their net worth permitted for direct investments in shares, convertible bonds/ debentures, units of equity-oriented mutual funds and exposures to VCFs, subject to the following conditions: (i) Banks should put in place a board approved policy on exposures to the Trust which lays down an internal limit on such investments within the overall exposure limits in respect of the real estate sector and infrastructure sector; (ii) Banks shall not invest more than 10% of the unit capital of the Trust; (iii) Banks should ensure adherence to the prudential guidelines issued by RBI from time to time on Equity investments by Banks, Classification and Valuation of Investment Portfolio, Basel III Capital requirements for Commercial Real Estate Exposures and Large Exposure Framework, as applicable. Failing this, the Investment Manager, in consultation with the Book Running Lead Managers, reserves the right to reject the Bid.

Bids by LLPs

In case of Bids made by limited liability partnerships registered under the Limited Liability Partnership Act, 2008, a certified copy of the certificate of registration issued under the Limited Liability Partnership Act, 2008, must be attached to the Bid cum Application Form. Failing this, the Bid(s) may be rejected.

Bids by Provident Funds/Pension Funds/NPS Schemes

On March 2, 2015, the Ministry of Finance issued a notification allowing investments by non-government provident funds, superannuation funds and gratuity funds up to 5% in infrastructure investment trusts, as specified. On May 29, 2015, the

Ministry of Labour and Employment issued a notification allowing investments by provident funds up to 5% in infrastructure investment trusts, as specified. The Pension Fund Regulatory and Development Authority issued circulars dated June 3, 2015 and September 2, 2015, May 4, 2017(as amended by the circular dated May 8, 2018), master circular dated August 18, 2023 on investment guidelines for National Pension System ("**NPS**")/Atal Pension Yojna ("**APY**") schemes-central government, state government, corporate—central government ("**Corporate—CG**"), NPS lite, APY and APY fund scheme, and master circular dated September 22, 2023, on investment guidelines for NPS tier-I and tier-II (other than central/state government, Corporate—CG, NPS lite and APY) respectively, allowing investments by national pension funds up to respectively, allowing investments by national pension funds up to 5% in infrastructure investment trusts, as specified. However, such investments by provident funds and pension funds will be subject to, amongst others, the sponsor having a minimum of AA or equivalent rating from at least two credit rating agencies registered with SEBI. In case of Bids made by provident funds/ pension funds (registered with the Pension Fund Regulatory and Development Authority established under section 3(1) of the Pension Fund Regulatory and Development Authority Act, 2013), subject to applicable laws, with minimum corpus of ₹ 250 million, a certified copy of certificate from a chartered accountant certifying the corpus of the provident fund/pension fund must be attached to the Bid cum Application Form. Failing this, the Bid(s) may be rejected.

Bids by Insurance Companies

Bids may be made by insurance companies as permitted by the Insurance Regulatory and Development Authority of India in terms of Master Circular on Investments dated October 27, 2022, circular dated March 14, 2017 titled Investment in Units of Real Estate Investment Trusts (REIT) & Infrastructure Investment Trusts (InvIT) and circular dated April 22, 2021 titled Investments in Debt Securities of InvITs and REITs. In case of Bids made by insurance companies registered with the IRDAI, a certified copy of the certificate of registration issued by IRDAI must be attached to the Bid cum Application Form. Failing this, the Investment Manager, in consultation with the Book Running Lead Managers, reserves the right to reject the Bid. An insurer can invest not more than 3% of respective fund size of the insurer or not more than 5% of the units issued by a single InvIT, whichever is lower.

Bids by Mutual Funds

Bids may be made by mutual funds under all its schemes, existing and future, subject to the investment conditions and other restrictions prescribed under the Securities and Exchange Board of India (Mutual Funds) Regulations, 1996 (including, the master circular for mutual funds dated June 27, 2024, as amended from time to time, and any other circulars, notifications and guidelines issued thereunder). A mutual fund may invest in the Units subject to the following:

(a) No mutual fund under all its schemes shall own more than 10% of the units; and

(b) A mutual fund scheme shall not invest:

  (i) more than 10% of its net asset value in the units issued by InvIT; and

  (ii) More than 5% of its net asset value in the units,

provided that the limits mentioned in sub-clauses (i) and (ii) above shall not be applicable for investments in case of index fund or sector or industry specific scheme pertaining to Trusts.

In case of a Mutual Fund, a separate Bid can be made in respect of each scheme of the Mutual Fund registered with SEBI and such Bids in respect of more than one scheme of the Mutual Fund will not be treated as multiple Bids provided that the Bids clearly indicate the scheme concerned for which the Bid has been made.

The Securities and Exchange Board of India (Mutual Funds) Regulations, 1996 have been superseded by the Securities and Exchange Board of India (Mutual Funds) Regulations, 2026, which will come into force with effect from April 1, 2026.

Bids by Eligible NRIs

In accordance with Schedule IV of the FEMA Rules, Eligible NRIs, including companies, trusts and partnership firms incorporated outside India which are owned and controlled by NRIs, are permitted to purchase units issued by an 'investment vehicle' without any limit, either on the stock exchange or outside it. The FEMA Rules define an 'investment vehicle' to mean an entity registered and regulated under the regulations framed by the SEBI or any other authority designated for that purpose, including an InvIT governed by the SEBI.

Investments by Eligible NRIs in the Units shall be on a non-repatriation basis and shall be deemed to be domestic investment at par with investments made by residents of India.

(a). Bid cum Application Forms for Eligible NRIs applying will be available at the office of the Trust, the registered office of the Investment Manager and with the Designated Intermediaries, as the case may be;

(b). Only Bids accompanied by payment in freely convertible foreign exchange will be considered for Allotment;

Eligible NRIs bidding on a repatriation basis by using the Bid cum Application Form for Non-Residents should authorize their respective SCSB (if they are Bidding directly through the SCSB) or confirm or accept the UPI Mandate Request (in case of

Bidding through the UPI Mechanism) to block their Non-Resident External ("**NRE**") accounts, or Foreign Currency Non-Resident ("**FCNR**") accounts, and eligible NRIs bidding on a non-repatriation basis by using the Bid cum Application Form for residents should authorize their respective SCSB (if they are Bidding directly through SCSB) or confirm or accept the UPI Mandate Request (in case of Bidding through the UPI Mechanism) to block their Non-Resident Ordinary ("**NRO**") accounts for the full Bid Amount, at the time of the submission of the Bid cum Application Form.

Bids by FPIs

Foreign Portfolio Investors are permitted to participate in the Offer subject to compliance with Schedule II and Schedule VIII of the FEMA Rules read with the applicable provisions of the Foreign Exchange Management (Mode of Payment and Reporting of Non-Debt Instruments) Regulations, 2019, as amended and such other terms and conditions as may be prescribed by SEBI from time to time. In accordance with the SEBI FPI Regulations, a FPI means, a person who has been registered under Chapter II of the SEBI FPI Regulations and shall be deemed to be an intermediary in terms of the provisions of the SEBI Act.

In case of Bids by FPIs the payment should be paid out of funds held in a Special Non-Resident Rupee Account as inward remittance from abroad through normal banking channels or out of funds held in [NRE, or FCNR(B)] account maintained in accordance with the Foreign Exchange Management (Deposit) Regulations, 2016, along with documentary evidence in support of the remittance. In case of Bids made by FPIs, a verified true copy of the certificate of registration issued by the designated depository participant under the SEBI FPI Regulations is required to be attached along with the Bid cum Application Form, failing which the Investment Manager, in consultation with the Book Running Lead Managers, reserves the right to reject the Bid without assigning any reasons thereof.

It is hereby clarified that bids received from FPIs bearing the same PAN shall be treated as multiple Bids and are liable to be rejected, except for Bids from FPIs that utilize the multiple investment manager structure in accordance with the operational guidelines for FPIs and designated Depository Participants issued to facilitate implementation of SEBI FPI Regulations (such structure referred to as "**MIM Structure**"), provided such Bids have been made with different beneficiary account numbers, Client IDs and DP IDs. Accordingly, it should be noted that multiple Bids received from FPIs, who do not utilize the MIM Structure, and bear the same PAN, are liable to be rejected. In order to ensure valid Bids, FPIs making multiple Bids using the same PAN, and with different beneficiary account numbers, Client IDs and DP IDs, are required to provide a confirmation in the Bid cum Application Forms that the relevant FPIs making multiple Bids utilize the MIM Structure. In the absence of such confirmation from the relevant FPIs, such multiple Bids shall be rejected.

Please note that, the maximum Bid by any Bidder including a QIB Bidder should not exceed the investment limits prescribed for them under applicable laws. Further, multiple Bids by a FPI Bidder utilising the MIM Structure shall be aggregated for determining the permissible maximum Bid. Further, please note that, Bid cum Application Forms are liable to be rejected in the event that the Bid in the Bid cum Application Form "exceeds the Offer size and/or investment limit or maximum number of Units that can be held under applicable laws or regulations or maximum amount permissible under applicable laws or regulations, or under the terms of the Offer Document".

Bids by SCSBs

SCSBs participating in the Offer are required to comply with the terms of the SEBI circulars dated September 13, 2012 (CIR/CFD/DIL/12/2012) and January 2, 2013 (CIR/CFD/DIL/1/2013). Such SCSBs are required to ensure that for making applications on their own account using ASBA, they should have a separate account in their own name with any other SCSBs. Further, such account shall be used solely for the purpose of making application in public issues and clear demarcated funds should be available in such account for such applications.

Bids under Power of Attorney

In case of Bids made pursuant to a power of attorney by Institutional Investors or bodies corporate, registered societies, Eligible FPIs, insurance companies, mutual funds, AIFs, insurance funds set up by the army, navy or air force of the India, insurance funds set up by the Department of Posts, India or the National Investment Fund and provident funds with a minimum corpus of ₹ 250 million (subject to Applicable Law) and pension funds with a minimum corpus of ₹ 250 million registered with the Pension Fund Regulatory and Development Authority established under sub-section (1) of section 3 of the Pension Fund Regulatory and Development Authority Act, 2013 (subject to applicable law), a certified copy of the power of attorney or the relevant resolution or authority, as the case may be, along with a certified copy of the memorandum of association and articles of association and/or bye laws must be submitted along with the Bid cum Application Form. Failing this, the Investment Manager, in consultation with the Book Running Lead Managers, reserve the right to accept or reject any Bid in whole or in part, in either case, without assigning any reason thereof The Investment Manager, in consultation with the Book Running Lead Managers, in its absolute discretion, reserves the right to relax the above condition of simultaneous lodging of the power of attorney along with the Bid cum Application Form.

Allotments, if any, made to FVCIs in the Offer are subject to the respective rules and regulations that are applicable to each of them.

The above information is given for the benefit of the Bidders. Each Bidder should check whether it is eligible to apply under applicable law and ensure that any prospective Allotment to it in the Offer is in compliance with the investment restrictions

under applicable law. Certain categories of Bidders may not be allowed to Bid in the Offer or hold Units exceeding certain limits specified under applicable law.

The Parties to the Trust, and the Book Running Lead Managers are not liable for any amendments or modification or changes in applicable laws or regulations, which may occur after the date of this Draft Offer Document. Bidders are advised to make their independent investigations and ensure that any single Bid from them does not exceed the applicable investment limits or maximum number of the Units that can be held by them under applicable law or regulation or as specified herein.

Maximum and Minimum Bid Size

Each Bidder (other than an Anchor Investor and Strategic Investor) is required to Bid for a Minimum Bid Size in the range of ₹10,000 and ₹15,000 and in multiples of [●] Units thereafter.

(i) No Bidder shall Bid for such number of Units which exceeds the Offer Size, subject to applicable investment limits or maximum number of Units that may be held by them under applicable laws.

(ii) The maximum Bid by any Bidder including Institutional Investors should not exceed the investment limits prescribed for them under the applicable law.

The price and quantity options submitted by a Bidder in the Bid cum Application Form may be treated as optional bids from the Bidder and may not be cumulated. After determination of the Offer Price, the highest number of Units Bid for by a Bidder at or above the Offer Price may be considered for Allotment and the rest of the Bid(s), irrespective of the Bid Amount may automatically become invalid.

Information for the Bidders:

(i) The Offer Document will be filed by the Investment Manager with SEBI and the Stock Exchanges at least five Working Days before the Bid/Offer Opening Date.

(ii) After the filing of the Offer Document with SEBI and the Stock Exchanges, the Book Running Lead Managers/ Investment Manager shall make a Pre-Offer advertisement on the websites of the Trust, the Sponsor, the Investment Manager and the Stock Exchanges. Further, such a Pre-Offer advertisement will be advertised in all editions of **[●]** (a widely circulated English national daily newspaper), in all editions of **[●]** (a widely circulated Hindi national daily newspaper) and **[●]** (a widely circulated regional daily newspaper, where the registered office of the Investment Manager is located.

(iii) Any Bidder (who is eligible to invest in the Units) may obtain the Bid cum Application Form or both from the principal place of business of the Trust, the registered office of the Investment Manager or from any Designated Intermediary at the Bidding Centres. Anchor Investor Application Forms will be made available at the principal place of business of the Trust, and the respective registered offices of the Investment Manager, and the Book Running Lead Managers.

(iv) The Bid/Offer Period shall be for a minimum of three Working Days.

(v) In case the Price Band is revised, the Bid/Offer Period shall be extended for a minimum period of one Working Day, subject to the total Bid/Offer Period not exceeding 30 Working Days. In case of *force majeure*, banking strike or similar circumstances, the Bid/Offer Period may be extended for a minimum period of three Working Days, subject to the total Bid/Offer Period not exceeding 30 Working Days. The revised Price Band and Bid/Offer Period will be widely disseminated by notification to the SCSBs and Stock Exchanges, and also by indicating the change on the websites of the Trust, the Book Running Lead Managers, the Sponsor, the Investment Manager and the Stock Exchanges and at the terminals of the members of the Syndicate. In accordance with the InvIT Regulations, the Price Band cannot be revised more than two times, and a differential price shall not be offered to any Bidder.

(vi) The Designated Intermediaries will accept Bids during the Bid/Offer Period in accordance with the terms of the Offer Document, provided that the Book Running Lead Managers will accept the Bids from Anchor Investors only on the Anchor Investor / Offer Period.

(vii) The Bids should be submitted on the prescribed Bid cum Application Form only. Bids by ASBA Bidders will be accepted by the Designated Intermediaries at the Bidding Centres in accordance with applicable law and any circulars issued by SEBI in this regard. Bid cum Application Forms should bear the stamp of a Designated Intermediary. Bid cum Application Forms (except electronic Bid cum Application Forms) which do not bear the stamp of a Designated Intermediary are liable to be rejected.

(viii) The Bidding Centres will acknowledge the receipt of the Bid cum Application Forms by stamping and returning to the Bidder the Acknowledgement Slip. This Acknowledgement Slip will serve as the duplicate of the Bid cum Application Form for the records of the Bidder.

Instructions for completing the Bid Cum Application Form

Bidders may note that Bid cum Application Forms not filled completely or correctly as per instructions provided in the Offer Document and the Bid cum Application Form are liable to be rejected.

Bids must be:

(i) made only in the prescribed Bid cum Application Form or Revision Form, as applicable;

(ii) completed in full, in BLOCK LETTERS in ENGLISH and in accordance with the instructions contained here and in the Bid cum Application Form. Incomplete Bid cum Application Forms or Revision Forms are liable to be rejected. Bidders must provide details of valid and active DP ID, Client ID, PAN, and UPI ID (for individual Non-Institutional Investors Bidding for a Bid Amount of ₹ 0.50 million or less using the UPI Mechanism clearly and without error. Invalid accounts, suspended accounts or where such account is classified as invalid or suspended shall not be considered for Allotment. Bidders should note that the Members of the Syndicate and/or the SCSBs (as appropriate) will not be liable for errors in data entry due to incomplete or illegible Bid cum Application Forms; and

(iii) in a single name or in joint names (not more than three, and in the same order as their Depository Participant details).

Bidders should also note that:

(i) information provided by Bidders will be uploaded in the online system by the Designated Intermediaries and the electronic data will be used to make allocation/Allotment. Bidders are advised to ensure that the details are correct and legible;

(ii) only the First Bidder is required to sign the Bid cum Application Form. Bidders should ensure that thumb impressions and signatures other than in the languages specified in the Eighth Schedule to the Constitution of India are attested by a Magistrate or a Notary Public or a Special Executive Magistrate under official seal; and

(iii) if the ASBA Account holder is different from the ASBA Bidder, the Bid cum Application Form should also be signed by the account holder as provided in the Bid cum Application Form.

General Instructions

Dos:

(i) Check if you are eligible to apply as per the terms of the Offer Document and under Applicable Laws and approvals. Bidders shall be required to be qualified to invest or hold interest in highway projects of NHAI and/or state concessioning authorities in India in respect of applicable laws, including FEMA and FDI Policy, and as prescribed under the relevant clauses of the respective concession agreements of the Portfolio Assets and the InvIT Regulations;

(ii) Ensure that you have a Bid within the Price Band;

(iii) Read all the instructions carefully and complete the relevant Bid cum Application Form;

(iv) Ensure that the details about the PAN, DP ID, Client ID and UPI ID (where applicable) are correct, and the Beneficiary Account is activated, as Allotment will be in dematerialized form only;

(v) Ensure that the Bids are submitted at the Bidding Centres only on the Bid cum Application Forms bearing the stamp of a Designated Intermediary;

(vi) Ensure that if you are the Bidder, you have mentioned the correct ASBA Account number in the Bid cum Application Form (other than in the case of Anchor Investors and Strategic Investors);

(vii) Individual Non-Institutional Investors Bidding for a Bid Amount of ₹ 0.50 million or less using the UPI Mechanism must provide bank account details and the authorization to block funds in their respective ASBA Accounts in the relevant space provided in the ASBA Form and the ASBA Forms that do not contain these details are liable to be rejected or the UPI ID, as applicable in the relevant space provided in the ASBA Form;

(viii) Individual Non-Institutional Investors Bidding for a Bid Amount of ₹ 0.50 million or less using the UPI Mechanism through the SCSBs and mobile applications shall ensure that the name of the bank appears in the list of SCSBs which are live on UPI, as displayed on the SEBI website.

(ix) Individual Non-Institutional Investors Bidding for a Bid Amount of ₹ 0.50 million or less using the UPI Mechanism to ensure that they shall use only their own ASBA Account or only their own bank account linked UPI ID to make an application in the Offer and not the ASBA Account or bank account linked UPI ID of any third party.

(x) UPI Bidders shall ensure that the name of the app and the UPI handle which is used for making the application appears on the list displayed on the SEBI website. An application made using incorrect UPI handle or using a bank account of an SCSB or bank which is not mentioned on the SEBI website is liable to be rejected;

(xi) Ensure that your Bid is submitted at a Bidding Centre of a Designated Intermediary. Further, ensure that the Bid cum Application Form is signed by the ASBA Account holder if the Bidder is not the ASBA Account holder;

(xii) Ensure that the full Bid Amount is paid for Bids submitted by Anchor Investors and Strategic Investors and funds equivalent to the Bid Amount are blocked by the SCSBs in case of Bids submitted through the ASBA process;

(xiii) Ensure that you have correctly checked the authorization/undertaking box in the Bid cum Application Form, or have otherwise provided an authorization to the SCSB via the electronic mode for the Designated Branch to block funds in the ASBA Account equivalent to the Bid Amount mentioned in the Bid cum Application Form at the time of submission of the Bid;

(xiv) Instruct your respective banks to not release the funds other than in relation to the Offer, blocked in the ASBA Accounts;

(xv) Ensure that you request for and have received an Acknowledgement Slip for all your Bid options;

(xvi) Ensure that you receive an Acknowledgement Slip from the Designated Intermediary for the submission of your Bid cum Application Form;

(xvii) Submit revised Bids at the same Bidding Centre of a Designated Intermediary, through which the original Bid was placed and obtain a revised Acknowledgement Slip, as the case may be;

(xviii) Except for Bids (i) on behalf of the Central or State Governments and the officials appointed by the courts, who, in terms of the SEBI circular dated June 30, 2008, may be exempt from specifying their PAN for transacting in the securities market, and (ii) Bids by persons resident in Sikkim, who, in terms of a SEBI circular dated July 20, 2006, may be exempted from specifying their PAN for transacting in the securities market, all Bidders should mention their PAN allotted under the IT Act. The exemption for the Central or the State Government and officials appointed by the courts and for Bidders residing in Sikkim is subject to (a) the Demographic Details received from the respective depositories confirming the exemption granted to the beneficiary owner by a suitable description in the PAN field and the beneficiary account remaining in "active status"; and (b) in the case of residents of Sikkim, the address as per the Demographic Details evidencing the same. All other applications in which the PAN is not mentioned will be rejected;

(xix) In cases where the PAN is same, such Bids will be treated as multiple applications. Bidders should not submit the GIR number instead of the PAN as the Bid is liable to be rejected on this ground. With effect from August 16, 2010, the demat accounts of Bidders for whom PAN details have not been verified shall be "suspended for credit" and no credit of Units pursuant to the Offer will be made into the accounts of such Bidders;

(xx) Ensure that your PAN is linked with Aadhaar and are in compliance with Central Board of Direct Taxes notification dated February 13, 2020 and press release dated June 25, 2021;

(xxi) Ensure that the Demographic Details (as defined below) are updated, true and correct in all respects;

(xxii) Ensure that thumb impressions and signatures other than in the languages specified in the Eighth Schedule to the Constitution of India are attested by a Magistrate or a Notary Public or a Special Executive Magistrate under official seal;

(xxiii) In case of joint Bids, the Bid cum Application Form should contain the name of only the First Bidder whose name should also appear as the first holder of the beneficiary account held in joint names. Ensure that the signature of the First Bidder in case of joint Bids, is included in the Bid cum Application Forms;

(xxiv) Ensure that the name(s) given in the Bid cum Application Form is exactly the same as the name(s) in which the beneficiary account is held with the Depository Participant;

(xxv) Ensure that the category and the Bidder status is indicated;

(xxvi) Bidders (except UPI Bidders using the UPI Mechanism) should instruct their respective banks to release the funds blocked in the ASBA Account under the ASBA process. UPI Bidders using the UPI Mechanism, should ensure that they approve the UPI Mandate Request generated by the Sponsor Bank(s) to authorise blocking of funds equivalent to Bid Amount and subsequent debit of funds in case of Allotment, in a timely manner;

(xxvii) Ensure that in case of Bids under power of attorney or by limited companies, corporates, trusts, etc., relevant documents are submitted;

(xxviii) UPI Bidders using the UPI Mechanism shall ensure that details of the Bid are reviewed and verified by opening the attachment in the UPI Mandate Request and then proceed to authorize the UPI Mandate Request using his/her UPI

PIN. Upon the authorization of the mandate using his/her UPI PIN, the UPI Bidders may be deemed to have verified the attachment containing the application details of the UPI Bidders using the UPI Mechanism in the UPI Mandate Request and have agreed to block the entire Bid Amount and authorized the Sponsor Bank(s) to offer a request to block the Bid Amount mentioned in the ASBA Form in his/her ASBA Account;

(xxix) UPI Bidders using the UPI Mechanism should mention valid UPI ID of only the Bidder (in case of single account) and of the first Bidder (in case of joint account) in the ASBA Form;

(xxx) UPI Bidders using the UPI Mechanism, who have revised their Bids subsequent to making the initial Bid, should also approve the revised UPI Mandate Request generated by the Sponsor Bank(s) to authorise blocking of funds equivalent to the revised Bid Amount in their account and subsequent debit of funds in case of allotment in a timely manner;

(xxxi) Ensure that Bids submitted by any person outside India are in compliance with applicable foreign and Indian laws; and

(xxxii) With respect to Bids by SCSBs, ensure that you have a separate account in your own name with any other SCSB having clear demarcated funds for applying under the ASBA process and that such separate account (with any other SCSB) is used as the ASBA Account with respect to your Bid.

The Bid cum Application Form is liable to be rejected if the above instructions, as applicable, are not complied with.

Dont's:

(i) Do not Bid for lower than the [Minimum Bid Size];

(ii) Do not submit a Bid without payment of the entire Bid Amount;

(iii) Do not Bid less than the Floor Price or higher than the Cap Price;

(iv) Do not Bid on another Bid cum Application Form after you have submitted a Bid;

(v) Do not pay the Bid Amount in cash, by money order or postal order and in relation to ABSA Bidders, in any other

(vi) mode other than blocked amounts in the ASBA Accounts;

(vii) Do not send Bid cum Application Forms by post and only submit the same to a Designated Intermediary at a Bidding Centre;

(viii) Do not fill up the Bid cum Application Form such that the Units Bid for exceed, the Offer Size or investment limits, or the maximum number of Units that can be held or the maximum amount permissible under applicable laws or under the terms of the Offer Document;

(ix) Do not submit more than five Bid cum Application Forms per ASBA Account;

(x) Do not submit the GIR number instead of the PAN as the Bid is liable to be rejected on this ground;

(xi) Do not submit incorrect details of DP ID, Client ID and PAN or give details for which demat account is suspended or for which such details cannot be verified by the Registrar;

(xii) Do not instruct your respective banks to release the funds blocked in the ASBA Account under the ASBA process, other than in relation to the Offer;

(xiii) Do not submit the Bid for an amount more than funds available in your ASBA Account;

(xiv) Do not submit Bids on plain paper or on incomplete or illegible Bid cum Application Forms or on Bid cum Application Forms in a colour prescribed for another category of Bidders;

(xv) Do not submit a Bid in case you are not eligible to acquire Units under applicable law or your relevant constitutional documents or otherwise;

(xvi) Do not Bid if you are not competent to contract under the Indian Contract Act, 1872 (other than minors having valid depository accounts as per demographic details provided by the Depository);

(xvii) Do not submit the Bid cum Application Form to any non-SCSB bank;

(xviii) Do not submit your Bid after the Bid/ Offer Closing Date;

(xix) Anchor Investors and Strategic Investors should not Bid through the ASBA process; and

(xx) Do not withdraw your Bid or lower the size of your Bid (in terms of quantity of the Units or the Bid Amount) at any stage.

Method and Process of Bidding

(i) The Investment Manager and the Book Running Lead Managers will declare the Bid/Offer Opening Date and Bid/Offer Closing Date at the time of filing the Offer Document with SEBI and the Stock Exchanges.

(ii) Post filing of the Offer Document with SEBI and the Stock Exchanges, the Book Running Lead Managers/ Investment Manager shall make a pre-Offer advertisement on the websites of the Sponsor, the Investment Manager and the Stock Exchanges. Further, such pre-Offer advertisement will also be advertised in all editions of **[●]** (a widely circulated English national daily newspaper), in all editions of **[●]** (a widely circulated Hindi national daily newspaper) and **[●]** (a widely circulated regional daily newspaper, where the registered office of the Investment Manager is located.

(iii) The Price Band and the Minimum Bid Size (as determined by the Investment Manager in consultation with the Book Running Lead Managers) will be announced on the websites of the Trust, the Sponsor, the Investment Manager, and the Stock Exchanges, as well as advertised in all editions of **[●]** (a widely circulated English national daily newspaper), in all editions of **[●]** (a widely circulated Hindi national daily newspaper and **[●]** (a widely circulated regional daily newspaper, where the registered office of the Investment Manager is located) at least two Working Days prior to the Bid/Offer Opening Date. The announcement/ advertisement shall contain relevant financial ratios computed for both the upper and lower end of the Price Band.

(iv) The Book Running Lead Managers will accept Bids from the Anchor Investors on the Anchor Investor Bidding Date, *i.e.* one Working Day prior to the Bid/Offer Opening Date. Bidders, except Anchor Investors, who are interested in subscribing to the Units should approach any of the Designated Intermediaries at Bidding Centres to register their Bids during the Bid/Offer Period. The Designated Intermediaries will accept Bids from all Bidders and will have the right to vet the Bids during the Bid/Offer Period in accordance with the terms of the Syndicate Agreement and/or the Offer Document. The Bid/Offer Period will be for at least three Working Days and not exceeding 30 Working Days (*including* the days for which the Offer is open in case of revision in Price Band). If the Price Band is revised, the revised Price Band and the Bid/Offer Period will disclosed on the websites of the Trust, the Sponsor, the Investment Managers, Book Running Lead Managers, Syndicate Member, SCSBs and the Stock Exchanges and in the newspapers where the Pre-Offer advertisement will be published.

(v) UPI Bidders may submit the Bid cum Application form with the Designated Intermediaries and use their bank account linked with UPI ID for the purpose of blocking funds. The Designated Intermediaries shall upload the Bid on the Stock Exchange bidding platform and the application amount would be blocked through the UPI Mechanism.

(vi) Each Bid cum Application Form will give the Bidder the choice to Bid for up to three optional prices within the Price Band and specify the demand (*i.e.*, the number of Units Bid for) in each option. The price and demand options submitted by the Bidder in the Bid cum Application Form will be treated as optional demands from the Bidder and will not be cumulated. In case of an upward revision in the Price Band, in the event the Bidder does not either revise the Bid or make additional payment and the Offer Price is higher than the Cap Price prior to revision, the number of Units Bid for will be adjusted downwards for the purpose of Allotment, such that no additional payment will be required from the Bidder and the Bidder shall be deemed to have approved such revised Bid. The Bidder can Bid at any price within the Price Band. The Bidder has to Bid for the desired number of Units at a specific price.

(vii) No Bidder shall either withdraw or lower its Bid at any stage.

(viii) After determination of the Offer Price, the maximum number of Units Bid for by a Bidder at or above the Offer Price will be considered for allocation/Allotment and the rest of the Bid(s), irrespective of the Bid Amount, will become automatically invalid.

(ix) Except in relation to the Bids received from the Anchor Investors and Strategic Investors, the Designated Intermediary will enter each Bid option into the electronic bidding system as a separate Bid and generate an Acknowledgement Slip, and SCSBs will generate an Acknowledgement Slip for each price and demand option and will, on demand, give the same to the Bidder. Therefore, a Bidder can receive up to three Acknowledgement Slips for each Bid cum Application Form.

(x) On receipt of the Bid cum Application Form (whether in physical or electronic mode) the Designated Branch of the SCSB will verify if sufficient funds equal to the Bid Amount are available in the ASBA Account, as mentioned in the ASBA Bid cum Application Form, prior to uploading such Bids with the Stock Exchanges. If sufficient funds are not available in the ASBA Account, the Designated Branch of the SCSB will reject such Bids and will not upload such Bids with the Stock Exchanges. If sufficient funds are available in the ASBA Account, the SCSB will block an amount equivalent to the Bid Amount mentioned in the ASBA Bid cum Application Form and will enter each Bid option into the electronic bidding system as a separate Bid.

(xi) Along with the Bid cum Application Form, all Bidders will make payment in the manner described under the paragraph titled "– *Payment Instructions*" on page 480 in this section.

Bidders' Depository Account and Bank Account Details

Bidders should note that on the basis of Bidders' PAN, DP ID and Client ID provided by them in the Bid cum Application Form and as entered into the electronic bidding system of the Stock Exchanges by the Members of the Syndicate and the SCSBs as the case may be, the Registrar will obtain from the Depository the demographic details including the Bidders' address, occupation and bank account details (including the nine-digit Magnetic Ink Character Recognition ("**MICR**") code as appearing on a cheque leaf (the "**Demographic Details**")), from the Depository. The Demographic Details will be used for giving refunds and allocation advice (including through physical refund warrants, direct credit, NACH, NEFT and RTGS) to Anchor Investors. Hence, Bidders are advised to immediately update their bank account details, PAN and Demographic Details as appearing on the records of the Depository Participant and ensure that they are true and correct. Failure to do so could result in delays in dispatch/credit of refunds to Bidders at the Bidders sole risk and none of the Lead Managers, the Registrar, the Escrow Collection Banks, the Sponsor Bank(s), the SCSBs, the Investment Manager or the Trustee will have any responsibility or undertake any liability for this.Accordingly, Bidders should carefully fill in their depository account details in the Bid cum Application Form.

By signing the Bid cum Application Form, the Bidder is deemed to have authorized the Depositories to provide to the Registrar, on request, the required Demographic Details as available in their records.

Bids with no corresponding record available with the Depositories matching the three parameters (namely, PAN (in case of joint Bids, PAN of First Bidder), the DP ID and Client ID), are liable to be rejected.

Payment mechanism for ASBA Bidders

The ASBA Bidders will specify the ASBA Account in the Bid cum Application Form and the SCSB (or the Sponsor Bank in case of individual Non-Institutional Investors using the UPI Mechanism) will block an amount equivalent to the Bid Amount in the ASBA Account so specified. The SCSB will keep the Bid Amount in the relevant ASBA Account blocked until finalization of the Basis of Allotment and consequent transfer of the Bid Amount to the Public Offer Account, or until withdrawal/failure of the Offer or until rejection of the Bid, as the case may be.

In the event of rejection of the Bid cum Application Form, failure of the Offer or for unsuccessful Bid cum Application Forms, the Registrar will give instructions to the SCSB to unblock the Bid Amount in the relevant ASBA Account and the SCSBs will unblock the Bid Amount on receipt of such instruction.

Payment Instructions

The Investment Manager in consultation with the Trustee and BRLMs and the Syndicate will open Escrow Accounts with one or more Escrow Collection Bank(s) in whose favour Anchor Investors and Strategic Investors will offer payment instruments. The payment instruments for payment into the Escrow Accounts should be drawn in favour of:

In case of resident Anchor Investors: "[●]"

In case of non-resident Anchor Investors: "[●]"

In case of resident Strategic Investors: "[●]"

In case of non-resident Strategic Investors: "[●]"

The Bidders should note that the escrow mechanism is not prescribed by SEBI and has been established as an arrangement amongst the Investment Manager, the Trustee (acting on behalf of the Trust), the Syndicate, the Escrow Collection Banks and the Registrar to facilitate collections from Bidders.

The Escrow Collection Banks will act in terms of the Offer Document and the Escrow Agreement. The monies deposited in the Escrow Accounts will be held for the benefit of the Anchor Investors and Strategic Investors until the Designated Date. On the Designated Date, the Escrow Collection Banks will transfer the funds from the Escrow Accounts as per the terms of the Escrow Agreement into the Public Offer Account with the Escrow Collection Banks and the Refund Account. The Escrow Collection Banks will not exercise any lien whatsoever over the monies deposited therein and will hold the monies therein in trust for the Anchor Investors. The balance amount after transfer to the Public Offer Account will be transferred to the Refund Account. Payments of refund to the Anchor Investors will be made from the Refund Account as per the terms of the Escrow Agreement and the Offer Document. Payments should be made by Anchor Investors only in electronic mode through direct credit/NEFT/NACH/RTGS. Cheques or bank drafts, cash, money orders or postal orders will not be accepted and is liable to be rejected.

Payment Mechanism for UPI Bidders

In relation to UPI Bidders, the Sponsor Bank shall initiate a UPI Mandate Request on the UPI Bidder, i.e., request the UPI Bidder to authorize blocking of funds equivalent to application amount and subsequent debit of funds in case of Allotment. The request raised by the Sponsor Bank would be electronically received by the UPI Bidder as an SMS / intimation on their mobile number / mobile application associated with the UPI ID linked bank account. The UPI Bidder shall be able to view the details of the request in their UPI application and authorize the transaction. In UPI, the SCSBs / UPI applications eligible for public

issues shall send SMS alerts to UPI Bidders for all ASBA applications and may also provide invoices in the inbox as an additional feature to verify the UPI mandate details. After reviewing the details properly, the UPI Bidder shall be required to authorize the mandate, which shall be a one-time mandate for each application in the Offer. The payment accompanied with any upward revision of the Bid shall be adjusted against the payment made at the time of the original Bid or previously revised Bid.

Other Instructions

Joint Bids in case of Individuals

Bids may be made in single or joint names (not more than three). In the case of joint Bids, all payments will be made out in favour of the Bidder whose name appears first in the Bid cum Application Form or Revision Form. All communications will be addressed to the First Bidder and will be dispatched to his or her address as per the Demographic Details received from the Depository.

Multiple Bids

A Bidder should submit only one Bid for the total number of the Units required. Two or more Bids will be deemed to be multiple Bids if the sole or First Bidder is the same. However, a Bidder can revise the Bid through the Revision Form.

In case of a mutual fund, subject to investment conditions as per applicable law, a separate Bid can be made in respect of each scheme of the mutual fund registered with SEBI and such Bids in respect of more than one scheme of the mutual fund will not be treated as multiple Bids, provided that the Bids clearly indicate the scheme concerned for which the Bid is made. Bids by Strategic Investors and QIBs under the Anchor Investor Portion and Institutional Investor Portion (excluding Anchor Investor Portion) will not be considered as multiple Bids.

After Bidding on an ASBA Form either in physical or electronic mode, where such ASBA Bid is submitted to the Designated Intermediaries and uploaded with the Stock Exchanges, an ASBA Bidder cannot Bid, either in physical or electronic mode, on another ASBA Form or a non-ASBA Form. Submission of a second Bid cum Application Form, whether an ASBA Form, to either the same or to another Designated Intermediary, or a non-ASBA Form, will be treated as multiple Bids and will be liable to be rejected either before entering the Bid into the electronic bidding system, or at any point of time prior to the allocation or Allotment of Units in this Offer. However, the ASBA Bidder can revise the Bid through the Revision Form.

More than one ASBA Bidder may Bid for Units using the same ASBA Account, provided that the SCSBs will not accept a total of more than five Bid cum Application Forms from ASBA Bidders with respect to any single ASBA Account.

The Investment Manager, in consultation with the Book Running Lead Managers, reserves the right to reject, in its absolute discretion, all or any multiple Bids in any or all categories. A check will be carried out for the same PAN. In cases where the PAN is same, such Bids will be treated as multiple applications.

Right to Reject Bids

In case of QIBs Bidding in the Institutional Investor Portion and Anchor Investors, the members of the Syndicate may reject Bids provided that such rejection will be made at the time of acceptance of the Bid and the reasons for rejecting such Bids will be provided to such Bidder in writing. The Members of the Syndicate may also reject Bids if all information required is not provided and the Bid cum Application Form is incomplete in any respect.

Grounds for Technical Rejections

Bidders are advised that incomplete or illegible Bid cum Application Forms will be rejected by Designated Intermediaries. Bidders are advised to note that Bids are liable to be rejected on technical grounds including the following:

(i) The amounts mentioned in the Bid cum Application Form does not tally with the amount payable for the value of the Units Bid for;

(ii) The Application is made on plain paper;

(iii) In case of partnership firms (excluding LLPs), Units may be registered in the names of the individual partners and no firm as such will be entitled to apply;

(iv) Bid by persons not competent to contract under the Indian Contract Act, 1872, as amended, including minors.However, minors can Bid through their guardians;

(v) PAN not stated (except for Bids on behalf of the Central or State Government, residents of Sikkim and the officials appointed by the courts);

(vi) GIR number furnished instead of PAN;

(vii) Where PAN details are not verified by demat accounts, i.e. where the demat account is “suspended for credit”;

(viii) Bids for lower value of Units than specified for that category of Bidders;

(ix) Bids at a price less than the Floor Price;

(x) Bids at a price over the Cap Price;

(xi) Submission of more than five Bid cum Application Forms per ASBA Account;

(xii) Bids by UPI Bidders for a value of more than ₹ 0.50 million;

(xiii) Individual Non-Institutional Investors Bidding for a Bid Amount of ₹ 0.50 million or less using the UPI Mechanism have not provided the valid UPI ID in the relevant space provided in the Bid cum Application Form;

(xiv) Bids for a value of less than the Minimum Bid Size;

(xv) Bidder category not specified;

(xvi) Multiple Bids as described in this Draft Offer Document;

(xvii) In case of Bids under power of attorney or by limited companies, corporate, trust etc., relevant documents not being submitted;

(xviii) Bids accompanied by cash, stock invest, money order or postal order;

(xix) Signature of sole and/or the First Bidder (in case of joint Bids) is missing;

(xx) The Bid cum Application form not being signed by the ASBA Account holder, if the ASBA Account holder is different from the Bidder;

(xxi) Bid cum Application Form does not have the stamp of a Designated Intermediary (except for electronic ASBA Bids), as the case may be;

(xxii) Bid cum Application Forms are not submitted within the time prescribed as per the Bid cum Application Form, Bid/Offer Opening Date advertisement and this Draft Offer Document and as per the instructions in this Draft Offer Document and the Bid cum Application Forms;

(xxiii) Inadequate funds in the ASBA Account to block the Bid Amount specified in the Bid cum Application Form at the time of blocking such Bid Amount in the ASBA Account;

(xxiv) Authorisation for blocking funds in the ASBA Account not provided;

(xxv) Bids for amounts greater than the maximum permissible amounts prescribed by Applicable Law;

(xxvi) Bids by overseas corporate bodies;

(xxvii) Bank account details for the refund not given, as applicable;

(xxviii) Bids by persons prohibited from buying, selling or dealing in the Units directly or indirectly by SEBI or any other regulatory authority;

(xxix) Bids by persons who are not eligible to acquire Units under applicable law or their relevant constitutional documents or otherwise; and

(xxx) Bids that do not comply with the securities laws of their respective jurisdictions.

IN CASE THE DP ID, CLIENT ID, PAN AND UPI ID (WHERE APPLICABLE) MENTIONED IN THE BID CUM APPLICATION FORM AND ENTERED INTO THE ELECTRONIC BIDDING SYSTEM OF THE STOCK EXCHANGES BY THE BOOK RUNNING LEAD MANAGERS/THE DESIGNATED INTERMEDIARIES DO NOT MATCH WITH THE DP ID, CLIENT ID, UPI ID (FOR INDIVIDUAL NON-INSTITUTIONAL INVESTORS BIDDING FOR A BID AMOUNT OF ₹ 0.50 MILLION OR LESS USING THE UPI MECHANISM) AND PAN AVAILABLE IN THE RECORDS WITH THE DEPOSITORIES THE APPLICATION IS LIABLE TO BE REJECTED.

Electronic Registration of Bids

(i) The Designated Intermediaries will register the Bids received, except Bids received from Anchor Bidders, using the online facilities of the Stock Exchanges. Details of Bids in the Strategic Investor Portion and Anchor Investor Portion will not be registered on the online facilities of the Stock Exchanges. The Book Running Lead Managers, the Investment Manager and the Registrar are not responsible for any acts, mistakes or errors or omission and commissions in relation to (i) the Bids accepted by Designated Intermediaries, (ii) the Bids uploaded by Designated Intermediaries,

(iii) the Bids accepted but not uploaded by the Designated Intermediaries or (iv) Bids accepted and uploaded without blocking funds in the ASBA Accounts. It will be presumed that for the Bids uploaded by the SCSBs, the Bid Amount has been blocked in the relevant ASBA Account.

(ii) The Stock Exchanges will offer a screen-based facility for registering such Bids for the Offer. This facility will be available on the terminals of the Designated Intermediaries during the Bid/Offer Period. The Designated Intermediaries can also set up facilities for offline electronic registration of Bids subject to the condition that it will upload the offline data file into the on-line facilities for book building on a regular basis.

(iii) On the Bid/Offer Closing Date, the Designated Intermediaries will upload the Bids until such time as may be permitted by the Stock Exchanges. This information will be available with the Book Running Lead Managers on a regular basis. In order to ensure that the data uploaded is accurate, the Syndicate or Designated Intermediaries may be permitted one Working Day after the Bid/Offer Closing Date to amend some of the data fields (currently DP ID, Client ID, UPI ID (as applicable) and PAN) entered by them in the electronic bidding system, after which the Registrar will proceed with the Allotment of the Units. Bidders are cautioned that a high inflow of Bids is typically experienced on the last Working Day of the Bidding, which may lead to some Bids received on the last Working Day not being uploaded due to a lack of sufficient uploading time. Such Bids that could not be uploaded will not be considered for allocation. Bids will only be accepted on Working Days (excluding any public holiday).

(iv) Based on the aggregate demand and price for Bids registered on the electronic facilities of the Stock Exchanges a graphical representation of consolidated demand and price will be made available at the Bidding Centres and on the websites of each of the Stock Exchanges during the Bid/Offer Period on regular at regular intervals as per applicable law.

(v) At the time of registering each Bid, the Designated Intermediaries will enter the following details of the Bidder in the electronic system:

- Name of the infrastructure investment trust;
- Bid cum Application Form number/ ASBA Form number ;
- Bidder Category – QIB, Eligible NRI, FPI, etc;
- PAN of the first applicant;
- DP ID;
- UPI ID (for UPI Bidders);
- Client ID;
- Number of Units Bid for; and
- Price option.

(vi) A system-generated Acknowledgement Slip will be given to the Bidder (only on demand) as proof of the registration of each of the Bidding options. It is the Bidders' responsibility to obtain the Acknowledgement Slip from Designated Intermediaries. The registration of the Bid by Designated Intermediaries does not guarantee that the Units will be allocated/Allotted. Such Acknowledgement Slip will be non-negotiable and by itself will not create any obligation of any kind.

(vii) In relation to Bids by UPI Bidders, once the Bid details are entered on the Stock Exchange platform, the Stock Exchange shall validate the PAN and demat account combination details of the Bidder with the Depository. The Depository shall validate the PAN and demat account details on a near real-time basis and send responses to the Stock Exchanges which would be shared by the Stock Exchanges with the Designated Intermediaries through its platforms for corrections, if any. Once the Bid details are uploaded on the platforms of the Stock Exchanges, the Stock Exchanges shall send an SMS to the UPI Bidder on the mobile number associated with their demat account regarding the submission of their Bid cum Application Form at the end of the day during the Bidding period. For the last day of Bidding, the SMS may be sent the next Working Day.

(viii) The permission given by the Stock Exchanges to use their network and software of the online IPO system should not in any way be deemed or construed to mean that the compliance with various statutory and other requirements by the Investment Manager and/or the Book Running Lead Managers are cleared or approved by the Stock Exchanges; nor does it in any manner warrant, certify or endorse the correctness or completeness of any of the compliance with the statutory and other requirements nor does it take any responsibility for the financial or other soundness of the Trust, the management of the Investment Manager or the Trustee or any project of the Trust nor does it in any manner warrant, certify or endorse the correctness or completeness of any of the contents of this Draft Offer Document; nor does it warrant that the Units will be listed or will continue to be listed on the Stock Exchanges.

Build-up of the book and revision of Bids

(i) Bids received from various Bidders through the Designated Intermediaries will be electronically uploaded to the Stock Exchange's mainframe on a regular basis.

(ii) The book gets built up at various price levels. This information will be available with the Book Running Lead Managers at the end of the Bid/Offer Period.

(iii) During the Bid/Offer Period, any Bidder who has registered his or her interest in the Units at a particular price level is free to revise the Bid upwards within the Price Band using the printed Revision Form, which is a part of the Bid cum Application Form.

(iv) Upward revisions can be made in both the desired number of Units and the Bid Amount by using the Revision Form. Apart from mentioning the revised options in the Revision Form, the Bidder must also mention the details of all the options in his or her Bid cum Application Form or its previous Revision Form. For example, if a Bidder has Bid for three options in the Bid cum Application Form and such Bidder changes only one of the options in the Revision Form, he must still fill in the details of the other two options that are not being revised, in the Revision Form. The Members of the Syndicate and the Designated Branches will not accept incomplete or inaccurate Revision Forms.

(v) The Bidder can make this upward revision any number of times during the Bid/Offer Period. However, for any revision(s) in the Bid, the Bidders will have to use the services of the same Designated Intermediary through which such Bidder had placed the original Bid. Bidders are advised to retain copies of the blank Revision Form, and the revised Bid must be made only in such Revision Form or in copies thereof.

(vi) If revision of the Bids results in an incremental amount, the relevant SCSB will block the additional Bid Amount. The Registrar will reconcile the Bid data and consider the revised Bid data for preparing the Basis of Allotment.

(vii) When a Bidder revises his or her Bid, he or she will surrender the earlier Acknowledgement Slip and will, on demand, receive a revised Acknowledgement Slip from the Designated Intermediary. It is the responsibility of the Bidder to request for and obtain the revised Acknowledgement Slip, which will act as proof of his or her having revised the previous Bid.

Price Discovery and Allocation

(i) Based on the Bids received and demand generated at various price levels, the Investment Manager, in consultation with the Book Running Lead Managers, will finalize the Offer Price and the Anchor Investor Offer Price.

(ii) Allocation to Anchor Investors will be at the discretion of the Investment Manager in consultation with the Book Running Lead Managers, subject to compliance with the InvIT Regulations, and other Applicable Laws. In the event of under-subscription in the Anchor Investor Portion, the balance Units will be added to the Institutional Investor Portion. The number of Units allocated to Anchor Investors and the Anchor Investor Allocation Price will be made available in the public domain by the Book Running Lead Managers before the Bid/Offer Opening Date.

(iii) In case of under-subscription in any category, the unsubscribed portion in either the Institutional Investor category or the Non-Institutional Investor Portion may be allotted to applicants in the other categories.

(iv) Allocation to Strategic Investors will be at the discretion of the Manager, in consultation with the Book Running Lead Managers, subject to compliance with the InvIT Regulations, the InvIT Master Circular and other applicable laws.

(v) Allocation to Non-Residents, including Eligible NRIs and FPIs, will be subject to applicable law.

(vi) The Investment Manager in consultation with the Book Running Lead Managers reserves the right to withdraw the Offer at any time after the Bid/Offer Opening Date but before the Allotment, without assigning any reasons whatsoever.

(vii) No Bidder can withdraw or lower their Bid at any time.

Signing of Underwriting Agreement

The Trust (acting through the Trustee), the Sponsor, the Investment Manager, the Lead Managers and the Syndicate Members may enter into an Underwriting Agreement on or immediately after the finalization of the Offer Price.

After signing the Underwriting Agreement, the Investment Manager and the Sponsor will update and file the updated Offer Document with SEBI and the Stock Exchanges in terms of the InvIT Regulations, which then will be termed the "Final Offer Document". The Final Offer Document will contain details of the Offer Price and Offer Size if any, underwriting arrangements and will be complete in all material respects

Advertisement regarding Offer Price

The Investment Manager will publish an advertisement after the filing of the Final Offer Document with SEBI and the Stock Exchanges. This advertisement will indicate the Offer Price.

Issuance of Allotment Advice

(i) Upon approval of the Basis of Allotment by the Designated Stock Exchange, the Registrar shall send to the Syndicate a list of the Bidders who have been Allotted Units in the Offer.

(ii) The Registrar will then dispatch an Allotment Advice to the Bidders who have been Allotted Units in the Offer. The dispatch of an Allotment Advice shall be deemed a valid, binding and irrevocable contract for the Bidder.

(iii) The issuance of Allotment Advice is subject to "Notice to Anchor Investors: Allotment Reconciliation and Confirmation of Allocation Note" below.

Notice to Strategic Investors and Anchor Investors: Allotment Reconciliation and Confirmation of Allocation Note ("CAN")

(i) A physical book will be prepared by the Registrar on the basis of the Bid cum Application Forms received from Anchor Investors and Strategic Investors. Based on the physical book and at the discretion of the Investment Manager in consultation with the Book Running Lead Managers, selected Strategic Investors and Anchor Investors will be sent a CAN or, if required, the revised CAN.

(ii) **In the event that the Offer Price is higher than the Strategic Investor Allocation Price or Anchor Investor Allocation Price**: Strategic Investors and Anchor Investors will be sent a revised CAN within one day of the Pricing Date indicating the number of Units allocated to such Anchor Investor or Strategic Investor and the Pay-In Date for payment of the balance amount. Anchor Investors and Strategic Investors are then required to pay any additional amounts, being the difference between the Offer Price and the Anchor Investor Allocation Price or the Strategic Investor Allocation Price, as applicable, as indicated in the revised CAN within the Pay-In Date referred to in the revised CAN. Thereafter, the Allotment Advice will be issued to such Anchor Investors and Strategic Investors.

(iii) **In the event the Offer Price is lower than the Anchor Investor Allocation Price and Strategic Investor Allocation Price**: Strategic Investors and Anchor Investors who have been Allotted Units will directly receive Allotment Advice and will not receive a refund for the difference between the Offer Price and the Anchor Investor Allocation Price or Strategic Investor Allocation Price, as applicable.

Designated Date and Allotment

On the Designated Date, the Registrar to the Offer shall instruct the SCSBs or Sponsor Bank for individual Non-Institutional Investors using the UPI Mechanism to transfer funds represented by the allocation of Units from ASBA Accounts into the Public Offer Account. The balance amount after transfer to the Public Offer Account shall be unblocked by the relevant SCSB or Sponsor Bank. Whilst the Investment Manager shall ensure all steps for the completion of the necessary formalities for the listing and the commencement of trading of the Units on the Stock Exchanges are completed within 6 Working Days of the Bid/Offer Closing Date, the timetable may be extended due to various factors, such as extension of the Bid/Offer Period by the Investment Manager, revision of the Price Band or any delay in receiving the final listing and trading approval from the Stock Exchanges. The commencement of trading of the Units will be entirely at the discretion of the Stock Exchanges and in accordance with the Applicable Laws.

Bidders are advised to instruct their Depository Participant to accept the Units that may be allotted to them in this Offer.

Basis of Allotment

For other than Anchor Investors and Strategic Investors

(i) The Allotment to Bidders other than Strategic Investors and Anchor Investors shall be on a proportionate basis within the specified investor categories, and the number of Units Allotted shall be rounded off to the nearest integer, subject to a minimum Allotment per successful Bidder in case of oversubscription as per the InvIT Regulations and InvIT Master Circular.

(ii) In case of under-subscription in any investor category, the unsubscribed portion in either the Institutional Investor category or the Non-Institutional Investor category may be allotted to applicants in the other category.

(iii) The aggregate allocation to Institutional Investors will not be more than 75% of the Offer Size.

(iv) The aggregate allocation to Non-Institutional Investors shall not be less than 25% of the Offer Size.

(v) The identity of Institutional Investors and Strategic Investors shall not be made public.

(vi) In relation to UPI Bidders, the RTA shall prepare the basis of Allotment based on information of Bidding and blocking received from the Stock Exchange and after undertaking reconciliation of the Bid data and block confirmations corresponding to the Bids by all Investor category applications (with and without the use of UPI). Upon approval of the basis of Allotment, the RTA shall share the 'debit' file with the Sponsor Bank and SCSBs, as applicable, for credit of funds in the Public Offer Account and unblocking of excess funds in the UPI Bidder's account. The Sponsor Bank, based on the mandate approved by the Bidder at the time of blocking of funds, shall raise the debit / collect request from the Bidder's bank account, whereupon funds will be transferred from the investor's account to the public offer account and remaining funds, if any, will be unblocked without any manual intervention by the investor or their bank.

For Anchor Investor Portion

Allocation to Anchor Investors at the Anchor Investor Allocation Price will be at the discretion of the Investment Manager, in consultation with the Book Running Lead Managers, subject to compliance with the following requirements:

- not more than 60% of the Institutional Investor Portion will be available for allocation to Anchor Investors;
- allocation to Anchor Investors will be on a discretionary basis and subject to a minimum number of two Anchor Investors for allocation up to ₹ 2,500 million and a minimum number of five Anchor Investors for allocation more than ₹ 2,500 million. The identity of the Anchor Investors shall be made public.

The number of Units Allocated to Anchor Investors and the Anchor Investor Allocation Price will be made available on the websites of the Stock Exchanges, the Sponsor, the Investment Manager and the Book Running Lead Managers, prior to the Bid/Offer Opening Date.

For Strategic Investor Portion

Allocation of Units to Strategic Investors at the Strategic Investor Allocation Price will be at the discretion of the Investment Manager, in consultation with the Book Running Lead Managers, subject to compliance with the following requirements:

- Strategic Investor(s) shall, jointly or severally, invest not less than 5% and not more than 25% of the total Offer; and
- allocation to Strategic Investors will be on a discretionary basis, as per applicable law.

The details of Allocation to Strategic Investors will be made available on the websites of the Stock Exchanges, the Manager, the Sponsor and the Book Running Lead Managers, prior to the Bid/Offer Opening Date, subject to applicable law.

Method of Proportionate Basis of Allotment in the Offer

Except in relation to Anchor Investors and Strategic Investors, in the event of the Offer being over-subscribed, the Investment Manager and the Book Running Lead Managers will finalize the Basis of Allotment in consultation with the Designated Stock Exchange. The Designated Stock Exchange along with the Book Running Lead Managers and the Registrar will be responsible for ensuring that the Basis of Allotment is finalized as per InvIT Regulations and the InvIT Master Circular in a fair and proper manner.

Except in relation to Anchor Investors and Strategic Investors, the Allotment will be made on a proportionate basis as explained below, subject to minimum Allotment per successful Bidder in case of oversubscription in accordance with the InvIT Regulations:

Bidders will be categorized according to the number of Units applied for:

The total number of Units to be allotted to each category as a whole will be arrived at on a proportionate basis, which is the total number of Units applied for in that category (number of Investors in the category multiplied by the number of Units applied for) multiplied by the inverse of the over-subscription ratio.

The number of Units to be allotted to the successful Bidders will be arrived at on a proportionate basis, which is the total number of Units applied for by each Bidder in that category multiplied by the inverse of the over-subscription ratio.

Units in Dematerialized Form with NSDL or CDSL

As per the InvIT Regulations, the Allotment will be only in dematerialized form.

In this context, the following agreements have been signed amongst the Trustee (on behalf of the Trust), the respective Depositories and the Registrar:

(i) Agreement dated July 8, 2022, between NSDL, the Trust (acting through Investment Manager) and the Registrar.

(ii) Agreement dated September 28, 2022, between CDSL, the Trust (acting through Investment Manager) and the Registrar.

(iii) Bids from any Bidder without relevant details of his or her depository account are liable to be rejected.

(iv) A Bidder applying for Units must have at least one valid beneficiary account with either of the Depository Participants of either NSDL or CDSL prior to making the Bid.

(v) Allotment to a successful Bidder will be credited in electronic form directly to the beneficiary account (with the Depository Participant) of the Bidder.

(vi) Bid cum Application Forms or Revision Forms containing incomplete or incorrect details under the heading "Bidder's Depository Account Details" are liable to be rejected.

(vii) Units in electronic form can be traded only on the stock exchanges having electronic connectivity with NSDL and CDSL. The Stock Exchanges where the Units are proposed to be listed have electronic connectivity with CDSL and NSDL.

Communications

All future communications in connection with Bids made in this Offer should be addressed to the Registrar quoting the full name of the sole or First Bidder, Bid cum Application Form number, PAN, Bidders depository account details, number of Units applied for, date of Bid cum Application Form, name and address of the member of the Syndicate where the Bid was submitted and cheque or draft number and issuing bank thereof or with respect to ASBA Bids, the bank account number in which an amount equivalent to the Bid Amount was blocked.

Bidders can contact the Compliance Officer or the Registrar in case of any Pre-Offer or post-Offer related problems such as non-receipt of letters of allotment, credit of allotted Units in the respective beneficiary accounts, refund orders etc. In case of ASBA Bids submitted with the Designated Intermediaries, Bidders can contact the relevant Designated Intermediary.

We estimate that the average time required by the Registrar to the Offer, the SCSBs or us for redressal of routine investor grievances shall be 10 Working Days from the date of receipt of the complaint. In case of non-routine complaints and complaints where external agencies are involved, we will seek to redress complaints as expeditiously as possible. The Trust has obtained authentication on the SCORES and shall comply with the SEBI circular (CIR/OIAE/1/2014) dated December 18, 2014, (SEBI/HO/OIAE/IGRD/P/CIR/202) dated November 7, 2022, (SEBI/HO/OIAE/IGRD/CIR/P/2023/156) dated September 20, 2023 and (SEBI/HO/OIAE/IGRD/CIR/P/2023/183) dated December 1, 2023 in relation to redressal of investor grievances through SCORES.

Payment of Refunds

In the case of Bidders other than ASBA Bidders, the Registrar will obtain from the Depositories the Bidders' bank account details, including the MICR code, on the basis of the DP ID and the Client ID provided by the Bidders in their Bid cum Application Forms.

In the case of Bids from Eligible NRIs and FPIs, any refunds, and other distributions, will normally be payable in Indian Rupees only and net of bank charges and/or commission. Where desired, such payments in Indian Rupees will be converted into US Dollars or any other freely convertible currency as may be permitted by the RBI at the rate of exchange prevailing at the time of remittance and will be dispatched by registered post. Neither the Manager nor the Trustee will be responsible for any loss incurred by Bidders on account of conversion of foreign currency. Payment of refunds will be made in the manner described below.

Mode of Refunds

For Strategic Investors and Anchor Investors

For Strategic Investors and Anchor Investors, any payment of refund will be made electronically through and of the following modes:

(i) NACH - National Automated Clearing House which is a consolidated system of ECS. Payment of refund would be done through NACH for Applicants having an account at one of the centers specified by the RBI, where such facility has been made available. This would be subject to the availability of complete bank account details including MICR code wherever applicable from the depository. The payment of refund through NACH is mandatory for Applicants having a bank account at any of the centers where the NACH facility has been made available by the RBI (subject to the availability of all information for crediting the refund through NACH from the depositories), except where applicant is otherwise disclosed as eligible to get refunds through NEFT, or direct credit or RTGS

(ii) Direct Credit - Bidders having bank accounts with the Refund Bank, as per the Demographic Details received from the Depositories, will be eligible to receive refunds through direct credit. Any bank charges levied by the Refund Bank will be borne by the Trust.

(iii) RTGS - Bidders having a bank account at any of the centers notified by SEBI where clearing houses are managed by the RBI, may have the option to receive refunds, if any, through RTGS.

(iv) NEFT- Payment of refund will be undertaken through NEFT wherever the Bidders bank branches are NEFT enabled and have been assigned the Indian Financial System Code ("IFSC"), which can be linked to an MICR code of that particular bank branch. The IFSC will be obtained from the website of the RBI as on a date prior to the date of payment of refund, duly mapped to an MICR code. Wherever the Bidders have registered their MICR code and bank account number while opening and operating the demat account, these will be duly mapped with the IFSC of that particular bank branch, and payment of refund will be paid to the Bidders through NEFT. In the event NEFT is not operationally feasible, the payment of refunds will be made through any one of the other modes discussed in this section.

Please note that refunds through the abovementioned modes shall be credited only to the bank account from which the Bid Amount was remitted.

Refunds for ASBA Bidders

In the case of ASBA Bidders, the Registrar will instruct the relevant SCSBs or Sponsor Bank (in case of individual Non-Institutional Investors using UPI Mechanism) to unblock the funds in the relevant ASBA Accounts to the extent of the Bid Amounts specified in the Bid cum Application Forms for withdrawn, rejected or unsuccessful or partially successful ASBA Bids, within 6 Working Days of the Bid/Offer Closing Date.

Refunds for UPI Bidders

For UPI Bidders, Units would be credited to the Bidder's account after confirmation of receipt of funds in the Public Offer Account. The Bidder will be notified for full / partial Allotment. For partial Allotment, the remaining funds shall be unblocked. For no Allotment, the UPI mandate would be revoked and application amount would be unblocked for the Bidder. The Registrar shall ensure refund of application amount or excess application amount in the bank account of the Bidder as stated in its demat account.

Disposal of Applications and Application Moneys

With respect to Bidders other than ASBA Bidders, the Investment Manager will ensure dispatch of Allotment Advice, refund orders (except for Strategic Investors and Anchor Investors who receive refunds through electronic transfer of funds) and give benefit to the beneficiary account with Depository Participants and submit the documents pertaining to the Allotment to the Stock Exchanges after the Allotment.

In case of Bidders who receive refunds through NACH, NEFT, direct credit or RTGS, the refund instructions will be provided to the clearing system within six Working Days from the Bid/Offer Closing Date. A suitable communication will be sent to the Anchor Investors receiving refunds through this mode within six Working Days from the Bid/Offer Closing Date, giving details of the bank where refunds will be credited, along with the amount and the expected date of electronic credit of the refund.

Refund Orders or instructions to the SCSBs

With respect to Strategic Investors and Anchor Investors, the Investment Manager will ensure dispatch of Allotment Advice and refund orders (except for Anchor Investors and Strategic Investors who receive refunds through electronic transfer of funds), give benefits to the beneficiary account with the Depository Participants and submit documents pertaining to the Allotment to the Stock Exchanges after the Allotment.

In the case of ASBA Bidders, the Registrar will instruct the relevant SCSBs and in case of Non-Institutional Investors Bidding through the UPI Mechanism, the Registrar will instruct the Sponsor Bank to unblock the funds in the relevant ASBA Accounts to the extent of the Bid Amounts specified in the Bid cum Application Forms for withdrawn, rejected or unsuccessful or partially successful ASBA Bids, within six Working Days of the Bid/Offer Closing Date.

Interest in case of delay in dispatch of Allotment Letters or Refund Orders/instruction to SCSB by the Registrar

Allotment, including the credit of Allotted Units to the beneficiary accounts of the Depository Participants, will be made not later than six Working Days of the Bid/Offer Closing Date. If Allotment letters/refund orders have not been dispatched to the Bidders or if, in a case where the refund or portion thereof is made in electronic manner through direct credit, NEFT, RTGS or NACH, or unblocking of ASBA Accounts or the refund instructions have not been issued to the clearing system in the disclosed manner and/or demat credits are not made to Bidders within six Working Days from the Bid/ Offer Closing Date, the Investment Manager will be liable to pay interest at 15% per annum, as prescribed under the InvIT Regulations and other applicable law.

The Trustee and the Investment Manager shall not have recourse to the Offer Proceeds until the final approval for listing and trading of the Offered Units from all the Stock Exchanges where listing is sought has been received.

Withdrawal of the Offer

The Investment Manager in consultation with the Trustee and the Book Running Lead Managers, reserves the right not to proceed with the Offer at any time after the Bid/Offer Opening Date but before Allotment. If the Investment Manager, in consultation with the Book Running Lead Managers, withdraws the Offer, they will issue a public notice within two days or such other time as may be prescribed by SEBI in this regard, providing reasons for not proceeding with the Offer. The Book Running Lead Managers, through the Registrar, will notify the SCSBs and Sponsor Bank (in case of Bids from Non Institutional

Investors through the UPI mechanism) to unblock the ASBA Accounts within one Working Day or such other time as may be prescribed by SEBI, from the day of receipt of such notification. The notice of withdrawal will be made available on the websites of the Stock Exchanges, the Trust, the Sponsor, the Investment Manager and will also be issued in the same newspapers where the Pre-Offer advertisements have appeared.

If the Investment Manager withdraws the Offer after the Bid/Offer Closing Date and thereafter determines that it will proceed with a public offering of Units, they will file a fresh draft Offer Document with and/SEBI or the Stock Exchanges, as the case may be.

Notwithstanding the foregoing, the Offer is also subject to (i) the approvals of the Stock Exchanges, which the Investment Manager will apply for only after Allotment for commencement of trading; and (ii) the final approval of the Final Offer Document after it is filed with SEBI and the Stock Exchanges.

In the event the Trust does not receive relevant permissions from the Stock Exchanges or in the event of withdrawal of the observation letter issued by SEBI, the Units shall not be eligible for listing and the Trust shall be liable to refund the subscription monies, if any, to the respective Bidders immediately, along with interest at the rate of 15% per annum, from the date of Allotment.

Minimum Subscription and Minimum Allotment

In case the Trust does not receive subscription for at least such number of units by public unitholders in accordance with Regulation 14(1A) of the InvIT Regulations; or if the number of prospective Allottees (other than the Sponsor, its related parties and Associates) is less than 200, the entire subscription money shall be refunded.

Undertakings of Investment Manager

The Investment Manager hereby undertakes on behalf of the Trust that at any given time, there shall be only one denomination for the Units and that it shall comply with such disclosure and accounting norms specified by the SEBI from time to time.

The Investment Manager further undertakes that no person connected with this Offer, including a person connected with the distribution of this Offer, shall offer any incentive, whether direct or indirect, in any manner, whether in cash or kind or services or otherwise to any person for making an application for allotment of Units, except for any fees or commission for services rendered in relation to this Offer.

STATEMENT OF POSSIBLE DIRECT TAX BENEFITS

March 17, 2026

To
The Board of Directors
Cube Highways Fund Advisors Private Limited (the "Investment Manager") in its capacity as an Investment Manager of the Cube Highways Trust (the "Trust" or the "InvIT")

Dear Sirs,

We refer to the proposed public offer of the ordinary units of Cube Highways Trust, ('the trust' or 'the InvIT'). We enclose herewith the statement showing the current position of special/general tax benefits available to the InvIT, and its unitholders as per the provisions of the Income-tax Act 1961 ("Act"), as applicable on as date, for inclusion in the draft offer document, the offer document and the final offer document for the proposed offer of ordinary units of the InvIT.

Several of these benefits are dependent on the InvIT or its unitholders fulfilling the conditions prescribed under the relevant provisions of the Act. Hence the ability of the InvIT or its unitholders to derive these direct tax benefits is dependent upon their fulfilling such conditions, which based on the business imperatives, the InvIT or its unitholders may or may not choose to fulfil.

The benefits discussed in the enclosed statement are neither exhaustive nor conclusive. The contents stated in the Annexure are based on the information and explanations obtained from the Investment Manager. This statement is only intended to provide general information to guide investors and is neither designed nor intended to be a substitute for professional tax advice. In view of the individual nature of the tax consequences and the changing tax laws, each investor is advised to consult their own tax consultant with respect to the specific tax implications arising out of their participation in the offering. We are neither suggesting nor are we advising the investor to invest money or not to invest money based on this statement.

We do not express any opinion or provide any assurance whether:

- The InvIT or its unitholders will continue to obtain these benefits in future;
- The conditions prescribed for availing the benefits have been/would be met;

We hereby give our consent to include enclosed statement regarding the tax benefits available to the InvIT and its unitholders in the draft placement memorandum, the placement memorandum and final placement memorandum for the proposed public offer of ordinary units, which the Investment Manager (on behalf of the InvIT) intends to submit to the Securities and Exchange Board of India, BSE, NSE and any other authority, provided that the below statement of limitation is included in the draft placement memorandum, the placement memorandum and final placement memorandum.

LIMITATIONS

Our views expressed in the statement enclosed are based on the facts and assumptions indicated above. No assurance is given that the revenue authorities/courts will concur with the views expressed herein. Our views are based on the existing provisions of law and its interpretation, which are subject to change from time to time. We do not assume responsibility to update the views consequent to such changes. Reliance on the statement is on the express understanding that we do not assume responsibility towards the investors who may or may not invest in the proposed public offer relying on the statement.

This statement has been prepared solely in connection with the offering of units by the InvIT under the Securities and Exchange Board of India ("SEBI") (Infrastructure Investment Trusts) Regulations, 2014 and the notifications, guidelines and circulars issued thereunder, as amended.

For **S. B. Billimoria & Co LLP**
Chartered Accountants
(Firm's Registration No. 101496W/W100774)

Pramod B. Shukla
(Partner)
(Membership No. 104337)
UDIN: 26104337ZEJBHL6463

Place: Noida
Date: March 17, 2026

STATEMENT OF POSSIBLE DIRECT TAX BENEFITS

The information provided below sets out the possible direct tax benefits available to the unitholders of the InvIT / business trust in a summary manner only based on the provisions of Income-tax Act, 1961 ('Act') as amended by the Finance Act, 2025 [published on 29th March 2025[1]] and is not a complete analysis or listing of all potential tax consequences of the subscription, ownership and disposal of the units, under the tax laws currently in force in India. Several of these benefits are dependent on the unitholders fulfilling the conditions prescribed under the Act and the SEBI regulations. Hence, the ability of the unitholders to derive the tax benefits is dependent upon fulfilling such conditions, which, based on the commercial imperatives, a unitholder may or may not choose to fulfill. The following overview is not exhaustive or comprehensive and is not intended to be a substitute for professional advice. Investors are advised to consult their own tax consultants with respect to the tax implications of an investment in the units particularly in view of the fact that certain recently enacted provisions under the Act may not have a direct legal precedent or may have a different interpretation on the benefits, which an investor can avail.

Further, the tax rates specified in this document are applicable for the Financial Year 2025-26 (i.e. Assessment Year 2026-27) as per the Finance Act, 2025. The rates given in this statement are excluding surcharge and health and education cess, if any, as leviable. The rate of surcharge and health and education cess along with other key considerations are given in the Notes to this statement.

INVESTORS ARE ADVISED TO CONSULT THEIR OWN TAX CONSULTANT WITH RESPECT TO THE INDIAN TAX IMPLICATIONS AND CONSEQUENCES OF PURCHASING, OWNING AND DISPOSING OFF UNITS IN THEIR PARTICULAR SITUATION.

STATEMENT OF POSSIBLE INCOME TAX BENEFITS AVAILABLE TO CUBE HIGHWAYS INVIT ('TRUST') AND ITS UNITHOLDERS

I. *Tax Implications and benefits in relation to InvITs*

Cube Highways InvIT ('the Trust') has been constituted as an irrevocable determinate trust under the Indian Trusts Act, 1882. Further, the Trust is registered with the Securities and Exchange Board of India ('SEBI') as Infrastructure Investment Trust under the SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended ('SEBI InvIT Regulations').

The following implications/benefits under the Act are applicable/available to the Trust after fulfilling conditions as per the applicable provisions of the Act and the SEBI InvIT Regulations.

1. Taxability of interest and dividend income in the hands of trust from Special Purpose Vehicle(s)

As per the provisions of section 10(23FC) of the Act, any income of a trust by way of interest and dividend received or receivable from a special purpose vehicle (SPV) would be exempt from tax. For this purpose, SPV means a domestic company in which the business trust holds controlling interest and any specific percentage of shareholding or interest, as may be required by the regulations under which such trust is granted registration.

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[1]*Please note that Finance Bill 2026 introduced in Loka Sabha on February 01, 2026 has not been enacted as on date. For reference purposes only, we have covered the key proposals introduced vide such Finance Bill. The same may or may not be enacted as part of Finance Act which shall come into force post approval by both the Houses of Parliament and Presidential assent.*

It is pertinent to note here that as per the provisions of section 14A of the Act, any expenditure incurred in relation to earning the above exempt income shall not be tax deductible. The provision of Rule 8D of the Income-tax Rules, 1962 read with section 14A of the Act shall be followed for calculating the quantum of disallowance.

2. Taxability of income of trust in general unless exempted / specified otherwise under the provisions of the Act

As per section 115UA(2) read with section 10(23FC) of the Act, the taxable total income of a business trust would be charged to tax at the maximum marginal rate ('MMR') [i.e. the rates of income-tax (including surcharge and Cess on income-tax, if any) applicable in relation to the highest slab of income as specified in the relevant Finance Act] in force except for the income chargeable to tax on transfer of short term capital assets as per section 111A and long term capital assets as per section 112 and section 112A of the Act and income referred to in section 10(23FC) of the Act.

Further, dividend and interest income earned by Trust from company other than SPV, shall be taxable at MMR.

As per section 57 of the Act, no deduction shall be allowable against the dividend income (which is taxable in the hands of the Trust) other than deduction on account of interest expense incurred wholly and exclusively for the purpose of earning such

dividend and such interest expense shall not exceed 20% of the dividend income included in the total income for that year, without deduction under section 57 of the Act.

Recently, the Finance Bill 2026 has proposed changes in the corresponding section 93 of the Income tax Act, 2025 w.e.f. April 1, 2026 that no deduction shall be allowed in respect of any interest expenditure incurred for earning dividend income or income from units of mutual funds.

3. Taxability of Capital Gains in the hands of the Trust

a. Period of Holding

Capital assets are classified as long-term capital assets ('LTCA') or short-term capital assets ('STCA'), based on the period of holding of these assets. Depending on the period of holding for which the shares and securities are held, the gains should be taxable as short-term capital gains or long-term capital gains. As per the provisions of section 2(42A) of the Act, a capital asset is regarded as short-term capital asset ("STCA"), if:

Sr. no.	Nature of asset	Period of holding before the date of sale
(i)	Securities listed in a recognised stock exchange in India or a unit of an equity- oriented fund or unit of the Unit Trust of India or Zero-coupon bond	12 months or less
(ii)	Capital asset other than covered in (i)	24 months or less

As per the provisions of section 2(29AA) of the Act, LTCA means a capital asset which is not a STCA.

b. Short-term capital gains

As per the provisions of section 111A of the Act, any income arising from transfer of STCA being an equity share in a company or a unit of an equity oriented fund or a unit of a business trust pursuant to a transaction acted through a recognized stock exchange and subject to Securities transaction tax ('STT'), will be taxable in the hands of the Trust at a concessional rate (plus applicable surcharge and cess):

- 15% for any transfer which takes place before the 23rd day of July, 2024; and

- 20% for any transfer which takes place on or after the 23rd day of July, 2024

However, the condition of STT is not required if the transaction is undertaken on a recognised stock exchange located in any International Financial Services Centre and where the consideration for such transaction is paid or payable in foreign currency.

Short-term capital gains arising from transfer of STCA other than the shares and securities covered under section 111A of the Act, will be taxed at the maximum marginal rates in force.

c. Long-term capital gains

As per the provisions of section 112(1)(d) of the Act, gains arising on the transfer of LTCA shall be chargeable to tax in the hands of the Trust at a concessional rate (plus applicable surcharge and cess):

- 20% (with indexation) for any transfer which takes place before the 23rd day of July, 2024; and

- 12.5% (without indexation) for any transfer which takes place on or after the 23rd day of July, 2024

Further, as per section 112A, gains exceeding INR 1,25,000 arising on the transfer of LTCA, being an equity share in a company or a unit of an equity-oriented fund or a unit of a business trust, through a recognized stock exchange and subject to STT, shall be chargeable to tax in the hands of the Trust at a concessional rate (plus applicable surcharge and cess):

- 10% (without indexation) for any transfer which takes place before the 23rd day of July, 2024; and

- 12.5% (without indexation) for any transfer which takes place on or after the 23rd day of July, 2024

d. Cost of Acquisition

Section 48 of the Act prescribes the mode of computation of capital gains and provides for deduction of cost of acquisition/ improvement and expenses incurred in connection with the transfer of a capital asset, from the sale consideration to arrive at the amount of capital gains. However, in respect of long-term capital gains, section 48 of the Act provides for substitution of cost of acquisition/ improvement with indexed cost of acquisition/ improvement (which adjusts the cost of acquisition/ improvement by a cost inflation index as prescribed from time to time) for any transfer which takes place before the 23rd day of July, 2024. Such indexation benefit would not be available on bonds, debentures, and listed equity shares in a company or units of equity-oriented funds or units of a trust referred to in section 112A of the Act.

e. Deemed sales consideration

As per section 50CA of the Act, where the consideration on transfer of unquoted shares of a company, is less than the fair market value of such share determined in such manner as may be prescribed, the value so determined shall for the purpose of section 48 of the Act, be deemed to the full value of consideration.

4. Income from buy back of shares by SPV

The total amount received from the buyback by the shareholder shall be deemed as dividend in accordance with the provision of Section 2(22)(f) of the Act.

Accordingly, in case income arises in hands of the Trust from buy-back of unlisted shares by the Project SPVs (held in the underlying SPVs), then such income shall be exempt in the hands of the Trust as per section 10(23FC) of the Act, being dividend received from SPV.

Further, the cost of acquisition of such shares shall be deemed as long term/short term capital loss basis the period of holding of such shares.

Recently, the Finance Bill 2026 has proposed changes in the corresponding sections of Income tax Act, 2025 w.e.f. April 01, 2026 that consideration received on buy-back of shares shall be taxed under the head "Capital gains" instead of treating it as dividend income.

Further, considering the influence exercised by the promoters, section 69 has been proposed to be amended to levy additional tax on promoters (in addition to normal tax payable on capital gains) – tabulated as below:

Type of capital gain	**Additional tax rate for promoter domestic company**	**Additional tax rate for promoter other than domestic company**
Short term capital gain	2%	10%
Long term capital gain	9.5%	17.5%

5. Set off and carry forward of capital losses

As per section 70 read with section 74 of the Act, long-term capital loss, if any arising during the year can be set-off only against long-term capital gain and shall be allowed to be carried forward up to eight assessment years immediately succeeding the assessment year for which the loss was first computed. The brought forward long-term capital loss can be set off only against long-term capital gains.

As per section 70 read with section 74 of the Act, short-term capital loss, if any arising during the year can be set-off against short-term capital gain as well as against the long-term capital gains and shall be allowed to be carried forward up to eight assessment years immediately succeeding the assessment year for which the loss was first computed. The brought forward short-term capital loss can be set off against capital gains (both long-term and short-term capital gains).

II. ***Tax Implications and benefits in relation to all unitholders***

Following tax benefit is specifically available to the unitholders of the Trust subject to the fulfillment of the conditions specified in the Act and the SEBI Regulations:

a) Tax exemption in respect of income distributed by Trust

As per the provisions of section 115UA(1) of the Act, the income distributed by the Trust shall be deemed to be of the same nature and in the same proportion in the hands of the unitholders as if such income was received by or accrued to the Trust.

As per the provisions of section 10(23FD) of the Act, any income referred to in section 115UA(1) of the Act and distributed by the Trust shall not be included in the total income of the unitholders except for the following income:

- Interest referred to in Section 10(23FC) of the Act; and

- Specified dividend i.e., dividend income received in cases where SPV has exercised the option under section 115BAA of the Act.

SPVs have the option, subject to certain condition, to choose a concessional tax rate of 22 percent (plus 10% surcharge and 4% cess) under section 115BAA of the Act. In case, SPV has exercised the option under section 115BAA of the Act, any dividend distributed by the Trust out of the dividend paid by such SPV shall be taxable in the hands of unitholder. In other cases, the dividend distributed by Trust out of the dividend paid by SPV which has not exercised the option under section 115BAA of the Act, shall be exempt in the hands of unitholders under section 10(23FD) of the Act.

As per section 56(2) of the Act any distribution received by unitholders that is not covered under section 10(23FC) or 10(23FCA) of the Act and that which is not chargeable to tax under section 115UA(2) of the Act shall be charged to tax as 'income from other sources' provided such amount received (including similar distributions in earlier years to the same unitholder or any other unitholder) is in excess of the amount at which units are issued by the InvIT, as reduced by the amount which would have been charged to tax earlier under this provision. Such income shall be chargeable to tax at the rates applicable based on the status of the unitholder.

b) Implications on transfer of shares held by Sponsor in Project SPVs to trust

According to section 47(xvii) of the Act, any transfer of a capital asset, being shares of an SPV to a business trust in exchange of units allotted by that trust to the transferor shall not be regarded as transfer and accordingly not be liable to capital gains tax.

According to section 49(2AC) of the Act, the cost of units acquired in lieu of shares in SPV shall be deemed to be cost of acquisition of shares in SPV.

The amount of distribution received to the extent not chargeable to tax under section 56(2)(xii) of the Act and not covered under sections 10(23FC), 10(23FCA) or 115UA(2) of the Act shall be reduced from the cost of units.

As per clause (hc) of explanation 1 of section 2(42A) of the Act, for ascertaining the period of holding of such units, the period of holding of shares in SPV shall also be included.

III. ***Tax Implications and benefits in relation to Resident unitholders***

a) As stated in Part II above, income distributed by the Business Trust being in the nature of dividend from SPVs which is not exempt under section 10(23FD) of the Act, interest from SPVs, and income chargeable to tax under section 56(2)(xii) of the Act, shall be taxable in the hands of resident unitholders as under:

Status of unitholder	**Tax rate (exclusive of surcharge and education cess)**
Resident companies (Refer Note 1,2 and 3)	30%
Firms / LLPs	30%
Others (Refer Note 4)	As per applicable rates, for instance in case of individuals income has to be taxed as per applicable slab rates, maximum being 30%

Note 1: As per the Finance Act, 2025, the tax rate is 25% (plus applicable surcharge and health and education cess) shall be applicable to a domestic company for Financial year 2025-26 if the total turnover or gross receipts of such company are not exceeding INR 4,000 million in the Financial Year 2023-24 (Assessment Year 2024-25).

Note 2: Further, the tax rates for resident companies exercising the option under section 115BAA and section 115BAB of the Act shall be chargeable to concessional tax rate of 22% and 15% respectively (plus surcharge at the rate of 10% and health and education cess at the rate of 4%), subject to fulfilment of conditions prescribed in the said sections.

Note 3: The Finance Act, 2020 has also inserted section 80M to eliminate the cascading tax effect in case of intercorporate dividends by providing a deduction in respect of dividends received from a company (including foreign company) and business trust to the extent such dividend is distributed before the specified time.

Note 4:
As per the Finance Act, 2025, section 115BAC of the Act provide that the Individual, Hindu Undivided Family ('HUF'), Association of Persons ('AOP') (other than a co-operative society), Body of Individuals ('BOI') and Artificial Juridical Person ('AJP') will be taxed on its total income at the reduced tax rates ('New Regime'). The income would however have to be computed without claiming prescribed deductions or exemptions. However, such person will have the option to be taxed on its total income as per the tax rates under the old regime. The option is required to be exercised – (i) on or before the due date specified under section 139(1) of the Act for furnishing the return of income for such assessment year, in case of a person having income from business or profession and such option once exercised shall apply to subsequent assessment years; or (ii)

along with the return of income to be furnished under section 139(1) of the Act for such assessment year in case of a person not having income referred to in clause (i). A person having income from business or profession who has exercised the above option of shifting out of the New Regime shall be able to exercise the option of opting back to the New Regime only once. However, a person not having income from business or profession shall be able to exercise this option every year.

b) Income in nature of Capital gains on sale of units of the Trust

Period of holding: Capital assets are classified as LTCA or STCA, based on the period of holding of these assets. The determinative period of holding for units of the Trust held by the unitholders to qualify as LTCA is more than 12 months. The units held for less than 12 months would be STCA.

Taxation of capital gains on sale of units of the Trust (where transfer takes place on or after July 23, 2024):

Nature of capital gains	**Tax rate (exclusive of surcharge and education cess)**		
	Unitholders being resident companies	**Unitholders being resident Firms / LLPs**	**Other unitholders**
Short-term capital gains on sale of units of the Trust being a listed InvIT, subject to STT	20%	20%	20%
Long-term capital gains on sale of units of the Trust being a listed InvIT, subject to STT	12.5% (on capital gains exceeding INR 1,25,000)	12.5% (on capital gains exceeding INR 1,25,000)	12.5% (on capital gains exceeding INR 1,25,000

The amount of distribution to the extent not chargeable to tax under section 56(2)(xii) of the Act and not covered under sections 10(23FC), 10(23FCA) or 115UA(2) of the Act shall be reduced from the cost of units, for computing capital gains.

c) Set off of Losses: Please refer point 5 under *'Tax implications and benefits in relation to InvITs'*

d) Applicability of Minimum Alternate tax (MAT)/ Alternate Minimum Tax (AMT)

In case of domestic companies that are liable to pay MAT under provisions of section 115JB of the Act, the gains arising, if any, on sale of units of trust are to be included as part of book profits for the purpose of computing MAT liability. MAT paid by such companies should be available as credit for set-off against future tax liability, provided such companies do not opt to be governed by the concessional tax rates u/s 115BAA or 115BAB of the Act. Companies exercising the option to be taxed as per section 115BAA and 115BAB of the Act have been excluded from the applicability of MAT.

Recently, the Finance Bill 2026 has proposed changes in the corresponding section 206 of Income tax Act, 2025 w.e.f. April 01, 2026 that the tax paid under provisions of MAT be made as final tax in the old regime (i.e., for companies do not opt to be governed by the concessional tax rates under the Act) and no new MAT credit may be allowed. However, the tax rate of MAT has been reduced to 14% of book profit from the existing 15%.

Further, set-off of MAT credit may be allowed only in the new tax regime (i.e., for companies who opt to be governed by the concessional tax rates under the Act) for domestic companies to the extent of 25% of the tax liability.

However, as per clause (iie)/(fc) to explanation 1 to section 115JB of the Act, the following shall not be considered while computing book profits for levy of MAT:

- notional gain/loss on transfer of shares of SPV in exchange of units allotted by the business trust referred to in clause (xvii) of section 47; or
- notional gain/loss resulting from any change in carrying amount of said units; or
- gain/loss on transfer of units allotted by the business trust referred to in clause (xvii) of section 47.

Further, as per clause (k)/(iif) of explanation 1 to section 115JB of the Act, any gain/loss on transfer of units referred to in clause (xvii) of section 47 of the Act shall be considered while computing the book profit for levy of MAT by taking into account the cost of the shares exchanged with units referred to in the said clause or the carrying amount of the shares at the time of exchange where such shares are carried at a value other than the cost through statement of profit and loss, as the case may be.

In case of unitholders, other than companies, that are liable to Alternate Minimum Tax (AMT) under provisions of section 115JC of the Act, the gains arising, if any, on sale of units of InvIT are to be included as part of adjusted total income for the purpose of computing AMT liability. AMT paid by such unitholders should be available as credit for set-off against future tax liability, provided they do not opt to be governed by the concessional tax rates u/s 115BAC or 115BAD of the Act.

e) Other income (income other than interest or dividend income or income chargeable to tax under section 56(2)(xii) of the Act) received from Trust

Other income (income other than interest or dividend income or income chargeable to tax under section 56(2)(xii) of the Act) such as treasury income earned by Trust and distributed to unitholder shall be exempt in hands of unitholders as the same shall be taxable in the hands of Trust. Further, there shall be no withholding on distribution of such other income by the Trust to the unitholders.

IV. ***Tax benefits/ provisions applicable to Non-resident Unitholders***

1. As per section 2(30) of the Act, non-resident is defined to mean a person who is not a "resident".

   A non-resident unit holder should be subject to taxation in India only if:

   - it is regarded a tax resident of India; or
   - being a non-resident in India, it derives: (a) if any income is received / deemed to be received in India; or (b) if any income has accrued or arisen / deemed to have accrued or arisen in India in terms of the provisions of the Act.

   Section 6 of the Act provides that a foreign company should be treated as a tax resident in India if its place of effective management ('POEM') is in India in that year. POEM has been defined to mean a place where key management and commercial decisions that are necessary for the conduct of the business of an entity as a whole are, in substance made.

2. As per section 90(2) of the Act, the provisions of the Act should apply to the extent they are more beneficial than the provisions of the Double Taxation Avoidance Agreement ('tax treaty' or 'DTAA') between India and the country of residence of the offshore unit holder to the extent of availability of tax treaty benefits to the offshore unit holders. However, no assurance can be provided that the treaty benefits should be available to the offshore unit holder or the terms of the tax treaty will not be subject to amendment or reinterpretation in the future.

3. The taxability of income of non-resident unit holders on different income streams, should be as per the provisions of the Act or tax treaty (whichever is beneficial) as discussed below. However, for claiming the tax treaty benefit, the non-resident would have to provide relevant documents/declarations viz. tax residency certificate ('TRC'), etc. as per the requirements of the Act/tax treaty.

a) Dividend which is not exempt under section 10(23FD) of the Act (where dividend received by the Trust from the SPV who has exercised the option under section 115BAA of the Act)

The dividend income will be taxable at the rate of 20% (plus applicable surcharge and cess) under the Act. This is subject to benefits, if any, under the applicable tax treaty.

b) Interest income distributed by the Trust earned from the SPV

Interest income earned from the SPV and distributed by Trust to non-resident unitholder is not exempt under section 10(23FD) of the Act in the hands of unit holder and would be taxable at 5% (plus applicable surcharge and cess). This is subject to benefits, if any, under the applicable tax treaty.

c) Other distribution by the Trust not covered under section 115UA(2) of the Act

As per newly inserted section 56(2)(xii) of the Act, any distribution received by unitholders that is not covered under section 10(23FC) or 10(23FCA) of the Act and that which is not chargeable to tax under section 115UA(2) of the Act shall be charged to tax as 'income from other sources' provided such amount received (including similar distributions in earlier years to the same unitholder or any other unitholder) is in excess of the amount at which units are issued by the InvIT, as reduced by the amount which would have been charged to tax earlier under this provision. This is subject to benefits, if any, under the applicable tax treaty.

Such income shall be chargeable to tax at the rates applicable based on the status of the unitholder.

Status of unitholder	**Tax rate (exclusive of surcharge and education cess)**
Non-resident companies	35%
Firms / LLPs	30%
Others	As per applicable rates, for instance in case of individuals income has to be taxed as per applicable slab rates

d) Capital gains on sale of units of the Trust

Period of holding: Capital assets are classified as LTCA or STCA, based on the period of holding of these assets. The determinative period of holding for units of the Trust (being a business trust) held by the unitholders to qualify as LTCA is more than 12 months. The units held for less than 12 months would be STCA. While determining the period of holding for units of business trust allotted pursuant to exchange of shares of SPV as per clause (hc) of explanation 1 to section 2(42A) of the Act, the period of holding for the units shall include the period for which the shares were held in the SPV.

Depending on the classification of capital gains, the non-resident unit holders should be chargeable to tax under the Act as under (where transfer takes place on or after July 23, 2024). This is subject to benefits, if any, under the applicable tax treaty.

Nature of capital gains	**Tax rate under the Act (excluding surcharge and cess)**
Short-term capital gains on sale of units of the Trust being a listed InvIT, subject to STT	20%
Long-term capital gains on sale of units of the Trust being a listed InvIT, subject to STT	12.5%(on capital gains exceeding INR 1,25,000)

The amount of distribution to the extent not chargeable to tax under section 56(2)(xii) of the Act and not covered under sections 10(23FC), 10(23FCA) or 115UA(2) of the Act, shall be reduced from the cost of units, for computing capital gains.

e) Set off of Losses: Please refer point 5 under *'Tax implications and benefits in relation to InvITs'*

4. Applicability of Minimum Alternate tax (MAT)

While computing book profits to determine the applicability of MAT, any income accruing or arising to a foreign company from (i) capital gains earned from sale of shares or other instruments that qualify as "securities" (as per the securities Contract (Regulation) Act, 1956) or (ii) interest, royalties or fees for technical services, and which are credited by the foreign company to its profit and loss account should be excluded.

Recently, the Finance Bill 2026 has proposed changes in the corresponding section 206 of Income tax Act, 2025 w.e.f. April 01, 2026 that the tax paid under provisions of MAT be made as final tax and no new MAT credit may be allowed. However, the tax rate of MAT has been reduced to 14% of book profit from the existing 15%.

In the case of foreign companies, MAT Credit set off is proposed to be allowed to the extent of the difference between the tax on the total income and the minimum alternate tax, for the tax year in which normal tax is more than MAT.

The MAT provisions should not be applicable in case of foreign company:

- if such foreign company is a resident of a country with which India has entered into a tax treaty and such foreign company does not have a permanent establishment in India in terms of provisions of applicable tax treaty; or
- if such foreign company is a resident of a country with which India does not have an agreement of the nature referred to in above clause and such foreign company is not required to seek registration under any law for the time being in force relating to companies.

V. *Specific provisions relating to Tax deduction at Source ('TDS')*

1. Withholding of tax by SPVs

The interest payable by SPV to the trust will not be subject to withholding tax as per section 193 and 194A of the Act.

As per section 194 of the Act, the SPVs will not be required to withhold taxes when they make payment of dividend to the Trust.

2. Withholding of tax by trust

As per the provisions of section 115UA(1) of the Act, the income distributed by the Trust shall be deemed to be of the same nature and in the same proportion in the hands of the unitholder as if such income was received by or accrued to the Trust.

The distribution of income, in the nature of interest or dividend, by the trust to the unit holders, would be subject to withholding tax under section 194LBA of the Act at the time of credit of such payment to the account of the unitholder or at the time of payment thereof, whichever is earlier. The rate of withholding as per section 194LBA of the Act shall be as under

- On interest income:

    - 10% in case of resident unitholder; and
    - 5% (plus applicable surcharge and education cess) in case of non-resident unitholder

- On dividend income, being that proportion of dividend earned from an SPV which has exercised the option of beneficial tax regime under section 115BAA of the Act:

    - 10% in case of resident unitholder; and
    - 10% (plus applicable surcharge and education cess) in case of non-resident unitholder

- On dividend income, being that proportion of dividend earned from an SPV which has not exercised the option of beneficial tax regime under section 115BAA of the Act, no withholding tax is required.

- On certain distributions proposed to be considered as income for the unitholders, there is no specific withholding tax provisions. Accordingly, the Trust maybe required to withhold tax under section 195 of the Act. The withholding tax rate applicable on such distributions shall be determined on the basis of the tax status of the unitholder and applicable treaty benefits, if any.

3. Withholding of tax in case of transfer of shares/securities

No income tax is deductible at source from income by way of capital gains arising to a resident unitholder under the present provisions of the Act.

However, as per the provisions of section 195 of the Act, any income on transfer of unit of the Trust by non-residents may be subject to withholding of tax at the rate under the domestic tax laws or under the DTAA, whichever is beneficial to the assessee (other than FPIs/ FIIs which are subject to provisions of section 196D(2) of the Act).

However, the non-resident investor will have to furnish a certificate of his being a tax resident in a country outside India and a suitable declaration for not having a fixed base/ permanent establishment in India, to get the benefit of the applicable DTAA and such other document as may be prescribed as per the provision of section 90(4) of Act.

Buyer and seller of unlisted shares/securities also need to check the applicability of TDS u/s 194Q of the Act. As per the clarification issued by Central Board of Direct taxes ('CBDT'), the transaction in shares not taken place through recognized stock exchange/ recognised clearing corporations may also fall under the ambit of section 194Q/ of the Act since CBDT has clarified that the said provisions of section 194Q/ of the Act are not applicable to transactions in securities and commodities transacted through recognised stock exchanges/ recognised clearing corporations, including those located in International Financial Service Centre.

4. Withholding at higher rate where PAN details are not furnished- section 206AA of the Act

As per section 206AA of the Act, where a taxpayer does not possess a PAN, taxes have to be withheld on payment of income to the taxpayer (where chargeable to tax) at higher of the following:

- at the rate specified in the Act; or
- at the rate or rates in force; or
- at the rate of 20%

Further, CBDT has issued a notification no. 53/2016 for relaxation from deduction of tax at a higher rate under Section 206AA of the Act in the case of non-resident investor or a foreign company and not having PAN by inserting a new rule 37BC. The provisions of Section 206AA of the Act shall not apply in respect of payments in the nature of interest, royalty, fees for technical services and payments on transfer of any capital asset, if the deductee furnishes certain details and specified documents to the deductor.

Please note that similar provisions are there under section 206CC of the Act in relation to TCS.

Notes to statement:
General tax rates and provisions:

1. The income-tax rates specified in this note are as applicable for the financial year 2025-26, and are exclusive of surcharge and education cess, if any. Rate of surcharge and cess are provided below:

Rate of Surcharge:

Domestic companies other than companies covered under section 115BAA and 115BAB of the Act, surcharge rates are as below:

a) If the total income does not exceed INR 10 million – Nil
b) If the total income exceeds INR 10 million but does not exceed INR 100 million - 7 %
c) If the total income exceeds INR 100 million - 12 %

In case of domestic companies having income chargeable under Section 115BAA and 115BAB of the Act, surcharge of 10% is applicable irrespective of taxable income.

Foreign companies:

a) If the total income does not exceed INR 10 million - Nil
b) If the total income exceeds INR 10 million but does not exceed INR 100 million – 2%
c) If the total income exceeds INR 100 million – 5%

For individuals, Hindu Undivided Family, association of person, body of individuals (including non-resident)

a) If the total income does not exceed INR 5 million - Nil
b) If the total income (including dividend income or capital gains on specified securities) exceeds INR 5 million but does not exceed INR 10 million – 10%
c) If the total income (including dividend income or capital gains on specified securities) exceeds INR 10 million but does not exceed INR 20 million – 15%
d) If the total income (excluding dividend income or capital gains on specified securities) exceeds INR 20 million but does not exceed INR 50 million – 25%
e) If the total income (excluding dividend income or capital gains on specified securities) exceeds INR 50 million – 37%

However, *in case total income includes any income by way of dividend or income referred to in section 111A or section 112 or section 112A of the Act, surcharge on such income shall not exceed 15%.*

The above surcharge is subject to marginal tax benefit as per the Act.

As per the Finance Act, 2023, in case of the Individual/HUF/AOP (other than co-operative)/ BOI/Artificial Juridical Person ('AJP') taxable under the New Regime prescribed under the Act, the surcharge on the amount of income-tax shall not exceed 25% where taxable income exceeds INR 20 million.

In the case of an AOP, and consisting of only companies as its members, surcharge shall be calculated at the rate of 10%, where the aggregate income exceeds INR 5 million but does not exceed INR 10 million; at the rate of 15%, where the aggregate income exceeds INR 10 million.

For Partnership or LLPs:

a) If the total income does not exceed INR 10 million – NIL
b) If the total income exceeds INR 10 million - 12 %

The above surcharge is subject to marginal tax benefit as per the Act

Health and Education cess:
In all cases, Health and education cess will be levied at the rate of 4 per cent of income-tax and surcharge.

2. The stated benefits will be available only to the sole/ first named holder in case the units are held by joint holders.

3. Please note that the TDS rates mentioned in the given document may be subject to any concessions introduced/ allowed by the Government under any policy, press release, etc. Also, the same may also be subject to lower/ nil withholding tax certificates which may be furnished by the unit holders.

4. In respect of non-residents, the tax rates and the consequent taxation mentioned above shall be further subject to any benefits available under the applicable DTAA, if any, between India and the country in which the non-resident has fiscal domicile. Further, it is pertinent to meet the terms and condition viz. Principal purpose test, beneficial ownership test etc. as enacted in DTAAs entered into by India with various countries based on Multilateral Convention to implement tax treaty related measures to prevent Base Erosion and Profit Shifting ('MLI').

5. The tax implications/ benefits stated in this document are subject to General Anti Avoidance Rules (GAAR) provisions under the Act. GAAR may be invoked by the Indian income-tax authorities in case arrangements are found to be impermissible

avoidance arrangements. Further, in case GAAR provisions are invoked, the onus to prove that the main purpose of an arrangement was not to obtain any tax benefit is on the taxpayer. Also, any resident or non-resident may approach the Board for Advance Rulings to determine whether an arrangement can be regarded as an impermissible avoidance arrangement.

6. This statement does not discuss any tax consequences in the country outside India of an investment in the units of trust. The unit holders / investors in the country outside India are advised to consult their own professional advisors regarding possible Income tax consequences that apply to them.

7. This statement is intended only to provide general information to the investors and is neither designed nor intended to be substituted for professional tax advice. In view of the individual nature of tax consequences, each investor is advised to consult his/her own tax advisor with respect to specific tax consequences of his/her participation in the scheme.

8. No assurance is given that the revenue authorities/courts will concur with the views expressed herein. Our views are based on the existing provisions of law and its interpretation, which are subject to changes from time to time. We do not assume responsibility to update the views consequent to such changes.

9. This statement of possible direct tax benefits enumerated above is as per the Act as amended by the Finance Act, 2025. The above statement of possible Direct-tax Benefits sets out the possible tax benefits available to the Trust and its unitholders under the current tax laws presently in force in India. Several of these benefits available are dependent on the Trust or its unitholders fulfilling the conditions prescribed under the relevant tax laws.

10. The information provided above sets out the possible tax benefits available to the unit holders in a summary manner only and is not a complete analysis or listing of all potential tax consequences of the purchase, ownership, transfer and disposal of equity shares and units, under the current tax laws presently in force in India. It is not exhaustive or comprehensive and is not intended to be a substitute for professional advice. Investors are advised to consult their own tax consultant with respect to the tax implications arising on account of any investment in equity shares or units (including tax implications on account of any distributions by/ receipts from the Trust), particularly in view of the fact that certain recently enacted legislation may not have a direct legal precedent or may have a different interpretation impacting the benefits, which an investor can avail.

LEGAL MATTERS

Each of Cyril Amarchand Mangaldas, AZB & Partners, and Sidley Austin Singapore Pte. Ltd., do not make, or purport to make, any statement in this Draft Offer Document and is not aware of any statement in this Draft Offer Document which purports to be based on a statement made by any of them, and each of them makes no representation, express or implied, regarding, and to the extent permitted by law takes no responsibility for, any statement in or omission from this Draft Offer Document.

INDEPENDENT ACCOUNTANTS

The Audited Consolidated Financial Statements and Consolidated Unaudited Financial Information have been prepared in accordance with Ind AS, read with the InvIT Regulations. The Audited Consolidated Financial Statements and Consolidated Unaudited Financial Information included in this Draft Offer Document have been prepared by the Investment Manager and audited by S.B. Billimoria & Co. LLP, the statutory auditors of the Trust, as stated in their audit reports dated December 5, 2025 and report on review of the Consolidated Unaudited Financial Information dated January 30, 2026, included in this Draft Offer Document.

MATERIAL CONTRACTS AND DOCUMENTS FOR INSPECTION

The following contracts, which are or may be deemed material have been entered or are to be entered into in due course. The copies of contracts and the documents for inspection referred to hereunder, may be inspected at the principal place of business of the Trust, from 10:00 A.M. to 5:00 P.M., on all Working Days from the date of filing the Offer Document until the date of Bid/Offer Closing Date. Any of the contracts or documents mentioned in Draft Offer Document may be amended or modified at any time if so required in the interest of the Trust or if required by the other parties, without reference to the Unitholder, subject to compliance with applicable law and InvIT Documents.

1. Amended and Restated Trust Deed entered into between the Settlor, erstwhile sponsors and the Trustee dated March 11, 2024. Further, pursuant to the Deed of Adherence dated February 20, 2026, CH-V has been inducted as the Sponsor.

2. The amended and restated investment management agreement dated July 24, 2024, entered into between the Trustee, the Investment Manager and the Existing Portfolio Assets.

3. SEBI registration certificate for the Trust bearing number IN/InvIT/22-23/0022 dated April 5, 2022, as an infrastructure investment trust.

4. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and the Existing Portfolio Assets dated January 2, 2023.

5. Deed of adherence to the project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, BWHPL, JUHPL, SIPL, SPPL, THPL, MHPL, MSHPL, NAMEPL, QEPL and the Project Manager.

6. Deed of adherence to the investment management agreement entered into among the Trustee, BWHPL, JUHPL, SIPL, SPPL, THPL, MHPL, MSHPL, NAMEPL, QEPL and the Investment Manager.

7. SEBI observation letter bearing number [●] dated [●].

8. In-principle listing approval dated [●] and [●] issued by BSE and NSE, respectively.

9. Resolution dated February 20, 2026, passed by the Unitholders for approving the Offer.

10. Resolution dated January 30, 2026, passed by the IM Board and the Unitholders resolution dated February 19, 2026, for declassifying CH-I and CH-III as the sponsors of the Trust and inducting CH-V as the new Sponsor.

11. Certified copies of the updated Memorandum and Articles of Association of the Investment Manager as amended from time to time.

12. Due diligence certificate dated March 17, 2026, addressed to SEBI from the Book Running Lead Managers.

13. Cash Escrow and Sponsor Agreement entered into among the Investment Manager, the Trustee (acting on behalf of, and in its capacity as a trustee to, the Trust), the Selling Unitholders, Book Running Lead Managers, Syndicate Members, the Escrow Collection Bank(s), the Public Offer Account Bank(s), the Refund Bank(s), the Sponsor Bank(s) and Registrar to the Offer, dated [●].

14. Unit Escrow Agreement dated [●] to be entered into among the Investment Manager, the Trustee (acting on behalf of, and in its capacity as a trustee to, the Trust), the Selling Unitholders and the Unit Escrow Agent, dated [●], in relation to, inter alia, the deposit of our Units issued pursuant to the Offer.

15. Registrar Agreement entered into between KFin Technologies Limited, Trustee and the Investment Manager and Selling Unitholders dated March 17, 2026.

16. Corporate governance policies adopted by the Investment Manager on behalf of the Trust.

17. Consents from the (i) Valuer; (ii) Registrar; (iii) Technical Consultants; (iv) Traffic Consultants; (v) Industry Expert.

18. Audited Consolidated Financial Statements for the Trust.

19. Consolidated Unaudited Financial Information of the Trust.

20. Financial Statements of the Proposed Portfolio Assets.

21. Projections of Revenue from Operations and Cash Flow from Operating Activities of the Proposed Portfolio Assets.

22. The statement of possible direct tax benefits dated March 17, 2026, from the Auditors.

23. Agreement dated July 8, 2022, between NSDL, the Investment Manager (on behalf of the Trust) and the Registrar

24. Agreement dated September 28, 2022, between CDSL, the Investment Manager (on behalf of the Trust) and the Registrar.

25. Right of first offer agreement dated March 17, 2026, entered into amongst the Investment Manager and Sponsor.

26. The binding commitment letter entered into by the Trust, CH-V, CH-II, BFHL, CNTL, WTPL and DTPL on March 17, 2026.

27. The Offer Agreement dated March 17, 2026, entered into among the Trustee (acting on behalf of, and in its capacity as a trustee to, the Trust), the Investment Manager, the Sponsor, the Project Manager, Cube Highways Asset & Project Advisory Private Limited, the Selling Unitholders and the Book Running Lead Managers.

28. Underwriting Agreement, if any, to be entered into between the Trustee (on behalf of the Trust), the Underwriters, the Investment Manager, Selling Unitholders and the Sponsor.

29. Syndicate Agreement, to be entered into between the Trustee (on behalf of the Trust), the Investment Manager, the Book Running Lead Managers and, the Syndicate Members in relation to collection of Bid cum Application Forms by the Syndicate.

30. The shared services agreement dated September 7, 2022, as amended on January 18, 2023, and September 26, 2023, entered into between the Investment Manager and the Project Manager.

31. Share Purchase Agreements to be entered into between Cube Highways and Infrastructure V Pte. Ltd., Cube Highways and Infrastructure II Pte. Ltd., the Trustee, the Investment Manager and the Proposed Portfolio Assets.

32. Assignment agreements to be entered into by the Trust (acting through the Investment Manager) in relation to the Erstwhile SPAs.

33. Reimbursement Agreement dated September 9, 2024 entered into between the Sponsor with Hazaribagh Tollway Private Limited, Jhansi–Vigakhet Tollway Private Limited, Kanyakumari-Etturavattam Tollway Private Limited, Lucknow-Raebareli Tollway Private Limited, Madurai-Kanyakumari Tollway Private Limited, Nanguneri-Kanyakumari Tollway Private Limited, Salaipudhur-Madurai Tollway Private Limited, Kotwa-Muzaffarpur Tollway Private Limited, Jhansi-Lalitpur Tollway Private Limited, DA Toll Road Private Limited, Walayar Vadakkencherry Expressways Private Limited, Andhra Pradesh Expressway Private Limited, Farakka Raiganj Highways Private Limited, Jaipur-Mahua Tollway Private Limited, Mahua Bharatpur Expressways Limited, Western UP Tollway Private Limited, Nelamangala Devihalli Expressway Private Limited and Ghaziabad Aligarh Expressway Private.

34. Reimbursement Agreement dated March 28, 2025, entered into amongst the Investment Manager and Project Manager.

35. Expert Services Agreement dated February 17, 2026, entered amongst Cube Highways Technologies Private Limited (the "**Service Provider**"), Trust (acting through its Investment Manager), Project Manager and Portfolio Assets.

36. Concession agreements executed between LRTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

37. Concession agreement executed between JLTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

38. Concession agreement executed between JVTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

39. Concession agreement executed between KMTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

40. Concession agreement executed between HTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

41. Concession agreement executed between MKTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

42. Concession agreement executed between KETPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

43. Concession agreement executed between SMTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

44. Concession agreement executed between NKTPL and NHAI dated December 27, 2019, as amended from time to time, read with the relevant supplementary agreement.

45. Concession agreement executed between JMTPL and NHAI dated September 23, 2005, as amended from time to time, read with the relevant supplementary agreement.

46. Concession agreement executed between WUPTPL and NHAI dated September 9, 2005, as amended from time to time, read with the relevant supplementary agreement.

47. Concession agreement executed between MBEL and NHAI dated October 13, 2005, as amended from time to time, read with the relevant supplementary agreement.

48. Concession agreement executed between DATRPL and NHAI dated July 16, 2010, as amended from time to time, read with the relevant supplementary agreement.

49. Concession agreement executed between Lanco Devihalli Highways Limited and NHAI dated July 9, 2007, and endorsed in favour of NDEPL pursuant to the endorsement agreement dated January 11, 2021, entered into between NDEPL and NHAI, as amended from time to time, read with the relevant supplementary agreement.

50. Concession agreement executed between FRHPL and NHAI dated July 19, 2010, as amended from time to time, read with the relevant supplementary agreement.

51. Concession agreement executed between WVEPL and NHAI dated September 17, 2012, as amended from time to time, read with the relevant supplementary agreement.

52. Concession agreement executed between GAEPL and NHAI dated May 20, 2010, as amended from time to time, read with the relevant supplementary agreement.

53. Concession agreement executed between NAMEPL and the relevant state authorities in Andhra Pradesh and Telangana dated July 23, 2010, as amended from time to time.

54. Concession agreement executed between SIPL and NHAI dated April 11, 2018, as amended from time to time, read with the relevant supplementary agreement.

55. Concession agreement executed between MHPL and NHAI dated May 9, 2018, as amended from time to time, read with the relevant supplementary agreement.

56. Concession agreement executed between BWHPL and NHAI dated May 10, 2018, as amended from time to time, read with the relevant supplementary agreement.

57. Concession agreement executed between MSHPL and NHAI dated May 10, 2018, as amended from time to time, read with the relevant supplementary agreement.

58. Concession agreement executed between SPPL and NHAI dated May 9, 2018, as amended from time to time, read with the relevant supplementary agreement.

59. Concession agreement executed between THPL and NHAI dated May 9, 2018, as amended from time to time, read with the relevant supplementary agreement.

60. Concession agreement executed between APEPL and NHAI dated March 20, 2006, as amended from time to time, read with the relevant supplementary agreement.

61. Concession agreement executed between JUHPL and NHAI dated July 19, 2010, as amended from time to time, read with the relevant supplementary agreement.

62. Concession agreement executed between QEPL and NHAI dated July 13, 2010, as amended from time to time, read with the relevant supplementary agreement.

63. Concession agreement executed between BFHL and NHAI dated June 28, 2010, as amended from time to time, read with the relevant supplementary agreement.

64. Concession agreement executed between WMTPL and Madhya Pradesh Road Development Corporation dated August 30, 2007, as amended from time to time.

65. Concession agreement executed between CNTL and NHAI dated June 28, 2010, as amended from time to time.

66. Concession agreement executed between DTPL and NHAI dated April 30, 2010, as amended from time to time, read with the relevant supplementary agreement.

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways Fund Advisors Private Limited**

Jayesh Ramniklal Desai
Independent Director

Date: March 17, 2026
Place: Mumbai, India

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways Fund Advisors Private Limited**

Upendra Kumar Sinha
Independent Director

Date: March 17, 2026
Place: Mumbai, India

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways Fund Advisors Private Limited**

Surinder Chawla
Independent Director

Date: March 17, 2026
Place: New York, USA

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways Fund Advisors Private Limited**

Sandeep Lakhanpal
Director

Date: March 17, 2026
Place: Hyderabad, India

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways Fund Advisors Private Limited**

Raviraj Vipul Acharya
Director

Date: March 17, 2026
Place: Mumbai, India

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways Fund Advisors Private Limited**

Fereshte Dhunjishaw Sethna
Independent Director

Date: March 17, 2026
Place: Mumbai, India

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways Fund Advisors Private Limited**

Helly Bharat Ajmera
Non Executive Director

Date: March 17, 2026
Place: Mumbai, India

DECLARATION

Cube Highways and Infrastructure V Pte. Ltd ("**CH-V**") hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). CH-V further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure V Pte. Ltd.**

Ashutosh Goyal
Director

Date: March 17, 2026
Place: Singapore

DECLARATION

Cube Highways and Infrastructure V Pte. Ltd ("**CH-V**") hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). CH-V further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure V Pte. Ltd.**

Raviraj Vipul Acharya
Director

Date: March 17, 2026
Place: Mumbai, India

DECLARATION

Cube Highways and Infrastructure V Pte. Ltd ("**CH-V**") hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). CH-V further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure V Pte. Ltd.**

Lin Le
Director

Date: March 17, 2026
Place: Singapore

DECLARATION

Cube Highways and Infrastructure V Pte. Ltd ("**CH-V**") hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). CH-V further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure V Pte. Ltd.**

Zaman Velji
Director

Date: March 17, 2026
Place: Canada

DECLARATION

Cube Highways and Infrastructure V Pte. Ltd ("**CH-V**") hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). CH-V further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure V Pte. Ltd.**

Angela Mary Bouzanis
Alternate Director

Date: March 17, 2026
Place: Canada

DECLARATION

Cube Highways and Infrastructure V Pte. Ltd ("**CH-V**") hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). CH-V further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure V Pte. Ltd.**

Kunal Agarwal
Director

Date: March 17, 2026
Place: Singapore

DECLARATION

The Trustee hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Trustee further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

SIGNED BY THE TRUSTEE

For **AXIS TRUSTEE SERVICES LIMITED**
Date: March 17, 2026
Place: New Delhi, India

DECLARATION

Cube Highways and Infrastructure III Pte. Ltd., in its capacity as a Selling Unitholder hereby declares and certifies that all the statements and disclosures in this Draft Offer Document in relation to itself and the Units offered by it in the Offer for Sale are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure III Pte. Ltd.**

Lin Le
Director

Date: March 17, 2026
Place: Singapore

DECLARATION

Cube Mobility Investments Pte. Ltd., in its capacity as a Selling Unitholder hereby declares and certifies that all the statements and disclosures in this Draft Offer Document in relation to itself and the Units offered by it in the Offer for Sale are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Mobility Investments Pte. Ltd.**

Lin Le
Director

Date: March 17, 2026
Place: Singapore

DECLARATION

Cube Highways and Infrastructure II Pte. Ltd., in its capacity as a Selling Unitholder hereby declares and certifies that all the statements and disclosures in this Draft Offer Document in relation to itself and the Units offered by it in the Offer for Sale are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Cube Highways and Infrastructure II Pte. Ltd.**

Lin Le
Director

Date: March 17, 2026
Place: Singapore

DECLARATION

BCI IRR India Holdings Inc., in its capacity as a Selling Unitholder hereby declares and certifies that all the statements and disclosures in this Draft Offer Document in relation to itself and the Units offered by it in the Offer for Sale are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **BCI IRR India Holdings Inc.**

Zaman Velji
Vice-President

Date: March 17, 2026
Place: Canada

DECLARATION

Seventy Second Investment Company LLC, in its capacity as a Selling Unitholder hereby declares and certifies that all the statements and disclosures in this Draft Offer Document in relation to itself and the Units offered by it in the Offer for Sale are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Seventy Second Investment Company LLC**

Kevin Taylaur
Director

Date: March 17, 2026
Place: Abu Dhabi, United Arab Emirates

DECLARATION

BCI IRR India Holdings Limited Partnership, in its capacity as a Selling Unitholder hereby declares and certifies that all the statements and disclosures in this Draft Offer Document in relation to itself and the Units offered by it in the Offer for Sale are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **BCI IRR India Holdings Limited Partnership**

Zaman Velji
Vice-President of BCI IRR India Holdings GP Inc., in its capacity as general partner of BCI IRR India Holdings Limited Partnership

Date: March 17, 2026
Place: Canada

ANNEXURE A –VALUATION REPORTS

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Valuation of Specified Assets

For Cube Highways Fund Advisors Private Limited

Reliance Restricted

25 December 2025

Building a better working world

Reliance Restricted

Cube Highways Fund Advisors Private Limited
(acting as the Investment Manager of Cube Highways Trust)
Attention: Mr. Vinay Sekar
CEO
Unit no. 1901, 19th floor, Tower B, World trade tower,
Plot no. C-1, Sector 16, Noida, UP-201301

25 December 2025

Ernst & Young Merchant Banking Services LLP
14th Floor, The Ruby,
29 Senapati Bapat Marg,
Dadar West,
Mumbai - 400 028, India

Report on Enterprise Valuation of Specified Assets

Dear Mr. Sekar,

In accordance with instructions of Cube Highways Fund Advisors Private Limited ("Client" or "You"), Ernst and Young Merchant Banking Services LLP ("EY") have performed the work set out in our Engagement Letter dated 20 November 2025 ("Engagement Agreement"). We are pleased to present the following report ("Report") in connection with the enterprise valuation of Devanahalli Tollway Private Limited ("DTPL"), Western MP Infrastructure and Tolls Roads Private Limited ("WMTPL") and Baharampore Farakka Highway Limited ("BFHL") (collectively referred to as "Specified Asset(s)") as at 31 March 2026 ("Valuation Date").

It may be noted that for carrying out the valuation, we have relied upon information provided by the management of Cube Highways Fund Advisors Private Limited ("Management"). We have been given to understand that the information provided is correct and accurate and that the Management was duly authorized to provide us the same.

Purpose of our Report and restrictions on its use

We understand that Cube Highways Trust ("CHT" or "Trust" or "InvIT") is proposing to acquire the Specified Assets from Cube Highways and Infrastructure V Pte. Ltd. ("CH-V") which is a Singapore based entity ("Proposed Transaction"). In this regard, valuation of the Specified Assets is required as at the Valuation Date for internal management analysis, disclosures to unit holders if required, any corporate action and/or regulatory filings as per SEBI InvIT Regulations ("Purpose").

The Report was prepared solely for the above Purpose and should not be used or relied upon for any other purpose including for filing with any statutory/regulatory authority, except as stated above. The Report and its contents may not be quoted, referred to or shown to any other parties except as provided in the Engagement Agreement.

We accept no responsibility or liability to any person other than to the Client, or to such party to whom we have agreed in writing to accept a duty of care in respect of the Report, and accordingly if such other persons choose to rely upon any of the contents of the Report, they do so at their own risk.

Building a better working world

Nature and scope of the services

The nature and scope of the services, including the basis and limitations, are detailed in the Engagement Agreement. The contents of our Report have been reviewed by the Client, who have confirmed to us the factual accuracy of the Report.

Whilst each part of our Report may address different aspects of the work we have agreed to perform, the entire Report should be read for a full understanding of our findings and advice.

Our work commenced on 21 November 2025 and was completed on 25 December 2025. Our Report does not take account of events or circumstances arising after Valuation Date and we have no responsibility to update the Report for such events or circumstances. If you have any questions or require additional information, please do feel free to contact us.

Yours faithfully

Nilesh Jain
Partner
Membership No. IBBI/RV/05/2024/15540
Ernst & Young Merchant Banking Services LLP
Registration No. IBBI/RV-E/05/2021/155

Date: 25 December 2025
Report No. EYMBS/RV/2025-26/148

Table of contents

1	Valuation summary	5
2	Statement of limiting condition	11
3	Background	14
4	Valuation analysis	27
5	Appendix	35

1

Valuation summary

Valuation summary	6
Identity of the valuer and disclosure of valuer’s interest or conflict	7
Procedures Adopted	8
Sources of Information	9
Valuation results / conclusion	10

Valuation summary

Company Background

- Cube Highways Trust (“CHT” or “Trust” or “InvIT”) is registered as an infrastructure investment trust with Securities and Exchange Board of India ("SEBI") pursuant to the SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended ("SEBI InvIT Regulations").
- The InvIT is proposing to acquire the Specified Assets (defined below) from Cube Highways and Infrastructure V Pte. Ltd. (“CH-V”), which is a Singapore based entity. These assets are involved in operating and managing road assets under concession agreements with NHAI and/or respective State Governments. The following road assets are collectively referred to as “Specified Assets” or “Valuation Subjects” or “SPVs”
    1. Devanahalli Tollway Private Limited (“DTPL”)
    2. Western MP Infrastructure and Tolls Roads Private Limited (“WMTPL”)
    3. Baharampore Farakka Highway Limited (“BFHL”)
- The Specified Assets are operating under the Build Operate and Transfer model.

Purpose and Scope of Valuation

- We understand that Cube Highways Trust (“CHT” or “Trust” or “InvIT”) is proposing to acquire the Specified Assets from Cube Highways and Infrastructure V Pte. Ltd. (“CH-V”) which is a Singapore based entity (“Proposed Transaction”). In this regard, valuation of the Specified Assets is required as at the Valuation Date for internal management analysis, disclosures to unit holders if required, any corporate action and/or regulatory filings as per SEBI InvIT Regulations (“Purpose”).
- Valuation Date: 31 March 2026*
- The Client has requested EY to undertake the valuation of the Specified Assets in its capacity as Registered Valuer for the aforementioned Purpose.
- EY is registered under Insolvency and Bankruptcy Board of India with registration number: IBBI/RV-E/05/2021/155 valid from 1 November 2021 under Securities or Financial Assets Category to act in the capacity as Registered Valuer.
- The scope of Valuation is to perform valuation of Specified Assets for the aforementioned Purpose as of 31 March 2026 based on latest available balance sheet date.
- The signatory of this report, Mr. Nilesh Jain, is a Chartered Accountant from ICAI and has also cleared CFA exams conducted by CFA Institute, USA.
- This report is our deliverable for the abovementioned scope of work.

Note: *Valuation Date of 31 March 2026 has been considered as per the requirements stated by the Client. For the purpose of Valuation, it has been assumed that the projections made by the Management from 1 October 2025 to 31 March 2026 would be actualized as at the Valuation Date.

Identity of the valuer and disclosure of valuer's interest or conflict

Identity of the Valuer

Name of entity registered	Ernst & Young Merchant Banking Services LLP
Registration Number	IBBI/RV-E/05/2021/155
Registration valid from	01 November 2021

Disclosure of Valuer's Interest or Conflict

- EY does not have any interest in the business of the SPVs. EY is neither associated with nor carrying out any relationship with the Client, except carrying out valuation service. Accordingly, there is no conflict of interest for carrying out the valuation.
- The information provided by the Management have been appropriately reviewed in carrying out the valuation. Sufficient time and information was provided to us to carry out the valuation.

Procedures Adopted

Procedures adopted in carrying out the valuation:

- Requested and received financial and qualitative information of the business from its management;
- Discussions with the Management concerning:
  - the nature and operations of the SPVs including historical financial performance;
  - the assumptions and the basis of key assumption used by the Management
  - business plan, future performance estimates, or budgets for the consolidated business including scenarios, if applicable;
- Analysed the industry, as well as the economic and competitive environments in which the SPVs operate; and
- Performed valuation analysis of the SPVs using Internationally accepted valuation methodology to arrive at the valuation.

Valuation Standards:

- Valuation was carried out as per the International Valuation Standards, 2025 ("IVS") published by International Valuation Standards Council.
- In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis of value when valuing a business or business interest. Fair value was considered as appropriate Bases of Value as per IVS 102.
- Market Value is the estimated amount for which an asset or liability should exchange on the Valuation Date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion. The Fair Value referred elsewhere in the Report is same as Market Value as defined above.
- For the purpose of this valuation, the valuation is based on 'Going Concern' premise.

Inspections and Investigations undertaken:

- We have analysed the audited financials of Specified Assets from FY23 to FY25 and provisional financials of the Specified Assets as on H1 FY26, provided by Management.
- We also held discussions with the Management concerning: (i) : the nature and operations of the SPVs including historical financial performance (ii) the assumptions and the basis of key assumptions used in the forecast.

Sources of Information

- The following sources of information have been utilized in conducting the valuation exercise:
- **SPV specific information** – The following information, as provided by the Management, have inter-alia been used in the valuation:
  - Audited financials (balance sheet and profit and loss account along with schedules and notes to accounts including auditors' report but excluding director's report) of Specified assets from FY23 to FY25
  - Provisional financials (balance sheet and profit and loss account along with schedules) of the SPVs for the 6 months period ended 30 September 2025
  - Financial projections of the SPVs from 1 April 2026 till the end of their respective concession periods, including underlying assumptions (It includes forecasts of profit and loss statements, major maintenance expenditures and working capital requirements)
  - Concession agreements entered into between the SPVs and the respective concessioning authorities.
  - Traffic study reports dated December 2025 by M/s CRISIL Limited ("Crisil") for each of the SPVs.
  - Technical due diligence reports for BFHL and DTPL, prepared by M/s Knight Frank India, and for WMTPL, prepared by FP Project Management, dated November 2025.
  - Background information regarding the SPVs provided through emails or during discussions
- Besides the above listing, there may be other information provided by the Management which may not have been perused by EY in any detail, if not considered relevant for the defined scope.
- **Industry and economy information:** EY has relied on publicly available information, proprietary databases subscribed to by EY or its member firms, and discussions with the Management for analysing the industry and the competitors:
- In addition to the above, EY has also obtained such other information and explanations from the Management as were considered relevant for the purpose of the valuation.
- It may be mentioned that the Management have been provided an opportunity to review factual information in the draft Report and confirm with Management of the respective SPVs as part of EY's standard practice to make sure that factual inaccuracies/omissions/etc. are avoided in the final Report.

Valuation results / conclusion

Valuation summary

- Income approach, specifically Discounted Cash Flow method has been considered for arriving at enterprise value of the Specified Assets basis the business plan provided by the Management.
- The valuation is based on provisional financials of SPVs for 6 months period ended 30 September 2025 and projected profit and loss statement for 6 months period ending 31 March 2026. For the purpose of Valuation, it has been assumed that the projections made by the Management from 1 October 2025 to 31 March 2026 would be actualized as at the Valuation Date, i.e. 31 March 2026.
- A detailed discussion on the appropriateness of use of valuation methods has been given in Section: Valuation Analysis.
- This Report should be read in its entirety but especially in conjunction with the 'Statement of limiting conditions'.
- Fair Value of the SPVs, as on 31 March 2026, is arrived as follows:

Currency: INR Mn	Enterprise Value
DTPL	14,765
WMPTL	15,722
BFHL	20,193
Total	**50,679**

Source: Calculation

2

Statement of limiting condition

Statement of limiting conditions 12

Statement of limiting conditions

- Provision of valuation opinions and consideration of the issues described herein are areas of our regular valuation practice. The services do not represent accounting, assurance, accounting / tax due diligence, consulting or tax related services that may otherwise be provided by us or our affiliates.
- The user to which this valuation is addressed should read the basis upon which the valuation has been done and be aware of the potential for later variations in value due to factors that are unforeseen at the valuation date. Due to possible changes in market forces and circumstances, this valuation report can only be regarded as relevant as at the Valuation Date.
- This Report has been prepared for the purposes stated herein and should not be relied upon for any other purpose. Our Client is the only authorized user of this report and is restricted for the purpose indicated in the engagement letter. This restriction does not preclude the Client from providing a copy of the report to third-party advisors whose review would be consistent with the intended use. We do not take any responsibility for the unauthorized use of this report.
- While our work has involved an analysis of financial information and accounting records, our engagement does not include an audit in accordance with generally accepted auditing standards of the client existing business records. Accordingly, we express no audit opinion or any other form of assurance on this information.
- The valuation has been performed based on the provisional financials for 6 months period ended 30 September 2025 for respective SPVs provided by Management and audited financials from FY23 to FY25.
- For the purpose of Valuation, it has been assumed that the projections made by the Management from 1 October 2025 to 31 March 2026 would be actualized as at the Valuation Date, i.e. 31 March 2026.
- In no event shall we be liable for any loss, damages, cost or expenses arising in any way from fraudulent acts, misrepresentations or wilful default on part of the client or companies, their directors, employees or agents.
- The Client and its management/representatives warranted to us that the information they supplied was complete, accurate and true and correct to the best of their knowledge. We have relied upon the representations of the clients, their management and other third parties, if any, concerning the financial data, operational data and other information, except as specifically stated to the contrary in the report. We shall not be liable for any loss, damages, cost or expenses arising from fraudulent acts, misrepresentations, or wilful default on part of the companies, their directors, employee or agents.
- EY is not aware of any contingency, commitment or material issue which could materially affect the SPVs' economic environment and future performance and therefore, the Fair Value of the SPVs.
- We do not provide assurance on the achievability of the results forecast by the management as events and circumstances do not occur as expected; differences between actual and expected results may be material. We express no opinion as to how closely the actual results will correspond to those projected/forecast as the achievement of the forecast results is dependent on actions, plans and assumptions of management.

Statement of limiting conditions

- The Report assumes that the SPVs comply fully with relevant laws and regulations applicable in its area of operations and usage unless otherwise stated, and that the SPVs will be managed in a competent and responsible manner. Further, unless as specifically stated to the contrary, this report has given no consideration to matters of a legal nature, including issues of legal title and compliance with local laws, and litigations and other contingent liabilities that are not recorded/reflected in the balance sheet provided to us.
- The valuation analysis and result are governed by concept of materiality.
- It has been assumed that the required and relevant policies and practices have been adopted by the SPVs and would be continued in the future.
- The fee for the Report is not contingent upon the results reported.
- The figures in the tables in this report may not sum or cross cast, due to rounding differences
- We owe responsibility only to the client that has appointed us under the terms of the engagement letters. We will not be liable for any losses, claims, damages or liabilities arising out of the actions taken, omissions or advice given by any other person.
- The actual transacted value achieved may be higher or lower than our estimate of value (or value range of value) depending upon the circumstances of the transaction (for example the competitive bidding environment), the nature of the business (for example the purchaser's perception of potential synergies). The knowledge, negotiating ability and motivation of the buyers and sellers will also affect the transaction value achieved. Accordingly, our valuation conclusion will not necessarily be the value at which actual transaction will take place.
- We have also relied on data from external sources to conclude the valuation. These sources are believed to be reliable and therefore, we assume no liability for the truth or accuracy of any data, opinions or estimates furnished by others that have been used in this analysis. Where we have relied on data, opinions or estimates from external sources, reasonable care has been taken to ensure that such data has been correctly extracted from those sources and /or reproduced in its proper form and context.

3

Background

Devanahalli Tollway Private Limited (“DTPL”) 15

Western MP Infrastructure and Toll Roads Private Ltd (“WMTPL”) 19

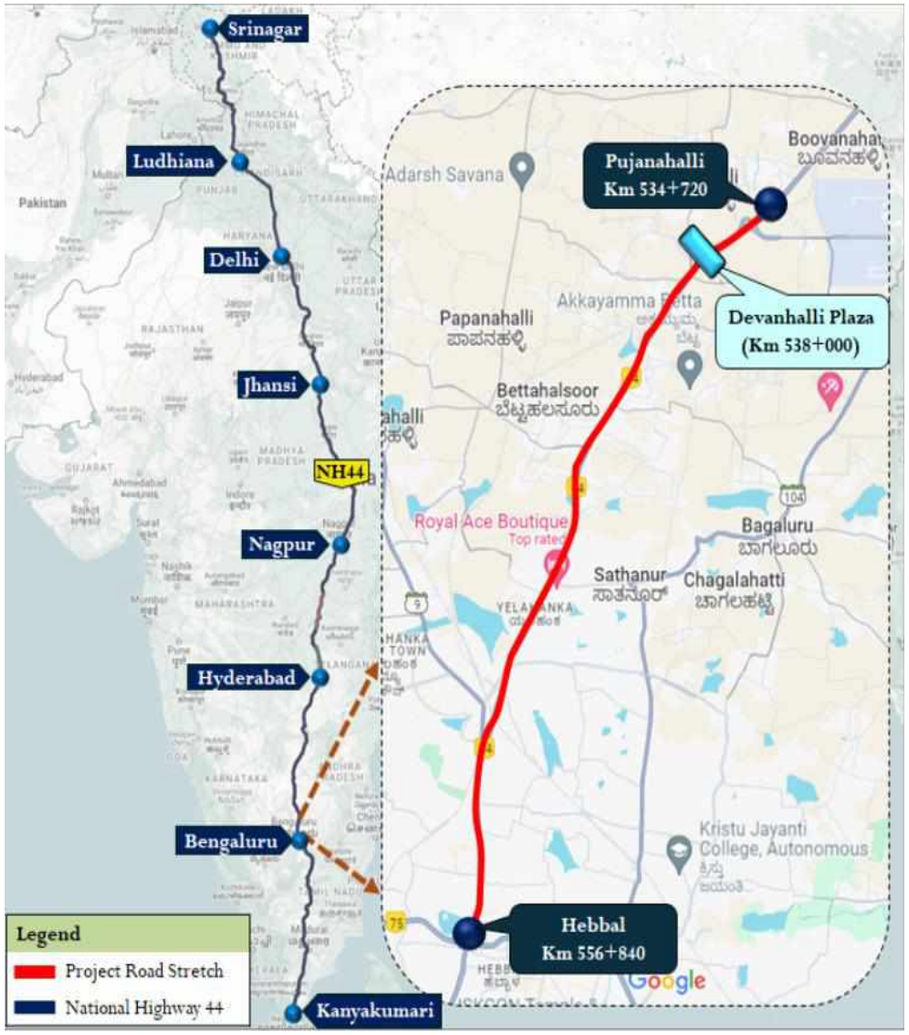
Baharampore Farakka Highway Limited (“BFHL”) 23

Devanahalli Tollway Private Limited ("DTPL")

Business Overview

Devanahalli Tollway Private Limited ("DTPL") was incorporated under the provisions of the Companies Act, 1956 in India. The SPV has entered into a Concession Agreement with the National Highways Authority of India (NHAI) for the development, operation, and maintenance of a 22.12 km, six-lane stretch of NH44 from Devanahalli to Hebbal in the state of Karnataka **under the Build Operate and Transfer ("BOT"). NH-44 connects several states from north to south such as Jammu & Kashmir, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Madhya Pradesh, Maharashtra, Telangana, Andhra Pradesh, Karnataka and Tamil Nadu.**

Particulars	Details
State	Karnataka
Concessioning authority	NHAI
Highway and lane configuration	NH44 six lane
Project type	BOT
Length (km)	22.12 Km
Toll Plazas	Devanahalli Plaza
Appointed Date	25th April 2011
Commencement of Operations	1st April 2014
Concession period (operation period)	20 years
Concession end (original)	24th April 2031
Concession end (Including extensions)	16th Jan 2032
Remaining Concession Life	6 years



Source: Management

Devanahalli Tollway Private Limited ("DTPL")

Financial Information of DTPL– Balance Sheet

Currency: INR mn Audited/Unaudited	Mar-23 Audited	Mar-24 Audited	Mar-25 Audited	Sep-25 Provisional
Net block of fixed assets (NFA)	**4,583**	**4,019**	**3,477**	**3,222**
Investments	**1,074**	**1**	**72**	**3,022**
Current assets				
Inventories	-	-	-	11
Trade receivables	22	22	13	78
Cash and bank balances	1,130	1,582	1,882	1,903
Other financial assets	9	2,009	2,158	0
Other current assets	172	417	646	811
	1,332	**4,030**	**4,699**	**2,803**
Current liabilities and provisions				
Trade payables	14	41	12	102
Provisions	118	45	35	87
Other current liabilities	57	52	69	4
	189	**138**	**116**	**193**
Net current assets (NCA)	**1,144**	**3,892**	**4,583**	**2,610**
Provision for MMR	180	245	310	342
Loan funds				
Borrowings	4,765	4,205	3,538	3,937
Promoter NCD	1,184	1,052	897	-
	5,950	**5,258**	**4,435**	**3,937**
Net worth	**672**	**2,410**	**3,386**	**4,574**
Represented by				
Equity	43	43	43	43
Other equity	629	2,367	3,343	4,531
Total	**672**	**2,410**	**3,386**	**4,574**

Source: Management

Financial Information DTPL– Profit and Loss Statement

Currency: INR Mn Audited/Unaudited Number of months	Mar-23 Audited	Mar-24 Audited 12	Mar-25 Audited 12	Sep-25 Provisional 6	Mar-26 Projected 12
Net revenue					
Revenue from toll collections	2,371	3,011	3,238	1,747	3,592
Net revenue	**2,371**	**3,011**	**3,238**	**1,747**	**3,592**
Employee benefit expenses	(23)	(22)	(31)	(13)	-
Toll operation and maintainence expenses	(382)	(287)	(236)	(151)	(389)
Routine Maintenance	-	-	-	-	(42)
One time expense	-	-	(603)	-	(547)
Other Expenses	(110)	(106)	(98)	(53)	-
Total expenses	**(515)**	**(415)**	**(967)**	**(218)**	**(977)**
Pre-MMR Operating EBITDA	1,856	2,595	2,271	1,529	2,614
Provision for major maintenance	-	-	-	-	(125)
Operating EBITDA	**1,856**	**2,595**	**2,271**	**1,529**	**2,489**
Depreciation and amortisation	(576)	(574)	(544)	(257)	
EBIT	**1,281**	**2,021**	**1,726**	**1,273**	
Finance costs	(562)	(450)	(406)	(179)	
PBT	**719**	**1,571**	**1,321**	**1,093**	
Other income	132	230	338	142	
Tax	(14)	(63)	(82)	(48)	
PAT	**837**	**1,738**	**1,576**	**1,187**	

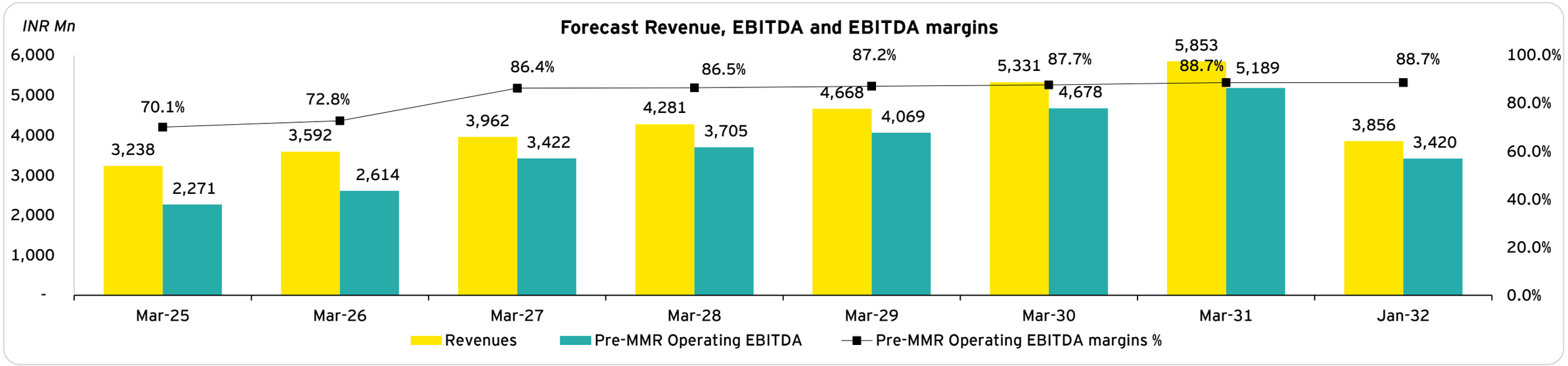
Source: Management

Note:

One-time expense during FY25 pertain to settlement with NHAI and change of scope expense

One time expense during FY26 pertain to initial rectification works and related expenses.

Devanahalli Tollway Private Limited ("DTPL")



Source: Management

Prospective Financial Information – Profit and Loss Statement

- The Management forecasts revenue over forecast period on account of
  - **Growth in traffic volume:** Traffic volume in the forecast period is projected basis independent traffic studies received by the Management from independent traffic consultant ("Crisil").
  - **Toll rates:** Based on the Concession Agreement ("CA"), the year-on-year growth in the toll rates for the projected period is considered as annual base increase 3% + 40% increase in WPI derived from the actual WPI growth as of 31 December of each preceding year (Refer Appendix-4 for applicable WPI rates).
  - **Concession Period:** DTPL has received NHAI approval for extension in concession period by 267 days on account of COVID-19 pandemic and revenue leakages due to toll inefficiencies. Hence, the revised concession period has been considered as 16 January 2032.

    Further, the average traffic volumes are estimated to be higher than the target traffic volumes during the period FY26 – FY28, which may lead to ~295 days reduction in the Concession Period. As per the Concession Agreement ("CA"), DTPL may elect to either reduce the concession period or pay an additional premium of 25% of the Realisable Fee (i.e. toll revenue) for the period of reduction in concession period, in lieu of the reduction in the concession period. The Management has represented to us that DTPL shall elect for payment of additional premium, in lieu of the reduction in the concession period. DTPL has made estimates based on contracts and third-party traffic studies.

Devanahalli Tollway Private Limited ("DTPL")

- **Operation and Maintenance (O&M) expenses:** O&M expenses for FY26 have been projected by the Management at INR 389 Mn. The year-on-year growth has been considered at 1.4 times WPI growth estimates, with certain adjustments pertaining to Management's estimate of cost. WPI growth rates are estimated to be in the range of 4.1% to 5.1% during the projected period (Refer Appendix-4 for applicable WPI rates). Project management fees to Cube Highways and Transportation Assets Advisors Private Limited ("Project Manager" or "CHTAAPL") are estimated to be at 1.829% (i.e. 1.55% + 18% GST) of the toll/annuity revenues until FY30. Additional fees of 0.413% (i.e. 0.35% + 18% GST) of the toll/annuity revenues will be paid to Cube Highways Technologies Private Limited ("CHTPL") for expert service agreement. Further, Management has represented to us that the above mentioned expenses will be reduced to a combined number of 0.944% (i.e. 0.8% + 18% GST) of the toll/annuity revenues from FY31 onwards on incremental basis for Specified Assets (without changing it for existing portfolio). The agreement with CHTAAPL and CHTPL with regards to the above is yet to be executed.
- **Routine maintenance:** Routine Maintenance expenses for FY26 have been projected by the Management at INR 42 Mn. The year-on-year growth in routine maintenance costs has been considered to be based on WPI growth, with certain adjustments pertaining to the Management's estimate of the cost. The years during which major maintenance expenses are being incurred, these expenses are estimated to be at 50% of the normalized level.

Western MP Infrastructure and Toll Roads Private Ltd ("WMTPL")

Business Overview

Western MP Infrastructure and Tolls Roads Private Ltd ("WMTPL") was incorporated under the provisions of the Companies Act, 1956 in India. The Asset is 124.15 Km four-lane road section of SH31 connecting districts of Ratlam and Dhar in Madhya Pradesh, linking traffic commuting on NH48 (formerly NH8) from the south of Chittorgarh in Rajasthan to NH52 (formerly NH3) towards west of Indore in Madhya Pradesh, which is major commercial centre of the state. Industries near asset include Cement clusters, textiles, wheat and automobiles.

Particulars	Details
State	Madhya Pradesh
Concessioning authority	Madhya Pradesh Road Development Corporation (MPRDC)
Highway and lane configuration	SH21 four lane
Project type	BOT
Length (km)	124.15 Km
Toll Plazas	TP1 - Chokala TP 2 – Chikliya
Appointed date	25th Feb 2008
Commencement of Operations	25 November 2009
Concession period (operation period)	25 year
Concession end (original)	24th Feb 2033
Concession end (Including extensions)	27th April 2038
Remaining Concession Life	13 years

Source: Management

Western MP Infrastructure and Toll Roads Private Ltd ("WMTPL")

Financial Information of WMTPL – Balance Sheet

Currency: INR mn	Mar-23	Mar-24	Mar-25	Sep-25
Audited/Unaudited	Audited	Audited	Audited	Provisional
Net block of fixed assets (NFA)	**7260**	**7,047**	**6,782**	**6,657**
Investments	**1**	**1**	**23**	**349**
Current assets				
Inventories	-	-	7	4
Trade receivables	-	9	8	12
Cash and bank balances	185	158	169	12
Other financial assets	5	35	41	67
Other current assets	76	13	19	76
	266	**216**	**244**	**171**
Current liabilities and provisions				
Trade payables	264	73	216	192
Provisions	7	0	1	2
Other current liabilities	3	243	300	342
	274	**316**	**517**	**535**
Net current assets (NCA)	**(8)**	**(100)**	**(273)**	**(364)**
Provision for MMR	703	991	491	136
Deferred tax asset	324	107	55	-
Loan funds				
Borrowings	5467	4,965	4,910	4,834
	5467	**4,965**	**4,910**	**4,834**
Deferred tax liability	-	-	-	127
Net worth	**1407**	**1,098**	**1,187**	**1,546**
Represented by	**-**	-	-	-
Equity	291	291	291	291
Other equity	1116	807	895	1,255
Total	**1407**	**1,098**	**1,187**	**1,546**

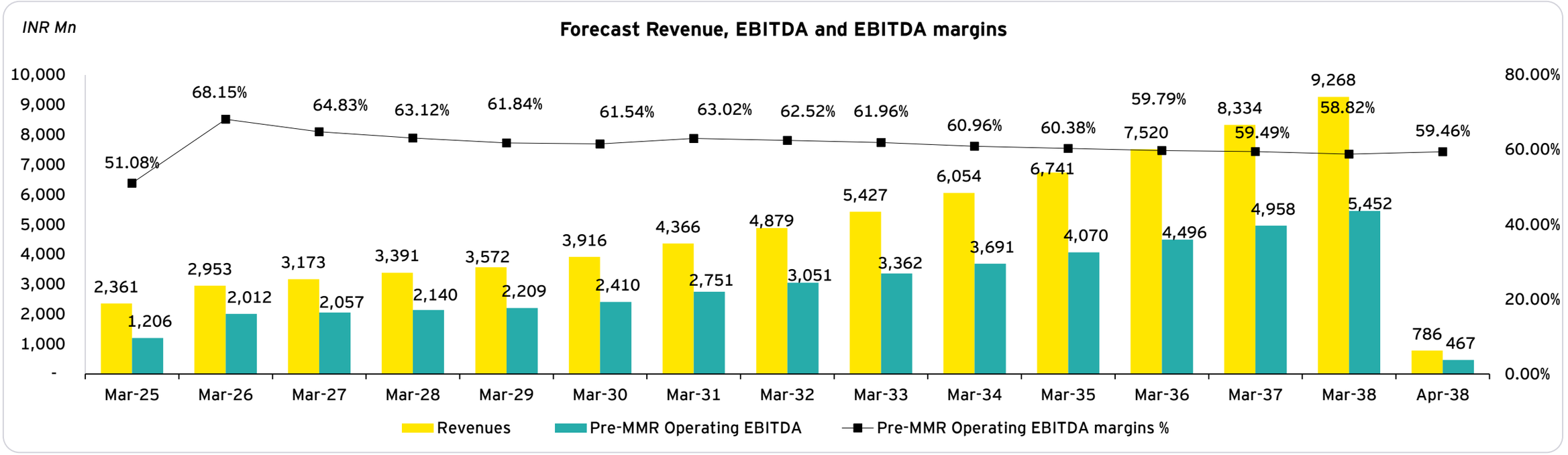
Source: Management

Financial Information of WMTPL– Profit and Loss Statement

Currency: INR Mn	Mar-23	Mar-24	Mar-25	Sep-25	Mar-26
Audited/Unaudited	Audited	Audited	Audited	Provisional	Projected
Number of months	**12**	**12**	**12**	**6**	**12**
Net revenue					
Revenue from toll collections	1,778	1,907	2,361	1,530	2,953
Net revenue	**1,778**	**1,907**	**2,361**	**1,530**	**2,953**
Employee benefit expenses	(30)	(21)	(18)	(11)	-
Toll operation and maintainence expenses	(820)	(451)	(671)	(533)	(273)
Routine Maintenance	-	-	-	-	(55)
One time expense		(76)	-	-	-
Additional concessioner fee		(436)	(466)	-	(613)
Other Expenses	(76)	(168)	-	(50)	-
Total expenses	**(925)**	**(1,151)**	**(1,156)**	**(594)**	**(941)**
Pre-MMR Operating EBITDA	**853**	**755**	**1,206**	**936**	**2,012**
Provision for major maintenance	-	-	-	-	(610)
Operating EBITDA	**853**	**755**	**1,206**	**936**	**1,402**
Depreciation and amortisation	(148)	(222)	(273)	(126)	
EBIT	**705**	**533**	**933**	**809**	
Finance costs	(650)	(656)	(687)	(298)	
PBT	**55**	**(123)**	**246**	**512**	
Other income	22	32	48	30	
Tax	14	(217)	(67)	(182)	
PAT	**91**	**(308)**	**227**	**360**	

Source: Management

Western MP Infrastructure and Toll Roads Private Ltd ("WMTPL")



Prospective Financial Information – Profit and Loss Statement

- The Management forecasts revenue over forecast period on account of
  - **Growth in traffic volume:** Traffic volume in the forecast period is projected basis independent traffic studies received by the Management from Crisil.

    FY26 is expected to witness higher traffic on account of partial completion of Delhi Mumbai Expressway ("DME") in December 2024. This led to a permanent increase of traffic volumes moving from Delhi to Indore and temporary traffic increase from Delhi to Mumbai. Further, the construction activities around the flyover between Indore-Deewas section led to a temporary increase in traffic volumes during Q2FY26.

    While the traffic moving from Delhi to Indore is expected to continue via WMTPL, the traffic between Delhi to Mumbai is expected to be diverted upon completion of the DME route and short-term increase in traffic witnessed due to construction activities around the flyover between Indore-Deewas section is also expected to be diverted upon the construction completion of the said flyover. Hence, there is minimal traffic volume growth expected from FY27-FY30.

Western MP Infrastructure and Toll Roads Private Ltd ("WMTPL")

- **Toll rates:** Based on the Concession Agreement ("CA"), the year-on-year growth in the toll rates for the projected period is considered as 7% per annum.
- **Concession Period:** WMTPL has received the approval from MPRDC for extension in concession period by 1,888 days on account of COVID-19 pandemic and variation in traffic growth. Hence, the concession end date of 27 April 2038 has been considered for the purpose of valuation

- **Operation and Maintenance (O&M) expenses:** Base OPEX for FY26 has been estimated at INR 0.46 Mn per lane Km. The year-on-year growth has been considered at 1.4 times WPI growth estimates. WPI growth rates are estimated to be in the range of 4.1% to 5.1% during the projected period (Refer Appendix-4 for applicable WPI rates). Project management fees to Cube Highways and Transportation Assets Advisors Private Limited ("Project Manager" or "CHTAAPL") are estimated to be at 1.829% (i.e. 1.55% + 18% GST) of the toll/annuity revenues until FY30. Additional fees of 0.413% (i.e. 0.35% + 18% GST) of the toll/annuity revenues will be paid to Cube Highways Technologies Private Limited ("CHTPL") for expert service agreement. Further, Management has represented to us that the above mentioned expenses will be reduced to a combined number of 0.944% (i.e. 0.8% + 18% GST) of the toll/annuity revenues from FY31 onwards on incremental basis for Specified Assets (without changing it for existing portfolio). The agreement with CHTAAPL and CHTPL with regards to the above is yet to be executed.
- **Routine maintenance:** Routine maintenance expenses for FY26 have been projected by the Management at INR 55 Mn. The year-on-year growth in routine maintenance costs has been considered to be based on WPI growth, with certain adjustments pertaining to the Management's estimate of the cost. The years during which major maintenance expenses are being incurred, these expenses are estimated to be at 50% of the normalized level.
- **Additional Concessionaire Fee:** Based upon the Concession Agreement, WMPTL is required to pay additional premium of 4.762% (+1% each year from 2010) of the toll revenues to MPRDC. Additional premium payable as at FY26 stood at 20.762% of total realisable fee. The total realisable fee is defined as the higher of a) actual PCUs; b) 2% greater than the PCUs reckoned hereunder in the immediately preceding year. While there is an ongoing dispute between MPRDC and WMPTL in relation to the computation of premium, for the purposes of this valuation, it has been assumed that no additional premium is payable for the period prior to the Valuation Date.

Baharampore Farakka Highway Limited ("BFHL")

Business Overview

Baharampore Farakka Highway Limited ("BFHL") was incorporated under the provisions of the Companies Act, 1956 in India. The Asset is a 100.6 Km four-lane road section of NH12 runs through Dalkhola (Uttar Dinajpur) in the north of the state of West Bengal to Bakkhali (South 24 Parganas) in the south of the state, connecting all the important centres of West Bengal such as Kolkata with Siliguri and Darjeeling which are major tourist and trade centres along with key towns of Berhampore, Dhuliyan, Malda and Farakka.

Particulars	Details
State	West Bengal
Concessioning authority	NHAI
Highway and lane configuration	NH-12 four lane
Project type	BOT
Length (km)	100.6 Km
Toll Plazas	TP1 - Gopgram (Shibpur) TP 2 - Kishorpur (Chandermore)
Appointed date	3rd Feb 2011
Commencement of Operations	14th May 2014
Concession Period (Operation period)	25 years + 5 years of extension
Concession end (original)	2nd Feb 2036
Concession end (Including extensions)	2nd Feb 2041
Remaining Concession Life	15 years

Source: Management

Baharampore Farakka Highway Limited ("BFHL")

Financial Information of BFHL – Balance Sheet

Currency: INR mn	Mar-23	Mar-24	Mar-25	Sep-25
Audited/Unaudited	Audited	Audited	Audited	Provisional
Net block of fixed assets (NFA)	**10,521**	**10,703**	**10,093**	**9,771**
Investments	**1**	**1**	**768**	**582**
Current assets				
Inventories	-	12	16	26
Trade receivables	1	15	4	5
Cash and bank balances	715	1,228	637	811
Other financial assets	75	0	1	152
Other current assets	236	378	29	69
	1,027	**1,633**	**686**	**1,062**
Current liabilities and provisions				
Trade payables	815	386	387	240
Provisions	1,835	1	2	3
Other current liabilities	987	1,047	1,272	1,213
	3,637	**1,435**	**1,661**	**1,455**
Net current assets (NCA)	**(2,610)**	**199**	**(975)**	**(393)**
Provision for MMR	-	1,428	378	126
Current Tax liability	-	-	-	45
Loan funds				
Borrowings	6,358	6,106	6,809	6,677
NCD's	-	2,289	2,289	2,289
	6,358	**8,395**	**9,098**	**8,966**
Net worth	**1,555**	**1,080**	**411**	**823**
Represented by				
Equity	2,173	2,173	2,173	2,173
Other equity	(617)	(1,092)	(1,762)	(1,350)
Total	**1,555**	**1,080**	**411**	**823**

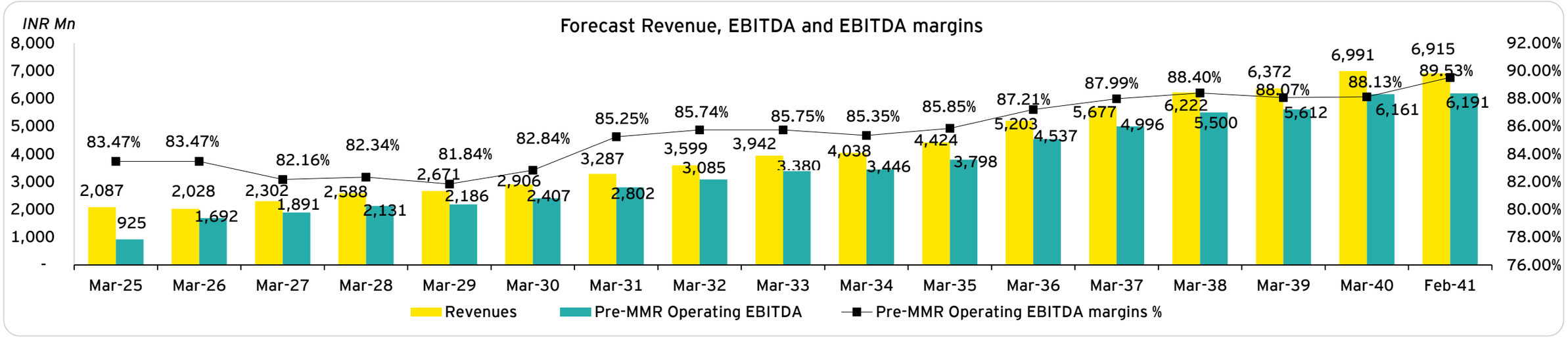
Source: Management

Financial Information of BFHL – Profit and Loss Statement

Currency: INR Mn	Mar-23	Mar-24	Mar-25	Sep-25	Mar-26
Audited/Unaudited	Audited	Audited	Audited	Provisional	Projected
Number of months	12	12	12	6	12
Revenue from toll collections	4,193	2,414	2,087	1,009	2,028
Other Operating Income	-	32	-	-	-
Net revenue	**4,193**	**2,446**	**2,087**	**1,009**	**2,028**
Employee benefit expenses	-	(18)	(30)	(14)	-
Cost of Construction	(2,846)	(854)	(99)	-	-
Toll operation and maintainence expenses	(710)	(392)	(916)	(131)	(293)
Routine maintenance	(254)	-	-	-	(42)
Other Expenses	(165)	(219)	(117)	(37)	-
Total expenses	**(3,976)**	**(1,484)**	**(1,162)**	**(182)**	**(335)**
Pre-MMR Operating EBITDA	**217**	**962**	**925**	**826**	**1,692**
Provision for major maintenance	-	-	-	-	(404)
Operating EBITDA	**217**	**962**	**925**	**826**	**1,289**
Depreciation and amortisation	(534)	(641)	(634)	(320)	
EBIT	**(317)**	**321**	**291**	**507**	
Finance costs	(756)	(887)	(856)	(302)	
PBT	**(1,073)**	**(566)**	**(565)**	**204**	
Other income	80	90	74	51	
Tax	(2)	2	(21)	-	
PAT	**(995)**	**(474)**	**(513)**	**256**	

Source: Management

Baharampore Farakka Highway Limited ("BFHL")



Prospective Financial Information – Profit and Loss Statement

- The Management forecasts revenue over forecast period on account of
  - **Overloading revenue:** BFHL has entered into an Amended and Restated overloading agreement with HCC Concessions Limited ("HCon") dated 20 March 2023, under which BFHL agrees to passthrough to HCon, all amounts that will be collected by BFHL on account of Overloading revenue over the term of the concession agreement. BFHL being the concessionaire, will be required to incur higher operation, routine and maintenance expenses because of overloaded vehicles. Accordingly, as per the agreement, BFHL will be entitled to charge to HCon, amount equivalent to 20% of Overloading revenue collected by BFHL throughout the concession period.
  - **Growth in traffic volume:** Traffic volume in the forecast period is projected basis independent traffic studies received by the Management from Crisil.

    Stone aggregates and sand are the primary commodities moved along the project section. Implementation of Quarrying permit and Sand mining Policy in 2021 in West Bengal and the National Green Tribunal ban in February 2024 led to mine closures and traffic decline, FY25 also witnessed a downward trend due to network improvements and restrictions on sand and stone movement. However, recovery is expected once the ban is lifted. According to Crisil, given that the commodity sector is inherently high-risk and subject to uncertainties, which may result in similar fluctuations in the future hence the impact is considered in cyclic trend over the projected period and has been considered from FY27 onwards.

    Alternate expressway projects will have mixed impacts on the project section. On the positive side, NH116A expansion and Barrackpore–Kalyani Expressway will improve regional connectivity and support short-distance traffic in the near term. However, the Kharagpur–Morgram Greenfield Expressway will negatively impact the corridor by diverting long-distance traffic, with diversion expected to start by FY30 and reach full impact by FY31.

Baharampore Farakka Highway Limited ("BFHL")

- **Toll rates:** Based on the Concession Agreement ("CA"), the year-on-year growth in the toll rates for the projected period is considered as annual base increase 3% + 40% increase in WPI derived from the actual WPI growth as of 31 December of each preceding year (Refer Appendix-4 for applicable WPI rates).
- **Concession Period:** The Concession Agreement allows for changes in the concession period based on actual traffic compared to target benchmarks, with specific multipliers for adjustments. The Company has made estimates based on contracts and third-party traffic studies. Based on independent legal and accounting opinions obtained by BFHL, it believes that the estimates (pertaining to the extension of concession period by 5 years) used are reasonable, evidence-based, and compliant with applicable accounting standards. We have relied on the same for our valuation exercise.

- **Operation and Maintenance (O&M) expenses:** Base OPEX for FY26 has been estimated at INR 0.73 Mn per lane Km. The year-on-year growth has been considered at 1.4 times WPI growth estimates. WPI growth rates are estimated to be in the range of 4.1% to 5.1% during the projected period (Refer Appendix-4 for applicable WPI rates). Project management fees to Cube Highways and Transportation Assets Advisors Private Limited ("Project Manager" or "CHTAAPL") are estimated to be at 1.829% (i.e. 1.55% + 18% GST) of the toll/annuity revenues until FY30. Additional fees of 0.413% (i.e. 0.35% + 18% GST) of the toll/annuity revenues will be paid to Cube Highways Technologies Private Limited ("CHTPL") for expert service agreement. Further, Management has represented to us that the above mentioned expenses will be reduced to a combined number of 0.944% (i.e. 0.8% + 18% GST) of the toll/annuity revenues from FY31 onwards on incremental basis for Specified Assets (without changing it for existing portfolio). The agreement with CHTAAPL and CHTPL with regards to the above is yet to be executed.
- **Routine maintenance:** Routine maintenance expenses for FY26 have been projected by the Management at INR 42 Mn. The year-on-year growth in routine maintenance costs has been considered to be based on WPI growth, with certain adjustments pertaining to the Management's estimate of the cost. The years during which major maintenance expenses are being incurred, these expenses are estimated to be at 50% of the normalized level.

4

Valuation analysis

Valuation methods used/ not used 28

Discounted Cashflow Method – Other Key Assumptions 29

Discounted cash flows method 30

Valuation methods used/ not used

- To determine the Fair Value of enterprise, three traditional approaches can be considered namely, Income, Market and Cost Approaches.
- For this valuation, we have considered the International Valuation Standards ("IVS") and have adopted a definition of Market Value as given in IVS 102, "Market Value is the estimated amount for which an asset or liability should exchange on the Valuation Date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion". The Fair Value referred elsewhere in the Report is same as Market Value as defined above
- The following methods have been considered for determination of Fair Value of the SPVs as at the Valuation Date:

Methodology	Weights	Remarks
Income Approach – Discounted Cash Flows Method	100.0%	► DCF method is considered to be one of the most scientific methods of valuation. The SPVs have a definite concession period and estimable cash flows for the entire length of the concession. We have therefore relied on the DCF method, using the financial projections provided to us. ► The Management has not provided the balance sheet as at the Valuation Date, hence impact from the change / release in working capital has not been considered in the valuation exercise.
Market Approach – Comparable Companies' Multiple Method	-	► There are no listed companies that are comparable to the SPVs in terms of concession period, type or region. ► We did not find any transactions in comparable companies / businesses for which information is available in public domain. ► Accordingly, CCM / CTM methods have not been considered for the valuation analysis.
Market Approach – Comparable Transactions' Multiple Method	-	
Cost Approach – Net Asset Value Method	-	► Asset values are generally not a true indicator of the future distributable cash flow / the profit generating ability of a business. NAVs of the SPVs have been computed and presented for information only.

Discounted Cashflow Method – Other Key Assumptions

- **Major Maintenance Expenses (MMR / Periodic maintenance):** Periodic maintenance expenses are incurred to bring the road asset back to an earlier condition or to keep the road asset operating at its present condition. MMR expenditures have been estimated by the Management, based on Technical Due Diligence ("TDD") reports, shared by independent technical consultants appointed by the Trust and internal estimates by the Management over the Concession Period.
- **Depreciation and Amortization:** The total project cost has been capitalized in the books of the respective SPVs as an intangible asset. The said intangible assets have been amortized basis applicable depreciation method (SLM / WDV / Revenue Adjusted) over the respective period of concession. Since depreciation and amortization is a non-cash expenditure, it has been added back to arrive at the net cash flows.
- **Taxes:** Income taxes are estimated considering, as appropriate, brought forward losses, unabsorbed depreciation, MAT credit, tax depreciation/ amortisation policy proposed to be followed by the InvIT Assets and applicable corporate income tax rate.

Discounted cash flows method

Income based approach

- Free Cash Flow to Firm approach under DCF method has been considered to determine the enterprise value of the SPVs.
- The business plan covers explicit forecast period from 1 April 2026 till the end of the life of the concession period of the respective SPVs.

Discount Rate

- The application of the income approach requires the determination of an appropriate discount rate at which future cash flows are discounted to their present value as of valuation date.
- The derivation of discount rate, the Weighted Average Cost of Capital (WACC) is based on a group of guideline companies (peer group) which are operating in the same industry/sector as that of the Company. To calculate the discount rate, cost of equity, cost of debt and the capital structure must be determined based on market data of the group of market participants. For the estimation of the cost of equity, the capital asset pricing model ("CAPM") is applied.
- WACC is computed to be 9.97%, 10.16%, 10.00% for DTPL, WMTPL and BFHL respectively. Refer Appendix 2 for determination of WACC.

Mid-Year Discounting Convention

- EY DCF approach assumes that the cash flows occur evenly during each of the measurement period (and not at the end of the year); therefore the discounting rate is adjusted to value the cash flows at midpoint of the measurement period.

Calculation for WACC

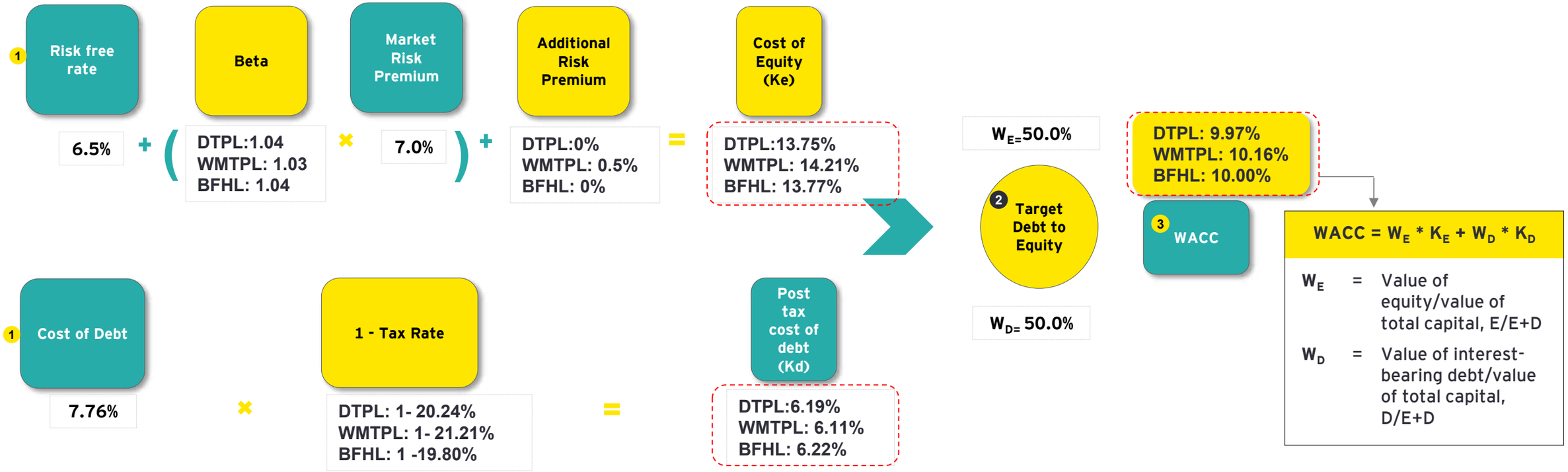
$$WACC = W_E * K_E + W_D * K_D$$

where:

W_E	=	Value of equity/value of total capital, E/E+D
K_E	=	Cost of equity
W_D	=	Value of interest-bearing debt/value of total capital, D/E+D
K_D	=	After-tax cost of interest-bearing debt

Discounted cash flows method

Determination of WACC



1 Refer Appendix 2 for determination of cost of equity and post-tax cost of debt

2 The debt equity ratio of 50:50 is considered for SPV assets basis the expected debt to capital structure of the SPVs.

3 Refer Appendix 2 for a detailed computation of WACC

Discounted cash flows method

Valuation of DTPL as per DCF Method

Currency: INR mn	Notes	Mar27	Mar28	Mar29	Mar30	Mar31	Jan32
Number of months		12	12	12	12	12	10
Net revenue		**3,962**	**4,281**	**4,668**	**5,331**	**5,853**	**3,856**
Operating expenses		(660)	(696)	(718)	(647)	(664)	(437)
EBITDA		**3,302**	**3,585**	**3,949**	**4,684**	**5,189**	**3,420**
Depreciation and amortisation		(469)	(507)	(552)	(631)	(693)	(456)
EBIT		**2,833**	**3,078**	**3,397**	**4,053**	**4,496**	**2,963**
Tax expense		(495)	(538)	(593)	(708)	(1,172)	(754)
Debt free net income		**2,338**	**2,540**	**2,803**	**3,345**	**3,324**	**2,209**
Add: Depreciation and amortisation		469	507	552	631	693	456
Add: Provision for major maintenance		125	125	125	-	-	-
(Increase)/ Decrease in net working capital		-	-	-	-	-	-
Less: Major maintenance expenses		-	-	(750)	-	-	-
Debt free cash flow		**2,932**	**3,172**	**2,730**	**3,976**	**4,017**	**2,666**
Discount rate (%)		9.97	9.97	9.97	9.97	9.97	9.97
Present value factor- Mid year discounting		0.95	0.87	0.79	0.72	0.65	0.60
Present value debt free cash flow		**2,796**	**2,750**	**2,153**	**2,851**	**2,619**	**1,596**
Present value for explicit period	14,765						
Enterprise value	**14,765**						

Enterprise Value of the Company as per DCF method is estimated to be INR 14,765 Mn

Discounted cash flows method

Valuation OF WMTPL as per DCF

Currency: INR mn	Notes	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Apr38
Number of months		12	12	12	12	12	12	12	12	12	12	12	12	1
Net revenue		**3,173**	**3,391**	**3,572**	**3,916**	**4,366**	**4,879**	**5,427**	**6,054**	**6,741**	**7,520**	**8,334**	**9,268**	**786**
Operating expenses		(1,473)	(1,607)	(1,720)	(1,863)	(1,975)	(2,190)	(2,432)	(2,731)	(3,038)	(3,391)	(3,743)	(4,184)	(319)
EBITDA		**1,700**	**1,783**	**1,852**	**2,054**	**2,390**	**2,690**	**2,995**	**3,323**	**3,703**	**4,129**	**4,591**	**5,084**	**467**
Depreciation and amortisation		(305)	(326)	(344)	(377)	(420)	(470)	(522)	(583)	(649)	(724)	(802)	(892)	(91)
EBIT		**1,394**	**1,457**	**1,508**	**1,677**	**1,970**	**2,220**	**2,473**	**2,740**	**3,054**	**3,405**	**3,788**	**4,192**	**376**
Tax expense		-	(180)	(516)	(567)	(384)	(451)	(806)	(888)	(984)	(1,091)	(935)	(1,050)	(101)
Debt free net income		**1,394**	**1,277**	**992**	**1,109**	**1,586**	**1,770**	**1,667**	**1,852**	**2,070**	**2,314**	**2,854**	**3,142**	**275**
Add: Depreciation and amortisation		305	326	344	377	420	470	522	583	649	724	802	892	91
Add: Provision for major maintenance		361	361	361	361	361	361	367	367	367	367	367	367	-
(Increase)/ Decrease in net working capital		-	-	-	-	-	-	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	-	(1,066)	(1,100)	-	-	-	-	(1,084)	(1,121)	-
Debt free cash flow		**2,061**	**1,964**	**1,696**	**1,847**	**1,302**	**1,500**	**2,557**	**2,802**	**3,086**	**3,405**	**2,940**	**3,281**	**366**
Discount rate (%)		10.16	10.16	10.16	10.16	10.16	10.16	10.16	10.16	10.16	10.16	10.16	10.16	10.16
Present value factor- Mid year discounting		0.95	0.86	0.79	0.71	0.65	0.59	0.53	0.48	0.44	0.40	0.36	0.33	0.31
Present value debt free cash flow		**1,963**	**1,699**	**1,332**	**1,317**	**842**	**881**	**1,363**	**1,356**	**1,356**	**1,358**	**1,064**	**1,078**	**114**
Present value for explicit period	15,722													
Enterprise value	**15,722**													

Enterprise Value of the Company as per DCF method is estimated to be INR 15,722 Mn

Discounted cash flows method

Valuation OF BFHL as per DCF

Currency: INR mn	Notes	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Feb41
Number of months		12	12	12	12	12	12	12	12	12	12	12	12	12	12	10
Net revenue		**2,302**	**2,588**	**2,671**	**2,906**	**3,287**	**3,599**	**3,942**	**4,038**	**4,424**	**5,203**	**5,677**	**6,222**	**6,372**	**6,991**	**6,915**
Operating expenses		(849)	(895)	(923)	(936)	(926)	(848)	(897)	(927)	(961)	(1,001)	(1,017)	(1,057)	(1,331)	(1,401)	(1,295)
EBITDA		**1,453**	**1,693**	**1,748**	**1,969**	**2,361**	**2,750**	**3,044**	**3,111**	**3,463**	**4,202**	**4,660**	**5,165**	**5,041**	**5,590**	**5,619**
Depreciation and amortisation		(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(982)
EBIT		**827**	**1,067**	**1,122**	**1,343**	**1,735**	**2,124**	**2,418**	**2,485**	**2,837**	**3,576**	**4,034**	**4,539**	**4,415**	**4,964**	**4,637**
Tax expense		(90)	(186)	(196)	(235)	(303)	(371)	(423)	(434)	(496)	(625)	(705)	(924)	(1,252)	(1,391)	(993)
Debt free net income		**736**	**881**	**926**	**1,109**	**1,432**	**1,753**	**1,996**	**2,051**	**2,341**	**2,951**	**3,330**	**3,615**	**3,162**	**3,573**	**3,644**
Add: Depreciation and amortisation		626	626	626	626	626	626	626	626	626	626	626	626	626	626	982
Add: Provision for major maintenance		441	441	441	441	441	335	335	335	335	335	335	335	571	571	571
(Increase)/ Decrease in net working capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(1,085)	(1,120)	-	-	-	-	-	(1,154)	(1,193)	-	-	(1,714)
Debt free cash flow		**1,804**	**1,948**	**1,993**	**1,090**	**1,379**	**2,714**	**2,957**	**3,012**	**3,302**	**3,913**	**3,137**	**3,383**	**4,360**	**4,770**	**3,484**
Discount rate (%)		10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Present value factor- Mid year discounting		0.95	0.87	0.79	0.72	0.65	0.59	0.54	0.49	0.44	0.40	0.37	0.33	0.30	0.28	0.25
Present value debt free cash flow		**1,720**	**1,688**	**1,571**	**781**	**898**	**1,607**	**1,592**	**1,474**	**1,469**	**1,583**	**1,154**	**1,131**	**1,325**	**1,318**	**882**
Present value for explicit period	20,193															
Enterprise value	**20,193**															

Enterprise Value of the Company as per DCF method is estimated to be INR 20,193 Mn

5

Appendix

Appendix 1: Prospective Financial Information 36

Appendix 2: Determination of WACC 39

Appendix 3: Major Maintenance expense 42

Appendix 4: Applicable WPI rates 43

Appendix 1: Prospective Financial Information

► The prospective income statement of DTPL as provided by the Management are summarised in the table below:

Currency: INR mn	Mar27	Mar28	Mar29	Mar30	Mar31	Jan32
Audited/Unaudited/Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Numbr of months	12	12	12	12	12	10
Net revenue						
Revenue from toll collection	3,962	4,281	4,668	5,331	5,853	3,856
Net revenue	**3,962**	**4,281**	**4,668**	**5,331**	**5,853**	**3,856**
Operating expenses	(479)	(512)	(563)	(599)	(597)	(381)
Routine Maintenance	(56)	(59)	(31)	(48)	(67)	(55)
Pre-MMR Operating EBITDA	**3,427**	**3,710**	**4,074**	**4,684**	**5,189**	**3,420**
Provision for major maintenance	(125)	(125)	(125)	-	-	-
Operating EBITDA	**3,302**	**3,585**	**3,949**	**4,684**	**5,189**	**3,420**
Depreciation and amortisation	(469)	(507)	(552)	(631)	(693)	(456)
EBIT	**2,833**	**3,078**	**3,397**	**4,053**	**4,496**	**2,963**

Source: Management

Appendix 1: Prospective Financial Information

► The prospective income statement of WMTPL as provided by the Management are summarised in the table below:

Currency: INR mn	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Apr38
Audited/Unaudited/Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Numbr of months	12	12	12	12	12	12	12	12	12	12	12	12	1
Net revenue													
Revenue from toll collection	3,173	3,391	3,572	3,916	4,366	4,879	5,427	6,054	6,741	7,520	8,334	9,268	786
Net revenue	**3,173**	**3,391**	**3,572**	**3,916**	**4,366**	**4,879**	**5,427**	**6,054**	**6,741**	**7,520**	**8,334**	**9,268**	**786**
Operating expenses	(363)	(389)	(413)	(444)	(421)	(451)	(483)	(519)	(556)	(598)	(641)	(689)	(46)
Premium payable to MPRDC	(692)	(777)	(861)	(970)	(1,125)	(1,306)	(1,507)	(1,741)	(2,006)	(2,313)	(2,647)	(3,037)	(265)
Toll operation and maintainence expenses	(58)	(81)	(85)	(88)	(69)	(72)	(75)	(104)	(108)	(112)	(88)	(91)	(7)
Pre-MMR Operating EBITDA	**2,061**	**2,144**	**2,213**	**2,415**	**2,751**	**3,051**	**3,362**	**3,691**	**4,070**	**4,496**	**4,958**	**5,452**	**467**
Provision for major maintenance	(361)	(361)	(361)	(361)	(361)	(361)	(367)	(367)	(367)	(367)	(367)	(367)	-
Operating EBITDA	**1,700**	**1,783**	**1,852**	**2,054**	**2,390**	**2,690**	**2,995**	**3,323**	**3,703**	**4,129**	**4,591**	**5,084**	**467**
Depreciation and amortisation	(305)	(326)	(344)	(377)	(420)	(470)	(522)	(583)	(649)	(724)	(802)	(892)	(91)
EBIT	**1,394**	**1,457**	**1,508**	**1,677**	**1,970**	**2,220**	**2,473**	**2,740**	**3,054**	**3,405**	**3,788**	**4,192**	**376**

Source: Management

Appendix 1: Prospective Financial Information

► The prospective income statement of BFHL as provided by the Management are summarised in the table below:

Currency: INR mn	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Feb41
Audited/Unaudited/Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Numbr of months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Net revenue															
Revenue from toll collection	2,302	2,588	2,671	2,906	3,287	3,599	3,942	4,038	4,424	5,203	5,677	6,222	6,372	6,991	6,915
Net revenue	**2,302**	**2,588**	**2,671**	**2,906**	**3,287**	**3,599**	**3,942**	**4,038**	**4,424**	**5,203**	**5,677**	**6,222**	**6,372**	**6,991**	**6,915**
Operating expenses	(364)	(393)	(418)	(445)	(433)	(459)	(486)	(513)	(544)	(580)	(615)	(652)	(688)	(730)	(658)
Cost of Construction	(44)	(61)	(64)	(50)	(52)	(54)	(76)	(79)	(82)	(85)	(67)	(69)	(72)	(100)	(66)
Pre-MMR Operating EBITDA	**1,894**	**2,134**	**2,189**	**2,410**	**2,802**	**3,085**	**3,380**	**3,446**	**3,798**	**4,537**	**4,996**	**5,500**	**5,612**	**6,161**	**6,191**
Provision for major maintenance	(441)	(441)	(441)	(441)	(441)	(335)	(335)	(335)	(335)	(335)	(335)	(335)	(571)	(571)	(571)
Operating EBITDA	**1,453**	**1,693**	**1,748**	**1,969**	**2,361**	**2,750**	**3,044**	**3,111**	**3,463**	**4,202**	**4,660**	**5,165**	**5,041**	**5,590**	**5,619**
Depreciation and amortisation	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(626)	(982)
EBIT	**827**	**1,067**	**1,122**	**1,343**	**1,735**	**2,124**	**2,418**	**2,485**	**2,837**	**3,576**	**4,034**	**4,539**	**4,415**	**4,964**	**4,637**

Source: Management

Appendix 2: Determination of WACC

► WACC Computation for DTPL are summarised in the table below:

Cost of equity

Particular	Notes	31-Mar-26
Risk-free rate (%)	a	6.50
Beta	b	1.04
Equity market risk premium (%	c	7.00
Additional risk premium (%)		-
Cost of equity capital (%)		**13.75**

Cost of debt

Particular	Notes	31-Mar-26
Debt borrowing rate (%)	d	7.76
Expected income tax rate (%)	e	20.24
After-tax cost of debt (%)		**6.19**

WACC

Particular	Weight	31-Mar-26
Cost of debt (%)	50.0	3.09
Cost of equity (%)	50.0	6.88
WACC		**9.97**

Currency: INR Mn	Equity Beta (f)	Market capitalisation	Net debt (g)	Enterprise value	Debt-equity ratio based on 3 year average	Effective tax rate (%)	Unlevered beta based on 3 year debt-equity	Relevered beta based on 3 year debt- equity ratio
IRB Infrastructure Developers Limited	1.9	265,721	26,614	292,336	36.9	25.17	1.47	2.65
PNC Infratech Limited	1.3	69,146	69,462	138,608	77.5	25.17	0.83	1.49
Dilip Buildcon Limited	1.6	110,657	72,347	183,004	115.9	25.17	0.88	1.58
IRB InvIT Fund	0.2	78,959	27,964	106,923	59.8	25.17	0.15	0.26
Ashoka Buildcon Limited	1.7	56,159	11,049	67,208	106.9	25.17	0.93	1.68
Sadbhav Infrastructure Project Limited	0.9	1,993	31,239	33,232	1,969.1	25.17	0.06	0.11
KNR Constructions Limited	1.2	48,160	15,661	63,821	13.0	25.17	1.11	1.99
Powergrid Infrastructure Investment Trust	0.2	86,716	8,936	95,653	7.3	25.17	0.20	0.37
Indus Infra Trust	0.1	52,265	13,207	65,472	15.6	25.17	0.08	0.15
Indigrid Infrastructure Trust	0.1	145,795	174,867	320,661	152.7	25.17	0.05	0.08
Average	**0.9**				**255.5**		**0.58**	**1.04**

Notes

a. Based on the prevailing YTMs of Government Bonds with 10 years residual maturity (rounded) as at the Valuation Date
b. Refer Beta table
c. Based on EY understanding of prevailing market risk premium in India
d. Based on the expected debt borrowing rate of the Trust.
e. Based on the effective tax rate of the SPV
f. Based on 3 years weekly beta for period ended 21 November 2025.
g. Net debt includes gross debt net of surplus cash and bank balances, investments, capital work-in-progress and net deferred tax @50% as per latest available financials

Appendix 2: Determination of WACC

- WACC Computation for WMTPL are summarised in the table below:

Cost of equity

Particular	Notes	31-Mar-26
Risk-free rate (%)	a	6.50
Beta	b	1.03
Equity market risk premium (%	c	7.00
Additional risk premium (%)	d	0.50
Cost of equity capital (%)		**14.21**

Cost of debt

Particular	Notes	31-Mar-26
Debt borrowing rate (%)	e	7.76
Expected income tax rate (%)	f	21.21
After-tax cost of debt (%)		**6.11**

WACC

Particular	Weight	31-Mar-26
Cost of debt (%)	50.0	3.06
Cost of equity (%)	50.0	7.11
WACC		**10.16**

Currency: INR Mn	Equity Beta (g)	Market capitalisation	Net debt (h)	Enterprise value	Debt-equity ratio based on 3 year average	Effective tax rate (%)	Unlevered beta based on 3 year debt-equity	Relevered beta based on 3 year debt- equity ratio
IRB Infrastructure Developers Limited	1.9	265,721	26,614	292,336	36.9	25.17	1.47	2.64
PNC Infratech Limited	1.3	69,146	69,462	138,608	77.5	25.17	0.83	1.48
Dilip Buildcon Limited	1.6	110,657	72,347	183,004	115.9	25.17	0.88	1.58
IRB InvIT Fund	0.2	78,959	27,964	106,923	59.8	25.17	0.15	0.26
Ashoka Buildcon Limited	1.7	56,159	11,049	67,208	106.9	25.17	0.93	1.67
Sadbhav Infrastructure Project Limited	0.9	1,993	31,239	33,232	1,969.1	25.17	0.06	0.11
KNR Constructions Limited	1.2	48,160	15,661	63,821	13.0	25.17	1.11	1.98
Powergrid Infrastructure Investment Trust	0.2	86,716	8,936	95,653	7.3	25.17	0.20	0.37
Indus Infra Trust	0.1	52,265	13,207	65,472	15.6	25.17	0.08	0.15
Indigrid Infrastructure Trust	0.1	145,795	174,867	320,661	152.7	25.17	0.05	0.08
Average	**0.9**				**255.5**		**0.58**	**1.03**

Notes

a. Based on the prevailing YTMs of Government Bonds with 10 years residual maturity (rounded) as at the Valuation Date
b. Refer Beta table
c. Based on EY understanding of prevailing market risk premium in India
d. Additional risk premium of 0.5% has been considered basis operational and regulatory risk factors associated with WMTPL, considering it is a state highway concession agreement
e. Based on the expected debt borrowing rate of the Trust.
f. Based on the effective tax rate of the SPV
g. Based on 3 years weekly beta for period ended 21 November 2025.
h. Net debt includes gross debt net of surplus cash and bank balances, investments, capital work-in-progress and net deferred tax @50% as per latest available financials

Appendix 2: Determination of WACC

- WACC Computation for BFHL are summarised in the table below:

Cost of equity

Particular	Notes	31-Mar-26
Risk-free rate (%)	a	6.50
Beta	b	1.04
Equity market risk premiun	c	7.00
Additional risk premium (%)	d	-
Cost of equity capital (%)		**13.77**

Cost of debt

Particular	Notes	31-Mar-26
Debt borrowing rate (%)	e	7.76
Expected income tax rate (	f	19.80
After-tax cost of debt (%)		**6.22**

WACC

Particular	Weight	31-Mar-26
Cost of debt (%)	50.0	3.11
Cost of equity (%)	50.0	6.88
WACC		**10.00**

Currency: INR Mn	Equity Beta (g)	Market capitalisation	Net debt (h)	Enterprise value	Debt-equity ratio based on 3 year average	Effective tax rate (%)	Unlevered beta based on 3 year debt-equity	Relevered beta based on 3 year debt- equity ratio
IRB Infrastructure Developers Limited	1.9	2,65,721	26,614	2,92,336	36.9	25.17	1.47	2.66
PNC Infratech Limited	1.3	69,146	69,462	1,38,608	77.5	25.17	0.83	1.49
Dilip Buildcon Limited	1.6	1,10,657	72,347	1,83,004	115.9	25.17	0.88	1.59
IRB InvIT Fund	0.2	78,959	27,964	1,06,923	59.8	25.17	0.15	0.26
Ashoka Buildcon Limited	1.7	56,159	11,049	67,208	106.9	25.17	0.93	1.68
Sadbhav Infrastructure Project Limited	0.9	1,993	31,239	33,232	1,969.1	25.17	0.06	0.11
KNR Constructions Limited	1.2	48,160	15,661	63,821	13.0	25.17	1.11	1.99
Powergrid Infrastructure Investment Trust	0.2	86,716	8,936	95,653	7.3	25.17	0.20	0.37
Indus Infra Trust	0.1	52,265	13,207	65,472	15.6	25.17	0.08	0.15
Indigrid Infrastructure Trust	0.1	1,45,795	1,74,867	3,20,661	152.7	25.17	0.05	0.08
Average	**0.9**				**255.5**		**0.58**	**1.04**

Notes

a. Based on the prevailing YTMs of Government Bonds with 10 years residual maturity (rounded) as at the Valuation Date
b. Refer Beta table
c. Based on EY understanding of prevailing market risk premium in India
d. Additional risk premium has not been.
e. Based on the expected debt borrowing rate of the Trust.
f. Based on the effective tax rate of the SPV
g. Based on 3 years weekly beta for period ended 21 November 2025.
h. Net debt includes gross debt net of surplus cash and bank balances, investments, capital work-in-progress and net deferred tax @50% as per latest available financials

Appendix 3: Major Maintenance Expense

The Projected Major Maintenance Expenses as provided by the Management is tabulated below:

Currency: INR mn	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Mar41
DTPL	-	-	(750)	-	-	-	-	-	-	-	-	-	-	-	-
WMTPL	-	-	-	-	(1,066)	(1,100)	-	-	-	-	(1,084)	(1,121)	-	-	-
BFHL	-	-	-	(1,085)	(1,120)	-	-	-	-	-	(1,154)	(1,193)	-	-	(1,714)

Source: Management

Appendix 4: Applicable WPI rates

The applicable WPI rates as provided by the Management is tabulated below:

FY	Applicable WPI growth rate	
	Toll rates	O&M Expenses
FY27	2.4%	5.0%
FY28	5.0%	5.1%
FY29	5.1%	4.9%
FY30	4.9%	4.4%
FY31	4.4%	4.1%
FY32 onwards	4.1%	4.1%

Source: Management

EY
Building a better
working world

Valuation of Chenani Nashri Tunnelway Limited

For Cube Highways Fund Advisors Private Limited

Reliance Restricted

25 December 2025

Building a better working world

Reliance Restricted

Cube Highways Fund Advisors Private Limited
(acting as the Investment Manager of Cube Highways Trust)
Attention: Mr. Vinay Sekar
CEO
Unit no. 1901, 19th floor, Tower B, World trade tower,
Plot no. C-1, Sector 16, Noida, UP-201301

25 December 2025

Ernst & Young Merchant Banking Services LLP
14th Floor, The Ruby,
29 Senapati Bapat Marg,
Dadar West,
Mumbai - 400 028, India

Report on Enterprise Valuation of Chenani Nashri Tunnelway Limited

Dear Mr. Sekar,

In accordance with instructions of Cube Highways Fund Advisors Private Limited ("Client" or "You"), Ernst and Young Merchant Banking Services LLP ("EY") have performed the work set out in our Engagement Letter dated 20 November 2025 ("Engagement Agreement"). We are pleased to present the following report ("Report") in connection with the enterprise valuation of Chenani Nashri Tunnelway Limited ("CNTL") as at 31 March 2026 ("Valuation Date").

It may be noted that for carrying out the valuation, we have relied upon information provided by the management of Cube Highways Fund Advisors Private Limited ("Management"). We have been given to understand that the information provided is correct and accurate and that the Management was duly authorized to provide us the same.

Purpose of our Report and restrictions on its use
We understand that Cube Highways Trust ("CHT" or "Trust" or "InvIT") is proposing to acquire Chenani Nashri Tunnelway Limited ("CNTL") from Cube Highways and Infrastructure II Pte. Ltd. ("CH-II"), which is a Singapore based entity ("Proposed Transaction"). In this regard, valuation of CNTL is required as at Valuation Date for internal management analysis, disclosures to unit holders if required, any corporate action and/or regulatory filings as per SEBI InvIT Regulations ("Purpose").

The Report was prepared solely for the above Purpose and should not be used or relied upon for any other purpose including for filing with any statutory/regulatory authority, except as stated above. The Report and its contents may not be quoted, referred to or shown to any other parties except as provided in the Engagement Agreement.

We accept no responsibility or liability to any person other than to the Client, or to such party to whom we have agreed in writing to accept a duty of care in respect of the Report, and accordingly if such other persons choose to rely upon any of the contents of the Report, they do so at their own risk.

Building a better working world

Nature and scope of the services

The nature and scope of the services, including the basis and limitations, are detailed in the Engagement Agreement. The contents of our Report have been reviewed by the Client, who have confirmed to us the factual accuracy of the Report.

Whilst each part of our Report may address different aspects of the work we have agreed to perform, the entire Report should be read for a full understanding of our findings and advice.

Our work commenced on 21 November 2025 and was completed on 25 December 2025. Our Report does not take account of events or circumstances arising after Valuation Date and we have no responsibility to update the Report for such events or circumstances. If you have any questions or require additional information, please do feel free to contact us.

Yours faithfully

Nilesh Jain
Partner
Membership No. IBBI/RV/05/2024/15540
Ernst & Young Merchant Banking Services LLP
Registration No. IBBI/RV-E/05/2021/155

Date: 25 December 2025
Report No. EYMBS/RV/2025-26/149

Table of contents

1	Valuation summary	5
2	Statement of limiting condition	11
3	Background	14
4	Valuation analysis	18
5	Appendix	24

1

Valuation summary

Valuation summary	6
Identity of the valuer and disclosure of valuer’s interest or conflict	7
Procedures Adopted	8
Sources of information	9
Valuation results / conclusion	10

Valuation summary

Company Background

- Cube Highways Trust (“CHT” or “Trust” or “InvIT”) is registered as an infrastructure investment trust with Securities and Exchange Board of India ("SEBI") pursuant to the SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended ("the SEBI InvIT Regulations").
- The InvIT is proposing to acquire Chenani Nashri Tunnelway Limited (“CNTL”) from Cube Highways and Infrastructure II Pte. Ltd. (“CH-II”), which is a Singapore based entity. These assets are involved in operating and managing road assets under concession agreements with NHAI and/or respective State Governments.
- CNTL is operating on a fixed annuity model.

Purpose and Scope of Valuation

- We understand that Cube Highways Trust (“CHT” or “Trust” or “InvIT”) is proposing to acquire Chenani Nashri Tunnelway Limited (“CNTL”) from Cube Highways and Infrastructure II Pte. Ltd. (“CH-II”), which is a Singapore based entity (“Proposed Transaction”). In this regard, valuation of CNTL is required as at Valuation Date for internal management analysis, disclosures to unit holders if required, any corporate action and/or regulatory filings as per SEBI InvIT Regulations (“Purpose”).
- Valuation Date: 31 March 2026*
- The Client has requested EY to undertake the valuation of CNTL in its capacity as Registered Valuer for the aforementioned Purpose.
- EY is registered under Insolvency and Bankruptcy Board of India with registration number: IBBI/RV-E/05/2021/155 valid from 1 November 2021 under Securities or Financial Assets Category to act in the capacity as Registered Valuer.
- The scope of Valuation is to perform valuation of CNTL for the aforementioned Purpose as at Mutually agreed date based on latest available balance sheet date.
- The signatory of this report, Mr. Nilesh Jain, is a Chartered Accountant from ICAI and has also cleared CFA exams conducted by CFA Institute, USA.
- This report is our deliverable for the abovementioned scope of work.

Note: *Valuation Date of 31 March 2026 has been considered as per the requirements stated by the Client. For the purpose of Valuation, it has been assumed that the projections made by the Management from 1 October 2025 to 31 March 2026 would be actualized as at the Valuation Date.

Identity of the valuer and disclosure of valuer's interest or conflict

Identity of the Valuer

Name of entity registered	Ernst & Young Merchant Banking Services LLP
Registration Number	IBBI/RV-E/05/2021/155
Registration valid from	01 November 2021

Disclosure of Valuer's Interest or Conflict

- EY does not have any interest in the business of the SPV. EY is neither associated with nor carrying out any relationship with the Client, except carrying out valuation service. Accordingly, there is no conflict of interest for carrying out the valuation.
- The information provided by the Management have been appropriately reviewed in carrying out the valuation. Sufficient time and information was provided to us to carry out the valuation.

Procedures Adopted

Procedures adopted in carrying out the valuation:

- Requested and received financial and qualitative information of the business from its management;
- Discussions with the Management concerning:
  - the nature and operations of the SPV including historical financial performance;
  - the assumptions and the basis of key assumption used by the Management
  - business plan, future performance estimates, or budgets for the consolidated business including scenarios, if applicable;
- Analysed the industry, as well as the economic and competitive environments in which the SPV operate; and
- Performed valuation analysis of the SPV using Internationally accepted valuation methodology to arrive at the valuation.

Valuation Standards:

- Valuation was carried out as per the International Valuation Standards, 2025 ("IVS") published by International Valuation Standards Council.
- In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis of value when valuing a business or business interest. Fair value was considered as appropriate Bases of Value as per IVS 102.
- Market Value is the estimated amount for which an asset or liability should exchange on the Valuation Date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion. The Fair Value referred elsewhere in the Report is same as Market Value as defined above.
- For the purpose of this valuation, the valuation is based on 'Going Concern' premise.

Inspections and Investigations undertaken:

- We have analysed the audited financials of CNTL from FY23 to FY25 provided by Management.
- We also held discussions with the Management concerning: (i) : the nature and operations of the SPV including historical financial performance (ii) the assumptions and the basis of key assumptions used in the forecast.

Sources of information

- The following sources of information have been utilized in conducting the valuation exercise:
- **SPV specific information** – The following information, as provided by the Management, have inter-alia been used in the valuation:
  - Audited financials (balance sheet and profit and loss account along with schedules and notes to accounts including auditors' report but excluding director's report) of SPV from FY23 to FY25
  - Financial projections of the SPV from 1 April 2026 till the end of their respective concession periods, including underlying assumptions (It includes forecasts of profit and loss statements, major maintenance expenditures and working capital requirements)
  - Concession agreements entered into between the SPV and the respective concessioning authorities.
  - Technical due diligence reports for CNTL prepared by M/s Knight Frank India, dated November 2025.
  - Latest Annuity letters for the asset
  - Background information regarding the SPV provided through emails or during discussions
- Besides the above listing, there may be other information provided by the Management which may not have been perused by EY in any detail, if not considered relevant for the defined scope.
- **Industry and economy information:** EY has relied on publicly available information, proprietary databases subscribed to by EY or its member firms, and discussions with the Management for analysing the industry and the competitors:
- In addition to the above, EY has also obtained such other information and explanations from the Management as were considered relevant for the purpose of the valuation.
- It may be mentioned that the Management have been provided an opportunity to review factual information in the draft Report and confirm with Management of the SPV as part of EY's standard practice to make sure that factual inaccuracies/omissions/etc. are avoided in the final Report.

Valuation results / conclusion

Valuation summary

- Income approach, specifically Discounted Cash Flow method has been considered for arriving at enterprise value of CNTL basis the business plan provided by the Management.
- The valuation is based on projected profit and loss statement for CNTL for the period ended 31 March 2026. For the purpose of Valuation, it has been assumed that the projections made by the Management from 1 April 2025 to 31 March 2026 would be actualized as at the Valuation Date, i.e. 31 March 2026.
- A detailed discussion on the appropriateness of use of valuation methods has been given in Section: Valuation Analysis.
- This Report should be read in its entirety but especially in conjunction with the 'Statement of limiting conditions'.
- Fair Value of CNTL, as on 31 March 2026, is arrived as follows:

Currency: INR Mn	Enterprise Value
CNTL	22,246
Total	**22,246**

Source: Calculation

2

Statement of limiting condition

Statement of limiting conditions 12

Statement of limiting conditions

- Provision of valuation opinions and consideration of the issues described herein are areas of our regular valuation practice. The services do not represent accounting, assurance, accounting / tax due diligence, consulting or tax related services that may otherwise be provided by us or our affiliates.
- The user to which this valuation is addressed should read the basis upon which the valuation has been done and be aware of the potential for later variations in value due to factors that are unforeseen at the valuation date. Due to possible changes in market forces and circumstances, this valuation report can only be regarded as relevant as at the Valuation Date.
- This Report has been prepared for the purposes stated herein and should not be relied upon for any other purpose. Our Client is the only authorized user of this report and is restricted for the purpose indicated in the engagement letter. This restriction does not preclude the Client from providing a copy of the report to third-party advisors whose review would be consistent with the intended use. We do not take any responsibility for the unauthorized use of this report.
- While our work has involved an analysis of financial information and accounting records, our engagement does not include an audit in accordance with generally accepted auditing standards of the client existing business records. Accordingly, we express no audit opinion or any other form of assurance on this information.
- The valuation has been performed based on the projected profit and loss statement for CNTL for the period ended 31 March 2026 provided by Management and audited financials from FY23 to FY25.
- For the purpose of Valuation, it has been assumed that the projections made by the Management from 1 April 2025 to 31 March 2026 would be actualized as at the Valuation Date, i.e. 31 March 2026.
- In no event shall we be liable for any loss, damages, cost or expenses arising in any way from fraudulent acts, misrepresentations or wilful default on part of the client or companies, their directors, employees or agents.
- The Client and its management/representatives warranted to us that the information they supplied was complete, accurate and true and correct to the best of their knowledge. We have relied upon the representations of the clients, their management and other third parties, if any, concerning the financial data, operational data and other information, except as specifically stated to the contrary in the report. We shall not be liable for any loss, damages, cost or expenses arising from fraudulent acts, misrepresentations, or wilful default on part of the companies, their directors, employee or agents.
- EY is not aware of any contingency, commitment or material issue which could materially affect the SPV' economic environment and future performance and therefore, the Fair Value of the SPV.
- We do not provide assurance on the achievability of the results forecast by the management as events and circumstances do not occur as expected; differences between actual and expected results may be material. We express no opinion as to how closely the actual results will correspond to those projected/forecast as the achievement of the forecast results is dependent on actions, plans and assumptions of management.

Statement of limiting conditions

- The Report assumes that the SPV comply fully with relevant laws and regulations applicable in its area of operations and usage unless otherwise stated, and that the SPV will be managed in a competent and responsible manner. Further, unless as specifically stated to the contrary, this report has given no consideration to matters of a legal nature, including issues of legal title and compliance with local laws, and litigations and other contingent liabilities that are not recorded/reflected in the balance sheet provided to us.
- The valuation analysis and result are governed by concept of materiality.
- It has been assumed that the required and relevant policies and practices have been adopted by the SPV and would be continued in the future.
- The fee for the Report is not contingent upon the results reported.
- The figures in the tables in this report may not sum or cross cast, due to rounding differences
- We owe responsibility only to the client that has appointed us under the terms of the engagement letters. We will not be liable for any losses, claims, damages or liabilities arising out of the actions taken, omissions or advice given by any other person.
- The actual transacted value achieved may be higher or lower than our estimate of value (or value range of value) depending upon the circumstances of the transaction (for example the competitive bidding environment), the nature of the business (for example the purchaser's perception of potential synergies). The knowledge, negotiating ability and motivation of the buyers and sellers will also affect the transaction value achieved. Accordingly, our valuation conclusion will not necessarily be the value at which actual transaction will take place.
- We have also relied on data from external sources to conclude the valuation. These sources are believed to be reliable and therefore, we assume no liability for the truth or accuracy of any data, opinions or estimates furnished by others that have been used in this analysis. Where we have relied on data, opinions or estimates from external sources, reasonable care has been taken to ensure that such data has been correctly extracted from those sources and /or reproduced in its proper form and context.

3

Background

Background 15

Financial Information 16

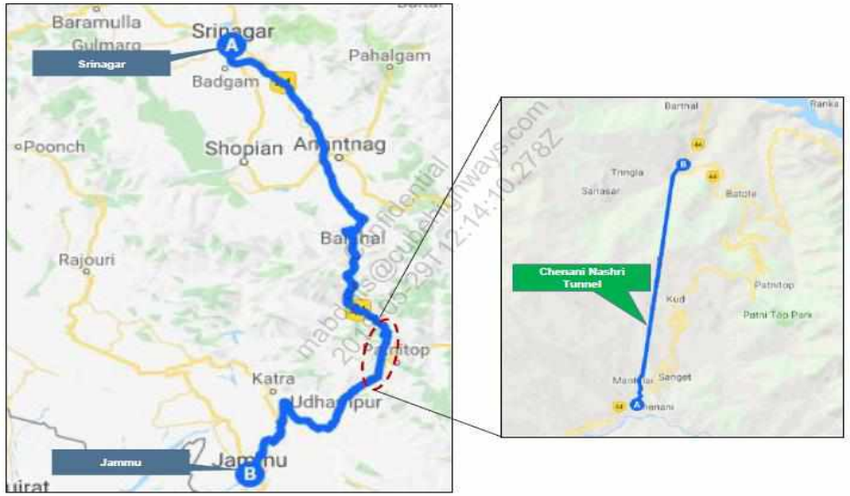
Background

Business Overview

Chenani - Nashri Tunnelway Limited ("CNTL")

Chenani - Nashri Tunnelway Limited was incorporated under the provisions of the Companies Act, 1956 in India. The SPV has entered into a Agreement with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Chenani to Nashri in the State of Jammu and Kashmir under the annuity model

Particulars	Details
State	Jammu and Kashmir (NH-1A)
Concessioning authority	NHAI
Highway and lane configuration	NH1A two lane
Project type	Annuity
Length (km)	9 Km (plus 1.9 km approach road)
Annuity	INR 6,350 mn payable semi-annually
Appointed Date	23rd May 2011
Concession period (operation period)	20 years
Concession end	FY32



Source: Management

Financial Information

Financial Information of CNTL – Balance Sheet

Currency: INR mn Audited/Unaudited	Mar-23 Audited	Mar-24 Audited	Mar-25 Audited
Net block of fixed assets (NFA)	**1.5**	**1.5**	**1.5**
Investments	**0.17**	**0.18**	**0.20**
Current assets			
Cash and bank balances	15,892	21,762	29,515
Other current assets	34,874	31,383	28,413
	50,766	53,146	57,927
Current liabilities and provisions			
Trade payables	5,202	4,991	4,991
Other current liabilities	2,801	512	593
	8,003	5,502	5,584
Net current assets (NCA)	**42,764**	**47,643**	**52,343**
Loan funds			
Senior Debt	35,249	33,763	33,794
Deferred tax liability	-	3,172	4,376
Net worth	**7,516**	**10,710**	**14,175**
Represented by			
Equity	3720	3720	3720
Other equity	3,796	6,990	10,455
Total	**7,516**	**10,710**	**14,175**

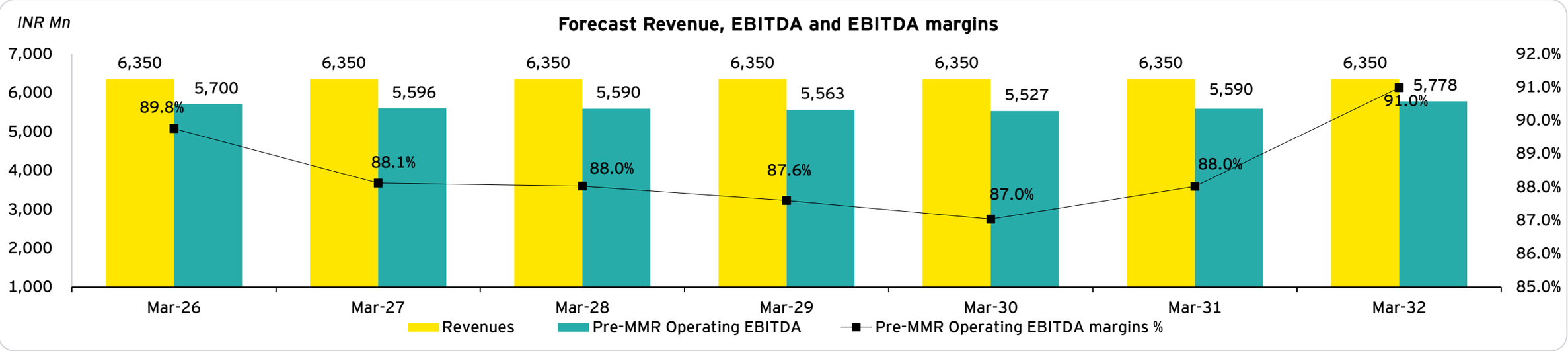
Source: Management

Financial Information of CNTL– Profit and Loss Statement

Currency: INR mn Audited/Unaudited	Mar-23 Audited	Mar-24 Audited	Mar-25 Audited
Operation and maintenance income	525	480	492
Periodic maintenance income	9	19	17
Finance income	3,397	3,143	2,880
Total Revenue	**3,931**	**3,642**	**3,389**
Operational Expenditure	(487)	(456)	(464)
Routine Maintenance	(299)	(103)	(99)
Total expenses	**(786)**	**(559)**	**(563)**
Pre-MMR Operating EBITDA	3,145	3,084	2,826
Operating EBITDA	**3,145**	**3,084**	**2,826**
Depreciation and amortisation	-	-	-
EBIT	**3,145**	**3,084**	**2,826**
Finance costs	(44)	(38)	(31)
PBT	**3,102**	**3,046**	**2,795**
Other income	801	1,260	1,874
Tax	(2,059)	(1,113)	(1,204)
PAT	**1,843**	**3,193**	**3,466**

Source: Management

Financial Information



Prospective Financial Information – Profit and Loss Statement

- **Revenue:** The annuity income for CNTL is based upon the fixed annuity schedules as per the Concession Agreement.
- **Operation and Maintenance (O&M) expenses:** Base OPEX for FY26 has been estimated at INR 16.8 Mn per lane Km. The year-on-year growth has been considered at 1.4 times WPI growth estimates. WPI growth rates are estimated to be in the range of 4.1% to 5.1% during the projected period. Project management fees to Cube Highways and Transportation Assets Advisors Private Limited ("Project Manager" or "CHTAAPL") are estimated to be at 1.829% (i.e. 1.55% + 18% GST) of the annuity revenues until FY30. Additional fees of 0.413% (i.e. 0.35% + 18% GST) of the annuity revenues will be paid to Cube Highways Technologies Private Limited ("CHTPL") for expert service agreement. Further, Management has represented to us that the above mentioned expenses will be reduced to a combined number of 0.944% (i.e. 0.8% + 18% GST) of the toll/annuity revenues from FY31 onwards on incremental basis for CNTL without changing it for existing portfolio). The agreement with CHTAAPL and CHTPL with regards to the above is yet to be executed.
- **Routine maintenance:** Routine maintenance expenses for FY26 have been projected by the Management at INR 48 Mn. The year-on-year growth in routine maintenance costs has been considered to be based on WPI growth, with certain adjustments pertaining to the Management's estimate of the cost. The years during which major maintenance expenses are being incurred, these expenses are estimated to be at 50% of the normalized level.

FY	Applicable WPI growth rate for Operating Expenses
FY27	5.0%
FY28	5.1%
FY29	4.9%
FY30	4.4%
FY31	4.1%
FY32 onwards	4.1%

4

Valuation analysis

Valuation methods used/ not used	19
Discounted Cashflow Method – Other Key Assumptions	20
Discounted Cash flows method	21

Valuation methods used/ not used

- To determine the Fair Value of enterprise, three traditional approaches can be considered namely, Income, Market and Cost Approaches.
- For this valuation, we have considered the International Valuation Standards ("IVS") and have adopted a definition of Market Value as given in IVS 102, "Market Value is the estimated amount for which an asset or liability should exchange on the Valuation Date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion". The Fair Value referred elsewhere in the Report is same as Market Value as defined above
- The following methods have been considered for determination of Fair Value of the SPV as at the Valuation Date:

Methodology	Weights	Remarks
Income Approach – Discounted Cash Flows Method	100.0%	► DCF method is considered to be one of the most scientific methods of valuation. The SPV have a definite concession period and estimable cash flows for the entire length of the concession. We have therefore relied on the DCF method, using the financial projections provided to us. ► The Management has not provided the balance sheet as at the Valuation Date, hence impact from the change / release in working capital has not been considered in the valuation exercise.
Market Approach – Comparable Companies' Multiple Method	-	► There are no listed companies that are comparable to the SPV in terms of concession period, type or region.
Market Approach – Comparable Transactions' Multiple Method	-	► We did not find any transactions in comparable companies / businesses for which information is available in public domain. ► Accordingly, CCM / CTM methods have not been considered for the valuation analysis.
Cost Approach – Net Asset Value Method	-	► Asset values are generally not a true indicator of the future distributable cash flow / the profit generating ability of a business. NAVs of the SPV have been computed and presented for information only.

Discounted Cashflow Method – Other Key Assumptions

- **Major Maintenance Expenses (MMR / Periodic maintenance):** Periodic maintenance expenses are incurred to bring the road asset back to an earlier condition or to keep the road asset operating at its present condition. MMR expenditures have been estimated by the Management, based on Technical Due Diligence ("TDD") reports, shared by independent technical consultants appointed by the Trust and internal estimates by the Management over the Concession Period
- **Depreciation and Amortization:** The concessions agreement has been capitalized in the books of the respective SPV as an intangible asset. The said intangible assets have been amortized basis applicable depreciation method (SLM / WDV / Revenue Adjusted) over the respective period of concession. Since depreciation and amortization is a non-cash expenditure, it has been added back to arrive at the net cash flows.
- **Taxes:** Income taxes are estimated considering, as appropriate, brought forward losses, unabsorbed depreciation, MAT credit, tax depreciation/ amortisation policy proposed to be followed by the InvIT Assets and applicable corporate income tax rate.

Discounted Cash flows method

Income based approach

- Free Cash Flow to Firm approach under DCF method has been considered to determine the enterprise value of the SPV.
- The business plan covers explicit forecast period from 1 April 2026 till the end of the life of the concession period of the SPV.

Discount Rate

- The application of the income approach requires the determination of an appropriate discount rate at which future cash flows are discounted to their present value as of valuation date.
- The derivation of discount rate, the Weighted Average Cost of Capital (WACC) is based on a group of guideline companies (peer group) which are operating in the same industry/sector as that of the Company. To calculate the discount rate, cost of equity, cost of debt and the capital structure must be determined based on market data of the group of market participants. For the estimation of the cost of equity, the capital asset pricing model ("CAPM") is applied.
- WACC is computed to be 7.56% for the SPV. Refer Appendix 2 for determination of WACC.

Mid-Year Discounting Convention

- EY DCF approach assumes that the cash flows occur evenly during each of the measurement period (and not at the end of the year); therefore the discounting rate is adjusted to value the cash flows at midpoint of the measurement period.

Calculation for WACC

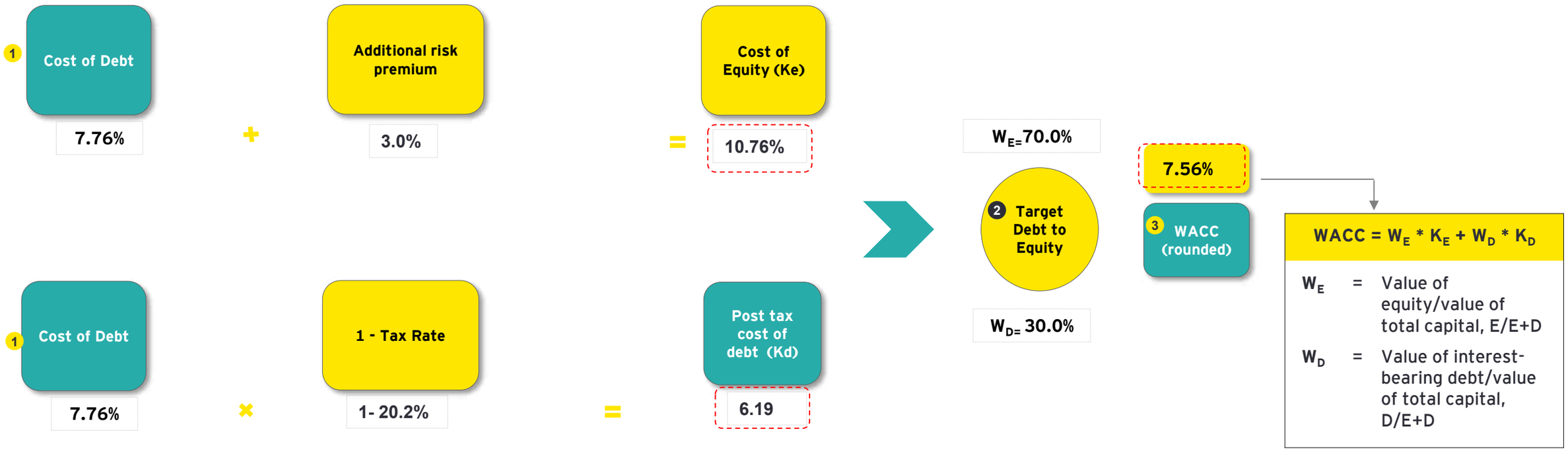
$$WACC = W_E * K_E + W_D * K_D$$

where:

W_E	=	Value of equity/value of total capital, E/E+D
K_E	=	Cost of equity
W_D	=	Value of interest-bearing debt/value of total capital, D/E+D
K_D	=	After-tax cost of interest-bearing debt

Discounted Cash flows method

Determination of WACC



1 Refer Appendix 2 for determination of cost of equity and post-tax cost of debt

2 The debt equity ratio of 70:30 is considered for SPV assets basis the expected debt to capital structure of the SPV.

3 Refer Appendix 2 for a detailed computation of WACC

Discounted Cash flows method

Valuation of CNTL as per DCF Method

Currency: INR mn	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Number of months	12	12	12	12	12	11
Net revenue	**6,350**	**6,350**	**6,350**	**6,350**	**6,350**	**6,350**
Operating expenses	(746)	(753)	(828)	(864)	(809)	(574)
EBITDA	**5,605**	**5,598**	**5,522**	**5,486**	**5,541**	**5,776**
Depreciation and amortisation	(3,044)	(3,044)	(3,044)	(3,044)	(3,044)	(3,044)
EBIT	**2,561**	**2,553**	**2,478**	**2,442**	**2,497**	**2,732**
Tax expense	-	(1,179)	(1,279)	(1,300)	(1,302)	(1,246)
Debt free net income	**2,561**	**1,375**	**1,200**	**1,142**	**1,195**	**1,486**
Add: Depreciation and amortisation	3,044	3,044	3,044	3,044	3,044	3,044
Add: Provision for major maintenance	-	-	46	46	46	-
Less: Major maintenance expenses	-	-	-	-	(138)	-
Debt free cash flow	**5,605**	**4,419**	**4,290**	**4,232**	**4,147**	**4,530**
Discount rate (%)	7.56	7.56	7.56	7.56	7.56	7.56
Present value factor- Mid year discounting	0.96	0.90	0.83	0.77	0.72	0.67
Present value debt free cash flow	**5,404**	**3,961**	**3,575**	**3,279**	**2,987**	**3,040**

Present value for explicit per	22,246
Enterprise value	**22,246**

Enterprise Value of the Company as per DCF method is estimated to be INR 22,246 Mn

5

Appendix

Appendix 1: Prospective financial information 25

Appendix 2: Determination of WACC 26

Appendix 3: Major Maintenance expenses 27

Appendix 1: Prospective financial information

- The prospective profit and loss statements of CNTL as provided by the Management are summarised in the table below:

Currency: INR mn	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Number of months	12	12	12	12	12	11
Total Annuity	**6,350**	**6,350**	**6,350**	**6,350**	**6,350**	**6,350**
Routine Maintenance	(746)	(753)	(782)	(818)	(763)	(574)
Pre-MMR Operating EBITDA	**5,605**	**5,598**	**5,568**	**5,532**	**5,587**	**5,776**
Provision for major maintenance	-	-	(46)	(46)	(46)	-
Operating EBITDA	**5,605**	**5,598**	**5,522**	**5,486**	**5,541**	**5,776**
Depreciation and amortisation	(3,044)	(3,044)	(3,044)	(3,044)	(3,044)	(3,044)
EBIT	**2,561**	**2,553**	**2,478**	**2,442**	**2,497**	**2,732**

Source: Management

Appendix 2: Determination of WACC

Cost of equity

Particulars	Notes	Value
Debt borrowing rate (%)	a	7.8
Additional risk premium (%)	b	3.0
Cost of equity capital (%)		**10.76**

Cost of debt

Particulars	Notes	Value
Debt borrowing rate (%)	a	7.8
Expected income tax rate (%)	c	20.2
After-tax cost of debt (%)		**6.19**

WACC

Particulars	Weights	Value
Cost of debt (%)	70	4.34
Cost of equity (%)	30	3.23
WACC		**7.56**

Notes

a. Based on the expected debt borrowing rate of the Trust
b. We have applied a 3.0% premium on the cost of debt to adequately account for the risk associated with the cash flows, such as timing of the annuity payments, etc.
c. Based on the applicable corporate tax rate to the SPV

Appendix 3: Major Maintenance expenses

The projected major maintenance expenses as provided by the Management is tabulated below:

Currency: INR Mn	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Major maintenance expenses	-	-	-	-	(138)	-

EY
Building a better
working world

Ernst & Young Merchant Banking Services LLP
Registered Valuer
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29 January 2026

To,

Cube Highways Trust
B-376, Nirman Vihar, Upper Ground Floor,
New Delhi, 110092

Cube Highways Fund Advisors Private Limited
B-376, Nirman Vihar, Upper Ground Floor,
New Delhi, 110092

Re: Report on Enterprise Valuation of Specified Assets as per SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended ("SEBI InvIT Regulations") as on 31 December 2025

Dear Sir/Madam,

In accordance with instructions of Cube Highways Trust ("Client" or "you" or "CHT" or "InvIT" or "Trust"), Ernst & Young Merchant Banking Services LLP ("EYMBSLLP") have performed the work set out in our Engagement Agreement dated 21 July 2025 ("Engagement Agreement"). We are pleased to present the following report ("Report") in connection with the Enterprise Valuation of Specified Assets of Cube Highways Trust as at 31 December 2025 ("Valuation Date").

It may be noted that for carrying out the valuation, we have relied upon information provided by the Management of CHT ("Management"). We have been given to understand that the information provided is correct and accurate and that the Management was duly authorized to provide us the same.

Purpose of our Report and restrictions on its use

EYMBSLLP has been appointed by Cube Highways Trust as an independent valuer as per Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended and the circulars, notifications and guidelines issued thereunder ("SEBI InvIT Regulations"), to undertake an independent Enterprise Valuation of Specified Assets (defined later) ("Specified Assets" or "InvIT Assets" or "SPVs") as on 31 December 2025 for internal management analysis, disclosure to unit holders and regulatory filings under Chapter V Regulation 21(5A) of the SEBI InvIT Regulations ("Purpose"). This Report was prepared solely for the above Purpose and should not be used or relied upon for any other purpose.

We accept no responsibility or liability to any person other than to the Client, or to such party to whom we have agreed in writing to accept a duty of care in respect of the Report, and accordingly if such other persons choose to rely upon any of the contents of the Report, they do so at their own risk.

Nature and scope of the services

The nature and scope of the services, including the basis and limitations, are detailed in the Engagement Agreement. The contents of our Report have been reviewed by the Client, who have confirmed to us the factual accuracy of the Report.

Whilst each part of our Report may address different aspects of the work we have agreed to perform, the entire Report should be read for a full understanding of our findings and advice.

Please note that the Report must be read in conjunction with the Statement of limiting conditions contained in Section 4 of this Report. This letter, the Report and the summary of valuation included herein can be provided to Trust's advisors and may be made available for the inspection to the public and with the SEBI, the stock exchanges and any other regulatory and supervisory authority, as may be required. The valuation analysis should not be construed as investment advice; specifically, EYMBSLLP does not express any opinion on the suitability or otherwise of entering into any financial or other transaction with the Trust.

The valuation conclusion included here-in and the Report complies with the SEBI InvIT Regulations and guidelines, circular, notification, clarifications or guidance issued by the Securities and Exchange Board of India ("SEBI") thereunder.

This letter should be read in conjunction with the attached Report.

Yours faithfully,

Nilesh Jain
Partner
Membership No. IBBI/RV/05/2024/15540
Ernst & Young Merchant Banking Services LLP
Registration No. IBBI/RV-E/05/2021/155
LLPIN: AAO-2287

Date: 29 January 2026
Report No. EYMBS/RV/2025-26/161

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Table of Contents

I. Executive Summary 4

II. Valuation Analysis 8

III. Sources of Information 10

IV. Statement of Limiting Conditions 11

V. Industry Overview 13

VI. Background of the SPVs 17

VII. Procedures Adopted 53

VIII. Valuation Methodology 54

IX. Valuation Assumptions 59

X. Basis and Premise of Valuation 61

XI. Valuation Conclusion 62

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I. Executive Summary

Cube Highways Trust is registered as an infrastructure investment trust with Securities and Exchange Board of India ("SEBI") pursuant to the SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended ("the SEBI InvIT Regulations"). It was registered on April 05, 2022 [Registration No.: IN/InvIT/22-23/0022].

The InvIT owns and operates a portfolio of 27 road SPVs; which are involved in operating and managing road assets under concession agreements with NHAI and or respective NHAI/state authorities. The InvIT Assets have an aggregate length of ~2,005 kms (8,754 lane kms) spread across 13 states / UTs. The following is the list of InvIT Assets owned by the Trust:

1. Jaipur-Mahua Tollway Private Limited (“JMTPL”)
2. Mahua Bharatpur Expressways Limited (“MBEL”)
3. Western UP Tollway Private Limited (“WUPTPL”)
4. Nelamangala Devihalli Expressway Private Limited (“NDEPL”)
5. Farakka-Raiganj Highways Private Limited (“FRHPL”)
6. Walayar Vadakkencherry Expressways Private Limited (“WVEPL”)
7. DA Toll Road Private Limited (“DATRPL”)
8. Ghaziabad Aligarh Expressway Private Limited ("GAEPL")
9. N. A. M. Expressway Private Limited (“NAMEPL”)
10. Hazaribagh Tollway Private Limited (“HTPL”)
11. Jhansi-Lalitpur Tollway Private Limited (“JLTPL”)
12. Jhansi-Vigakhet Tollway Private Limited (“JVTPL”)
13. Kotwa-Muzaffarpur Tollway Private Limited (“KMTPL”)
14. Lucknow-Raebareli Tollway Private Limited (“LRTPL”)
15. Madurai-Kanyakumari Tollway Private Limited (“MKTPL”)
16. Kanyakumari-Etturavattam Tollway Private Limited (“KETPL”)
17. Salaipudhpur-Madurai Tollway Private Limited (“SMTPL”)
18. Nanguneri-Kanyakumari Tollway Private Limited (“NKTPL”)
19. Jammu Udhampur Highway Private Ltd. ("JU" or “JUHPL”)
20. Quazigund Expressway Private Ltd. (“QB” or “QEPL”)
21. Andhra Pradesh Expressway Private Limited (“APEPL” or “APEL”)
22. Borgaon Watambare Highways Private Limited (“BWHPL”)
23. Mangalwedha Solapur Highways Private Limited (“MSHPL”)
24. Mangloor Highways Private Limited (“MHPL")
25. Srirangam Infra Private Limited (“SIPL”)
26. Shankarampet Projects Private Limited (“SPPL”)
27. Tirumala Highways Private Limited (“THPL”)

Assets from Sr. No 1 – 9 operate under the Design, Build, Finance, Operate and Transfer model and are hereinafter referred to as “BOT Assets”. Assets from Sr No 10 – 18 operate under the Toll, Operate and Transfer model and are hereinafter referred to as “TOT Assets”. Assets from Sr No 19 – 21 operate under Annuity Model and are hereinafter referred to as “BOT Annuity Assets”. Assets from Sr. No 22 – 27 operate under the Hybrid Annuity model and are hereinafter referred to as “HAM Assets”.

BOT Assets, TOT Assets, BOT Annuity Assets and HAM Assets are collectively referred to as “InvIT Assets”

Cube Highways and Infrastructure Pte. Ltd. (“CHIPL”) and Cube Highways and Infrastructure III Pte. Ltd. (“CH-III) are the Sponsors (hereinafter collectively referred to as “Sponsors”) to Cube Highways Trust.

Cube Highways Fund Advisors Private Limited (“Investment Manager” or “CHFAPL”) is acting as an investment manager of the Trust. CHFAPL is a private limited company incorporated on April 12, 2021 at New Delhi under the Companies Act, 2013.

Axis Trustee Services Limited (“Trustee” or “ATSL”) is acting as a Trustee to the InvIT. Axis Trustee Services Limited is a public company incorporated on May 16, 2008 at Mumbai under the Companies Act, 2013. The Trustee is a trusteeship company, which has been registered with SEBI on January 31, 2014, and has been promoted by and is a wholly owned subsidiary of Axis Bank for providing corporate and other trusteeship services.

Cube Highways and Transportation Assets Advisors Private Limited (“Project Manager” or “CHTAAPL”) is acting as the Project Manager to the InvIT. CHTAAPL is a private company incorporated on January 1, 2015 under the Companies Act, 2013. CHTAAPL is engaged in management of routine operations and maintenance of the InvIT Assets.

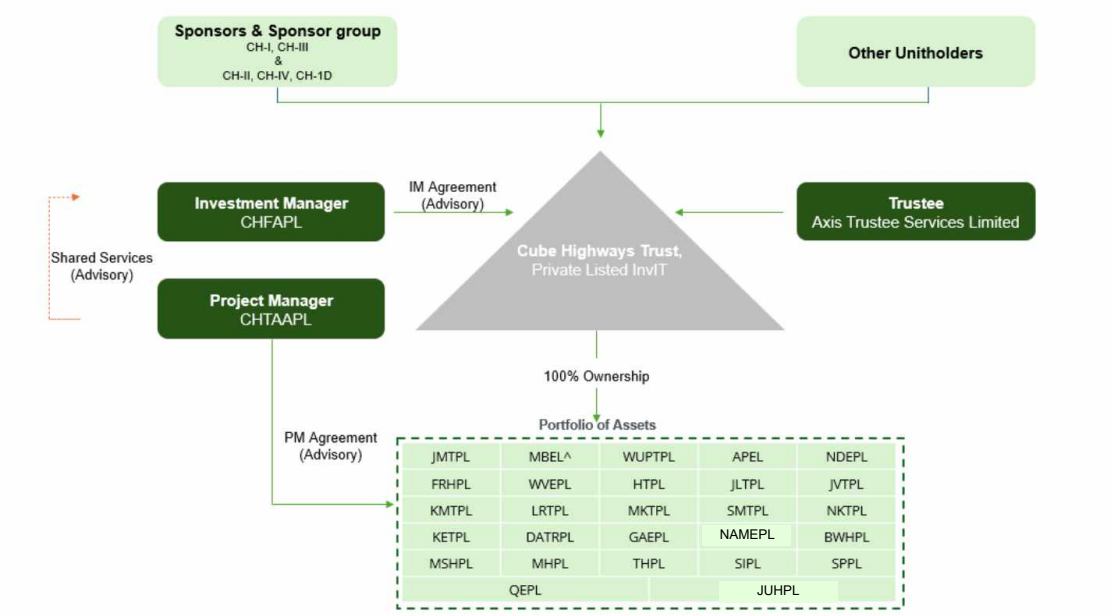
Related Party Transactions

Cube Highways Trust made an initial offer of 522,582,727 Ordinary Units through a private placement at a price of INR 100 per Ordinary Unit (the “Offer Price”) in April 2023 and raised INR 52,258.27 Million (the “Offer”). On April 17, 2023, the Trust, acting through the Trustee, acquired the entire equity shareholding of the BOT assets, TOT assets and APEPL (except for 0.03% of the equity share capital of MBEL) from the Sponsors and its group companies. The Trust got its Ordinary Units listed on the BSE Limited (BSE) and National Stock Exchange of India Limited (NSE) on April 19, 2023.

On June 04, 2024, the Trust acquired 51% shareholding of the HAM assets from the Sponsors for a purchase consideration of INR 5,395 Million, in line with the Share Purchase Agreement executed between the parties on May 31, 2024. Further, on December 03, 2024, the Trust acquired remaining 49% shareholding of the HAM assets from the Sponsors for a purchase consideration of INR 5,332.25 Million, in line with the Share Purchase Agreement executed between the parties on May 31, 2024.

On February 12, 2025, the Trust acquired 100% equity shareholding of M/s N.A.M. Expressway Private Limited from the Sponsors for a purchase consideration of INR 7,176 Million, in line with the Share Purchase Agreement executed between the parties on June 04, 2024.

The following chart represents the Structure of the Trust:



^0.03% of the equity shares of MBEL are held by Madhucon Infra Limited Source: https://cubehighwaystrust.com/

EYMBSLLP has been appointed as an independent valuer to undertake Enterprise Valuation of InvIT Assets as on 31 December 2025, in accordance with Regulation 21(5A) of the SEBI InvIT Regulations.

EYMBSLLP is appointed to undertake financial valuation only. We are placing reliance on other consultants appointed by the Clients for traffic and other technical inputs. This report is our deliverable for the aforementioned purpose.

EYMBSLLP is duly registered, as a Limited Liability Partnership under the Limited Liability Partnership Act, 2008, with the Ministry of Corporate Affairs (identified with a unique LLPIN: AAO-2287) and as a Registered Valuer with Insolvency and Bankruptcy Board of India ("IBBI") for securities or financial assets under Section 247 of the Companies Act, 2013 bearing registration number IBBI/RV-E/05/2021/155.

Identity of the Valuer

Name of entity registered	Ernst & Young Merchant Banking Services LLP
LLPIN	AAO-2287
Registration Number (for Registered Valuer)	IBBI/RV-E/05/2021/155
Registration (for Registered Valuer) valid from	01 November 2021
Website	https://www.ey.com/en_in/services/strategy-transactions/valuation-modeling-economics

- EY has experience to perform valuation service relating to business valuation, real estate valuation, complex security valuation and tangible assets valuation. EY has performed valuation service across various sectors including infrastructure (such as roads, power plants, airports, ports, and logistics etc), consumer goods and retail, pharma/healthcare, financial services and media & entertainment, metals and mining, manufacturing, automotive and real estate.
- Nilesh Jain is a partner at EY and is based out of Mumbai. He has more than 18 years of valuation experience across sectors. He is a merit ranker Chartered Accountant from ICAI and has also cleared CFA exams conducted by CFA Institute, USA.
- Nilesh has over 18 years of experience in Valuations of Infrastructure assets, he has been involved in more than 300 valuation engagements with more than 200 valuations in the infrastructure sector.

He has worked on assignments involving business valuation, brand valuation, purchase price allocation, valuation for the purposes of merger, business restructuring and regulatory approvals.

Disclosure of Valuer's Interest or Conflict

EYMBSLLP, Nilesh Jain and the team working on the valuation of InvIT Assets do not have any present or planned future interest in the Trust, the InvIT Assets or the Investment Manager. EYMBSLLP is neither associated with nor carrying out any relationship with the Client, except carrying out valuation service. Accordingly, there is no conflict of interest for carrying out the valuation.
The information provided by the Management have been appropriately reviewed in carrying out the valuation. Sufficient time and information was provided to us to carry out the valuation.

Declaration

- We hereby confirm on behalf of EYMBSLLP that EYMBSLLP is competent to undertake this valuation in terms of SEBI InvIT Regulations.
- We further confirm that EYMBSLLP is independent in terms of the SEBI InvIT Regulations and that this report has been prepared on a fair and unbiased basis in compliance with Regulation 13(1) and Regulation 21 of the SEBI InvIT Regulations.
- We have at least two partners/ directors having experience of 5 years each in the valuation of infrastructure assets.

This Report covers all the disclosures required as per the SEBI InvIT Regulations and the Valuation of the SPVs is impartial, true and fair and in compliance with the SEBI InvIT Regulations.

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II. Valuation Analysis

Income approach, specifically Discounted Cash Flow (DCF) method has been considered for arriving at fair value of InvIT Assets as on 31 December 2025. The valuation exercise has been carried out basis the financial projections of each of the InvIT Assets provided to us by the management of the Client ("Management"). Free Cash Flow to Firm approach under DCF method has been considered to determine the Enterprise Value of InvIT Assets. The Enterprise Value has been computed by discounting the free cash flows to the firm (InvIT Assets) from 01 January 2026 until the end of the concession period, using an appropriate Weighted Average Cost of Capital ("WACC").

The Investment Manager has appointed independent consultants to carry out traffic study for estimation of toll revenue and technical study for estimation of operating and maintenance expenses and major maintenance expenses, for each of the InvIT Assets over the concession period. The traffic study reports dated October 2025 have been provided to us by the Management. These reports presented an update of the traffic and revenue forecasts based on the data available through H1 FY26 and other macro-economic assumptions. We have relied upon financial projections, traffic study reports, technical reports provided by independent consultants and other information provided to us for carrying out the valuation of each of the InvIT Assets.

The valuation is based on various assumptions with respect to the InvIT Assets, including their respective present and future financial condition, business strategies and the environment in which they will operate in the future. These assumptions are based on the information that we have been provided with and our discussions with the Management, and reflect current expectations and views regarding future events, and therefore necessarily involve known and unknown risks and uncertainties.

The summary of valuation of each of the InvIT Assets as on 31 December 2025 is presented below:

SPV (Currency: INR mn)	Enterprise Value (excluding other financial assets)	Other financial assets[1]	Enterprise Value (including other financial assets)
JMTPL	7,627	0	7,627
MBEL	3,601	250	3,851
WUPTPL	(83)	0	(83)
NDEPL	4,791	0	4,791
FRHPL	27,373	0	27,373
WVEPL	9,333	0	9,333
DATRPL	77,096	0	77,096
GAEPL	35,560	0	35,560
NAMEPL	27,337	0	27,337
HTPL	20,376	326	20,701
JLTPL	12,659	90	12,749
JVTPL	7,863	90	7,953
LRTPL	7,760	694	8,454
KMTPL	14,418	0	14,418
MKTPL	16,226	25	16,251
KETPL	10,535	93	10,628
SMTPL	11,492	23	11,515
NKTPL	10,634	2,954	13,588
JU	10,491	0	10,491
QB	19,077	88	19,166
APEPL	868	256	1,124
BWHPL	3,404	0	3,404
MSHPL	3,260	0	3,260
MHPL	2,433	0	2,433
SIPL	3,278	0	3,278
SPPL	3,745	456	4,201
THPL	4,432	0	4,432
Total	**355,588**	**5,343**	**360,931**

Table above represents the 100% enterprise value for all SPVs including MBEL (0.03% of the equity shares of MBEL are held by Madhucon Infra Limited).

Notes:

1. According to IND AS 7, cash & cash equivalents are held for the purpose of meeting short term cash commitments rather than for investments or other purposes. Accordingly, cash & cash equivalents held by the respective SPVs, having maturity of more than 3 months have been considered as other financial assets.

2. WUPTPL reflects a negative Enterprise Value primarily due to projected negative cash flows arising from significant maintenance expenditure associated with the asset nearing the end of its useful life. Notwithstanding this, the Management has represented to us that WUPTPL maintains sufficient cash and liquid resources to fund its operating requirements and the anticipated maintenance expenditure.

   Our views are based on the current economic, market, industry, regulatory, monetary and other conditions and on the information made available to us, as of the date of this Report. Such conditions may change significantly over a relatively short period of time, and we assume no responsibility and are not required to update, revise or reaffirm our conclusion set out in this Report to reflect events or developments subsequent to the date of the Report.

III. Sources of Information

The following sources of information have been utilized in conducting the valuation exercise:

- **SPV specific information** – The following information, as provided by the Management, have inter-alia been used in the Enterprise Valuation of InvIT Assets:
  - Audited financials (balance sheet and profit and loss account along with schedules and notes to accounts including auditors' report but excluding director's report) of BOT Assets, TOT Assets and BOT Annuity Assets from FY18 to FY25 (FY19 to FY25 for NAMEPL; FY23 to FY25 for JU and QB).
  - Audited financials (balance sheet and profit and loss account along with schedules and notes to accounts including auditors' report but excluding director's report) of HAM Assets from FY22 to FY25.
  - Provisional financials (balance sheet and profit and loss account along with schedules and notes to accounts) of InvIT Assets for 9-months period ending 31 December 2025.
  - Financial projections of each of the InvIT Assets from 01 January 2026 till the end of concession period including underlying assumptions (It includes forecasts of profit and loss statements, major maintenance expenditures, working capital requirements and respective underlying assumptions).
  - Concession Agreements entered into between the respective InvIT Assets and NHAI/State authorities, along with extension letters, if any.
  - Traffic assessment reports dated October 2025 and technical assessment reports dated between 02 April 2025 - 08 April 2025, by independent consultants for each of the InvIT Assets.
  - Latest Annuity letters for all the HAM Assets and BOT Annuity Assets.
  - Supplementary agreement to the respective Concession Agreement with NHAI ("Supplementary Agreement") pursuant to the introduction of the Annual Pass Scheme for BOT Assets and TOT Assets.
  - Detail of carry forward losses, unabsorbed depreciation, applicable tax/ tax benefits of the InvIT Assets as of 31 December 2025.
  - Background information regarding the InvIT Assets provided through emails or during discussions.

- Besides the above listing, there may be other information provided by the Management which may not have been perused by EYMBSLLP in any detail, if not considered relevant for the defined scope.

- **Industry and economy information**: EYMBSLLP has relied on publicly available information, proprietary databases subscribed to by EYMBSLLP or its member firms, and discussions with the Management for analysing the industry and the competitors.

- In addition to the above, EYMBSLLP has also obtained such other information and explanations from the Management as were considered relevant for the purpose of the valuation.

It may be mentioned that the Client has been provided an opportunity to review factual information in our draft report as part of our standard practice to make sure that factual inaccuracies/omissions/etc. are avoided in our final report.

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IV. Statement of Limiting Conditions

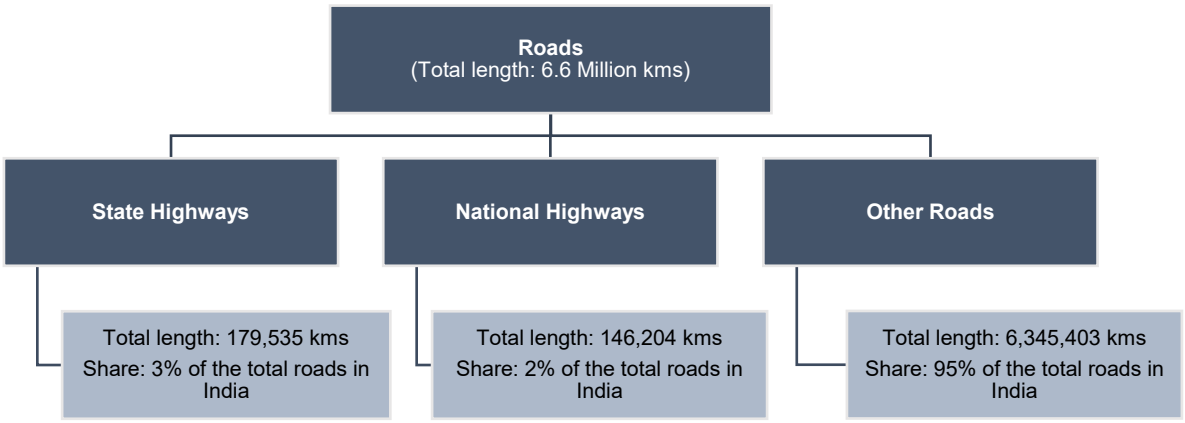
- Provision of valuation opinions and consideration of the issues described herein are areas of our regular valuation practice. The services do not represent accounting, assurance, accounting / tax due diligence, consulting or tax related services that may otherwise be provided by us or our affiliates.
- The estimate of value contained herein are not intended to represent value of the respective InvIT Assets at any time other than the dates specifically mentioned for each valuation result, as per the agreed scope of our engagement and as required under the SEBI InvIT Regulations. Changes in market/industry conditions could result in opinions of value substantially different than those presented.
- The valuation report was prepared for the purpose of internal management analysis, disclosure to unitholders, any corporate action and/or regulatory filings as required under Regulation 21(5A) of the SEBI InvIT Regulations. Its suitability and applicability of any other use has not been checked by us.
- The user to which this valuation is addressed should read the basis upon which the valuation has been done and be aware of the potential for later variations in value due to factors that are unforeseen at the valuation date. Due to possible changes in market forces and circumstances, this valuation report can only be regarded as relevant as at the Valuation Date.
- This Report has been prepared for the purposes stated herein and should not be relied upon for any other purpose. Our Client is the only authorized user of this report and is restricted for the purpose indicated in the engagement letter. This restriction does not preclude the Client from providing a copy of the report to third-party advisors whose review would be consistent with the intended use. We do not take any responsibility for the unauthorized use of this report.
- While our work has involved an analysis of financial information and accounting records, our engagement does not include an audit in accordance with generally accepted auditing standards of the client existing business records. Accordingly, we express no audit opinion or any other form of assurance on this information.
- The valuation has been performed based on the provisional financial statements provided by Management for the 9-month period ended 31 December 2025 and audited financials for earlier years.
- In no event shall we be liable for any loss, damages, cost or expenses arising in any way from fraudulent acts, misrepresentations or wilful default on part of the client or companies, their directors, employees or agents.
- The Client and its Management/representatives warranted to us that the information they supplied was complete, accurate, true and correct to the best of their knowledge. We have relied upon the representations of the clients, their Management and other third parties, if any, concerning the financial data, operational data and other information, except as specifically stated to the contrary in the report. We shall not be liable for any loss, damages, cost or expenses arising from fraudulent acts, misrepresentations, or wilful default on part of the companies, their directors, employee or agents.
- EYMBSLLP is not aware of any contingency, commitment or material issue which could materially affect the economic environment and future performance of the InvIT Assets and therefore, the fair value of the InvIT Assets.
- In the course of the valuation, we were provided with both written and verbal information. We have however, evaluated the information provided to us by the Management through broad inquiry, analysis and review but have not carried out a due diligence or audit of the information provided for the purpose of this engagement. Our conclusions are based on the assumptions, forecasts and other information given by the Management.

- We do not provide assurance on the achievability of the results forecast by the Management as events and circumstances do not occur as expected; differences between actual and expected results may be material. We express no opinion as to how closely the actual results will correspond to those projected/forecast as the achievement of the forecast results is dependent on actions, plans and assumptions of Management. However, the information provided, and assumptions used by the Management in developing projections have been appropriately reviewed, enquiries have been made regarding basis of key assumptions in context of business being valued and the industry/economy.
- The Report assumes that the InvIT Assets complies fully with relevant laws and regulations applicable in its area of operations and usage unless otherwise stated, and that the InvIT Assets will be managed in a competent and responsible manner. Further, as specifically stated to the contrary, this report has given no consideration to matters of a legal nature, including issues of legal title and compliance with local laws, and litigations and other contingent liabilities that are not recorded/reflected in the balance sheet/fixed assets register provided to us.
- The valuation analysis and result are governed by concept of materiality.
- It has been assumed that the required and relevant policies and practices have been adopted by Company and would be continued in the future.
- The fee for the Report is not contingent upon the results reported.
- The figures in the tables in this report may not sum or cross cast, due to rounding differences.
- We owe responsibility to only to the Client that has appointed us under the terms of the Engagement Agreement. We will not be liable for any losses, claims, damages or liabilities arising out of the actions taken, omissions or advice given by any other person.
- The actual transacted value achieved may be higher or lower than our estimate of value (or value range of value) depending upon the circumstances of the transaction (for example the competitive bidding environment), the nature of the business (for example the purchaser's perception of potential synergies). The knowledge, negotiating ability and motivation of the buyers and sellers will also affect the transaction value achieved.
- We have also relied on data from external sources to conclude the valuation. These sources are believed to be reliable and therefore, we assume no liability for the truth or accuracy of any data, opinions or estimates furnished by others that have been used in this analysis. Where we have relied on data, opinions or estimates from external sources, reasonable care has been taken to ensure that such data has been correctly extracted from those sources and /or reproduced in its proper form and context.
- This Report is subject to the laws of India.
- Any person/ party intending to provide finance/ invest in the units/ businesses of the Trust/ their holding companies/ SPVs, if any, shall do so after seeking their own professional advice and after carrying out their own due diligence procedures to ensure that they are making an informed decision. If any person/ party (other than the Client) chooses to place reliance upon any matters included in the Report, they shall do so at their own risk and without recourse to us.

V. Industry Overview

1. Road Network in India

The Roads sector in India is a crucial component of the country's infrastructure, facilitating transportation, connectivity, and economic growth. India has the second-largest road network in the world, spanning a total of 6.6 Million kilometres (kms). This road network plays a pivotal role in India's road infrastructure as it facilitates the transportation of 70% of all goods within the country, while 85% of India's total passenger traffic relies on roads for commuting. The road network is sub-divided into 3 categories:



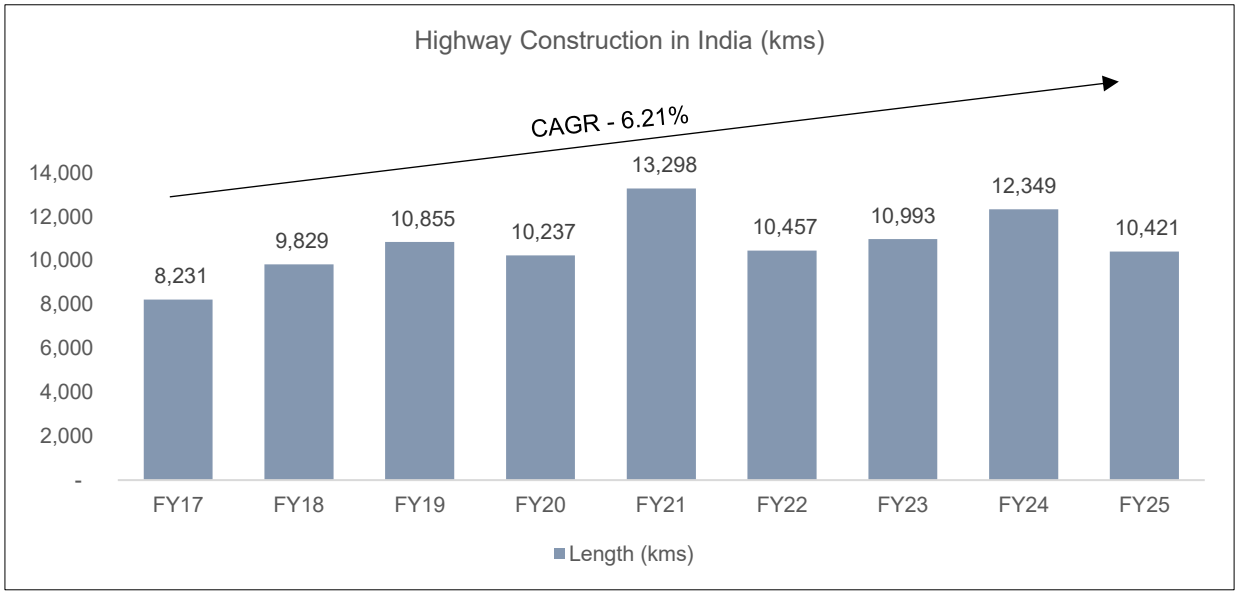
Source: IBEF Roads Report, August 2025

2. Key Statistics

Highway construction in India increased at a CAGR of 6.21% between FY17-FY25 and the roads sector has grown to about 1,46,342 km with 10,660 km built in FY 2025, as on July 30, 2025. The key component of this effort is the Bharatmala Pariyojana, under which projects are executed in categories such as Economic Corridors Development, Inter-corridor and Feeder Routes Development, National Corridors Efficiency Improvement, Border and International Connectivity Roads, Coastal and Port Connectivity Roads, and Expressways. This flagship program has awarded 26,425 km and constructed 19,826 km of roads until February 2025, with an expenditure of INR 4.92 lakh crore as of February 28, 2025 (Source: Press Information Bureau, Swarajya–National Highways Expansion, Sansad).

India's national highway network has expanded significantly, growing by 60% in a decade, now standing at 146,195 km. Under the Union Budget 2025-26, the Government of India has allocated INR 2.87 lakh crore (USD 33.07 billion) to the Ministry of Road Transport and Highways, highlighting the prioritization of infrastructure development.

The private sector participation has shown high growth in the recent years. As of September 2025, there were 826 roads projects PPP out of 1883 total projects in India.

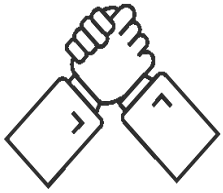


Source: IBEF Roads Report, August 2025

3. Growth Drivers

Growing Vehicular Demand

Growing domestic trade flows have led to rise in commercial vehicles and freight movement; supported by rise in production of commercial vehicles. This increase in commercial and freight vehicles will lead to strong tourist and trade flows between states, increasing the traffic and revenue.

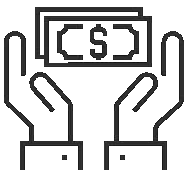


Government Initiatives

The Pradhan Mantri Gram Sadak Yojana (PMGSY) has significantly enhanced rural road connectivity. Under this scheme, 8,25,114 km of road length was sanctioned, out of which 7,87,520 km (95%) has been constructed as of December 2025. As of July 26, 2024, the total expenditure on this initiative stood at INR 3,24,186 crores (Source: Transforming India's Road Infrastructure, Press Information Bureau, Government of India).

Under Phase-I of Bharatmala Pariyojana, the Ministry has sanctioned the development of 34,800 km of national highways over a period of 5 years, with a budget allocation of INR 5,35,000 crore (US$ 76.55 billion).

The Ministry of Road Transport and Highways allocates Central Road Infrastructure Fund (CRIF) to State Governments and Union Territories for the development and maintenance of State Roads. Currently, 1,209 State Road projects, spanning approximately 14,369 kilometres and totalling INR 37,098 Crore are underway, with completion expected in phases by 2027.

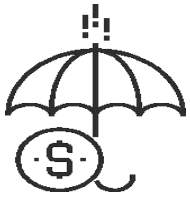


Growth in Private Participation

As of September 2025, there were 826 roads projects PPP out of 1883 total projects in India.

As of February 2025, there were 826 roads projects PPP out of 1825 total projects in India.

The government has successfully rolled out over 60 road projects in India worth over USD 10 billion based on the Hybrid Annuity Model (HAM).



Lower tax burdens

Companies enjoy 100% tax exemption in road projects for the first 5 years and 30% relief over the next 5 years. Interest payment on external commercial borrowings for infrastructure are now subject to a lower withholding tax of 5% vis-a-vis 20% earlier.
The GST on construction equipment has been reduced to 18% from 28%, which is expected to boost infrastructure development in the country.

4. E-Initiatives

a. Land Acquisition

The primary hurdle facing the sector involves land acquisition issues, prompting MoRTH to introduce the Bhoomi Raashi initiative to address this concern. The Bhoomi Rashi portal is an online platform launched by the Ministry of Road Transport and Highways (MoRTH) in India. It serves as a centralized database for land acquisition-related information for highway projects across the country.

The portal provides various functionalities related to land acquisition, including land records, ownership details, compensation disbursement, and project status updates. It aims to streamline the land acquisition process, enhance transparency, and facilitate efficient decision-making for highway development projects. The Bhoomi Rashi portal plays a crucial role in ensuring smooth implementation of infrastructure projects while addressing land acquisition-related challenges and avoid parking of public funds with the Competent Authority for Land Acquisition (CALA).

As on June 2025, the Bhoomi Rashi Portal had incorporated 3,427 projects of the National Highways Authority of India (NHAI). (Source: bhoomirashi.gov.in).

b. Toll collection and Revenue Leakages

Before the introduction of FASTag, toll collection processes typically involved manual cash payments at toll booths, which often resulted in long queues, delays, and traffic congestion, especially during peak hours and busy travel periods.

To ensure seamless movement of traffic through fee plazas and increase transparency in collection of user fee using FASTag, the National Electronic Toll Collection (NETC) programme, the flagship initiative of Ministry of Road Transport and Highways, has been implemented on pan-India basis.

With FASTag, vehicles are equipped with a prepaid RFID tag that is linked to the vehicle's registration and a prepaid account. As vehicles approach the toll plaza, the RFID tag is automatically scanned, and the toll amount is deducted from the prepaid account, allowing for seamless and hassle-free passage through toll booths. As of December 2025, a total of INR 11.87 crore FASTags have been issued by forty banks, resulting in a cumulative collection of INR 7,385.04 crores. (Source: npci.org.in)

The constant growth and adoption of FASTag by highway users is very encouraging and has helped increase efficiency in toll operations as it not only addresses the challenge of long queues and delays but also promotes digital payments, transparency, and accountability in toll collection operations.

Further, the industry offers abundant prospects for expansion and advancement, especially with the advent of technologies such as smart transportation systems, intelligent traffic management, and sustainable construction methods. Efforts are also underway to tackle environmental and safety issues, with a heightened emphasis on enhancing road safety protocols, mitigating traffic congestion, and advocating for the adoption of eco-friendly materials in road infrastructure development.

5. Future Outlook

The Roads sector in India is continually expanding, driven by numerous factors including urbanization, population growth, and the escalating demand for efficient transportation infrastructure. The surge in domestic trade flows has led to an increase in commercial vehicles and freight movement, further bolstering the sector's prospects.

The government's unwavering support, coupled with strategic investments and the adoption of advanced technologies, is expected to propel the sector forward, contributing to India's economic development and global competitiveness.

- Ministry of Road Transport and Highways has been allocated INR 2.87 Tn (USD 33.07 Bn) during FY 2025-26 Budget.
- To improve commuting experience, Wayside Amenities (WSA) are planned to be developed at more than six hundred locations on National Highways and Expressways by FY25.
- NHAI has made significant progress in developing Digital Highways with Optic Fibre Cable (OFC) infrastructure. Two pilot projects along the Delhi-Mumbai Expressway (1,367 km) and Hyderabad-Bangalore corridor (512 km) have been awarded, and the laying of OFC is underway. This infrastructure supports internet connectivity expansion in remote areas and enables next generation telecom technologies like 5G and 6G.
- Additionally, in a significant step towards supporting electric mobility, a total of 5,293 Electric Vehicle (EV) charging stations have been established along National Highways. This includes 4,729 stations set up by the Ministry of Petroleum and Natural Gas at an investment of INR 178 Crore. Additionally, the Ministry of Heavy Industries has targeted the establishment of 5,833 EV charging stations as part of a broader plan to deploy 7,432 stations (Source: Transforming India’s Road Infrastructure, Press Information Bureau, Government of India).
- Gati Shakti-National Master Plan aims to create a digital platform that would enable sixteen ministries to collaborate on integrated planning and coordinated implementation of projects. The plan will also bring together departments such as railways, roads & highways and others and implementation will be done with the help of geo-satellite imaging and Big Data, land and logistics.
- The Government has engaged a consultant to provide guidance on the integration of innovative technologies such as GNSS for toll collection without barriers. A pilot program for GNSS-based Electronic Toll Collection will be conducted in conjunction with FASTag on specific National Highways.
- The Ministry of Environment, Forests, and Climate Change (MoEF & CC) has directed the National Highways Authority of India (NHAI) and other relevant agencies to utilize fly ash in road construction projects located within a 300-kilometer radius of coal or lignite-based thermal power plants. This directive aims to encourage sustainable practices in road construction.

With ongoing projects and initiatives aimed at transforming the infrastructure landscape, the future outlook for the roads sector in India appears promising, poised to meet the evolving needs of the nation's growing economy and population.

VI. Background of the SPVs

1. Jaipur-Mahua Tollway Private Limited ("JMTPL")

JMTPL is situated in the state of Rajasthan, connecting Jaipur to Mahua on the east, near the edge of the south-western Uttar Pradesh. It is a 109.09 km toll road which forms a part of the NH 21 in Rajasthan. This is a four-lane road with two toll plazas, namely, Sikandra (TP1) at Km 156.6 (closer to Mahua) and Rajadhok (TP2) at Km 204.7 (closer to Jaipur).

It caters to following types of strategic movements:

- **Short-distance trips** including tourism and leisure trips between some of the most attractive tourist destinations in India. Such trips are mostly comprising of CJVs which are either local or run between key tourist locations of Agra and Bharatpur at one end and Jaipur on the other.
- **Medium-distance trips** between Rajasthan and Uttar Pradesh connect marble-processing sites of Rajasthan to its consumption sites in Uttar Pradesh. It also transports significant number of manufactured products across the states of UP and Rajasthan.
- **Long-distance trips** between Gujarat and southern Rajasthan, and UP/East India connects ports and industries of western India to major consumption and production centres in North India.

The toll plazas have been operational since May 2008 (TP1) and September (TP2) 2009. The following table presents a summary of the concession:

Particulars	Details
State	Rajasthan
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 8,717 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 21 four lane
Toll Plazas	TP1: Sikandra TP2: Rajadhok
Length of the asset	TP1: 54.73 km TP2: 54.36 km
Commencement of operations	TP1: May 2008 TP2: September 2009
Concession period	25 years
Concession end	FY32

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 24 September 2024

2. Mahua Bharatpur Expressways Limited ("MBEL")

MBEL is situated in the state of Rajasthan, connecting Mahua to Bharatpur on the east, near the edge of the south-western Uttar Pradesh. It is a 57.3 km toll road which forms a part of the NH 21 in Rajasthan. This is a four-lane road with two toll plazas, namely, Amoli (TP1) at Km 98.5 (closer to Mahua) and Ludhawai (TP2) at Km 64.5 (closer to Bharatpur).

MBEL caters to following types of strategic movements:

- **Short-distance trips** including tourism and leisure trips between some of the most attractive tourist destinations in India. Such trips are mostly comprising of CJVs which are either local or run between key tourist locations of Agra and Bharatpur at one end and Jaipur on the other.
- **Medium-distance trips** between Rajasthan and Uttar Pradesh connect marble-processing sites of Rajasthan to its consumption sites in Uttar Pradesh. It also transports significant number of manufactured products across the states of UP and Rajasthan.
- **Long-distance trips** between Gujarat and southern Rajasthan, and UP/East India connects ports and industries of western India to major consumption and production centres in North India.

The toll plazas have been operational since May 2009. The following table presents a summary of the concession:

Particulars	Details
State	Rajasthan
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 3,241 Mn
InvIT Holding in the SPV	99.97%
Highway and lane configuration	NH 21 four lane
Toll Plazas	TP1: Amoli TP2: Ludhawai
Length of the asset	TP1: 38.65 Km TP2: 18.65 Km
Commencement of operations	May 2009
Concession period	25 years
Concession end	FY32

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 24 September 2024

3. Western UP Tollway Private Limited ("WUPTPL")

WUPTPL is situated in western Uttar Pradesh (UP), connecting the cities of Meerut and Muzaffarnagar. It is a 78.1-Km four-lane tolled road which forms a part of the NH 334 in Uttar Pradesh. It has one toll plaza, namely, Siwaya (TP1) at Km 76.0, which lies close to Meerut (approximately 10 km from the city).

WUPTPL primarily caters to two different types of strategic movements:

- **Short-distance trips** by locals travelling within the National Capital Region (NCR) for work, leisure or short trips. This region is made up of contiguous urban settlements which are largely co-dependent on each other for exchanging goods and services.
- **Medium-distance trips** on WUPTPL which mostly have one end of their trip in Uttarakhand. This is because it is the primary route connecting Delhi NCR to the popular tourist destinations of Uttarakhand. Increased traffic volumes can be observed closer to weekends, as people from Delhi and nearby areas travel to Uttarakhand for leisure, tourism and business purposes.

The toll plaza on WUPTPL has been operational since April 2011. The following table presents a summary of the concession:

Particulars	Details
State	Uttar Pradesh
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 1,728 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 334 four lane
Toll Plazas	TP1: Siwaya
Length of the asset	78.1 Km
Commencement of operations	TP1: April 2011
Concession period	20 years
Concession end	FY27

The pictures of the Asset are shown below

Note: Site visit conducted by EYMBSLLP personnel on 27 September 2024

4. Nelamangala Devihalli Expressway Private Limited ("NDEPL")

NDEPL is situated in the southern state of Karnataka, connecting the city of Bangalore to Mangalore via NH75. It is one of the three sections making the corridor, the other two being Devihalli-Hassan Tollway Limited (DHTPL) and Hassan-Mangalore highway. This project is an 80.26-km toll road which forms a part of NH75 in Karnataka. This is a four-lane road with two toll plazas, namely, Doddakarenahalli/Nelamangala (TP1 closer to Bangalore) and Karbylu (TP2 closer to Devihalli).

NDEPL primarily caters to the following different types of movements, by virtue of its strategic location on various corridors:

- **Medium-distance** movements between Bangalore and Mangalore primarily for leisure and tourism. The CJVs contribute around 70% to the total traffic on the project. This is driven by the large number of tourist destinations along the Asset and close to the Asset which drives the car growth.
- **Work and leisure trips** between local cities, towns and villages like Nelamangala, Hassan, tourist spots, and Bangalore city.
- **Petroleum-related traffic**:
  - Between ports and refineries in Mangalore and Kochi, and bottling plants lying on the project, viz HPCL plant at Yediyur and BPCL plant at Solur.
  - Between bottling plants and neighbouring consumption centres like Bangalore.

The toll plazas have been operational since June 2012. The following table presents a summary of the concession:

Particulars	Details
State	Karnataka
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 5,936 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 75 4-lane
Toll Plazas	TP1: Doddakarenahalli TP2: Karbylu
Length of the asset	TP1: 40.13 km TP2: 40.13 km
Commencement of operations	TP1: June 2012 TP2: June 2012
Concession period	25 years
Concession end	FY33

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 20 September 2024

5. Farakka-Raiganj Highways Private Limited ("FRHPL")

FRHPL is situated in the state of West Bengal, connecting the cities of Farakka and Raiganj where it also passes through another city – Malda - and is located very close to the international border with Bangladesh. It is a 100.1 km toll road which forms a part of NH 12 in West Bengal. It is a four-lane road with two toll plazas, namely, Lakshmipur (TP1) at Km 297.9 (closer to Farakka in the south) and Gazole (TP2) at Km 351.4 (closer to Malda).

FRHPL primarily caters to three different types of strategic movements:

- **Short-distance trips** between Malda and other towns in Malda and Murshidabad districts.
- **Medium-distance trips** between southern and northern parts of West Bengal, including movements between Pakur region, Malda and Bangladesh.
- **Long-distance trips** between South and East India including Kolkata, and Northeast India. Kolkata is the largest urban agglomeration and one of the four older metropolitan cities of India and is both a large attractor and generator of consumption-linked commodities in East and Northeast India.

The toll plazas on Farakka Raiganj Highway Private Limited Road have been operational since October 2016. The following table presents a summary of the concession:

Particulars	Details
State	West Bengal
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 29,204 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH12 four-lane
Toll Plazas	TP1: Lakshmipur TP2: Gazole
Length of the asset	TP1: 47.67 km TP2: 43.38 km Malda Bypass: 9.05 km
Commencement of operations	October 2016
Concession period	30 years
Concession end*	FY42

** The average actual traffic volumes were higher than the target traffic volumes during the period FY20 – FY22. Accordingly, as per the Concession Agreement, the Concessionaire may elect to either reduce the concession period or pay an additional premium of 25% of the Realisable Fee (i.e. toll revenue) for the period of reduction in concession period, in lieu of the reduction in the concession period*

While the Concessionaire has proposed to elect for payment of additional premium, they are in discussion with NHAI over the period of payment due to discrepancies in the computation of the Passenger Car Units ("PCU(s)") made by the Concessionaire and NHAI.

The Concessionaire has made estimates based on contracts and third-party traffic studies, but NHAI and the Independent Engineer (IE) used different methodologies, leading to varied results. As per the information provided by the Management, litigation on this matter will be initiated soon.

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards. We have relied on the same for our valuation exercise.

The pictures of the Asset are shown below:

Note: Virtual site visit conducted by EYMBSLLP personnel on 3 October 2024

6. Walayar Vadakkencherry Expressways Private Limited ("WVEPL")

WVEPL is situated in the state of Kerala, connecting Walayar, a town located on the Tamil Nadu-Kerala border and Vadakkencherry, a town in the Palakkad district of Kerala. It is a section of the strategic NH 47 which serves as a key entry point to the State from its eastern end. It is a 53.5 km toll road which forms a part of the NH 47, a key highway connecting the city Salem in Tamil Nadu to Kochi in Kerala. It is a four-lane road with one toll plaza, namely, Chullimada Hamlet (Pampampallam) at km 189.4 (closer to Walayar).

WVEPL primarily caters to three different types of strategic movements:

- **Short-distance trips** undertaken largely by passenger vehicles for work/business trips wherein the movement is predominantly local between Walayar and other areas in the Palakkad district.
- **Medium-distance trips** made by both passenger and goods vehicles covering places such as Ernakulam and Kochi in Kerala, to Erode and Salem in Tamil Nadu.
- **Long-distance trips** predominantly by MAVs catering to Kerala's high demand for consumption goods and cement, from areas lying outside the state such as Chennai, Bangalore, Vijaywada etc.

The toll plaza has been operational since May 2015. The following table presents a summary of the concession:

Particulars	Details
State	Kerela
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 8,792 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 544 four lane
Toll Plazas	TP1: Pampampallam
Length of the asset	TP1: 53.5 km
Commencement of operations	May 2015
Concession period	20 years
Concession end	FY34
Revised concession end (due to variation in traffic) *	FY38

**The Concessionaire is in arbitration with NHAI over adjustments to the concession period due to discrepancies between actual and target traffic volumes as per the Concession Agreement.*

The Concession Agreement allows for changes in the concession period based on actual traffic compared to target benchmarks, with specific multipliers for adjustments. The Concessionaire has made estimates based on contracts and third-party traffic studies, but NHAI and the Independent Engineer (IE) used different methodologies, leading to varied results. The issue is currently under arbitration.

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards. However, the matter remains under arbitration currently.

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 26 September 2024

7. DA Toll Road Private Limited ("DATRPL")

DATRPL is situated in the state of Haryana and Uttar Pradesh connecting the Central National Capital Region (NCR; comprising Delhi state) to Agra in the south, via Palwal and Mathura. It is a 179.5-km toll road which forms a part of the NH 19 in Haryana and Uttar Pradesh. This was a four-lane road with two toll plazas - TP1 Srinagar (km74 closer to Delhi) and Mahuvan (km164 closer to Agra). DATRPL achieved provisional commercial operations date (PCOD) in May 2022 and the toll plaza at km74 (Srinagar) split into two toll plazas TP1 Prithala (km46) and Kotwan (km94) which became operational in July'22.

DATRPL primarily caters to three different types of strategic movements:

- **East-West long-distance movement** from Kashmir in North India to the India-Bangladesh border. This route originally connected Kabul in Afghanistan to Chittagong in Bangladesh.
- **North-south long-distance movement** connecting the Srinagar in Kashmir (northernmost state) to Kanyakumari in Tamil Nadu (southernmost state in mainland India).
- **Medium-distance movement** as part of being located one of the primary corridors connecting Delhi and Lucknow via Agra.
- **Short-distance inter-urban movement** between towns and cities in and around Delhi, Palwal, Mathura and Agra.

The following table presents a summary of the concession:

Particulars	Details
State	Haryana and Uttar Pradesh
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 68,172 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 19 / NH 44 Six-lane divided
Toll Plazas	KM46: Gadpuri KM94: Karman KM196: Mahuvan
Length of the asset	KM46: 45.88 KM KM94: 63.22 KM KM164: 69.00 KM
Commencement of operations	Mahuvan: October 2012 Gadpuri: July 2022 Karman: July 2022
Concession period	26 years
Concession end	FY39
Revised concession end (due to variation in traffic) *	FY44

**The Concession Agreement allows for changes in the concession period based on actual traffic volumes compared to target benchmarks, with specific multipliers for adjustments. The Company has made estimates based on contracts and third-party traffic studies.*

While the Management has submitted its proposal for extension in the concession period based upon its computation of the PCUs achieved during FY22-FY24, a response from NHAI is awaited.

Management has also considered extension of concession period on account of suspension or less toll collection fee at toll plazas due to lockdowns imposed by Government of India as remedial measure to Covid-19. While the extension letters are yet to be received from the Concessioning Authority, based

upon the extension letters received for the other SPVs, the Management is confident of receiving these extension letters as well.

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards. We have relied on the same for our valuation exercise.

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 16 September 2024

8. Ghaziabad Aligarh Expressway Private Limited ("GAEPL")

GAEPL is situated in western Uttar Pradesh (UP), connecting the cities of Ghaziabad and Aligarh via Khurja and Bulandshahr. It is a 125.3-km toll road which forms a part of NH 91 in Uttar Pradesh. This is a six-lane road with two toll plazas, namely, Luharli (TP1 closer to Ghaziabad) and Somna (TP2 closer to Aligarh).

GAEPL primarily caters to three different types of strategic movements:

- Local traffic between cities in western UP, Delhi Central NCR (consisting of Delhi state) and Ghaziabad.
- Trips to the industrial area of Sikandrabad which is located on the Asset and serves as a major attractor/generator of traffic.
- Heavy vehicle traffic originating from the states of Haryana, Punjab and Jammu and Kashmir in the north travelling to states in the east of India including West Bengal, Orissa and the north-eastern states. The asset is part of strategic north – east movement and majority of this traffic appears on Somna toll plaza

The toll plazas on the Asset have been operational since June 2015. The following table presents a summary of the concession:

Particulars	Details
State	Uttar Pradesh
Employer	NHAI
Project type	Design, Build, Finance, Operate and Transfer ("DBFOT")
Purchase price for the InvIT at an EV level	INR 24,606 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 91 six lane
Toll Plazas	TP1: Luharli TP2: Somna
Length of the asset	TP1: 63.15 Km TP2: 63.15 Km
Commencement of operations	June 2015
Concession period	24 years
Concession end	FY35
Revised concession end (due to variation in traffic)	FY40

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 27 September 2024

9. N. A. M. Expressway Private Limited ("NAMEPL")

N.A.M. Expressway Private Limited ("NAMEPL") is a company limited by shares, domiciled in India and was incorporated under the provisions of the erstwhile companies Act 1956 on June 15, 2010 as a Special Purpose Vehicle. It is an interstate route connecting southeastern Telangana with northern Andhra Pradesh. It connects the towns of Narketpally (Nalagonda district, Telangana) and Medarametla (Bapatla district, Andhra Pradesh). It is a 212.9-km four-lane toll road which forms a part of the state highway SH-2 (New SH36 in Andhra Pradesh (AP)). There are three toll plazas, namely, Madgulapally (TP1), Tummalacheruvu (TP2), and Elchuru (TP3) in the increasing order of their distance from Hyderabad.

The toll plazas on the Asset have been operational since June 2015. The following table presents a summary of the concession:

Particulars	Details
State	Telangana & Andhra Pradesh
Concessioning authority	Government of Andhra Pradesh
Project type	Design, Build, Finance, Operate and Transfer (DBFOT)
Purchase price for the InvIT at an EV level	INR 24,013 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	SH-2 (New SH36) four lane
Toll plazas	TP1: Madgulapally TP2: Tummalacheruvu TP3: Elchuru
Length (km)	TP1: 71.62 Km TP2: 70.62 Km TP3: 70.62 Km
Commencement of operations	January 2011
Concession period	24 years
Concession end	FY35
Revised Concession end (due to variation in traffic) *	FY40

**The Concession Agreement allows for changes in the concession period based on actual traffic/ revenue compared to target benchmarks, with specific multipliers for adjustments. The Company has made estimates based on contracts and third-party traffic studies.*

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards. We have relied on the same for our valuation exercise.

The pictures of the Asset are shown below:

Note: Virtual site visit conducted by EYMBSLLP personnel on 14 July 2025

10. Hazaribagh Tollway Private Limited ("HTPL")

HTPL is situated in the state of Jharkhand connecting the Ranchi, the capital of Jharkhand, and Hazaribagh, on the NH20. It is a 73.5 km long toll road which forms a part of the NH 20 in Jharkhand. This is a four-lane road with one toll plazas, namely, Pundag (TP1) at Km 100.4.

HTPL primarily caters to three different types of strategic movements:

- **Short-distance trips** including tourism and leisure travel trips between some of the key tourist destinations in Jharkhand. Many CJV users are either local or travel between Ramgarh and Patratu at one end and Ranchi at the other.
- **Medium-distance trips** between Bihar/rest of Jharkhand connecting the mines situated close to the Asset, to industries in Jharkhand. The Asset also transports a significant number of minerals, steel, and related products across the states of Bihar, West Bengal, and Odisha.
- **Long-distance trips** between Bihar/southern West Bengal and southern as well as central states of India.

The following table presents a summary of the concession:

Particulars	Details
State	Jharkhand
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 13,247 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 33, 4-lane divided
Toll Plazas	TP1: Pundag
Length of the asset	TP1: 73.5 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 3 October 2024

11. Jhansi-Lalitpur Tollway Private Limited ("JLTPL")

JLTPL is situated in the state of Uttar Pradesh, connecting Jhansi and Lalitpur, on the NH 44. NH44 caters to the North South movement between Jammu and Kashmir, and Kanyakumari, connecting major centres of economic activity such as Delhi, Nagpur, Hyderabad, Bangalore and Chennai.

JLTPL primarily caters to three different types of strategic movements:

- **Short-distance trips** including leisure and business travel trips between some of the key tourist towns/cities around the Asset. Many CJV trips are either local or run between Jhansi, Orchha, Talbehat, and Lalitpur.
- **Medium-distance trips and Long distance trips** connecting Gwalior, Delhi-NCR as well as northern regions with Nagpur, Hyderabad, Bangalore, and further southern regions.

JLTPL and JVTPL form a 100.0 Km long toll road which is a part of NH 44 in Uttar Pradesh. It is a four-lane divided road with two toll plazas. Babina (JLTPL) is at km 49.7. JLTPL is near Jhansi end of the Asset. The following table presents a summary of the concession:

Particulars	Details
State	Uttar Pradesh
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 7,723 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 44, 4-lane divided
Toll Plazas	Babina
Length of the asset	49.70 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51
Revised concession end (due to variation in traffic) *	FY46

**The Concession Agreement allows for changes in the concession period based on actual revenue compared to target benchmarks. The Company has made estimates based on contracts and third-party traffic studies.*

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards.

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 20 September 2024

12. Jhansi-Vigakhet Tollway Private Limited ("JVTPL")

JVTPL is situated in the state of Uttar Pradesh, connecting Jhansi and Lalitpur, on the NH 44. NH44 caters to the North South movement between Jammu and Kashmir, and Kanyakumari, connecting major centres of economic activity such as Delhi, Nagpur, Hyderabad, Bangalore and Chennai.

JVTPL primarily caters to three different types of strategic movements:

- **Short-distance trips** including leisure and business travel trips between some of the key tourist towns/cities around the Asset. Many CJV trips are either local or run between Jhansi, Orchha, Talbehat, and Lalitpur.
- **Medium-distance trips and Long distance trips** connecting Gwalior, Delhi-NCR as well as northern regions with Nagpur, Hyderabad, Bangalore, and further southern regions.

JLTPL and JVTPL form a 100.0 Km long toll road which is a part of NH 44 in Uttar Pradesh. It is a four-lane divided road with two toll plazas. Vigakhet (JVTPL) at km 49.3. JVTPL is near Lalitpur end of the asset.

The following table presents a summary of the concession:

Particulars	Details
State	Uttar Pradesh
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 4,735 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 44, 4-lane divided
Toll Plazas	Vigakhet
Length of the asset	49.3 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51
Revised concession end (due to variation in traffic) *	FY46

**The Concession Agreement allows for changes in the concession period based on actual revenue compared to target benchmarks. The Company has made estimates based on contracts and third-party traffic studies.*

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards.

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 20 September 2024

13. Kotwa-Muzaffarpur Tollway Private Limited ("KMTPL")

KMTPL is situated in the state of Bihar, connecting the two cities of Muzaffarpur and Kotwa in the northwestern part of Bihar. This Asset is an 80 km toll road which forms part of the NH 27 in Bihar. It is a four-lane road with one toll plaza, namely, Parsoni Khem (TP1) at Km 467+700 (closer to Kotwa).

KMTPL primarily caters to three different types of strategic movements:

- **Short-distance trips** made by cars for local movement between places such as Motihari, Chakia, Motipur and other local destinations mostly for work related purpose.
- **Medium-distance trips** made by light and heavy goods vehicles covering places such as Patna in the southern part of the state and Raxaul near the India-Nepal border thereby catering to the heavy movement of trucks between the two countries for trade purpose.
- **Long-distance trips** made by heavy goods vehicles to provide the east-west connectivity between states such as Uttar Pradesh, Uttarakhand and Delhi, and West Bengal and North-eastern states. The Asset also caters to movement of trucks to countries such as Bangladesh and Bhutan.

The following table presents a summary of the concession:

Particulars	Details
State	Bihar
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 11,142 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 27 four-lane
Toll Plazas	Parsoni Khem
Length of the asset	80 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51
Revised concession end (due to variation in traffic) *	FY47

**The Concession Agreement allows for changes in the concession period based on actual revenue compared to target benchmarks. The Company has made estimates based on contracts and third-party traffic studies.*

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards.

The pictures of the Asset are shown below:

Note: Virtual site visit conducted by EYMBSLLP personnel on 3 October 2024

14. Lucknow-Raebareli Tollway Private Limited ("LRTPL")

LRTPL is situated in the state of Uttar Pradesh, connecting the state capital Lucknow to Raebareli in the southern-central part of Lucknow. This Asset is a 70 km toll road which forms part of the NH 30 in Uttar Pradesh. It is a four-lane road with one toll plaza, namely, Dakhina Sekhpur (TP1) at Km 42.65 (closer to Lucknow).

LRTPL primarily caters to two different types of strategic movements:

- **Short-distance trips** undertaken majorly by passenger vehicles such as cars for work/business and tourism purpose wherein the movement is predominantly local between Lucknow, Raebareli, Prayagraj, Varanasi and Mirzapur. Further, LCVs cater to the local demand generated by two large consumption centres – Lucknow and Raebareli. Short distance trips made by MAVs feeds into the local consumption demand and also carries significant amount of Cement due to the presence of cement factories (Birla Cement, Dalla Cement) in the vicinity.
- **Long-distance trips** undertaken by heavy trucks between Punjab, Haryana, Uttar Pradesh, West Bengal, and Jharkhand carrying a mix of commodities such as agriculture/grocery items, metal, cement, petroleum and manufacturing items.

The following table presents a summary of the concession:

Particulars	Details
State	Uttar Pradesh
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 7,678 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 30 four-lane
Toll Plazas	Dakhina Sekhpur
Length of the asset	70.0 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51

The pictures of the Asset are shown below:

Note: Virtual site visit conducted by EYMBSLLP personnel on 3 October 2024

15. Madurai-Kanyakumari Tollway Private Limited ("MKTPL")

MKTPL is situated in the state of Tamil Nadu, connecting Madurai, northern Tamil Nadu and states north of Tamil Nadu with cities and towns in southern Tamil Nadu and Thiruvananthapuram in Kerala. The Asset is a 52.3-km toll road which lies on NH 44 in Tamil Nadu. It is a four-lane road with one toll plaza.

MKTPL primarily caters to three different types of strategic movements:

- **Short-distance trips** between cities and towns in southern Tamil Nadu including Madurai, Thirumangalam, Virudhunagar, Sivakasi, Kovilpatti, Tirunelveli and Thiruvananthapuram.
- **Medium-distance trips** between northern Tamil Nadu including Chennai and southern Karnataka including Bangalore at one end and southern parts of Tamil Nadu and Thiruvananthapuram.
- **Long-distance trips** between North India and Southern states like Andhra Pradesh, Telangana and Karnataka at one end and southern Tamil Nadu and Thiruvananthapuram at the other end.

The following table presents a summary of the concession:

Particulars	Details
State	Tamil Nadu
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 11,113 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 44 four-lane
Toll Plazas	Kappalur
Length of the asset	52.3 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51
Revised concession end (due to variation in traffic) *	FY46

**The Concession Agreement allows for changes in the concession period based on actual traffic/ revenue compared to target benchmarks. The Company has made estimates based on contracts and third-party traffic studies.*

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards.

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 30 September 2024

16. Kanyakumari-Etturavattam Tollway Private Limited ("KETPL")

KETPL is situated in the state of Tamil Nadu, connecting Madurai, northern Tamil Nadu and states north of Tamil Nadu with cities and towns in southern Tamil Nadu and Thiruvananthapuram in Kerala. The Asset is a 64.2-km toll road which lies on NH 44 in Tamil Nadu. It is a four-lane road with one toll plaza.

KETPL primarily caters to three different types of strategic movements:

- **Short-distance trips** between cities and towns in southern Tamil Nadu including Madurai, Thirumangalam, Virudhunagar, Sivakasi, Kovilpatti, Tirunelveli and Thiruvananthapuram.
- **Medium-distance trips** between northern Tamil Nadu including Chennai and southern Karnataka including Bangalore at one end and southern parts of Tamil Nadu and Thiruvananthapuram.
- **Long-distance trips** between North India and Southern states like Andhra Pradesh, Telangana and Karnataka at one end and southern Tamil Nadu and Thiruvananthapuram at the other end.

The following table presents a summary of the concession:

Particulars	Details
State	Tamil Nadu
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 6,611 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 44 four-lane
Toll Plazas	Etturvattam
Length of the asset	64.2 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 30 September 2024

17. Salaipudhpur-Madurai Tollway Private Limited ("SMTPL")

SMTPL is situated in the state of Tamil Nadu, connecting Madurai, northern Tamil Nadu and states north of Tamil Nadu with cities and towns in southern Tamil Nadu and Thiruvananthapuram in Kerala. The Asset is a 63.5-km toll road which lies on NH 44 in Tamil Nadu. It is a four-lane road with one toll plaza.

SMTPL primarily caters to three different types of strategic movements:

- **Short-distance trips** between cities and towns in southern Tamil Nadu including Madurai, Thirumangalam, Virudhunagar, Sivakasi, Kovilpatti, Tirunelveli and Thiruvananthapuram.
- **Medium-distance trips** between northern Tamil Nadu including Chennai and southern Karnataka including Bangalore at one end and southern parts of Tamil Nadu and Thiruvananthapuram.
- **Long-distance trips** between North India and Southern states like Andhra Pradesh, Telangana and Karnataka at one end and southern Tamil Nadu and Thiruvananthapuram at the other end.

The following table presents a summary of the concession:

Particulars	Details
State	Tamil Nadu
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 7,480 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 44 four-lane
Toll Plazas	Salaipudhur
Length of the asset	63.5 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 24 September 2024

18. Nanguneri-Kanyakumari Tollway Private Limited ("NKTPL")

NKTPL is situated in the state of Tamil Nadu, connecting Madurai, northern Tamil Nadu and states north of Tamil Nadu with cities and towns in southern Tamil Nadu and Thiruvananthapuram in Kerala. The Asset is a 63.47-km toll road which lies on NH 44 in Tamil Nadu. It is a four-lane road with one toll plaza.

NKTPL primarily caters to three different types of strategic movements:

- **Short-distance trips** between cities and towns in southern Tamil Nadu including Madurai, Thirumangalam, Virudhunagar, Sivakasi, Kovilpatti, Tirunelveli and Thiruvananthapuram.
- **Medium-distance trips** between northern Tamil Nadu including Chennai and southern Karnataka including Bangalore at one end and southern parts of Tamil Nadu and Thiruvananthapuram.
- **Long-distance trips** between North India and Southern states like Andhra Pradesh, Telangana and Karnataka at one end and southern Tamil Nadu and Thiruvananthapuram at the other end.

The following table presents a summary of the concession:

Particulars	Details
State	Tamil Nadu
Employer	NHAI
Project type	Toll, Operate and Transfer ("TOT")
Purchase price for the InvIT at an EV level	INR 8,156 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 44 four-lane
Toll Plazas	Nanguneri
Length of the asset	63.47 km
Commencement of operations	October 2020
Concession period	30 years
Concession end	FY51
Revised concession end (due to variation in traffic) *	FY52

**The Concession Agreement allows for changes in the concession period based on actual traffic/ revenue compared to target benchmarks. The Company has made estimates based on contracts and third-party traffic studies.*

Based on independent legal and accounting opinions obtained by the SPV, it believes that the estimates used are reasonable, evidence-based, and compliant with applicable accounting standards.

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 24 September 2024

19. Jammu Udhampur Highway Private Limited ("JU" or "JUHPL")

JU was acquired by CHT from National Investment and Infrastructure Fund Limited (NIIF) on 12 June 2025. The Enterprise Value INR of JU was reported at INR13,335 Mn.

JU has entered into a Concession Agreement on 19 July 2010 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Jammu to Udhampur section (from 15.000 km to 67.000 km) of NH1A in the Union Territory of Jammu & Kashmir by Four-Laning on design, build, finance, operate and transfer on Annuity ("BOT Annuity") basis. Summary of details of JU are as follows:

Particulars	Details
State	Jammu and Kashmir
Employer	NHAI
Project type	BOT (Annuity)
Purchase price for the InvIT at an EV level	INR 13,335 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH-1A (four lane)
Length of the asset	48 km
Commencement of operations	31 May 2018
Concession period	20 years
Concession end	FY32
Annuity Payment Schedule	Semi-annual in June and December

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 18 July 2025

20. Quazigund Expressway Private Limited (“QB” or “QEPL”)

QB was acquired by CHT from National Investment and Infrastructure Fund Limited (NIIF) on 12 June 2025. The Enterprise Value INR of QB was reported at INR19,693 Mn.

QB has entered into a Concession Agreement on May 10, 2018 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Quazigund to Banihal section (from km 189.350 to km 204.700 including two tunnels of 0.69 kms and 8.45 kms) of NH1A in the Union Territory of Jammu & Kashmir by Two/Four-Laning on design, build, finance, operate and transfer on Annuity (“DBFOT Annuity”) basis.

Summary of details of QB are as follows:

Particulars	Details
State	Jammu and Kashmir
Employer	NHAI
Project type	BOT (Annuity)
Purchase price for the InvIT at an EV level	INR 19,693 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH-1A (four lane)
Length of the asset	16 km
Commencement of operations	15 December 2022
Concession period	20 years
Concession end	FY32
Annuity Payment Schedule	Semi-annual in January and July

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 24 July 2025

21. Andhra Pradesh Expressway Private Limited ("APEPL")

Andhra Pradesh Expressway Private Limited is situated in Telangana and Andhra Pradesh and is a four lane highway on NH44 and connects Kothakota to Kurnool Section (from km. 136+077 to km. 210+699). APEPL operates as a BOT annuity model.

Summary of details of APEPL are as follows:

Particulars	Details
State	Telangana and Andhra Pradesh
Employer	NHAI and MoRTH
Project type	BOT (Annuity)
Purchase price for the InvIT at an EV level	INR 2,079 Mn
InvIT Holding in the SPV	100%
Highway and lane configuration	NH 44 four lane
Toll Plazas	TP1: Pullur
Length of the asset	74.6 km
Commencement of operations	TP1: September 2009
Concession period	20 years
Concession end	FY27

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 24 July 2025

22. Borgaon Watambare Highways Private Limited (“BWHPL”)

Borgaon Watambare Highways Private Limited (“BWHPL”) was incorporated under the provisions of the Companies Act, 2013 in India. The SPV has entered into a Concession Agreement on May 10, 2018 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Sangli to Solapur (Package-II: Borgaon to Watambare) section (from existing Ch. km. 219.956 to Ch. 272.394/Design Ch. km. 224.000 to km. 276.000) of NH166 in the State of Maharashtra on Hybrid Annuity Mode (HAM).

The following table presents a summary of the concession:

Particulars	Details
State	Maharashtra
Concessioning authority	NHAI
Highway and lane configuration	NH-166 four lane
Project type	HAM
Purchase price for the InvIT at an EV level (100% stake)	INR 3,868 Mn
InvIT Holding in the SPV	100%
Length (km)	52.0 Km
PCOD	September 2021
Construction Period	730 days
Concession Period (Operation period)	15 years
Concession end	FY37

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 20 September 2024

23. Mangalwedha Solapur Highways Private Limited ("MSHPL")

Mangalwedha Solapur Highways Private Limited ("MSHPL") was incorporated under the provisions of the Companies Act, 2013 in India. The SPV has entered into a Concession Agreement on May 10, 2018 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Sangli to Solapur (Package-IV: Mangalwedha to Solapur) section (from existing Ch. km. 314.969 to Ch. 370.452/Design Ch. km. 321.600 to km. 378.100) of NH166 in the State of Maharashtra on Hybrid Annuity Mode (HAM).

The following table presents a summary of the concession:

Particulars	Details
State	Maharashtra
Concessioning authority	NHAI
Highway and lane configuration	NH166 four lane
Project type	HAM
Purchase price for the InvIT at an EV level (100% stake)	INR 4,255 Mn
InvIT Holding in the SPV	100%
Length (km)	55.8 Km
PCOD	December 2021
Construction period	730 days
Concession period (operation period)	15 years
Concession end	FY37

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 20 September 2024

24. Mangloor Highways Private Limited (“MHPL”)

Mangloor Highways Private Limited (“MHPL”) was incorporated under the provisions of the Companies Act, 2013 in India. The SPV has entered into a Concession Agreement on May 9, 2018 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Mangloor to Telangana/Maharashtra border section (Existing km. 91.350 to 140.873/Design km. 86.788 to km. 135.751) of NH161 in the State of Telangana under Bharatmala Pariyojana on Hybrid Annuity Mode (HAM).

The following table presents a summary of the concession:

Particulars	Details
State	Telangana
Concessioning authority	NHAI
Highway and lane configuration	NH161 four lane
Project type	HAM
Purchase price for the InvIT at an EV level (100% stake)	INR 3,160 Mn
InvIT Holding in the SPV	100%
Length (km)	48.963 Km
PCOD	December 2021
Construction period	730 days
Concession period (operation period)	15 years
Concession end	FY37

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 27 September 2024

25. Tirumala Highways Private Limited ("THPL")

Tirumala Highways Private Limited ("THPL") was incorporated under the provisions of the Companies Act, 2013 in India. The SPV has entered into a Concession Agreement on May 9, 2018 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Chittor to Mallavaram section (from existing km. 158.000 to km. 41.800/Design km. 0.000 to km. 61.128) of NH140 in the State of Andhra Pradesh under Bharatmala Pariyojana on Hybrid Annuity Mode (HAM).

The following table presents a summary of the concession:

Particulars	Details
State	Andhra Pradesh
Concessioning authority	NHAI
Highway and lane configuration	NH140 six lane
Project type	HAM
Purchase price for the InvIT at an EV level (100% stake)	INR 5,129 Mn
InvIT Holding in the SPV	100%
Length (km)	61.128 Km
PCOD	May 2021
Construction period	910 days
Concession period (operation period)	15 years
Concession end	FY37

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 26 September 2024

26. Srirangam Infra Private Limited ("SIPL")

Srirangam Infra Private Limited ("SIPL") was incorporated under the provisions of the Companies Act, 2013 in India. The SPV has entered into a Concession Agreement on April 11, 2018 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Trichy to Kallagam section (from km. 0.000 to km. 38.700) of NH227 in the State of Tamil Nadu under Bharatmala Pariyojana on Hybrid Annuity Mode (HAM).

The following table presents a summary of the concession:

Particulars	Details
State	Tamil Nadu
Concessioning authority	NHAI
Highway and lane configuration	NH227 four lane
Project type	HAM
Purchase price for the InvIT at an EV level (100% stake)	INR 4,439 Mn
InvIT Holding in the SPV	100%
Length (km)	38.70 Km
PCOD	May 2021
Construction period	730 days
Concession period (operation period)	15 years
Concession end	FY37

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 30 September 2024

27. Shankarampet Projects Private Limited (“SPPL”)

Shankarampet Projects Private Limited (“SPPL”) was incorporated under the provisions of the Companies Act, 2013 in India. The SPV has entered into a Concession Agreement on May 9, 2018 with the National Highways Authority of India ('NHAI') for the development, maintenance and management for a stretch of National Highway from Ramsanpalle village to Mangloor village section (from existing km. 44.757 to km. 91.350/Design km. 39.980 to km. 86.788) of NH 61 in the State of Telangana under Bharatmala Pariyoana on Hybrid Annuity Mode (HAM).

The following table presents a summary of the concession:

Particulars	Details
State	Telangana
Concessioning authority	NHAI
Highway and lane configuration	NH161 four lane
Project type	HAM
Purchase price for the InvIT at an EV level (100% stake)	INR 4,447 Mn
InvIT Holding in the SPV	100%
Length (km)	46.808 Km
PCOD	October 2021
Construction period	730 days
Concession period (operation period)	15 years
Concession end	FY37

The pictures of the Asset are shown below:

Note: Site visit conducted by EYMBSLLP personnel on 27 September 2024

VII. Procedures Adopted

We have carried out the Enterprise Valuation of the InvIT Assets, in accordance with valuation standards as specified / applicable as per SEBI InvIT Regulations, to the extent applicable.

In connection with this analysis, we have adopted the following procedures to carry out the valuation analysis:

- Requested and received financial and qualitative information relating to the InvIT Assets
- Considered the key terms of Concession Agreements;
- Analysis of the Management Projections;
- Considered the Traffic Study Reports and Technical Reports;
- Considered the latest annuity letters for annuity received up to the valuation date;
- Discussed with the Investment Manager on: Background of the SPVs– business and fundamental factors that affect its earning-generating capacity and historical and expected financial performance
- Analysis of the key economic and industry factors which may affect the valuation of the SPV; Analysis of the information available in public domain/ subscribed databases in respect of the comparable companies/ comparable transactions, as considered relevant by us;
- Conducted site visits to assess the operating condition of the InvIT Assets as per the requirements of SEBI (InvIT Regulations) 2014 (as amended)
- Selection of valuation approach and valuation methodology/(ies), in accordance with SEBI (InvIT Regulations), as considered appropriate and relevant by us;
- Analysis of other publicly available information, as considered relevant by us; and
- Determination of Enterprise Value of the InvIT Assets as on the Valuation date.

VIII. Valuation Methodology

To determine the value of enterprises, three traditional approaches can be considered:

A. Market approach

The market approach measures value based on what other purchasers in the market have paid for assets that can be considered reasonably similar to those being valued.

B. Income approach

The income approach determines the value of a business based on its ability to generate desired economic benefit for the owners. The key objective of the income-based methods is to determine the business value as a function of the economic benefit.

C. Asset approach

The asset approach seeks to determine the business value based on the value of its assets.

Summary of various methods used / not used in this engagement is as given below:

Valuation Methodology	Used	Remarks
Income Approach		
Cash Flows method	Yes	DCF method is considered to be one of the most scientific methods of valuation. The individual InvIT Assets have definite concession periods and estimable cash flows for the entire length of the concession. We have therefore relied on the DCF method, using the financial projections provided to us.
Market Approach		
Market Price method	No	Not applicable as none of the SPVs are publicly listed
Comparable Companies' multiples method		
Quoted multiples	No	There are no listed companies comparable to the individual SPVs in terms of concession period, type or region
Transaction multiples	No	There were no recent transactions in comparable assets where sufficient information is available in the public domain.
Cost approach		
Net Asset Value method	No	Does not capture the earning capacity of the business and hence NAV would not be representative of fair value

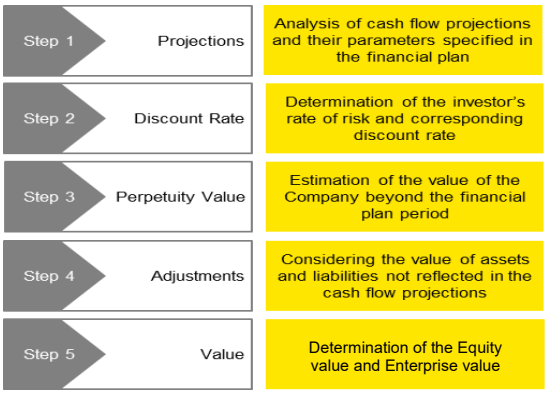
In the case of these SPVs, the Discounted Cash Flow method was considered the most appropriate method for valuation based on the characteristics of the assets being valued (as mentioned above).

Discounted Cash Flow method

Income Based Approach

- Taking into consideration the specifics of the InvIT Assets and the business environment, we have used the discounted cash flow (DCF) method (specifically, the Free Cash Flow to Firm approach) to determine the Enterprise value of the InvIT Assets.
- The profit and loss account forecast covers the remaining concession period of individual InvIT Assets.

DCF Methodology



Calculation of Weighted Average Cost of Capital ("WACC")

Purpose of a discount rate

The application of the income approach requires the determination of an appropriate discount rate at which future cash flows are discounted to their present value as of valuation date.

The discount rate reflects the time value of money and the risk associated with projected future cash flows. It is derived on the basis of the expected return on capital and the price of the best alternative investment. Therefore, the discount rate indicates the minimum required return from the asset being valued if the investor is not to be worse off than he would be if he had invested his money in the next best alternative. The return on this alternative investment must be comparable in terms of dimensions, timing and certainty, with the net cash flows expected to be derived from the subject asset.

To derive the discount rate, the weighted average cost of capital (WACC), which refers to the total capital invested (equity and debt), is used and adjusted for risk premiums or discounts, depending on the asset's specific risk compared to the risk of the overall enterprise. To determine the appropriate WACC it is adequate to consider cost of equity and cost of debt separately.

The derivation of the WACC is based on a group of guideline companies (peer group) which are operating in the same industry/sector as the InvIT Assets (so called "potential acquirers"). To calculate the WACC, cost of equity, cost of debt and the capital structure have to be determined based on market data of the group of "potential acquirers".

Formula for WACC Computation

$$WACC = \frac{E}{E+D} * r_E + \frac{D}{E+D} * r_D * (1-s)$$

$WACC$	=	Weighted Average Cost of Capital
r_E	=	Cost of Equity
r_D	=	Cost of Debt
E	=	Market Value of Equity
D	=	Market value of interest bearing debt
$E+D$	=	Enterprise Value
s	=	Corporate Tax Rate

Calculation of Cost of equity

For the estimation of the cost of equity for BOT Assets and TOT Assets, the capital asset pricing model ("CAPM") is applied. According to the CAPM, cost of equity consists of a risk-free interest rate and a risk premium. The risk premium is calculated by multiplying the market risk premium by the beta-factor, a company-specific measure of the systematic risk of an equity investment in a company.

To determine cost of equity, its components risk-free rate and risk premium have to be analysed.

1. Risk-free rate

The starting point for the calculation of an appropriate equity rate of return is the calculation of the risk-free rate, which corresponds to the minimum return that an investor can expect from an investment "without" risk. This risk-free rate of return is therefore generally derived from the rate of return on a high-quality long-term government bond. The risk-free rate is based on prevailing YTMs of Gilt Bonds with 10-year residual maturity (rounded) as on 31 December 2025.

2. Risk premium

i. Market risk premium

According to the CAPM, long-term capital market studies have shown that historically investments in shares have yielded higher returns than investments in low-risk bonds. Market Risk Premium ('MRP') levels of 7% p.a. has been considered based on EYMBSLLP internal study on the prevailing MRP in India.

According to the aforementioned internal study, based on historical analysis, the MRP for India post-1990 is estimated at approximately 6.8% for both the BSE Sensex and BSE 100 indices. Considering the improved reliability of post-liberalization data and the preference for a broader market index, we have considered an MRP of 7.0% for the purpose of the valuation.

ii. Beta coefficient

According to the CAPM in arriving at the appropriate risk premium, non-systematic risk, which attaches to the specific enterprise and can therefore generally be eliminated by diversifying, is distinguished from systematic risk. A risk premium will only be required to compensate for systematic risk, which cannot be eliminated by diversification. In practice, systematic risk is measured in terms of the beta coefficient and the market risk premium. The market risk premium is defined as the difference between the expected return on a market portfolio and the risk-free rate. The beta coefficient indicates the risk of the equity of the enterprise that is being valued relative to the average market risk (for stocks), which is represented by the market risk premium. A beta higher than one implies that the systematic risk of the company's stock is higher than the market risk. The risk premium is calculated by multiplying the market risk premium by the enterprise's beta coefficient.

Betas reported in public sources are "leveraged", which means that the additional risk to a stockholder due to the debt financing of the company is incorporated in the corresponding beta coefficient.

We have used the relevered beta (based on a three-year data considering Daily returns) of listed Indian companies that are engaged primarily in construction and operation of road assets in India.

In order to arrive at the comparable companies, we have carried out screening on S&P Capital IQ while applying the following selection criteria:

a. Indian companies listed on either Bombay Stock Exchange or National Stock Exchange (provides a set of 9,442 companies).
b. Industry classification as mentioned below (provides a set of 90 companies):
    i. Sector: Industrial; Sub-sector: Construction and Engineering; and Sub-sub-sector: Highways and Street Construction
    ii. Sector: Industrial; Sub-sector: Transportation Infrastructure; and Sub-sub-sector: Highways and Rail Tracks
c. The set of 90 companies were further shortlisted on the basis of the availability of their market capitalization (provides a set of 86 companies)
d. Basis the above list of 86 companies, we have further filtered the companies by applying a filter on the business description of the companies using the keywords "Road" or "Highway" or "Develop" (provides a set of 46 companies)
e. From the list of 46 companies, we have considered only those companies which do not have any qualified auditor's opinion on the Going Concern assumptions of the entity and for which majority revenue contribution is from road assets and construction activities (provides a set of 31 companies)
f. On the set of 31 companies, we separately applied a filter on the business segment of the companies using the following keywords:
    i. "BOT" or "Road" to arrive at a set of 7 companies.
    ii. "Engineering" and "Construction" to arrive at set of additional 5 companies.
g. From these 11 companies, we analysed the segment reporting basis the information available in the annual report and ruled out 5 companies who were majorly engaged in EPC and/or revenue contribution from BOT/TOT was minimal

Accordingly, we arrived at a set of 6 companies. Further, we have also added four listed InvITs to account for typical investor expectations from an InvIT.

Based on above screening criteria, we shortlisted a total of 10 companies. Please refer Appendix 2 for the list of comparable companies used for computation of beta.

iii. Additional Risk Premium

Additional risk premium of 0.5% has been considered to arrive at the cost of equity for NAMEPL basis operational and regulatory risk factors, considering it is a state highway concession agreement.

Formula for Cost of Equity Computation

$r_e = r_f + b * MRP + ARP$

r_e	=	Cost of equity
r_f	=	Risk-free rate of return
b	=	Beta, a measure of the level of non-diversifiable (i.e., systematic) risk associated with company returns
MRP	=	Market Equity Risk Premium
ARP	=	Additional Risk Premium

Annuity projects (BOT Annuity Assets and HAM Assets) have a relatively stable cash flow structure as compared to toll projects and do not have traditional risk factors such as traffic risk, tolling risk, etc. There are currently no major listed companies which could be considered comparable to such annuity projects. Hence, we have used the built-up approach to arrive at the cost of equity for such assets.

Given the risk profile for HAM Assets is majorly influenced by the movement in bank rates, we have applied a risk premium of 5.0% on the cost of debt for HAM Assets, to adequately account for the risk associated with the cash flows. The annuity payments for BOT Annuity Assets are fixed pre-determined semi-annual payments, and hence they have a lower risk profile than the HAM Assets. Accordingly, we have used a 2.0% lower risk premium to compute the cost of equity for BOT Annuity Assets.

Calculation of Cost of Debt

To determine the cost of debt, its components, that is, pre-tax cost of debt and tax rate have to be analysed.

i. Pre-tax cost of debt

The pre-tax cost of debt is the effective interest rate or the total amount of interest that a company or individual owes on any liabilities, such as bonds and loans. Pre-tax cost of debt of SPVs has been considered basis discussions with the Management regarding the effective interest rate.

ii. Tax Rate

Tax rate to be considered for computation of post-tax cost of debt should be the effective rate of the company. The effective tax rate represents the present value of the percentage of taxable income paid in taxes as at the Valuation Date. Tax rate of SPVs has been considered basis the effective tax rate of the respective SPVs.

Calculation of Weighted Average Cost of Capital

The Summary of WACC computed for each of the InvIT Assets is presented below:

Particulars	Weights	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL	DATRPL	GAEPL	NAMEPL
Cost of debt (%)	50.0	3.23	3.55	3.86	3.23	3.18	2.98	2.86	3.16	3.10
Cost of equity capital (%)	50.0	6.88	6.90	7.21	6.88	6.86	6.76	6.69	6.85	7.07
WACC		**10.11**	**10.45**	**11.07**	**10.12**	**10.04**	**9.74**	**9.55**	**10.01**	**10.17**

Particulars	Weights	HTPL	JLTPL	JVTPL	LRTPL	KMTPL	MKTPL	KETPL	SMTPL	NKTPL
Cost of debt (%)	50.0	3.13	3.01	3.00	3.19	3.17	3.11	3.19	3.16	3.24
Cost of equity capital (%)	50.0	6.83	6.77	6.77	6.86	6.85	6.82	6.86	6.85	6.89
WACC		**9.96**	**9.78**	**9.77**	**10.05**	**10.02**	**9.93**	**10.05**	**10.01**	**10.12**

Particulars	Weights	JU	QB	APEPL	BWHPL	MSHPL	MHPL	THPL	SIPL	SPPL
Cost of debt (%)	70.0	4.55	4.07	5.40	4.21	4.17	4.26	4.09	4.14	4.27
Cost of equity capital (%)	30.0	3.22	3.22	3.22	3.82	3.82	3.82	3.82	3.82	3.82
WACC		**7.77**	**7.28**	**8.62**	**8.03**	**7.99**	**8.08**	**7.91**	**7.96**	**8.09**

The computed WACC for the BOT Assets and TOT Assets ranges from 9.55% to 11.07%. For the annuity assets, the computed WACC ranges from 7.91% to 8.09% for HAM Assets and 7.28% to 8.62% for BOT Annuity Assets.

Detailed WACC Calculation has been provided in Appendix 2

IX. Valuation Assumptions

Key underlying assumptions as provided by the Management are as follows:

- **Operating Revenue:**
  BOT Assets and TOT Assets: Operating revenue is projected based on the Traffic Study Reports of independent consultants appointed by Management. The traffic study reports dated October 2025 have been provided to us by the Management. These reports presented an update of the traffic and revenue forecasts and other macro-economic assumptions. (Refer Appendix 4 for the base traffic for FY 2026, based upon the independent consultant's revised estimates and growth in traffic in the subsequent years as estimated by the independent consultant).
  Further, the toll rates for each of these assets have been estimated based on annual base rate increase (if applicable) and forecast of macro-economic factors such as Wholesale Price Index (WPI).

  Operating revenue have been projected by the Management basis the traffic study reports, dated October 2025 and estimated toll rates.

  BOT Annuity Assets: BOT Annuity Assets are annuity projects with agreed periodical annuities to be received from NHAI and the operating revenue has been projected by the Management accordingly.

  HAM Assets: Operating revenue comprises of construction income; annuity receipts; finance income on Balance Completion Cost; and operation and maintenance income from NHAI. These income receipts have been adjusted by the Management for applicable GST rates; and any claims/ reimbursements pertaining to change in law (i.e., any change in applicable GST rates). The income from these sources has been estimated as per the following:
  1. Construction income: As per the respective Concession Agreements, each SPV is entitled to receive 40% of the Bid Project Cost ("BPC") of the asset adjusted for the price index multiple as on date of achievement of the construction milestone as construction income. The said income has already been received as on Valuation Date by each of the SPVs from NHAI as agreed upon in the Concession Agreements in 5 equal instalments upon achievement of the construction milestones.
  2. Annuity receipts: The remaining 60% portion of the BPC (hereinafter referred to as Balance Completion Cost "BCC") is to be received by the SPVs in biannual instalments commencing from the Commercial Operations Date ("COD") over the remaining life of the Concession period as per the annuity schedules laid out in the respective Concession Agreements.
  3. Finance income: In addition to the above, the SPVs are also entitled to receive interest on the BCC along with the Annuity receipts. The interest would be calculated on reducing balance method at a rate equivalent to 3.0% plus the prevailing Bank Rate. The Management's projections indicate that the long-term Bank Rate is anticipated to be 5.50% over the concession period.
  4. Operation and maintenance income: All O&M expenses over the Concession period will be borne by the SPVs, and they shall receive biannual O&M payments from NHAI along with the annuity receipts. The payments shall be received as per the amounts specified in the respective Concession Agreements adjusted for the price index multiple.

- **Operational Expenditure:** Operational expenditure includes base operating expenditure, admin expenses, Project Manager fee, insurance costs, one-time expenses and other miscellaneous expenses. These expenses are estimated by the Management over the Concession Period.

- **Routine Repair and Maintenance Expenses:** Routine repair and maintenance expenses are estimated by the Management over the projected period.

- **Major Maintenance Expenses (MMR / Periodic maintenance):** Periodic maintenance expenses are incurred to bring the road asset back to an earlier condition or to keep the road asset operating at its present condition. MMR expenditures have been estimated by the Management, based on Technical Due Diligence ("TDD") reports, dated between 02 April 2025 - 08 April 2025, shared by independent technical consultants appointed by the Trust and internal estimates by the Management over the Concession Period.

- **Depreciation and Amortization:**
  BOT Assets: The total project cost has been capitalized in the books of the respective SPVs as an intangible asset.

  TOT Assets: The concession fee paid to NHAI has been capitalized in the books of the respective SPVs as an intangible asset.

  BOT Annuity Assets and HAM Assets: The concessions agreement has been capitalized in the books of the respective SPVs as an intangible asset.

  The said intangible assets have been amortized basis applicable depreciation method (SLM / WDV / Revenue Adjusted) over the respective period of concession. Since depreciation and amortization is a non-cash expenditure, it has been added back to arrive at the net cash flows.

- **Taxes:** Income taxes are estimated considering, as appropriate, brought forward losses, unabsorbed depreciation, MAT credit, tax depreciation/ amortisation policy proposed to be followed by the InvIT Assets and applicable corporate income tax rate.

- **Working Capital:**
  Working capital movement has been considered basis discussions with Management.

  BOT Assets and TOT Assets: Considering the nature of the business of operating road projects, incremental working capital requirement is expected to be Nil for the projected period. Release of working capital has been considered at the end of the respective concession period as the project life comes to an end.
  As per the Supplementary Agreement with NHAI for the Annual Pass Scheme, compensation is to be centrally disbursed by NHAI Headquarters on a weekly basis; however, compensation for the period 15 August 2025 to 31 December 2025 remains outstanding as on the Valuation Date. The Management expects to receive the outstanding amount during Q4 FY2026. However, given that there would be around 7 days of recurring receivable cycle against the revenue under the Annual Pass Scheme, based upon the terms of the Supplementary Agreement, 7 days receivables are estimated to be released at the end of the Concession Period.

  BOT Annuity Assets and HAM Assets: Balance with government authorities and current tax assets are assumed to be utilised during FY26 and FY27, while the release of remaining working capital has been considered at the end of the respective concession period as the project life comes to an end.

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X. Basis and Premise of Valuation

1. Basis of Valuation

Valuation Base means the indication of the type of value being used in an engagement. In the present case, we have determined the fair value of the SPVs at the Enterprise level. Fair Value Bases defined as under:

Fair Value

For this valuation, we have considered the International Valuation Standards ("IVS") and have adopted a definition of Market Value as given in IVS 102, "Market Value is the estimated amount for which an asset or liability should exchange on the Valuation Date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion". The Fair Value referred elsewhere in the Report is same as Market Value as defined above

2. Valuation Date

Valuation Date is the specific date at which the value of the assets to be valued gets estimated or measured. Valuation is time specific and can change with the passage of time inter-alia due to changes in the condition of the asset to be valued and market parameters. Accordingly, valuation of an asset as at a particular date can be different from other date(s).

The Valuation Date considered for the Enterprise Valuation of the InvIT Assets is 31 December 2025. Our Report does not take account of events or circumstances arising after Valuation Date and we have no responsibility to update the Report for such events or circumstances.

Premise of Value

Premise of Value refers to the conditions and circumstances how an asset is deployed. In the present case, we have determined the Fair Enterprise Value of the SPV on a Going Concern Value defined as under:

Going concern value is the value of a business enterprise that is expected to continue to operate in the future. The intangible elements of going concern value result from factors such as having a trained workforce, an operational plant, the necessary licenses, systems, procedures in place, etc.

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XI. Valuation Conclusion

The fair valuation of InvIT Assets as on 31 December 2025 has been carried out basis the Discounted Cash Flow (DCF) method of valuation. We have considered the financial projections of each of the InvIT Assets provided to us by the Management. Free Cash Flow to Firm approach under DCF method has been considered to determine the Enterprise Value of InvIT Assets. The Enterprise Value has been computed by discounting the free cash flows to the firm (InvIT Assets) from 1 January 2026 until the end of the concession period, using an appropriate Weighted Average Cost of Capital ("WACC").

The Management has appointed independent consultants to carry out traffic study and estimation of toll revenue and technical study for estimation of operating and maintenance expenses and major maintenance expenses, for each of the InvIT Assets over the concession period. We have relied upon Financial Projections, traffic study reports, technical reports provided by independent consultants and other information provided to us for carrying out the valuation of each of the InvIT Assets.

The valuation is based on various assumptions with respect to the InvIT Assets, including their respective present and future financial condition, business strategies and the environment in which they will operate in the future. These assumptions are based on the information that we have been provided with and our discussions with the Management, and reflect current expectations and views regarding future events, and therefore necessarily involve known and unknown risks and uncertainties.

The summary of valuation of each of the InvIT Assets is presented below:

SPV (Currency: INR mn)	Enterprise Value (excluding other financial assets)	Other financial assets[1]	Enterprise Value (including other financial assets)
JMTPL	7,627	0	7,627
MBEL	3,601	250	3,851
WUPTPL	(83)	0	(83)
NDEPL	4,791	0	4,791
FRHPL	27,373	0	27,373
WVEPL	9,333	0	9,333
DATRPL	77,096	0	77,096
GAEPL	35,560	0	35,560
NAMEPL	27,337	0	27,337
HTPL	20,376	326	20,701
JLTPL	12,659	90	12,749
JVTPL	7,863	90	7,953
LRTPL	7,760	694	8,454
KMTPL	14,418	0	14,418
MKTPL	16,226	25	16,251
KETPL	10,535	93	10,628
SMTPL	11,492	23	11,515
NKTPL	10,634	2,954	13,588
JU	10,491	0	10,491
QB	19,077	88	19,166
APEPL	868	256	1,124
BWHPL	3,404	0	3,404
MSHPL	3,260	0	3,260
MHPL	2,433	0	2,433
SIPL	3,278	0	3,278
SPPL	3,745	456	4,201
THPL	4,432	0	4,432
Total	**3,55,588**	**5,343**	**3,60,931**

Table above represents the 100% enterprise value for all SPVs including MBEL (0.03% of the equity shares of MBEL are held by Madhucon Infra Limited).

Notes:

1. According to IND AS 7, cash & cash equivalents are held for the purpose of meeting short term cash commitments rather than for investments or other purposes. Accordingly, cash & cash equivalents held by the respective SPVs, having maturity of more than 3 months have been considered as other financial assets.

2. WUPTPL reflects a negative Enterprise Value primarily due to projected negative cash flows arising from significant maintenance expenditure associated with the asset nearing the end of its useful life. Notwithstanding this, the Management has represented to us that WUPTPL maintains sufficient cash and liquid resources to fund its operating requirements and the anticipated maintenance expenditure.

Our views are based on the current economic, market, industry, regulatory, monetary and other conditions and on the information made available to us, as of the date of this Report. Such conditions may change significantly over a relatively short period of time, and we assume no responsibility and are not required to update, revise or reaffirm our conclusion set out in this Report to reflect events or developments subsequent to the date of the Report.

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Appendices

1. Discounted Cash flow workings for InvIT Assets as at 31 December 2025

1.1 JMTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Jun31
Number of months		3	12	12	12	12	12	2
Net revenue		**631**	**2,615**	**2,889**	**3,187**	**3,494**	**3,833**	**811**
Operating expenses		(279)	(784)	(777)	(808)	(1,358)	(1,368)	(114)
EBITDA		**352**	**1,831**	**2,112**	**2,379**	**2,136**	**2,464**	**697**
Depreciation and amortisation		(106)	(445)	(491)	(542)	(594)	(652)	(138)
EBIT		**246**	**1,386**	**1,621**	**1,837**	**1,542**	**1,812**	**559**
Tax expense		(43)	(242)	(283)	(321)	(269)	(317)	(98)
Debt free net income		**203**	**1,144**	**1,338**	**1,516**	**1,272**	**1,496**	**462**
Add: Depreciation and amortisation		106	445	491	542	594	652	138
Add: Provision for major maintenance		146	332	332	332	832	832	-
(Increase)/ Decrease in net working capital		42	-	-	-	-	-	55
Less: Major maintenance expenses		-	-	(878)	(878)	-	(1,664)	-
Debt free cash flow		**497**	**1,921**	**1,284**	**1,512**	**2,699**	**1,315**	**654**
Discount rate (%)		10.11	10.11	10.11	10.11	10.11	10.11	10.11
Present value factor- Mid year discounting		0.99	0.93	0.84	0.77	0.70	0.63	0.60
Present value debt free cash flow		**491**	**1,787**	**1,084**	**1,160**	**1,881**	**833**	**391**
Present value for explicit period	7,627							
Enterprise value	**7,627**							

1.2 MBEL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	May31
Number of months		3	12	12	12	12	12	2
Net revenue		**316**	**1,329**	**1,476**	**1,628**	**1,786**	**1,960**	**331**
Operating expenses		(197)	(478)	(499)	(498)	(736)	(745)	(60)
EBITDA		**119**	**851**	**977**	**1,130**	**1,050**	**1,215**	**271**
Depreciation and amortisation		(55)	(231)	(256)	(283)	(310)	(341)	(58)
EBIT		**64**	**620**	**720**	**847**	**740**	**874**	**214**
Tax expense		(11)	(108)	(126)	(148)	(129)	(153)	(37)
Debt free net income		**54**	**512**	**595**	**699**	**610**	**722**	**176**
Add: Depreciation and amortisation		55	231	256	283	310	341	58
Add: Provision for major maintenance		76	184	184	184	391	391	-
(Increase)/ Decrease in net working capital		8	-	-	-	-	-	24
Less: Major maintenance expenses		-	-	-	(896)	-	(782)	-
Debt free cash flow		**192**	**927**	**1,036**	**271**	**1,312**	**671**	**258**
Discount rate (%)		10.45	10.45	10.45	10.45	10.45	10.45	10.45
Present value factor- Mid year discounting		0.99	0.93	0.84	0.76	0.69	0.62	0.59
Present value debt free cash flow		**189**	**861**	**870**	**206**	**904**	**418**	**152**
Present value for explicit period	3,601							
Enterprise value	**3,601**							

1.3 WUPTPL

Currency: ₹ mn	Notes	Mar26	Jun26
Number of months		3	3
Net revenue		**373**	**404**
Operating expenses		(311)	(94)
EBITDA		**62**	**310**
Depreciation and amortisation		(200)	(178)
EBIT		**(138)**	**132**
Tax expense		-	-
Debt free net income		**(138)**	**132**
Add: Depreciation and amortisation		200	178
Add: Provision for major maintenance		132	-
(Increase)/ Decrease in net working capital		10	18
Less: Major maintenance expenses		(607)	-
Debt free cash flow		**(404)**	**328**
Discount rate (%)		11.07	11.07
Present value factor- Mid year discounting		0.99	0.96
Present value debt free cash flow		**(398)**	**316**
Present value for explicit period	(83)		
Enterprise value	**(83)**		

Note- WUPTPL reflects a negative Enterprise Value primarily due to projected negative cash flows arising from significant maintenance expenditure associated with the asset nearing the end of its useful life. Notwithstanding this, the Management has represented to us that WUPTPL maintains sufficient cash and liquid resources to fund its operating requirements and the anticipated maintenance expenditure.

1.4 NDEPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Jan33
Number of months		3	12	12	12	12	12	12	10
Net revenue		**344**	**1,373**	**1,479**	**1,638**	**1,831**	**1,989**	**2,186**	**2,008**
Operating expenses		(228)	(553)	(542)	(633)	(675)	(699)	(724)	(635)
EBITDA		**116**	**820**	**936**	**1,004**	**1,156**	**1,291**	**1,462**	**1,372**
Depreciation and amortisation		(76)	(314)	(314)	(314)	(314)	(314)	(314)	(261)
EBIT		**41**	**507**	**623**	**691**	**842**	**977**	**1,149**	**1,111**
Tax expense		-	(20)	(109)	(121)	(147)	(171)	(201)	(194)
Debt free net income		**41**	**487**	**514**	**570**	**695**	**807**	**948**	**917**
Add: Depreciation and amortisation		76	314	314	314	314	314	314	261
Add: Provision for major maintenance		101	203	203	253	253	253	253	253
(Increase)/ Decrease in net working capital		25	-	-	-	-	-	-	(67)
Less: Major maintenance expenses		-	-	(939)	-	-	-	-	(1,266)
Debt free cash flow		**242**	**1,003**	**91**	**1,137**	**1,262**	**1,373**	**1,515**	**99**
Discount rate (%)		10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12
Present value factor- Mid year discounting		0.99	0.93	0.84	0.77	0.70	0.63	0.57	0.53
Present value debt free cash flow		**239**	**933**	**77**	**872**	**879**	**869**	**870**	**52**
Present value for explicit period	4,791								
Enterprise value	**4,791**								

1.5 FRHPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33
Number of months		3	12	12	12	12	12	12	12
Net revenue		**665**	**2,891**	**3,274**	**3,600**	**3,954**	**4,245**	**4,649**	**5,082**
Operating expenses		(237)	(742)	(775)	(740)	(770)	(863)	(932)	(968)
EBITDA		**428**	**2,149**	**2,500**	**2,860**	**3,184**	**3,382**	**3,716**	**4,113**
Depreciation and amortisation		(137)	(561)	(561)	(561)	(561)	(561)	(561)	(561)
EBIT		**291**	**1,588**	**1,939**	**2,299**	**2,624**	**2,822**	**3,156**	**3,553**
Tax expense		-	(120)	(339)	(402)	(458)	(493)	(551)	(621)
Debt free net income		**291**	**1,469**	**1,600**	**1,897**	**2,165**	**2,329**	**2,604**	**2,932**
Add: Depreciation and amortisation		137	561	561	561	561	561	561	561
Add: Provision for major maintenance		119	264	264	264	264	293	293	293
(Increase)/ Decrease in net working capital		1	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(875)	(901)	-	-	-
Debt free cash flow		**548**	**2,293**	**2,425**	**1,846**	**2,088**	**3,182**	**3,458**	**3,786**
Discount rate (%)		10.04	10.04	10.04	10.04	10.04	10.04	10.04	10.04
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.63	0.58	0.52
Present value debt free cash flow		**542**	**2,134**	**2,051**	**1,419**	**1,459**	**2,020**	**1,995**	**1,985**
Present value for explicit period	27,373								
Enterprise value	**27,373**								

Currency: ₹ mn	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Mar41	May41
Number of months	12	12	12	12	12	12	12	12	1
Net revenue	**5,564**	**6,101**	**6,694**	**7,304**	**8,002**	**8,753**	**7,508**	**7,736**	**764**
Operating expenses	(1,007)	(1,048)	(1,010)	(1,054)	(1,248)	(1,344)	(1,398)	(1,362)	(97)
EBITDA	**4,558**	**5,053**	**5,684**	**6,250**	**6,754**	**7,409**	**6,110**	**6,374**	**667**
Depreciation and amortisation	(561)	(561)	(561)	(561)	(561)	(561)	(561)	(561)	(51)
EBIT	**3,997**	**4,492**	**5,123**	**5,689**	**6,193**	**6,849**	**5,549**	**5,813**	**617**
Tax expense	(698)	(785)	(895)	(994)	(1,082)	(1,197)	(970)	(1,016)	(108)
Debt free net income	**3,299**	**3,707**	**4,228**	**4,695**	**5,111**	**5,652**	**4,580**	**4,798**	**509**
Add: Depreciation and amortisation	561	561	561	561	561	561	561	561	51
Add: Provision for major maintenance	293	293	293	293	396	396	396	396	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	185
Less: Major maintenance expenses	-	-	(1,011)	(1,041)	-	-	-	(1,585)	-
Debt free cash flow	**4,152**	**4,561**	**4,071**	**4,508**	**6,068**	**6,609**	**5,536**	**4,169**	**745**
Discount rate (%)	10.04	10.04	10.04	10.04	10.04	10.04	10.04	10.04	10.04
Present value factor- Mid year discounting	0.48	0.43	0.39	0.36	0.33	0.30	0.27	0.24	0.23
Present value debt free cash flow	**1,979**	**1,975**	**1,602**	**1,612**	**1,972**	**1,952**	**1,486**	**1,017**	**172**

1.6 WVEPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Net revenue		**297**	**1,282**	**1,464**	**1,621**	**1,765**	**1,948**
Operating expenses		(136)	(382)	(399)	(389)	(410)	(441)
EBITDA		**162**	**900**	**1,064**	**1,232**	**1,355**	**1,507**
Depreciation and amortisation		(61)	(249)	(249)	(249)	(249)	(249)
EBIT		**101**	**651**	**815**	**983**	**1,105**	**1,258**
Tax expense		-	(10)	(142)	(172)	(193)	(220)
Debt free net income		**101**	**640**	**673**	**811**	**912**	**1,038**
Add: Depreciation and amortisation		61	249	249	249	249	249
Add: Provision for major maintenance		69	140	140	140	132	132
(Increase)/ Decrease in net working capital		167	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(755)	-	-
Debt free cash flow		**397**	**1,030**	**1,062**	**445**	**1,294**	**1,419**
Discount rate (%)		9.74	9.74	9.74	9.74	9.74	9.74
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.71	0.64
Present value debt free cash flow		**392**	**960**	**903**	**345**	**913**	**913**
Present value for explicit period	9,333						
Enterprise value	**9,333**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	Mar37	Aug37
Number of months	12	12	12	12	12	12	4
Net revenue	**2,108**	**2,305**	**2,545**	**2,784**	**3,070**	**3,390**	**1,308**
Operating expenses	(458)	(477)	(497)	(519)	(507)	(416)	(162)
EBITDA	**1,650**	**1,828**	**2,048**	**2,265**	**2,562**	**2,974**	**1,146**
Depreciation and amortisation	(249)	(249)	(249)	(249)	(249)	(249)	(88)
EBIT	**1,401**	**1,579**	**1,799**	**2,016**	**2,313**	**2,724**	**1,059**
Tax expense	(245)	(397)	(572)	(635)	(452)	(803)	(312)
Debt free net income	**1,156**	**1,182**	**1,226**	**1,381**	**1,861**	**1,921**	**747**
Add: Depreciation and amortisation	249	249	249	249	249	249	88
Add: Provision for major maintenance	132	132	132	132	132	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	(35)
Less: Major maintenance expenses	-	-	-	-	(926)	-	-
Debt free cash flow	**1,538**	**1,564**	**1,608**	**1,762**	**1,316**	**2,170**	**799**
Discount rate (%)	9.74	9.74	9.74	9.74	9.74	9.74	9.74
Present value factor- Mid year discounting	0.59	0.53	0.49	0.44	0.40	0.37	0.35
Present value debt free cash flow	**901**	**835**	**782**	**781**	**532**	**799**	**276**

Shape the future with confidence

1.7 DATRPL

Currency: ₹ mn Number of months	Notes	Mar26 3	Mar27 12	Mar28 12	Mar29 12	Mar30 12	Mar31 12
Net revenue		**1,554**	**6,780**	**7,436**	**8,274**	**9,201**	**10,126**
Operating expenses		(107)	(1,324)	(2,726)	(2,704)	(1,463)	(1,632)
EBITDA		**1,447**	**5,456**	**4,709**	**5,570**	**7,738**	**8,495**
Depreciation and amortisation		(305)	(1,249)	(1,249)	(1,249)	(1,249)	(1,249)
EBIT		**1,143**	**4,207**	**3,460**	**4,322**	**6,489**	**7,246**
Tax expense		(75)	(1,266)	(1,787)	(718)	(1,696)	(1,886)
Debt free net income		**1,067**	**2,941**	**1,673**	**3,604**	**4,793**	**5,359**
Add: Depreciation and amortisation		305	1,249	1,249	1,249	1,249	1,249
Add: Provision for major maintenance		(197)	315	1,561	1,561	157	157
(Increase)/ Decrease in net working capital		(160)	-	-	-	-	-
Less: Major maintenance expenses		-	(991)	-	(3,123)	-	-
Debt free cash flow		**1,015**	**3,514**	**4,484**	**3,291**	**6,199**	**6,766**
Discount rate (%)		9.55	9.55	9.55	9.55	9.55	9.55
Present value factor- Mid year discounting		0.99	0.93	0.85	0.78	0.71	0.65
Present value debt free cash flow		**1,003**	**3,282**	**3,823**	**2,561**	**4,404**	**4,388**
Present value for explicit period	77,096						
Enterprise value	**77,096**						

Currency: ₹ mn Number of months	Mar32 12	Mar33 12	Mar34 12	Mar35 12	Mar36 12	Mar37 12	Mar38 12
Net revenue	**11,188**	**12,284**	**13,588**	**14,934**	**16,497**	**18,072**	**19,910**
Operating expenses	(1,709)	(1,791)	(1,663)	(3,703)	(3,684)	(2,087)	(2,313)
EBITDA	**9,479**	**10,494**	**11,925**	**11,231**	**12,813**	**15,985**	**17,596**
Depreciation and amortisation	(1,249)	(1,249)	(1,249)	(1,249)	(1,249)	(1,249)	(1,249)
EBIT	**8,230**	**9,245**	**10,676**	**9,982**	**11,564**	**14,736**	**16,347**
Tax expense	(2,134)	(2,389)	(2,552)	(3,039)	(2,430)	(3,780)	(4,186)
Debt free net income	**6,096**	**6,855**	**8,124**	**6,943**	**9,134**	**10,956**	**12,162**
Add: Depreciation and amortisation	1,249	1,249	1,249	1,249	1,249	1,249	1,249
Add: Provision for major maintenance	157	157	157	2,002	2,002	191	191
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	(786)	-	(4,003)	-	-
Debt free cash flow	**7,502**	**8,261**	**8,744**	**10,193**	**8,382**	**12,396**	**13,602**
Discount rate (%)	9.55	9.55	9.55	9.55	9.55	9.55	9.55
Present value factor- Mid year discounting	0.59	0.54	0.49	0.45	0.41	0.38	0.34
Present value debt free cash flow	**4,441**	**4,464**	**4,314**	**4,590**	**3,446**	**4,652**	**4,659**

Currency: ₹ mn	Mar39	Mar40	Mar41	Mar42	Mar43	Feb44
Number of months	12	12	12	12	12	10
Net revenue	**21,854**	**24,112**	**26,370**	**28,869**	**31,645**	**30,204**
Operating expenses	(2,429)	(2,566)	(2,443)	(4,462)	(4,480)	(2,487)
EBITDA	**19,424**	**21,546**	**23,927**	**24,407**	**27,165**	**27,717**
Depreciation and amortisation	(1,249)	(1,249)	(1,249)	(1,249)	(1,249)	(1,085)
EBIT	**18,175**	**20,297**	**22,678**	**23,158**	**25,916**	**26,632**
Tax expense	(4,646)	(5,180)	(5,539)	(6,337)	(6,060)	(6,723)
Debt free net income	**13,530**	**15,117**	**17,139**	**16,821**	**19,856**	**19,909**
Add: Depreciation and amortisation	1,249	1,249	1,249	1,249	1,249	1,085
Add: Provision for major maintenance	191	191	191	1,930	1,930	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	(199)
Less: Major maintenance expenses	-	-	(954)	-	(3,859)	-
Debt free cash flow	**14,970**	**16,557**	**17,625**	**20,000**	**19,175**	**20,796**
Discount rate (%)	9.55	9.55	9.55	9.55	9.55	9.55
Present value factor- Mid year discounting	0.31	0.29	0.26	0.24	0.22	0.20
Present value debt free cash flow	**4,681**	**4,726**	**4,593**	**4,758**	**4,164**	**4,147**

1.8 GAEPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Number of months		3	12	12	12	12	12	12
Net revenue		**778**	**4,101**	**4,462**	**4,913**	**5,368**	**5,879**	**6,440**
Operating expenses		(432)	(914)	(951)	(991)	(958)	(995)	(1,107)
EBITDA		**347**	**3,187**	**3,511**	**3,922**	**4,410**	**4,884**	**5,333**
Depreciation and amortisation		(150)	(839)	(913)	(1,006)	(1,099)	(1,203)	(1,318)
EBIT		**197**	**2,348**	**2,598**	**2,916**	**3,311**	**3,681**	**4,015**
Tax expense		-	(298)	(454)	(509)	(579)	(643)	(701)
Debt free net income		**197**	**2,050**	**2,144**	**2,407**	**2,733**	**3,038**	**3,313**
Add: Depreciation and amortisation		150	839	913	1,006	1,099	1,203	1,318
Add: Provision for major maintenance		178	339	339	339	339	339	372
(Increase)/ Decrease in net working capital		174	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	-	(1,122)	(1,153)	-
Debt free cash flow		**700**	**3,228**	**3,396**	**3,751**	**3,047**	**3,426**	**5,003**
Discount rate (%)		10.01	10.01	10.01	10.01	10.01	10.01	10.01
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.64	0.58
Present value debt free cash flow		**691**	**3,005**	**2,874**	**2,885**	**2,131**	**2,178**	**2,891**
Present value for explicit period	35,560							
Enterprise value	**35,560**							

Currency: ₹ mn	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Jun39
Number of months	12	12	12	12	12	12	12	3
Net revenue	**7,017**	**7,667**	**8,395**	**9,191**	**10,011**	**10,976**	**11,967**	**2,936**
Operating expenses	(1,189)	(1,237)	(1,288)	(1,343)	(1,312)	(1,372)	(1,109)	(275)
EBITDA	**5,827**	**6,430**	**7,107**	**7,848**	**8,699**	**9,605**	**10,858**	**2,662**
Depreciation and amortisation	(1,436)	(1,569)	(1,718)	(1,881)	(2,049)	(2,247)	(2,449)	(601)
EBIT	**4,391**	**4,860**	**5,389**	**5,967**	**6,650**	**7,358**	**8,408**	**2,061**
Tax expense	(767)	(849)	(941)	(1,043)	(1,162)	(1,286)	(3,099)	(892)
Debt free net income	**3,624**	**4,011**	**4,447**	**4,924**	**5,488**	**6,072**	**5,309**	**1,168**
Add: Depreciation and amortisation	1,436	1,569	1,718	1,881	2,049	2,247	2,449	601
Add: Provision for major maintenance	372	372	372	372	372	372	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	(101)
Less: Major maintenance expenses	-	-	-	-	(1,281)	(1,322)	-	-
Debt free cash flow	**5,432**	**5,952**	**6,537**	**7,177**	**6,628**	**7,369**	**7,759**	**1,669**
Discount rate (%)	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01
Present value factor- Mid year discounting	0.53	0.48	0.43	0.39	0.36	0.33	0.30	0.28
Present value debt free cash flow	**2,853**	**2,842**	**2,837**	**2,831**	**2,377**	**2,402**	**2,299**	**466**

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1.9 NAMEPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Number of months		3	12	12	12	12	12	12
Net revenue		**799**	**3,695**	**3,816**	**4,410**	**4,523**	**4,958**	**5,227**
Operating expenses		(403)	(861)	(1,179)	(1,228)	(1,179)	(1,219)	(1,192)
EBITDA		**396**	**2,834**	**2,636**	**3,182**	**3,344**	**3,739**	**4,036**
Depreciation and amortisation		(111)	(613)	(633)	(732)	(751)	(823)	(868)
EBIT		**285**	**2,221**	**2,003**	**2,450**	**2,593**	**2,916**	**3,168**
Tax expense		-	-	(262)	(428)	(453)	(510)	(554)
Debt free net income		**285**	**2,221**	**1,741**	**2,022**	**2,140**	**2,407**	**2,615**
Add: Depreciation and amortisation		111	613	633	732	751	823	868
Add: Provision for major maintenance		-	293	578	578	497	497	432
(Increase)/ Decrease in net working capital		-	-	-	-	-	-	-
Less: Major maintenance expenses		(999)	-	(1,098)	(636)	-	(543)	-
Debt free cash flow		**(603)**	**3,128**	**1,854**	**2,696**	**3,387**	**3,183**	**3,914**
Discount rate (%)		10.17	10.17	10.17	10.17	10.17	10.17	10.17
Present value factor- Mid year discounting		0.99	0.93	0.84	0.77	0.70	0.63	0.57
Present value debt free cash flow		**(596)**	**2,908**	**1,565**	**2,065**	**2,356**	**2,010**	**2,243**
Present value for explicit period	27,337							
Enterprise value	**27,337**							

Currency: ₹ mn	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Nov39
Number of months	12	12	12	12	12	12	12	8
Net revenue	**5,871**	**6,153**	**6,988**	**7,339**	**8,305**	**8,693**	**9,858**	**6,815**
Operating expenses	(1,304)	(1,281)	(1,336)	(1,383)	(1,446)	(1,498)	(1,138)	(737)
EBITDA	**4,567**	**4,872**	**5,652**	**5,956**	**6,859**	**7,195**	**8,720**	**6,078**
Depreciation and amortisation	(975)	(1,021)	(1,160)	(1,218)	(1,379)	(1,443)	(1,636)	(1,131)
EBIT	**3,593**	**3,851**	**4,492**	**4,738**	**5,480**	**5,752**	**7,083**	**4,947**
Tax expense	(628)	(673)	(785)	(828)	(1,641)	(1,431)	(2,001)	(1,402)
Debt free net income	**2,965**	**3,178**	**3,707**	**3,910**	**3,839**	**4,321**	**5,082**	**3,545**
Add: Depreciation and amortisation	975	1,021	1,160	1,218	1,379	1,443	1,636	1,131
Add: Provision for major maintenance	497	432	432	432	432	432	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	332
Less: Major maintenance expenses	(947)	-	-	(1,419)	-	(1,172)	-	-
Debt free cash flow	**3,489**	**4,631**	**5,299**	**4,141**	**5,649**	**5,024**	**6,719**	**5,008**
Discount rate (%)	10.17	10.17	10.17	10.17	10.17	10.17	10.17	10.17
Present value factor- Mid year discounting	0.52	0.47	0.43	0.39	0.35	0.32	0.29	0.27
Present value debt free cash flow	**1,815**	**2,186**	**2,271**	**1,611**	**1,994**	**1,610**	**1,954**	**1,344**

1.10 HTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33
Number of months		3	12	12	12	12	12	12	12
Net revenue		**408**	**1,427**	**1,516**	**1,687**	**1,854**	**2,042**	**2,239**	**2,464**
Operating expenses		(308)	(137)	(146)	(984)	(1,002)	(997)	(524)	(557)
EBITDA		**99**	**1,290**	**1,370**	**702**	**852**	**1,045**	**1,715**	**1,907**
Depreciation and amortisation		(70)	(327)	(327)	(327)	(327)	(327)	(327)	(327)
EBIT		**29**	**963**	**1,043**	**375**	**524**	**718**	**1,388**	**1,580**
Tax expense		-	-	-	-	-	-	-	-
Debt free net income		**29**	**963**	**1,043**	**375**	**524**	**718**	**1,388**	**1,580**
Add: Depreciation and amortisation		70	327	327	327	327	327	327	327
Add: Provision for major maintenance		-	-	-	689	689	689	185	185
(Increase)/ Decrease in net working capital		(19)	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	-	-	(2,066)	-	-
Debt free cash flow		**80**	**1,290**	**1,370**	**1,391**	**1,540**	**(332)**	**1,900**	**2,092**
Discount rate (%)		9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.64	0.58	0.53
Present value debt free cash flow		**79**	**1,201**	**1,160**	**1,072**	**1,079**	**(211)**	**1,101**	**1,102**
Present value for explicit period	20,376								
Enterprise value	**20,376**								

Currency: ₹ mn	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Mar41	Mar42
Number of months	12	12	12	12	12	12	12	12	12
Net revenue	**2,714**	**2,975**	**3,271**	**3,585**	**3,943**	**3,245**	**3,414**	**3,572**	**5,705**
Operating expenses	(579)	(603)	(628)	(654)	(653)	(681)	(714)	(740)	(860)
EBITDA	**2,134**	**2,372**	**2,644**	**2,931**	**3,290**	**2,564**	**2,701**	**2,832**	**4,845**
Depreciation and amortisation	(327)	(327)	(327)	(327)	(327)	(327)	(327)	(327)	(327)
EBIT	**1,807**	**2,045**	**2,316**	**2,604**	**2,962**	**2,237**	**2,373**	**2,504**	**4,518**
Tax expense	(343)	(630)	(702)	(777)	(542)	(695)	(730)	(764)	(1,272)
Debt free net income	**1,464**	**1,415**	**1,615**	**1,827**	**2,420**	**1,542**	**1,643**	**1,740**	**3,246**
Add: Depreciation and amortisation	327	327	327	327	327	327	327	327	327
Add: Provision for major maintenance	185	185	185	185	185	215	215	215	215
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	-	-	(1,297)	-	-	-	-
Debt free cash flow	**1,976**	**1,928**	**2,127**	**2,340**	**1,636**	**2,084**	**2,185**	**2,282**	**3,788**
Discount rate (%)	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96
Present value factor- Mid year discounting	0.48	0.44	0.40	0.36	0.33	0.30	0.27	0.25	0.22
Present value debt free cash flow	**947**	**840**	**843**	**843**	**536**	**621**	**592**	**563**	**850**

Currency: ₹ mn	Mar43	Mar44	Mar45	Mar46	Mar47	Mar48	Mar49	Mar50	Oct50
Number of months	12	12	12	12	12	12	12	12	7
Net revenue	**6,344**	**6,984**	**7,607**	**8,329**	**9,101**	**9,993**	**10,888**	**11,934**	**7,201**
Operating expenses	(901)	(945)	(989)	(1,064)	(1,062)	(930)	(1,017)	(1,082)	(636)
EBITDA	**5,442**	**6,039**	**6,618**	**7,265**	**8,040**	**9,062**	**9,871**	**10,852**	**6,565**
Depreciation and amortisation	(327)	(327)	(327)	(327)	(327)	(327)	(327)	(327)	(509)
EBIT	**5,115**	**5,712**	**6,290**	**6,937**	**7,712**	**8,735**	**9,543**	**10,524**	**6,056**
Tax expense	(1,422)	(1,573)	(1,719)	(1,882)	(1,591)	(2,280)	(2,484)	(2,731)	(1,652)
Debt free net income	**3,693**	**4,139**	**4,572**	**5,056**	**6,122**	**6,454**	**7,059**	**7,793**	**4,404**
Add: Depreciation and amortisation	327	327	327	327	327	327	327	327	509
Add: Provision for major maintenance	215	215	215	215	215	-	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	(18)
Less: Major maintenance expenses	-	-	-	-	(1,933)	-	-	-	-
Debt free cash flow	**4,235**	**4,681**	**5,114**	**5,598**	**4,731**	**6,782**	**7,387**	**8,121**	**4,895**
Discount rate (%)	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96
Present value factor- Mid year discounting	0.20	0.19	0.17	0.15	0.14	0.13	0.12	0.10	0.10
Present value debt free cash flow	**864**	**868**	**863**	**859**	**660**	**861**	**852**	**852**	**477**

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1.11 JLTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Number of months		3	12	12	12	12	12	12
Net revenue		**265**	**1,118**	**1,237**	**1,364**	**1,500**	**1,638**	**1,726**
Operating expenses		(111)	(117)	(609)	(624)	(621)	(378)	(400)
EBITDA		**154**	**1,001**	**627**	**740**	**880**	**1,260**	**1,326**
Depreciation and amortisation		(41)	(195)	(195)	(195)	(195)	(195)	(195)
EBIT		**113**	**806**	**432**	**545**	**685**	**1,066**	**1,131**
Tax expense		-	-	-	(104)	-	(321)	(350)
Debt free net income		**113**	**806**	**432**	**442**	**685**	**744**	**781**
Add: Depreciation and amortisation		41	195	195	195	195	195	195
Add: Provision for major maintenance		-	-	395	395	395	130	130
(Increase)/ Decrease in net working capital		12	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	-	(1,184)	-	-
Debt free cash flow		**165**	**1,001**	**1,022**	**1,031**	**91**	**1,069**	**1,106**
Discount rate (%)		9.78	9.78	9.78	9.78	9.78	9.78	9.78
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.64	0.58
Present value debt free cash flow		**163**	**933**	**868**	**798**	**64**	**686**	**647**
Present value for explicit period	12,659							
Enterprise value	**12,659**							

Currency: ₹ mn	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39
Number of months	12	12	12	12	12	12	12
Net revenue	**1,884**	**2,069**	**2,266**	**2,496**	**2,722**	**2,990**	**3,272**
Operating expenses	(416)	(433)	(450)	(470)	(469)	(496)	(529)
EBITDA	**1,468**	**1,636**	**1,816**	**2,026**	**2,253**	**2,494**	**2,742**
Depreciation and amortisation	(195)	(195)	(195)	(195)	(195)	(195)	(195)
EBIT	**1,273**	**1,442**	**1,621**	**1,831**	**2,058**	**2,299**	**2,548**
Tax expense	(390)	(435)	(483)	(537)	(367)	(656)	(720)
Debt free net income	**884**	**1,006**	**1,138**	**1,294**	**1,691**	**1,643**	**1,828**
Add: Depreciation and amortisation	195	195	195	195	195	195	195
Add: Provision for major maintenance	130	130	130	130	130	125	125
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	-	-	(909)	-	-
Debt free cash flow	**1,208**	**1,331**	**1,463**	**1,619**	**1,107**	**1,963**	**2,148**
Discount rate (%)	9.78	9.78	9.78	9.78	9.78	9.78	9.78
Present value factor- Mid year discounting	0.53	0.49	0.44	0.40	0.37	0.33	0.30
Present value debt free cash flow	**644**	**646**	**647**	**652**	**406**	**656**	**654**

Currency: ₹ mn	Mar40	Mar41	Mar42	Mar43	Mar44	Mar45	Oct45
Number of months	12	12	12	12	12	12	7
Net revenue	**3,588**	**3,930**	**4,307**	**4,711**	**5,172**	**5,640**	**3,419**
Operating expenses	(554)	(580)	(608)	(638)	(670)	(677)	(332)
EBITDA	**3,034**	**3,349**	**3,699**	**4,073**	**4,502**	**4,963**	**3,086**
Depreciation and amortisation	(195)	(195)	(195)	(195)	(195)	(195)	(303)
EBIT	**2,839**	**3,155**	**3,504**	**3,878**	**4,308**	**4,768**	**2,784**
Tax expense	(793)	(873)	(962)	(1,056)	(1,164)	(1,028)	(776)
Debt free net income	**2,046**	**2,281**	**2,543**	**2,822**	**3,144**	**3,740**	**2,008**
Add: Depreciation and amortisation	195	195	195	195	195	195	303
Add: Provision for major maintenance	125	125	125	125	125	125	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	5
Less: Major maintenance expenses	-	-	-	-	-	(1,000)	-
Debt free cash flow	**2,366**	**2,601**	**2,863**	**3,142**	**3,463**	**3,059**	**2,316**
Discount rate (%)	9.78	9.78	9.78	9.78	9.78	9.78	9.78
Present value factor- Mid year discounting	0.28	0.25	0.23	0.21	0.19	0.17	0.16
Present value debt free cash flow	**656**	**657**	**658**	**658**	**661**	**532**	**374**

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1.12 JVTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Number of months		3	12	12	12	12	12	12
Net revenue		**184**	**778**	**860**	**950**	**1,041**	**1,135**	**1,193**
Operating expenses		(142)	(107)	(585)	(598)	(597)	(355)	(374)
EBITDA		**42**	**671**	**274**	**352**	**444**	**781**	**819**
Depreciation and amortisation		(24)	(123)	(123)	(123)	(123)	(123)	(123)
EBIT		**17**	**548**	**151**	**228**	**321**	**657**	**696**
Tax expense		-	-	(2)	(161)	-	(111)	(228)
Debt free net income		**17**	**548**	**149**	**67**	**321**	**546**	**468**
Add: Depreciation and amortisation		24	123	123	123	123	123	123
Add: Provision for major maintenance		-	-	389	389	389	128	128
(Increase)/ Decrease in net working capital		(3)	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	-	(1,168)	-	-
Debt free cash flow		**39**	**671**	**661**	**580**	**(334)**	**797**	**719**
Discount rate (%)		9.77	9.77	9.77	9.77	9.77	9.77	9.77
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.64	0.59
Present value debt free cash flow		**39**	**625**	**562**	**448**	**(236)**	**512**	**421**
Present value for explicit period	7,863							
Enterprise value	**7,863**							

Currency: ₹ mn	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39
Number of months	12	12	12	12	12	12	12
Net revenue	**1,306**	**1,431**	**1,565**	**1,727**	**1,880**	**2,064**	**2,256**
Operating expenses	(388)	(403)	(419)	(436)	(437)	(459)	(488)
EBITDA	**918**	**1,028**	**1,146**	**1,291**	**1,442**	**1,605**	**1,768**
Depreciation and amortisation	(123)	(123)	(123)	(123)	(123)	(123)	(123)
EBIT	**795**	**904**	**1,023**	**1,168**	**1,319**	**1,482**	**1,645**
Tax expense	(255)	(285)	(316)	(354)	(168)	(433)	(474)
Debt free net income	**540**	**620**	**707**	**814**	**1,151**	**1,049**	**1,171**
Add: Depreciation and amortisation	123	123	123	123	123	123	123
Add: Provision for major maintenance	128	128	128	128	128	122	122
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	-	-	(893)	-	-
Debt free cash flow	**790**	**870**	**958**	**1,065**	**509**	**1,294**	**1,416**
Discount rate (%)	9.77	9.77	9.77	9.77	9.77	9.77	9.77
Present value factor- Mid year discounting	0.53	0.49	0.44	0.40	0.37	0.33	0.30
Present value debt free cash flow	**421**	**423**	**424**	**429**	**187**	**433**	**431**

Currency: ₹ mn	Mar40	Mar41	Mar42	Mar43	Mar44	Mar45	Oct45
Number of months	12	12	12	12	12	12	7
Net revenue	**2,477**	**2,709**	**2,961**	**3,244**	**3,564**	**3,888**	**2,352**
Operating expenses	(510)	(533)	(558)	(584)	(612)	(620)	(299)
EBITDA	**1,967**	**2,176**	**2,404**	**2,660**	**2,952**	**3,268**	**2,053**
Depreciation and amortisation	(123)	(123)	(123)	(123)	(123)	(123)	(191)
EBIT	**1,843**	**2,053**	**2,281**	**2,537**	**2,829**	**3,145**	**1,862**
Tax expense	(525)	(577)	(635)	(700)	(773)	(608)	(516)
Debt free net income	**1,319**	**1,475**	**1,646**	**1,837**	**2,055**	**2,537**	**1,346**
Add: Depreciation and amortisation	123	123	123	123	123	123	191
Add: Provision for major maintenance	122	122	122	122	122	122	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	5
Less: Major maintenance expenses	-	-	-	-	-	(974)	-
Debt free cash flow	**1,564**	**1,720**	**1,891**	**2,082**	**2,300**	**1,808**	**1,542**
Discount rate (%)	9.77	9.77	9.77	9.77	9.77	9.77	9.77
Present value factor- Mid year discounting	0.28	0.25	0.23	0.21	0.19	0.17	0.16
Present value debt free cash flow	**434**	**435**	**435**	**437**	**440**	**315**	**250**

1.13 LRTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33
Number of months		3	12	12	12	12	12	12	12
Net revenue		**171**	**747**	**831**	**908**	**989**	**1,103**	**1,187**	**1,296**
Operating expenses		(772)	(141)	(151)	(162)	(1,115)	(1,133)	(1,129)	(569)
EBITDA		**(601)**	**606**	**680**	**746**	**(127)**	**(30)**	**58**	**727**
Depreciation and amortisation		(34)	(165)	(165)	(165)	(165)	(165)	(165)	(165)
EBIT		**(635)**	**441**	**515**	**581**	**(291)**	**(194)**	**(106)**	**562**
Tax expense		-	-	-	-	-	-	-	-
Debt free net income		**(635)**	**441**	**515**	**581**	**(291)**	**(194)**	**(106)**	**562**
Add: Depreciation and amortisation		34	165	165	165	165	165	165	165
Add: Provision for major maintenance		-	-	-	-	803	803	803	214
(Increase)/ Decrease in net working capital		26	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	-	-	-	(2,409)	-
Debt free cash flow		**(575)**	**606**	**680**	**746**	**676**	**773**	**(1,547)**	**941**
Discount rate (%)		10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.63	0.58	0.52
Present value debt free cash flow		**(568)**	**564**	**575**	**573**	**472**	**491**	**(892)**	**493**
Present value for explicit period	7,760								
Enterprise value	**7,760**								

Currency: ₹ mn	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Mar41	Mar42
Number of months	12	12	12	12	12	12	12	12	12
Net revenue	**1,425**	**1,546**	**1,703**	**1,906**	**2,014**	**2,195**	**2,405**	**2,616**	**2,861**
Operating expenses	(600)	(621)	(644)	(670)	(694)	(695)	(524)	(568)	(601)
EBITDA	**825**	**924**	**1,058**	**1,236**	**1,320**	**1,500**	**1,881**	**2,048**	**2,260**
Depreciation and amortisation	(165)	(165)	(165)	(165)	(165)	(165)	(165)	(165)	(165)
EBIT	**660**	**760**	**894**	**1,071**	**1,155**	**1,335**	**1,716**	**1,883**	**2,096**
Tax expense	-	(190)	(315)	(361)	(383)	(53)	(472)	(514)	(568)
Debt free net income	**660**	**569**	**578**	**710**	**772**	**1,282**	**1,244**	**1,369**	**1,528**
Add: Depreciation and amortisation	165	165	165	165	165	165	165	165	165
Add: Provision for major maintenance	214	214	214	214	214	214	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	-	-	-	(1,496)	-	-	-
Debt free cash flow	**1,039**	**948**	**957**	**1,088**	**1,150**	**165**	**1,409**	**1,534**	**1,692**
Discount rate (%)	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05
Present value factor- Mid year discounting	0.48	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22
Present value debt free cash flow	**495**	**410**	**376**	**389**	**373**	**49**	**378**	**374**	**375**

Currency: ₹ mn	Mar43	Mar44	Mar45	Mar46	Mar47	Mar48	Mar49	Mar50	Oct50
Number of months	12	12	12	12	12	12	12	12	7
Net revenue	**3,183**	**3,418**	**3,711**	**4,062**	**3,307**	**3,457**	**3,703**	**5,722**	**3,463**
Operating expenses	(637)	(673)	(712)	(754)	(743)	(785)	(829)	(967)	(567)
EBITDA	**2,545**	**2,745**	**2,999**	**3,308**	**2,565**	**2,673**	**2,873**	**4,754**	**2,896**
Depreciation and amortisation	(165)	(165)	(165)	(165)	(165)	(165)	(165)	(165)	(256)
EBIT	**2,381**	**2,580**	**2,834**	**3,144**	**2,400**	**2,508**	**2,709**	**4,590**	**2,640**
Tax expense	(640)	(690)	(754)	(832)	(645)	(673)	(723)	(1,196)	(729)
Debt free net income	**1,741**	**1,890**	**2,080**	**2,311**	**1,755**	**1,835**	**1,986**	**3,393**	**1,911**
Add: Depreciation and amortisation	165	165	165	165	165	165	165	165	256
Add: Provision for major maintenance	-	-	-	-	-	-	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	(10)
Less: Major maintenance expenses	-	-	-	-	-	-	-	-	-
Debt free cash flow	**1,905**	**2,055**	**2,245**	**2,476**	**1,920**	**2,000**	**2,150**	**3,558**	**2,157**
Discount rate (%)	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05
Present value factor- Mid year discounting	0.20	0.18	0.17	0.15	0.14	0.12	0.11	0.10	0.10
Present value debt free cash flow	**383**	**376**	**373**	**374**	**263**	**249**	**244**	**366**	**206**

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1.14 KMTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Net revenue		**311**	**1,358**	**1,502**	**1,659**	**1,821**	**1,991**
Operating expenses		(266)	(574)	(596)	(559)	(613)	(665)
EBITDA		**45**	**784**	**906**	**1,100**	**1,208**	**1,326**
Depreciation and amortisation		(67)	(319)	(319)	(319)	(319)	(319)
EBIT		**(22)**	**465**	**587**	**781**	**889**	**1,007**
Tax expense		-	-	-	-	-	-
Debt free net income		**(22)**	**465**	**587**	**781**	**889**	**1,007**
Add: Depreciation and amortisation		67	319	319	319	319	319
Add: Provision for major maintenance		116	232	232	232	237	237
(Increase)/ Decrease in net working capital		(6)	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(1,268)	-	-
Debt free cash flow		**155**	**1,016**	**1,138**	**65**	**1,445**	**1,563**
Discount rate (%)		10.02	10.02	10.02	10.02	10.02	10.02
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.64
Present value debt free cash flow		**153**	**946**	**963**	**50**	**1,010**	**993**
Present value for explicit period	14,418						
Enterprise value	**14,418**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39
Number of months	12	12	12	12	12	12	12	12
Net revenue	**2,180**	**2,386**	**2,613**	**2,693**	**2,912**	**3,181**	**3,484**	**3,814**
Operating expenses	(688)	(712)	(738)	(761)	(715)	(544)	(614)	(648)
EBITDA	**1,493**	**1,674**	**1,876**	**1,932**	**2,197**	**2,637**	**2,870**	**3,166**
Depreciation and amortisation	(319)	(319)	(319)	(319)	(319)	(319)	(319)	(319)
EBIT	**1,173**	**1,355**	**1,557**	**1,613**	**1,878**	**2,318**	**2,551**	**2,847**
Tax expense	-	(111)	(515)	(534)	(186)	(657)	(717)	(793)
Debt free net income	**1,173**	**1,244**	**1,041**	**1,079**	**1,692**	**1,661**	**1,834**	**2,054**
Add: Depreciation and amortisation	319	319	319	319	319	319	319	319
Add: Provision for major maintenance	237	237	237	237	237	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	-	-	(1,658)	-	-	-
Debt free cash flow	**1,729**	**1,800**	**1,597**	**1,635**	**590**	**1,980**	**2,153**	**2,373**
Discount rate (%)	10.02	10.02	10.02	10.02	10.02	10.02	10.02	10.02
Present value factor- Mid year discounting	0.58	0.52	0.48	0.43	0.39	0.36	0.33	0.30
Present value debt free cash flow	**999**	**945**	**762**	**709**	**232**	**709**	**701**	**702**

Currency: ₹ mn	Mar40	Mar41	Mar42	Mar43	Mar44	Mar45	Mar46	Apr46
Number of months	12	12	12	12	12	12	12	1
Net revenue	**4,179**	**4,552**	**4,984**	**5,455**	**5,963**	**4,893**	**5,110**	**278**
Operating expenses	(684)	(722)	(763)	(807)	(853)	(767)	(807)	(44)
EBITDA	**3,494**	**3,830**	**4,221**	**4,648**	**5,110**	**4,126**	**4,303**	**234**
Depreciation and amortisation	(319)	(319)	(319)	(319)	(319)	(319)	(319)	(336)
EBIT	**3,175**	**3,511**	**3,902**	**4,329**	**4,791**	**3,807**	**3,984**	**(102)**
Tax expense	(877)	(962)	(1,061)	(1,169)	(1,285)	(1,038)	(1,083)	(57)
Debt free net income	**2,299**	**2,549**	**2,841**	**3,161**	**3,506**	**2,769**	**2,902**	**(159)**
Add: Depreciation and amortisation	319	319	319	319	319	319	319	336
Add: Provision for major maintenance	-	-	-	-	-	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	5
Less: Major maintenance expenses	-	-	-	-	-	-	-	-
Debt free cash flow	**2,618**	**2,868**	**3,160**	**3,480**	**3,825**	**3,089**	**3,221**	**181**
Discount rate (%)	10.02	10.02	10.02	10.02	10.02	10.02	10.02	10.02
Present value factor- Mid year discounting	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14
Present value debt free cash flow	**704**	**701**	**702**	**703**	**702**	**515**	**489**	**26**

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1.15 MKTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32
Number of months		3	12	12	12	12	12	12
Net revenue		**323**	**1,476**	**1,631**	**1,345**	**1,408**	**1,473**	**2,304**
Operating expenses		(187)	(425)	(444)	(390)	(467)	(490)	(566)
EBITDA		**136**	**1,051**	**1,187**	**956**	**942**	**983**	**1,739**
Depreciation and amortisation		(63)	(306)	(306)	(306)	(306)	(306)	(306)
EBIT		**73**	**745**	**881**	**650**	**636**	**677**	**1,433**
Tax expense		-	-	-	-	-	-	-
Debt free net income		**73**	**745**	**881**	**650**	**636**	**677**	**1,433**
Add: Depreciation and amortisation		63	306	306	306	306	306	306
Add: Provision for major maintenance		68	142	142	142	179	179	179
(Increase)/ Decrease in net working capital		54	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(750)	-	-	-
Debt free cash flow		**257**	**1,193**	**1,329**	**347**	**1,121**	**1,162**	**1,918**
Discount rate (%)		9.93	9.93	9.93	9.93	9.93	9.93	9.93
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.64	0.58
Present value debt free cash flow		**254**	**1,111**	**1,126**	**267**	**786**	**741**	**1,113**
Present value for explicit period	16,226							
Enterprise value	**16,226**							

Currency: ₹ mn	Mar33	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39
Number of months	12	12	12	12	12	12	12
Net revenue	**2,559**	**2,797**	**3,047**	**3,355**	**3,633**	**4,001**	**4,327**
Operating expenses	(588)	(612)	(636)	(690)	(662)	(777)	(837)
EBITDA	**1,971**	**2,185**	**2,411**	**2,665**	**2,971**	**3,224**	**3,490**
Depreciation and amortisation	(306)	(306)	(306)	(306)	(306)	(306)	(306)
EBIT	**1,665**	**1,879**	**2,105**	**2,359**	**2,665**	**2,918**	**3,184**
Tax expense	(475)	(580)	(641)	(707)	(425)	(866)	(934)
Debt free net income	**1,190**	**1,299**	**1,464**	**1,652**	**2,240**	**2,052**	**2,250**
Add: Depreciation and amortisation	306	306	306	306	306	306	306
Add: Provision for major maintenance	179	179	179	179	179	235	235
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	-	-	(1,436)	-	-
Debt free cash flow	**1,676**	**1,784**	**1,950**	**2,137**	**1,290**	**2,594**	**2,791**
Discount rate (%)	9.93	9.93	9.93	9.93	9.93	9.93	9.93
Present value factor- Mid year discounting	0.53	0.48	0.44	0.40	0.36	0.33	0.30
Present value debt free cash flow	**885**	**857**	**852**	**849**	**466**	**853**	**835**

Currency: ₹ mn	Mar40	Mar41	Mar42	Mar43	Mar44	Mar45	Oct45
Number of months	12	12	12	12	12	12	7
Net revenue	**4,754**	**5,171**	**5,654**	**6,169**	**6,740**	**7,319**	**4,415**
Operating expenses	(872)	(909)	(948)	(989)	(964)	(809)	(495)
EBITDA	**3,882**	**4,263**	**4,706**	**5,179**	**5,775**	**6,510**	**3,920**
Depreciation and amortisation	(306)	(306)	(306)	(306)	(306)	(306)	(475)
EBIT	**3,576**	**3,957**	**4,400**	**4,874**	**5,470**	**6,205**	**3,445**
Tax expense	(1,033)	(1,130)	(1,242)	(1,362)	(1,097)	(1,638)	(985)
Debt free net income	**2,542**	**2,827**	**3,158**	**3,512**	**4,372**	**4,567**	**2,460**
Add: Depreciation and amortisation	306	306	306	306	306	306	475
Add: Provision for major maintenance	235	235	235	235	235	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	(18)
Less: Major maintenance expenses	-	-	-	-	(1,647)	-	-
Debt free cash flow	**3,083**	**3,368**	**3,699**	**4,053**	**3,266**	**4,872**	**2,917**
Discount rate (%)	9.93	9.93	9.93	9.93	9.93	9.93	9.93
Present value factor- Mid year discounting	0.27	0.25	0.23	0.20	0.19	0.17	0.16
Present value debt free cash flow	**839**	**834**	**833**	**830**	**609**	**826**	**460**

Shape the future with confidence

1.16 KETPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33
Number of months		3	12	12	12	12	12	12	12
Net revenue		**191**	**862**	**943**	**1,029**	**1,126**	**1,229**	**1,355**	**1,474**
Operating expenses		(289)	(398)	(413)	(396)	(440)	(471)	(488)	(504)
EBITDA		**(98)**	**465**	**530**	**633**	**686**	**757**	**868**	**969**
Depreciation and amortisation		(42)	(197)	(197)	(197)	(197)	(197)	(197)	(197)
EBIT		**(139)**	**268**	**333**	**436**	**489**	**560**	**671**	**772**
Tax expense		-	-	-	-	-	-	-	-
Debt free net income		**(139)**	**268**	**333**	**436**	**489**	**560**	**671**	**772**
Add: Depreciation and amortisation		42	197	197	197	197	197	197	197
Add: Provision for major maintenance		81	164	164	164	177	177	177	177
(Increase)/ Decrease in net working capital		14	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(901)	-	-	-	-
Debt free cash flow		**(3)**	**628**	**693**	**(105)**	**863**	**934**	**1,045**	**1,147**
Discount rate (%)		10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.63	0.58	0.52
Present value debt free cash flow		**(2)**	**585**	**587**	**(81)**	**603**	**593**	**603**	**601**
Present value for explicit period	10,535								
Enterprise value	**10,535**								

Currency: ₹ mn	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Mar41	Mar42
Number of months	12	12	12	12	12	12	12	12	12
Net revenue	**1,605**	**1,765**	**1,923**	**2,084**	**2,282**	**2,494**	**2,710**	**2,951**	**3,224**
Operating expenses	(522)	(541)	(522)	(579)	(622)	(646)	(671)	(698)	(727)
EBITDA	**1,083**	**1,224**	**1,400**	**1,505**	**1,660**	**1,848**	**2,039**	**2,253**	**2,498**
Depreciation and amortisation	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)
EBIT	**886**	**1,027**	**1,203**	**1,308**	**1,463**	**1,651**	**1,842**	**2,056**	**2,301**
Tax expense	-	(199)	(78)	(423)	(463)	(511)	(560)	(615)	(676)
Debt free net income	**886**	**828**	**1,125**	**885**	**1,000**	**1,140**	**1,282**	**1,442**	**1,624**
Add: Depreciation and amortisation	197	197	197	197	197	197	197	197	197
Add: Provision for major maintenance	177	177	177	195	195	195	195	195	195
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	(1,241)	-	-	-	-	-	-
Debt free cash flow	**1,260**	**1,202**	**258**	**1,277**	**1,392**	**1,532**	**1,673**	**1,833**	**2,016**
Discount rate (%)	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05
Present value factor- Mid year discounting	0.48	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22
Present value debt free cash flow	**600**	**520**	**102**	**456**	**452**	**452**	**449**	**447**	**446**

Currency: ₹ mn	Mar43	Mar44	Mar45	Mar46	Mar47	Mar48	Mar49	Mar50	Oct50
Number of months	12	12	12	12	12	12	12	12	7
Net revenue	**3,512**	**3,832**	**3,127**	**3,256**	**3,390**	**5,373**	**5,843**	**6,381**	**3,836**
Operating expenses	(709)	(570)	(554)	(583)	(614)	(758)	(802)	(849)	(497)
EBITDA	**2,803**	**3,262**	**2,573**	**2,673**	**2,776**	**4,616**	**5,042**	**5,532**	**3,339**
Depreciation and amortisation	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(197)	(306)
EBIT	**2,606**	**3,065**	**2,376**	**2,476**	**2,579**	**4,419**	**4,845**	**5,335**	**3,033**
Tax expense	(411)	(820)	(647)	(672)	(698)	(1,161)	(1,269)	(1,392)	(840)
Debt free net income	**2,195**	**2,245**	**1,729**	**1,804**	**1,880**	**3,257**	**3,576**	**3,943**	**2,193**
Add: Depreciation and amortisation	197	197	197	197	197	197	197	197	306
Add: Provision for major maintenance	195	-	-	-	-	-	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	0
Less: Major maintenance expenses	(1,363)	-	-	-	-	-	-	-	-
Debt free cash flow	**1,224**	**2,442**	**1,926**	**2,001**	**2,077**	**3,454**	**3,773**	**4,140**	**2,499**
Discount rate (%)	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05
Present value factor- Mid year discounting	0.20	0.18	0.17	0.15	0.14	0.12	0.11	0.10	0.10
Present value debt free cash flow	**246**	**447**	**320**	**302**	**285**	**431**	**428**	**426**	**239**

1.17 SMTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33
Number of months		3	12	12	12	12	12	12	12
Net revenue		**205**	**917**	**1,009**	**1,100**	**1,212**	**1,319**	**1,451**	**1,577**
Operating expenses		(252)	(467)	(483)	(461)	(455)	(491)	(508)	(526)
EBITDA		**(48)**	**450**	**526**	**639**	**757**	**829**	**943**	**1,051**
Depreciation and amortisation		(41)	(199)	(199)	(199)	(199)	(199)	(199)	(199)
EBIT		**(89)**	**251**	**327**	**439**	**557**	**629**	**744**	**852**
Tax expense		-	-	-	-	-	-	-	-
Debt free net income		**(89)**	**251**	**327**	**439**	**557**	**629**	**744**	**852**
Add: Depreciation and amortisation		41	199	199	199	199	199	199	199
Add: Provision for major maintenance		130	210	210	210	170	170	170	170
(Increase)/ Decrease in net working capital		32	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(878)	-	-	-	-
Debt free cash flow		**114**	**660**	**736**	**(29)**	**926**	**998**	**1,113**	**1,221**
Discount rate (%)		10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01
Present value factor- Mid year discounting		0.99	0.93	0.85	0.77	0.70	0.64	0.58	0.53
Present value debt free cash flow		**112**	**615**	**623**	**(23)**	**648**	**634**	**643**	**641**
Present value for explicit period	11,492								
Enterprise value	**11,492**								

Currency: ₹ mn	Mar34	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Mar41	Mar42
Number of months	12	12	12	12	12	12	12	12	12
Net revenue	**1,728**	**1,877**	**2,059**	**2,244**	**2,452**	**2,673**	**2,920**	**3,167**	**3,474**
Operating expenses	(545)	(565)	(540)	(602)	(650)	(676)	(703)	(732)	(763)
EBITDA	**1,183**	**1,312**	**1,519**	**1,642**	**1,801**	**1,997**	**2,216**	**2,436**	**2,711**
Depreciation and amortisation	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)
EBIT	**984**	**1,113**	**1,319**	**1,443**	**1,602**	**1,798**	**2,017**	**2,236**	**2,511**
Tax expense	-	(360)	(120)	(455)	(497)	(547)	(603)	(658)	(728)
Debt free net income	**984**	**753**	**1,200**	**987**	**1,106**	**1,251**	**1,414**	**1,578**	**1,783**
Add: Depreciation and amortisation	199	199	199	199	199	199	199	199	199
Add: Provision for major maintenance	170	170	170	186	186	186	186	186	186
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	-	(1,187)	-	-	-	-	-	-
Debt free cash flow	**1,353**	**1,122**	**382**	**1,373**	**1,491**	**1,637**	**1,800**	**1,964**	**2,169**
Discount rate (%)	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01
Present value factor- Mid year discounting	0.48	0.43	0.39	0.36	0.33	0.30	0.27	0.24	0.22
Present value debt free cash flow	**646**	**487**	**151**	**492**	**486**	**485**	**485**	**481**	**483**

Currency: ₹ mn	Mar43	Mar44	Mar45	Mar46	Mar47	Mar48	Mar49	Mar50	Oct50
Number of months	12	12	12	12	12	12	12	12	7
Net revenue	**3,771**	**4,106**	**4,472**	**4,876**	**3,970**	**4,143**	**4,299**	**6,836**	**4,121**
Operating expenses	(738)	(614)	(680)	(719)	(665)	(700)	(737)	(917)	(537)
EBITDA	**3,033**	**3,492**	**3,792**	**4,157**	**3,305**	**3,443**	**3,562**	**5,919**	**3,584**
Depreciation and amortisation	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(199)	(310)
EBIT	**2,833**	**3,293**	**3,592**	**3,957**	**3,105**	**3,243**	**3,363**	**5,719**	**3,274**
Tax expense	(481)	(878)	(954)	(1,046)	(831)	(866)	(896)	(1,489)	(902)
Debt free net income	**2,352**	**2,415**	**2,639**	**2,912**	**2,274**	**2,377**	**2,466**	**4,230**	**2,373**
Add: Depreciation and amortisation	199	199	199	199	199	199	199	199	310
Add: Provision for major maintenance	186	-	-	-	-	-	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	(8)
Less: Major maintenance expenses	(1,304)	-	-	-	-	-	-	-	-
Debt free cash flow	**1,434**	**2,614**	**2,838**	**3,111**	**2,473**	**2,576**	**2,666**	**4,429**	**2,674**
Discount rate (%)	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01
Present value factor- Mid year discounting	0.20	0.18	0.17	0.15	0.14	0.13	0.11	0.10	0.10
Present value debt free cash flow	**290**	**481**	**474**	**473**	**342**	**323**	**304**	**459**	**258**

1.18 NKTPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Mar32	Mar33	Mar34
Number of months		3	12	12	12	12	12	12	12	12
Net revenue		**175**	**845**	**929**	**1,017**	**1,127**	**1,230**	**1,345**	**1,463**	**1,610**
Operating expenses		(247)	(422)	(439)	(424)	(465)	(499)	(517)	(536)	(557)
EBITDA		**(72)**	**423**	**490**	**593**	**662**	**731**	**828**	**927**	**1,054**
Depreciation and amortisation		(55)	(241)	(241)	(241)	(241)	(241)	(241)	(241)	(241)
EBIT		**(127)**	**181**	**249**	**351**	**420**	**490**	**586**	**685**	**812**
Tax expense		-	-	-	-	-	-	-	-	-
Debt free net income		**(127)**	**181**	**249**	**351**	**420**	**490**	**586**	**685**	**812**
Add: Depreciation and amortisation		55	241	241	241	241	241	241	241	241
Add: Provision for major maintenance		78	157	157	157	165	165	165	165	165
(Increase)/ Decrease in net working capital		14	-	-	-	-	-	-	-	-
Less: Major maintenance expenses		-	-	-	(860)	-	-	-	-	-
Debt free cash flow		**20**	**580**	**647**	**(110)**	**827**	**897**	**993**	**1,092**	**1,219**
Discount rate (%)		10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12
Present value factor- Mid year discounting		0.99	0.93	0.84	0.77	0.70	0.63	0.57	0.52	0.47
Present value debt free cash flow		**20**	**539**	**547**	**(85)**	**576**	**567**	**571**	**570**	**577**
Present value for explicit period	10,634									
Enterprise value	**10,634**									

Currency: ₹ mn	Mar35	Mar36	Mar37	Mar38	Mar39	Mar40	Mar41	Mar42	Mar43
Number of months	12	12	12	12	12	12	12	12	12
Net revenue	**1,758**	**1,934**	**2,110**	**2,296**	**2,514**	**2,745**	**2,991**	**3,273**	**3,563**
Operating expenses	(578)	(562)	(644)	(690)	(717)	(746)	(777)	(809)	(795)
EBITDA	**1,180**	**1,372**	**1,466**	**1,607**	**1,797**	**1,999**	**2,214**	**2,464**	**2,768**
Depreciation and amortisation	(241)	(241)	(241)	(241)	(241)	(241)	(241)	(241)	(241)
EBIT	**939**	**1,131**	**1,225**	**1,365**	**1,555**	**1,757**	**1,972**	**2,223**	**2,526**
Tax expense	-	-	(77)	(451)	(500)	(552)	(607)	(670)	(387)
Debt free net income	**939**	**1,131**	**1,148**	**914**	**1,055**	**1,205**	**1,366**	**1,552**	**2,139**
Add: Depreciation and amortisation	241	241	241	241	241	241	241	241	241
Add: Provision for major maintenance	165	165	204	204	204	204	204	204	204
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	-
Less: Major maintenance expenses	-	(1,157)	-	-	-	-	-	-	(1,429)
Debt free cash flow	**1,345**	**380**	**1,594**	**1,360**	**1,501**	**1,651**	**1,811**	**1,998**	**1,156**
Discount rate (%)	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12
Present value factor- Mid year discounting	0.43	0.39	0.35	0.32	0.29	0.27	0.24	0.22	0.20
Present value debt free cash flow	**579**	**149**	**565**	**438**	**439**	**439**	**437**	**438**	**230**

Currency: ₹ mn	Mar44	Mar45	Mar46	Mar47	Mar48	Mar49	Mar50	Mar51	Apr51
Number of months	12	12	12	12	12	12	12	12	0
Net revenue	**3,887**	**3,185**	**3,322**	**3,464**	**5,575**	**6,040**	**6,577**	**7,193**	**21**
Operating expenses	(651)	(640)	(674)	(710)	(863)	(912)	(966)	(1,023)	(3)
EBITDA	**3,235**	**2,545**	**2,648**	**2,754**	**4,712**	**5,128**	**5,612**	**6,170**	**19**
Depreciation and amortisation	(241)	(241)	(241)	(241)	(241)	(241)	(241)	(241)	(1)
EBIT	**2,994**	**2,304**	**2,407**	**2,512**	**4,471**	**4,886**	**5,370**	**5,928**	**18**
Tax expense	(813)	(640)	(666)	(693)	(1,186)	(1,290)	(1,412)	(1,553)	(5)
Debt free net income	**2,180**	**1,664**	**1,741**	**1,820**	**3,285**	**3,596**	**3,958**	**4,376**	**13**
Add: Depreciation and amortisation	241	241	241	241	241	241	241	241	1
Add: Provision for major maintenance	-	-	-	-	-	-	-	-	-
(Increase)/ Decrease in net working capital	-	-	-	-	-	-	-	-	42
Less: Major maintenance expenses	-	-	-	-	-	-	-	-	-
Debt free cash flow	**2,422**	**1,905**	**1,982**	**2,061**	**3,527**	**3,837**	**4,200**	**4,617**	**56**
Discount rate (%)	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12
Present value factor- Mid year discounting	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.09	0.09
Present value debt free cash flow	**437**	**312**	**295**	**279**	**433**	**428**	**425**	**425**	**5**

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1.19 JU

Currency: INR mn Number of months		Mar26 3	Mar27 12	Mar28 12	Mar29 12	Mar30 12	Mar31 12	Jul31 4
Net revenue		**-**	**4,038**	**4,038**	**4,038**	**4,038**	**4,038**	**2,019**
Operating expenses		(1,026)	(749)	(957)	(920)	(912)	(1,175)	(317)
EBITDA		**(1,026)**	**3,289**	**3,081**	**3,118**	**3,126**	**2,863**	**1,702**
Depreciation and amortisation		0.3	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(1.5)
EBIT		**(1,026)**	**3,286**	**3,078**	**3,115**	**3,123**	**2,860**	**1,701**
Tax expense		-	-	(529)	(786)	(798)	(618)	(362)
Debt free net income		**(1,026)**	**3,286**	**2,548**	**2,329**	**2,325**	**2,242**	**1,338**
Add: Depreciation and amortisation		(0.3)	3.0	3.0	3.0	3.0	3.0	1.5
Add: Provision for major maintenance		81	81	81	159	159	159	-
(Increase)/ Decrease in net working capital		-	-	-	-	-	-	(155)
Add: Advance income tax (including TDS)		196	196					
Less: Major maintenance expenses		-	-	(564)	-	-	(478)	-
Debt free cash flow		**(750)**	**3,566**	**2,068**	**2,491**	**2,488**	**1,926**	**1,184**
Discount rate (%)		7.77	7.77	7.77	7.77	7.77	7.77	7.77
Present value factor- Mid year discounting		0.99	0.95	0.88	0.81	0.76	0.70	0.67
Present value debt free cash flow		**(743)**	**3,371**	**1,814**	**2,028**	**1,879**	**1,350**	**790**
Present value for explicit period	10,491							
Enterprise value	**10,491**							

Note: The above Enterprise Value includes the pass-through advance tax of INR 119.34 Mn to the erstwhile shareholders. As per the information provided by the Management, the payment to the erstwhile shareholders shall happen from the Trust, hence, the adjustment for the pass-through advance tax has not been made at the SPV level.

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1.20 QEPL

Currency: INR mn		Mar26	Mar27	Mar28	Mar29	Mar30	Mar31	Jun31
Number of months		3	12	12	12	12	12	2
Net revenue		**2,450**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**1,678**
Operating expenses		(825)	(761)	(772)	(817)	(861)	(905)	(243)
EBITDA		**1,625**	**4,139**	**4,128**	**4,083**	**4,039**	**3,995**	**1,435**
Depreciation and amortisation		0.7	(2.8)	(2.8)	(2.8)	(2.8)	(2.8)	(1.0)
EBIT		**1,626**	**4,136**	**4,125**	**4,080**	**4,037**	**3,993**	**1,434**
Tax expense		(1)	-	(80)	(76)	(65)	(54)	(150)
Debt free net income		**1,624**	**4,136**	**4,044**	**4,004**	**3,971**	**3,939**	**1,284**
Add: Depreciation and amortisation		(0.7)	2.8	2.8	2.8	2.8	2.8	1.0
Add: Provision for major maintenance		70	70	37	37	37	37	37
(Increase)/ Decrease in net working capital		-	-	-	-	-	-	(138)
Add: Advance income tax (including TDS)		125	125					
Less: Major maintenance expenses		-	(418)	-	-	-	-	(187)
Debt free cash flow		**1,818**	**3,916**	**4,085**	**4,044**	**4,012**	**3,979**	**997**
Discount rate (%)		7.28	7.28	7.28	7.28	7.28	7.28	7.28
Present value factor- Mid year discounting		0.99	0.95	0.88	0.82	0.77	0.72	0.69
Present value debt free cash flow		**1,802**	**3,714**	**3,612**	**3,333**	**3,082**	**2,849**	**685**
Present value for explicit period	19,077							
Enterprise value	**19,077**							

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1.21 APEPL

Currency: ₹ mn	Notes	Mar26	Sep26
Number of months		3	6
Net revenue		**565**	**565**
Operating expenses		(123)	(123)
EBITDA		**442**	**443**
Depreciation and amortisation		(1)	(0)
EBIT		**442**	**442**
Tax expense		-	-
Debt free net income		**442**	**442**
Add: Depreciation and amortisation		1	0
Add: Provision for major maintenance		-	-
(Increase)/ Decrease in net working capital		(20)	37
Less: Major maintenance expenses		-	-
Debt free cash flow		**422**	**480**
Discount rate (%)		8.62	8.62
Present value factor- Mid year discounting		0.99	0.94
Present value debt free cash flow		**417**	**451**
Present value for explicit period	868		
Enterprise value	**868**		

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1.22 BWHPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Total Annuity		**409**	**861**	**852**	**842**	**831**	**820**
Operating expenses		(216)	(251)	(259)	(247)	(262)	(284)
EBITDA		**193**	**610**	**593**	**595**	**570**	**536**
Depreciation and amortisation		(0)	(1)	(1)	(1)	(1)	(1)
EBIT		**192**	**609**	**592**	**593**	**568**	**535**
Tax expense		-	(100)	(132)	(56)	(141)	(138)
Debt free net income		**192**	**509**	**460**	**537**	**427**	**397**
Add: Depreciation and amortisation		0	1	1	1	1	1
(Increase)/ Decrease in net working capital		66	66	-	-	-	-
Add: Provision for Major maintenance		85	85	85	85	78	78
Less: Major maintenance expenses		-	-	-	(341)	-	-
Debt free cash flow		**344**	**661**	**546**	**283**	**507**	**476**
Discount rate (%)		8.03	8.03	8.03	8.03	8.03	8.03
Present value factor- Mid year discounting		0.99	0.94	0.87	0.81	0.75	0.69
Present value debt free cash flow		**341**	**624**	**477**	**229**	**379**	**330**
Present value for explicit period	3,404						
Enterprise value	**3,404**						
Add: Deferred consideration	-						
Adjusted Enterprise value	**3,404**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	Sep36
Number of months	12	12	12	12	12	6
Total Annuity	**808**	**794**	**776**	**745**	**738**	**368**
Operating expenses	(295)	(306)	(319)	(331)	(315)	(121)
EBITDA	**513**	**488**	**458**	**414**	**423**	**248**
Depreciation and amortisation	(1)	(1)	(1)	(1)	(1)	(1)
EBIT	**512**	**486**	**457**	**413**	**422**	**247**
Tax expense	(136)	(133)	(128)	(119)	-	(35)
Debt free net income	**375**	**353**	**329**	**294**	**422**	**212**
Add: Depreciation and amortisation	1	1	1	1	1	1
(Increase)/ Decrease in net working capital	-	-	-	-	-	(26)
Add: Provision for Major maintenance	78	78	78	78	78	-
Less: Major maintenance expenses	-	-	-	-	(549)	-
Debt free cash flow	**455**	**433**	**408**	**374**	**(47)**	**187**
Discount rate (%)	8.03	8.03	8.03	8.03	8.03	8.03
Present value factor- Mid year discounting	0.64	0.59	0.55	0.51	0.47	0.44
Present value debt free cash flow	**292**	**257**	**224**	**190**	**(22)**	**83**

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1.23 MSHPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Total Annuity		**(51)**	**983**	**923**	**913**	**901**	**889**
Operating expenses		(312)	(267)	(279)	(270)	(292)	(315)
EBITDA		**(363)**	**716**	**643**	**643**	**609**	**574**
Depreciation and amortisation		(0)	(1)	(1)	(1)	(1)	(1)
EBIT		**(363)**	**715**	**642**	**642**	**608**	**573**
Tax expense		-	(105)	(136)	(63)	(148)	(146)
Debt free net income		**(363)**	**610**	**506**	**578**	**460**	**427**
Add: Depreciation and amortisation		0	1	1	1	1	1
(Increase)/ Decrease in net working capital		61	61	-	-	-	-
Add: Provision for Major maintenance		84	84	84	84	84	84
Less: Major maintenance expenses		-	-	-	(335)	-	-
Debt free cash flow		**(218)**	**756**	**591**	**328**	**545**	**512**
Discount rate (%)		7.99	7.99	7.99	7.99	7.99	7.99
Present value factor- Mid year discounting		0.99	0.94	0.87	0.81	0.75	0.69
Present value debt free cash flow		**(216)**	**713**	**517**	**266**	**409**	**356**
Present value for explicit period	3,260						
Enterprise value	**3,260**						
Add: Deferred consideration	-						
Adjusted Enterprise value	**3,260**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	Nov36
Number of months	12	12	12	12	12	8
Total Annuity	**876**	**862**	**847**	**815**	**798**	**785**
Operating expenses	(327)	(340)	(354)	(369)	(355)	(195)
EBITDA	**549**	**522**	**493**	**446**	**443**	**590**
Depreciation and amortisation	(1)	(1)	(1)	(1)	(1)	(1)
EBIT	**548**	**520**	**491**	**445**	**441**	**589**
Tax expense	(144)	(141)	(137)	(127)	-	(114)
Debt free net income	**403**	**379**	**355**	**318**	**441**	**475**
Add: Depreciation and amortisation	1	1	1	1	1	1
(Increase)/ Decrease in net working capital	-	-	-	-	-	(11)
Add: Provision for Major maintenance	84	84	84	84	84	-
Less: Major maintenance expenses	-	-	-	-	(588)	-
Debt free cash flow	**489**	**464**	**440**	**403**	**(62)**	**465**
Discount rate (%)	7.99	7.99	7.99	7.99	7.99	7.99
Present value factor- Mid year discounting	0.64	0.60	0.55	0.51	0.47	0.44
Present value debt free cash flow	**314**	**276**	**243**	**206**	**(29)**	**206**

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1.24 MHPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Total Annuity		**(52)**	**833**	**773**	**765**	**756**	**746**
Operating expenses		(375)	(317)	(329)	(318)	(290)	(313)
EBITDA		**(426)**	**516**	**445**	**448**	**465**	**433**
Depreciation and amortisation		(0)	(1)	(1)	(1)	(1)	(1)
EBIT		**(427)**	**515**	**444**	**446**	**464**	**432**
Tax expense		-	(64)	(108)	-	(99)	(115)
Debt free net income		**(427)**	**451**	**336**	**446**	**365**	**317**
Add: Depreciation and amortisation		0	1	1	1	1	1
(Increase)/ Decrease in net working capital		109	64	-	-	-	-
Add: Provision for Major maintenance		135	135	135	135	86	86
Less: Major maintenance expenses		-	-	-	(542)	-	-
Debt free cash flow		**(182)**	**652**	**472**	**41**	**452**	**404**
Discount rate (%)		8.08	8.08	8.08	8.08	8.08	8.08
Present value factor- Mid year discounting		0.99	0.94	0.87	0.81	0.75	0.69
Present value debt free cash flow		**(180)**	**615**	**412**	**33**	**338**	**279**
Present value for explicit period	2,433						
Enterprise value	**2,433**						
Add: Deferred consideration	-						
Adjusted Enterprise value	**2,433**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	Dec36
Number of months	12	12	12	12	12	9
Total Annuity	**736**	**724**	**711**	**685**	**645**	**686**
Operating expenses	(325)	(337)	(351)	(365)	(351)	(216)
EBITDA	**411**	**386**	**361**	**320**	**294**	**470**
Depreciation and amortisation	(1)	(1)	(1)	(1)	(1)	(1)
EBIT	**409**	**385**	**360**	**319**	**293**	**469**
Tax expense	(113)	(110)	(106)	(97)	-	(48)
Debt free net income	**297**	**275**	**254**	**222**	**293**	**421**
Add: Depreciation and amortisation	1	1	1	1	1	1
(Increase)/ Decrease in net working capital	-	-	-	-	-	117
Add: Provision for Major maintenance	86	86	86	86	86	-
Less: Major maintenance expenses	-	-	-	-	(601)	-
Debt free cash flow	**384**	**362**	**341**	**309**	**(221)**	**539**
Discount rate (%)	8.08	8.08	8.08	8.08	8.08	8.08
Present value factor- Mid year discounting	0.64	0.59	0.55	0.51	0.47	0.44
Present value debt free cash flow	**245**	**215**	**187**	**157**	**(103)**	**236**

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1.25 SIPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Total Annuity		**(24)**	**904**	**871**	**860**	**850**	**838**
Operating expenses		(94)	(237)	(248)	(243)	(248)	(267)
EBITDA		**(119)**	**667**	**623**	**617**	**602**	**571**
Depreciation and amortisation		1	(0)	(0)	(0)	(0)	(0)
EBIT		**(118)**	**667**	**623**	**617**	**602**	**571**
Tax expense		(4)	(99)	(114)	(58)	(131)	(132)
Debt free net income		**(122)**	**568**	**509**	**558**	**470**	**439**
Add: Depreciation and amortisation		(1)	0	0	0	0	0
(Increase)/ Decrease in net working capital		25	25	-	-	-	-
Add Provision for Major maintenance		69	69	69	69	55	55
Less: Major maintenance expenses		-	-	-	(275)	-	-
Debt free cash flow		**(29)**	**662**	**578**	**353**	**525**	**494**
Discount rate (%)		7.96	7.96	7.96	7.96	7.96	7.96
Present value factor- Mid year discounting		0.99	0.94	0.87	0.81	0.75	0.70
Present value debt free cash flow		**(29)**	**625**	**505**	**286**	**394**	**343**
Present value for explicit period	3,278						
Enterprise value	**3,278**						
Add: Deferred consideration	-						
Adjusted Enterprise value	**3,278**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	May36
Number of months	12	12	12	12	12	2
Total Annuity	**826**	**811**	**793**	**761**	**761**	**369**
Operating expenses	(278)	(290)	(303)	(316)	(310)	(47)
EBITDA	**547**	**521**	**490**	**445**	**451**	**322**
Depreciation and amortisation	(0)	(0)	(0)	(0)	(0)	(0)
EBIT	**547**	**521**	**490**	**445**	**451**	**322**
Tax expense	(132)	(131)	(126)	(118)	(25)	(63)
Debt free net income	**415**	**390**	**363**	**327**	**426**	**259**
Add: Depreciation and amortisation	0	0	0	0	0	0
(Increase)/ Decrease in net working capital	-	-	-	-	-	(10)
Add Provision for Major maintenance	55	55	55	55	55	-
Less: Major maintenance expenses	-	-	-	-	(383)	-
Debt free cash flow	**470**	**445**	**418**	**382**	**98**	**249**
Discount rate (%)	7.96	7.96	7.96	7.96	7.96	7.96
Present value factor- Mid year discounting	0.64	0.60	0.55	0.51	0.47	0.45
Present value debt free cash flow	**302**	**266**	**231**	**195**	**46**	**113**

1.26 SPPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Total Annuity		**(28)**	**1,125**	**1,002**	**991**	**977**	**964**
Operating expenses		(245)	(356)	(367)	(353)	(323)	(349)
EBITDA		**(273)**	**769**	**635**	**638**	**654**	**615**
Depreciation and amortisation		0	(0)	(0)	(0)	(0)	(0)
EBIT		**(273)**	**769**	**635**	**637**	**654**	**614**
Tax expense		-	(88)	(141)	(1)	(157)	(155)
Debt free net income		**(273)**	**681**	**494**	**636**	**497**	**459**
Add: Depreciation and amortisation		(0)	0	0	0	0	0
(Increase)/ Decrease in net working capital		151	90	-	-	-	-
Add: Provision for Major maintenance		153	153	153	153	98	98
Less: Major maintenance expenses		-	-	-	(614)	-	-
Debt free cash flow		**31**	**925**	**648**	**176**	**596**	**558**
Discount rate (%)		8.09	8.09	8.09	8.09	8.09	8.09
Present value factor- Mid year discounting		0.99	0.94	0.87	0.81	0.75	0.69
Present value debt free cash flow		**30**	**873**	**566**	**142**	**445**	**385**
Present value for explicit period	3,745						
Enterprise value	**3,745**						
Add: Deferred consideraition	-						
Adjusted Enterprise value	**3,745**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	Oct36
Number of months	12	12	12	12	12	6
Total Annuity	**949**	**933**	**916**	**880**	**852**	**854**
Operating expenses	(362)	(376)	(390)	(405)	(387)	(165)
EBITDA	**587**	**557**	**526**	**474**	**464**	**689**
Depreciation and amortisation	(0)	(0)	(0)	(0)	(0)	(0)
EBIT	**587**	**557**	**525**	**474**	**464**	**688**
Tax expense	(154)	(151)	(147)	(136)	-	(119)
Debt free net income	**433**	**406**	**378**	**338**	**464**	**569**
Add: Depreciation and amortisation	0	0	0	0	0	0
(Increase)/ Decrease in net working capital	-	-	-	-	-	(22)
Add: Provision for Major maintenance	98	98	98	98	98	-
Less: Major maintenance expenses	-	-	-	-	(687)	-
Debt free cash flow	**531**	**504**	**477**	**436**	**(124)**	**548**
Discount rate (%)	8.09	8.09	8.09	8.09	8.09	8.09
Present value factor- Mid year discounting	0.64	0.59	0.55	0.51	0.47	0.44
Present value debt free cash flow	**340**	**298**	**261**	**221**	**(58)**	**242**

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1.27 THPL

Currency: ₹ mn	Notes	Mar26	Mar27	Mar28	Mar29	Mar30	Mar31
Number of months		3	12	12	12	12	12
Total Annuity		**(32)**	**1,306**	**1,255**	**1,237**	**1,219**	**1,200**
Operating expenses		(352)	(427)	(439)	(426)	(371)	(396)
EBITDA		**(384)**	**879**	**816**	**811**	**848**	**804**
Depreciation and amortisation		0	(1)	(1)	(1)	(1)	(1)
EBIT		**(383)**	**879**	**816**	**810**	**848**	**803**
Tax expense		(44)	(213)	(220)	-	(226)	(222)
Debt free net income		**(428)**	**665**	**595**	**810**	**621**	**581**
Add: Depreciation and amortisation		(0)	1	1	1	1	1
(Increase)/ Decrease in net working capital		128	128	-	-	-	-
Add: Provision for Major maintenance		229	229	229	229	150	150
Less: Major maintenance expenses		-	-	-	(916)	-	-
Debt free cash flow		**(71)**	**1,023**	**825**	**124**	**772**	**732**
Discount rate (%)		7.91	7.91	7.91	7.91	7.91	7.91
Present value factor- Mid year discounting		0.99	0.94	0.88	0.81	0.75	0.70
Present value debt free cash flow		**(70)**	**966**	**722**	**101**	**580**	**510**
Present value for explicit period	4,432						
Enterprise value	**4,432**						
Add: Deferred consideraition	-						
Adjusted Enterprise value	**4,432**						

Currency: ₹ mn	Mar32	Mar33	Mar34	Mar35	Mar36	May36
Number of months	12	12	12	12	12	1
Total Annuity	**1,180**	**1,156**	**1,127**	**1,078**	**1,029**	**566**
Operating expenses	(409)	(422)	(437)	(452)	(436)	(39)
EBITDA	**771**	**734**	**690**	**626**	**593**	**526**
Depreciation and amortisation	(1)	(1)	(1)	(1)	(1)	(0)
EBIT	**770**	**733**	**690**	**626**	**592**	**526**
Tax expense	(218)	(212)	(204)	(190)	-	(39)
Debt free net income	**552**	**521**	**486**	**436**	**592**	**488**
Add: Depreciation and amortisation	1	1	1	1	1	0
(Increase)/ Decrease in net working capital	-	-	-	-	-	82
Add: Provision for Major maintenance	150	150	150	150	150	-
Less: Major maintenance expenses	-	-	-	-	(1,048)	-
Debt free cash flow	**702**	**671**	**636**	**586**	**(305)**	**570**
Discount rate (%)	7.91	7.91	7.91	7.91	7.91	7.91
Present value factor- Mid year discounting	0.65	0.60	0.55	0.51	0.48	0.46
Present value debt free cash flow	**453**	**402**	**353**	**301**	**(145)**	**260**

2. Detailed WACC Computation

Computation of Cost of Equity

► Based on the parameters mentioned in the Report above, the cost of equity for InvIT Assets is computed in the following table:

Particulars	Notes	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL	DATRPL	GAEPL	NAMEPL
Risk-free rate (%)	a	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Beta	b	1.04	1.04	1.13	1.04	1.03	1.00	0.98	1.03	1.02
Equity market risk premium (%)	c	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Additional risk premium (%)	d	-	-	-	-	-	-	-	-	0.50
Cost of equity capital (%)		**13.76**	**13.80**	**14.41**	**13.77**	**13.71**	**13.51**	**13.38**	**13.70**	**14.13**

Particulars	Notes	HTPL	JLTPL	JVTPL	LRTPL	KMTPL	MKTPL	KETPL	SMTPL	NKTPL
Risk-free rate (%)	a	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Beta	b	1.02	1.01	1.01	1.03	1.03	1.02	1.03	1.03	1.04
Equity market risk premium (%)	c	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Additional risk premium (%)	d	-	-	-	-	-	-	-	-	-
Cost of equity capital (%)		**13.66**	**13.54**	**13.54**	**13.72**	**13.70**	**13.64**	**13.72**	**13.70**	**13.77**

Particulars	Notes	JU	QB	APEPL	BWHPL	MSHPL	MHPL	THPL	SIPL	SPPL
Debt borrowing rate (%)	e	7.72	7.72	7.72	7.72	7.72	7.72	7.72	7.72	7.72
Additional risk premium (%)	d	3.00	3.00	3.00	5.00	5.00	5.00	5.00	5.00	5.00
Cost of equity capital (%)		**10.72**	**10.72**	**10.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**

Computation of Cost of Debt

Based on the parameters mentioned in the Report above, the cost of debt for InvIT Assets is computed in the following table:

Particulars	Notes	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL	DATRPL	GAEPL	NAMEPL
Debt borrowing rate (%)	e	7.72	8.40	7.72	7.72	7.72	7.72	7.72	7.72	7.72
Expected income tax rate (%)	f	16.43	15.45	-	16.27	17.61	22.71	26.04	18.07	19.64
After-tax cost of debt (%)		**6.45**	**7.10**	**7.72**	**6.46**	**6.36**	**5.97**	**5.71**	**6.33**	**6.20**

Particulars	Notes	HTPL	JLTPL	JVTPL	LRTPL	KMTPL	MKTPL	KETPL	SMTPL	NKTPL
Debt borrowing rate (%)	e	7.72	7.72	7.72	7.72	7.72	7.72	7.72	7.72	7.72
Expected income tax rate (%)	f	19.00	22.02	22.16	17.47	17.91	19.50	17.48	18.07	16.16
After-tax cost of debt (%)		**6.25**	**6.02**	**6.01**	**6.37**	**6.34**	**6.21**	**6.37**	**6.33**	**6.47**

Particulars	Notes	JU	QB	APEPL	BWHPL	MSHPL	MHPL	THPL	SIPL	SPPL
Debt borrowing rate (%)	e	7.72	7.72	7.72	7.72	7.72	7.72	7.72	7.72	7.72
Expected income tax rate (%)	f	15.81	24.71	-	22.05	22.77	21.18	24.24	23.39	20.96
After-tax cost of debt (%)		**6.50**	**5.81**	**7.72**	**6.02**	**5.96**	**6.08**	**5.85**	**5.91**	**6.10**

Notes:

a. Based on prevailing YTMs of Gilt Bonds with 10-year residual maturity (rounded) as on 31 December 2025.

b. Please refer the table for Beta working below

c. Based on EYMBSLLP internal study on the prevailing market risk premium in India

d. We have applied 5.0% risk premium on the cost of debt for the InvIT, to arrive at the cost of equity for HAM Assets, to adequately account for the risk associated with the cash flows, such as fluctuations in the bank rates etc. Further, we have used a 2.0% lower risk premium to arrive at the cost of equity for BOT Annuity Assets, since they are fixed annuity projects (wherein the annuity payments are predetermined and are not dependent on any external parameters such as bank rates etc).

Additional risk premium of 0.5% has been considered for NAMEPL to account for operational and regulatory risk factors, considering it is a state highway concession agreement.

e. Of all the SPVs held by the Trust, MBEL has external debt and all other SPVs have the borrowings via the Trust. Hence the cost of debt for MBEL is based upon the borrowing cost of MBEL itself and the cost of borrowings for all other SPVs are based upon the borrowing cost of the Trust.

f. Based on effective tax rate of respective SPV's

Calculation of Beta

a. **Calculation of Unlevered Beta**

Currency: ₹ mn	Equity beta	Market capitalisation	Net debt	Enterprise value	Debt-equity ratio based on 3 year average	Effective tax rate (%)	Unlevered beta based on 3 year debt-equity
IRB Infrastructure Developers Limited	1.81	2,53,196	26,614	2,79,810	37	25.17	1.42
PNC Infratech Limited	1.32	64,456	69,462	1,33,918	77	25.17	0.84
Dilip Buildcon Limited	1.61	1,14,831	72,347	1,87,178	116	25.17	0.86
IRB InvIT Fund	0.16	79,315	27,964	1,07,280	60	25.17	0.11
Ashoka Buildcon Limited	1.64	50,681	11,049	61,729	107	25.17	0.91
Sadbhav Infrastructure Project Limited	0.94	2,044	31,239	33,284	1,969	25.17	0.06
KNR Constructions Limited	1.23	47,880	15,661	63,541	13	25.17	1.12
Powergrid Infrastructure Investment Tru	0.21	81,114	8,936	90,050	7	25.17	0.20
Indus Infra Trust	0.09	51,549	13,207	64,756	16	25.17	0.08
Indigrid Infrastructure Trust	0.10	1,44,897	1,74,867	3,19,763	153	25.17	0.05
Average	**0.91**						**0.57**

Source: Capital IQ

Note: Given that Indus Infra Trust was listed on 12 March 2024, the beta parameters have been considered for last 1 year as against 3 years for other comparable companies.

b. **Calculation of Relevered beta**

Particulars	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL	DATRPL	GAEPL	NAMEPL
IRB Infrastructure Developers Limited	2.60	2.62	2.84	2.61	2.59	2.51	2.47	2.58	2.56
PNC Infratech Limited	1.54	1.55	1.68	1.54	1.53	1.49	1.46	1.52	1.51
Dilip Buildcon Limited	1.59	1.60	1.73	1.59	1.58	1.53	1.50	1.57	1.56
IRB InvIT Fund	0.21	0.21	0.23	0.21	0.21	0.20	0.20	0.21	0.21
Ashoka Buildcon Limited	1.68	1.68	1.83	1.68	1.67	1.62	1.59	1.66	1.65
Sadbhav Infrastructure Project Limited	0.11	0.11	0.12	0.11	0.11	0.11	0.10	0.11	0.11
KNR Constructions Limited	2.05	2.06	2.23	2.05	2.04	1.98	1.94	2.03	2.01
Powergrid Infrastructure Investment Trust	0.37	0.37	0.40	0.37	0.37	0.36	0.35	0.37	0.36
Indus Infra Trust	0.14	0.14	0.15	0.14	0.14	0.14	0.13	0.14	0.14
Indigrid Infrastructure Trust	0.09	0.09	0.10	0.09	0.09	0.09	0.08	0.09	0.09
Average	**1.04**	**1.04**	**1.13**	**1.04**	**1.03**	**1.00**	**0.98**	**1.03**	**1.02**
	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Particulars	**HTPL**	**JLTPL**	**JVTPL**	**LRTPL**	**KMTPL**	**MKTPL**	**KETPL**	**SMTPL**	**NKTPL**
IRB Infrastructure Developers Limited	2.57	2.52	2.52	2.59	2.58	2.56	2.59	2.58	2.61
PNC Infratech Limited	1.52	1.49	1.49	1.53	1.53	1.51	1.53	1.52	1.54
Dilip Buildcon Limited	1.56	1.54	1.54	1.58	1.57	1.56	1.58	1.57	1.59
IRB InvIT Fund	0.21	0.20	0.20	0.21	0.21	0.21	0.21	0.21	0.21
Ashoka Buildcon Limited	1.65	1.62	1.62	1.67	1.66	1.65	1.67	1.66	1.68
Sadbhav Infrastructure Project Limited	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
KNR Constructions Limited	2.02	1.99	1.99	2.04	2.03	2.02	2.04	2.03	2.05
Powergrid Infrastructure Investment Trust	0.36	0.36	0.36	0.37	0.37	0.36	0.37	0.37	0.37
Indus Infra Trust	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Indigrid Infrastructure Trust	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Average	**1.02**	**1.01**	**1.01**	**1.03**	**1.03**	**1.02**	**1.03**	**1.03**	**1.04**

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Calculation of WACC

BOT Assets and TOT Assets: Considering the finite life of the asset, the cashflows being prone to Traffic and inflation risk and the current & expected debt to equity structure of the SPVs, we have conservatively considered a long-term debt-to-equity ratio of 50:50

BOT Annuity Assets and HAM Assets: The leverage risk in the assets with fixed, stable cashflow schedules and subdued risk, is relatively lower. Hence, a higher debt-to-equity ratio of 70:30 is considered after considering the nature of income from HAM Assets and BOT Annuity Assets.

The net debt to enterprise value ratio of the InvIT as at 31 December 2025 is ~46.90%.

Based upon the credit rating profile the Trust can increase their leverage to 70% net debt to enterprise ratio, in accordance with the InvIT Regulations. However, as per their existing Debt covenants, the Trust can increase their leverage to 60% net debt to enterprise ratio.

Our assumption for debt-to-equity ratio of 50:50 for BOT Assets & TOT Assets and 70:30 for HAM Assets & BOT Annuity Assets, respectively results in an overall debt-to-equity ratio of 53:47. This is broadly in line with the existing debt to equity structure of the InvIT as on 31 December 2025.

Particulars	Weights	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL	DATRPL	GAEPL	NAMEPL
Cost of debt (%)	50.0	3.23	3.55	3.86	3.23	3.18	2.98	2.86	3.16	3.10
Cost of equity capital (%)	50.0	6.88	6.90	7.21	6.88	6.86	6.76	6.69	6.85	7.07
WACC		**10.11**	**10.45**	**11.07**	**10.12**	**10.04**	**9.74**	**9.55**	**10.01**	**10.17**

Particulars	Weights	HTPL	JLTPL	JVTPL	LRTPL	KMTPL	MKTPL	KETPL	SMTPL	NKTPL
Cost of debt (%)	50.0	3.13	3.01	3.00	3.19	3.17	3.11	3.19	3.16	3.24
Cost of equity capital (%)	50.0	6.83	6.77	6.77	6.86	6.85	6.82	6.86	6.85	6.89
WACC		**9.96**	**9.78**	**9.77**	**10.05**	**10.02**	**9.93**	**10.05**	**10.01**	**10.12**

Particulars	Weights	JU	QB	APEPL	BWHPL	MSHPL	MHPL	THPL	SIPL	SPPL
Cost of debt (%)	70.0	4.55	4.07	5.40	4.21	4.17	4.26	4.09	4.14	4.27
Cost of equity capital (%)	30.0	3.22	3.22	3.22	3.82	3.82	3.82	3.82	3.82	3.82
WACC		**7.77**	**7.28**	**8.62**	**8.03**	**7.99**	**8.08**	**7.91**	**7.96**	**8.09**

The computed WACC for the BOT Assets and TOT Assets ranges from 9.55% to 11.07%. For the annuity assets, the computed WACC ranges from 7.91% to 8.09% for HAM Assets and 7.28% to 8.62% for BOT Annuity Assets.

3. Change in assumptions from previous annual valuation:

A comparison of assumptions used to carry out the current and previous annual valuation exercise has been present below:

A. Change in assumptions for WPI

Based upon the recent macro-economic conditions, the Management has considered the applicable WPI growth rate of 2.4% for FY 2027 (vs 4.7% considered during the previous annual valuation exercise).

B. Change in assumptions for WACC Computation

a. BOT & TOT Assets

WACC Input	BOT & TOT Assets		Comments
	Mar-25	Dec-25	
Debt/Equity	45:55	50:50	Post acquisition of JU and QB, the existing and expected debt to equity ratio at the InvIT level has increased. Thus, the weight to debt has been increased to bring the same broadly in line with the existing debt to equity structure of the InvIT as on 31 December 2025.
Cost of equity calculation			
Risk-free rate	6.5%	6.5%	
Unlevered beta	0.62	0.57	1. Bharat Road Network Limited has been removed as comparable as the company has a qualified opinion on its going concern assumptions and has limited trading volumes. 2. Indus Infrastructure Trust, Indigrid Trust and Powergrid Trust have additionally been considered as comparables for beta computation to account for typical investor expectations from an InvIT. 3. Given that Indus Infrastructure Trust was listed on 12 March 2024, beta parameters for Indus Infrastructure trust have been considered based upon 1 year returns. 4. Further, given the limited datapoints of monthly returns for Indus Infrastructure Trust, we have considered daily returns for all the comparable companies (in order to maintain consistency of data) as against the monthly returns considered during the previous valuations.
Relevered beta	0.99 - 1.12	0.98-1.13	
Market equity risk premium (ERP)	7.0%	7.0%	
Cost of equity	**13.4% - 14.3%**	**13.4% - 14.4%**	
Cost of debt calculation			
Debt borrowing rate	8.19% / 8.4%	7.72% / 8.4%	As indicated earlier, MBEL has external borrowings and hence the cost of borrowings for MBEL is based upon the borrowing cost of the SPV itself. However, the borrowings for other BOT Assets and TOT Assets within the trust are via the Trust, hence the cost of borrowings for other SPVs are based upon the borrowing cost of the Trust. The borrowing cost for the Trust has been reduced from 7.76% to 7.72%. Accordingly the debt borrowing rate has been adjusted for respective SPVs.
Effective income tax rate	0.0% - 26.4%	0.0% - 26.04%	
After-tax cost of debt	**6.0% - 8.2%**	**5.71% - 7.72%**	
WACC	**10.1% - 11.6%**	**9.55% - 11.07%**	

b. BOT Annuity Assets and HAM Assets

WACC Input	HAM Assets		BOT Annuity Assets		Comments
	Mar-25	Dec-25	Mar-25	Dec-25	
Debt/Equity	70:30	70:30	70:30	70:30	
Cost of equity calculation					
Debt borrowing rate	8.19%	7.72%	8.19%	7.72%	As indicated earlier, the HAM Assets and BOT Annuity Assets have the borrowings via the Trust. Hence the cost of debt for all the HAM Assets and BOT Annuity Assets are based upon the borrowing cost of the Trust. the borrowing cost for the Trust has been reduced from 8.19% to 7.72%. Accordingly the debt borrowing rate has been adjusted for respective SPVs.
Additional Risk Premium	5.0%	5.0%	3.0%	3.0%	
Cost of equity	**13.2%**	**12.7%**	**11.2%**	**10.7%**	
Cost of debt calculation					
Debt borrowing rate	8.19%	7.72%	8.19%	7.72%	
Effective income tax rate	20.9% - 24.3%	20.96% - 24.24%	0%	0.0% - 24.71%	JU and QB assets were acquired during Q1 FY26, hence the range includes JU & QB assets in Dec-25, but are not included in Mar-25
After-tax cost of debt	**6.2% - 6.5%**	**5.85% - 6.10%**	**8.2%**	**5.81% - 7.72%**	
WACC	**8.3% to 8.5%**	**7.91% to 8.09%**	**9.1%**	**7.28% to 8.62%**	

C. Change in Traffic Estimates

Based upon the recent traffic study conducted, the Management has considered the revised traffic estimates provided by M/s Steer Davies Gleave India Private Limited dated October 2025. The traffic update included

i. Updates to the base traffic estimates for FY 2026, based upon the actual traffic achieved during H1 FY 2026. Further the growth rates considered to estimate traffic in subsequent years were also updated based upon revised assessment of the impact such as traffic diversions, revised projected capacity augmentation dates etc.

ii. Impact from the adoption of annual passes by passenger vehicles has been considered while computing estimated revenue from revised traffic estimates. The impact varies across the portfolio depending upon the proportion of passenger vehicles to the total traffic at each toll plaza.

D. Change in Operating expenses

i. The Management has estimated an additional fee of 0.413% (i.e. 0.35% + 18% GST) of the toll/annuity revenues is to be paid to Cube Highways Technologies Private Limited (“CHTPL”) for expert service agreement.

E. Change in deferred consideration for HAM Assets

i. As part of the acquisition of HAM Assets by the InvIT, we understand that there were certain deferred consideration amounts which were to be paid by the InvIT to CH-III, when they are received from NHAI (to be paid within a period not exceeding eighteen months from the date of the transfer agreement, subject to receipt of such amounts from NHAI), as agreed between CH-III and the InvIT as per the terms and conditions of the relevant share purchase agreements and in compliance with the applicable law. These amounts include pending GST claims, receivables due to Change in Law (“CIL”), withheld annuities and descoping related receivables. However, since the period of eighteen months is completed, hence these amounts are no longer payable to CH-III. Hence the adjustment to Enterprise Value of the HAM Assets is no longer computed.

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Statement of assets

SPV (Currency: INR Mn)	Net Tangible assets	Intangible assets	Non-current assets	Current assets	Total
JMTPL	14	2,954	55	512	3,534
MBEL	14	1,521	27	936	2,498
WUPTPL	10	327	15	1,163	1,515
NDEPL	13	2,206	2	144	2,365
FRHPL	16	8,584	217	330	9,147
WVEPL	9	2,883	39	242	3,172
DATRPL	63	22,565	22	745	23,396
GAEPL	44	20,718	47	882	21,691
NAMEPL	26	14,988	285	543	15,842
HTPL	3	8,433	19	482	8,938
JLTPL	29	4,003	2	239	4,273
JVTPL	24	2,590	2	159	2,775
LRTPL	49	4,195	6	860	5,110
KMTPL	45	6,781	3	100	6,928
MKTPL	13	6,338	2	372	6,725
KETPL	12	5,066	1	283	5,361
SMTPL	13	5,110	1	181	5,305
NKTPL	14	6,323	44	3,800	10,180
JU	26	-	7,239	5,599	12,864
QB	18	-	13,000	5,786	18,803
APEPL	1	-	12	1,207	1,220
BWHPL	14	-	625	1,404	2,042
MSHPL	16	-	434	1,811	2,261
MHPL	15	-	179	1,939	2,133
SIPL	7	1	951	1,559	2,517
SPPL	6	-	1,850	1,772	3,627
THPL	5	1	1,200	2,160	3,365
Total	**515**	**1,25,586**	**26,277**	**35,208**	**1,87,587**

Source: Management

4. Traffic Estimates as per the Traffic Study Report provided to us by the Management and published by M/s Steer Davies Gleave India Private Limited

A. Jaipur Mahua Tollway Private Limited ("JMTPL")

Table 1: Traffic via Toll Plaza 1 (Sikandra)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	10491	1116	344	1784	654	462	3605	18456
FY27	11242	1152	351	1842	695	478	3990	19751
FY28	12038	1189	358	1901	734	487	4245	20953
FY29	12866	1226	365	1961	770	493	4469	22149
FY30	13721	1263	372	2020	807	499	4633	23314
FY31	14617	1301	378	2080	845	505	4864	24590
FY32	15572	1339	385	2142	884	510	5108	25941

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Sikandra)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	7.2%	3.2%	2.0%	3.3%	6.3%	3.5%	10.7%	7.0%
FY28	7.1%	3.2%	2.0%	3.2%	5.6%	1.9%	6.4%	6.1%
FY29	6.9%	3.1%	2.0%	3.2%	4.9%	1.2%	5.3%	5.7%
FY30	6.6%	3.0%	1.9%	3.0%	4.8%	1.2%	3.7%	5.3%
FY31	6.5%	3.0%	1.6%	3.0%	4.7%	1.2%	5.0%	5.5%
FY32	6.5%	2.9%	1.9%	3.0%	4.6%	1.0%	5.0%	5.5%

Source: Computed based on traffic forecasts in Table 1

Table 3: Traffic via Toll Plaza 2 (Rajadhok)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	13507	1058	403	1648	587	284	2846	20333
FY27	13146	1093	387	1652	608	280	2972	20136
FY28	14078	1128	395	1705	641	285	3164	21394
FY29	15045	1163	402	1758	672	288	3330	22659
FY30	16045	1198	409	1811	705	292	3446	23906
FY31	17093	1234	417	1865	738	295	3618	25259
FY32	18210	1270	424	1920	772	299	3799	26695

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 4: Forecast for growth rates via Toll Plaza 2 (Rajadhok)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	-2.7%	3.3%	-4.0%	0.2%	3.6%	-1.4%	4.4%	-1.0%
FY28	7.1%	3.2%	2.1%	3.2%	5.4%	1.8%	6.5%	6.2%
FY29	6.9%	3.1%	1.8%	3.1%	4.8%	1.1%	5.2%	5.9%
FY30	6.6%	3.0%	1.7%	3.0%	4.9%	1.4%	3.5%	5.5%
FY31	6.5%	3.0%	2.0%	3.0%	4.7%	1.0%	5.0%	5.7%
FY32	6.5%	2.9%	1.7%	2.9%	4.6%	1.4%	5.0%	5.7%

Source: Computed based on traffic forecasts in Table 3

B. Mahua Bharatpur Expressways Limited ("MBEL")

Table 1: Traffic via Toll Plaza 1 (Amoli)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	7521	882	280	1411	558	476	3688	14815
FY27	8059	910	287	1457	596	495	4073	15877
FY28	8630	940	292	1504	630	504	4347	16846
FY29	9223	969	298	1551	661	510	4575	17787
FY30	9836	998	303	1598	693	517	4744	18688
FY31	10478	1028	309	1645	725	523	4981	19689
FY32	11163	1058	314	1694	760	529	5231	20748

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Amoli)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	7.2%	3.2%	2.5%	2.6%	6.8%	4.0%	10.4%	7.1%
FY28	7.1%	3.3%	1.7%	3.9%	5.7%	1.8%	6.7%	6.2%
FY29	6.9%	3.1%	2.1%	3.1%	4.9%	1.2%	5.2%	5.6%
FY30	6.6%	3.0%	1.7%	3.0%	4.8%	1.4%	3.7%	5.1%
FY31	6.5%	3.0%	2.0%	2.9%	4.6%	1.2%	5.0%	5.4%
FY32	6.5%	2.9%	1.6%	3.0%	4.8%	1.1%	5.0%	5.4%

Source: Computed based on traffic forecasts in Table 1

Table 3: Traffic via Toll Plaza 2 (Ludhawai)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	8728	1023	291	1446	572	476	3687	16222
FY27	9352	1056	298	1493	611	495	4071	17376
FY28	10014	1090	304	1541	646	505	4344	18444
FY29	10703	1124	309	1589	678	511	4573	19487
FY30	11414	1158	315	1637	710	517	4742	20493
FY31	12160	1193	321	1686	744	523	4979	21606
FY32	12954	1228	326	1736	779	529	5228	22780

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 4: Forecast for growth rates via Toll Plaza 2 (Ludhawai)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	7.1%	3.2%	2.4%	3.3%	6.8%	4.0%	10.4%	7.1%
FY28	7.1%	3.2%	2.0%	3.2%	5.7%	2.0%	6.7%	6.1%
FY29	6.9%	3.1%	1.6%	3.1%	5.0%	1.2%	5.3%	5.7%
FY30	6.6%	3.0%	1.9%	3.0%	4.7%	1.2%	3.7%	5.2%
FY31	6.5%	3.0%	1.9%	3.0%	4.8%	1.2%	5.0%	5.4%
FY32	6.5%	2.9%	1.6%	3.0%	4.7%	1.1%	5.0%	5.4%

Source: Computed based on traffic forecasts in Table 3

C. Western U.P. Tollway Private Limited ("WUPTPL)

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Siwaya)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	29,082	1,520	976	2,285	384	439	910	35,597

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Siwaya)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	(4.3%)	3.2%	(4.3%)	3.2%	(2.6%)	(9.4%)	(5.5%)	(3.5%)

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

D. Nelamangala Devihalli Expressway Private Limited ("NDEPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Doddakarenahalli)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	21917	1501	1265	1821	1074	436	686	28700

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Doddakarenahalli)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	7.0%	4.9%	2.2%	1.8%	3.1%	1.1%	4.2%	6.1%
FY28	6.1%	4.0%	1.4%	1.7%	2.2%	0.2%	3.2%	5.2%
FY29	7.3%	5.3%	2.6%	1.7%	3.7%	1.9%	4.9%	6.4%
FY30	7.6%	5.1%	2.6%	1.6%	3.6%	1.8%	4.8%	6.7%
FY31	6.9%	5.0%	2.5%	1.6%	3.5%	1.8%	4.7%	6.1%
FY32	6.9%	5.0%	2.5%	1.6%	3.5%	1.8%	4.7%	6.1%
FY33	7.1%	5.2%	2.6%	1.6%	3.7%	1.8%	4.9%	6.4%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 3: Base Traffic (FY26) via Toll Plaza 2 (Karbylu)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	16467	1128	893	1474	772	431	679	21845

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 4: Forecast for growth rates via Toll Plaza 2 (Karbylu)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	7.5%	5.0%	2.8%	1.8%	3.9%	1.9%	5.2%	6.5%
FY28	7.2%	4.8%	2.8%	1.7%	3.8%	1.9%	5.1%	6.3%
FY29	6.8%	4.6%	2.6%	1.7%	3.7%	1.9%	4.9%	5.9%
FY30	6.9%	4.5%	2.6%	1.6%	3.6%	1.8%	4.8%	6.0%
FY31	6.3%	4.4%	2.5%	1.6%	3.5%	1.8%	4.7%	5.6%
FY32	6.3%	4.4%	2.5%	1.6%	3.5%	1.8%	4.7%	5.6%
FY33	6.5%	4.5%	2.6%	1.6%	3.7%	1.8%	4.9%	5.8%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

E. Farakka-Raiganj Highways Private Limited ("FRHPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Lakshmipur)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	2291	1886	533	429	1169	687	5149	12143

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Lakshmipur)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	7.8%	5.5%	3.4%	1.5%	5.4%	3.3%	7.6%	6.5%
FY28	6.3%	4.2%	3.0%	1.5%	4.2%	6.5%	10.0%	7.0%
FY29	5.9%	4.1%	2.9%	1.5%	4.6%	1.2%	5.6%	4.9%
FY30	5.6%	3.9%	2.8%	1.4%	4.5%	1.2%	5.4%	4.7%
FY31	5.5%	3.9%	2.8%	1.4%	2.6%	(0.3%)	2.8%	3.3%
FY32	5.6%	3.9%	2.8%	1.4%	4.4%	1.2%	5.3%	4.6%
FY33	5.8%	4.1%	2.9%	1.5%	4.6%	1.2%	5.5%	4.9%
FY34	5.8%	4.0%	2.9%	1.4%	4.5%	1.2%	5.5%	4.8%
FY35	5.8%	4.0%	2.9%	1.4%	4.5%	1.2%	5.4%	4.8%
FY36	5.7%	4.0%	2.9%	1.4%	4.5%	1.2%	5.4%	4.8%
FY37	5.7%	4.0%	2.8%	1.4%	4.4%	1.2%	5.3%	4.8%
FY38	5.6%	4.0%	2.8%	1.4%	4.4%	1.2%	5.3%	4.7%
FY39	5.6%	3.9%	2.8%	1.4%	4.3%	1.2%	5.2%	4.7%
FY40	5.6%	3.9%	2.8%	1.4%	4.3%	1.1%	5.2%	4.7%
FY41	5.5%	3.9%	2.8%	1.4%	4.3%	1.1%	5.1%	4.6%
FY42	5.5%	3.8%	2.7%	1.4%	4.2%	1.1%	5.0%	4.6%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 3: Base Traffic (FY26) via Toll Plaza 2 (Gazole)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	3986	2287	510	696	1343	735	3997	13554

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 4: Forecast for growth rates via Toll Plaza 2 (Gazole)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	6.9%	4.4%	2.8%	1.5%	5.4%	2.2%	7.1%	5.7%
FY28	6.0%	3.6%	2.4%	1.5%	4.3%	2.3%	6.7%	5.1%
FY29	5.8%	3.5%	2.3%	1.5%	4.6%	1.2%	5.6%	4.7%
FY30	5.6%	3.4%	2.3%	1.4%	4.5%	1.2%	5.4%	4.6%
FY31	5.5%	3.3%	2.2%	1.4%	2.8%	(0.3%)	1.9%	3.2%
FY32	5.6%	3.3%	2.2%	1.4%	4.4%	1.2%	5.3%	4.5%
FY33	5.8%	3.5%	2.3%	1.5%	4.6%	1.2%	5.5%	4.7%
FY34	5.8%	3.5%	2.3%	1.4%	4.5%	1.2%	5.5%	4.7%
FY35	5.8%	3.5%	2.3%	1.4%	4.5%	1.2%	5.4%	4.7%
FY36	5.7%	3.4%	2.3%	1.4%	4.5%	1.2%	5.4%	4.7%
FY37	5.7%	3.4%	2.3%	1.4%	4.4%	1.2%	5.3%	4.7%
FY38	5.6%	3.4%	2.3%	1.4%	4.4%	1.2%	5.3%	4.6%
FY39	5.6%	3.4%	2.2%	1.4%	4.3%	1.2%	5.2%	4.6%
FY40	5.6%	3.3%	2.2%	1.4%	4.3%	1.1%	5.2%	4.6%
FY41	5.5%	3.3%	2.2%	1.4%	4.3%	1.1%	5.1%	4.6%
FY42	5.5%	3.3%	2.2%	1.4%	4.2%	1.1%	5.0%	4.5%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

F. Walayar Vadakkencherry Expressways Private Limited ("WVEPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Pampampallam)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	14454	1871	2181	1095	1552	636	2579	24368

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Pampampallam)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	7.7%	4.0%	3.2%	3.3%	5.1%	1.6%	6.8%	6.4%
FY28	7.5%	3.9%	3.1%	3.3%	5.0%	2.3%	14.0%	7.0%
FY29	7.1%	3.8%	3.0%	3.2%	4.8%	1.6%	6.4%	6.0%
FY30	6.7%	3.7%	2.9%	3.1%	4.7%	1.2%	5.3%	5.6%
FY31	6.6%	3.6%	2.9%	3.0%	4.6%	1.2%	5.2%	5.5%
FY32	6.6%	3.6%	2.9%	3.0%	4.6%	1.2%	0.4%	5.0%
FY33	6.8%	3.7%	3.0%	3.1%	4.8%	1.2%	5.4%	5.8%
FY34	6.7%	3.7%	3.0%	3.1%	4.8%	1.2%	5.4%	5.7%
FY35	6.6%	3.6%	3.0%	3.0%	4.8%	1.2%	5.3%	5.7%
FY36	6.5%	3.6%	3.0%	3.0%	4.7%	1.2%	5.3%	5.6%
FY37	6.5%	3.6%	2.9%	3.0%	4.7%	1.2%	5.3%	5.6%
FY38	6.4%	3.5%	2.9%	2.9%	4.7%	1.2%	5.2%	5.6%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

G. D A Toll Road Private Limited ("DATRPL")

Table 1: Traffic via Toll Plaza 1 (Gadpuri)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY26	33542	3177	1612	1194	1657	721	1526	1	43430
FY27	35533	3307	1641	1236	1724	722	1607	1	45771
FY28	37895	3440	1673	1279	1806	731	1703	1	48527
FY29	40493	3573	1706	1322	1895	745	1808	1	51543
FY30	43148	3707	1740	1365	1986	758	1916	1	54621
FY31	45901	3843	1773	1409	2079	771	2029	1	57806
FY32	48800	3985	1807	1454	2177	785	2148	1	61157
FY33	51968	4137	1843	1502	2284	799	2280	1	64813
FY34	55273	4293	1879	1551	2394	814	2418	2	68623
FY35	58716	4453	1915	1601	2509	829	2563	2	72587
FY36	62236	4617	1951	1651	2629	843	2715	2	76645
FY37	65824	4785	1988	1703	2753	858	2875	2	80788
FY38	69470	4958	2024	1755	2881	873	3043	2	85007
FY39	73164	5134	2061	1808	3014	888	3219	2	89291
FY40	76895	5314	2098	1862	3152	904	3403	2	93630
FY41	80648	5497	2135	1917	3295	919	3596	2	98009
FY42	84411	5685	2171	1972	3443	934	3798	2	1,02,417
FY43	88172	5876	2208	2027	3596	950	4009	3	1,06,840
FY44	91919	6070	2245	2083	3754	966	4229	3	1,11,270

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Gadpuri)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY27	5.9%	4.1%	1.8%	3.5%	4.0%	0.1%	5.3%	0.0%	5.4%
FY28	6.6%	4.0%	2.0%	3.5%	4.8%	1.2%	6.0%	0.0%	6.0%
FY29	6.9%	3.9%	2.0%	3.4%	4.9%	1.9%	6.2%	0.0%	6.2%
FY30	6.6%	3.8%	2.0%	3.3%	4.8%	1.7%	6.0%	0.0%	6.0%
FY31	6.4%	3.7%	1.9%	3.2%	4.7%	1.7%	5.9%	0.0%	5.8%
FY32	6.3%	3.7%	1.9%	3.2%	4.7%	1.8%	5.9%	0.0%	5.8%
FY33	6.5%	3.8%	2.0%	3.3%	4.9%	1.8%	6.1%	0.0%	6.0%
FY34	6.4%	3.8%	2.0%	3.3%	4.8%	1.9%	6.1%	100.0%	5.9%
FY35	6.2%	3.7%	1.9%	3.2%	4.8%	1.8%	6.0%	0.0%	5.8%
FY36	6.0%	3.7%	1.9%	3.1%	4.8%	1.7%	5.9%	0.0%	5.6%
FY37	5.8%	3.6%	1.9%	3.1%	4.7%	1.8%	5.9%	0.0%	5.4%
FY38	5.5%	3.6%	1.8%	3.1%	4.6%	1.7%	5.8%	0.0%	5.2%
FY39	5.3%	3.5%	1.8%	3.0%	4.6%	1.7%	5.8%	0.0%	5.0%
FY40	5.1%	3.5%	1.8%	3.0%	4.6%	1.8%	5.7%	0.0%	4.9%
FY41	4.9%	3.4%	1.8%	3.0%	4.5%	1.7%	5.7%	0.0%	4.7%
FY42	4.7%	3.4%	1.7%	2.9%	4.5%	1.6%	5.6%	0.0%	4.5%
FY43	4.5%	3.4%	1.7%	2.8%	4.4%	1.7%	5.6%	50.0%	4.3%
FY44	4.2%	3.3%	1.7%	2.8%	4.4%	1.7%	5.5%	0.0%	4.1%

Source: Computed based on traffic forecasts in Table 1

Table 3: Traffic via Toll Plaza 2 (Karman)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY26	21773	1602	1583	926	3838	2141	3463	3	35330
FY27	23384	1670	1555	959	3841	2003	3391	4	36806
FY28	25047	1740	1553	993	3944	1994	3529	4	38804
FY29	27007	1810	1584	1026	4243	2063	3842	4	41581
FY30	29028	1881	1615	1060	4500	2111	4121	4	44320
FY31	31140	1953	1646	1094	4735	2148	4388	5	47108
FY32	33383	2028	1677	1128	4977	2186	4672	5	50055
FY33	35851	2108	1710	1166	5234	2226	4987	5	53287
FY34	38448	2190	1744	1204	5495	2267	5319	6	56671
FY35	41173	2275	1777	1242	5759	2308	5670	6	60210
FY36	44007	2361	1811	1282	6033	2349	6041	6	63891
FY37	46948	2450	1845	1322	6317	2390	6433	7	67711
FY38	49992	2540	1879	1362	6612	2432	6846	7	71670
FY39	53136	2632	1913	1403	6918	2474	7281	8	75766
FY40	56376	2726	1947	1445	7234	2517	7740	8	79994
FY41	59700	2822	1982	1488	7562	2560	8222	9	84344
FY42	63103	2920	2016	1530	7902	2603	8729	9	88812
FY43	66579	3018	2050	1573	8253	2646	9263	10	93391
FY44	70121	3119	2084	1617	8616	2690	9823	10	98079

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 4: Forecast for growth rates via Toll Plaza 2 (Karman)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY27	7.4%	4.2%	-1.8%	3.6%	0.1%	-6.4%	-2.1%	33.3%	4.2%
FY28	7.1%	4.2%	-0.1%	3.5%	2.7%	-0.4%	4.1%	0.0%	5.4%
FY29	7.8%	4.0%	2.0%	3.3%	7.6%	3.5%	8.9%	0.0%	7.2%
FY30	7.5%	3.9%	2.0%	3.3%	6.1%	2.3%	7.3%	0.0%	6.6%
FY31	7.3%	3.8%	1.9%	3.2%	5.2%	1.8%	6.5%	25.0%	6.3%
FY32	7.2%	3.8%	1.9%	3.1%	5.1%	1.8%	6.5%	0.0%	6.3%
FY33	7.4%	3.9%	2.0%	3.4%	5.2%	1.8%	6.7%	0.0%	6.5%
FY34	7.2%	3.9%	2.0%	3.3%	5.0%	1.8%	6.7%	20.0%	6.4%
FY35	7.1%	3.9%	1.9%	3.2%	4.8%	1.8%	6.6%	0.0%	6.2%
FY36	6.9%	3.8%	1.9%	3.2%	4.8%	1.8%	6.5%	0.0%	6.1%
FY37	6.7%	3.8%	1.9%	3.1%	4.7%	1.7%	6.5%	16.7%	6.0%
FY38	6.5%	3.7%	1.8%	3.0%	4.7%	1.8%	6.4%	0.0%	5.8%
FY39	6.3%	3.6%	1.8%	3.0%	4.6%	1.7%	6.4%	14.3%	5.7%
FY40	6.1%	3.6%	1.8%	3.0%	4.6%	1.7%	6.3%	0.0%	5.6%
FY41	5.9%	3.5%	1.8%	3.0%	4.5%	1.7%	6.2%	12.5%	5.4%
FY42	5.7%	3.5%	1.7%	2.8%	4.5%	1.7%	6.2%	0.0%	5.3%
FY43	5.5%	3.4%	1.7%	2.8%	4.4%	1.7%	6.1%	11.1%	5.2%
FY44	5.3%	3.3%	1.7%	2.8%	4.4%	1.7%	6.0%	0.0%	5.0%

Source: Computed based on traffic forecasts in Table 3

Table 5: Traffic via Toll Plaza 3 (Mahuvan)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY26	14617	1622	1573	1065	3989	2211	4125	3	29206
FY27	15625	1692	1546	1103	4003	2060	4108	3	30141
FY28	16651	1763	1543	1142	4118	2049	4299	3	31569
FY29	17955	1834	1575	1180	4427	2119	4665	4	33758
FY30	19298	1905	1605	1218	4694	2168	4998	4	35891
FY31	20702	1978	1636	1257	4939	2206	5322	4	38045
FY32	22193	2054	1667	1297	5191	2245	5666	4	40318
FY33	23834	2135	1700	1340	5459	2286	6048	5	42808
FY34	25560	2219	1733	1384	5732	2328	6451	5	45411
FY35	27372	2304	1767	1428	6007	2370	6877	5	48131
FY36	29256	2392	1800	1473	6293	2412	7327	6	50960
FY37	31211	2482	1834	1519	6589	2454	7802	6	53898
FY38	33235	2573	1868	1566	6897	2497	8303	6	56946
FY39	35325	2667	1902	1614	7216	2541	8831	7	60101
FY40	37479	2762	1936	1662	7546	2584	9387	7	63363
FY41	39689	2859	1970	1710	7888	2628	9972	8	66724
FY42	41951	2958	2004	1759	8242	2673	10587	8	70182
FY43	44262	3058	2038	1809	8609	2717	11234	9	73734
FY44	46617	3159	2071	1859	8987	2762	11913	9	77378

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 6: Forecast for growth rates via Toll Plaza 3 (Mahuvan)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY27	6.9%	4.3%	-1.7%	3.6%	0.4%	-6.8%	-0.4%	0.0%	3.2%
FY28	6.6%	4.2%	-0.2%	3.5%	2.9%	-0.5%	4.6%	0.0%	4.7%
FY29	7.8%	4.0%	2.1%	3.3%	7.5%	3.4%	8.5%	33.3%	6.9%
FY30	7.5%	3.9%	1.9%	3.2%	6.0%	2.3%	7.1%	0.0%	6.3%
FY31	7.3%	3.8%	1.9%	3.2%	5.2%	1.8%	6.5%	0.0%	6.0%
FY32	7.2%	3.8%	1.9%	3.2%	5.1%	1.8%	6.5%	0.0%	6.0%
FY33	7.4%	3.9%	2.0%	3.3%	5.2%	1.8%	6.7%	25.0%	6.2%
FY34	7.2%	3.9%	1.9%	3.3%	5.0%	1.8%	6.7%	0.0%	6.1%
FY35	7.1%	3.8%	2.0%	3.2%	4.8%	1.8%	6.6%	0.0%	6.0%
FY36	6.9%	3.8%	1.9%	3.2%	4.8%	1.8%	6.5%	20.0%	5.9%
FY37	6.7%	3.8%	1.9%	3.1%	4.7%	1.7%	6.5%	0.0%	5.8%
FY38	6.5%	3.7%	1.9%	3.1%	4.7%	1.8%	6.4%	0.0%	5.7%
FY39	6.3%	3.7%	1.8%	3.1%	4.6%	1.8%	6.4%	16.7%	5.5%
FY40	6.1%	3.6%	1.8%	3.0%	4.6%	1.7%	6.3%	0.0%	5.4%
FY41	5.9%	3.5%	1.8%	2.9%	4.5%	1.7%	6.2%	14.3%	5.3%
FY42	5.7%	3.5%	1.7%	2.9%	4.5%	1.7%	6.2%	0.0%	5.2%
FY43	5.5%	3.4%	1.7%	2.8%	4.5%	1.6%	6.1%	12.5%	5.1%
FY44	5.3%	3.3%	1.6%	2.8%	4.4%	1.7%	6.0%	0.0%	4.9%

Source: Computed based on traffic forecasts in Table 5

H. Ghaziabad Aligarh Expressway Private Limited ("GAEPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Luharli)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	20668	2178	1594	2094	1920	646	2393	31494

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Luharli)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	6.7%	3.7%	3.0%	2.9%	(1.9%)	(8.6%)	(4.3%)	4.4%
FY28	7.1%	3.7%	2.9%	2.9%	3.3%	(1.7%)	2.3%	5.6%
FY29	6.9%	3.5%	2.8%	2.8%	5.2%	1.4%	5.0%	5.9%
FY30	6.5%	3.4%	2.7%	2.7%	4.8%	1.2%	4.8%	5.6%
FY31	6.4%	3.3%	2.7%	2.6%	4.7%	1.2%	4.7%	5.5%
FY32	6.4%	3.3%	2.7%	2.6%	4.7%	1.2%	4.7%	5.5%
FY33	6.6%	3.4%	2.7%	2.7%	4.9%	1.2%	4.9%	5.7%
FY34	6.5%	3.4%	2.7%	2.7%	4.8%	1.2%	4.8%	5.7%
FY35	6.4%	3.3%	2.7%	2.6%	4.8%	1.2%	4.8%	5.6%
FY36	6.3%	3.3%	2.6%	2.6%	4.8%	1.2%	4.8%	5.6%
FY37	6.2%	3.2%	2.6%	2.5%	4.7%	1.2%	4.7%	5.5%
FY38	6.2%	3.2%	2.5%	2.5%	4.7%	1.2%	4.7%	5.4%
FY39	6.1%	3.1%	2.5%	2.5%	4.6%	1.2%	4.6%	5.4%
FY40	6.0%	3.0%	2.4%	2.4%	4.6%	1.1%	4.6%	5.3%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 3: Base Traffic (FY26) via Toll Plaza 2 (Somna)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	7074	885	965	1384	1540	642	1782	14273

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 4: Forecast for growth rates via Toll Plaza 2 (Somna)

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY27	5.2%	3.1%	3.1%	3.1%	(6.1%)	(8.8%)	(8.5%)	1.1%
FY28	6.5%	3.0%	3.0%	3.0%	2.0%	(1.7%)	0.9%	4.3%
FY29	6.7%	2.9%	2.9%	2.9%	5.2%	1.4%	5.1%	5.3%
FY30	6.3%	2.8%	2.8%	2.8%	4.8%	1.2%	4.8%	5.0%
FY31	6.2%	2.7%	2.7%	2.7%	4.7%	1.2%	4.7%	4.9%
FY32	6.1%	2.7%	2.7%	2.7%	4.7%	1.2%	4.7%	5.0%
FY33	6.3%	2.8%	2.8%	2.8%	4.9%	1.2%	4.9%	5.1%
FY34	6.3%	2.8%	2.8%	2.8%	4.8%	1.2%	4.8%	5.1%
FY35	6.2%	2.7%	2.7%	2.7%	4.8%	1.2%	4.8%	5.0%
FY36	6.0%	2.7%	2.7%	2.7%	4.8%	1.2%	4.8%	5.0%
FY37	5.9%	2.6%	2.6%	2.6%	4.7%	1.2%	4.7%	4.9%
FY38	5.8%	2.6%	2.6%	2.6%	4.7%	1.2%	4.7%	4.8%
FY39	5.7%	2.5%	2.5%	2.5%	4.6%	1.2%	4.6%	4.8%
FY40	5.6%	2.5%	2.5%	2.5%	4.6%	1.1%	4.6%	4.7%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Shape the future with confidence

I. N.A.M. Expressway Private Limited ("NAMEPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Madgulapally)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	6,359	1,873	831	664	1,333	647	2,007	13,715

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Madgulapally)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	7.7%	2.9%	2.9%	1.8%	5.2%	1.3%	5.8%	5.7%
FY28	8.6%	2.8%	2.8%	0.3%	1.3%	(5.4%)	3.0%	4.9%
FY29	7.2%	2.7%	2.7%	1.3%	4.0%	(0.6%)	4.9%	5.1%
FY30	6.3%	2.6%	2.6%	1.5%	1.5%	(0.8%)	2.4%	4.1%
FY31	5.7%	2.6%	2.6%	1.1%	(1.8%)	(3.0%)	(1.2%)	3.0%
FY32	6.4%	2.6%	2.6%	1.6%	5.7%	1.7%	6.1%	5.2%
FY33	6.6%	2.6%	2.6%	1.6%	4.9%	1.2%	5.5%	5.2%
FY34	6.5%	2.6%	2.6%	1.6%	4.8%	1.2%	5.5%	5.2%
FY35	6.4%	2.6%	2.6%	1.6%	4.8%	1.2%	5.4%	5.1%
FY36	6.3%	2.5%	2.5%	1.6%	4.8%	1.2%	5.4%	5.1%
FY37	6.2%	2.5%	2.5%	1.5%	4.7%	1.2%	5.3%	5.0%
FY38	6.1%	2.4%	2.4%	1.5%	4.7%	1.2%	5.3%	5.0%
FY39	6.0%	2.4%	2.4%	1.5%	4.6%	1.2%	5.2%	4.9%
FY40	5.9%	2.4%	2.4%	1.5%	4.6%	1.1%	5.2%	4.9%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 3: Base Traffic (FY26) via Toll Plaza 2 (Tummalacheruvu)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	5,486	1,616	775	640	1,306	667	2,749	13,240

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 4: Forecast for growth rates via Toll Plaza 2 (Tummalacheruvu)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	7.7%	3.6%	4.4%	1.8%	5.2%	1.3%	5.8%	5.8%
FY28	8.8%	3.5%	4.2%	0.3%	1.3%	(5.1%)	6.8%	5.7%
FY29	7.2%	3.4%	4.1%	1.3%	3.9%	(0.5%)	5.8%	5.4%
FY30	6.2%	3.3%	3.9%	1.5%	1.5%	(0.7%)	3.3%	4.2%
FY31	5.6%	3.2%	3.9%	1.1%	(1.8%)	(3.0%)	0.9%	3.1%
FY32	6.4%	3.2%	3.8%	1.6%	5.7%	1.6%	5.8%	5.3%
FY33	6.6%	3.3%	4.0%	1.6%	4.9%	1.2%	1.7%	4.5%
FY34	6.5%	3.2%	3.9%	1.6%	4.8%	1.2%	5.5%	5.3%
FY35	6.4%	3.2%	3.8%	1.6%	4.8%	1.2%	5.4%	5.2%
FY36	6.3%	3.1%	3.8%	1.6%	4.8%	1.2%	5.4%	5.2%
FY37	6.2%	3.1%	3.7%	1.5%	4.7%	1.2%	5.3%	5.1%
FY38	6.1%	3.0%	3.6%	1.5%	4.7%	1.2%	5.3%	5.1%
FY39	6.0%	3.0%	3.6%	1.5%	4.6%	1.2%	5.2%	5.0%
FY40	5.9%	3.0%	3.6%	1.5%	4.6%	1.1%	5.2%	5.0%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 5: Base Traffic (FY26) via Toll Plaza 3 (Elchuru)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	2828	833	424	486	1021	586	2119	8298

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 6: Forecast for growth rates via Toll Plaza 3 (Elchuru)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	7.7%	3.6%	4.4%	1.8%	5.2%	1.3%	5.8%	5.5%
FY28	10.1%	3.5%	4.2%	(0.2%)	0.2%	(6.4%)	3.2%	4.5%
FY29	7.6%	3.4%	4.1%	1.2%	3.6%	(0.8%)	4.9%	5.0%
FY30	6.0%	3.3%	3.9%	1.4%	0.5%	(1.1%)	2.6%	3.5%
FY31	4.9%	3.2%	3.9%	0.9%	(3.9%)	(3.8%)	(0.8%)	1.6%
FY32	6.4%	3.2%	3.8%	1.6%	6.0%	1.7%	6.0%	5.3%
FY33	6.6%	3.3%	4.0%	1.6%	4.9%	1.2%	5.5%	5.2%
FY34	6.5%	3.2%	3.9%	1.6%	4.8%	1.2%	5.5%	5.1%
FY35	6.4%	3.2%	3.8%	1.6%	4.8%	1.2%	5.4%	5.1%
FY36	6.3%	3.1%	3.8%	1.6%	4.8%	1.2%	5.4%	5.0%
FY37	6.2%	3.1%	3.7%	1.5%	4.7%	1.2%	5.3%	5.0%
FY38	6.1%	3.0%	3.6%	1.5%	4.7%	1.2%	5.3%	5.0%
FY39	6.0%	3.0%	3.6%	1.5%	4.6%	1.2%	5.2%	4.9%
FY40	5.9%	3.0%	3.6%	1.5%	4.6%	1.1%	5.2%	4.9%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

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J. Hazaribagh Tollway Private Limited ("HTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Pundag)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	11,306	1,245	964	386	1,041	580	2,894	18,417

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Pundag)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	(0.4%)	4.2%	(10.5%)	2.8%	(8.2%)	(3.2%)	(15.6%)	(3.5%)
FY28	5.1%	4.1%	(0.7%)	2.7%	1.2%	0.6%	(0.6%)	3.5%
FY29	7.0%	3.9%	3.2%	2.6%	4.9%	1.9%	6.3%	6.2%
FY30	6.5%	3.7%	3.1%	2.5%	4.5%	1.8%	5.7%	5.7%
FY31	6.2%	3.7%	3.1%	2.5%	4.1%	1.8%	5.3%	5.4%
FY32	6.1%	3.7%	3.1%	2.5%	4.1%	1.8%	5.3%	5.4%
FY33	6.4%	3.8%	3.2%	2.6%	4.3%	1.8%	5.5%	5.7%
FY34	6.3%	3.8%	3.2%	2.5%	4.2%	1.8%	5.5%	5.6%
FY35	6.2%	3.7%	3.1%	2.5%	4.2%	1.8%	5.4%	5.6%
FY36	6.2%	3.7%	3.1%	2.5%	4.2%	1.8%	5.4%	5.5%
FY37	6.1%	3.7%	3.1%	2.4%	4.1%	1.8%	5.3%	5.5%
FY38	6.0%	3.6%	3.0%	2.4%	4.1%	1.8%	5.3%	5.4%
FY39	6.0%	3.6%	3.0%	2.4%	4.0%	1.7%	5.2%	5.4%
FY40	5.9%	3.5%	3.0%	2.4%	4.0%	1.7%	5.2%	5.3%
FY41	5.8%	3.5%	2.9%	2.3%	4.0%	1.7%	5.1%	5.3%
FY42	5.8%	3.5%	2.9%	2.3%	3.9%	1.7%	5.0%	5.2%
FY43	8.3%	3.4%	2.8%	4.3%	5.9%	3.2%	6.2%	7.3%
FY44	5.6%	3.4%	2.8%	2.2%	3.8%	1.6%	4.9%	5.1%
FY45	5.5%	3.3%	2.8%	2.2%	3.8%	1.6%	4.9%	5.1%
FY46	5.5%	3.3%	2.7%	2.2%	3.8%	1.6%	4.8%	5.0%
FY47	5.4%	3.2%	2.7%	2.1%	3.7%	1.6%	4.8%	4.9%
FY48	5.3%	3.2%	2.6%	2.1%	3.7%	1.6%	4.7%	4.9%
FY49	5.2%	3.1%	2.6%	2.1%	3.6%	1.6%	4.7%	4.8%
FY50	5.2%	3.1%	2.6%	2.1%	3.6%	1.5%	4.6%	4.8%
FY51	4.9%	2.9%	2.5%	2.0%	3.4%	1.5%	4.4%	4.5%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

K. Jhansi – Lalitpur Tollway Private Limited ("JLTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Babina)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	OSV	Total
FY26	3,105	499	175	336	1,577	1,397	1,910	2	9,000

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Babina)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	OSV	Total
FY27	7.5%	7.5%	(5.5%)	7.9%	10.9%	9.2%	(5.0%)	-	5.1%
FY28	6.3%	3.8%	2.5%	3.2%	0.1%	(3.3%)	3.9%	-	2.9%
FY29	6.3%	3.8%	2.5%	3.1%	5.6%	1.9%	6.7%	-	5.3%
FY30	6.1%	3.6%	2.4%	3.0%	5.3%	1.9%	6.3%	-	5.1%
FY31	5.9%	3.5%	2.3%	2.9%	5.1%	1.8%	6.0%	-	4.9%
FY32	5.8%	3.5%	2.3%	2.9%	4.9%	1.8%	5.9%	-	4.8%
FY33	5.8%	3.5%	2.3%	2.9%	(2.5%)	(5.1%)	2.2%	-	1.9%
FY34	6.0%	3.6%	2.4%	3.0%	5.0%	1.8%	6.1%	-	5.1%
FY35	6.0%	3.6%	2.4%	3.0%	4.9%	1.8%	6.1%	-	5.0%
FY36	5.9%	3.5%	2.4%	3.0%	4.8%	1.8%	6.0%	-	5.0%
FY37	5.9%	3.5%	2.3%	2.9%	4.8%	1.8%	5.9%	-	5.0%
FY38	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.9%	-	5.0%
FY39	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.8%	-	4.9%
FY40	5.7%	3.4%	2.3%	2.9%	4.6%	1.7%	5.8%	-	4.9%
FY41	5.6%	3.4%	2.3%	2.8%	4.6%	1.7%	5.7%	-	4.9%
FY42	5.6%	3.4%	2.2%	2.8%	4.5%	1.7%	5.7%	-	4.8%
FY43	5.5%	3.3%	2.2%	2.8%	4.5%	1.7%	5.6%	-	4.8%
FY44	5.5%	3.3%	2.2%	2.7%	4.4%	1.7%	5.6%	-	4.8%
FY45	5.5%	3.3%	2.2%	2.7%	4.4%	1.6%	5.5%	-	4.7%
FY46	5.4%	3.2%	2.2%	2.7%	4.4%	1.6%	5.4%	-	4.7%
FY47	5.4%	3.2%	2.1%	2.7%	4.3%	1.6%	5.4%	-	4.7%
FY48	5.3%	3.2%	2.1%	2.7%	4.3%	1.6%	5.3%	-	4.7%
FY49	5.3%	3.2%	2.1%	2.6%	4.2%	1.6%	5.3%	-	4.6%
FY50	5.2%	3.1%	2.1%	2.6%	4.2%	1.6%	5.2%	-	4.6%
FY51	5.2%	3.1%	2.1%	2.6%	4.1%	1.5%	5.2%	-	4.5%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

L. Jhansi – Vigakhet Tollway Limited ("JVTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Vigakhet)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	OSV	Total
FY26	2,379	319	158	329	1,531	1,395	1,800	2	7,913

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Vigakhet)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	OSV	Total
FY27	4.8%	4.8%	(5.8%)	8.6%	11.1%	6.9%	(3.5%)	-	4.2%
FY28	6.3%	3.8%	2.5%	3.2%	(0.1%)	(3.3%)	3.7%	-	2.5%
FY29	6.3%	3.8%	2.5%	3.1%	5.6%	1.9%	6.7%	-	5.2%
FY30	6.1%	3.6%	2.4%	3.0%	5.3%	1.9%	6.3%	-	5.0%
FY31	5.9%	3.5%	2.3%	2.9%	5.1%	1.8%	6.0%	-	4.8%
FY32	5.8%	3.5%	2.3%	2.9%	4.9%	1.8%	5.9%	-	4.8%
FY33	5.8%	3.5%	2.3%	2.9%	(2.7%)	(5.1%)	2.0%	-	1.4%
FY34	6.0%	3.6%	2.4%	3.0%	5.0%	1.8%	6.1%	-	5.0%
FY35	6.0%	3.6%	2.4%	3.0%	4.9%	1.8%	6.1%	-	5.0%
FY36	5.9%	3.5%	2.4%	3.0%	4.8%	1.8%	6.0%	-	4.9%
FY37	5.9%	3.5%	2.3%	2.9%	4.8%	1.8%	5.9%	-	4.9%
FY38	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.9%	-	4.9%
FY39	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.8%	-	4.9%
FY40	5.7%	3.4%	2.3%	2.9%	4.6%	1.7%	5.8%	-	4.8%
FY41	5.6%	3.4%	2.3%	2.8%	4.6%	1.7%	5.7%	-	4.8%
FY42	5.6%	3.4%	2.2%	2.8%	4.5%	1.7%	5.7%	-	4.8%
FY43	5.5%	3.3%	2.2%	2.8%	4.5%	1.7%	5.6%	-	4.7%
FY44	5.5%	3.3%	2.2%	2.7%	4.4%	1.7%	5.6%	-	4.7%
FY45	5.5%	3.3%	2.2%	2.7%	4.4%	1.6%	5.5%	-	4.7%
FY46	5.4%	3.2%	2.2%	2.7%	4.4%	1.6%	5.4%	-	4.7%
FY47	5.4%	3.2%	2.1%	2.7%	4.3%	1.6%	5.4%	-	4.6%
FY48	5.3%	3.2%	2.1%	2.7%	4.3%	1.6%	5.3%	-	4.6%
FY49	5.3%	3.2%	2.1%	2.6%	4.2%	1.6%	5.3%	-	4.6%
FY50	5.2%	3.1%	2.1%	2.6%	4.2%	1.6%	5.2%	-	4.5%
FY51	5.2%	3.1%	2.1%	2.6%	4.1%	1.5%	5.2%	-	4.5%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Shape the future with confidence

M. Lucknow – Raebareli Tollway Private Limited ("LRTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Dakhina Sekhpur)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	11,261	1,101	741	362	423	179	700	14,767

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Dakhina Sekhpur)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	6.2%	2.5%	3.2%	2.5%	0.4%	(0.9%)	1.1%	5.2%
FY28	6.3%	2.5%	3.1%	2.5%	2.8%	2.1%	3.5%	5.5%
FY29	6.1%	2.4%	3.0%	2.4%	2.7%	2.0%	3.4%	5.3%
FY30	5.9%	2.3%	2.9%	2.3%	3.8%	2.5%	4.5%	5.3%
FY31	8.0%	2.3%	5.1%	2.3%	2.9%	2.1%	3.5%	6.9%
FY32	3.6%	2.3%	0.7%	2.3%	2.9%	2.1%	3.5%	3.4%
FY33	6.0%	2.4%	3.0%	2.4%	3.0%	2.1%	3.6%	5.4%
FY34	6.0%	2.4%	3.0%	2.4%	3.0%	2.1%	3.6%	5.3%
FY35	5.9%	2.4%	3.0%	2.4%	2.4%	1.8%	3.0%	5.3%
FY36	5.9%	2.3%	2.9%	2.3%	2.4%	1.8%	3.0%	5.2%
FY37	10.2%	2.3%	7.4%	2.3%	2.4%	1.8%	2.9%	8.9%
FY38	1.6%	2.3%	(1.4%)	2.3%	2.3%	1.8%	2.9%	1.6%
FY39	5.7%	2.3%	2.9%	2.3%	2.3%	1.7%	2.9%	5.1%
FY40	5.6%	2.3%	2.8%	2.3%	2.3%	1.7%	2.9%	5.1%
FY41	5.6%	2.2%	2.8%	2.2%	2.3%	1.7%	2.8%	5.1%
FY42	5.5%	2.2%	2.8%	2.2%	2.2%	1.7%	2.8%	5.0%
FY43	7.7%	2.2%	5.0%	2.2%	2.2%	1.7%	2.8%	6.9%
FY44	3.3%	2.2%	0.5%	2.2%	2.2%	1.6%	2.7%	3.1%
FY45	5.4%	2.2%	2.7%	2.2%	2.2%	1.6%	2.7%	4.9%
FY46	5.4%	2.1%	2.7%	2.1%	2.2%	1.6%	2.7%	4.9%
FY47	5.3%	2.1%	2.7%	2.1%	2.1%	1.6%	2.7%	4.9%
FY48	5.3%	2.1%	2.6%	2.1%	2.1%	1.6%	2.6%	4.8%
FY49	9.6%	2.1%	7.1%	2.1%	2.1%	1.6%	2.6%	8.7%
FY50	1.0%	2.1%	(1.7%)	2.1%	2.1%	1.5%	2.6%	1.0%
FY51	4.9%	2.0%	2.5%	2.0%	2.0%	1.5%	2.5%	4.5%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Shape the future with confidence

N. Kotwa - Muzaffarpur Tollway Private Limited ("KMTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Parsoni Khem)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	3,933	960	510	387	1,283	976	2,555	10,606

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Parsoni Khem)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	7.1%	4.2%	2.1%	2.8%	5.2%	1.3%	6.4%	5.5%
FY28	6.9%	4.1%	2.1%	2.8%	5.1%	1.3%	6.3%	5.4%
FY29	6.6%	4.0%	2.0%	2.6%	4.9%	1.2%	5.8%	5.2%
FY30	6.4%	3.8%	1.9%	2.6%	4.8%	1.2%	5.7%	5.0%
FY31	6.3%	3.8%	1.9%	2.5%	4.7%	1.2%	5.3%	4.9%
FY32	6.3%	3.8%	1.9%	2.5%	4.7%	1.2%	5.3%	5.0%
FY33	6.5%	3.9%	2.0%	2.6%	4.9%	1.2%	5.5%	5.2%
FY34	6.4%	3.9%	1.9%	2.6%	4.8%	1.2%	5.5%	5.1%
FY35	6.4%	3.8%	1.9%	2.5%	(4.4%)	(9.5%)	(1.6%)	1.5%
FY36	6.3%	3.8%	1.9%	2.5%	2.2%	(1.8%)	3.5%	4.2%
FY37	6.2%	3.7%	1.9%	2.5%	4.7%	1.2%	5.3%	5.1%
FY38	6.1%	3.7%	1.8%	2.5%	4.7%	1.2%	5.3%	5.0%
FY39	6.1%	3.6%	1.8%	2.4%	4.6%	1.2%	5.2%	5.0%
FY40	5.7%	3.4%	1.7%	2.3%	4.6%	1.1%	5.2%	4.8%
FY41	5.7%	3.4%	1.7%	2.3%	4.5%	1.1%	5.1%	4.8%
FY42	5.6%	3.4%	1.7%	2.2%	4.5%	1.1%	5.0%	4.7%
FY43	5.6%	3.3%	1.7%	2.2%	4.4%	1.1%	5.0%	4.7%
FY44	5.5%	3.3%	1.6%	2.2%	4.4%	1.1%	4.9%	4.7%
FY45	5.4%	3.3%	1.6%	2.2%	4.4%	1.1%	4.9%	4.6%
FY46	5.4%	3.2%	1.6%	2.2%	4.3%	1.1%	4.8%	4.6%
FY47	5.3%	3.2%	1.6%	2.1%	4.3%	1.1%	4.8%	4.6%
FY48	7.2%	3.2%	1.6%	3.5%	5.5%	1.8%	5.4%	5.8%
FY49	5.2%	3.1%	1.6%	2.1%	4.2%	1.0%	4.7%	4.5%
FY50	5.2%	3.1%	1.5%	2.1%	4.1%	1.0%	4.6%	4.5%
FY51	4.9%	2.9%	1.5%	2.0%	3.9%	1.0%	4.4%	4.3%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Shape the future with confidence

O. Madurai – Kanyakumari Tollway Private Limited ("MKTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Kappalur)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	19614	2570	3195	1770	1376	566	1035	30127

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Kappalur)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	5.7%	5.7%	(0.2%)	1.2%	8.7%	(5.1%)	4.7%	4.6%
FY28	5.1%	5.1%	9.3%	6.5%	(2.4%)	2.9%	6.8%	5.3%
FY29	9.6%	9.6%	(2.3%)	6.4%	1.6%	4.5%	6.3%	7.4%
FY30	7.4%	4.2%	2.8%	3.5%	4.2%	2.1%	5.1%	6.0%
FY31	7.1%	4.1%	2.7%	3.4%	4.1%	2.1%	5.0%	5.9%
FY32	6.7%	4.0%	2.6%	3.3%	4.0%	2.0%	4.7%	5.6%
FY33	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	4.5%	5.4%
FY34	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	4.4%	5.3%
FY35	2.6%	3.7%	2.5%	3.1%	3.7%	1.9%	4.3%	2.8%
FY36	7.8%	3.8%	2.6%	4.2%	5.0%	2.8%	5.2%	6.5%
FY37	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	4.4%	5.4%
FY38	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	4.3%	5.3%
FY39	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	4.3%	5.2%
FY40	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	4.2%	5.2%
FY41	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	4.1%	5.1%
FY42	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	4.0%	5.0%
FY43	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	4.0%	5.0%
FY44	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	4.0%	4.9%
FY45	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.9%	4.9%
FY46	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.9%	4.9%
FY47	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.8%	4.8%
FY48	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.8%	4.8%
FY49	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.8%	4.8%
FY50	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.7%	4.7%
FY51	5.3%	3.2%	2.1%	2.6%	3.2%	1.6%	3.7%	4.7%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Shape the future with confidence

P. Kanyakumari – Etturavattam Tollway Private Limited ("KETPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Etturvattam)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	9125	978	1379	977	788	350	869	14469

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Etturvattam)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	7.4%	4.2%	2.8%	3.5%	4.2%	2.1%	4.4%	6.0%
FY28	7.1%	4.1%	2.7%	3.4%	3.1%	0.1%	2.9%	5.6%
FY29	6.7%	4.0%	2.6%	3.3%	3.0%	0.0%	2.6%	5.4%
FY30	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%
FY31	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	3.8%	5.2%
FY32	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.2%
FY33	6.4%	3.8%	2.6%	3.2%	3.8%	1.9%	3.8%	5.4%
FY34	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%
FY35	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.3%
FY36	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	3.7%	5.2%
FY37	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	3.6%	5.1%
FY38	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	3.5%	5.0%
FY39	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	3.5%	5.0%
FY40	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	3.4%	4.9%
FY41	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	3.4%	4.9%
FY42	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.4%	4.9%
FY43	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.3%	4.8%
FY44	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%
FY45	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%
FY46	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.2%	4.7%
FY47	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.2%	4.7%
FY48	5.3%	3.2%	2.1%	2.6%	3.2%	1.6%	3.2%	4.7%
FY49	5.2%	3.1%	2.1%	2.6%	3.1%	1.6%	3.1%	4.6%
FY50	5.2%	3.1%	2.1%	2.6%	3.1%	1.5%	3.1%	4.6%
FY51	4.9%	2.9%	2.0%	2.5%	2.9%	1.5%	2.9%	4.4%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Shape the future with confidence

Q. Salaipudhur – Madurai Tollway Private Limited ("SMTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Salaipudhur)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	8345	991	1222	871	731	333	734	13231

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Salaipudhur)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	7.4%	4.2%	2.8%	3.5%	4.2%	2.1%	4.4%	6.0%
FY28	7.1%	4.1%	2.7%	3.4%	3.9%	1.6%	4.0%	5.8%
FY29	6.7%	4.0%	2.6%	3.3%	3.7%	1.6%	3.7%	5.5%
FY30	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%
FY31	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	3.8%	5.2%
FY32	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.2%
FY33	6.4%	3.8%	2.6%	3.2%	3.8%	1.9%	3.8%	5.4%
FY34	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%
FY35	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.3%
FY36	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	3.7%	5.2%
FY37	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	3.6%	5.1%
FY38	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	3.5%	5.0%
FY39	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	3.5%	5.0%
FY40	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	3.4%	4.9%
FY41	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	3.4%	4.9%
FY42	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.4%	4.9%
FY43	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.3%	4.8%
FY44	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%
FY45	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%
FY46	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.2%	4.7%
FY47	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.2%	4.7%
FY48	5.3%	3.2%	2.1%	2.6%	3.2%	1.6%	3.2%	4.7%
FY49	5.2%	3.1%	2.1%	2.6%	3.1%	1.6%	3.1%	4.6%
FY50	5.2%	3.1%	2.1%	2.6%	3.1%	1.5%	3.1%	4.6%
FY51	4.9%	2.9%	2.0%	2.5%	2.9%	1.5%	2.9%	4.4%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Shape the future with confidence

R. Nanguneri-Kanyakumari Tollway Private Limited ("NKTPL")

Table 1: Base Traffic (FY26) via Toll Plaza 1 (Nanguneri)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	10265	1129	1285	764	668	309	706	15128

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

Table 2: Forecast for growth rates via Toll Plaza 1 (Nanguneri)

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY27	6.9%	4.2%	2.8%	3.5%	4.2%	2.1%	4.4%	5.9%
FY28	6.8%	4.1%	2.7%	3.4%	4.5%	2.3%	4.7%	5.8%
FY29	6.6%	4.0%	2.6%	3.3%	4.0%	2.0%	4.0%	5.6%
FY30	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.4%
FY31	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	3.8%	5.4%
FY32	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.3%
FY33	6.4%	3.8%	2.6%	3.2%	3.8%	1.9%	3.8%	5.5%
FY34	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.5%
FY35	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.4%
FY36	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	3.7%	5.3%
FY37	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	3.6%	5.2%
FY38	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	3.5%	5.2%
FY39	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	3.5%	5.1%
FY40	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	3.4%	5.0%
FY41	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	3.4%	5.0%
FY42	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.4%	5.0%
FY43	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.3%	4.9%
FY44	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.9%
FY45	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.9%
FY46	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.2%	4.8%
FY47	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.2%	4.8%
FY48	6.6%	3.2%	2.1%	3.6%	4.3%	2.5%	3.9%	5.9%
FY49	5.2%	3.1%	2.1%	2.6%	3.1%	1.6%	3.1%	4.7%
FY50	5.2%	3.1%	2.1%	2.6%	3.1%	1.5%	3.1%	4.7%
FY51	4.9%	2.9%	2.0%	2.5%	2.9%	1.5%	2.9%	4.4%

Source: Traffic Due Diligence Report - M/s Steer Davies Gleave India Private Limited)

5. Operating Revenue

A. BOT Assets and TOT Assets

The break-up of FY 2025 Revenue for BOT Assets and TOT Assets are presented below:

Particulars	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL
Revenue from Toll Operations	2,587	1,160	1,693	1,124	2,533	1,082

Particulars	DATRPL	GAEPL	NAMEPL	HTPL	JLTPL	JVTPL
Revenue from Toll Operations	6,048	3,550	3,012	1,285	991	691

Particulars	LRTPL	KMTPL	MKTPL	KETPL	SMTPL	NKTPL
Revenue from Toll Operations	689	1,152	1,137	694	744	677

The revenue for BOT Assets and TOT Assets are estimated to grow at a CAGR of 7.4% to 10.2% (from FY 2026 till the last full financial year of the concession period of respective SPVs). The revenue growth is driven by 2 factors:

1. Traffic estimates – the traffic estimates are considered based upon a traffic study conducted by independent consultant appointed by the Investment Manager. Kindly refer to Section 5 for detailed traffic projections by the independent consultant for each SPV.
2. Toll rates - The year-on-year growth in the toll rates for the projected period is considered as per the following computation, based upon the respective concession agreements.

SPV	Growth in toll rates as per the respective concession agreements (%)
JMTPL	Base fees escalated as 100% of WPI (based on the provisional WPI growth as of March 31, 2025)
MBEL	Base fees escalated as 100% of WPI (based on the provisional WPI growth as of March 31, 2025)
WUPTPL	Base fees escalated as 100% of WPI (based on the provisional WPI growth as of March 31, 2025)
NDEPL	Base fees escalated as 100% of WPI (based on average WPI growth during FY 2025)
FRHPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
WVEPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
DATRPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
GAEPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
NAMEPL	Base fees escalated as 100% of WPI (derived from the actual WPI growth as of December 31, 2024)
HTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
JLTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
JVTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
LRTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
KMTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
MKTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
KETPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
SMTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)
NKTPL	Annual base increase 3% + 40% increase in WPI (derived from the actual WPI growth as of December 31, 2024)

WPI growth rate of 2.57% (derived from the actual WPI growth as of December 31, 2024), 2.05% (based on the provisional WPI growth as of March 31, 2025) and 2.25% (based on average WPI growth during FY 2025) has been taken into account for FY26, reflecting the applicable WPI rates for each SPV as specified in their respective concession agreements. Additionally, WPI for FY27-FY31 is projected to fall within the range of 2.4% to 5.1%. It is also anticipated that WPI will eventually align with the long-term rate of 4.1% starting in FY32. These WPI projections are based on Management's expectations / their internal estimates regarding WPI trends.

FY	Applicable WPI growth rate
FY26	2.05%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: Management

B. BOT Annuity Assets

The Annuity income as of FY 2025 for BOT Annuity Assets are presented below:

Particulars	JU	QB	APEPL
Annuity Income	4,038	4,900	1,130

Since the annuity income for BOT Annuity Assets is based upon the fixed annuity schedules as per the Concession Agreement, there is no year-on-year growth considered.

C. HAM Assets

The break-up of revenue of HAM Assets for FY 2025 are presented below:

Particulars	BWHPL	MSHPL	MHPL	THPL	SPPL	SIPL
Annuity Income	345	362	302	525	398	353
Finance Income	699	776	647	1,063	852	716
O&M Income	48	43	42	29	42	43

Finance Income - The year-on-year growth in the finance income is based upon the bank rate. The Management's projections indicate that the long-term Bank Rate is anticipated to be 5.50% over the concession period.

Annuity Income - Since the annuity income is based upon the annuity schedules, as per the Concession Agreement, the annuity income has been projected accordingly.

O&M Income - The year-on-year growth in the O&M income is based upon the price index multiple (i.e. summation of 70% of WPI and 30% of CPI), in line with the Concession Agreement. CPI growth rate has been considered in the range of 4.0% to 5.20% over the projection period. The CPI projections are based on Management's expectations / their internal estimates regarding CPI trends.

6. Operating Expenses

The break-up of operating expenses for the InvIT Assets as of FY 2025 are presented below:

Particulars	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL	DATRPL	GAEPL	NAMEPL
Operation and maintenance expenses	223	167	196	171	294	116	546	305	381
Routine Maintenace expenses	98	51	85	75	169	131	361	163	225
Project Management Fees	52	25	34	23	50	22	150	68	66

Particulars	HTPL	JLTPL	JVTPL	LRTPL	KMTPL	MKTPL	KETPL	SMTPL	NKTPL
Operation and maintenance expenses	74	64	60	74	257	126	92	100	109
Routine Maintenace expenses	7	17	14	24	111	86	92	86	99
Project Management Fees	26	21	16	16	24	25	16	16	16

Particulars	BWHPL	MSHPL	MHPL	THPL	SPPL	SIPL	JU	QB	APEPL
Operation and maintenance expenses	78	93	88	84	36	69	355	321	99
Routine Maintenace expenses	47	66	97	54	54	25	NA	16	60
Project Management Fees	18	20	18	20	15	18	5	8	24

Note: Operating and Maintenance Expenses include majorly include Employee Benefit Expense, One-time expenses etc.

Operation and maintenance expenses - The year-on-year growth in the operation and maintenance expenses (excluding insurance) has been considered at 1.4 times WPI growth estimates. Further, year-on-year growth in insurance costs has been considered to be based on WPI growth. WPI growth rates are estimated to be in the range of 2% to 5% during the projected period as described earlier.

Routine Maintenance – The year-on-year growth in routine maintenance costs has been considered to be based on WPI growth, with certain adjustments pertaining to the Management's estimate of the cost mix between the Bitumen related costs and Non-Bitumen related costs. The years during which major maintenance expenses are being incurred, these expenses are estimated to be at 50% of the normalized level.

Project Management Fees (PM fees) – The Management has estimated the PM fees as higher of 1.829% (i.e. 1.55% + 18% GST) of the total revenue in the respective financial year and a base fee (post considering an annual inflation of 7%).

Additional technical service fees –The Management has estimated an additional fee of 0.413% (i.e. 0.35% + 18% GST) of the toll/annuity revenues will be paid to Cube Highways Technologies Private Limited ("CHTPL") for expert service agreement.

Employee Benefit Expenses – The recently enacted labour codes have been notified, with phased implementation and detailed rules yet to be fully operationalised. Based on information made available, including legal assessments and existing contractual arrangements, no material present obligation or quantifiable impact has been identified as of the Valuation Date. Any potential financial implications would depend on future notification, the manner of implementation, and the actual occurrence of triggering events, and would be evaluated appropriately at that time.

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7. Details of major repairs for each of the SPVs

A. Historical periodical major repairs:

The historical major maintenance expenses for all the InvIT Assets are shown in the table below:

SPVs / Major repairs (INR Million)	FY24	FY25	9M FY26
JMTPL	289	640	53
MBEL	527	186	45
WUPTPL	-	10	442
NDEPL	5	7	10
FRHPL	64	-	23
WVEPL	44	-	-
GAEPL	956	-	375
DATRPL	101	-	-
NAMEPL	-	144	-
HTPL	-	-	-
JLTPL	-	-	-
JVTPL	-	-	-
KMTPL	-	-	-
LRTPL	-	-	-
MKTPL	-	-	-
KETPL	-	-	-
SMTPL	-	-	-
NKTPL	-	-	-
APEPL	-	-	-
JU	-	-	-
QB	-	-	-

Note: Since NAMEPL *& HAM Assets were acquired during FY 2025, and JU & QB were acquired during Q1 FY 2026 historical* major maintenance expenses *are not available.*

B. Estimates of the major repairs to be carried out in the forecast period:

The forecasted major maintenance expenses for all the InvIT Assets are shown in the tables below:

SPVs (INR million)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
JMTPL	-	-	878	878	-	1,664	-	-	-
MBEL	-	-	-	896	-	782	-	-	-
WUPTPL	607	-	-	-	-	-	-	-	-
NDEPL	-	-	939	-	-	-	-	1,266	-
FRHL	-	-	-	875	901	-	-	-	-
WVEPL	-	-	-	755	-	-	-	-	-
DATRPL	-	991	-	3,123	-	-	-	-	786
GAEPL	-	-	-	-	1,122	1,153	-	-	-
NAMEPL	1,057	-	1,098	636	-	543	-	947	-
HTPL	-	-	-	-	-	2,066	-	-	-
JLTPL	-	-	-	-	1,184	-	-	-	-
JVTPL	-	-	-	-	1,168	-	-	-	-
LRTPL	-	-	-	-	-	-	2,409	-	-
KMTPL	-	-	-	1,268	-	-	-	-	-
MKTPL	-	-	-	750	-	-	-	-	-
KETPL	-	-	-	901	-	-	-	-	-
SMTPL	-	-	-	878	-	-	-	-	-
NKTPL	-	-	-	860	-	-	-	-	-
APEPL	-	-	-	-	-	-	-	-	-
JU	-	-	564	-	-	478	-	-	-
QB	-	418	-	-	-	-	187	-	-
BWHPL	-	-	-	341	-	-	-	-	-
MSHPL	-	-	-	335	-	-	-	-	-
MHPL	-	-	-	542	-	-	-	-	-
SIPL	-	-	-	275	-	-	-	-	-
SPPL	-	-	-	614	-	-	-	-	-
THPL	-	-	-	916	-	-	-	-	-

SPVs (INR million)	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43
JMTPL	-	-	-	-	-	-	-	-	-
MBEL	-	-	-	-	-	-	-	-	-
WUPTPL	-	-	-	-	-	-	-	-	-
NDEPL	-	-	-	-	-	-	-	-	-
FRHL	-	1,011	1,041	-	-	-	1,585	-	-
WVEPL	-	926	-	-	-	-	-	-	-
DATRPL	-	4,003	-	-	-	-	954	-	3,859
GAEPL	-	-	1,281	1,322	-	-	-	-	-
NAMEPL	-	1,419	-	1,172	-	-	-	-	-
HTPL	-	-	-	1,297	-	-	-	-	-
JLTPL	-	-	909	-	-	-	-	-	-
JVTPL	-	-	893	-	-	-	-	-	-
LRTPL	-	-	-	-	1,496	-	-	-	-
KMTPL	-	1,658	-	-	-	-	-	-	-
MKTPL	-	-	1,436	-	-	-	-	-	-
KETPL	-	1,241	-	-	-	-	-	-	1,363
SMTPL	-	1,187	-	-	-	-	-	-	1,304
NKTPL	-	1,157	-	-	-	-	-	-	1,429
APEPL	-	-	-	-	-	-	-	-	-
JU	-	-	-	-	-	-	-	-	-
QB	-	-	-	-	-	-	-	-	-
BWHPL	-	549	-	-	-	-	-	-	-
MSHPL	-	588	-	-	-	-	-	-	-
MHPL	-	601	-	-	-	-	-	-	-
SIPL	-	383	-	-	-	-	-	-	-
SPPL	-	687	-	-	-	-	-	-	-
THPL	-	1,048	-	-	-	-	-	-	-

SPVs (INR million)	FY44	FY45	FY46	FY47	FY48	FY49	FY50	FY51	FY52
JMTPL	-	-	-	-	-	-	-	-	-
MBEL	-	-	-	-	-	-	-	-	-
WUPTPL	-	-	-	-	-	-	-	-	-
NDEPL	-	-	-	-	-	-	-	-	-
FRHL	-	-	-	-	-	-	-	-	-
WVEPL	-	-	-	-	-	-	-	-	-
DATRPL	-	-	-	-	-	-	-	-	-
GAEPL	-	-	-	-	-	-	-	-	-
NAMEPL	-	-	-	-	-	-	-	-	-
HTPL	-	-	-	1,933	-	-	-	-	-
JLTPL	-	1,000	-	-	-	-	-	-	-
JVTPL	-	974	-	-	-	-	-	-	-
LRTPL	-	-	-	-	-	-	-	-	-
KMTPL	-	-	-	-	-	-	-	-	-
MKTPL	1,647	-	-	-	-	-	-	-	-
KETPL	-	-	-	-	-	-	-	-	-
SMTPL	-	-	-	-	-	-	-	-	-
NKTPL	-	-	-	-	-	-	-	-	-
APEPL	-	-	-	-	-	-	-	-	-
JU	-	-	-	-	-	-	-	-	-
QB	-	-	-	-	-	-	-	-	-
BWHPL	-	-	-	-	-	-	-	-	-
MSHPL	-	-	-	-	-	-	-	-	-
MHPL	-	-	-	-	-	-	-	-	-
SIPL	-	-	-	-	-	-	-	-	-
SPPL	-	-	-	-	-	-	-	-	-
THPL	-	-	-	-	-	-	-	-	-

C. Movement in initial capital expenditure for BOT Assets and TOT Assets:

SPVs / Capex (INR Million)	FY24	FY25	9M FY26
DATRPL	40	16	6
HTPL	138	165	120
JLTPL	23	17	50
JVTPL	35	85	68
KMTPL	72	29	4
LRTPL*	(10)	-	-
MKTPL	38	42	20
KETPL	29	12	28
SMTPL	29	5	16
NKTPL	27	139	118

Note: The positive capital expenditure represents the initial capex incurred during the year.

**The negative capital expenditure represents additional capex requirement identified during the year resulting into increase in overall budget.*

D. Movement in balance work for HAM Assets:

SPVs / Capex (INR Million)	FY25	9M FY26
BWHPL	20	18
MSHPL	40	18
MHPL	25	4
KSIPL	0	3
KSPPL	0	-
KTIPL	-	-

8. One-time expenses

Particulars	JMTPL	MBEL	WUPTPL	NDEPL	FRHL	WVEPL	DATRPL	GAEPL	NAMEPL
One-Time Expenses	67	88	4	30	33	-	94	465	240

Particulars	HTPL	JLTPL	JVTPL	LRTPL	KMTPL	MKTPL	KETPL	SMTPL	NKTPL
One-Time Expenses	424	127	183	713	28	44	154	48	199

Particulars	BWHPL	MSHPL	MHPL	THPL	SPPL	SIPL	JU	QB	APEPL
One-Time Expenses	113	202	211	48	17	20	687	409	21

One-time expenses include major maintenance expenses related to pending MM cycles or capital expenditures yet to be incurred due to various reasons including pending land allotment from NHAI/State Authority.

9. Outstanding debt payable by SPVs to InvIT as of 31 December 2025:

SPV (Currency: INR mn)	Weighted average borrowing cost	Debt Outstanding
JMTPL	10.2%	460
MBEL	11.8%	195
NDEPL	13.6%	2,451
FRHPL	15.2%	15,452
WVEPL	15.3%	4,615
DATRPL	14.8%	25,271
GAEPL	13.9%	18,962
NAMEPL	15.2%	16,722
HTPL	13.6%	9,726
JLTPL	13.5%	3,398
JVTPL	13.6%	2,001
LRTPL	13.4%	4,088
KMTPL	14.7%	7,574
MKTPL	14.5%	7,334
KETPL	14.7%	5,935
SMTPL	14.6%	5,876
NKTPL	13.9%	11,243
APEPL	14.2%	1,274
BWHPL	12.6%	1,448
MSHPL	12.6%	1,639
MHPL	12.7%	1,968
SIPL	12.6%	1,176
SPPL	12.6%	2,656
THPL	12.6%	1,562
QEPL	12.2%	13,763
JUHPL	12.2%	7,762
Total		**1,74,548**

10. Sensitivity Analysis

Sensitivity of WACC on Enterprise Value (including other financial assets)

SPV (Currency: INR mn)	Enterprise Value (including other financial assets)	Change in Enterprise Value (including other financial assets)	
	Base Case	WACC +0.50%	WACC - 0.50%
JMTPL	7,627	88	(90)
MBEL	3,851	40	(41)
WUPTPL	(83)	0.3	(0)
NDEPL	4,791	72	(74)
FRHPL	27,373	891	(936)
WVEPL	9,333	233	(242)
DATRPL	77,096	3,228	(3,429)
GAEPL	35,560	1,040	(1,088)
NAMEPL	27,337	848	(888)
HTPL	20,701	1,106	(1,200)
JLTPL	12,749	548	(586)
JVTPL	7,953	350	(374)
LRTPL	8,454	436	(489)
KMTPL	14,418	621	(663)
MKTPL	16,251	705	(753)
KETPL	10,628	564	(611)
SMTPL	11,515	605	(655)
NKTPL	13,588	584	(634)
JU	10,491	134	(134)
QB	19,166	218	(223)
APEPL	1,124	2	(2)
BWHPL	3,404	57	(58)
MSHPL	3,260	67	(69)
MHPL	2,433	50	(52)
SIPL	3,278	63	(65)
SPPL	4,201	70	(73)
THPL	4,432	86	(89)
Total	**3,60,931**	**12,705**	**(13,518)**

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Sensitivity of WPI on Enterprise Value (including other financial assets)

SPV (Currency: INR mn)	Enterprise Value (including other financial Base Case	Change in Enterprise Value (including other financial assets) WPI +1%	WPI - 1%
JMTPL	7,627	246	(195)
MBEL	3,851	101	(58)
WUPTPL	(83)	0.5	(0)
NDEPL	4,791	129	(121)
FRHPL	27,373	1,284	(1,151)
WVEPL	9,333	326	(260)
DATRPL	77,096	5,033	(4,558)
GAEPL	35,560	1,438	(1,223)
NAMEPL	27,337	1,004	(989)
HTPL	20,701	1,800	(1,563)
JLTPL	12,749	831	(764)
JVTPL	7,953	505	(462)
LRTPL	8,454	641	(558)
KMTPL	14,418	626	916
MKTPL	16,251	1,015	(979)
KETPL	10,628	840	(716)
SMTPL	11,515	920	(805)
NKTPL	13,588	621	(402)
JU	10,491	(82)	79
QB	19,166	(93)	90
APEPL	1,124	(1)	1
BWHPL	3,404	(87)	80
MSHPL	3,260	(100)	93
MHPL	2,433	(99)	92
SIPL	3,278	(76)	70
SPPL	4,201	(107)	99
THPL	4,432	(117)	108
Total	**3,60,931**	**16,596**	**(13,175)**

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11. Valuation of the projects in the previous 3 years

Currency: INR Mn	Sep'23	Mar'24	Mar'25
JMTPL	9,841	10,046	9,493
MBEL	3,952	4,429	4,070
WUPTPL	2,332	1,370	165
NDEPL	5,548	5,329	5,076
FRHPL	25,441	26,570	26,853
WVEPL	9,918	9,502	9,410
DATRPL	68,756	73,155	74,808
GAEPL	25,448	29,946	32,782
NAMEPL	NA	NA	25,982
HTPL	15,270	16,703	17,974
JLTPL	11,308	11,648	12,211
JVTPL	7,035	7,269	7,638
LRTPL	6,613	7,652	7,170
KMTPL	13,302	13,139	13,261
MKTPL	13,082	13,640	14,168
KETPL	7,860	8,289	9,477
SMTPL	8,624	9,329	10,345
NKTPL	8,612	9,076	9,752
APEPL	1,499	1,014	1,228
BWHPL	NA	NA	3,580
MSHPL	NA	NA	4,106
MHPL	NA	NA	2,940
SPPL	NA	NA	4,412
SIPL	NA	NA	4,012
THPL	NA	NA	5,205
Total	**244,442**	**258,106**	**3,16,119**

12. India Equity Market Risk Premium: EY Study

Equity Market Risk Premium (EMRP or MRP) is the excess return earned by an investor over a risk free rate, when they invest in the stock market. This return compensates investors for taking on the higher risk of equity investing.

There are various approaches to estimating MRP like surveying investors, or calculating MRP implied in stock prices via forward forecasts. One of the most objective approach is to calculate MRP by analysing historical MRP earned over a long period of time. EY has used this approach. This has involved the following steps

Time period to be considered:

A relatively long time period is selected, as in the short term markets can be volatile leading to under/over-estimation of MRP depending upon near term market performance. stock market data is available from 1979 onwards. Further a period commencing from 1990 onwards is also suitable as it coincides with India's economic liberalization.

Rm: Market Return

Returns on BSE Sensex/BSE100 Index or NSE Nifty may be considered as a proxy for the market returns. Since data for NSE Nifty is available only from 1994, returns on BSE Sensex and BSE 100 have been considered for analysis of a longer period of data.

Rf: Risk Free Rate

Hypothetically, risk free rate is the return on security or portfolio securities that has no default risk and is completely uncorrelated with returns on anything else in the economy. In India, the yield on 10-year residual maturity government bond is considered as a reasonable proxy for the risk-free rate.

Adjustment for dividend yields

Return on equities is derived from a combination of dividend receipts and increase in share prices/ index. Since BSE Sensex and BSE100 Index are price return indices, the dividend yields for them are added to the average MRP to arrive at total return on equities.

Choice between Arithmetic and Geometric Mean

Geometric mean is preferred on the grounds that it takes compounding into account over the sample period.

Since the dividends are paid out in cash, it is assumed they are not re-invested, hence arithmetic mean of the dividend yield is added to the MRP.

Conclusion

Rf calculated for each of the year is deducted from Rm, which includes both returns on the stock index and the dividend yield of the index. The difference Rm- Rf is averaged over the period by using Geometric Mean.

The calculations of the study show that Market Risk Premium, while varying as per period and choice of index, converges around 7% (rounded). This is then considered a reasonable benchmark for India's Market Risk Premium.

13. Disclosures regarding list of one-time sanctions/approvals which are obtained or pending and Disclosures regarding list of up to date/overdue periodic clearances

The disclosures regarding list of one-time sanctions/approvals which are obtained or pending and list of up to date/overdue periodic clearances for the InvIT Assets are shown in the below table.

13.1 JMTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Certificate of completion - Dated 09-03-2015	Independent consultant	Active
2	Environmental clearance dated August 1,2006	MOEFCC	Active
3	No-objection certificate for obtaining an environmental clearance dated May 6, 2006	RSPCB	Active
4	Consent to establish	RSPCB	Active
5	No Objection certificates for ground water abstraction from borewells located at 3 locations along the stretch.	CGWA	Active
6	Renewal of No Objection certificates for ground water abstraction from borewells located at 4 locations along the stretch	CGWA	Active (3 Borewells) However, NOC renewal for 1 borewell is still in process with department due to some previous payment update for which department is checking and will update for further submission of renewal application.
7	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active

13.2 MBEL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Certificate of completion Dated-13-09-2009	Independent Consultant	Active
2	Consent to Operate (Green Category) under the Section 25 and Section 26 of the Water (Prevention and Control of Pollution) Act, 1974 and Section	RSPCB	Four new DG sets, CPCB IV norms (two at each plaza – 2 x 58.5kVA and 2x 125 kVA) procured and installed due to trigger of Central Air Quality Management directive in NCR region. The renewed consent issued for Amoli Toll Plaza.

	21(4) of the Air (Prevention and Control of Pollution) Act, 1981		SPV is still following up with RSPCB to re-submit the rejected application for Ludhawai Toll Plaza as discussed with officials. No further update received from department as of now due to implication of supreme court order in the region considering project falls in Taj Trapezium Zone.
3	No Objection certificates for ground water abstraction from borewells located at 5 locations along the stretch	CGWA	Active (1 Borewell) Renewal applications were submitted for four borewells for which NOC exemption has been issued based on CGWA guidelines exempting groundwater extraction for domestic purposes (<5 KLD) under infrastructure category from the respective borewell. The copies of NOC exemption letter are enclosed.
4	Renewed certificate of registration under the Contract Labour (Regulation and Abolition) Act, 1970 dated 13.09.2022	Licensing Officer and Assistant Labour Commissioner GOI	Active

13.3 WUPTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Certificate of completion UNI/D-06/O&M-IC/NH-58/2016-17/1075 - Dated- 02-06-2016	Independent Consultant	Active
2	Authorisation under the Hazardous and Other Wastes	UPPCB	Authorisation under Hazardous Waste Management Rules, 2016 is not applicable as per notification issued dated 01 March 2019. Per the notification, an occupier shall not be required to obtain an authorisation under this rule, from the State Pollution Control Board, in case the consent to establish or consent to operate, is not required from the State Pollution Control Board or Pollution Control Committee under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and Air (Prevention and Control of Pollution) Act, 1981 (21 of 1981); Refer Point no. 3 for clarity on non-applicability of consent for WUPTPL. Though, used oil (HW) generated from DG sets is being managed as per the said rules

			and disposed off to authorised vendor timely.
3	Consent dated February 3, 2019 under Sections 25 and 26 of the Water (Prevention and Control of Pollution) Act, 1974 for the disposal of its industrial effluents through the effluence treatment plant for irrigation/ or to the river through drains, and discharge of domestic effluents through septic tanks	UPPCB	WUPTPL submitted letter with detailed rationale to RO, UPPCB, Meerut justifying exemption of plaza operations under the Water and Air Acts. Active
4	Consent dated February 3, 2019 under Sections 21 and Section 22 of the Air (Prevention and Control of Pollution) Act, 1981, for the emission of air pollutants from the diesel generator installed at the Toll Plazas by the Company	UPPCB	
5	No Objection certificates for ground water abstraction from borewells located at 4 locations along the stretch dated 19.03.2023	Ground Water Department, Government of Uttar Pradesh	Active
6	Draft No Objection certificates for ground water abstraction from borewells located at 3 locations along the stretch dated 06.03.2023		Active
7	Renewed certificate of Registration under the Contract Labour (Regulation and Abolition) Act, 1970 dated 13.06.2022	Regional Labour Commissioner, GOI	Active

13.4 NDEPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment Clearance for upgradation of existing 2 lane road from Nelamangala to Bommanhalli dated March 13, 2007.	MoEFCC	Active
2	Provisional certificate of completion dated June 23, 2012	IE	Active
3	Permission for utilization of borewell for drinking purposes at toll plaza 1	District Groundwater Directorate, Bengaluru Rural District	Active
4	No-objection certificate dated December 13, 2022 for extraction of groundwater at the toll plaza 2	Karnataka Ground Water Authority	Active

5	Registration under Shop and Establishment Act	Labor Department	Active

13.5 FRHPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance for widening and strengthening of existing 2 lane to 4/6 lane from Farakka to Raiganj dated September 16, 2008	Ministry of Environment & Forests	Active
2	No Objection Certificates No. PG/DOES/342 and PG/DOES/343 dated March 16, 2018, for installation of 2*180 KVA at both toll plazas, Stand by Outdoor Canopy D.G. Set	Chief Electrical Inspector, Directorate of Electricity, Government of West Bengal	Active
3	Certificate of completion dated March 25, 2022 issued by the independent engineer	IE	Active
4	Renewed Labour License No. 46/L(80)/2017-E,3 under Contract Labour (Regulation and Abolition) Act, 1970 dated March 2, 2023	Licensing Officer, Ministry of Labour and Employment, Government of India	Active
5	Certificate of registration under The Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 dated March 6, 2017	Deputy Chief Labour Commissioner, Ministry of Labour and Employment, Government of India	Active

13.6 WVEPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Completion certificate APL/W-V/NS-2/02/2015-16/47 Dated- 31-10-2015	Independent Consultant	Active
2	Environment Clearance dated September 15, 2008 for widening and strengthening of 4/6 laning	Ministry of Environment and Forests	Active
3	Application dated July 16, 2021 submitted by WVEPL for obtaining NOC to extract ground water from an operational borewell. Application specifying the revised extraction quantity (based on actual consumption as per electromagnetic flow meter) was submitted by SPV for same location dated February 6, 2023 as advised by GW official. SPV obtained yield test certificate from Ground water department on February 22, 2023, for the existing borewell.	District Office, Ground Water Department, Palakkad	Active (1 Borewell) NOC Application for 2 borewells is approved based on verbal confirmation by department official but NOC letter is yet to receive from Department.
4	Three fresh applications (each dated March 24, 2023) submitted by WVEPL for obtaining NOC to extract ground water from proposed/new borewell at Chandranagar,		

	Erattakulam and Kannanur, along the road to manage water requirement for the median and avenue plants maintenance. There is a correction on point (4) : As per department's process for digging new borewell, three applications submitted by WVEPL (each dated March 24, 2023) to extract ground water from proposed borewells at Chandranagar, Erattakulam and Kannanur, along the road to manage water requirement for the median and avenue plants maintenance. After conduct of survey by department and SPV, two locations were finalised and borewells digged by SPV at Erattakulam and Kannaur.		
5	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active
6	Registration under Shop and Establishment Act	Labor Department	Active

13.7 DATRPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance dated July 23, 2012 for widening and improvement to six-laning	Ministry of Environment & Forests	Active
2	Forest clearance stage-I approval dated May 8, 2012	Ministry of Environment & Forests	Active
3	Forest clearance stage-I approval dated June 21, 2012	Ministry of Environment & Forests	Active
4	Forest clearance stage-II approval dated April 16, 2013	Ministry of Environment & Forests	Active
5	Forest clearance stage-II approval dated August 23, 2013	Ministry of Environment & Forests	Active
6	Provisional certificate of completion dated May 20, 2022 issued by the independent engineer	IE	Active
7	No objection certificate for ground water extraction from existing borewell at Mahuvan Toll Plaza.	Ground Water Department, Government of Uttar Pradesh	Active (NOC copy enclosed)
8	No objection certificate for ground water extraction from existing borewell at Karman Toll Plaza.	Ground Water Department, Government of Uttar Pradesh	Active (NOC copy enclosed)

9	In-principle approval dated January 7, 2020 for harmonious substitution of existing shareholders of DATRPL with CH-III	NHAI	Active
10	Final approval dated November 17, 2020 for harmonious substitution of existing shareholders of DATRPL with CH-III.	NHAI	Active
11	No objection certificate for ground water extraction from new installed borewell for Miyawaki Plantation Watering at Km 108 in median.	Ground Water Department, Government of Uttar Pradesh	This is the newly constructed borewell for which pre-requisite actions (Procurement and installation of flowmeter) has been initiated and is under process. The drafting of application has been initiated parallelly and will be submitted post establishmen t of average daily consumption from the borewell (based on data from flowmeter to be installed) The whole process will be completed by February end.

13.8 APEPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Final Completion Certificate AA/APEL/504/09-10/1491Dated- 04-01-2010	Independent Consultant	Active
2	Environment clearance dated May 19, 2006 for upgrading existing 2 lane to 4 lane	Ministry of Environment and Forest	Active
3	Letter seeking permission for extraction of ground water was submitted to respective Mandal Revenue Officer (MRO), Kurnool District dated 15.04.2018 and Reminder Letter was submitted dated 22.01.2021.	Mandal Revenue Officer, Government of Andhra Pradesh	Pending with Department
4	Total 5 Nos. of operational borewells for ground water abstraction along the stretch across Andhra Pradesh and Telangana State No objection certificate for ground water extraction from existing operational borewells (3 Nos.) located in Telangana State at below mentioned locations. • Office Area (1no.) • Base camp (1no.) • Truck Laybye Public Toilet Block (1 no.)	Ground Water Department, Government of Telangana	Active (3 borewells) The penalties were imposed due to non-integration of groundwater abstraction data on the TSGWD portal post-NOC, as existing flowmeters did not meet the required specifications. Therefore, the transfer of different vendor flowmeters with required configuration from GAEPL to APEPL is proposed and completed and installation of flowmeters is completed at the respective locations. The vendor is in process of integrating the flowmeter data at Telangana State Ground Water Department portal. However, as conveyed by vendor, due to some technical glitch in the portal, integration of data is not completed yet. The department will be informed post integration of data on the portal and penalties of INR 10,000 will be paid accordingly.

5	Certificate of registration of establishment dated June 4, 2019 issued by Labour Department	Government of National Capital Territory of Delhi	Active

13.9 GAEPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environmental clearance dated March 3, 2009	Ministry of Environment and Forest	Active
2	Completion certificate dated April 23, 2022	IE	Active
3	Forest clearance dated March 30, 2012	Ministry of Environment and Forest	Active
4	No objection certificate for ground water extraction from the operational borewells (5 locations)	Ground Water Department, Government of Uttar Pradesh	Active (NOC obtained for 3 locations) Draft NOC obtained for 2 borewells. The ground water abstraction charges have been paid post issuance of draft NOC. Final NOC is awaited from department. Draft NOC enclosed.
5	No objection certificate for ground water extraction from the additional operational borewells recently installed at 5 locations.	Ground Water Department, Government of Uttar Pradesh	Pre-requisite actions (procurement and installation of flowmeters) have been completed. It was observed during submission of NOC application for 5 borewells that ground water abstraction is not permitted in Critical and Over exploited areas based UPGWD guidelines. Out of 5 locations, 2 falls under critical zone and 3 falls under over exploited zone. Therefore, NOC submission is also not allowed for these borewells. The matter was intimated to Legal team dated 06.08.2025 post which legal team has recommended to stop the usage of borewell and close

			the borewells immediately as required by law. Following this, SPV was informed through email dated 19.08.2025 to stop the borewell operations (along with its removal from site) and identify the alternative suitable source of water (third party tanker/municipal supply) to cater the water requirement at the respective locations. The closure of borewells is completed one borewell at SPV office and remaining four is in progress as SPV didn't find the alternative source for water near the respective locations and water supply cannot be stopped due to frequent usage of toilet block by the road users.
6	Application dated November 16, 2022 for issuance of license under the Contract Labour (Regulation and Abolition) Act, 1970.	Ministry of Labour and Employment, Office of the Assistant Labour Commissioner (Central), Jhansi,	Pending with department

13.10 HTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance dated February 19, 2007	Ministry of Environment & Forests	Active
2	Registration certificate dated July 31, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.11 JLTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance dated January 17, 2007	Ministry of Environment & Forests	Active
2	No objection certificate for extraction of ground water from borewell at toll plaza	Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh	Active
3	No objection certificate for extraction of ground water from borewell at new toll plaza building.	Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh	This is the new borewell presently under construction. The pre-requisite actions (Procurement and installation of flowmeter) is to be initiated. NOC application process will be initiated post establishing the average daily consumption based on flowmeter data.
4	Registration certificate dated July 31, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.12 JVTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance dated February 19, 2007	Ministry of Environment & Forests	Active
2	No objection certificate for extraction of ground water from borewell at toll plaza	Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh	Active
3	Borewell Registration Certificate based on No objection certificate conditions.	Ground Water Department, Ministry of Jal Shakti, Government of Uttar Pradesh	Active
4	Registration certificate dated July 31, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.13 KMTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	No-objection certificate for ground water abstraction with NOC number CGWA/NOC/INF/ORIG/2021/13127 valid from September 29, 2021 to September 27, 2026	Government of India	Active

2	No objection certificate from Central Ground Water Authority for ground water abstraction from the new operational borewell at two locations (Toll Plaza and Public Toilet Block in front of Toll Plaza).	Government of India	Active
3	Registration certificate dated July 31, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.14 LRTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance dated July 10, 2012	Ministry of Environment & Forests	Active
2	No-objection certificate dated January 5, 2023 for extraction of ground water at NH-30, Dakhina Shekpur Toll Plaza	Ground Water Department, Government of Uttar Pradesh	Active
3	Registration certificate dated July 31, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.15 MKTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Registration certificate dated July 31, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.16 KETPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Applications dated April 25, 2022 submitted by KETL for obtaining NOC to extract ground water from operational borewells at plazas under Tamil Nadu Groundwater (Development and Management) Act, 2003	Water Resource Department, Public Works Department, Government of Tamil Nadu	NOC application is pending with department. The followup letter was written by SPV dated 13.02.2025. The borewell has been permanently closed due to high TDS level of the borewell water which makes it unfit for use at for any purpose. The photograph of closed borewell is enclosed.
3	Registration certificate dated October 15, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.17 SMTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	No objection certificate for withdrawal of groundwater dated 23.11.2021	Water Resource Department, Public Works Department, Government of Tamil Nadu	Active
2	Registration certificate dated October 28, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.18 NKTPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Applications dated March 24, 2022 submitted by NKTL, for obtaining NOC to extract ground water from operational borewells at plaza under Tamil Nadu Groundwater (Development and Management) Act, 2003	Water Resource Department, Public Works Department, Government of Tamil Nadu	Active
2	Application dated February 16, 2023 submitted by NKTL, for obtaining NOC to extract ground water from proposed borewell at plaza under Tamil Nadu Groundwater (Development and Management) Act, 2003		Ground Water NOC for two borewells received on 11.07.2025. Copy of renewal NOC is enclosed.
3	Registration certificate dated October 28, 2020 issued by Department of Labour	Government of National Capital Territory of Delhi	Active

13.19 SPPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Forest clearance for the diversion of 72.2262 ha. along for 4 laning of Sangareddy – Nanded – Akola section of NH 161 from Km 0.000 to Km 140.000	Ministry of Environment & Forests	Active (Common Proposal for SPPL and MHPL)

2	No Objection certificates for ground water abstraction from borewell located at Rest area BHS along the stretch.	Telangana Ground Water Authority	Active
3	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active
4	Registration under Building and Other Construction Work Act, 1996	Registering Officer and Assistant Labour Commissioner GOI	Active

13.20 MHPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Forest clearance for the diversion of 72.2262 ha. along for 4 laning of Sangareddy – Nanded – Akola section of NH 161 from Km 0.000 to Km 140.000	Ministry of Environment & Forests	Active (Common Proposal for SPPL and MHPL)
2	No Objection certificates for ground water abstraction from borewell located at O&M Centre RHS along the stretch.	Telangana Ground Water Authority	Active
3	No Objection certificates for ground water abstraction from borewell located at Rest Area RHS along the stretch.	Telangana Ground Water Authority	NOC application for ground water abstraction is submitted on 14.05.2025 and is under process with department. The ground water department has to visit the site as per the procedure and process the case further accordingly
3	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active

13.21 BWHPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	No Objection certificates for ground water abstraction from borewell located at Public Toilet block LHS along the stretch.	CGWA	NOC exempted

13.22 MSHPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Forest clearance proposal for the diversion of 11.24 ha. along Mangalwedha - Solapur section of NH – 166 from Km 321.600 to Km 378.100 (Existing: Km 314.969 - Km 370.452 on HAM in the State of Maharashtra.	Ministry of Environment & Forests	Proposal is still pending at User Agency due to EDS raised by Regional Office dated 24.05.2025 through DFO. The present status of proposal is showing as delisted (due to non-reply of EDS by UA within 90 days). This is under purview of NHAI. SPV is following up for smooth operation of the project.
2	No Objection certificates for ground water abstraction from borewell located at Public Toilet block RHS along the stretch.	CGWA	Active

13.23 SIPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Applications for obtaining NOC to extract ground water from operational borewells at 4 locations along the stretch under Tamil Nadu Groundwater (Development and Management) Act, 2003	Water Resource Department, Public Works Department, Government of Tamil Nadu	NOC application for two borewells at Public Toilet Block is under process. Based on recent discussion with department official, it was conveyed that the land record submitted along with application is not correct and asked to submit the correct land details. SPV is coordinating with NHAI/Revenue department to get the correct land documents for the respective borewell location.
2	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active

13.24 THPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active
2	Registration under Shop and Establishment Act	Labor Department	Active

13.25 NAMEPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Consent dated February 3, 2019 under Sections 25 and 26 of the Water (Prevention and Control of Pollution) Act, 1974 for the disposal of its industrial effluents through the effluence treatment plant for irrigation/ or to the river through drains, and discharge of domestic effluents through septic tanks for Madugulapally Toll Plaza	TSPCB	Active Consent Exemption under Air and Water Act
2	Consent dated February 3, 2019 under Sections 21 and Section 22 of the Air (Prevention and Control of Pollution) Act, 1981, for the emission of air pollutants from the diesel generator installed at the Toll Plazas by the Company for Madugulapally Toll Plaza	TSPCB	
3	Consent under Air (Prevention and Control of Pollution) Act, 1981 for DG Sets (180 KVA and 125 KVA) for Thummalacheruvu Toll Plaza at Thummalacheruvu, Piduguralla, Andhra Pradesh	APPCB	Active
4	Consent under Air (Prevention and Control of Pollution) Act, 1981 for DG Sets (180 KVA and 125 KVA) for Elchuru Toll Plaza at Elchuru, Prakasam, Andhra Pradesh	APPCB	Active
5	Permission for extraction of ground water from Mandal Revenue Officer (MRO), Guntur (now known as Palanadu) District dated 25.10.2018	Mandal Revenue Officer, Government of Andhra Pradesh	Active
6	Permission for extraction of ground water from Mandal Revenue Officer (MRO), Bapatla District dated 25.10.2018	Mandal Revenue Officer, Government of Andhra Pradesh	Active
7	No Objection certificates for ground water abstraction from new borewell located at Madugulapally Toll Plaza	Telangana Ground Water Authority	Active
8	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active

9	Registration under Shop and Establishment Act	Labor Department	Active
10	Registration under Building and Other Construction Work Act, 1996	Registering Officer and Assistant Labour Commissioner GOI	Active
11	Renewed certificate of registration under the Contract Labour (Regulation and Abolition) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active

13.26 JUHPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance dated Aug 31, 2010 for 4/6 laning of Jammu Udhampur Section of NH 1A and further amendment of Environmental Clearance dated May 3, 2013	Ministry of Environment & Forests	Active
2	Wildlife Clearance for four laning of National Highway (NH-1A) from Jammu to Udhampur passing through Ramnagar (7.97 ha) and Nandni Wildlife Sanctuary (13.40 ha) in Jammu region.	National Board of Wildlife Sanctuary, Ministry of Environment and Forests Wildlife Division	Active
3	Forest Clearance was obtained in Jammu and Udhampur division Permission copy is not provided during handover of project apart from forest area within Wildlife Sanctuary	J&K State Forest Department	Active
4	Authorization for Operating DG sets in Tunnel area dated 18.04.2018	J&K State Pollution Control Board	Active
5	Authorization for Operating DG sets at Ban Toll plaza dated 01.08.2017	J&K State Pollution Control Board	Active
6	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active
7	Registration under Building and Other Construction Work Act, 1996	Registering Officer and Assistant Labour Commissioner GOI	Active
8	Registration under Shop and Establishment Act	Labor Department	Active

13.27 QEPL

Sr. No.	Description of permit	Issuing Authority	Current Status
1	Environment clearance dated July 13, 2007 for four laning of Quazigund Banihal Section of NH 1A	Ministry of Environment & Forests	Environmental clearance was obtained for 32.7 km whereas the actual project length is 15.35 km for which EC is not required. NHAI letter stating of non-applicability of EC is enclosed
2	Forest clearance dated 27.05.2008 in Pir Panjal Range of Kahmir Region	J&K Forest Department	Active
3	Forest clearance dated 16.02.2010 in Chakore Conservation Reserve for construction of underground tunnel	J&K Forest Department	Active
4	Permission of Ground Water Abstraction from borewell (1 no.) situated at South side of Tunnel	Jal Shakti (PHE) Department, Government of Jammu and Kashmir	Active
5	Permission of Ground Water Abstraction from borewell (1 no.) situated at North side of Tunnel	Jal Shakti (PHE) Department, Government of Jammu and Kashmir	NOC application was submitted by Athaang pre asset acquisition by Cube. The relevant department has also raised few related queries, on which SPV is seeking clarity. Though, the matter is being looked into detail by E&S based on applicable act and Cube's process on compliance. Accordingly, action shall be taken to close this application
6	Renewed license under the Contract Labour (R&A) Act, 1970	Licensing Officer and Assistant Labour Commissioner GOI	Active
7	Registration under Building and Other Construction Work Act, 1996	Registering Officer and Assistant Labour Commissioner GOI	Active

14. Details of on-going litigations

14.1 Litigation and Regulatory Actions against the Trust and its Associates

As at the date of this Placement Memorandum, there are no outstanding criminal litigation, non-ordinary course regulatory actions or material civil litigation against the Trust and its Associates, except as disclosed in this section.

14.2 Litigation involving the Initial Portfolio Assets

Material civil proceedings filed against the Initial Portfolio Assets

DATRPL

(i) VKR Projects Private Limited ("**Plaintiff**") has filed a commercial suit against DATRPL ("**Defendant**") before the High Court of Judicature at Bombay ("**Bombay High Court**") in relation to a letter of intent issued by the Defendant wherein the Defendant sought the services of the Plaintiff in the laying and shifting of electricity cables in a specific section of the Defendant's project highway ("**Service**"). Due to a delay in the completion of the Service, the Defendant refused to pay an amount of ₹ 4,193.32 million. The Plaintiff has claimed that the aforesaid delay was due to the delay in handing over of the complete project site by the Defendant and accordingly, the Plaintiff has filed the present suit before the Bombay High Court. The Plaintiff has prayed for, amongst other things, the Bombay High Court to (i) direct the Defendant to pay an amount of ₹ 4,193.32 million to the Plaintiff, along with statutory taxes and an interest at the rate of 18% per annum up to the date of realization of such amount, (ii) order the specific performance of the terms of letter of intent, and (iii) direct the Defendant to deposit a sum of ₹ 277.28 million with the Bombay High Court. The matter is currently pending.

Others

(i). Certain persons ("**Petitioners**") have filed separate cases against some of the Initial Portfolio Assets before various civil and consumer courts, amongst other things, (i) alleging excess collection of toll; (ii) challenging acquisition of land used for the Initial Portfolio Assets; and (iii) challenging certain encroachment notices served upon the Petitioners. These matters are currently pending.

(ii). Certain persons have filed separate labour cases against some of the Initial Portfolio Assets before various civil and labour courts in relation to, amongst other things, wrongful termination of employment, increase in salaries and demands of bonus. These matters are currently pending.

Material civil proceedings filed by the Initial Portfolio Assets

WUPTL

(i). WUPTL ("**Claimant"**) has initiated arbitration proceedings against NHAI ("**Respondent**") before the Indian Council of Arbitration, New Delhi ("**ICA**"). The Claimant had entered into a concession agreement dated September 9, 2005 with the Respondent ("**Concession**

Agreement"). Due to change in law by way of an order of Supreme Court dated October 9, 2015 and the notification issued by National Green Tribunal dated February 18, 2016, (i) environmental compensation charges were to be levied on all light and heavy duty commercial vehicles entering New Delhi; (ii) commercial vehicles were prohibited from entering into New Delhi if not destined to New Delhi; and (iii) transportation of mining materials in Yamunanagar and Saharanpur districts was prohibited. The Claimant has alleged that these events led to substantial reduction in the commercial traffic on the project highway causing toll revenue losses to the Claimant. In accordance with the terms of the Concession Agreement, the Claimant sought compensation from the Respondent for the losses incurred due to 'change in law' event which was refused by the Respondent. Accordingly, the Claimant had initiated arbitration proceedings, and sought compensation of ₹ 666.00 million along with interest. However, the arbitration proceedings were kept in abeyance in order to pursue amicable settlement before the Conciliation Committee of Independent Experts. The matter is currently pending.

Criminal Proceedings involving the Initial Portfolio Assets

DATRPL

(i). The State of Haryana has initiated criminal proceedings against the project manager of DATRPL before the Chief Judicial Magistrate, Faridabad ("**CJM Court**"). A first information report was filed against DATRPL under sections 279, 337, 338 and 304A of the Indian Penal Code, 1860, as amended, in relation to the death of the son of Manoj Kumar Wadhwa in a road accident allegedly due to potholes on the road forming part of DATRPL's project. The matter is currently pending before the CJM Court.

(ii). Giriraj Kishore ("**Complainant**") has initiated criminal proceedings against Rajesh Madan and the Team Leader of U.R.S. Scale Wilson Pvt. Ltd. ("**Respondents**") before the Court of Judicial Magistrate, Chhata, Mathura ("**CJM Court**"). A First Information Report ("**FIR**") was filed by the Complainant under Section 430 of the Indian Penal Code, 1860 ("**IPC**"), as amended, against the Respondents in relation to the project assets of DATRPL for intentionally not constructing a drain near Complainant's land despite multiple reminders which has led to the collapse of Complainant's boundary wall and has also destroyed the crops planted in Complainant's land. The CJM took cognizance of the complaint on April 6, 2022 under Section 432 of the IPC. The matter is currently pending.

MBEL

(i). The Labour Enforcement Officer ("**Plaintiff**") has filed two separate cases against MBEL (erstwhile Madhucon Agra Jaipur Expressway Limited) before the Civil Court, Bair District, Bharatpur ("**Civil Court**") alleging non-compliance under Sections 23 and 24 of the Contract Labour (Regulation and Abolition) Act, 1970. The Plaintiff has also filed another case before Civil Court under Section 22 of the Minimum Wages Act, 1948 for non-payment of minimum wage to a worker as stipulated under the aforesaid Act. The matters are currently pending.

(ii). Uttam Sharma ("**Complainant**") has filed a criminal complaint against the erstwhile directors and certain employees of MBEL ("**Accused Persons**") before the court of Additional Chief Judicial Magistrate, Bharatpur ("**ACJM Court**"). The complaint was filed under section 418 and 420 of the Indian Penal Code, 1860 for charging excess toll fees from the commuters using the project highway. The ACJM Court took cognizance of the complaint on October 29, 2014 and issued a bailable warrant of arrest against the Accused Persons

("**Warrant**"). Aggrieved by the Warrant, the erstwhile directors of MBEL have filed a revision petition before the sessions court. The matter is currently pending.

(iii). Certain persons ("**Complainants**") have filed claims before certain courts and tribunals including the Motor Accident Claim Tribunal and the Lok Adalat claiming compensation due to accidents that occurred on the Project assets. These matters are currently pending.

Regulatory Proceedings involving Initial Portfolio Assets

(i). The office of the Registration and Stamps Department, Government of Telangana has issued notices to APEL and KMC Constructions Limited ("**KMC**") in relation to the inadequate stamping of the EPC contract entered into between APEL and KMC. APEL is contesting the aforesaid notices.

(ii). 2 of our Initial Portfolio Assets (being, GAEPL and WUPTL) have received notices from the office of the Collector, Aligarh and the office of the Additional District Magistrate (Finance Revenue), Meerut, respectively, in relation to the stamping of the concession agreements entered into by such Initial Portfolio Assets. The Collector, Aligarh has also passed an order in this regard. The relevant Initial Portfolio Assets are contesting the aforesaid notices and the order before various authorities and while these matters are currently pending, in accordance with the share purchase agreement through which the Cube Group acquired these Initial Portfolio Assets, the erstwhile sellers are obligated to indemnify, defend and hold harmless the Initial Portfolio Assets in relation to any payment of deficient stamp duty on the concession agreements.

Claims against Initial Portfolio Assets

TOT SPVs

(i). NHAI had, by way of its letter dated October 19, 2020 to the TOT SPVs, notified October 20, 2020 as the 'Appointed Date' under respective concession agreements and also noted that there was a delay by the TOT SPVs in the completion of the conditions precedent set out in their respective concession agreements, thereby entitling NHAI to levy liquidated damages on the Project SPVs. Subsequently, by way of its letter dated November 18, 2020, NHAI levied a claim of net liquidated damages of ₹ 83.70 million on the TOT SPVs rejecting their contentions of delay due to a force majeure event. The TOT SPVs had intimated NHAI of the occurrence of 'force majeure' events and sought deferment of the 'Appointed Date' pursuant to correspondences dated March 28, 2020, July 9, 2020 and August 10, 2020 and contested the claims on liquidated damages pursuant to its letters dated October 28, 2020 and November 27, 2020. NHAI has, by way of its letter dated November 18, 2020, agreed to grant the benefit of 'Force Majeure' for the period between March 24, 2020 to April 19, 2020 and declined to extend the benefit for any period thereafter. NHAI imposed liquidated damages on the TOT SPVs for delay in completion of its conditions precedent and also conceded delay on its part in publication of the fee notification. NHAI has sent three reminders by way of letters dated January 15, 2021, February 5, 2021 and February 26, 2021 to the TOT SPVs to pay the damages for an amount of ₹ 83.70 million to NHAI. NHAI has also stated in the aforementioned letter that the Project SPVs are required to pay interest at a rate equal to 5% above the bank rate and interest as per the relevant concession agreements. The TOT SPVs vide a letter dated July 19, 2021 agreed, under protest, that they are liable to pay a penalty of only ₹ 41.60 million in light of the delay being only for the

period of 135 days as opposed to different period of delays for each TOT SPV. The letter also stated that in light of the Atma Nirbhar guidelines dated June 3, 2020, the TOT SPVs is eligible for a grace period of six months for completion of all its obligations. The TOT SPVs vide letters dated April 12, 2022, have requested NHAI for revised calculation of damages and being penalized only for an amount of ₹ 39.80 million as the full and final amount payable as such damages. Further, the TOT SPVs, vide letters dated June 27, 2022, have stated that since NHAI never invoked force majeure provisions in terms of the relevant concession agreements and the outbreak of Covid-19 did not affect its obligations in relation to other projects, it is not entitled to take any action against the TOT SPVs in this regard.

APEL

(i). The regional office of NHAI, Hyderabad *vide* its letter dated May 12, 2022, has raised a claim of ₹ 77.20 million in relation to a negative change of scope proposal by APEL. Additionally, it has requested the General Manager, NHAI (Telangana) to execute a settlement agreement between NHAI and APEL so that that both the parties do not raise any claims against each other in respect of positive or negative change of scope in future. The claim is currently pending.

(ii). The regional office of NHAI, Hyderabad *vide* its letter dated September 9, 2022 has raised a claim of approximately ₹7.97 million in relation to a default in rectifying certain defects in the APEL Project Highway as recommended by the independent engineer, *vide* letter dated September 2, 2022. APEL has, *vide* letters dated September 6, 2022 and September 10, 2022, disputed such claim and has requested NHAI to hold the same and provide it time to submit a detailed justification. The claim is currently pending.

JMTL

(i). The independent engineer has issued a notice dated August 26, 2021 providing an opportunity to cure the defects and deficiencies in terms of operation and maintenance obligations under the JMTL Concession Agreement. JMTL, in its response dated September 4, 2021, has stated that it has taken efforts to restrict the unauthorized median cut by way of closure or by providing alternate viable solutions to the relevant authorities and has requested for withdrawal of the notice.

(ii). The independent engineer has issued a notice dated October 7, 2021, providing an opportunity to cure the defects and deficiencies in relation to failure to replace a metal beam crash barrier in terms of operation and maintenance obligations under the JMTL Concession Agreement. JMTL, in its response dated October 13, 2021, has submitted a compliance report for rectification of MBCB.

(iii). The independent engineer has imposed a penalty of ₹ 1.07 million vide letter dated October 22, 2021 for delay in painting of median kerb. JMTL, in its response dated October 26, 2021, stated that work was delayed due to consistent rains which severely affected the work progress and quality of work and has requested or extension for the completion of the work. Further, vide its letter dated November 17, 2021, JMTL stated that the work has been completed in totality and requested for withdrawal of notice and waiver of penalty.

(iv). The independent engineer has issued a notice dated October 27, 2021, providing an opportunity to cure the defects and deficiencies in relation to rectifying the service road in terms of operation and maintenance obligations under the JMTL Concession Agreement. JMTL, in its response dated November 1, 2021, has submitted that the rectifications has been carried out.

(v). The independent engineer has issued a notice dated March 9, 2022, providing an opportunity to cure the defects and deficiencies in relation to dumping encroachment bolder waste material dump in right of way of the project highway in terms of operation and maintenance obligations under the JMTL Concession Agreement. JMTL, in its response dated March 14, 2022, has stated that the observations have been complied with and has requested for withdrawal of notice.

LRTL

(i). The NHAI, through a letter dated August 19, 2021, has issued notice to LRTL for submission of negative change of scope for de-scoping of a proposed vehicle underpass. The independent engineer, *vide* letter dated August 24, 2021, issued notice to LRTL for submission of the relevant proposal. LRTL, in its response dated December 7, 2021 has submitted detailed proposal of estimate for negative change of scope. The independent engineer has provided certain observations in relation to the responses submitted by LRTL which has been complied with by LRTL as stated in the letter dated February 9, 2022. The independent engineer *vide* letter dated August 18, 2022 has submitted, for perusal and approval by the NHAI, a negative change of scope proposal, as submitted by LRTL, of a proposed vehicle underpass of approximately ₹ 536.17 million. In this regard, LRTL is required to pay 80% of the descoped amount, amounting to ₹ 428.93 million to NHAI. The claim is currently pending.

MBEL

(i). The independent engineer has imposed a penalty of ₹ 0.98 million *vide* letter dated May 1, 2019 for failure to take necessary steps to remove encroachment at the site. MBEL has objected to the claim *vide l*etter dated October 22, 2020 stating that the norms and guidelines were followed and executed and continuous efforts are being taken to clear the encroachments in the affected area.

(ii). The independent engineer has issued notice dated January 5, 2022 providing an opportunity to cure the defects and deficiencies in terms of operation and maintenance obligations under the MBEL Concession Agreement. MBEL, in its response dated January 6, 2022 has stated that the pavement defect rectification is under process and therefore, it is not in non-compliance of the relevant obligations under the MBEL Concession Agreement.

DATRPL

(i). NHAI *vide* letter dated September 1, 2022 has imposed a sum of ₹ 16.7 million on DATRPL on account of non-illumination of street lights on Project Highway on the recommendation of the independent engineer. The claim is currently pending.

GAEPL

(i). NHAI *vide* letter dated September 1, 2022 has notified GAEPL to deposit an amount of approximately ₹17.44 million as damages for breach of maintenance obligation under the Concession Agreement. GAEPL has submitted its response to NHAI, *vide*, letter dated September 10, 2022, delineating the remedial measures undertaken by GAEPL to fulfil its operation and maintenance obligations. GAEPL has submitted that there was no breach of maintenance obligation and accordingly there is no default as alleged by the independent engineer. The claim is currently pending.

NDEPL

(i). The independent engineer has imposed a penalty of ₹ 2.43 million vide letter dated November 5, 2021 for failure in conducting the required test at the major bridges in terms of the provision of the NDEPL Concession Agreement.

(ii). The independent engineer has imposed a penalty of ₹ 1.15 million vide letter dated November 5, 2021 for not rectifying the defects as notified by the independent engineer for the month of April 2021, within the stipulated time period in terms of the NDEPL Concession Agreement.

(iii). The independent engineer has imposed a penalty of ₹ 41.19 million vide letter dated July 5, 2022 for not carrying out periodical maintenance work (for instance, repair of shoulder, studs, road marking and BC overlay) for the period of January 2021 to May 2022. NDEPL has objected to the claim and has requested NHAI to direct the independent engineer to recalculate the penalty amount. The claim is currently pending with NHAI.

WVEPL

(i). The independent engineer has imposed a penalty of ₹ 3.82 million *vide* letter dated February 24, 2022 for delay in rectification of defects and deficiencies of road and bridge operations in operations and maintenance in terms of the WVEPL Concession Agreement. WVEPL has objected to the claim *vide* letter dated March 4, 2022 stating that all defects and deficiencies were rectified within the stipulated time period and has requested the independent engineer to waive off the damages. The claim is currently pending.

15. Litigation involving the Sponsors and their associates (including common associates of the Sponsors, the Project Manager and the Investment Manager)

i. ICICI Bank Limited (**"Plaintiff"**) filed a commercial suit before High Court of Bombay (**"High Court"**) against State Bank of India and Dena Bank (**"Original Defendants"**) seeking an injunction against them from exercising the right of substitution of Lanco Devihalli Highways Limited (**"LDHL"**) with any selectee. Since CH-I (**"Defendant"**) was shortlisted as the selectee for substituting LDHL with an SPV held by it or its associate, it was impleaded as a defendant in the said commercial suit by an order dated February 11, 2019. The High Court by way of its order dated February 18, 2019 stated that CH-I was required to pay transaction consideration after the Original Defendants have granted no objection. Pursuant to the aforesaid order, the transaction was closed and supplementary concession agreement was executed by NDEPL. While CH-I continues to be a party to the said suit, the outstanding issue is with reference to the distribution of consideration. Thus, CH-I has filed

an application for removal of its name as a defendant to the suit. The matter is currently pending.

ii. CH-II (**"Plaintiff"**) has filed a commercial suit before the High Court of Bombay (**"High Court"**) against IL&FS Transportation Networks Limited (**"ITNL"**), Infrastructure Leasing and financial Services Limited (**"IL&FS"**) and Chenani Nashri Tunnelway Limited (**"CNTL"**) (collectively, referred to as **"Defendants"**) seeking, inter alia, (a) specific performance of the share purchase agreement (**"SPA"**) executed between the Plaintiff and the Defendants in relation to transfer of 100% shareholding of ITNL in CNTL to the Plaintiff; (b) mandatory injunction against the Defendants to extend the long stop date (as defined in the SPA) up to ninety days after receipt of all approvals and fulfilment of all conditions. The Hon'ble Bombay High Court passed an interim order dated September 14, 2021 directing the Plaintiff to file an application before the National Company Law Tribunal, Mumbai (**"NCLT"**). Subsequently, the Plaintiff filed an application before the NCLT. The Plaintiff also approached the Bombay High Court seeking injunction to restrain the Defendants from divesting, disposing of, transferring, alienating, or creating any other interests in the shares of CNTL otherwise than under the SPA. The High Court in its order dated November 25, 2021 recorded that any decision at the behest of IL&FS and ITNL cannot prejudice any rights and contentions of Plaintiff. The matter is currently pending before the NCLT.

iii. N. Vijaya Kumar (**"Petitioner"**) has filed a writ petition against KNR Tirumala Infra Private Limited (**"Respondent"**) before the High Court of Andhra Pradesh at Amaravathi (**"High Court"**) seeking a writ of mandamus. The Petitioner prays for declaration of the act of permanently covering up Mungilipattu Kaluva water channel a natural spring stream channel by the Respondent as illegal, improper and unconstitutional. The Petitioner also seeks relief to direct the Respondent to restore Mungilipattu Kaluva water channel by constructing proper drainage systems to ensure the free flow of the water channel. The petition is currently pending and is at the stage of admission

SPV	Type	Brief of facts
APEPL	Writ Petition	The case was brought by P Naganna and K Lakshmi individually against each other along with other governmental authorities for their inaction on the illegal construction done by one another. The land in question is disputed and supposedly falls within the purview of NHAI.
APEPL	Writ Petition	The case was brought by P Naganna and K Lakshmi individually against each other along with other Governmental Authorities for their inaction on the illegal construction done by one another. The land in question is disputed and supposedly falls within the purview of NHAI. The Court is presently accepting show case in regard to admissibility of this matter. (APEL is R-6 in the matter)
APEPL	Civil	Andhra Pradesh Expressway Private Limited had been issued with notices dated July 16, 2019, August 21, 2019 and September 09, 2019 from Registration and Stamp Department, Government of Telangana levying stamp duty amounting to INR 22,50,00,000 (Indian Rupees Two Hundred And Twenty Five Million) on an agreement dated April 20, 2006 executed between APEPL and M/s KMC Constructions Limited . The agreement between APEPL and KMC is in the form of an engineering procurement and construction contract whereby APEPL had engaged M/s KMC Constructions Limited for carrying out construction work at a total consideration of INR 4500,000,000 (Indian Rupees our Thousand Five Hundred Million). It is alleged by the authority that the stamp duty has not been paid by APEPL as per the rate of 5% applicable for construction of any immovable property.
APEPL	Civil	The respondents issued a directive to the claimant - asking them to provide 40 mm BC overlay during the second and the third period maintenance which was in violation of the concession agreement and the applicable industry and government standards and the industry practice and lacked the authority of law to do so. Aggrieved by the same, the claimant filed for an arbitration claiming for the losses and interest for the costs incurred as a result of carrying out the directions passed by the respondent.
DATRPL	Writ Petition	The petitioner has filed the case against the NHAI for illegal acquisition of land of the petitioner without paying any compensation for the widening of the NH-2. As per the demarcation report, the land has been absorbed by the NHAI without compensation. The petitioners have moved to the court to either be paid the compensation as per section 3G of the National Highways Amendment Act, 1997 or the land be returned to them.
DATRPL	Criminal	A first information report under sections 279,337,338 and 304A of the Indian Penal Code, 1860, as amended, has been filed against DATRPL in the police station at sector 7, Faridabad in relation to the death of the son of Mr. Manoj Kumar Wadhwa in a road accident on February 10, 2014, alleged to have taken place due to potholes on the project road

DATRPL	Civil	After the NHAI took a portion of parcel of land belonging to the plaintiff, the remainder of the land was used by him for opening a shop. the only access to the shop is through the National Highway but the same is alleged to have been hindered by NHAI by putting up guard rails and iron rods. the plaintiff has moved this suit for permanent injunction against NHAI as the guard rails/ iron roads blocks his only way of passage. This has been alleged to be an illegal encroachment of land of the plaintiff for which he has already filed a case with the district collector for enhancement of compensation. A suit has been filed by one Mr. Sukhdev seeking a permanent injunction restraining DATRPL sfrom encroaching the only way of his land. As per the contentions of the plaintiff, it has been alleged that DATRPL is constructing a railing in front of the land of the defendant that is going to obstruct the right of way of the defendant and thus has sought a permanent injunction against NHAI and toll plaza.
DATRPL	Appeal	The suit had been instituted by residents of village Gadpuri alleging that the land on which Gadpuri Toll Plaza is made belongs to the Gram Panchayat of Gadpuri village and NHAI or DATRPL have no interest in the property. It is alleged that the defendants are colluding with the state authority who are allowing defendants 2 to 4 to illegally encroach onto the property in question. It is further alleged that the defendants wish to construct toll way booths and their offices on the disputed property illegally. Therefore, the plaintiff sought mandatory and permanent injunction restraining the defendants from illegally occupying the suit property and not to perform any construction on the disputed property. The suit has been dismissed by the Civil Judge (junior division) vide order dated 21.05.2022 and therefore residents of Gram Panchayat have preferred an appeal against the order dated 21.05.2022.
DATRPL	Writ Petition	The Petitioner has filed the Writ Petition alleging that the Notice dated 18.05.2023 issued by DATR to the Petitioner for removal of encroachment near Palwal Bus Stand is illegal and shall be quashed.
DATRPL	Civil	A civil suit for injunction has been filed by Mr. Sunil Kumar and others seeking injunction against NHAI and DATRPL for doing any construction on the disputed land. The plaintiff has alleged that certain portion of land on the row of Delhi-Agra toll belong to him, and the said land has never been acquired by NHAI. The plaintiff has also filed a case for contempt of court against some of the NHAI and DATRPL's officials alleging that the respondents had demolished certain portion of their property and constructed a boundary wall in violation of the Allahabad High Court’s order for maintaining status quo dated 23.01.2023.

DATRPL	Writ Petition	This is in relation to a civil writ petition that has been filed before High Court of Punjab & Haryana, by one Mr. Karan Singh Dalal against NHAI, DATRPL, Cube Highways and Reliance Constructions This petition, inter alia, alleges that DATRPL has been issued Provisional Certificate on the pretext of having completed the six-laning work while the six laning work remains incomplete and thus, seeking the following prayer from the court: a) Quashing of provisional certificate. b) Shifting of Gadpuri toll plaza to an appropriate place, away from Arohi Model School, Gadpuri
DATRPL	Writ Petition	The petitioner is aggrieved by the fact that there is no drainage system for storm waters along with the highway alongside NH2 from escorts corporate office 155, Mathura Road, Faridabad to near metro pillar number 630, Faridabad which leads to rain water entering residential houses in Huda residential area at sector 28. The petitioner is aggrieved by the fact despite various complaints in this behalf no action has been taken by respondent no.1 till date following are the parties to suit:- 1) R-1, NHAI 2) R-2, Municipal Corporation of Faridabad 3) R-3, Haryana Urban Development authority complex 4) R-4, UOI
DATRPL	Civil	This case has been filed alleging that the Gadpuri Toll Plaza has been constructed on land belonging to Gram Panchayat Gadpuri. They have sought the removal of encroachment from the said lands.
DATRPL	Civil	The plaintiffs are co-owners and in joint possession of two shops (area 35 sq. yards) situated in Village Baghola, Tehsil & District Palwal, duly shown in the site plan and forming part of Khewat/Khatoni No. 780/925, Khasra No. 112. Out of the plaintiffs' original 105 sq. yards land, 70 sq. yards had earlier been acquired by Defendant No.2 for road widening, for which compensation was duly received, leaving 35 sq. yards where the plaintiffs' shops are constructed. However, in the report "Babat Kabja Tasdik Karne Bare Moja Baghola" issued by Defendant No.1, the area was recorded as 89 sq. yards instead of 105 sq. yards. Further, Defendants No.1 and 3, acting in collusion, issued a notice dated 01.03.2024 for demolition of the plaintiffs' shops for road widening. The plaintiffs' requests on 14.03.2024 for correction of the report and withdrawal of the notice were refused, giving rise to the present cause of action
DATRPL	Civil	The complainant has filed a case alleging that the pipeline and related chamber near Goverdhan Chauraha, Chatta Kasba has not been constructed and maintained properly by NHAI and related parties. Complainant has alleged that the water from the pipeline overflows and has led the complainant to suffer various damages such as seepage/ cracks in his constructed school, bad smell in the vicinity etc. the complainant has sought compensation for compensation for such damages

DATRPL	Appeal	The District Consumer Disputes Redressal Commission, Dholpur has passed an order dated 18.12.2024 against DATRPL. The Commission ordered that the SPV had not correctly scanned the Fastag of the complainant because of which, despite having sufficient balance in Fastag, the complainant was made to pay penalty over and above the User Fee wrongfully. As a result, the Commission has ordered the following to be paid by the SPV: - 1. INR 110 to be refunded along with interest @ 9%. 2. Cost towards legal fee - INR 3000. 3. Compensation towards mental sufferage - INR 5000. 4. Penalty on account of inconvenience suffered by general public - 25000. The SPV has filed an appeal challenging the said order
DATRPL	Criminal	The complainant filed a criminal case against Rajesh Madaan and the i.e. for mischief due to non-completion of the drainage works. The complainant states that Mr Rajesh is the NHAI contractor and is awarded the work for construction and maintenance of Delhi Mathura Road. He has alleged that during the construction of a bridge and service road near barsana chauraha, the drainage works was knowingly left incomplete. He alleges that the drainage works were not completed despite several requests. He alleges that he was asked to pay Rs. 2,000 to the JE for resuming the works and on his refusal to pay such amount, the works were never started. He further contends that the respondents intentionally diverted the water of the drainage in the direction of the complainant's farm which has not only destroyed a boundary wall but also crops. He alleges this as a mischief. Court prima facie found malfeasance and mischief and subsequently issued summons.
JMTPL	Civil	It is alleged by the Petitioner that the Respondents are wrongfully (without paying any compensation) proceeding to demolish structures on the land held by the Petitioner through PATTA near NH 21. The Petitioner has challenged the notice for removal of encroachments issued by JMTL dated 03.09.2022.
JMTPL	Civil	It is alleged by the Petitioner that the Respondents are wrongfully (without paying any compensation) proceeding to demolish structures on the land held by the Petitioner through PATTA No. 24 (dated 22.01.1980) near NH 21. The Petitioner has challenged the notice for removal of encroachments issued by JMTL dated 03.09.2022.
JMTPL	Civil	This case has been filed by the father and mother of the deceased who died due to electrocution at the Project Highway alleging that the deceased died due to negligence of the PNC Infratech Ltd, during the construction of highways. JMTL is also party in this case

JMTPL	Civil	This case has been filed by Ms Manjudevi, the wife of the deceased who died on the national highway due to sudden rush of the cattle at the highway which hit the two-wheeler of the deceased. The Petitioner alleges that the said accident occurred due to negligence on part of NHAI and JMTL as it was their responsibility to make arrangements for preventing such animals from coming onto the roads. The case was earlier filed in the Motor Accident Claim Tribunal however, the said case was considered as a fatal accident and therefore was disposed with the instructions to file the same in appropriate court vide order dated 22.03.2022 (pronounced on 23.03.2022).
JMTPL	Civil	Case has been filed by Mr. Raj Kumar alleging excess collection of Rs. 130 (which was the FasTag penalty collected by JMTL as his FasTag could not be detected by the system as it was registered via chasis number) seeking (a) Refund of Rs 130. (b) Damages of Rs 2,21,000
JMTPL	Civil	Mr. Ram Singh had filed multiple cases against JMTL seeking an injunction against JMTL from installing Static Weigh Bridge. However, the revenue board rejected all such cases and allowed JMTL to install SWB. The Order passed in favour of JMTL by revenue board has been challenged by Ram Singh.
JMTPL	Civil	The Petitioner alleges that Mr. Sanjay Kumar Meena has died on NH-21 due to a dead bull lying on the road. It is alleged that the cleaning and maintenance of the road has been done negligently which has resulted in the death of Mr. Sanjay Kumar.
JMTPL	Writ Petition	Mr Raghuveer Singh was employed as security supervisor with IJM from August 2006, Subsequently, he was transferred to JMTL wherein his employment was terminated without notice. The Labour Court held vide its order dated 02.05.2018 that the termination of Mr. Raguveer Singh without notice as unlawful and ordered IJM to pay Rs. 40,000 to him. Mr Raghuveer Singh has challenged the order of the Labour Court before the High Court of Rajasthan and sought reinstatement in the employment of JMTL.
JMTPL	Civil	It is alleged by the Petitioner that the Respondents are wrongfully (without paying any compensation) proceeding to demolish structures on the land held by the Petitioner through PATTA NO. 8 (dated 26.03.1984) near NH 21. The Petitioner has challenged the notice for removal of encroachments issued by JMTL dated 03.09.2022
JMTPL	Civil	Mrs. Reena has filed this case claiming compensation amounting to INR 36,50,000/-(@interest and cost of 50,000 and 25000 towards litigation) for death of her husband caused due to an accident on the road maintained by JMTPL. She alleges that when her husband (deceased) was passing through the JMTPL land, his motorcycle collided with a bull on the road which resulted in his death. It is alleged that the accident occurred due to the SPV's negligence in not putting any indicator/signage and any fencing for prevention of such accidents.

JMTPL	Civil	Mr. Rameshwar Prasadhas filed this case claiming compensation amounting to INR 36,50,000/- (@interest and cost of 50,000 and 25000 towards litigation) for death of his son caused due to an accident on the road maintained by JMTPL. It is alleged that when his son (deceased) was passing through the JMTPL land, his scooty collided with a bull on the road which resulted in his death. It is alleged that the accident occurred due to the SPV's negligence in not putting any indicator/signage/lights and any fencing for prevention of such accidents
JMTPL	Civil	The complaint has alleged that the complainant has been made to pay penalty despite there being sufficient balance in the Fastag.
JMTPL	Civil	"The complaint has alleged that the complainant has been made to pay penalty despite their being sufficient balance in the fastag at Amoli toll plaza"
JMTPL	Civil	The case concerns a fatal accident that occurred on 08.02.2020 at about 7:30 PM on NH-21, where cement blocks were left in the middle of the road without any warning signs, lighting, or radium strips, leading to the accident. In its judgment dated 29.09.2025, the Hon'ble Court held that the responsibility for construction, operation, and maintenance of the concerned highway stretch rested with Defendant Nos. 1 and 2 under contractual arrangements with the National Highway Authority of India, and that the accident occurred due to their negligence in failing to ensure proper safety measures. The Court relied upon witness testimony and statutory provisions under the Fatal Accidents Act, 1855, and observed that despite being informed by residents, no corrective action was taken. While deciding Issue No. 3, the Court noted that Defendant No. 2 failed to discharge the burden of proving that he was not a necessary party. Consequently, the suit was partly decreed in favour of the plaintiffs, holding Defendant Nos. 1 to 3 jointly and severally liable. However, National Insurance Company Limited (Defendant No. 3), in its review petition, contends that this finding is erroneous, as its liability arises only under a voluntary insurance policy (Exhibit NA-3/1) taken by Defendant No. 1, M/s PNC Infratech Limited, covering only acts carried out by the insured at the construction site during the policy period, and not under any compulsory statutory insurance such as the Motor Vehicles Act. The insurer asserts that it neither insured Defendant No. 2 nor covered any act attributable to him, and therefore, fastening joint and several liability on National Insurance Company Limited is a clerical and legal error warranting reconsideration of the operative portion of the judgment.

JMTPL	Civil	This case has been filed by the plaintiffs, who are residents of village Gurjar Simla, Tehsil Sikrai, District Dausa, asserting their ownership, possession, and khatedari rights over land bearing Arazi Khasra No. 187 measuring 0.1000 hectares, along with a residential house, shop, and cattle shed constructed thereon by their ancestors about 40 years ago. The dispute arises due to alleged wrong revenue entries and amendments during settlement proceedings, pursuant to which Defendant No. 1 (the highway authority/operator) and Defendant No. 2 (Public Works Department) have claimed that the plaintiffs' land falls within Khasra No. 199 and have forcibly attempted to evict the plaintiffs without paying compensation. The plaintiffs contend that 7 biswa of their land from old Khasra No. 132/2 was acquired by Defendant No. 2 without payment of compensation, and that despite clear revenue records showing Khasra No. 187 as their land, the defendants, along with Defendant No. 3, illegally entered the land on 06.12.2022 and attempted demolition using machinery. The plaintiffs therefore seek protection of their possession and ownership rights.
MBEL	Civil	The Complainant has filed the case alleging that despite having a pass for concessional rates to be charged at the Toll Ludhawai, the Complainant was charged an excess toll amount. The complainant alleges that as per the concessional rate, he was to be charged toll @ Rs. 5 however, he was charged at Rs. 25. He alleges excess collection of tolls of Rs. 40 and states that despite repeated complaints, his concern was not addressed. He now claims the refund of the excess amount along with charges towards mental agony and court expenses.
MBEL	Writ Petition	The petitioner has challenged the notice issued by MBEL for the removal of encroachment done by the petitioners. The Petitioner has challenged the notice on the ground that it has already challenged the acquisition of the relevant land by NHAI and the proceedings in that regard are still pending.
MBEL	Criminal	The complainant Mr. Suresh Kumar alleges that Mr. Anoop Singh along with the toll staff beat the complainant and also spoke bad words to him on his caste. He has filed a complaint under the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989 and IPC against Mr. Anoop Singh. The matter pertains to removal of encroachment near NH-21.
MBEL	Writ Petition	The petitioners challenged the land acquisition notification wherein the old and the new *khata* numbers mentioned different owners. When the objections were entertained by the district collector, the presence of some pertinent documents revealed that the petitioners are the actual owners of the land, but the respondent while the case of determination of ownership is going on, asked the petitioners to vacate the land premises. even though the authorities have indicated the demolition of the property without even paying the compensation or deciding over the ownership dispute or even proceedings to acquire the said property.

MBEL	Civil	The plaintiffs have claimed that they have been allotted land on patta near nh-21 and that they have complied with the requirement of leaving 75feet distance from the national highway in doing the construction on the land. It is alleged that the defendants have sent illegal notice to the plaintiffs for removal of encroachment on the said land despite the fact that the said land belongs to the plaintiffs and no compensations has ever been paid to them. The plaintiff has filed this case seeking a temporary and permanent injunction against mbel/defendant from removing any of the alleged encroachment.
MBEL	Civil	The case has been filed by Amar Singh (resident of nearby locality) alleging that there is a *kacha* land (belonging to NHAI) adjacent to the carriageway wherein some individuals have made encroachments. As a result of such encroachment on the said land, the passage to his house is blocked. He seeks relief of removal of such encroachments from all the encroachers, administration, NHAI and Project Manager.
MBEL	Civil	The Plaintiff is claiming that the compensation paid by NHAI for acquiring his land is very less and seeks to get additional compensation for the said land.
MBEL	Civil	Mr. Vinod Kumar has obtained a stay on the encroachment proceedings with respect to his property in the vicinity of MBEL stretch without making MBEL a party to the case. Since MBEL was not aware of the said proceedings, it issued a routine notice for removal of encroachment to the plaintiff. Now the plaintiff has filed a contempt petition alleging breach of court's order adding MBEL also as a party.
MBEL	Civil	The matter relates to land acquisition compensation not being received by the Plaintiff.
MBEL	Civil	This is a land acquisition related case. The Plaintiff alleges that it has not received the compensation for acquisition of Land. He alleges that NHAI, through its agency (MBEL), is wrongly asking the plaintiff to vacate the land without payment of compensation for the land.
MBEL	Criminal	The petitioner has alleged that the accused Mr. Brijendra Singh has illegally constructed some tanks in front of her land which is resulting in blocking her way. It is alleged by the petitioner that the officials of MBEL did not accept her request for removal of Mr. Brijendra's encroachment and that MBEL officials are acting in connivance with Mr. Brijendra. In the present petition, the petitioner has challenged the order dated 10.03.2025 of lower court wherein the lower court has rejected to take cognizance of the matter.
MBEL	Criminal	Mr. Rajendra had filed an FIR alleging a scuffle and bad behaviour by the employees of MBEL. Since the police closed the FIR, the petitioner filed a protest petition against the closure of the FIR for taking cognizance of the matter. Thereafter, the court has taken cognizance in the matter.

MBEL	Civil	The complainant has filed a complaint stating that his toll fee was deducted twice, once at the toll plaza and again through Paytm. Accordingly, he has sought a refund of the excess amount along with compensation of Rs. 2,50,000/- for alleged mental harassment.
MKTPL	Appeal	Three writ petitions have been filed by Madurai district bus owners' association (2) and Virudhnagar district bus owners' association challenging the judgment passed by the madras high court in the W.P. nos. 5121, 5118 and 6527 of 2021 and batch matters. The petitioners in all the writ petitions have challenged the notification no. 2606 dated 26.06.2013 (pertaining to Madurai-Kanyakumari section) which provides for discounted rates of daily and monthly pass on various legal grounds. The notification no. 2606 stipulates daily pass and monthly passes to be provided at the rate of (a) daily pass- @1.5 times of the fees for one-way journey with a capping of maximum of 2 single journeys per day (b) monthly pass- @ 2/3rd of the fee payable for 50 single journeys with capping on the maximum of 50 single journeys per month. The main contention of the petitioners in all the 3 writs is that such a capping of 2 journeys per day or 50 single journeys per months prescribed in the notification is illegal.
MKTPL	Writ Petition	From the year 2020, Tamil Nadu State Transport Corporation (TNSTC) buses have been plying through the toll plazas operated by the 4 SPVs (i.e. MKTPL, SMTPL, KETPL and NKTPL) without payment of appropriate user fee in terms of the 2008 Rules, and despite the best efforts of the SPVs, TNSTC has refused to pay the toll user fee to the Petitioners on an arbitrary ground that they will continue to be governed by the User Fee Rules, 1997 dated 27.08.1997 brought out by Ministry of Surface Transport (the 1997 Rules). All the 4 SPV have suffered cumulative losses of around INR 214 Crores. All the 4 SPVs have filed writ petitions before the Madras High Court for claiming these losses. MKTPL has claimed an amount of INR 133,75,73,040/- (Indian Rupee One Hundred Thirty-Three Crores Seventy-Five Lakhs Seventy-Three Thousand and Forty Only) for the losses suffered between the period of Oct 2020 to June 2024.

MKTPL	Writ Petition	The petitioner is running a bakery and tea shop in Lakshmi nagar virudhnagar which is abutting the service road of national highway. The respondent cleared the encroachment in the highway on the complaint given by Sundarrajan. On 20.6.2024 the respondent came at 2.45 am with bulldozer and erased the structure. The petitioner who came to spot being informed by his employees. He tried to prevent the respondent and their men from demolishing the structure. During the scuffle the bulldozer hit the shoulder of the petitioner. The petitioner sustained nerve injury in shoulder and admitted in the hospital. The petitioner gave complaint to the complaint who didn't receive the same. The petitioner sought Information under RTI. The action of the respondent cause monetary loss and permanent damage to the health to the petitioner. Hence the present petition filed claiming compensation.
MKTPL	Writ Petition	The petitioner is the absolute owner of lands in Kappalur Village, Madurai District. In 2007, a portion of the land was acquired for NH-7 widening, but compensation remains unpaid. The grievance now is that the respondents have begun constructing a toll plaza office building, as claimed by the petitioner, it blocks ingress and egress to the petitioner's property. The petitioner therefore seeks a Writ of Mandamus to rectify survey sketch errors and to consider his representation for protecting access to the property.
NDEPL	Criminal	An over speeding car hit the pedestrian resulting in his death on the NDEPL stretch. His wife has filed a FIR against driver of the car, NDEPL's employee Mr. Hari Babu (toll supervisor) and the NHAI inspector before Kudur police station. She alleges that the toll supervisor had failed to maintain the road which was the reason of accident. Being aggrieved by such frivolous complaint and considering the pendency of criminal case in the FIR and further investigation in crime no. 0275/2023, Mr. Haribabu is approaching the high court for quashing of the complaint filed by the wife of the deceased
NKTPL	Writ Petition	From the year 2020, Tamil Nadu State Transport Corporation (TNSTC) buses have been plying through the toll plazas operated by the 4 SPVs (i.e. MKTPL, SMTPL, KETPL and NKTPL) without payment of appropriate user fee in terms of the 2008 Rules, and despite the best efforts of the SPVs, TNSTC has refused to pay the toll user fee to the Petitioners on an arbitrary ground that they will continue to be governed by the User Fee Rules, 1997 dated 27.08.1997 brought out by Ministry of Surface Transport (the 1997 Rules). All the 4 SPV have suffered cumulative losses of around INR 214 Crores. All the 4 SPVs have filed writ petitions before the Madras High Court for claiming these losses. NKTPL has claimed an amount of INR 37,34,32,208/- (Indian Rupees Thirty-Seven Crores Thirty Four Lacs thirty two thousand and two hundred and eight only) for the losses suffered between the period of Oct 2020 to June 2024

NKTPL	Civil	The complaint has alleged that the complainant has been made to pay penalty despite there being sufficeint balance in the fastag.
SMTPL	Writ Petition	Mr. Maharajan, has filed a writ petition in the High Court stating all false statements alleging proper road maintenance and repair works are not being undertaken at the road stretch between Madurai - Kanyakumari. He prays that the toll collection shall be suspended at Salaidupur (Kayathar) and Nanguneri Toll Plaza till repair and maintenance of the road stretch between Madurai-Kanyakumari is completed. He has made several other frivolous allegation stating that the road is filled with potholes and cracks resulting in accidents, the amenities at toll plaza are bad, use of handheld scanners due to non-functioning of scanner, no plantation work being undertaken etc. He has made allegation that the bridges at Ponnakudi-Sengulam and Moondraippu have remained pending for more than 3 years causing dilapidated condition of the nearby road resulting in heavy jam.
SMTPL	Writ Petition	From the year 2020, Tamil Nadu State Transport Corporation (TNSTC) buses have been plying through the toll plazas operated by the 4 SPVs (i.e. MKTPL, SMTPL, KETPL and NKTPL) without payment of appropriate user fee in terms of the 2008 Rules, and despite the best efforts of the SPVs, TNSTC has refused to pay the toll user fee to the Petitioners on an arbitrary ground that they will continue to be governed by the User Fee Rules, 1997 dated 27.08.1997 brought out by Ministry of Surface Transport (the 1997 Rules). All the 4 SPV have suffered cumulative losses of around INR 214 Crores. All the 4 SPVs have filed writ petitions before the Madras High Court for claiming these losses. SMTPL has claimed an amount of INR 20,84,25,354/- (Indian Rupee Twenty Crores Eighty-Four Lakhs Twenty-Five Thousand Three Hundred and Fifty-Four Only) for the losses suffered between the period of Oct 2020 to June 2024
MKTP, NKTPL, SMTPL and KETL	Writ Petition	From the year 2020, Tamil Nadu State Transport Corporation (TNSTC) buses have been plying through the toll plazas operated by the 4 SPVs (i.e. MKTPL, SMTPL, KETPL and NKTPL) without payment of appropriate user fee in terms of the 2008 Rules, and despite the best efforts of the SPVs, TNSTC has refused to pay the toll user fee to the Petitioners on an arbitrary ground that they will continue to be governed by the User Fee Rules, 1997 dated 27.08.1997 brought out by Ministry of Surface Transport (the 1997 Rules). All the 4 SPV have suffered cumulative losses of around INR 214 Crores. All the 4 SPVs have filed writ petitions before the Madras High Court for claiming these losses.

WUPTPL	Writ Petition	The Writ Petition has been filed by a group of individuals, i.e., the Petitioners, under Article 226 of the Constitution of India, allegedly claiming to be acting in bonafide public interest to protect certain fundamental rights of the local commuters and, inter alia, challenging the grant of concession by the NHAI for the project highway to WUPTL. WUPTL and Cube Highways and Transportation Assets Advisors Private Limited have been impleaded as respondents in the proceedings.
WUPTPL	Civil	We had received notices from the ADM, stamp department Uttar Pradesh levying stamp duty amounting to Rs. 25.13 crores on the concession agreement executed between WUPTL and NHAI and asking the authorized representatives to show cause on why such duty shall not be levied. We had duly filed our reply to this letter from ADM and made our representation in this regard
WUPTPL	Writ Petition	The case was filed before Lok Adalat by the wife of the deceased claiming a compensation of Rs. 1 crore alleging that the deceased met with the accident that caused his death due to negligence of WUPTL and non-maintenance of railing at the Sakoti over bridge. Lok Adalat (Permanent/Temporary) is a pre-litigation mechanism for conciliation and settlement of cases relating to public utility services like transport, postal, telegraph etc. and has no authority to pass any order/direction. It is a forum that allows parties to settle the dispute and in case of failure of settlement, the matter is referred to court. Disregarding the same, the Permanent Lok Adalat has passed an order dated 09.02.2022 in the above-mentioned case directing WUPTL to pay 77 Lakhs to the petitioner within 2 (two) months from the date of the Order. Therefore, WUPTL has filed a Writ Petition before Allahabad High Court challenging the order of Lok Adalat.
WUPTPL	Civil	One Mr. Gyan Kumar has filed this case seeking compensation amounting to INR 34,85,000 (along with 12% interest) for injuries sustained by him due to an accident on the WUPTL Land stretch. He alleges that the reason for the accident was the bad condition of the road which is attributable to the negligence of NHAI and WUPTL.
WUPTPL	Civil	The complainant has alleged incorrect deduction of Fastag amount at Siwaya toll on 25.01.2024 despite the fact that his car was parked at his house.
WUPTPL	Criminal	The Applicant is Manager of Shivaya Toll Plaza, Meerut, which is operated by Western U.P. Tollways Pvt. Ltd. (WUPTL). As per prosecution version informant has suffered road accident due to falling in ditch near toll bridge and sustained injuries. It was submitted that applicant is merely operating the said toll plaza on a contract basis and he has absolutely no duty or role in maintenance of road. Referring to facts of the matter, it was submitted that no prima-facie case is made out against applicant.

LRTPL	Civil	The notice dated 30.10.2025 has been issued alleging a stamp duty deficiency of INR 99,90,96,000 on the Concession Agreement dated 27.12.2019 executed between LRTPL and NHAI. Subsequently, the stamp authorities issued a show cause notice dated 08.12.2022 regarding the appropriate stamp duty to be paid on the Concession Agreement, to which LRTPL submitted its detailed reply on 08.02.2023. No action was taken by the authorities after LRTPL's reply. Thereafter, the present Notice was issued and LRTPL duly appeared before the authority on 20.11.2025, wherein the proceedings were adjourned, and time was given to submit a reply to the Notice.
WVEPL	Civil	This case has been filed by the wife of the deceased who died due to electrocution at the project highway alleging that the deceased died due to negligence of the SPV in maintaining the project highway. WVEPL is respondent no. 3 in the suit
WVEPL	Civil	The Concessionaire had claimed for an extension in Concession Period for 1460 days on account of the Actual Average Traffic falling short of the Target Traffic, in accordance with Article 29 of the Concession Agreement. The IE has however, recommended for only 328 days EOT. Thereafter, NHAI had reduced the concession period for 1.5 years on account of the target traffic issue. The SPV has therefore raised a claim against NHAI.
WVEPL	Writ Petition	The petitioners have challenged NHAI's encroachment removal notices. NHAI vide the notices had alleged that there is an illegal encroachment of Government land at km 197+507 LHS in Pudussery Village of Palakkad District within the Right of Way of the National Highway section of NH-544 between Walayar to Vadakkencerry and similarly in the case of 2nd petitioner there is an illegal encroachment at 197 + 157 LHS. Therefore, the petitioners were called upon to remove such unauthorized occupation within 7 days from the date of the said notice.
THPL	Writ Petition	The petitioner has filed the writ petition seeking an order or direction more particularly one in the nature of a writ of mandamus declaring the action of the respondent 1 to 4 in permanently covering up Mungilipattu Kaluva water channel a natural spring stream channel situate in SY NOS 142 to 707 of Kongaravaripalli Village Chandragiri Mandal Chittoor district as illegal improper and unconstitutional and consequently direct the respondents to restore Mungilipattu Kaluva water channel by constructing proper drainage systems to ensure the free flow of the water channel. The case is being handled by the sellers.

THPL	Writ Petition	KTIPL has filed a writ petition before the High Court of Andhra Pradesh seeking quashing of DRC-07 proceedings dated 17.03.2022 (issued for the year 2018-19, 2019-20, 2020-21) and assessment order dated 16.03.2022 imposing tax to an extent of Rs. 113.44 Crores. Such tax has been imposed on the SPV on the ground that the future annuities to be received from NHAI is not exempted from GST in view of the circular no. 150/06/2021-GST dated 17.06.2021 ("the Impugned Circular"). SPV has challenged the Impugned Circular issued by ministry of finance vide which it was clarified that construction of road services falling under heading 9954 is not covered by entry 23-A and thus is not exempted. The SPV has taken grounds that the exemption under entry 23-A is still applicable as annuities are to be paid in lieu of toll collection and therefore the demand for GST on future annuities is illegal. The Court vide order dated 25.07.2022 directed for stay of all further proceedings pursuant to the impugned DRC-07 notices for the years 2018-19, 2019-20 & 2020-21.
MSHPL	Criminal	In discharge of its financial liabilities, MSHPL had initiated an electronic funds transfer on 02.05.2022 in favor of one M/s Vishwayog Buildcon for an amount of Rs.12,18,544/- on its bank account bearing number 5870011000002731, maintained in the Solapur Janata Sahakari Bank Limited. However, due to wrong entry of the bank account number, the funds were inadvertently credited to the account of M/s Rajdeep Enterprises (Proprietorship of Rohit Sharma) bearing bank account number 5870011000002730 resulting in wrongful credit of Rs. 12,18,544/- to M/s Rajdeep Enterprises account vide UTR Ref-PUNBH22122048515. The Company, upon noticing the aforesaid oversight, contacted M/s Rajdeep Enterprises and requested for the reversal of the aforesaid amount wrongfully credited to him. While M/s Rajdeep Enterprises returned the amount of Rs. 9,00,000/- during the months of July to December 2022, balance amount of Rs. 3,18,544/- remained outstanding to the Company. Further, a post-dated cheque bearing number 364529 dated 25.03.2023 for the payment of remaining amount of Rs. 3,18,544/- was issued by M/s Rajdeep Enterprises in favour of the Company. However, the same was dishonoured on presentation due to insufficiency of funds. As M/s Rajdeep Enterprises has failed to pay the Outstanding Amount within the prescribed time, the Company has initiated legal proceedings against Mr. Rohit Sharma (Proprietor of M/s Rajdeep Enterprises) under Section 138 of the Negotiable Instruments Act, 1881.

BWHPL, MSHPL and MHPL	Civil	The 3 DBL entities i.e. BWHPL, MSHPL, and MHPL have raised various claims against Dilip Buildcon Limited (The Erstwhile Sellers of the SPVs) originating from the Share Purchase Agreements (SPA) and EPC Agreements executed between the SPV and DBL before the Singapore International Arbitration Centre (SIAC). The SPVs have raised the following claims in the Notice of Arbitration: - 1. BWHPL: INR 13.23 Crores 2. MHPL: INR 241.2 Crores 3. MSHPL: INR 107.42 Crores (These Claim amounts may further increase at the time of filing of claim petition) DBL in their response to the Notice of Arbitration, denied all of the claims against it and has filed counterclaims against the SPVs, alleging that the SPVs have (i) breached their obligation to pass on tax credit benefits to DBL, (ii) breached their duties of confidentiality and failed to pay the deferred consideration under the SPA. DBL has raised the claims as under: - i. Payment due from MHPL: INR 40,16,52,000 ii. Payment due from MSHPL: INR 49,33,70,000 iii. Payment due from BWHPL: INR 37,34,00,000
MSHPL	Appeal	The appellant challenges the order passed by the Tehsildar, North Solapur Case No. क्र.2024/गौख/कावि-508/एसआर-31/2024 claiming it is illegal and should be quashed. Key points include: The appellant's tractor and JCB, used for highway maintenance, were wrongly accused of illegal soil excavation. The mud removed was excess from highway drains due to monsoon damage, not from unauthorized mining. The soil removal was part of regular maintenance to prevent damage to nearby farms and reduce highway hazards, not unlawful excavation. The appellant’s tractor was confiscated, and a fine of INR 1,05,625 was paid to retrieve it. The appellant seeks a refund, arguing the seizure was unjust. The appellant requests the order be quashed and the fine refunded.
MHPL	Criminal	Mr. Rajinder Bhati (Cube Highways) has received a notice from Madnoor Police station based on an FIR filed by Mr. Ismail Shaik. He has alleged death of his father due to the High Mud Mounds kept near the vicinity of NH-161 to be attributable to NHAI officials. It is alleged that his father had went on the mud mount to collect some beer bottles but due to the height of mud mount running closer to electricity lines, he caught electric shock leading to his death. He has alleged negligence on part of Road maintaining authorities in non-removal of such mud mounds by maintenance authorities.

MHPL	Civil	There are 2 issues for which the SPV is contesting against NHAI in arbitration: - 1. NHAI Project Director recommendation dated 28.12.2023 to the Regional Officer of NHAI to recover alleged excess monies paid under the Milestone Payments (during construction phase) to the Petitioner to the tune of INR 27,92,30,507/- (Rupees Twenty Seven Crore Ninety Two Lakh Thirty Thousand Five Hundred and Seven only) from the crystalized Annuity and Operations & Maintenance payment of MHPL on account of alleged wrongful adoption of CPI. 2. NHAI proposed recovery for alleged damages to the tune of Rs. 134.784 Crores imposed on MHPL for not carrying out repair and rectification works. Further NHAI in their Counter Claims have raised a claim against the SPV amounting to INR 524 Crores alleging delay in rectification works. In this 524 Crore Rs Counter Claim, NHAI has claimed Rs 376 Crores alleging improper functioning of TMS works, Rs. 5.32 Lacs for non-completion of punch list items, Rs. 123 Crores towards remaining from the 134 Crore penalty already imposed, along with interest amounting to INR 25 Crores
HTPL	Civil	The complainant Mr. Ram Nath has filed the case because he was charged double the amount of toll tax and alleged that the toll plaza employee misbehaved with him. A show cause was issued to the toll plaza and its employee which was duly responded. It is HTPL's position that the complainant did not have a valid fastag and therefore he was charged double the amount which he refused to pay and started arguing. Mr. Ram Nath has claimed an amount of Rs. 5,00,000

GAEPL	Writ Petition	On 15-02-2016, the Collector, Aligarh issued a show cause notice under Sections 33/47 A of the Indian Stamp Act, 1899 (Stamp Act) to GAEPL stating that the Deputy Commissioner Stamps, Aligarh Division, Aligarh has been informed that the National Highways Authority of India has given the right to collect toll tax for 24 years to GAEPL in consideration of Rs.1.00 per annum and Rs.57.5 Crores security (5% of prima facie total cost of the project Rs.1,114 Crores). Thus, the Concession Agreement so executed in this regard is in nature of a lease deed as defined under Section 2(16)(c) of the Stamp Act. The show cause notice further stated that in addition to Rs.1.00 annual rent, GAEPL has also paid premium, thus the instrument will be covered by Article 35 of Schedule I B of the Stamp Act and stamp duty amounting to Rs 45,63,99,940/- is payable by GAEPL on the Concession Agreement. According, GAEPL was asked to show cause as to why an amount of Rs.45,63,99,940/- towards stamp duty deficiency and penalty thereon shall not be recovered from GAEPL. That on 25-02-2020, the Collector, Aligarh passed an ex parte order of recovery of Rs. 45,63,99,940 from GAEPL towards payment of stamp duty on the Concession Agreement along with simple interest at the rate of 1.5% per month. GAEPL got this ex parte order recalled and filed its detailed objections. However, the Collector Aligarh passed an order dated 13.10.2020 (reaffirming the ex parte order) holding that the Concession Agreement is a Lease Deed under Section 2 (16) (c) of the Stamp Act and is chargeable with stamp duty under Article 35 (c) (1) of Schedule 1B appended to the Stamp Act with an amount equivalent to Rs.45,64,00,040/-. The Collector, Aligarh further imposed a penalty of Rs.45,63,994/- on the petitioner and ordered the amount to be recovered along with simple interest at the rate of 1.5% per month. The amount of stamp duty has been calculated taking 20 times of the performance security of Rs.57.05 crores i.e. Rs.1141 crores to be the premium amount and Rs.1.00 per annum to be the rent. GAEPL challenged the order of the Collector, Aligarh dated 13.10.2020 before the Hon'ble High Court of Allahabad and the Hon'ble High Court of Allahabad vide its order dated 18.12.2020 stayed any coercive action against GAEPL during the pendency of the case.
GAEPL	Writ Petition	The main allegation of the Petitioner is that the base of the Drainage/Nalah at NH-91 (which is under the purview of NHAI) near Gata No. 343 and 433 Chanderu Village (Sikandrabad), Bulandshahr is very high as compared to the pond. Resultantly due to high base of the Nalah, water from the pond does not drain and overflow from the pond resulting issues like (i) damage to the crops of the Petitioner (ii) risk of disease to nearby schools, (iii) causing flood like situation etc. GAEPL is not a party to the writ petition. However, remedy of lowering down the base of the Nalah has been sought from NHAI.

JLTPL	Civil	Amit Yadav an ex-employee of Aegis Ltd. was terminated on 16.08.2023 by Aegis (the previous contractor at JLTPL site). Mr. Amit is now seeking reinstatement of services from SKM (the current contractor) and JLTPL. He also demands for salary from the date of his termination i.e. 16.08.2023
JVTPL	Civil	A Notice dated 21.02.2024 (Impugned Notice) was issued by the Assistant Inspector General (Registration), Lalitpur, Uttar Pradesh issued under Section 47A of the Indian Stamps Act, 1899 and Section 7(3) of the UP Stamp (Valuation of Property) Rules, 1997. Vide the said notice, the Authority asked JVTPL to provide the original copy of the Concession Agreement executed between JVTPL and the National Highways Authority of India (NHAI) dated 27.12.2019 for assessing the stamp duty payable. Apprehending levy of stamp duty, the SPV had refused to provide such signed copy and challenged the notice dated 21.02.2024 before the High Court of Allahabad. The High Court vide order dated 15.03.2024 has granted stay in favour of JVTPL restricting the Authority from taking any coercive actions against the SPV.
SIPL	Criminal	A complaint has been received from Smt. Benittameri, who was employed as a Paramedic with the concessionaire for the SIPL project, alleging sexual harassment by the Manager Ramesh Vadivel.
AJUHPL	Civil	The industrial dispute has been referred to the Tribunal-cum-Labour Court under Section 10(2A) of the ID Act, 1947. Summons issued for appearance on 24.11.2025 at 10:30 A.M. with relevant documents, failing which the matter may proceed ex parte. Multiple plaintiffs in this Case- 1. Rajinder Kumar 2. Sikander Singh 3. Bharat Bhushan 4. Radhey Sham 5. Ajay Kumar 6. Kuldeep Kumar 7. Bhishav Kumar 8. Amarjeet Singh 9. Neeraj Sharma 10. Vinod Kumar 11. Rakesh Kumar 12. Avneet Singh 13. Lakhan Mashi 14. Balvinder Kumar 15. Sunil Sharma 16. Vivek Kumar 17. Babu Singh 18. Kalyan Singh 19. Rakesh Verma 20. Bansi Lal 21. Raspal Singh 22. Satish Kumar 23. Shamsher Singh 24. Kuldeep Singh 25. Jagdev Singh 26. Shadi Lal 27. Sanjeev Kumar 28. Kamal Dev 29. Balbinder Singh 30. Mangal Singh 31. Sunil Kumar 32. Sh. Rakesh Singh 33. Sh. Sunil Kumar 34. Sh. Rohit Dutt

Note- The Management do not expect any liabilities to arise out of these litigations, and hence we have not factored any impact of these in our valuation.

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16. Ongoing Litigations for Direct Tax

Sl No	SPV	Assessment Year (AY)	Forum where dispute is currently pending	Amount Involved (Millions)- Income/additions made by the department	Remarks
1	JMTL	2017-18	270A	-	penalty on account of 'TP addition of INR 2,18,73,742 has been made and has been upheld by the DRP. 'Response submitted. Appeal before the ITAT has been filed.
2	JMTL	2023-24	143(3)	-	TP order dated 17 Nov 25 (Adjustment amount 23,60,464)
3	JMTL	2024-25	143(3)	-	response to last notice filed
4	JMTL	2017-18	ITAT	21.87	Matter adjourned.
5	JMTL	2016-17	154	21.21	Rectification application pending with AO
6	JMTL	2018-19	154	0.09	Rectification application pending with AO
7	JMTL	2020-21	154	0.01	Rectification application pending with AO
8	JMTL	2022-23	154	-	Rectification application passed
9	MBEL	2010-11	271(1)(c)	-	CIT(A) filed against adverse order passed by AO. Also, penalty abeyance letter filed with AO to keep proceedings in abeyance till disposal of appeal by CIT(A).
10	MBEL	2011-12	271(1)(c)	-	CIT(A) filed against adverse order passed by AO. Also, penalty abeyance letter filed with AO to keep proceedings in abeyance till disposal of appeal by CIT(A).
11	MBEL	2017-18	270A	-	Response submitted
12	MBEL	2024-25	143(3)	-	Response filed
13	MBEL	2010-11	CIT(A)	425.03	Hearing notice received. Response to be filed
14	MBEL	2011-12	CIT(A)	274.41	Hearing notice received. Response to be filed

15	MBEL	2012-13	CIT(A)	493.88	Hearing notice received. Response to be filed
16	MBEL	2013-14	ITAT	424.33	Company filed the appeal with the ITAT for non-granting of depreciation, Department filed the appeal with the ITAT on non-deduction of capital grant from the FA.
17	MBEL	2014-15	ITAT	150.26	CIT(A) passed the order and allowed the penal interest and INR 14.42Cr MMR provision. However, appeal with the ITAT is still pending for balance addition of INR 15,02,64,000.
18	MBEL	2017-18	CIT(A)	7.72	Hearing notice received. Response to be filed
19	MBEL	2014-15	154	2.46	Rectification application pending with AO
20	MBEL	2020-21	CIT(A)	-	-
21	MBEL	2020-21	154	0.45	Rectification application filed to delete the TP additions and accordingly SPV will file letter to delete penalty demand
22	WUPTL	2017-18	270A	-	Penalty under section 270A was initiated by the AO. A response has been filed requesting the AO to keep the proceedings in abeyance till the conclusion of ITAT proceedings
23	WUPTL	2018-19	270A	-	Penalty under section 270A was initiated by the AO. A response has been filed requesting the AO to keep the proceedings in abeyance till the conclusion of ITAT proceedings.
24	WUPTL	2024-25	143(3)	-	-
25	WUPTL	2017-18	ITAT	68.14	Filed adjournment with the bench. Case has been posted for hearing on 06 March 2023. PAN not to be transferred to Delhi jurisdiction as confirmed by client.

					Hearing fixed on to 06 Aug, 2025
26	WVEPL	2021-22	270A	-	Penalty under section 270A was initiated by the AO. A response has been filed requesting the AO to keep the proceedings in abeyance till the conclusion of ITAT proceedings.
27	WVEPL	2023-24	143(3)	-	TP order passed and disallowance of INR 11,28,56,542 made by TPO on interred on OCDs
28	WVEPL	2024-25	143(3)	-	response to last notice filed
29	WVEPL	2014-15	CIT(A)	39.40	CIT(A) filed, Response to last notice has been filed.
30	WVEPL	2021-22	ITAT	248.17	DRP directions received. No relief from DRP. Appeal filed with ITAT
31	WVEPL	2021-22	154	149.74	AO has not considered the losses for the year to calculate the income after additions. Rectification application filed to consider the losses and reduction in demand
32	APEL	2016-17	271(1)(C)	-	Response filed for keeping penalty in abeyance till the disposal of CIT(A).
33	APEL	2011-12	High Court	675.69	Department filed an appeal with High Court
34	APEL	2012-13	High Court	508.83	Department filed an appeal with High Court
35	APEL	2013-14	High Court	299.76	Department filed an appeal with High Court
36	APEL	2014-15	High Court	197.92	Department filed an appeal with High Court
37	APEL	2015-16	High Court	111.13	Department filed an appeal with High Court
38	APEL	2016-17	CIT(A)	73.95	CIT(A) filed
39	APEL	2017-18	CIT(A)	337.48	Submission filed on 21-06-2023
40	APEL	2018-19	High Court	493.30	Department filed an appeal with High Court

41	DATRPL	2023-24	143(3)	-	TP order dated 16 Dec 25 (Adjustment amount 40,88,61,220)
42	DATRPL	2024-25	143(3)	-	-
43	FRHL	2023-24	143(3)	-	Response to last notice filed
44	FRHL	2024-25	143(3)	-	Response to last notice filed
45	NDEPL	2024-25	143(3)	-	response to last notice filed
46	HTPL	2021-22	270A	-	Penalty under section 270A was initiated by the AO. A response has been filed requesting the AO to keep the proceedings in abeyance till the conclusion of ITAT proceedings.
47	HTPL	2022-23	270A	-	response filed. Further notice awaited
48	HTPL	2023-24	143(3)	-	TP order dated 08 Jan 26 (Adjustment amount 9,75,35,200)
49	HTPL	2021-22	ITAT	34.09	DRP directions received. No relief from DRP. Appeal with ITAT
50	HTPL	2022-23	CIT(A)	2077.69	CIT(A) filed
51	HTPL	2022-23	154	-	Losses as per return is not considered to calculate the income post additions
52	KETPL	2023-24	143(3)	-	TP order dated 31 Oct 25 (Adjustment amount 35,25,19,822)
53	KETPL	2021-22	ITAT	35.00	Further, the matter again got listed before Bench I on 21 January 2026.
54	KETPL	2021-22	CIT(A)	-	CIT(A) (along with stay of demand letter and condonation of delay) has been filed in this regard. Further, communiation is awaited in this regard.
55	MKTPL	2021-22	270A	-	Penalty under section 270A was initiated by the AO. A response has been filed requesting the AO to keep the proceedings in

					abeyance till the conclusion of ITAT proceedings.
56	MKTPL	2023-24	143(3)	-	TP order dated 19 Sept 25 (Adjustment amount 26,76,76,106)
57	MKTPL	2021-22	ITAT	52.62	DRP directions received. No relief from DRP. Appeal with ITAT
58	NKTPL	2021-22	270A	-	Penalty under section 270A was initiated by the AO. A response has been filed requesting the AO to keep the proceedings in abeyance till the conclusion of ITAT proceedings.
59	NKTPL	2023-24	143(3)	-	response to last notice filed
60	NKTPL	2021-22	ITAT	68.64	DRP directions received. No relief from DRP. Appeal with ITAT
61	SMTPL	2023-24	143(3)	-	response to last notice filed
62	KMTPL	2022-23	270A		response to be filed
63	KMTPL	2023-24	143(3)		TP order dated 31 Oct 25 (Adjustment amount 37,03,17,984)
64	KMTPL	2024-25	143(3)		Response to last notice filed
65	KMTPL	2022-23	CIT(A)	217.24	CIT(A) filed
66	LRTPL	2023-24	270A	-	Penalty under section 270A was initiated by the AO. Response to be filed
67	LRTPL	2023-24	CIT(A)	124.42	CIT(A) to be filed
68	JVTPL	2023-24	143(3)	-	TP order dated 31 Oct 25 (Adjustment amount 7,26,50,672)
69	JVTPL	2024-25	143(3)	-	Response to be filed against notice u/s 143(2)
70	GAEPL	2017-18	CIT(A)	2466.10	Submission filed, awaiting for further communication.
71	GAEPL	2022-23	CIT(A)	252.81	CIT(A) filed on 19 October 2025. Awaiting for hearing notice.
72	GAEPL	2018-19	154	0.00	SPV accepted the demand
73	GAEPL	2022-23	154	84.70	Rectification application to be filed

74	KTIPL	2024-25	143(3)	-	Response to last notice filed
75	KTIPL	2023-24	154	-	Rectification application pending with AO
76	KTIPL	2023-24	143(3)	-	TP order passed and disallowance of INR 1,52,81,418 made by TPO on interest on OCDs
77	KSPPL	2022-23	270A	-	Response submitted.
78	KSPPL	2024-25	143(3)	-	response to last notice filed
79	KSPPL	2022-23	CIT(A)	407.87	CIT(A) filed
80	KSPPL	2023-24	143(3)	-	TP order passed on 19 Sept 25 and disallowance of INR 2,03,17,040 made by TPO on intered on OCDs
81	BWHPL	2024-25	143(3)	-	Response to last notice filed
82	BWHPL	2023-24	143(3)	-	TP order passed and disallowance of INR 1,52,81,418 made by TPO on intered on OCDs
83	BWHPL	2022-23	DRP	5.90	CIT(A) filed
84	BWHPL	2023-24	CIT(A)	-	CIT(A) filed
85	BWHPL	2023-24	154	-	Rectification application pending with AO
86	MHPL	2023-24	143(3)	-	TP order dated 31 Dec 25 (Adjustment amount 99,54,107)
87	MHPL	2024-25	143(3)	-	response to last notice filed
88	MHSPL	2024-25	143(3)	-	Response to last notice filed
89	MHSPL	2023-24	143(3)	-	Response to last notice filed
90	MHSPL	2023-24	154	-	Rectification application pending with AO
91	NAMEPL	2023-24	143(3)	-	response filed
92	NAMEPL	2024-25	143(3)	-	reseponst to last notice filed
93	NAMEPL	2020-21	ITAT	316.40	ITAT filed
94	NAMEPL	2018-19	High Court	87.60	Pending
	NAMEPL	2018-19	ITAT	-	ITAT filed
95	JU	2015-16	271(1)(C)	-	- AO issued notice u/s. 274 r.w.s. 271(1) for addition made in assessment order

					- the proceeding kept in abeyance as Company preferred an appeal with CIT(A) against assessment order
96	JU	2016-17	271(1)(C)	-	- AO issued notice u/s. 274 r.w.s. 271(1) for addition made in assessment order - the proceeding kept in abeyance as Company preferred an appeal with CIT(A) against assessment order
97	JU	2017-18	148	-	Response submitted
98	JU	2018-19	CIT(A)	1597.12	Appeal filed with CiT(A)
99	JU	2017-18	CIT(A)	2316.81	Appeal filed with CiT(A)
100	JU	2016-17	CIT(A)	3281.31	Appeal filed with CiT(A)
101	JU	2015-16	CIT(A)	4744.85	Appeal filed with CiT(A)
102	JU	2014-15	ITAT	112.02	Appeal filed with ITAT
103	JU	2014-15	CIT(A)	-	Appeal filed with CiT(A)
104	JU	2013-14	CIT(A)	170.10	Appeal filed with CiT(A)
105	JU	2022-23	CIT(A)	1537.01	Appeal filed with CiT(A)
106	JU	2023-24	CIT(A)	855.05	Appeal filed with CiT(A)
107	QB	2023-24	143(3)		Clean TP order received, no further notice received for corporate tax
108	QB	2024-25	143(3)		
109	QB	2023-24	154	32.74	Assessment in process and Demand raised on account of short credit of TDS

Note 1 - On-going regular assessments of various entities are not mentioned above since the specific issues are not picked up by the department
Note 2 - The Management do not expect any liabilities to arise out of these litigations, and hence we have not factored any impact of these in our valuation.

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17. Ongoing Litigations for Indirect Tax

Sl No	Entity Name	FY	Pending Before	Regime	Demand (in INR Mn)	Issue involved
1	WUPTL	2018-19	Joint Commissioner	GST	0.11	Appeal rejected, stay application to filed with authority
2	WUPTL	2018-19	Joint Commissioner	GST	0.87	Appeal rejected, stay application to filed with authority
3	WUPTL	2016-17	Assessing office	VAT	249.41	VAT authority has passed ex-parte order. Application for re-opening the case is filed and no demand can be initiated
4	WUPTL	2017-18	First appeal	VAT	20.75	Earlier VAT authority has passed ex-parte order and raised demand of INR 2.072 crores Application for reopening of assessment is filed. Pending for disposal
5	WUPTL	2017-18	First appeal	Entry Tax	0.80	Earlier VAT authority has passed ex-parte order and raised demand of INR 8,00,000 Application for reopening of assessment is filed. Pending for disposal
6	JMTPL	2019-20	Office of Joint Commissioner	GST	1.55	Tax short paid to NHAI, Less RCM liability disclosed in 3B as compared with GSTR-1, GSTR-3B vs GSTR-1., appeal filed
7	NKTPL	2020-21	COMMERCIAL TAX OFFICER	GST	48.92	Tax not paid for the services provided to NHAI, writ filed.
8	NKTPL	2021-22	COMMERCIAL TAX OFFICER	GST	86.34	Tax not paid for the services provided to NHAI, writ filed.
9	NKTPL	2022-23	COMMERCIAL TAX OFFICER	GST	149.14	Tax not paid for the services provided to NHAI, writ filed.
10	WVEPL	2017-18	Appeal	GST	1.21	Appeal filed against the demand 27.9.2022
11	APEL	2017-18 to 2021-22	Appeal	GST	111.91	Appel is filed on 22.03.2024
12	APEL	2017-18 to	Department Appeal	GST	576.50	Department filed an appeal against the order wherein demand of INR 57 Cr dropped.

		2021-22				
13	GAEPL	2013-14	Second appeal	VAT	4.88	-SPV has received ex-party order dated 31 March 2017 imposing a tax demand of INR 2,30,00,000 which was later quashed in an appeal filed by the SPV against the said ex-party order. - Thereafter, the Deputy Commissioner passed order u/s 34(8) of UP VAT dated 3 September 2020 and imposed tax demand of INR 48.77 lakhs (i.e. WCT of INR 24,38,523 and 100% penalty on WCT amount) in relation to non-deduction WCT on utility shifting works. - SPV has filed an appeal dated 29 January 2021 against the said order imposing tax demand of INR 48.77 lakhs. - Appeal of the SPV has been reject via order dated 28 December 2022 - SPV has filed the appeal before Tribunal
14	GAEPL	2014-15	Second appeal	VAT	7.77	- SPV has received ex-parte order dated 19 March 2018 passed u/s 28(2) of UP VAT by Dy. Commissioner Commercial tax and raised demand of 2.645 Crores considering the utility shifting work as sale-purchase activity - Subsequently, SPV filed the appeal dated 19 March 2018 by paying of INR 40 lakhs under dispute before the Additional commissioner Grade-2 (Appeal) – I, Noida - Commissioner of Appeals remanded back the matter to the Deputy Commissioner for fresh assessment. - Dy. Commissioner Commercial tax passed order u/s 28(2)(i) dated 29 October 2020 (received on 17 December 2020) passed by, considering the amount received from NHAI towards utility shifting work as deemed sale and imposed a tax demand of INR 77,74,791 - SPV again preferred an appeal before Additional commissioner Grade-2 (Appeal) – I, Noida which is being rejected via order dated 28 December 2022 - SPV has filed the appeal before Tribunal. in Process

15	GAEPL	2015 -16	First appeal	VAT	2.18	- SPV has received ex-party order imposing a tax demand
16	GAEPL	2016 -17	Second appeal	VAT	0.48	- SPV has received ex-party order imposing a tax demand which was later quashed in an appeal filed by the SPV against the said ex-party order. - Dy. Commissioner Commercial tax passed order u/s 28(2)(i) dated 08 September 2021 passed by, considering the amount received from NHAI towards utility shifting work as deemed sale and imposed a tax demand of INR 4,82,164 - SPV preferred an appeal before Additional commissioner Grade-2 (Appeal) – I, Noida which is being rejected via order dated 28 December 2022 - SPV has filed the appeal before Tribunal. in Process
17	GAEPL	2017 -18	Second appeal	VAT	0.15	-SPV has received ex-party order imposing a tax demand which was later quashed In an appeal filed by the SPV against the said ex-party order. -Dy. Commissioner Commercial tax passed order u/s 28(2)(i) dated 29 June 2021 passed by, considering the amount received from NHAI towards utility shifting work as sale-purchase activity and imposed a tax demand of INR 1,53,442. -SPV preferred an appeal before Additional commissioner Grade-2 (Appeal) – I, Noida which is being rejected via order dated 28 December 2022. - SPV has filed the appeal before Tribunal. in Process
18	SMTPL	2020 -21	Commercial Tax Officer	GST	47.47	Writ has been admitted by the HC
19	SMTPL	2021 -22	Commercial Tax Officer	GST	87.17	Writ has been admitted by the HC
20	SMTPL	2022 -23	Commercial Tax Officer	GST	121.82	Writ has been admitted by the HC
21	MKTPL	2022 -23	Commercial Tax Officer	GST	3.15	The company is in process of filling an appeal with the appellate authority.

22	MKTPL	2023-24	Commercial Tax Officer	GST	2.46	The company is in process of filling an appeal with the appellate authority.
23	KETPL	2021-22	Commercial Tax Officer	GST	3.56	Appeal is yet to file
24	KETPL	2022-23	Commercial Tax Officer	GST	2.34	Appeal is yet to file
25	KETPL	2023-24	Commercial Tax Officer	GST	1.94	Appeal is yet to file
26	MSHPL	2021-22	State Tax officer	GST	7.25	Fresh order received, Appeal to be filed
27	MSHPL	2020-21		GST	-	Appeal filed
28	MSHPL	2019-20	Officer (ST)	GST	1.94	Appeal filed - Pending for order, Amnesty application filed
29	MHPL	2021-22	ASSISTANT COMMISSIONER	GST	0.04	Fresh order received, Appeal to be filed
30	KSPPL	2019-20	Deputy COMMISSIONER (ST)	GST	815.02	Appeal rejected, Writ filed with the High Court
31	KSPPL	2020-21	Assistant Commissioner	GST	0.59	Appeal filed
32	KSPPL	2019-20	ASSISTANT COMMISSIONER (ST)	GST	8.11	Appeal filed on 18/11/2024

33	KSPPL	2021-22	ASSISTANT COMMISSIONER (ST)	GST	2.08	Fresh order received, Appeal to be filed
34	KSIPL	2019-20	Commercial Tax Officer	GST	6.36	Appeal has been filed
35	KSIPL	2021-22	Commercial Tax Officer	GST	239.28	Company is in receipt of Notice in form DRC-01. Matter was originally remanded back to Adjudicating Authority for consideration factoring the CBIC circular vide DRC-07 having reference no. ZD330423147444M. Fresh SCN issued and demand of INR 9 cr proposed.
36	KSIPL	2020-21	Commercial Tax Officer	GST	8.60	Order has been passed, and demand is raised on Cos & Utility shifting, appeal filed
37	KSIPL	2019-20	Commercial Tax Officer	GST	4.65	Order has been passed, and demand is raised on Cos & Utility shifting, appeal filed
38	KSIPL	2020-21		GST	1.05	Appeal filed
39	KSIPL	2022-23	Commercial Tax Officer	GST	19.91	Appeal has been filed on 08.11.2025
40	KSIPL	2023-24	Commercial Tax Officer	GST	17.03	Appeal has been filed on 08.11.2025
41	KSIPL	2024-25	Commercial Tax Officer	GST	10.63	Appeal has been filed on 08.11.2025
42	KTIPL	2020-21	ASSISTANT COMMISSIONER (ST)	GST	860.55	10% pre deposit already made. Writ has been filed in HC
43	KTIPL	2019-20	ASSISTANT COMMISSIONER (ST)	GST	1802.44	10% pre deposit already made. Writ has been filed in HC
44	KTIPL	2018-19	ASSISTANT COMMISSIONER (ST)	GST	2.69	10% pre deposit already made. Writ has been filed in HC
45	JUHPL	July' 17-Dec' 21	Add. Director Jurisdiction	GST	2180.52	The company has filed writ application against the Show Cause Notice, the same is not considered in contingent as the writ proceedings are going on and no adverse order received.
46	QBEL	19-20	DGGI	GST	3309.85	The company has filed writ application against the Show Cause Notice, the same is not considered in contingent as the writ proceedings are going on and no adverse order received.

47	NAMEPL	2021-22	ASSISTANT COMMISSIONER (ST)	GST	0.02	Fresh order received, Appeal to be filed

Note 1 - On-going regular assessments of various entities are not mentioned above since the specific issues are not picked up by the department.

Note 2 - The Management do not expect any liabilities to arise out of these litigations, and hence we have not factored any impact of these in our valuation.

18. Other Disclosures

18.1 Details of revenue pendency including local authority rates associated with SPV and compounding charges

As given to understand by the Management, the InvIT Assets do not have material dues including local authority taxes (sum as Municipal Tax, Property Tax, etc.) pending to be payable to the government authorities with respect to the SPVs (InvIT assets).

18.2 Vulnerability to natural or induced hazards that may not have been covered in town planning/building control

As given to understand by the Management, the InvIT Assets are not vulnerable to natural or induced hazards which have not been considered in town planning/building control.

18.3 Any other matters which may affect the project or its value

There are no other matters which may affect the project or its value.

ANNEXURE B –TECHNICAL REPORTS

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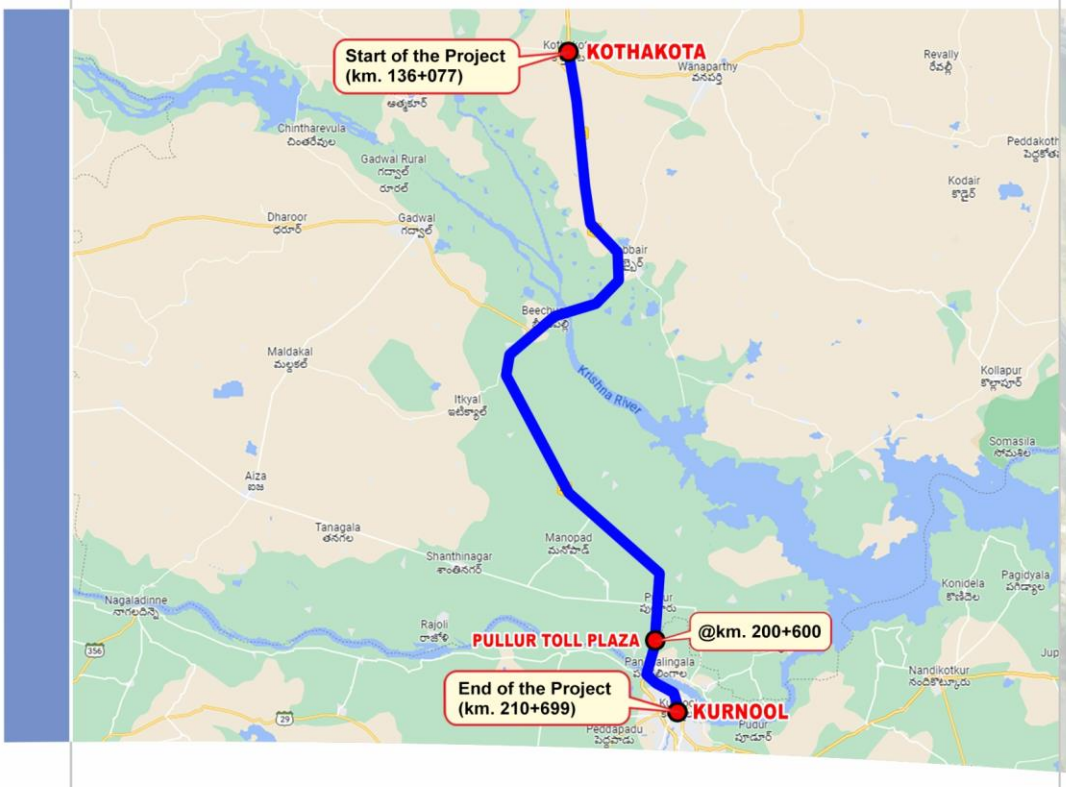
FP Project Management



Technical Due Diligence of Kothakota - Kurnool Section (from km. 136+077 to km. 210+699) of NH-44 in the State of Andhra Pradesh / Telangana on BOT (Annuity) Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	SG / MHP / VMK	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
2.9 Bypass and Realignment 6
3 Condition Assessment of Project Road 8
3.1 Pavement 8
3.1.1 Pavement Condition Survey 8
3.2 Service Road 20
3.3 Major / Minor Junction 22
3.4 Condition Survey of Structure 23
3.5 Condition Survey of Culverts 66
3.6 Drainage 69
3.7 Slope Protection 71
3.8 Road Furniture 72
3.9 Pavement Marking 73
3.10 Road Studs 74
3.11 Traffic Signage / Median Kerb painting / KM Stone 75
3.12 Highway Lighting / High Mast / Solar Blinker 80
3.13 Crash Barriers 82
3.14 Delineators 83
3.15 Pedestrian Guard Rail 84
3.16 Road Land Boundary 85

3.17 Avenue Plantation and Median Plantation 86
3.18 Toll Plaza 88
3.19 Highway Traffic Management System (HTMS) 88
3.19.1 Automatic Traffic Counter cum classifier (ATCC) 89
3.19.2 Mobile Radio communication System (MRCS) 89
3.19.3 Emergency Call Boxes (ECB) 89
3.19.4 MET System 90
3.19.5 Variable Message Signboards (VMS) 90
3.19.6 CCTV Surveillance Cameras 91
3.19.7 Adequacy of Toll Collection System and HTMS 93
3.20 Truck Layby 93
3.21 Traffic Aid Post and Medical Aid Post 94
3.22 Toilet Block 94
3.23 Bus Bays and Passenger Shelters 94
3.24 Wayside Amenities 95
3.25 Balance Work Status 95
3.26 Operation and Maintenance 96
3.26.1 O&M Contract 96
3.26.2 Organization Chart 96
3.26.3 Operation 99
3.26.4 Routine Maintenance 99
4 Pavement Investigation and Assessment 100
4.1 General 100
4.2 Axle Load and VDF 100
4.3 Design Traffic 100
4.4 Network Survey Vehicles (NSV) Survey 100
4.5 Structural Investigations 102
4.6 Test pit and Subgrade Investigation 102
4.7 Periodic Maintenance Strategy 108
5 Cost Estimates 109
5.1 General 109
5.2 Rate Assumption 109
5.3 Balance Work Cost 110
5.4 Routine O&M Cost 110
5.5 Major Maintenance Cost 112
5.6 Periodic Replacement of TMS / ATMS System 112
5.7 Escalation Assumption 112

5.8 Summary of Cost.....112

ANNEXURE.....114

ANNEXURE-I ROUTINE MAINTENANCE COST.....115

LIST OF TABLES

Table 2-1 Details of Bypass 7
Table 3-1 Summary of Structures 23
Table 3-2 Condition Survey of Major Structure 25
Table 3-3 Summary for Road Furniture Items 72
Table 3-4 Details of Truck layby 93
Table 3-5 Details of Toilet Block 94
Table 3-6 Details of Wayside Amenities 95
Table 4-1 Vehicle Damage Factor (VDF) 100
Table 4-2 MSA Calculation 100
Table 4-3 Roughness Index Summary 101
Table 4-4 Rutting Summary 101
Table 4-5 FWD Summary 102
Table 4-6 Granular Layer's Test Result Summary 103
Table 4-7 Test Results Summary of Subgrade 105
Table 4-8 Test Results of Core Cutting of Existing BT 107
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 109
Table 5-2 Summary of Unit Rates 110
Table 5-3 Summary of Operation Cost 111
Table 5-4 Escalation 112

LIST OF FIGURES

Figure 2-1 Location Map 4
Figure 2-2 Start and End of Project Road (LHS) 5
Figure 2-3 Start and End of Project Road (RHS) 5
Figure 2-4 Photographs of Bypass 7
Figure 3-1 Photographs of Pavement Condition (RHS) 9
Figure 3-2 Photographs of Pavement Condition (LHS) 14
Figure 3-3 Photographs of Service Road (RHS) 20
Figure 3-4 Photographs of Service Road (LHS) 21
Figure 3-5 Photographs of Major Junctions 22
Figure 3-6 Photographs of Minor Junctions 22
Figure 3-7 Photographs of Major Structures 52
Figure 3-8 Photographs of Box Culvert / Pipe Culvert 67
Figure 3-9 Photographs of Existing Drains (RHS) 69
Figure 3-10 Photographs of Existing Drains (LHS) 70
Figure 3-11 Photographs of Slope Protection 71
Figure 3-12 Photographs of Pavement Marking 73
Figure 3-13 Photographs of Road Studs 74
Figure 3-14 Photographs of Road Signages 75
Figure 3-15 Photographs of Street Light / Blinker 81
Figure 3-16 Photographs of Crash Barrier 82
Figure 3-17 Photographs of Delineators 84
Figure 3-18 Photographs of Pedestrian Guard Rail 85
Figure 3-19 Photographs of Road Land Boundary 86
Figure 3-20 Photographs of Plantation 86
Figure 3-21 Photographs of Truck Layby 93
Figure 3-22 Photographs of Toilet Block 94
Figure 3-23 Photographs of Bus Bay / Passenger Shelter 94
Figure 3-24 Photographs of Bus Bay / Passenger Shelter 95

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Kothakota - Kurnool section of NH-44 (Old NH-07) from km. 135+469 to km. 211+000 in the State of Andhra Pradesh (hereinafter referred as "Project Road").

M/s. Andhra Pradesh Expressway Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for operation, maintenance and transfer of Kothakota to Kurnool Section (from km. 135+469 to km. 211+000) of NH-44 or Project Road under BOT Annuity basis. The project was awarded to Concessionaire (M/s. Andhra Pradesh Expressway Ltd., a company promoted and incorporated by M/s. ILFS on March 2006 (Including construction period) by National Highway Authority of India (NHAI). Cube Highway group acquired the SPV M/s. APEL in the year March 2017 and has been operating the Project Road since 2017. The length of project as per CA is 75.531 kms while revised length as per IE document is 74.651 kms with one toll plaza at Pullur at km. 200+600.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates.

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our proposed team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader will coordinate the activities between all the key staff who will work closely together. The key is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader will act as the point of contact for Client Technical Study.

The technical study include review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **05th February 2025** to **07th February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features and overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/s. Andhra Pradesh Expressway Limited,** is a company promoted by IL&FS (infrastructure Leasing & Financial Services Limited). The Appointment Date for the project was September 2006. The concession period of the project is 20 years including construction period. The project has received PCOD on 30th September 2009 and COD on 26th September 2022. Cube Highway group acquired the SPV M/s APEL in the year March 2017 and has been operating the project road since 2017.

2.2 Location

The Project Road is part of National Highway No. 44, (Old NH-07) of Kothakota - Kurnool section in the state of Andhra Pradesh. The total project length is 75.531 kms as per CA while 74.651 kms as per IE / other documents.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

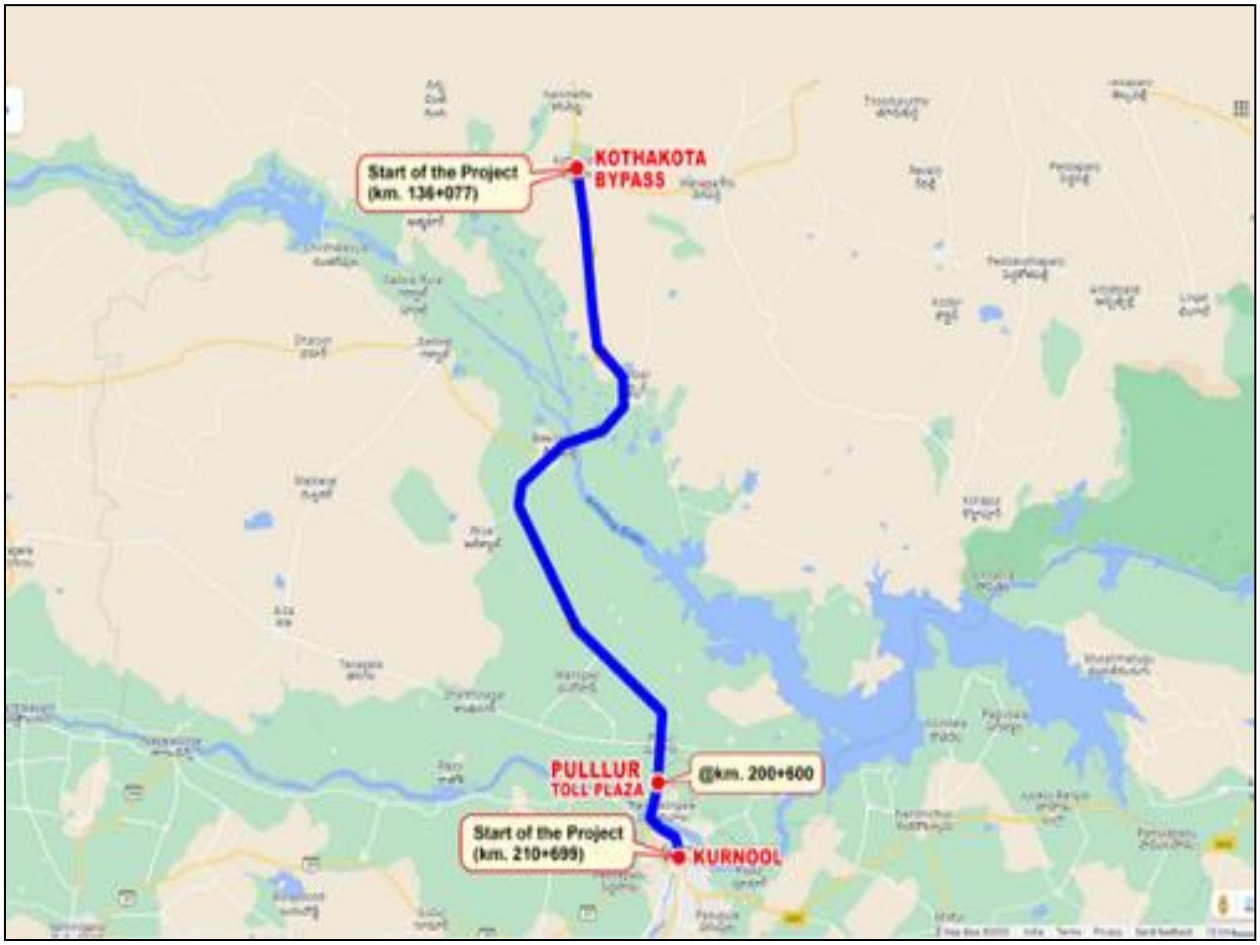


Figure 2-2 Start and End of Project Road (LHS)

Figure 2-3 Start and End of Project Road (RHS)

2.3 Climate

The climate of the region is marked by heavy rainfall with high humidity in the hot season. The Indian Meteorological Department (IMD) has identified the following four seasons in the region.

Sr. No.	Weather	Month
1	Summer	March to May
2	Monsoon	June to September
3	Post Monsoon	October to November
4	Winter	December to February
5	Maximum Temperature	42^0C
6	Minimum Temperature	17^0C
7	Average annual rainfall	943.10MM

@ 85% of the rainfall has been received during the southwest monsoon.

2.4 Terrain

The Project Road passes through plain to rolling terrain.

2.5 Abutting Land Use

The following are the various developments that are anticipated in the Four Laning of Kothakota Kurnool Section.

- Agriculture is the predominant land use along the Project Road.
- This highway reduces the travel time for getting access to Hyderabad, Bangalore Raichur and Joglamba, Gadwal which results in better industrial growth and economy.
- The tourism industry is getting a great booster as majority of people using this highway, for going to places like Joglamba, a group of temples (Heritage site) and Anjani Temple on the bank of Krishana River etc.,
- A lot of commercial establishments along the Project Road in the form of hotels and Snack Parlors may be developed in the coming future.

2.6 Right of Way

The width of the existing Right of Way (ROW) for the Project Road varies from 45.0 m to 60.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Kothakota to Kurnool (km. 135+469 to km. 211+00) has been developed as a four-lane divided carriageway with median width varies from 1.5 m to 4.5 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.

b) Operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement.

c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

2.9 Bypass and Realignment

There is a Bypass on Project Road. The total length of Bypass is 2.950 kms. The details of the bypass constructed along the Project Road is as tabulated below.

Table 2-1 Details of Bypass

Sr. No.	Name of Bypass	Chainage (km)		Length (km)
		From	To	
1	Pebbair	156+000	153+050	2.950

Figure 2-4 Photographs of Bypass

km. 153+050

km. 156+000

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.5 m with earthen shoulder of 1.0 on either side. The Project Road has median width varies from 1.5 m to 4.5 m.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

The pavement condition survey was carried out from **05th February 2025** to **07th February 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good to Fair. The summary of pavement condition survey is presented in table below:

Table 3-1 Summary of Pavement Condition

Rating	Main carriageway	
	LHS	**RHS**
Good	100%	100%
Fair	-	-
Good / Fair	-	-
Fair / Poor	-	-
Poor	-	-
Total	**100%**	**100%**

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (RHS)

km. 207+800

km. 205+900

km. 199+600

km. 193+000

km. 192+100

km. 189+550

km. 186+850

km. 185+300

km. 183+450

km. 182+600

km. 180+800

km. 180+050

km. 170+400

km. 168+200

km. 167+00

km. 165+900

km. 157+000

km. 155+850

km. 153+600

km. 150+100

km.148+700

km.144+050

km. 143+300

km. 136+200

Shoulder (RHS)

km. 207+800

km. 205+900

km. 199+600

km. 195+200

km. 193+000

km. 192+100

km. 191+250

km. 186+850

km. 185+300

km. 183+450

km. 180+800

km. 167+000

km. 157+000

km. 150+100

km. 148+700

km. 143+300

Figure 3-2 Photographs of Pavement Condition (LHS)

km. 137+00

km. 137+800

km. 141+700

km. 142+350

km. 143+450

km. 145+650

km. 149+500

km. 150+700

km. 153+900

km. 154+100

km. 157+750

km. 159+500

km. 164+650

km. 170+850

km. 73+650

km. 175+650

km. 180+450

km. 190+600

km. 192+000

km. 195+350

km. 202+500

km. 206+050

km. 209+400

km. 210+600

Shoulder (LHS)

km. 137+000

km. 141+900

km. 142+350

km. 145+650

km. 149+500

km. 150+700

km. 154+100

km. 157+750

km. 164+650

km. 173+650

km. 175+650

km. 180+450

km. 190+600

km. 192+000

km. 195+350

km. 202+500

km. 206+050

km. 209+400

3.2 Service Road

a) Existing Service Road

The width of service road is found to be 5.5 m to 7.0 m partially and it is constructed in built-up area, adjoining underpasses and flyover locations. The scope of service road as per CA is 16.012 kms whereas as per site the length is 18.932 [16.270 + 2.662 (COS)] kms.

The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service Road (RHS)

km. 210+450

km. 209+700

km. 209+300

km. 208+710

km. 207+100

km. 207+700

km. 205+00

km. 202+700

km. 202+150

km. 197+500

km. 166+200

km. 146+850

km. 140+750

Figure 3-4 Photographs of Service Road (LHS)

km. 147+050

km. 166+200

km. 196+800

km. 202+100

km. 204+900

km. 206+100

3.3 Major / Minor Junction

As per the Concession Agreement, there are 7 nos. of major junctions and 62 nos. of minor junctions. The photographs taken during the site visit are presented below.

Figure 3-5 Photographs of Major Junctions

km. 208+710

km. 165+800

km. 197+400

Figure 3-6 Photographs of Minor Junctions

km. 202+800

km. 200+200

km. 195+200

km. 194+00

km. 192+050

km. 189+500

km. 186+100

km. 183+500

km. 181+700

km. 180+00

km. 174+300

km. 170+200

km. 167+400

km. 158+650

3.4 Condition Survey of Structure

The inventory of structures including Major Bridges, Minor Bridges, ROB's, Underpasses and Culverts is presented in table as below:

Table 3-1 Summary of Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	01
Flyover	02
Major Bridges (MJB)	03
Minor Bridges (MNB)	37 + 1 (COS) = 38
Vehicular Underpass (VUP)	1 + 1 (COS) = 2
Pedestrian Underpass (PUP)	04
Culverts:	

Type of Structure	Total Number of Structures
Pipe Culverts	75
Box Culverts	72
Total	**197**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
Road Over Bridge (ROB)						
1	196+023	ROB 1 x 31.0 m	Age	New - 2 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	Steel Girders + RCC Slab Condition - Satisfactory	RCC Girders + RCC Slab Condition - Satisfactory	
			Bearing	–	–	
			Slope Protection	Stone pitching	Stone pitching	
			Nalla Bed	–	–	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available-to be clean	Available-to be clean	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
Flyover						
1	197+400	Flyover 1 x 27.0 m (Alampur)	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. Drainage arrangement not provided at approaches. Down take pipe not provided. However, weep holes & vent cleaning is
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment – RCC Wall type Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	PSC Girders + RCC Slab Condition - Satisfactory	PSC Girders + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Expansion Joint	Not Required	Not Required	required.
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
2	208+600	Flyover 1 x 20.0 + 1 x 40.0 + 1 x 20.2 m (Bellary)	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. Drainage arrangement not provided at approaches. Down take pipe not provided. However, weep holes & vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment – RCC Wall type Piers – RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Piers – RCC Piers Condition - Satisfactory	
			Super Structure	RCC Box Slab Condition - Satisfactory	RCC Box Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
Major Bridges (MJB)						
1	162+250	Major Bridge 1 x 22.1 + 1 x 33.830 + 25 x 34.0 + 1 x 28.0 + 1 x 22.0 m (Krishna River)	Age	New -3 Lane	New – 2 Lane	The structure is in sound condition. However, weep holes, expansion joints and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers – Pier + RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - Pier + RCC Walls Condition - Satisfactory	
			Super Structure	RCC Slab Footpath – Not Available Condition - Satisfactory	RCC Slab Footpath – Not Available Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Slope Protection	–	–	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
2	203+680	Major Bridge 1 x 40.0 + 14 x 38.8 + 1 x 40.4 m (Tungabhadra River)	Age	New – 3 lane	New – 2 lane	The structure is in sound condition. However, weep holes, expansion joints and vent cleaning are required.
			Foundation	Well Foundation	Well Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers – Pier Type Condition - Satisfactory	Abutment - RCC Wall type Piers – Pier + RCC Walls Condition - Satisfactory	
			Super Structure	PSC Girders + RCC Slab Footpath – Not Available Condition - Satisfactory	RCC Girders + RCC Slab Footpath – Not Available Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	-	-	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
3	210+150	Major Bridge 1 x 19.5 + 7 x 19.4 + 1 x 19.5 m (Hundri River)	Age	New - 2 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, expansion joints and vent
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers – Capsule tyle Condition - Satisfactory	Abutment - RCC Wall type Piers - Capsule tyle Condition - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Super Structure	RCC Girders + RCC Slab Footpath – Not Available Condition - Satisfactory	PSC Girders + RCC Slab Footpath – Not Available Condition - Satisfactory	cleaning are required
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	–	–	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
Minor Bridges (MNB)						
1	136+167	Minor Bridge 1 x 8.6 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	RCC Solid Slab Condition - Satisfactory	RCC Solid Slab ondition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Stable in condition	Stable in condition	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
2	138+850	Minor Bridge 1x10.2+2x20.4	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition.
			Foundation	Open Foundation	Open Foundation	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		m	Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Pile Cap Piers - RCC Piers Condition - Satisfactory	However, weep holes, vent & expansion joint cleaning is required.
			Super Structure	3 Span RCC Girder + RCC Slab Condition - Satisfactory	3 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
3	139+800	Minor Bridge 1 x 15.2 + 1 x 14.2 + 1 x 13.0 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment – RCC Wall type Piers - RCC Piers Condition - Satisfactory	
			Super Structure	5 Span RCC Solid Slab Condition - Satisfactory	2 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
4	144+075	Minor Bridge 1 x 17.6 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	2 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
5	144+826	Minor Bridge 1 x 17.4 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	2 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
6	145+900	Minor Bridge 1 x 30.5 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	
			Super Structure	2 Span RCC Solid Slab Condition - Satisfactory	2 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
7	147+681	Minor Bridge 1 x 9.40 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	3 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisf	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
8	148+734	Minor Bridge 1 x 9.40 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	
			Super Structure	1 Span RCC Solid Slab Condition - Satisfactory	3 Span RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
9	150+439	Minor Bridge 1 x 21.0 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC wall type Piers Condition - Satisfactory	
			Super Structure	1 Span RCC Girder + RCC Slab Condition - Satisfactory	2 Span RCC Solid Slab Condition - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
10	150+736	Minor Bridge 1 x 16.8 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	2 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
11	152+047	Minor Bridge 1 x 8.0 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	2 Span	1 Span	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				RCC Solid Slab Condition - Satisfactory	RCC Girder + RCC Slab Condition - Satisfactory	required.
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
12	152+795	Minor Bridge 2 x 20.6 + 1 x 10.3 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC wall type Piers Condition - Satisfactory	
			Super Structure	2 Span RCC Girder + RCC Slab Condition - Satisfactory	2 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
13	153+280	Minor Bridge 1 x 28.0 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC wall type Piers	Abutment - RCC Wall type Piers - RCC wall type Piers	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory	Condition - Satisfactory	cleaning are required.
			Super Structure	2 Span RCC Girder + RCC Slab Condition - Satisfactory	2 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
14	154+470	Minor Bridge 1 x 7.50 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Pile Cap Condition - Satisfactory	
			Super Structure	1 Span RCC Slab (Box Type) Condition - Satisfactory	1 Span RCC Slab (Box type) Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
15	157+021	Minor Bridge 1 x 8.40 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment /	Abutment - RCC Wall type	Abutment - RCC Pile Cap	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Pier	Condition - Satisfactory	Condition - Satisfactory	holes, vent cleaning is required.
			Super Structure	1 Span RCC Slab (Box Type) Condition - Satisfactory	1 Span RCC Slab (Box type) Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
16	166+690	Minor Bridge 2 x 16.0 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Pile Cap Condition - Satisfactory	
			Super Structure	2 Span RCC Girders + RCC Slab Condition - Satisfactory	2 Span RCC Girders + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
17	168+364	Minor Bridge 1 x 14.6 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment /	Abutment - RCC Wall type	Abutment - RCC Pile Cap	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Pier	Piers – wall type piers Condition - Satisfactory	Condition - Satisfactory	holes and vent cleaning are required.
			Super Structure	3 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
18	169+846	Minor Bridge 1 x 11.20 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers – wall type piers Condition - Satisfactory	Abutment - RCC Pile Cap Condition - Satisfactory	
			Super Structure	1 Span RCC Girder +RCC Slab Condition - Satisfactory	3 Span RCC Solid Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
19	170+598	Minor Bridge	Age	New - 3 Lane	New – 3 Lane	The Structure is in

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		1 x 7.40 m	Foundation	Open Foundation	Open Foundation	sound condition, However, weep holes, vent cleaning is required.
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC wall type Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Condition - Satisfactory	1 Span RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
20	170+992	Minor Bridge 1 x 16.70 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC wall type Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Condition - Satisfactory	1 Span RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
21	172+685	Minor Bridge	Age	New - 3 Lane	New – 3 Lane	The structure is in

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		1 x 28.0 m	Foundation	Open Foundation	Open Foundation	sound condition. However, weep holes and vent cleaning are required.
			Sub Structure Abutment / Pier	Abutment - RCC Wall box type Condition - Satisfactory	Abutment - RCC wall box type Condition - Satisfactory	
			Super Structure	3 Span RCC slab box type Condition - Satisfactory	3 Span RCC slab box type Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
22	174+564	Minor Bridge 1 x 6.80 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall box type Condition - Satisfactory	Abutment - RCC wall box type Condition - Satisfactory	
			Super Structure	2 Span RCC slab box type Condition - Satisfactory	1 Span RCC solid slab Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Drainage	Water grating clear	Water grating clear	
23	174+905	Minor Bridge 1 x 12.60 m	Age	New - 3 Lane	New – 2 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	3 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
24	177+708	Minor Bridge 1 x 15.30 m	Age	New - 3 Lane	New – 2 Lane	The Structure is in sound condition. However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	2 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
25	178+420	Minor Bridge 1 x 8.5 m	Age	New - 3 Lane	New – 2 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	1 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Available	Not Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
26	179+776	Minor Bridge 1 x 10.40 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	3 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Available	Not Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
27	181+419	Minor Bridge 1 x 9.30 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	3 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC Girder + RCC Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Available	Not Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
28	185+184	Minor Bridge 1 x 23.0 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	
			Super Structure	4 Span RCC Solid Slab Condition - Satisfactory	4 Span RCC solid Slab Condition - Satisfactory	
			Bearing	-	-	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Available	Not Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
29	186+478	Minor Bridge 1 x 6.8 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Wall type Piers Condition - Satisfactory	
			Super Structure	2 Span RCC Solid Slab Condition - Satisfactory	1 Span RCC solid Slab Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Available	Not Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
30	187+222	Minor Bridge 1 x 11.20 m	Age	New - 3 Lane	New –3 Lane	The structure is in sound condition. However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	2 Span RCC solid Slab	1 Span RCC solid Slab	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory	Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
31	192+545	Minor Bridge 1 x 8.20 m	Age	New - 3 Lane	New –3 Lane	The Structure is in sound condition, However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	2 Span RCC solid Slab Condition - Satisfactory	1 Span RCC solid Slab Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
32	194+608	Minor Bridge 1 x 8.0 m	Age	New - 3 Lane	New –3 Lane	The Structure is in sound condition, However, weep holes, vent cleaning is
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall type Condition - Satisfactory	
			Super Structure	1 Span	1 Span	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				RCC solid Slab (Box Type) Condition - Satisfactory	RCC solid Slab (Box Type) Condition - Satisfactory	required.
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
33	198+529	Minor Bridge 1 x 16.8 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	
			Super Structure	Single Span RCC Girders + RCC Slab Condition - Satisfactory	4-Span RCC solid slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
34	199+905	Minor Bridge 2 x 15.10 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent &
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls	Abutment - RCC Wall type Piers - RCC Walls	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory	Condition - Satisfactory	expansion joint cleaning is required.
			Super Structure	4 Span RCC Solid Slab Condition - Satisfactory	2-Span RCC Girders+ RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
35	204+411	Minor Bridge 2 x 7.8 + 1 x 22.8 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall Arch type Condition - Satisfactory	
			Super Structure	1 Span RCC Solid Slab Condition - Satisfactory	3-Span RCC solid Slab Condition - Satisfactory	
			Bearing	POT/PTFE	-	
			Slope Protection	Stone Pitching	Stone Pitching	
			Nalla Bed	Flowing Water	Flowing Water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
36	204+642	Minor Bridge 1 x 15.4 + 1 x	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition,
			Foundation	Open Foundation	Open Foundation	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		15.0 m	Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	However, weep holes, vent & expansion joint cleaning is required.
			Super Structure	2 Span RCC Girders + RCC Slab Condition - Satisfactory	1-Span RCC Girders+ RCC Slab Condition - Satisfactory	
			Bearing	POT/PTFE	POT/PTFE	
			Slope Protection	Stone Pitching	Stone Pitching	
			Nalla Bed	Standing Water	Standing Water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
37	205+752	Minor Bridge 1 x 19.8 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, expansion Joint and vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	
			Super Structure	RCC Box (Triple Cell) Condition - Satisfactory	RCC Box (Triple Cell) Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing Water	Flowing Water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
38	209+425	Minor Bridge	Age	New - 3 Lane	New – 3 Lane	The structure is in

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		1 x 48.1 m	Foundation	Open Foundation	Open Foundation	sound condition. However, weep holes, expansion joints and vent cleaning are required.
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	
			Super Structure	3- Span RCC Girders + RCC Slab Condition - Satisfactory	7 - Span RCC Girders + RCC Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing Water	Flowing Water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
Vehicular Underpass (VUP)						
1	204+750	VUP 1 x 34.0 m	Age	New - 3 Lane	New – 2 Lane	The structure is in sound condition. However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall Arch type Condition - Satisfactory	
			Super Structure	1 Span PSC Girders + RCC Slab Condition - Satisfactory	1 Span RCC Arch Solid Slab Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	Stone Pitching	Stone Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
2	207+100	VUP 12 x 5.5 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Wall Arch type Condition - Satisfactory	
			Super Structure	1 Span RCC Slab (Box Type) Condition - Satisfactory	1 Span RCC Slab (Box Type) Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Stone Pitching	Stone Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
Pedestrian Underpass (PUP)						
1	140+600	PUP 1 x 5.5 x 3.0 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Pile Cap Condition - Satisfactory	
			Super Structure	Single Span RCC Slab (Box Type) Condition - Satisfactory	Single Span RCC Slab (Box Type) Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Stone Pitching	Stone Pitching	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
2	147+000	PUP 1 x 5.5 x 3.0 m	Age	New - 3 Lane	New – 3 Lane	The Structure is in sound condition, However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Pile Cap Condition - Satisfactory	
			Super Structure	Single Span RCC Slab (Box Type) Condition - Satisfactory	Single Span RCC Slab (Box Type) Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Stone Pitching	Stone Pitching	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
3	154+470	PUP 1 x 5.5 x 3.0 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes and vent cleaning are required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Pile Cap Condition - Satisfactory	
			Super Structure	Single Span RCC Slab (Box Type) Condition - Satisfactory	Single Span RCC Slab (Box Type) Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Stone Pitching	Stone Pitching	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
4	209+600	PUP 1 x 12.0 x 3.5 m	Age	New - 3 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Condition - Satisfactory	Abutment - RCC Pile Cap Condition - Satisfactory	
			Super Structure	Single Span RCC Slab (Box Type) Condition - Satisfactory	Single Span RCC Slab (Box Type) Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Stone Pitching	Stone Pitching	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	

Figure 3-7 Photographs of Major Structures

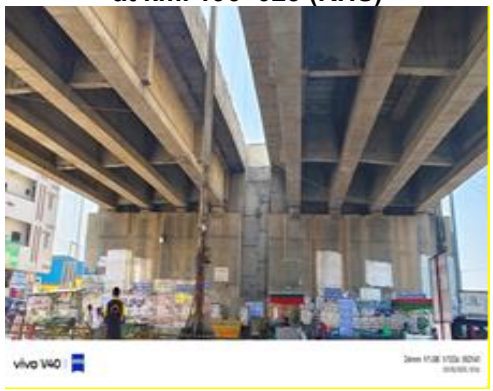
Side View of ROB at km. 196+023 (RHS)

Bottom View of ROB at km. 196+023 (RHS)

Bottom View of ROB at km. 196+023 (LHS)

Side View of ROB at km. 196+023 (LHS)

Side View of Flyover at km. 197+400 (RHS)



Bottom View of Flyover at km. 197+400 (BHS)

Wearing Coat of Flyover at km. 197+400 (LHS)

Side View of Flyover at km. 197+400 (LHS)

Side View of Flyover at km. 208+600 (RHS)

Bottom View of Flyover at km. 208+600 (BHS)

RE Panel Wall of Flyover at km. 208+600 (LHS)

Side View of Flyover at km. 208+600 (LHS)

Wearing Coat on Major Bridge at km. 162+250 (LHS)

Side View of Major Bridge at km. 162+250 (LHS)

Side View of Major Bridge at km. 162+250 (RHS)

Wearing Coat on Major Bridge at km. 162+250 (RHS)

Wearing Coat on Major Bridge at km. 203+680 (RHS)

Side View of Major Bridge at km. 203+680 (RHS)

Side View of Major Bridge at km. 203+680 (LHS)

Wearing Coat on Major Bridge at km. 203+680 (LHS)

Wearing Coat on Major Bridge at km. 210+150 (RHS)

Side View of Major Bridge at km. 210+150 (RHS)

Side View of Major Bridge at km. 210+150 (LHS)

Wearing Coat on Major Bridge at km. 210+150 (LHS)

Side View of Minor Bridge at km. 136+167 (LHS)

Side View of Minor Bridge at km. 136+167 (RHS)

Side View of Minor Bridge at km. 138+850 (LHS)

Side View of Minor Bridge at km. 138+850 (RHS)

Side View of Minor Bridge at km. 139+800 (LHS)

Side View of Minor Bridge at km. 139+800 (RHS)

Side View of Minor Bridge at km. 144+075 (LHS)

Side View of Minor Bridge at km. 144+075 (RHS)

Side View of Minor Bridge at km. 144+826 (LHS)

Side View of Minor Bridge at km. 144+826 (RHS)

Side View of Minor Bridge at km. 145+900 (LHS)

Side View of Minor Bridge at km. 145+900 (RHS)

Side View of Minor Bridge at km. 147+681 (LHS)

Side View of Minor Bridge at km. 147+681 (RHS)

Side View of Minor Bridge at km. 148+734 (LHS)

Side View of Minor Bridge at km. 148+734 (RHS)

Side View of Minor Bridge at km. 150+439 (LHS)

Side View of Minor Bridge at km. 150+439 (RHS)

Side View of Minor Bridge at km. 150+736 (LHS)

Side View of Minor Bridge at km. 150+736 (RHS)

Side View of Minor Bridge at km. 152+047 (LHS)

Side View of Minor Bridge at km. 152+047 (RHS)

Side View of Minor Bridge at km. 152+795 (LHS)

Side View of Minor Bridge at km. 152+795 (RHS)

Side View of Minor Bridge at km. 153+280 (LHS)

Side View of Minor Bridge at km. 153+280 (RHS)

Side View of Minor Bridge at km. 154+470 (LHS)

Side View of Minor Bridge at km. 154+470 (RHS)

Side View of Minor Bridge at km. 157+021 (LHS)

Side View of Minor Bridge at km. 157+021 (RHS)

Side View of Minor Bridge at km. 166+690 (LHS)

Side View of Minor Bridge at km. 166+690 (RHS)

Side View of Minor Bridge at km. 168+364 (LHS)

Side View of Minor Bridge at km. 168+364 (RHS)

Side View of Minor Bridge at km. 169+846 (RHS)

Side View of Minor Bridge at km. 169+846 (LHS)

Side View of Minor Bridge at km. 170+598 (RHS)

Side View of Minor Bridge at km. 170+598 (LHS)

Side View of Minor Bridge at km. 170+992 (RHS)

Side View of Minor Bridge at km. 170+992 (LHS)

Side View of Minor Bridge at km. 172+685 (RHS)

Side View of Minor Bridge at km. 172+685 (LHS)

Side View of Minor Bridge at km. 174+564 (RHS)

Side View of Minor Bridge at km. 174+564 (LHS)

Wearing Coat on Minor Bridge at km. 174+905 (RHS)

Side View of Minor Bridge at km. 174+905 (RHS

Side View of Minor Bridge at km. 177+708 (RHS)

Side View of Minor Bridge at km. 177+708 (LHS)

Side View of Minor Bridge at km. 178+420 (RHS)

Side View of Minor Bridge at km. 178+420 (LHS)

Side View of Minor Bridge at km. 179+776 (RHS)

Side View of Minor Bridge at km. 179+776 (LHS)

Side View of Minor Bridge at km. 181+419 (RHS)

Side View of Minor Bridge at km. 181+419 (LHS)

Side View of Minor Bridge at km. 185+184 (RHS)

Side View of Minor Bridge at km. 185+184 (LHS)

Side View of Minor Bridge at km. 186+478 (RHS)

Side View of Minor Bridge at km. 186+478 (LHS)

Side View of Minor Bridge at km. 187+222 (RHS)

Wearing Coat on Minor Bridge at km. 187+222 (LHS)

Side View of Minor Bridge at km. 192+545 (RHS)

Side View of Minor Bridge at km. 192+545 (LHS)

Side View of Minor Bridge at km. 194+608 (RHS)

Wearing Coat on Minor Bridge at km. 194+608 (LHS)

Side View of Minor Bridge at km. 198+529 (RHS)

Side View of Minor Bridge at km. 198+529 (LHS)

Side View of Minor Bridge at km. 199+905 (RHS)

Side View of Minor Bridge at km. 199+905 (LHS)

Side View of Minor Bridge at km. 204+411 (RHS)

Side View of Minor Bridge at km. 204+411 (LHS)

Side View of Minor Bridge at km. 205+752 (RHS)

Side View of Minor Bridge at km. 205+752 (LHS)

Side View of Minor Bridge at km. 209+425 (RHS)

Side View of Minor Bridge at km. 209+425 (LHS)

Wearing Coat on VUP at km. 204+750 (RHS)

Side View of VUP at km. 204+750 (RHS)

Wearing Coat on VUP at km. 204+750 (LHS)

Side View of VUP at km. 204+750 (LHS)

Side View of PUP at km. 140+600 (RHS)

Bottom View of PUP at km. 140+600 (BHS)

Side View of PUP at km. 147+000 (RHS)

Side View of PUP at km. 147+000 (LHS)

Side View of PUP at km. 154+470 (RHS)

Bottom View of PUP at km. 154+470 (BHS)

Side View of PUP at km. 209+600 (RHS)

Side View of PUP at km. 209+600 (LHS)

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 75 Nos. of pipe culverts, 72 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and at some locations, it is found blocked due to debris, drainage water or bushes, tree growth, which must be removed and cleaned before and after monsoon to clear waterway. The stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of some culverts, damaged stone pitching has been observed at culverts, which need to be addressed under routine repair work.

Figure 3-8 Photographs of Box Culvert / Pipe Culvert

Box culvert at km. 137+030 (LHS)

Box culvert at km. 137+030 (RHS)

Box culvert at km. 164+650 (LHS)

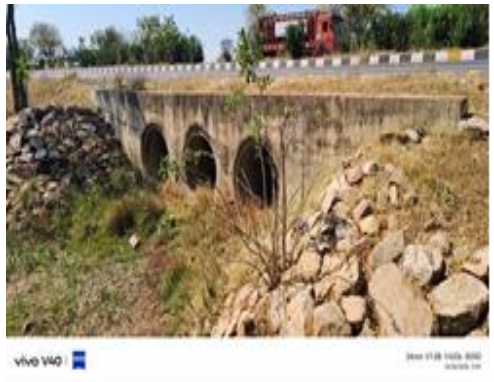
Box culvert at km. 164+650 (RHS)

Box culvert at km. 180+470 (LHS)

Box culvert at km. 180+470 (RHS)

Box culvert at km. 195+340 (LHS)

Box culvert at km. 195+340 (RHS)



HPC at km. 142+350 (LHS)

HPC at km. 142+350 (RHS)

HPC at km. 149+500 (LHS)

HPC at km. 149+500 (RHS)

HPC at km. 154+100 (LHS)

HPC at km. 154+100 (RHS)

HPC at km. 202+560 (LHS-SR)

3.6 Drainage

a) Existing Drains

Total 14.812 kms of RCC drain is provided along the Project Road and chute drains are provided at required locations. Some of the photographs taken during the site visit are presented below.

Figure 3-9 Photographs of Existing Drains (RHS)

km. 210+450

km. 210+150

km. 209+700

km. 208+600

km. 207+100

km. 205+000

km. 202+150

km. 197+500

km. 166+200

km. 146+850

km. 140+750

Figure 3-10 Photographs of Existing Drains (LHS)

km. 147+050

km. 153+400

km. 166+200

km. 196+800

km. 202+100

km. 204+900

3.7 Slope Protection

Slope protection is provided at required locations in the Project Road. During the site visit it has been observed that slope protection and chute drains are in damaged condition at few locations which required rectification. The photographs taken during the site visit are presented below.

Figure 3-11 Photographs of Slope Protection

km. 209+575 (RHS)

km. 204+390 (LHS)

km. 198+500 Median

km. 196+023 (LHS)

km. 177+680 (RHS)

km. 146+975 (LHS)

km. 166+670 (LHS)

km. 203+500 (LHS)

3.8 Road Furniture

The Concessionaire shall maintain the road furniture as per schedule-C.

a) Summary of Quantity for Road Furniture Items

The following details show the summary of quantity for road furniture items.

Table 3-3 Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Traffic Solar Blinkers	No	92
2	W-beam Crash Barriers	Rmt	43000
3	Road Studs	Nos	19000
4	Delineator	Nos	400
5	5 Km Stone	Nos	30
6	Km Stone	Nos	148

Sr. No.	Description	Unit	Quantity
7	Rainwater harvesting Structure	Nos	137
8	Warning signs	Nos	770
9	Informatory Signs	Nos	42
10	Mandatory Signs	Nos	349
11	Direction Signs	Nos	200
12	Pedestrian Guard Rail	m	16000
13	Highway Patrol Vehicles	Nos	2
14	Ambulances	Nos	1
15	Cranes	Nos	1
16	High mast	Nos	14
17	Streetlight	Nos	1201

3.9 Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is maintained by the Concessionaire. Some of the photographs of road marking are presented below.

Figure 3-12 Photographs of Pavement Marking

RHS

km. 195+200

km. 192+100

km. 183+450

km. 170+400

km. 165+900

km. 141+100

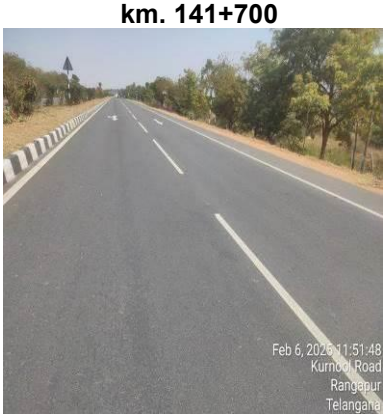
LHS

km. 137+800

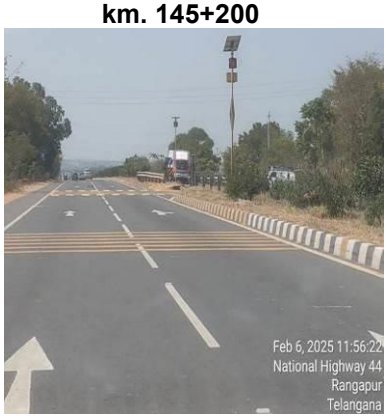
km. 141+700

km. 145+200

km. 149+600



km. 157+750



km. 159+500

3.10 Road Studs

Road studs / cat's eye for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / cat's eye has been fixed at junction, edge of paved shoulder and zebra crossing. However, at few locations some cat eye has damaged which need rectification in O&M. Some of the photographs of road studs are presented below.

Figure 3-13 Photographs of Road Studs

km. 195+200 (RHS)

km. 192+000 (RHS)

km. 183+450 (RHS)

km. 137+800 (LHS)

km. 141+900 (LHS)

km. 149+600 (LHS)

3.11 Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations. The Concessionaire needs to rectify the same. The photographs taken during the site visit are presented below.

Figure 3-14 Photographs of Road Signages

RHS

km. 210+250

km. 209+300

km. 207+100

km. 205+00

km. 204+700

km. 204+600

km. 203+950

km. 202+800

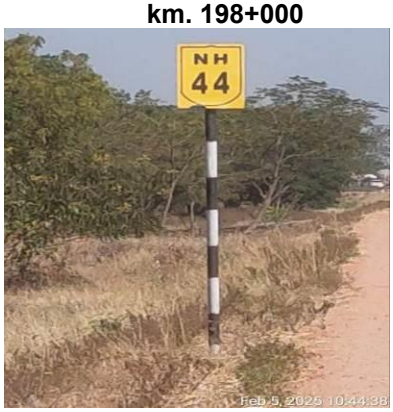
km. 200+000

km. 198+200

km. 198+000

km. 196+600

km. 196+600



km. 195+200

km. 194+450

km. 193+800

km. 190+000

km. 190+000

km. 189+500

km. 187+100

km. 186+100

km. 183+500

km. 181+700

km. 174+300

km. 169+800

km. 169+150

km. 166+200

km. 199+600

km. 193+000

km. 189+550

LHS

km. 137+720

km. 137+750

km. 138+300

km. 138+800

km. 139+200

km. 139+850

km. 141+700

km. 144+200

km. 144+950

km. 145+600

km. 146+000

km. 151+550

km. 152+050

km. 153+150

km. 156+200

km. 157+00

km. 161+700

km. 179+850

km. 180+000

km. 180+050

km. 196+350

km. 137+000

km. 142+350

km. 154+100

3.12 Highway Lighting / High Mast / Solar Blinker

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location as well as on major locations.

Solar amber blinker signals are provided at each median opening location. These lights need to maintain properly by Annuity Concessionaire. Regular maintenance work should be carried out to ensure their efficient operation.

Some of the photographs of highway lightings are presented below.

Figure 3-15 Photographs of Street Light / Blinker

km. 210+150

km. 210+000

km. 209+300

km. 207+700

km. 204+450

km. 156+200

km. 202+800

km. 200+200

km. 198+000

km. 195+200

km. 194+000

km. 189+500

3.13 Crash Barriers

Metal beam crash barriers and guard post are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided and maintained by the Concessionaire. The Concessionaire need to maintain it as per O&M contract. Some of the photographs of crash barrier are presented below.

Figure 3-16 Photographs of Crash Barrier

km. 210+200 (RHS)

km. 203+900 (LHS)

km. 196+100 (RHS)

km. 162+600 (LHS)

km. 204+480 (RHS)

km. 172+725 (LHS)

km. 154+500 (RHS)

km. 162+550 (LHS)

3.14 Delineators

The traffic delineators are provided and maintained by the Concessionaire for road users in abnormal condition of weather in the Project Road. It is maintained by the Concessionaire. Some of the photographs of delineators are presented below.

Figure 3-17 Photographs of Delineators

RHS

km. 198+000

km. 195+400

km. 195+000

km. 138+800

km. 169+150

LHS

km. 146+300

km. 153+400

km. 168+350

3.15 Pedestrian Guard Rail

The pedestrian guard rails are provided in the median between service road and main carriageway. It is maintained by the Concessionaire. However, at few locations rectification is required. Some of the photographs of PGR are presented below.

Figure 3-18 Photographs of Pedestrian Guard Rail

RHS

km. 210+150

km. 209+300

km. 202+150

km. 189+500

km. 169+800

km. 166+200

LHS

km. 166+200

km. 179+850

km. 206+100

3.16 Road Land Boundary

Road land boundary pillars are maintained in the form of fencing wall. It is maintained by Annuity Concessionaire. However, at few locations it has been damaged and can be rectified by the annuity concessionaire. Some of the photographs of road boundary pillars are presented below.

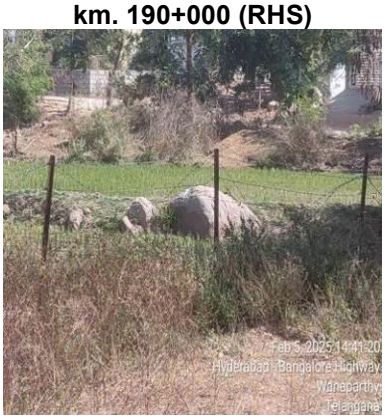
Figure 3-19 Photographs of Road Land Boundary

km. 194+450 (RHS)

km. 190+000 (RHS)

km. 181+350 (RHS)

km. 139+200 (LHS)



km. 144+200 (LHS)

km. 196+800 (LHS)

3.17 Avenue Plantation and Median Plantation

The Project Road passes through the plain and rolling terrain. Hence, in the Project Road there are in three layers avenue plantations in which one layer is done by Forest Dept. and other two as well as median plantation is done by Concessionaire. All plantations are properly maintained by O&M Concessionaire.

Some of the photographs of plantation are presented below.

Figure 3-20 Photographs of Plantation

km. 210+000

km. 204+450

km. 203+950

km. 198+200

km. 196+600

km. 193+800

km. 189+600

km. 200+00 (RHS)

km. 196+600 (RHS)

km. 195+200 (RHS)

km. 193+800 (RHS)

km. 177+550 (RHS)

km. 137+750 (LHS)

km. 139+200 (LHS)

km. 144+200 (LHS)

km. 145+600 (LHS)

km. 153+400 (LHS)

km. 156+600 (LHS)

3.18 Toll Plaza

There is one existing toll plaza at km. 200+600 near Pullur village for Project Road. As it is a HAM project, it is being operated by NHAI. The same is not in the scope of the Concessionaire.

3.19 Highway Traffic Management System (HTMS)

The Highway Traffic Management System (HTMS) installed for the Project Road is controlled by the HTMS center near the toll plaza location (km. 201+000). The HTMS is provided and being maintained as per the requirement of the Concession Agreement. The HTMS provided are listed below.

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)

Status of these systems at site are described below:

3.19.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at km. 200+200 and at km. 154+600.

3.19.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is installed but it is not in use as it has become old technology while new technology is available.

3.19.3 Emergency Call Boxes (ECB)

It is installed at 74 nos. of locations on the project length, and all are functional. It is maintained by the Concessionaire. Some of the photographs of emergency call box are presented below.

km. 196+600 (RHS)

km. 190+600 (RHS)

km. 145+600 (LHS)

km. 153+600 (LHS)

3.19.4 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at km 201+00 near O&M office in Pullu village.

3.19.5 Variable Message Signboards (VMS)

Variable message sign boards are installed at 07 locations in the Project Road. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

km. 196+600 (RHS)

km. 186+400 (RHS)

km. 146+800 (LHS)

km. 156+600 (LHS)

3.19.6 CCTV Surveillance Cameras

Surveillance Cameras are installed at 04 locations along the project corridor which are monitored through the HTMS control room.

Control Monitor

Server in Control Room

Monitoring in control Room

UPS Room

HTMS Office

CCTV at Toll Plaza

3.19.7 Adequacy of Toll Collection System and HTMS

- The Highway Traffic Management System (HTMS) installed is as per specifications required by the Authority and in working condition. A Mobile Radio system (MRCS) is installed but it is not in use.

3.20 Truck Layby

Truck Lay-Byes are provided at 4 locations. Following are the Truck Lay-Bye cum Rest Room locations.

Table 3-4 Details of Truck layby

Sr. No.	Chainage as per Site (km)	Side
1	203+100	RHS
2	151+800	RHS
3	150+100	LHS
4	201+800	LHS

Some of the photographs of road furniture are presented below.

Figure 3-21 Photographs of Truck Layby

km. 203+100 (RHS)

km. 151+800 (RHS)

km. 150+100 (LHS)

km. 201+650 (LHS)

3.21 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are available at HTMS office and in the scope of Concessionaire.

3.22 Toilet Block

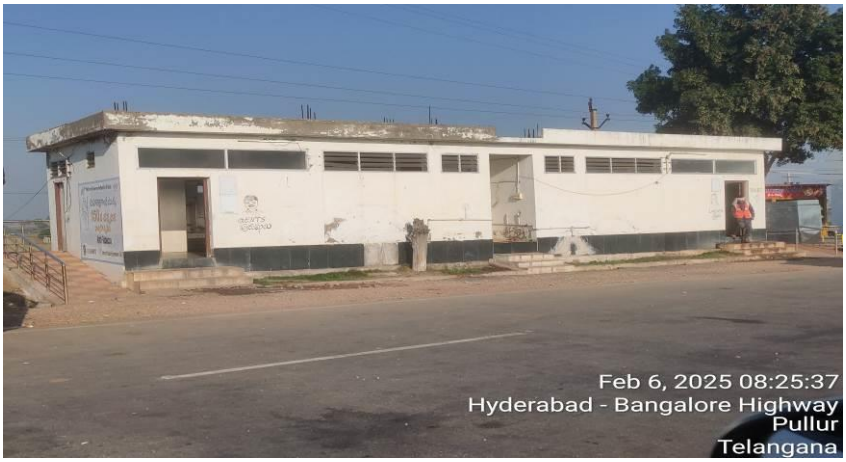
There are two nos. of toilet blocks available at site. The details are as following, and they are in Concessionaire's scope.

Table 3-5 Details of Toilet Block

Sr. No.	Chainage (km)	Side		Remarks
		LHS	RHS	
1	200+600	Yes	Yes	

Some of the photographs of Toilet Blocks are presented below.

Figure 3-22 Photographs of Toilet Block



3.23 Bus Bays and Passenger Shelters

There are 48 nos. bus bays / passenger shelters along the Project Road. All are in operational condition. Some of the photographs are presented below.

Figure 3-23 Photographs of Bus Bay / Passenger Shelter

km. 189+600 (RHS)

km. 186+100 (RHS)

km. 181+700 (RHS)

km. 137+750 (LHS)

km. 144+200 (LHS)

km. 151+700 (LHS)

Note: *As per CA only 42 nos. bus bay / passenger shelters are given.*

3.24 Wayside Amenities

There is one no. of wayside amenity along the Project Road. It is maintained by NHAI through external vendor. Details are listed below.

Table 3-6 Details of Wayside Amenities

Sr. No.	Description	Quantity in Nos.	Chainage (km)	Side
1	Wayside Amenities	01	200+200	LHS

Some of the photographs are presented below.

Figure 3-24 Photographs of Bus Bay / Passenger Shelter

3.25 Balance Work Status

Project Road has received the Final Completion Certificate on 26th September 2022 by completing all the works as mentioned in the Technical Schedules of Concession Agreement. There are no balance works to be executed as per the Concession Agreement.

3.26 Operation and Maintenance

3.26.1 O&M Contract

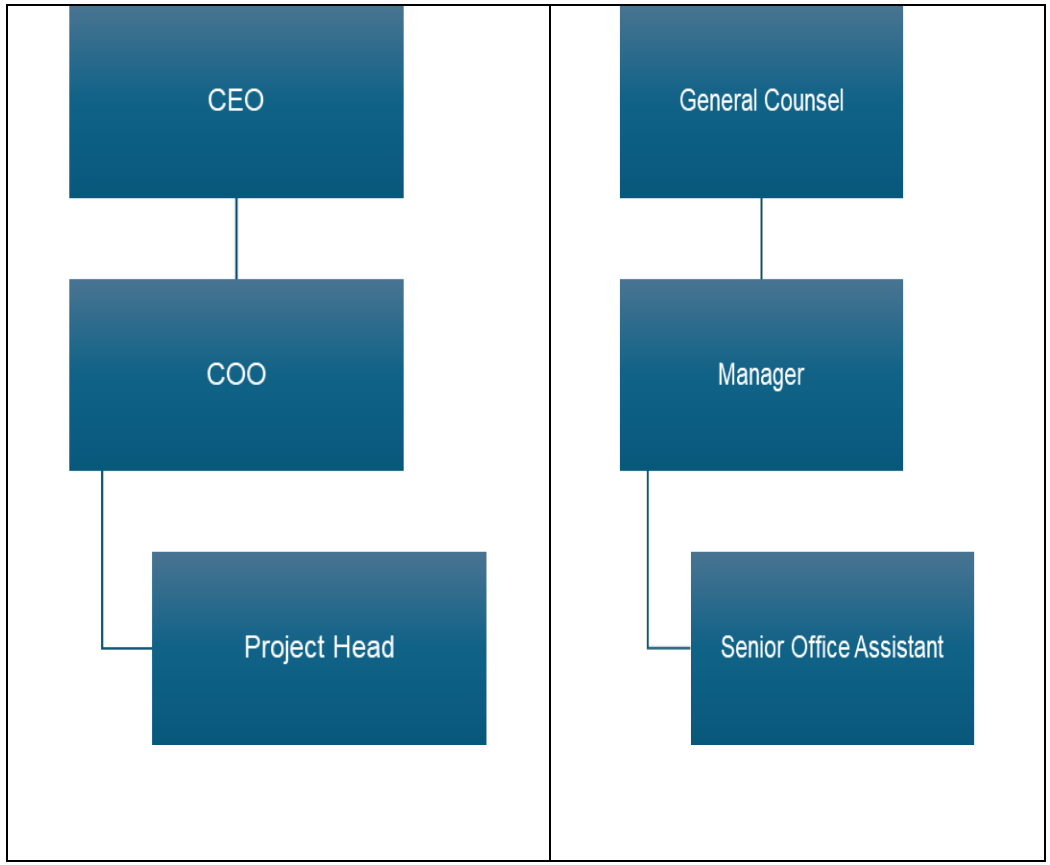
As per Clause 18 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

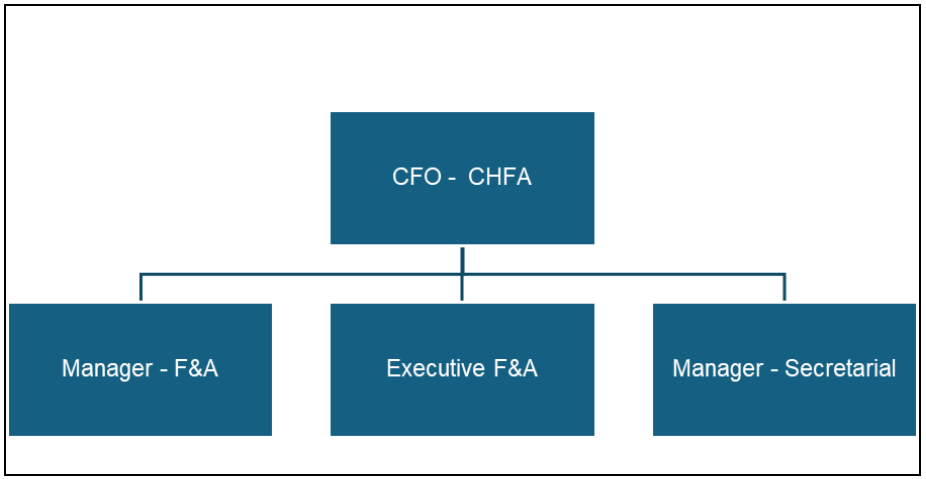
The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including Incidental management services, Security services, AMC for HTMS and AMC for DG set.

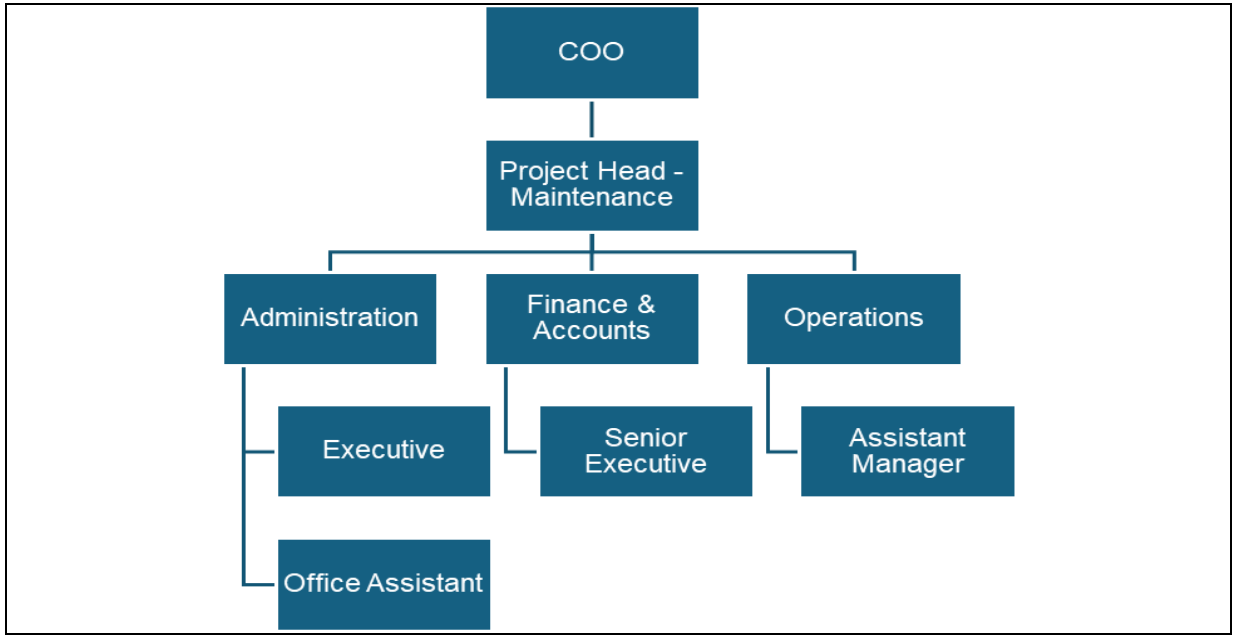
3.26.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 COO, 01 CEO, 01 General Counsel, 01 Manager, 01 Senior Office Assistant, 01 CFO, 01 Manager (F&A), 01 Executive (F&A), 01 Manager Secretarial, 01 Executive, 01 Office Assistant, 01 Sr. Executive, 01 Assistant Manager to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart




CFO - CHFA
Manager - F&A
Executive F&A
Manager - Secretarial


COO
Project Head - Maintenance
Administration
Finance & Accounts
Operations
Executive
Senior Executive
Assistant Manager
Office Assistant

3.26.3 Operation

Operation cost is comprised of manpower cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. As the Project is in Annuity mode, the Toll Operation is not in the Scope of Concessionaire. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.26.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

The project is currently under the Operation and Maintenance stage. The concession period of the project is 20 years from the Appointed / Commencement Date (i.e., 15th September 2009) including construction period of 2.5 years (910 days).

The Project received Provisional COD on 30th September 2009 and the Final COD on 26th September 2022.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 200+000 (near Pullur Toll Plaza) from 14th March 2018 to 16th March 2018. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor (VDF)

Sr. No.	Vehicle Type	Direction	
		LHS (Kothakota - Kurnool)	RHS (Kurnool - Kothakota)
1	BUS	1.140	0.919
2	LCV	1.303	0.856
3	2-Axle	2.321	2.028
4	3-Axle	4.210	3.785
5	MAV	8.414	7.176

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data (FY 2018) as provided by the Concessionaire, FY 2018 traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

Year	LHS		RHS		Remarks
	MSA	Cumulative MSA	MSA	Cumulative MSA	
2024-25	-	**-**	-	**-**	
2025-26	5.70	**5.70**	4.84	**4.84**	
2026-27	5.94	**11.64**	5.04	**9.88**	End of Concession Period as per CA

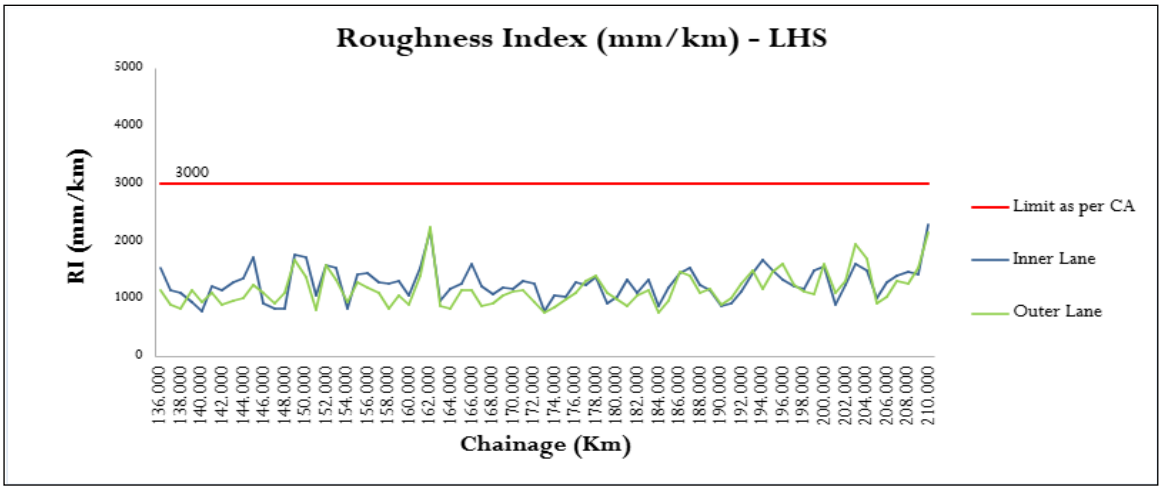
4.4 Network Survey Vehicles (NSV) Survey

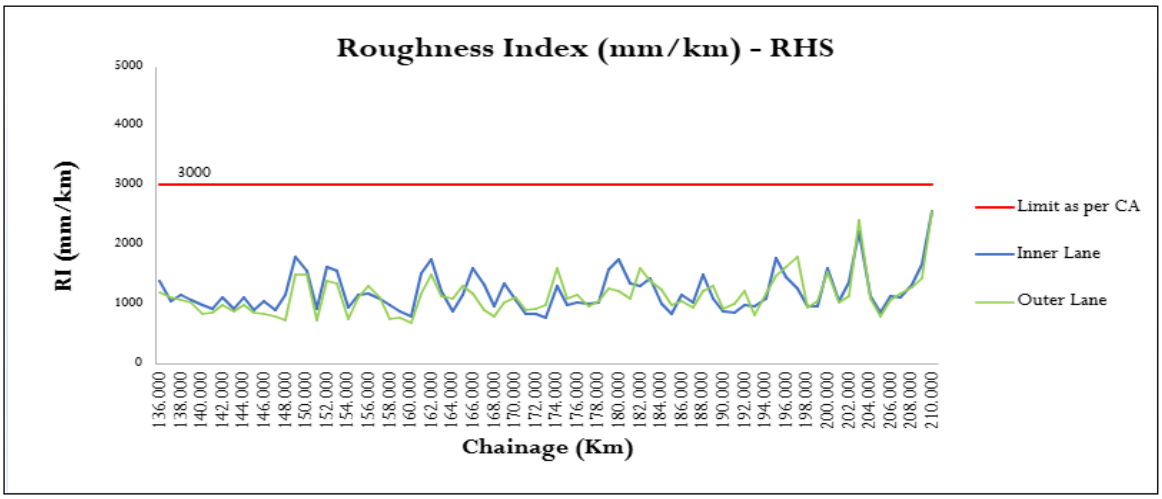
The Concessionaire has provided NSV survey data conducted in November 2024. The NSV data is used to assess the riding quality and pavement condition of project road. The summary of Roughness Index is given in table below:

Table 4-3 Roughness Index Summary

Sr. No.	Rating	Roughness Value as per CA limit (mm/km)	Length (km)			
			LHS		RHS	
			Inner Lane	Outer Lane	Inner Lane	Outer Lane
1	Good - Fair	<3000	75.000	75.000	75.000	75.000
2	Poor	>3000	-	-	-	-

The above table shows that the pavement condition is Good to Fair and does not require any immediate major maintenance.





The summary of Rutting of the Project is given in table below:

Table 4-4 Rutting Summary

Rut Depth (mm)	Length of the Road Effected with Rutting			
	LHS (km)		RHS (km)	
	Inner Lane	Outer Lane	Inner Lane	Outer Lane
< 10	74.000	75.000	74.000	75.000
> 10	1.000	-	1.000	-

4.5 Structural Investigations

Falling Weight Deflectometer survey was conducted for flexible pavement by the Concessionaire in February 2024. The summary of the FWD survey report is presented in the table below.

Table 4-5 FWD Summary

Remaining life (MSA)	Length (km)				Remark
	LHS		RHS		
	Inner Lane	Outer Lane	Inner Lane	Outer Lane	
<25	-	-	-	1.000	Strengthening Required
25-50	0.000	1.000	2.000	1.000	
50-100	5.000	5.000	7.000	4.000	
100-200	7.340	8.000	2.810	11.060	
200-300	3.000	5.000	8.000	5.954	
300-400	4.000	6.000	6.204	4.000	
400-500	10.000	7.150	13.000	2.000	
>500	43.014	40.204	33.340	43.340	
Total Length	**72.354**	**72.354**	**72.354**	**72.354**	

Note: *The survey data is not available from km. 161+800 to km. 162+200 and from km. 203+100 to km. 204+000 for all lanes.*

From the above table, it is observed that the residual life of the pavement is more than the cumulative design MSA up to FY 2027 i.e. up to end of concession period except 1 km length of RHS outer lane. However, overlay has been carried out recently which would enhance the strength and remaining life of pavement.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade, GSB layer investigation & BT Core cutting for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-6 Granular Layer's Test Result Summary

Sr. No.	1	2	3	4
Location (km)	140+000	150+000	160+000	170+000
Side (LHS/RHS)	RHS	RHS	RHS	RHS
Type of material	GSB	WMM	WMM	WMM
Gradation Sieve Size in (mm) 75	100.0	100.0	100.0	100.0
53	91.3	100.0	100.0	100.0
45	83.6	97.9	100.0	98.7
26.5	78.1	65.9	84.6	81.4
22.4	64.3	60.1	78.8	75.1
11.2	52.6	43.8	58.5	59.2
9.5	43.6	38.8	39.9	51.9
4.75	34.8	33.2	28.7	37.6
2.36	26.4	25.9	20.6	29.3
0.600	18.5	15.2	10.8	19.4
0.425	11.6	12.2	6.4	16.3
0.075	3.1	4.3	3.4	4.6
Gradation Conforming to Specifications (as per MORT&H 5th revision)	Conforming to GSB Grade-I	Conforming to WMM gradation	Conforming to WMM gradation	Conforming to WMM gradation
Gradation Conforming to Specifications (as per MORT&H 4th revision)	Conforming to GSB Grade-I	Conforming to WMM gradation	Conforming to WMM gradation	Conforming to WMM gradation
Atterberg Limits: Liquid Limit (LL) %	19	18	20	19
Plastic Limit (PL) %	NP	NP	NP	NP
Plasticity Index (PI)	NP	NP	NP	NP
Specific Gravity	2.73	2.65	2.73	2.68
Water Absorption (%)	0.35	0.41	0.55	0.44
Aggregate Impact Value (%)	13.1	11.4	13.5	11.9

8	7	6	5	Sr. No.	
210+000	200+000	194+200	180+000	Location (km)	
LHS	LHS	RHS	RHS	Side (LHS/RHS)	
WMM	WMM	GSB	GSB	Type of material	
100.0	100.0	100.0	100.0	**75**	Gradation Sieve Size in (mm)
100.0	100.0	100.0	100.0	**53**	
100.0	100.0	100.0	86.5	**45**	
69.1	83.6	82.4	68.4	**26.5**	
58.5	77.4	73.8	44.1	**22.4**	
40.9	57.8	56.9	35.4	**11.2**	
38.4	42.6	48.7	28.7	**9.5**	
36.6	27.9	38.5	21.6	**4.75**	
29.2	22.3	28.1	15.4	**2.36**	
16.7	11.4	14.3	11.7	**0.600**	
13.3	9.2	11.1	5.4	**0.425**	
0.9	2.9	1.5	2.1	**0.075**	
Conforming to WMM gradation	Conforming to WMM gradation	Conforming to GSB Grade-I	Conforming to GSB Grade-III&IV		**Gradation Conforming to Specifications (as per MORT&H 5th revision)**
Conforming to WMM gradation	Conforming to WMM gradation	Conforming to GSB Grade-I	Conforming to GSB Grade-IV&V		**Gradation Conforming to Specifications (as per MORT&H 4th revision)**
19	17	25	20	**Liquid Limit (LL) %**	**Atterberg Limits**
NP	NP	21	NP	**Plastic Limit (PL) %**	
NP	NP	4	NP	**Plasticity Index (PI)**	
2.68	2.67	2.70	2.72		**Specific Gravity**
0.67	0.41	0.61	0.43		**Water Absorption (%)**
10.9	12.3	10.3	10.7		**Aggregate Impact Value (%)**

FP Project Management

Table 4-7 Test Results Summary of Subgrade

Sr. No.	Name of Road	Location (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 micron	75 micron		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	NH-44	135+600	LHS	SM	95.4	86.9	70.6	52.8	30.6	16.4	16.4	21	NP	NP	2.07	8.3	1.93	6.5	17.9	7.1	93.2
2	NH-44	140+000	RHS	SM	94.7	79.3	64.1	50.3	31.3	15.8	15.8	19	NP	NP	2.06	8.0	1.96	7.5	18.8	0.0	95.1
3	NH-44	145+000	LHS	SM	82.6	76.7	72.0	59.8	34.1	17.1	17.1	24	NP	NP	2.07	7.9	1.93	8.5	13.9	0.0	93.2
4	NH-44	150+000	RHS	SC	99.0	88.0	72.3	51.0	33.4	23.9	23.9	36	21	15	1.96	12.7	1.84	8.0	8.1	33.3	93.9
5	NH-44	154+200	LHS	SM	95.5	83.5	70.7	54.7	29.8	17.7	17.7	25	NP	NP	2.06	9.3	1.95	7.0	16.4	0.0	94.7
6	NH-44	160+000	RHS	SP	91.1	80.3	72.4	63.1	24.7	3.4	3.4	19	NP	NP	2.10	7.7	1.90	9.0	24.0	0.0	90.5
7	NH-44	164+900	LHS	SM-SC	90.8	78.2	69.5	48.8	27.5	14.6	14.6	25	20	5	2.06	9.2	1.94	7.5	15.8	11.1	94.2
8	NH-44	170+000	RHS	SM	97.0	90.6	82.8	65.9	44.9	31.2	31.2	38	26	12	1.93	12.5	1.79	7.5	10.5	25.2	92.7

Sr. No.	Name of Road	Location (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 micron	75 micron		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
9	NH-44	174+800	LHS	SM	96.3	83.5	70.1	55.9	32.4	17.6	17.6	19	NP	NP	2.09	8.1	1.95	8.5	15.8	0.0	93.3
10	NH-44	180+000	RHS	SC	96.4	90.2	77.6	60.5	32.4	17.3	17.3	32	21	11	2.06	11.6	1.91	8.0	12.6	25.0	92.7
11	NH-44	185+000	LHS	GP-GM	60.8	45.4	38.9	30.7	18.7	8.2	8.2	20	NP	NP	2.14	7.4	1.93	7.0	25.2	0.0	90.2
12	NH-44	190+000	RHS	SM-SC	96.8	88.4	80.5	60.5	34.1	16.5	16.5	27	21	6	2.08	8.9	1.84	7.5	12.8	11.1	88.5
13	NH-44	194+200	RHS	SC	98.3	79.6	63.4	51.2	38.0	27.4	27.4	32	22	10	1.95	10.9	1.82	5.5	8.9	22.2	93.3
14	NH-44	200+000	LHS	SC	95.6	83.9	63.9	50.3	38.0	29.6	29.6	30	17	13	1.97	12.4	1.84	6.0	11.8	30.0	93.4
15	NH-44	206+200	RHS	SC	81.5	67.8	54.3	42.3	31.0	23.5	23.5	30	18	12	2.03	10.5	1.93	8.5	11.5	25.2	95.1
16	NH-44	210+000	LHS	SC	81.9	69.7	57.1	46.7	37.0	28.5	28.5	31	20	11	1.98	10.1	1.88	8.0	9.3	33.3	94.9

Table 4-8 Test Results of Core Cutting of Existing BT

Sr. No.	Chainage (Km.)	Side (LHS/RHS)	Type of Material Tested	Source of Sample	Cumulative Percentage of Passing through IS Sieve (mm)													Bitumen Content (%)	Gradation Confirming to MoRT&H 5th Revision of Table 500-17
					45	37.5	26.5	19	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.075		
1	138+300	LHS	DBM	Core	100.0	100	100.0	94.1	69.2	45.1	38.9	29.8	23.2	17.3	9.6	7.2	3.4	4.79	Conforming to DBM-II
2	140+000	RHS	BC	Test pit	100.0	100.0	100.0	96.5	72.4	64.3	50.6	42.8	31.6	22.1	17.6	11.5	5.2	5.21	75µSieve material Slightly finer side in BC-1
3	160+000	RHS	DBM	Core	100.0	100.0	97.2	90.8	67.1	46.1	38.3	29.2	22.2	17.2	10.5	7.5	4.1	4.68	Conforming to DBM-II
4	167+000	LHS	BC	Core	100.0	100.0	100.0	100.0	76.9	56.9	42.6	27.2	21.6	15.8	12.6	8.9	5.7	5.31	Conforming to BC-I
5	176+800	RHS	BC	Core	100.0	100.0	100.0	100.0	74.2	54.8	39.8	31.0	25.0	16.4	11.4	6.4	4.6	4.68	Conforming to BC-I
6	182+000	LHS	DBM	Core	100.0	100.0	100.0	93.3	76.4	57.6	45.3	34.9	24.8	18.8	10.6	9.5	3.1	4.51	Conforming to DBM-II
7	188+900	RHS	BC	Core	100.0	100	100.0	100.0	100.0	80.2	63.7	48.6	35.9	27.6	20.5	16.1	8.4	5.07	Conforming to BC-II
8	197+800	RHS	DBM	Core	100.0	100.0	100.0	93.1	78.6	64.4	52.6	40.8	31.8	25.4	19.4	13.4	6.2	4.62	Conforming to DBM-II
9	200+000	LHS	BC	Test pit	100.0	100.0	100.0	100.0	73.4	68.5	49.3	35.2	26.4	21.4	15.4	9.8	4.6	5.23	Conforming to BC-I
10	202+600	RHS	BC	Core	100.0	100.0	100.0	100.0	95.6	81.3	68.7	55.3	46.5	30.9	21.6	16.4	8.7	5.12	Conforming to BC-II
11	210+200	LHS	DBM	Core	100.0	100.0	100.0	84.6	67.2	51.8	46.5	32.7	24.6	18.4	11.3	6.3	2.4	4.70	Conforming to DBM-II

4.7 Periodic Maintenance Strategy

As per the Concession Agreement, the concession period for the Project Road ends in September 2026. The major maintenance work has been completed in FY 2024 and FY 2025. Hence, the major maintenance to be carried out up to end of concession period is **NIL**.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per Common SoR (Road & Bridge Works) 2024-25. The input rates for SoR were adopted as below:

   a. Manpower and labour: As per applicable minimum wages published by Sschedule of Rates, Government of Telangana.

   b. Bitumen: Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,132	32,985
IOC Mathura	VG-30	47,432	34,666
IOC Mathura	VG-40	50,232	36,712
IOC Haldia	VG-10	47,632	33,913
IOC Haldia	VG-30	48,432	34,482
IOC Haldia	VG-40	51,232	36,476
IOC Barauni	VG-10	48,662	34,646

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Barauni	VG-30	49,462	35,215
IOC Barauni	VG-40	52,262	37,209
CPC Chennai	VG-10	47,632	34,091
CPC Chennai	VG-30	48,432	34,663
CPC Chennai	VG-40	51,232	36,667

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from Market rate.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book / rate as per work order adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	10,171
2	Bituminous Concrete (VG-40)	Cum	11,745
3	Bituminous Concrete (VG-30)	Cum	11,124
4	Milling	Sqm	88
5	Micro-surfacing	Sqm	155
6	Kerb Re-laying	Rmt	303
7	Road Marking	Sqm	501
8	Road Studs	Nos.	179

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, balance work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best

industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services (Not in Scope)
3. Incident Management Services
4. Electricity and Diesel Charges
5. HTMS Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount for (FY 2026-27)
1	Salary and Welfare Expenses	7,392,000
2	Tolling Operations Services	-
3	Toll Security Services	7,583,076
4	Incident Management & Emergency Services	23,793,070
5	Electricity and Diesel Charges	16,610,586
6	HTMS Expenses	2,107,143
7	Office Operating Expenses	3,461,299
8	Vehicle Running Expenses	2,664,000
9	Professional Fees Expense	13,999,554
10	Community Development	2,305,438
11	Communication Expenses	199,690
12	Conveyance Expenses	399,380
13	Insurance Expense	15,291,762
14	IE Fees	3,408,087
15	Routine Maintenance Cost (Project Road)	20,375,336
16	Horticulture & ROW Maintenance	20,921,621
17	Miscellaneous including Contingency	3,968,603
	Total Cost (Rs.)	**144,480,646**

Sr. No.	Particulars	Amount for (FY 2026-27)
	Total Cost (Cr.)	**14.45**
	Per km Cost (Lakhs)	19.36

5.5 Major Maintenance Cost

As discussed in the previous chapter, there are no balance major maintenance to be executed. Hence, major maintenance cost is **NIL**.

5.6 Periodic Replacement of TMS / ATMS System

As the only 4 years of concession period is remaining, replacement of HTMS Equipment is not considered. Any defects & deficiencies / minor replacement of the equipment is considered in the maintenance cost.

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%	**2057**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in above clause.

Escalated O&M Cost (in INR Cr)

Sr. No.	Year of expense	FY26	FY27
1	Routine O&M Cost		
1.01	Salary and Welfare Expense	0.74	0.78
1.02	Tolling Operations Services	-	-
1.03	Toll Security Services	0.76	0.80
1.04	Incident Management Services	2.38	2.51
1.05	Electricity and Diesel Charges	1.66	1.75
1.06	TMS/HTMS/System Expenses	0.17	0.27
1.07	Office Operating Expenses	0.35	0.37
1.08	Vehicle Running Expenses	0.27	0.28
1.09	Professional Fees Expense	1.40	1.48
1.10	Community Development	0.23	0.24
1.11	Communication Expenses	0.02	0.02
1.12	Conveyance Expenses	0.04	0.04
1.13	Insurance Expense	1.53	1.61
1.14	IE Fees	0.34	0.36
1.15	Routine Maintenance Cost	2.04	2.15
1.16	Horticulture & ROW Maintenance	2.09	2.21
1.17	Miscellaneous and Contingency	0.40	0.42
	Subtotal of O&M Cost	**14.41**	**15.29**
2	Major Maintenance Cost	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	-
4	Balance Works Cost	-	-
	Total Cost	**14.41**	**15.29**

ANNEXURE

ANNEXURE-I ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**20,375,336**
(Inclusive of GST)	**= 2.73 lakhs per km**

National Highways / State Highways (Flexible Pavement)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	More than 4500 CVD				
				1,50,799	**1,87,234**	**Normal**	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	230722	286468	-	-	-	-
		Paved shoulder	1.70	256358	318298	66.62	-	17,077,545	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	301597	374468	-	-	-	-
		Paved shoulder	2.20	331757	411915	-	8.01		3,297,791
					TOTAL		**74.622**		**20,375,336**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.25%
	Volume (cum)			1.25
	Rs/m^3			12036
	Cost in Rupees			15,045
	ii) Patch repair	100 % Patch less	As & when required	0.25%
	Area (sqm)			25
	Rs/m^2			481
	Cost in Rupees			12,036
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			94
	Cost in Rupees			4,699
	b) Width less than 3 mm	75 % Crack Less	As & when required	0.50%
	Area (sqm)			37.5
	Rs/m^2			63
	Cost in Rupees			2,360
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			481
	Cost in Rupees			36,108
	v) Road marking	10%	Once in 10th year & @ Repaired location	17680

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**87,928**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**150,799**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	7083
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**36,436**
	GRAND TOTAL (Urban)			**187,234**

FP Project Management

Technical Due Diligence of Delhi - Agra Section of NH-2 from km. 20+500 to km. 200+000 in the State of Haryana and Uttar Pradesh on DBFOT (Toll) Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Terrain 5
2.4 Abutting Land Use 5
2.5 Right of Way 5
2.6 Existing Utilities 6
2.7 Service Road 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 9
3.3 Major / Minor Junctions 10
3.4 Condition Survey of Bridges and Major Structures 12
3.4.1 Flyovers 13
3.4.2 Two-Lane Over Pass 15
3.4.3 Vehicular Underpass 15
3.4.4 Cattle / Pedestrian Underpasses 18
3.4.5 Major Bridges 19
3.4.6 Minor Bridges 19
3.4.7 Palwal Elevated Highway (Viaduct) 21
3.4.8 Condition Survey of Culverts 22
3.5 Drainage 24
3.6 Slope Protection 24
3.7 Road Furniture 25
3.8 Avenue Plantation and Median Plantation 29

3.9 Toll Plaza 29
3.10 Lane Equipment 32
3.10.1 RFID ETC Transceiver 32
3.10.2 Lane Controller with Industrial PC 33
3.10.3 Automatic Vehicle Classification (AVC) Sensors 33
3.10.4 Automatic Lane Barrier 33
3.10.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 34
3.10.6 Incident Capture Camera (AVC Camera) 34
3.10.7 License Plate Image Capture Camera (LPIC) 35
3.10.8 Over Head Lane Signal (OHLS) 35
3.10.9 Toll Booth Equipment 35
3.10.10 Medium Speed Weigh in Motion (MSWIM) 36
3.11 Plaza Equipment 37
3.11.1 TMS Server 37
3.11.2 55” LED screen for CCTV monitoring 37
3.11.3 Workstations in Control Room, POS room 38
3.12 Truck Lay-Bye 38
3.13 Bus Bays 39
3.14 Traffic Aid Post and Medical Aid Post 39
3.15 Toilet Block 39
3.16 Balance Work Status 39
3.17 Operation and Maintenance 39
3.17.1 O&M Contract 39
3.17.2 Organization Chart 40
3.17.3 Operation 42
3.17.4 Routine Maintenance 42
4 Pavement Investigation and Assessment 43
4.1 General 43
4.2 Surveys and Investigation 43
4.2.1 Pavement Condition Survey 43
4.3 Axle Load and VDF 43
4.4 Design Traffic 44
4.5 Network Survey Vehicles (NSV) Survey 46
4.5.1 Roughness Survey 46
4.6 Falling Weight Deflectometer (FWD) Survey 47
4.7 Test pit and Subgrade Investigation 49
4.7.1 Existing Granular layers Testing 50

4.7.2 Existing Pavement Composition and Analysis 54
4.8 Periodic Maintenance Strategy 55
5 Cost Estimates 58
5.1 General 58
5.2 Rate Assumption 58
5.3 Balance Work Cost 59
5.4 Routine O&M Cost 60
5.5 Major Maintenance Cost 61
5.6 Periodic Replacement of TMS / ATMS System 61
5.7 Escalation Assumption 62
5.8 Summary of Cost 62
Annexures 64
Annexure I - Routine Maintenance Cost 65
Annexure II - Major Maintenance Cost 69

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 12
Table 3-2 Details of Condition of Flyovers 13
Table 3-3 Details of Two Lane Over Pass 15
Table 3-4 Details of Vehicular Underpass 15
Table 3-5 Details of Cattle/Pedestrian Underpass 18
Table 3-6 Details of Major Bridge 19
Table 3-7 Details of Minor Bridges on MCW 19
Table 3-8 Details of Minor Bridges on Service Road 20
Table 3-9 Details of Elevated Highway (Viaduct) 21
Table 3-10 Details of Summary for Toll Plaza Items at km. 46+000 29
Table 4-1 Summary of Pavement Condition 43
Table 4-2 Vehicle Damage Factor 44
Table 4-3 MSA Calculation 44
Table 4-4 Result of Roughness Survey for Pavement 46
Table 4-5 Summary of Subgrade Test Results 49
Table 4-6 Summary of Granular Layers Tests Results 50
Table 4-7 Summary Pavement Crust Details along the project corridor 54
Table 4-8 Major Maintenance Cycle 56
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST. 58
Table 5-2 Summary of Unit Rates 59
Table 5-3 Summary of O&M Cost 60
Table 5-4 Escalation 62

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 7
Figure 3-2 Photographs of Service Road 10
Figure 3-3 Photographs of Major Junctions 11
Figure 3-4 Photographs of Minor Junctions 11
Figure 3-5 Photographs of Flyovers 14
Figure 3-6 Photographs of Two-Lane Overpass 15
Figure 3-7 Photographs of Vehicular Underpasses 16
Figure 3-8 Photographs of Pedestrian Underpass 18
Figure 3-9 Photographs of Major bridges 19
Figure 3-10 Photographs of Minor Bridges 20
Figure 3-11 Photographs of Palwal Elevated Highway (Viaduct) 22
Figure 3-12 Photographs of Culverts 22
Figure 3-13 Photographs of Drainage 24
Figure 3-14 Photographs of Slope Protection 25
Figure 3-15 Photographs of Highway Lighting 25
Figure 3-16 Photographs of Pavement Marking 26
Figure 3-17 Photographs of Traffic Signages 27
Figure 3-18 Photographs of MBCB / Crash Barrier 28
Figure 3-19 Photographs of Pedestrian Guard Rail 28
Figure 3-20 Photographs of Avenue Plantation and Median Plantation 29
Figure 3-21 Photographs of Toll Plaza at km. 46+000 30
Figure 3-22 Photographs of Toll Plaza at km. 94+000 31
Figure 3-23 Photographs of Toll Plaza at km. 164+000 32
Figure 3-24 Photographs of Truck lay-Bye 38
Figure 3-25 Photographs of Bus Bays 39

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of The Government of India had entrusted to the Authority the development, maintenance and management of National Highway No. 2 including the section from (km. 20+500 to km. 200+000) on DBFOT (Toll) basis under NHDP Phase V in the State of Haryana and Uttar Pradesh.

DA Toll Road Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for development, maintenance, and management of the section from Delhi to Agra of NH-2 from km. 20+500 to km. 200+000 (Length - 179.500 kms) in the state of Haryana / Uttar Pradesh under NHDP Phase-V as BOT (Toll) on DBFO Pattern.

The Date of Concession Agreement is 16th July 2010. The concession period of the project is 26 years commencing from the Appointed Date including implementation period. Appointed Date of the project is 16th October 2012. Provisional Completion Certificate was issued for the length of 179.500 km on 20th May 2022 and the Commercial Operation commenced from 20th May 2022.

Sr. No.	Description	Date
1	Date of Signing the Concession Agreement	16th July 2010
2	Appointed Date	16th October 2012
3	Scheduled Project completion	15th April 2015
4	Scheduled End of Concession	15th October 2038
5	Date of issue of Provisional Completion Certificate	20th May 2022
6	Date of Commencement of Commercial Operation	20th May 2022
7	Date of Issue of Completion Certificate	Not yet Achieved

Presently the project is under operation and maintenance and the Technical Consultant has undertaken the work of assessment of operation and maintenance(O&M) cost based on site inspections and field investigations. The same is accordingly presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of project road is presented as below:

- A reconnaissance of the project road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on project road like FWD, NSV, Axle load, material investigations etc.
- Formulation of future major maintenance strategy

- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for project road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings.
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority.
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyzing the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **31st January 2025** to **4th February 2025** and the latest site visit was carried out on **6th October 2025.**

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, and overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the project road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on project road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **DA Toll Road Private Limited**, a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 16th July 2010. The Appointed Date for the project road is 16th October 2012.

2.2 Location

The site of the Six-Lane divided Project Road comprises the section of NH-2 commencing from km. 20+500 at Delhi to km. 200+000 (Approx Length is 179.500 kms) at Agra in the State of Haryana / Uttar Pradesh.

The Location Map of the project road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

Start of Project at km. 20+500

Start of Project at km. 20+500

Figure 2-3 End of Project Road

End of Project at km. 200+000

End of Project at km. 200+000

2.3 Terrain

The Project Road traverses through plain / rolling terrain.

2.4 Abutting Land Use

The Project Road passes through residential and agricultural zones.

2.5 Right of Way

The width of the existing Right of Way (ROW) for the Project Road is 60 m to 100 m except Toll Plaza area.

2.6 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.7 Service Road

The total length of service road on both sides is 204.164 kms.

2.8 Development as per Schedule-B

The Project Road from Delhi to Agra Section (from km. 20+500 to km. 200+000) of NH-2 has been developed as a Six-lane divided carriageway, service road and other arrangements. The Project Road passes through rural (agricultural) as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Tolling, operation, management, maintenance, and transfer of the Project Highway subject to and in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Total Number of Structures As per Concession Agreement	Remarks
1	O&M of Main Carriageway	179.500 km	
2	Rail Over Bridge (ROB)	08 Nos.	08 Nos. (Descope)
3	Flyover	17 Nos.	
4	Two Lane Over Pass	02 Nos.	
5	Viaduct	01 Nos.	
6	Vehicle Underpass	15 Nos.	
7	Cattle / Pedestrian Underpasses	11 Nos.	
8	Major Bridge	01 Nos.	
9	Minor Bridge	14 Nos.	
10	Culverts	203 Nos.	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The project is Six lane-carriageway of width of 17.50 m as per standard cross section including paved shoulder. Service road of 7.0 m / 5.5 m width has been provided on one side or both sides wherever required in built up area to cater for the local traffic.

The Project Road is constructed majorly with flexible pavement and partially rigid pavement. The service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

The pavement condition survey was carried out during the period from **31st January 2025 to 4th February 2025** & latest site visit for visual inspection was carried out on **6th October 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the overall pavement condition of the Project Road is found to be Good to Fair.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

Cracks at km. 22+680 (LHS)

Cracks at km. 28+600 (LHS)

Cracks a km. 30+300 (LHS)

Cracks & Wearing Out at km. 43+140 (LHS)

Craks at km. 49+270 (LHS)

Pothole at km. 47+500 (LHS)

Craks at km. 64+960 (LHS)

Repair of Cracks at km. 65+960 (RHS)

Wearing of Patch Work at km. 153+600 (LHS)

Cracks in PQC at km. 82+700 (RHS)

Descope location at Km 47+740 LHS

Descope location at Km 91+900 LHS

Poor condition of PQC at Km 82+880 RHS

Poor condition of PQC at Km 49+760 LHS

3.2 Service Road / Slip Road

The total length of servicer road is 204.164 km (LHS+RHS) with width of 7.0 / 5.5 m is constructed in built-up area and adjoining underpass locations. The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Service / Slip road at km. 43+600

Service / Slip road on the Project Road

Service Road at Km 47+900 LHS

Waterlogged Service Road at Km 76+900 RHS

3.3 Major / Minor Junctions

There are 30 nos. of major junctions and 242 nos. of minor junction along Project Road. The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Major Junctions

Major Junction at km. 25+650

Major Junction at km. 142+760

Major Junction at km. 197+400

Major Junction at km. 197+700

Figure 3-4 Photographs of Minor Junctions

Minor Junction at km. 56+630

Minor Junction at km. 139+520

3.4 Condition Survey of Bridges and Major Structures

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Sr. No.	Type of Structure	Total Number of Structures as per CA
1	Rail Over Bridge (ROB)	08 Nos.
2	Flyover	17 Nos.
3	Two Lane Over Pass	02 Nos.
4	Viaduct	01 Nos.
5	Vehicle Underpass	15 Nos.
6	Cattle / Pedestrian Underpasses	11 Nos.
7	Major Bridge	01 Nos.
8	Minor Bridge	14 Nos.
9	Culverts	203 Nos.

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

3.4.1 Flyovers

Table 3-2 Details of Condition of Flyovers

Sr. No.	Location	Chainage (km)	Proposed structural configuration	Proposed Structure arrangement	Proposed span arrangement (m)	Total width of the structure (m)	Consultant Remarks
1	NHPC Chowk	21+750	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T-Girder with RCC desk Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
2	Badhkal lake	25+650	6-lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
3	Old Faridabad Chowk	26+950	6 - Lane Flyover (VC S.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
4	Ajronda Chowk	29+500	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
5	Bata Chowk	31+100	6- Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
6	Ballabgarh	35+050	6- Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSCT Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
7	Amarpur - Palwal Intersection	58+070	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSCT-Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
8	Sohna Chowk	60+165	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
9	Hodal Chowk	88+825	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
10	Kosi City	101+300	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
11	Goverdhan Chowk	142+575	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
12	Gokul Chowk	152+000	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
13	Mathura Refinery	157+775	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSCT- Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
14	Khandari Chowk (Central Hindi Institute)	195+680	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
15	Sultan Ganj Pulia	198+415	6 - Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	25.2	Structure seems to be in good condition; cleaning of weepholes is required
16	Water Works Chowk	199+800	4- Lane Flyover (VC 5.5m)	PSC Box Girder for Central span and Precast PSC T Girder with RCC deck Slab for end Spans with Circular Pier and Pile/Open Foundation	26+46+26	18.2	Structure seems to be in good condition; cleaning of weepholes is required

Figure 3-5 Photographs of Flyovers

Flyover at km. 21+750

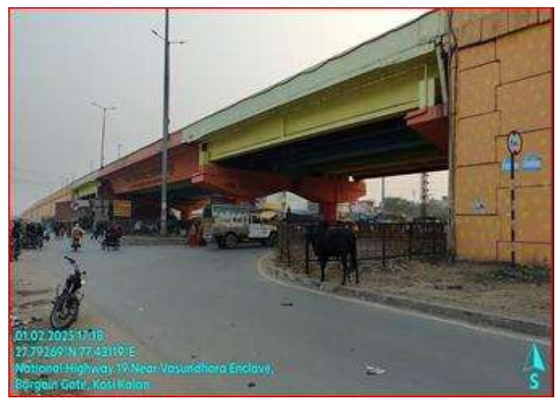
Flyover at km. 26+950

Flyover at km. 29+950

Flyover at km. 31+100

Flyover at km. 35+050

Flyover at km. 88+825



Flyover at km. 101+500

Flyover at km. 142+780

Flyover at km. 152+100

Flyover at km. 157+775

Flyover at km. 195+680

Flyover at km. 198+620

3.4.2 Two-Lane Over Pass

Table 3-3 Details of Two Lane Over Pass

Sr. No.	Location	Chainage (km)	Proposed structural configuration	Proposed Structure type	Proposed span arrangement (m)	Total width of the structure (m)
1	Tarapur Jn.	64+200	2 – Lane Overpass	Precast PSCT-Girder and RCC deck slab with Circular Pier and Pile Foundation	2 x 30	8.5
2	Maathura Cantt - Bharatpur	141+500	2 – Lane Overpass	Precast PSCT-Girder and RCC deck slab with Circular Pier and Pile Foundation	2 x 30	8.5
3	Gwalior Bypass	176+800	2 – Lane Overpass	Precast PSCT-Girder and RCC deck slab with Circular Pier and Pile Foundation	2 x 30	8.5

Figure 3-6 Photographs of Two-Lane Overpass

Overpass at km. 64+200

Overpass at km. 141+500

Overpass at km. 176+800

3.4.3 Vehicular Underpass

Table 3-4 Details of Vehicular Underpass

Sr. No.	Design Chainage (km)	Proposed structural configuration	Proposed Structure type	Proposed span arrangement (m)	Total width of the structure (m)	Consultant's Remarks
1	23+660	6 lane Structure (VC 5.5 m)	RCC T Girder and Deck Slab with circular pier and open foundation	20x1	25.2	Structure seems to be in good condition
2	32+150					Structure seems to be in good condition
3	38+200					Structure seems to be in good condition
4	40+960					Structure seems to be in good condition
5	54+435					Structure seems to be in good condition
6	63+170					Structure seems to be in good condition
7	68+125					Structure seems to be in good condition
8	71+750					Structure seems to be in good condition
9	77+300					Structure seems to be in good condition
10	83+270					Structure seems to be in good condition
11	112+100					Structure seems to be in good condition
12	112+700					Structure seems to be in good condition
13	118+800					Structure seems to be in good condition

Sr. No.	Design Chainage (km)	Proposed structural configuration	Proposed Structure type	Proposed span arrangement (m)	Total width of the structure (m)	Consultant's Remarks
14	122+750					Structure seems to be in good condition
15	125+900					Structure seems to be in good condition
16	128+068					Structure seems to be in good condition
17	134+555					Structure seems to be in good condition
18	139+335					Structure seems to be in good condition
19	145+100					Structure seems to be in good condition
20	167+600					Structure seems to be in good condition
21	175+730					Structure seems to be in good condition
22	183+527					Structure seems to be in good condition
23	189+900					Structure seems to be in good condition

Figure 3-7 Photographs of Vehicular Underpasses

VUP at km. 23+660 (COS)

VUP at km. 32+150

VUP at km. 38+200

VUP at km. 40+960

VUP at km. 54+435

VUP at km. 63+170

VUP at km. 65+200

VUP at km. 72+500

VUP at km. 77+300

VUP at km. 83+270

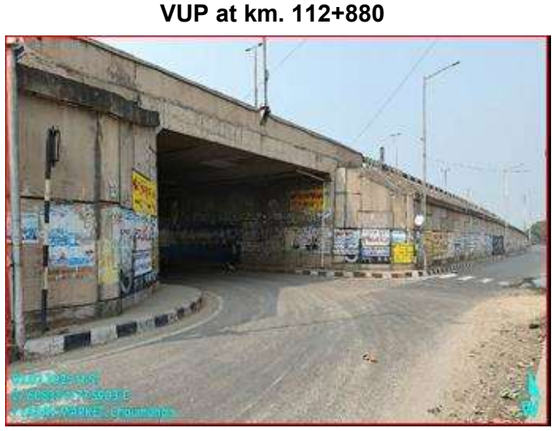
VUP at km. 112+100

VUP at km. 112+880

VUP at km. 119+020

VUP at km. 123+060 (COS)

VUP at km. 126+350



VUP at km. 128+068

VUP at km. 134+760

VUP at km. 139+520

VUP at km. 175+880

VUP at km. 183+640

3.4.4 Cattle / Pedestrian Underpasses

Table 3-5 Details of Cattle/Pedestrian Underpass

Sr. No.	Chainage (km)	Location	Proposed Structure configuration	Proposed Structure type	Proposed span arrangement (m) (Clear Width X Clear Height)	Total width of the structure (m)	Remarks
1	63+170	Tikribrahman	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
2	87+875	School area, Hodal	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
3	90+625	Haryana Roadways Bus Stand, Hodal	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
4	107+630	School area Dautana village	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
5	116+500	Nanglagiri	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
6	122+750	Akrror Inter College	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
7	137+370	K D Dental College and Hospital	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
8	154+500	Baad village	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
9	170+460	Bheem Nagar	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition
10	172+990	Churmura-Siyarpur village area	6 – Lane Structure (VC 2.5m)	Single Cell Box Structure	4 x 2.5	25.2	Structure in good condition

Figure 3-8 Photographs of Pedestrian Underpass

PUP at km. 63+170

PUP at km. 87+875

PUP at km. 90+625

PUP at km. 107+630

PUP at km. 116+700

PUP at km. 137+242

PUP at km. 154+400

PUP at km. 170+700

3.4.5 Major Bridges

Table 3-6 Details of Major Bridge

Sr. No.	Design Chainage (km)	Proposed Structure type	Proposed span arrangement	Total width of the structure	Consultant's Remarks
1	91+900	Pile Foundation, RCC Abutments with Front Counter forts, RCC circular pier with RCC cap & RCC beam and Slab	1 x 34 + 1 x 32	7.90 m	As informed by the Concessionaire the widening work which is currently under progress is not in their scope. LHS side median and crash barrier not in good condition; need to be repaired

Figure 3-9 Photographs of Major bridges

Major Bridge at km. 91+900

Major Bridge at km. 91+900

3.4.6 Minor Bridges

Table 3-7 Details of Minor Bridges on MCW

Sr. No.	Chainage (km)	Width	Span arrangement & Total length (m)	Type of structure		
				Foundation	Sub-structure	Super-Structure
1	21+860	LHS=8.750 m. RHS=8.750 m.	1X20.30m	Open	Brick masonry wall type abutment with RCC cap	RCC T-Beam & slab
2	26+065	LHS=7.600m. RHS=9.900m.	4X2.1m	Open	Brick masonry wall type abutment	RCC T-beam & slab
3	34+530	LHS=8.900 m. RHS=8.300m.	1X4.6m+3X5.0m +1X4.6m	Open	Brick masonry wall type abutment and Pire	RCC slab
4	54+100	LHS=9.450 m. RHS=9.550 m.	1x7m	Open	Brick masonry wall type	RCC slab
5	84+365	LHS=6.650 m. RHS=6.750 m.	1X17.1m+1X16.6m +1X14.75m	Open	Brick Masonry type abutment and RCC Wall type pier	RCC T-beam & slab
6	92+960	LHS=10.200 m. RHS=8.600 m.	1X8.1m+1X8.3m	Open	Brick masonry wall type on RHS (old). RCC all type on LHS (new)	RCC slab
7	104+085	LHS=7.700 m. RHS=7.700 m.	1X10.2m+1X16.5m+ 1X10.2m	Open	Brick wall masonry wall type abutment and RCC pier, circular in cross-section	RCC T-beam & slab

Sr. No.	Chainage (km)	Width	Span arrangement & Total length (m)	Type of structure		
				Foundation	Sub-structure	Super-Structure
8	104+480	LHS=7.800 m. RHS=7.700 m.	1X17.2m	Open	Brick Masonry wall type abutment	RCC T-beam & slab
9	125+490	LHS=8.850 m. RHS=9.700 m.	Left c/way bridge (2 span brick masonry arch bridge) 2x3.15m, Right c/way bridge (RCC box bridge) 1x6.3m (clear span)	Open	For Left side Brick masonry wall type abutment and Left side RCC Box structure	For Left side Brick masonry arch For Right side Single cell RCC box
10	141+600	LHS=9.700 m. RHS=9.700 m.	1X7.6m	Open	Brick Masonry wall type abutment (old bridge), RCC Wall type abutment (new bridge)	RCC Slab type
11	154+965	LHS=10.700m RHS=11.900m	1x13.2m	Open	Brick Wall masonry (LHS) RCC wall type (RHS)	RCC T-beam & slab
12	171+091	LHS=8.000m. RHS=8.500 m.	Left c/way bridge 1x46.7m, Right c/way bridge 1x3.5m+1x40.5m+1x3.5m	Not Visible	RCC wall type abutment	For Left Side PSC box girder For Right Side Concrete girder
13	179+110	LHS=10.400 m. RHS=10.00 m.	1X7.0m LHS, 1X7.0m RHS.	Open	Stone masonry wall type abutment supporting arch on LHS. RCC wall type on RHS	Brick Arch on LHS and RCC slab on RHS
14	198+552	LHS=11.200 m RHS=11.100 m	1x7.1m	Open	RCC Box type abutment	RCC box

Table 3-8 Details of Minor Bridges on Service Road

Sr. No.	Name of Bridge	Chainage (km)	Type of crossing	Proposed Structure configuration	Proposed Structure type	Proposed span arrangement (m)	Total width of the structure (m)
1	Near NHPC	21+860	Nala	New 2 Lane (Both Side)	RCC T-beam & Slab	1x20.30 m.	9.5
2	Near Swastik Steel Industry	26+065	Nala	New 2 Lane (Both Side)	RCC T-beam & Slab	4x2.1 m.	9.5
3		34+530	Nala	New 2 Lane (Both Side)	RCC Slab	1x4.6+3x5.0+1x4.6 m.	9.5
4		54+100	Nala	New 2 Lane (Both Side)	RCC Slab	1x7.0 m.	9.5
5	Agra Canal Bridge	104+085	Canal	New 2 Lane (Both Side)	RCC T-beam & Slab	1x10.2+1x16.5+1x10.2 m.	9.5
6	Sarah Rajwale	104+480	Nala	New 2 Lane (Both Side)	RCC T-beam & Slab	1x17.2 m.	9.5
7	Ganeshra Nala	141+600	Nala	New 2 Lane (Both Side)	RCC Slab	1x7.6 m.	9.5
8		198+552	Nala	New 2 Lane (Both Side)	RCC Box	1x7.1 m.	9.5

Figure 3-10 Photographs of Minor Bridges

MNB at km. 21+860

MNB at km. 26+065

MNB at km. 34+530

MNB at km. 54+600

MNB at km. 84+365

MNB at km. 92+960

MNB at km. 104+085

MNB at km. 104+480

MNB at km. 124+700

MNB at km. 154+965

MNB at km. 171+091

MNB at km. 179+380

3.4.7 Palwal Elevated Highway (Viaduct)

Table 3-9 Details of Elevated Highway (Viaduct)

The Structure was initially Proposed at Sikandra Area of Agra but due to some Archaeological issues the Viaduct has been now constructed at Palwal considering the Traffic in the Town.

Sr. No.	Location	Chainage From (km)	Chainage To (km)	Proposed Structure configuration	Proposed span arrangement (m)	Proposed Structure type	Total width of the structure (m)
1	Palwal	57+300	60+800	4 Lane Viaduct (VC 8.0m)	164x30	Precast PSC T-Girder with RCC deck Slab with Circular Pier and Pile Foundation	18.0

Figure 3-11 Photographs of Palwal Elevated Highway (Viaduct)

Palwal Elevated Highway

Palwal Elevated Highway

Palwal Elevated Highway

Palwal Elevated Highway

3.4.8 Condition Survey of Culverts

There are 203 cross-drainage structures which includes slab culverts, hume pipe culverts and box culverts at various locations along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

In most of culverts, the waterway is clear. However, in urban areas and at few rural locations it is found blocked due to debris, drainage water or bushes, tree growth, which need to be removed by the Concessionaire.

Figure 3-12 Photographs of Culverts

Slab Culvert at km. 34+820

Slab Culvert at km. 48+600

Slab Culvert at km. 78+430

Box Culvert at km. 54+100

Box Culvert at km. 95+520

Box Culvert at km. 106+875

Box Culvert at km. 112+120

Box Culvert at km. 112+850

Box Culvert at km. 122+220

Box Culvert at km. 129+300

Box Culvert at km. 131+100

Box Culvert at km. 173+635

3.5 Drainage

There are of existing drain on both side of the project road as per Concession Agreement. However, RCC drains are additionally constructed in built-up areas and locations where service roads are provided.

The photographs taken during site visit is presented as below:

Figure 3-13 Photographs of Drainage

RCC Drain at Service Road

RCC Drain at Service Road

RCC Drain at Service Road

RCC Drain at Service Road

3.6 Slope Protection

The entire Project Road passes through the ground level. Hence, slope protection and chute drains are not found on Project Road. Few of the slope protection found at underpass approaches which are in fair condition. The photographs taken during site visit are presented as below:

Figure 3-14 Photographs of Slope Protection

Slope Protection at the Structure approach

Earthen Shoulder parallel to ground level

3.7 Road Furniture

The Concessionaire has provided road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. Details of the items are provided below.

a) Highway Lighting along Project Road

Highway lighting is provided at Major Bridge, Underpasses, Flyovers, Toll Plaza, ROBs and built-up locations. High mast lighting is provided at Toll Plaza and Major Junction location. Highway lighting is also provided at approaches of Underpass and Flyovers. Some of the photographs of highway lighting are presented below.

Figure 3-15 Photographs of Highway Lighting

Highway Lighting at Palwal

Highway Lighting at km. 100+720

b) Pavement Marking

Pavement marking for the Project Road is done as per the design standard. Pavement marking is faded at some locations which need to be rectified by the Concessionaire.

Some of the photographs of road marking are presented below.

Figure 3-16 Photographs of Pavement Marking

Pavement Marking on Project Road

Pavement Marking on Project Road

c) Road Studs / Cat's eyes

Road studs / Cat's eyes for the Project Road are provided as per the design standards. Cat's eyes have been fixed at junction and zebra crossings. However, during site visit it has not been visually seen. Maybe it has damaged which will be rectified by the Concessionaire.

Some of the photographs of road studs are presented below.

d) Traffic Signages

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standard.

The height, lateral clearance, location and installation are as per design standard. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of project highway and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb found to be not in proper condition at few locations which need to be rectified by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-17 Photographs of Traffic Signages

Overhead sign board

Chevron sign board

Kilometer Stone

Lane Division Sign board

e) Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of metal beam crash barriers are presented below.

Figure 3-18 Photographs of MBCB / Crash Barrier

Concrete crash barrier

Metal beam crash barrier

f) Pedestrian Guard Rail

The pedestrian guard rails are provided in the median in the built-up sections. It is maintained by the Concessionaire.

Some of the photographs of pedestrian guard rails are presented below.

Figure 3-19 Photographs of Pedestrian Guard Rail

Pedestrian guard rails

Pedestrian guard rails

3.8 Avenue Plantation and Median Plantation

Avenue plantations and median plantations are done along the project length as per IRC specification except built-up locations. Some of the photographs of plantation are presented below.

Figure 3-20 Photographs of Avenue Plantation and Median Plantation

Median Plantation

Median Plantation

Avenue Plantation

Avenue Plantation

3.9 Toll Plaza

As per the Concession Agreement, on Project Road there are 3 nos. of toll plazas i.e. at km. 46+000, km. 94+000 and at km. 164+000 with the following infrastructure.

Table 3-10 Details of Summary for Toll Plaza Items at km. 46+000

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 46+000
2	Number of Tolling Lanes	24 lanes for toll operation for vehicles
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	One in each direction
5	Number of Toll Booths	24

Sr. No.	Particulars	Details
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Static Weigh Bridge	Yes
10	Availability of Loading / Unloading Facility for Overloaded Vehicles	Yes
11	Storage facility for Overloaded Material	No
12	High mast Light	Yes
13	Streetlight	Yes. 20 nos, 10 each in both direction
14	User Fee Boards	
15	Cantilever / Gantry Boards	Yes
16	Automatic boom barrier	Yes

Figure 3-21 Photographs of Toll Plaza at km. 46+000

Admin Building at km. 46+000

Toll Plaza at km. 46+000

Details of Summary for Toll Plaza Items at km. 94+000

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 94+000
2	Number of Tolling Lanes	16 lanes for toll operation for vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	One in each direction
5	Number of Toll Booths	16
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Static Weigh Bridge	Yes
10	Availability of Loading / Unloading Facility for Overloaded Vehicles	Yes
11	Storage facility for Overloaded Material	No
12	High mast Light	Yes
13	Streetlight	Yes. 20 no’s, 10 each in both direction
14	User Fee Boards	
15	Cantilever / Gantry Boards	Yes
16	Automatic boom barrier	Yes

Figure 3-22 Photographs of Toll Plaza at km. 94+000

Toll Plaza at km. 94+000

Details of Summary for Toll Plaza Items at km. 164+000

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 164+000,
2	Number of Tolling Lanes	14 lanes for toll operation for vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	One in each direction
5	Number of Toll Booths	13
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Static Weigh Bridge	Yes
10	Availability of Loading / Unloading Facility for Overloaded Vehicles	Yes
11	Storage facility for Overloaded Material	No
12	High mast Light	Yes
13	Streetlight	Yes 20 no's, 10 each in both direction
14	User Fee Boards	
15	Cantilever / Gantry Boards	Yes
16	Automatic boom barrier	Yes

Figure 3-23 Photographs of Toll Plaza at km. 164+000

Admin Building at Toll Plaza at km. 164+000

Toll Plaza at km. 164+000

3.10 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.10.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 8 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID ETC Transceiver

3.10.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.10.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

3.10.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.10.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

3.10.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.10.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

3.10.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

3.10.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and types of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras is provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.10.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at Toll Plaza

3.11 Plaza Equipment

3.11.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

3.11.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The Toll Plaza Manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.11.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.12 Truck Lay-Bye

There are 04 nos. of Truck lay along the Project Road. Some of the photographs of truck lay-bye are presented below.

Figure 3-24 Photographs of Truck lay-Bye

3.13 Bus Bays

There are 23 nos. bus bays along the project road. Some photographs taken during the site visit are presented below.

Figure 3-25 Photographs of Bus Bays

3.14 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post have been constructed at the site and the same are maintained by the Concessionaire.

3.15 Toilet Block

There are two nos. of toilet blocks on the Project Road and the same are maintained by the Concessionaire.

3.16 Balance Work Status

As per review of the IE report for the month of December 2024 shared by the Concessionaire, and as observed during the site visit, about 99.95% of the balance works are completed at the site. About 0.05% of the work is balance, which are pending and perhaps not able to take up due to massive law and order issues and LA / utilities issues in that particular section.

The Cost of Balance Work is presented in the subsequent chapter.

3.17 Operation and Maintenance

3.17.1 O&M Contract

As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the project road by itself, or through O&M Contractors and if required, modify, repair, improve the project road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall meet all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

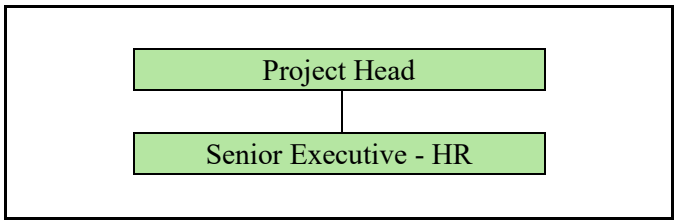
The Concessionaire has outsourced for carrying out activities related to operation and maintenance of the project road including toll operation services, security services, AMC for TMC and AMC for DG set.

3.17.2 Organization Chart

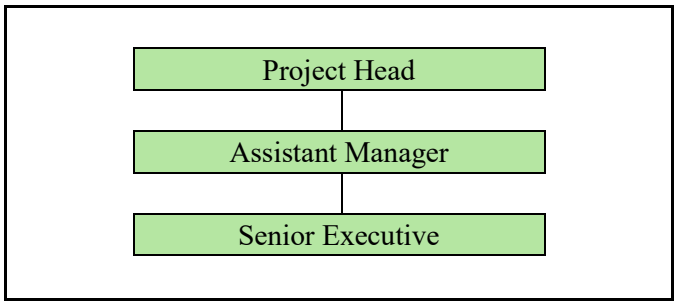
Organization Charts for operation and maintenance of the Project Road is given as follows. Accordingly, there is 01 Project Head, 01 Senior Executive (HR), 01 Assistance Executive (F&A), 01 Executive, 01 Manager Maintenance (Traffic), 01 Senior Executive (Traffic), 01 Assistant Manager (TMS / IT), 06 Executive (TMS / IT), 02 Manager (MM), 02 Electrical Engineer, 04 Electrician, 06 Executive, 10 Supervisor, 03 Plaza Manager, 03 Assistance Plaza Manager, 03 MIS Executive, 01 Document Controller, 09 Cashiers and 12 validators to carry out O&M activities. Maintenance work is undertaken and executed through competent subcontractors and the team controls all the maintenance activities.

Organization Chart

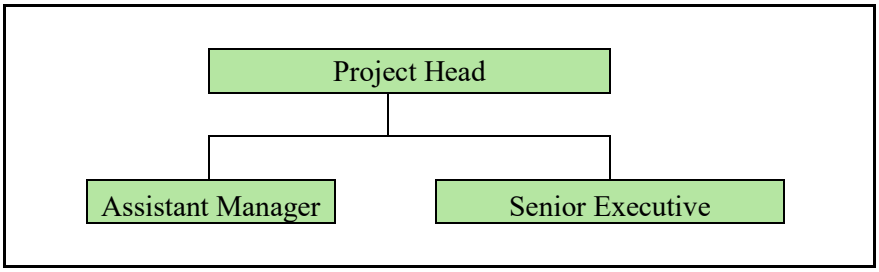
Human Resources – Site



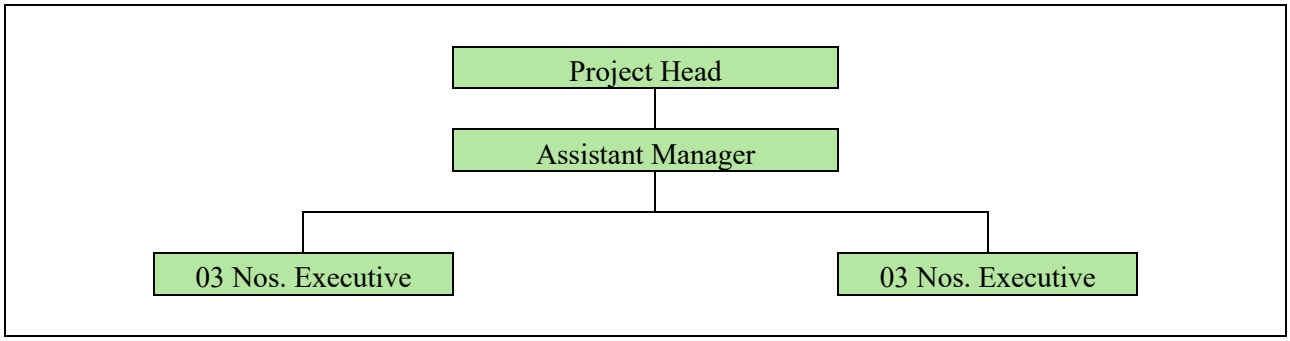
Finance & Accounts – Site



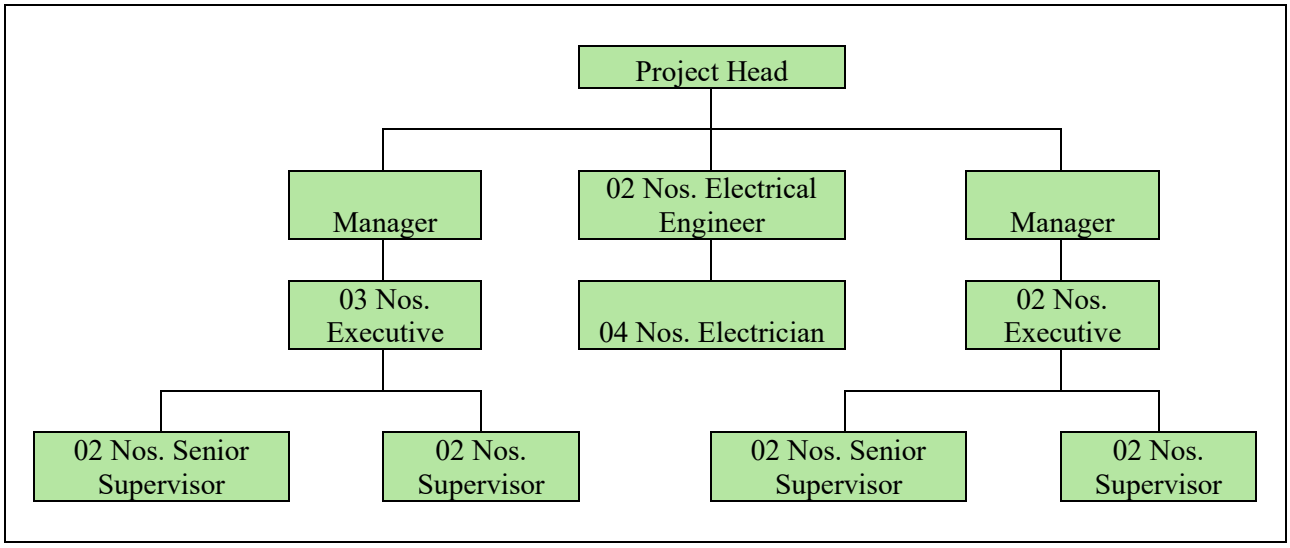
Traffic & Road Safety – Site



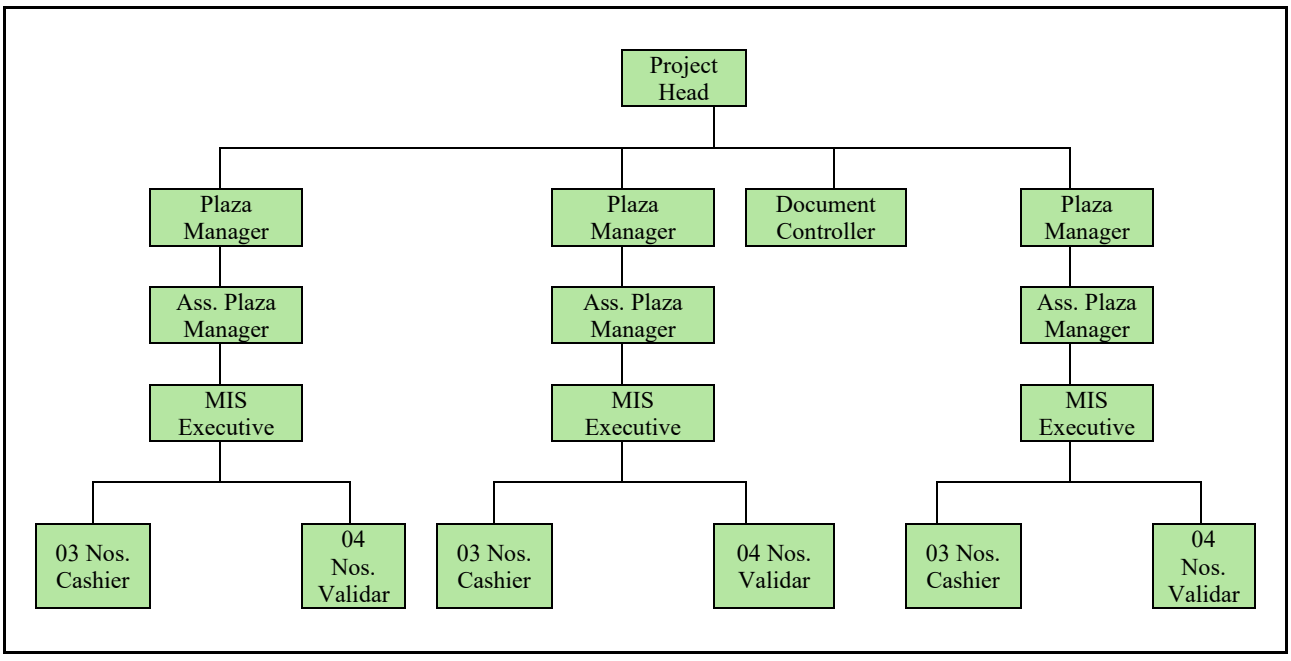
Operation System – Site



Maintenance – Site



Operation – Site



3.17.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses incurred towards the operation expenses for the past few years. Same has been reviewed and also necessary assumptions have been made about the expenses of similar types of projects to arrive the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.17.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per scope of work. The Concessionaire has received a Provisional Completion Certificate for the length of 179.50 km on **20th May 2022**.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 26 years i.e. up to 15th October 2038 from the Appointed Date of 16th October 2012 including construction period of 2.5 years. As informed by the Concessionaire, the concession period of the Project Road is likely to extend up to March 2044 on the basis of the traffic data.

4.2 Surveys and Investigation

4.2.1 Pavement Condition Survey

Pavement condition survey was carried out by the Technical Consultant during the period from **31st January 2025 to 4th February 2025** and visual inspection was carried out during the latest site visit on **6th October 2025** through visual inspection of the total Project Road.

The summary of pavement condition based on the visual inspection is tabulated below.

Table 4-1 Summary of Pavement Condition

Visual Condition (As per IRC:115-2014)			
Carriageway (LHS)		**Carriageway (RHS)**	
Length (km)	**Pavement Condition**	**Length (km)**	**Pavement Condition**
110.00	Good	103.73	Good
69.5	Fair	75.77	Fair
Summary			
Good		**106.87 kms**	
Fair		**72.63 kms**	
Poor		**-**	

4.3 Axle Load and VDF

In order to estimate the vehicle-loading pattern in the project area, and to determine vehicle damage factor for the commercial vehicles, Axle Load Survey of the vehicles plying on the project road stretch was carried out at three different locations of project stretch.

The Axle Load Survey was conducted at three locations, first at Toll Plaza-1 (km. 46+000) and second at Toll Plaza-2 (km. 94+00) and Third at Toll Plaza-3 (km. 164+000) in the month of September 2021. The survey was carried out for both directions (LHS and RHS) simultaneously and for 24 hours using standard weigh pads. The survey was carried out using random sample method for goods vehicles i.e. LCV, Bus, Trucks and Multi-axle vehicles with special axle configuration count. Vehicle damage factors for various categories of vehicles were computed.

Summary of VDF calculation is shown in below table for TP-1, TP-2, TP-3 locations.

Table 4-2 Vehicle Damage Factor

Toll Plaza at km. 46+000				Toll Plaza at km. 94+000			Toll Plaza at km. 164+000		
Sr. No.	Vehicle Type	Direction		Vehicle Type	Direction		Vehicle Type	Direction	
		From Delhi-Agra	From Agra-Delhi		From Delhi-Agra	From Agra-Delhi		From Delhi-Agra	From Agra-Delhi
1	BUS	0.840	0.937	BUS	0.950	0.923	BUS	0.914	1.033
2	LCV	0.543	0.622	LCV	0.513	0.443	LCV	0.634	0.495
3	2-Axle	2.041	2.475	2-Axle	3.227	3.207	2-Axle	3.079	2.595
4	3-Axle	4.089	4.184	3-Axle	5.522	5.882	3-Axle	5.714	4.870
5	MAV	5.019	13.119	MAV	8.524	8.318	MAV	9.874	14.105

4.4 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data provided by the Concessionaire, FY 2023-24 traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-3 MSA Calculation

Toll Plaza-1 (km. 46+000)					
Year	LHS (Delhi to Agra)		RHS (Agra to Delhi)		Remarks
	MSA	Cumulative MSA	MSA	Cumulative MSA	
2025-26	1.85	**1.85**	3.43	**3.43**	
2026-27	1.92	**3.77**	3.58	**7.01**	
2027-28	2.00	**5.77**	3.76	**10.77**	
2028-29	2.10	**7.87**	3.97	**14.74**	
2029-30	2.20	**10.07**	4.18	**18.92**	
2030-31	2.31	**12.38**	4.39	**23.31**	
2031-32	2.41	**14.79**	4.62	**27.93**	
2032-33	2.53	**17.32**	4.87	**32.80**	
2033-34	2.66	**19.98**	5.13	**37.93**	
2034-35	2.78	**22.76**	5.41	**43.34**	
2035-36	2.92	**25.68**	5.70	**49.04**	
2036-37	3.06	**28.74**	6.00	**55.04**	
2037-38	3.20	**31.94**	6.31	**61.35**	
2038-39	3.35	**35.29**	6.64	**67.99**	End of Concession Period as per CA
2039-40	3.51	**38.80**	6.98	**74.97**	
2040-41	3.67	**42.47**	7.34	**82.31**	
2041-42	3.85	**46.32**	7.71	**90.02**	
2042-43	4.02	**50.34**	8.10	**98.12**	
2043-44	4.21	**54.55**	8.50	**106.62**	End of Extended Concession Period

Toll Plaza-2 (km. 94+000)					
Year	LHS (Delhi to Agra)		RHS (Agra to Delhi)		Remarks
	MSA	Cumulative MSA	MSA	Cumulative MSA	
2025-26	6.27	**6.27**	6.25	**6.25**	
2026-27	6.23	**12.50**	6.20	**12.45**	
2027-28	6.35	**18.85**	6.32	**18.77**	
2028-29	6.79	**25.64**	6.76	**25.53**	
2029-30	7.20	**32.84**	7.15	**32.68**	
2030-31	7.57	**40.41**	7.53	**40.21**	
2031-32	7.98	**48.39**	7.92	**48.13**	
2032-33	8.42	**56.81**	8.36	**56.49**	
2033-34	8.88	**65.69**	8.82	**65.31**	
2034-35	9.37	**75.06**	9.30	**74.61**	
2035-36	9.89	**84.95**	9.80	**84.41**	
2036-37	10.43	**95.38**	10.33	**94.74**	
2037-38	10.99	**106.37**	10.89	**105.63**	
2038-39	11.59	**117.96**	11.47	**117.10**	End of Concession Period as per CA
2039-40	12.21	**130.17**	12.09	**129.19**	
2040-41	12.86	**143.03**	12.73	**141.92**	
2041-42	13.54	**156.57**	13.40	**155.32**	
2042-43	14.26	**170.83**	14.10	**169.42**	
2043-44	15.01	**185.84**	14.83	**184.25**	End of Extended Concession Period

Toll Plaza-3 (km. 164+000)					
Year	LHS (Delhi to Agra)		RHS (Agra to Delhi)		
	MSA	Cumulative MSA	MSA	Cumulative MSA	Remarks
2025-26	7.66	**7.66**	8.91	**17.82**	
2026-27	7.69	**15.35**	9.15	**26.97**	
2027-28	7.89	**23.24**	9.61	**36.58**	
2028-29	8.45	**31.69**	10.40	**46.98**	
2029-30	8.96	**40.65**	11.02	**58.00**	
2030-31	9.45	**50.10**	11.67	**69.67**	
2031-32	9.97	**60.07**	12.36	**82.03**	
2032-33	10.54	**70.61**	13.12	**95.15**	
2033-34	11.14	**81.75**	13.92	**109.07**	
2034-35	11.78	**93.53**	14.76	**123.83**	
2035-36	12.44	**105.97**	15.64	**139.47**	
2036-37	13.14	**119.11**	16.57	**156.04**	
2037-38	13.88	**132.99**	17.55	**173.59**	
2038-39	14.65	**147.64**	18.58	**192.17**	End of Concession Period as per CA
2039-40	15.46	**163.10**	19.66	**211.83**	
2040-41	16.31	**179.41**	20.79	**232.62**	
2041-42	17.20	**196.61**	21.97	**254.59**	
2042-43	18.13	**214.74**	23.21	**277.80**	
2043-44	19.11	**233.85**	24.51	**302.31**	End of Extended Concession Period

4.5 Network Survey Vehicles (NSV) Survey

4.5.1 Roughness Survey

Roughness Survey results were provided by the Concessionaire for analysis and to assess the riding quality in each direction (each lane) of the carriageway of the Project Road. The tests have been carried out on 22nd September 2024. The test was conducted in the project length of 177.10 Km out of 179.00 Km. as in the length of about 2.00 Km i.e. from Ch. 50+200 to Ch. 52+400. construction work of new VUP is in progress.

The Roughness Survey results (sidewise) are presented as below.

Table 4-4 Result of Roughness Survey for Pavement

Roughness Summary as per IRC: SP:16-2019: Section from Delhi to Agra								
Sr. No.	Condition	BI (mm/ km)	LHS			RHS		
			Outer	Middle	Inner lane	Outer	Middle	Inner lane
			Length (km)	Length (km)	Length (km)	Length (km)	Length (km)	Length (km)
1	Good	<1800	110.00	105.00	115.00	105.60	92.00	113.60
2	Fair	1800-2400	43.50	52.10	44.50	47.00	60.10	51.50
3	Poor	>2400	23.60	20.00	17.60	24.50	25.00	12.00
4	Limiting Value	>2500	18.60	18.00	13.60	21.00	17.00	11.00

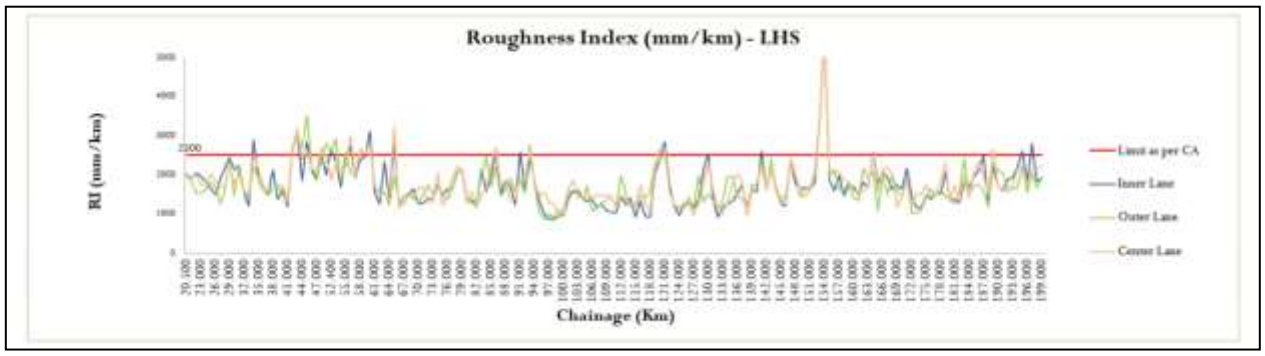


Figure 2-4: Roughness Index for DATRL as per Schedule K of CA

Observation and Conclusion:

As per NSV test carried out in the month of September 2024 and the related Roughness Tests results provided by the Concessionaire, it is observed that the overall pavement condition for the Project Road is found to be Good for 106.87 Km, Fair for 53.70 Km. and Poor for 16.53 Km. Further, in the length of about 10.816 km which is under defect

liability period of the other Contractor, length of about 7.89 km is in poor condition. Balance length of 8.65 Km is required to be repaired / overlayed; cost of which has been considered under Routine Maintenance. Hence, no extra cost considered in Major maintenance for said stretch.

4.6 Falling Weight Deflectometer (FWD) Survey

The structural evaluation and analysis of the remaining life of the Project was carried out in conformity with IRC:115-2014 "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique".

The FWD survey was conducted on the Project Road on 27th April 2024 to 07th April 2024. The summary of the same is presented below.

LHS side Remaining life

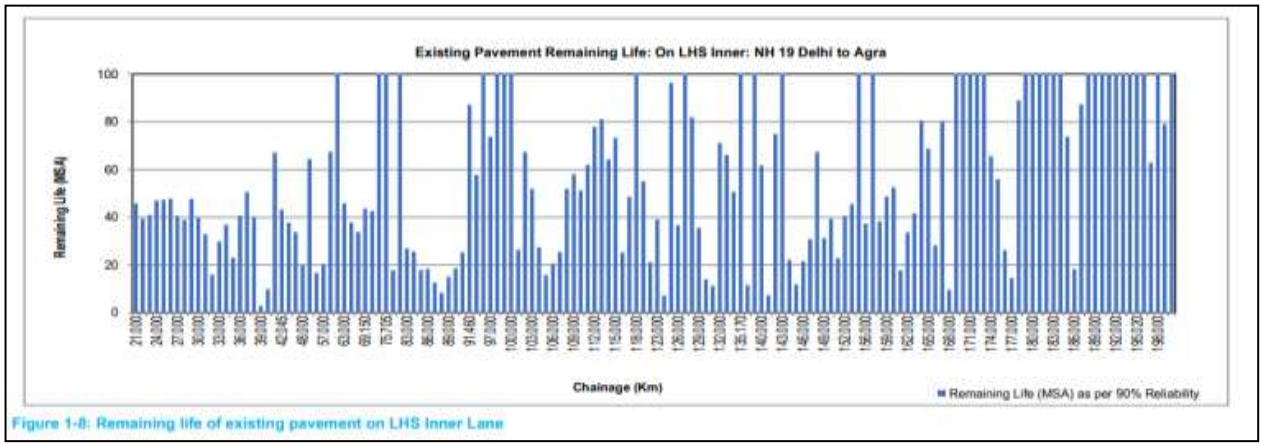


Figure 1-8: Remaining life of existing pavement on LHS Inner Lane

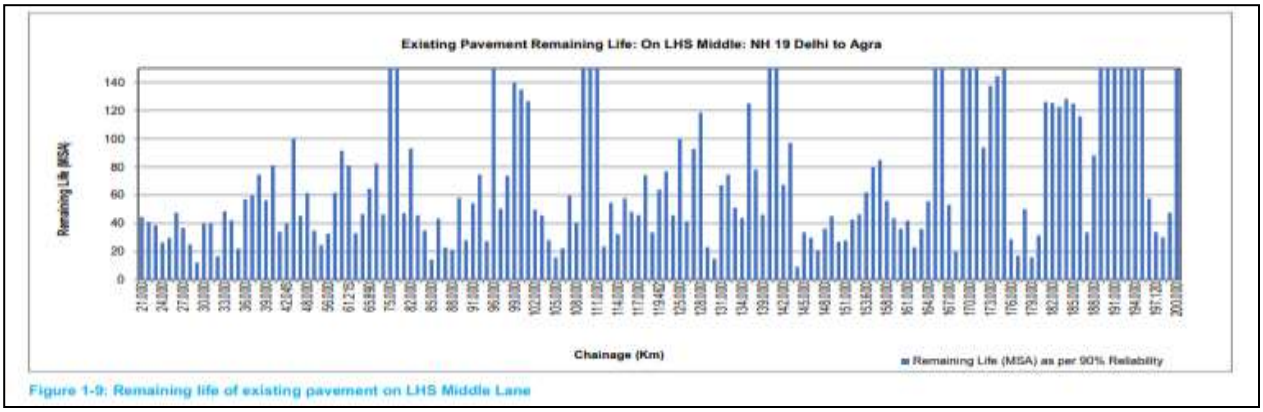


Figure 1-9: Remaining life of existing pavement on LHS Middle Lane

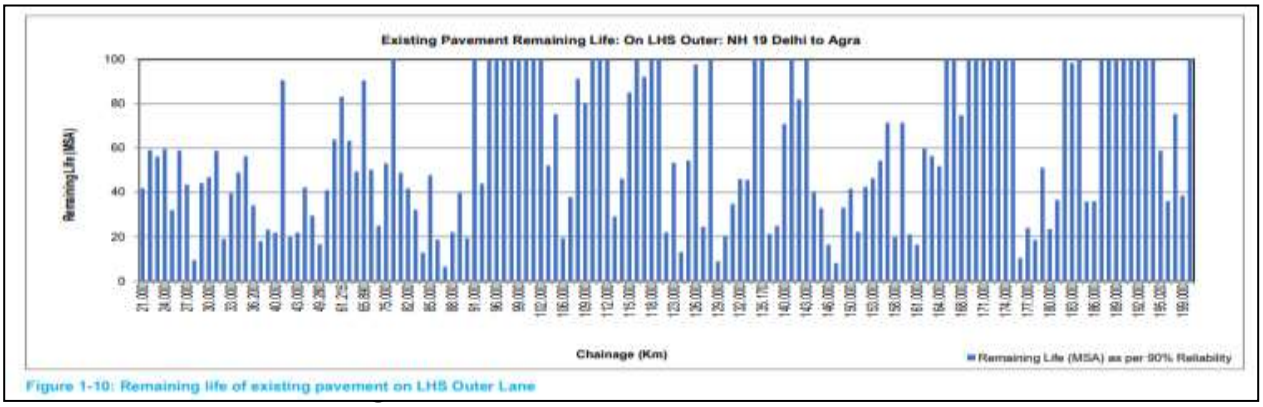


Figure 1-10: Remaining life of existing pavement on LHS Outer Lane

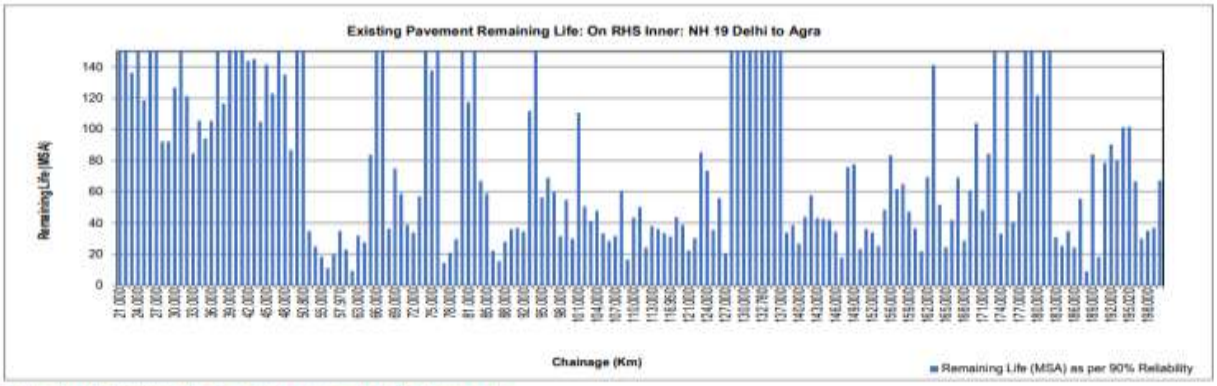


Figure 1-11: Remaining life of existing pavement on RHS Inner Lane

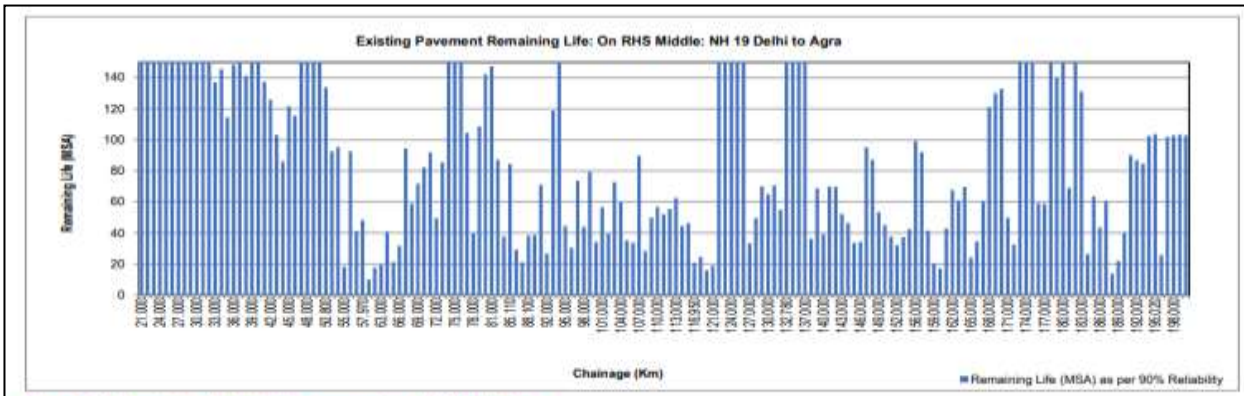


Figure 1-12: Remaining life of existing pavement on RHS Middle Lane

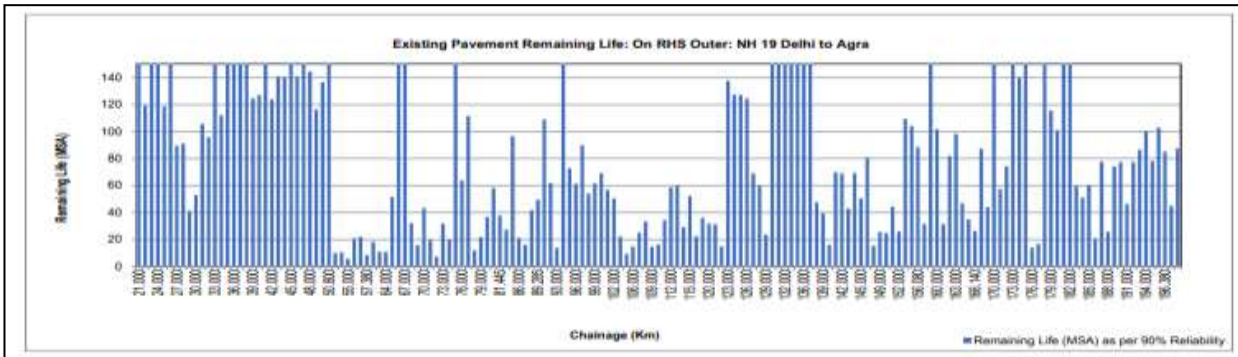


Figure 1-13: Remaining life of existing pavement on RHS Outer Lane

After review of the test results, we found that as per the test results, MSA value is found to be low at some locations though at these locations the pavement is observed to be in good condition. The reason behind this can be that full consolidation is not achieved at the time of FWD survey.

However, the maintenance can be carried out on, as and when required basis, and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. However, improvement in Riding Quality is expected if the roughness value exceeds 2500 mm/km.

4.7 Test pit and Subgrade Investigation

The Concessionaire has carried out a subgrade investigation for project road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-5 Summary of Subgrade Test Results

Sr. No.	Chainage (Km)	Carriage way	Side (LHS/RHS)	Soil Classification as per IS: 1498	% by weight passing through the Sieve		Clay & silt content %	Atterberg Limits			Modified Proctor Test		4-Days Soaked CBR (%)	Free Swell Index
					19.0 mm	4.75 mm		LL (%)	PL (%)	PI	MDD (gm/cc)	OMC (%)		
1	23+700	Service Road	RHS	ML	100.0	98.7	58.9	23	NP	NP	1.94	9.4	10.9	0.0
2	24+140	Service Road	LHS	ML	99.0	91.7	67.0	23	NP	NP	1.92	9.7	9.1	0.0
3	27+220	Service Road	RHS	ML	98.0	95.4	79.1	26	NP	NP	1.89	10.5	8.1	12.5
4	29+300	Service Road	LHS	SM	98.3	97.4	32.5	19	NP	NP	2.04	8.7	13.1	0.0
5	31+360	Service Road	RHS	ML	99.0	92.7	85.5	27	NP	NP	1.86	10.8	7.3	12.5
6	35+640	Service Road	RHS	ML	95.2	90.2	80.6	26	NP	NP	1.88	10.5	7.0	10.0
7	35+920	MCW	LHS	ML	100.0	92.5	72.6	25	NP	NP	1.86	9.9	8.7	9.2
8	39+600	MCW	LHS	SM	88.3	82.5	43.4	23	NP	NP	2.01	9.8	15.3	0.0
9	42+020	Service Road	RHS	ML	100.0	99.9	58.8	24	NP	NP	1.94	9.2	11.3	0.0
10	44+100	MCW	LHS	ML	81.6	75.0	51.0	23	NP	NP	2.02	8.8	11.7	0.0
11	49+550	MCW	LHS	SM	98.3	95.9	47.7	24	NP	NP	1.97	9.0	11.3	0.0
12	49+950	MCW	RHS	ML	100.0	99.3	51.1	23	NP	NP	1.92	10.1	12.1	0.0
13	52+540	MCW	LHS	ML	98.0	92.4	54.3	24	NP	NP	1.94	9.3	10.8	5.3
14	54+800	MCW	RHS	SM	93.3	88.1	40.1	22	NP	NP	1.98	9.2	15.1	0.0
15	60+400	MCW	RHS	SM	88.6	83.5	41.0	21	NP	NP	1.96	9.0	12.0	0.0
16	63+700	MCW	LHS	ML	97.4	91.4	73.7	24	NP	NP	1.88	9.7	7.4	11.1
17	66+310	MCW	RHS	ML	100.0	99.0	89.1	26	NP	NP	1.86	9.6	7.1	11.1
18	68+200	MCW	LHS	ML	93.6	85.7	58.8	20	NP	NP	1.95	9.0	12.3	0.0
19	69+010	MCW	RHS	ML	100.0	98.3	60.3	23	NP	NP	1.94	9.3	12.6	0.0
20	73+410	MCW	LHS	ML	99.4	92.7	65.5	23	NP	NP	1.98	9.1	12.4	0.0
21	75+400	MCW	LHS	ML	86.8	73.2	54.9	20	NP	NP	1.94	9.2	11.6	0.0
22	75+500	MCW	RHS	ML	98.1	92.4	66.2	23	NP	NP	1.91	10.0	10.5	0.0
23	78+150	MCW	LHS	SM	100.0	99.4	46.4	25	NP	NP	2.01	8.7	14.2	0.0
24	80+040	MCW	RHS	ML	99.1	92.6	60.0	23	NP	NP	1.97	9.5	11.5	0.0
25	82+100	MCW	RHS	SM	97.9	92.4	43.9	21	NP	NP	2.02	8.5	13.4	0.0
26	82+200	MCW	LHS	SM	100.0	98.1	45.8	22	NP	NP	1.95	9.2	10.1	0.0
27	84+970	MCW	LHS	ML	97.9	92.9	72.6	25	NP	NP	1.91	9.6	9.7	0.0
28	87+410	MCW	RHS	SM	100.0	98.6	46.5	23	NP	NP	1.99	8.9	11.6	0.0
29	89+250	MCW	LHS	ML	93.8	80.7	56.6	23	NP	NP	1.96	9.0	10.3	0.0
30	91+030	MCW	LHS	ML	100.0	97.8	78.1	25	NP	NP	1.92	9.5	8.2	0.0
31	92+980	MCW	LHS	ML	97.6	94.5	51.3	23	NP	NP	1.98	9.3	11.4	0.0
32	95+100	MCW	RHS	ML	100.0	96.6	52.0	23	NP	NP	2.02	8.4	11.6	0.0
33	95+400	MCW	LHS	ML	100.0	98.7	58.9	21	NP	NP	1.93	10.3	8.9	7.1
34	97+300	MCW	LHS	ML	100.0	96.7	51.9	23	NP	NP	1.94	9.5	11.6	0.0
35	99+020	MCW	LHS	ML	98.5	97.8	51.8	22	NP	NP	1.95	9.6	10.8	8.3
36	99+850	MCW	RHS	ML	98.3	94.2	68.2	19	NP	NP	2.01	8.7	12.1	0.0
37	105+030	MCW	RHS	ML	100.0	99.4	68.3	23	NP	NP	1.99	8.9	13.2	0.0
38	105+640	MCW	LHS	ML	95.0	87.6	65.4	25	NP	NP	1.94	9.1	10.1	0.0
39	107+210	MCW	LHS	ML	100.0	97.0	72.0	25	NP	NP	1.96	10.0	8.7	0.0
40	108+690	MCW	RHS	ML	93.3	83.4	59.8	24	NP	NP	2.02	8.9	14.7	0.0
41	109+270	MCW	LHS	ML	98.5	92.9	76.3	26	NP	NP	1.89	10.2	7.6	12.5
42	114+070	MCW	LHS	ML	96.1	91.9	69.1	21	NP	NP	1.93	9.3	8.7	0.0
43	114+980	MCW	RHS	ML	98.1	97.7	58.4	20	NP	NP	1.96	9.1	9.4	0.0
44	117+200	MCW	LHS	ML	100.0	97.7	76.6	25	NP	NP	1.88	10.0	6.9	0.0
45	120+250	MCW	RHS	ML	95.6	90.5	62.5	23	NP	NP	1.93	9.5	9.9	0.0
46	120+270	MCW	LHS	ML	89.2	75.9	64.0	23	NP	NP	1.95	9.1	10.6	0.0
47	122+450	MCW	LHS	ML	90.5	85.5	68.9	24	NP	NP	2.00	9.5	11.3	7.1

Sr. No.	Chainage (Km)	Carriage way	Side (LHS/RHS)	Soil Classification as per IS: 1498	% by weight passing through the Sieve		Clay & silt content %	Atterberg Limits			Modified Proctor Test		4-Days Soaked CBR (%)	Free Swell Index
					19.0 mm	4.75 mm		LL (%)	PL (%)	PI	MDD (gm/cc)	OMC (%)		
48	124+260	MCW	LHS	SM	83.9	65.4	45.6	21	NP	NP	2.03	8.6	15.9	0.0
49	125+020	MCW	RHS	ML	100.0	97.1	80.1	26	NP	NP	1.86	9.9	8.3	0.0
50	127+280	MCW	LHS	ML	93.9	82.2	65.4	20	NP	NP	1.99	8.8	10.2	0.0
51	129+870	MCW	LHS	ML	91.0	81.7	57.6	21	NP	NP	1.98	8.6	12.4	11.1
52	131+020	MCW	RHS	ML	100.0	90.3	78.2	25	NP	NP	1.87	9.8	8.1	0.0
53	132+780	MCW	LHS	ML	98.9	89.4	65.0	23	NP	NP	2.01	8.8	12.7	0.0
54	135+570	MCW	RHS	ML	93.8	83.4	66.2	27	NP	NP	1.89	10.1	8.4	8.3
55	137+830	MCW	LHS	ML	97.5	86.8	52.5	23	NP	NP	1.94	9.6	9.2	0.0
56	138+620	MCW	RHS	ML	100.0	94.1	57.4	20	NP	NP	2.02	8.7	14.6	0.0
57	141+200	MCW	RHS	ML	97.7	93.9	81.4	26	NP	NP	1.85	10.2	7.1	11.1
58	147+100	MCW	LHS	ML	92.6	83.6	57.1	21	NP	NP	2.02	8.8	14.8	0.0
59	149+130	MCW	RHS	SM	90.2	77.9	45.8	25	NP	NP	2.05	8.8	15.1	0.0
60	151+700	MCW	LHS	SM	100.0	85.7	33.5	22	NP	NP	2.08	8.7	17.3	0.0
61	154+890	MCW	LHS	ML	86.9	70.5	53.3	23	NP	NP	2.03	8.6	15.6	0.0
62	155+300	MCW	RHS	ML	91.1	81.4	63.3	23	NP	NP	1.96	9.0	12.1	0.0
63	161+170	MCW	RHS	SM	96.8	92.2	47.6	22	NP	NP	1.99	8.9	13.1	5.3
64	161+500	MCW	LHS	SM	89.8	79.2	45.1	22	NP	NP	2.02	8.6	13.9	0.0
65	163+610	MCW	LHS	ML	91.3	88.4	65.3	22	NP	NP	1.93	9.7	10.3	0.0
66	165+050	MCW	RHS	ML	98.8	94.0	58.0	25	NP	NP	1.99	8.6	14.7	0.0
67	166+100	MCW	LHS	ML	91.9	80.7	58.5	20	NP	NP	2.00	8.5	12.4	10.0
68	169+080	MCW	LHS	ML	98.7	94.0	88.7	28	NP	NP	1.86	10.7	6.7	12.5
69	170+020	MCW	RHS	ML	99.3	98.7	82.5	26	NP	NP	1.87	10.2	7.3	0.0
70	172+500	MCW	LHS	ML	97.6	91.2	82.8	26	NP	NP	1.85	10.6	6.8	11.1
71	174+200	MCW	RHS	ML	94.7	89.5	83.8	27	NP	NP	1.87	11.0	7.3	8.3
72	177+400	MCW	LHS	ML	100.0	96.1	78.7	22	NP	NP	1.91	10.1	10.5	0.0
73	180+020	MCW	RHS	ML	97.4	90.2	77.2	25	NP	NP	1.86	9.6	9.0	0.0
74	182+450	MCW	LHS	ML	99.2	94.9	83.9	27	NP	NP	1.85	9.9	7.1	0.0
75	185+530	MCW	RHS	ML	94.3	88.3	62.9	24	NP	NP	1.94	9.0	11.3	0.0
76	186+700	Service Road	LHS	ML	98.9	94.6	87.6	26	NP	NP	1.90	10.5	8.0	10.0
77	192+200	MCW	LHS	CL	100.0	98.4	88.4	29	18	11	1.91	11.3	5.6	22.2
78	193+500	MCW	RHS	ML	97.6	93.1	75.3	23	NP	NP	1.93	9.0	7.9	0.0
79	197+200	Service Road	RHS	ML	99.1	95.6	83.8	26	NP	NP	1.88	10.1	7.0	8.3
80	197+400	Service Road	LHS	ML	100.0	97.8	85.4	24	NP	NP	1.90	9.8	7.5	0.0

4.7.1 Existing Granular layers Testing

Table 4-6 Summary of Granular Layers Tests Results

Sr. No.	Chainage (km)	Carriage way	Side (LHS/RHS)	Type of Layer	MoRTH 5th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
						LL (%)	PI (%)	PI			
1	23+700	Service Road	RHS	WMM	Conforming to WMM Gradation	23	NP	NP	2.636	0.81	26.0
2	24+140	Service Road	LHS	WMM	45.0 mm,22.4mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	21	NP	NP	2.655	0.91	27.1
3	27+220	Service Road	RHS	GSB	Conforming to GSB- I	19	NP	NP	2.621	0.78	23.4
4	29+300	Service Road	LHS	GSB	Conforming to GSB- I	21	NP	NP	2.648	0.72	28.0
5	31+360	Service Road	RHS	WMM	22.4mm,11.2mm,4.75mm IS Sieve Material is Slightly	21	NP	NP	2.623	1.04	26.0

Sr. No.	Chainage (km)	Carriage way	Side (LHS/RHS)	Type of Layer	MoRTH 5th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
						LL (%)	PI (%)	PI			
					Coarser Side in WMM Gradation						
6	35+640	Service Road	RHS	GSB	0.425mm IS Sieve Material is Slightly coarser Side in GSB I	21	NP	NP	2.611	0.89	25.3
7	35+920	MCW	LHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22	NP	NP	2.640	0.86	25.0
8	39+600	MCW	LHS	GSB	Conforming to GSB- III & IV	22	NP	NP	2.647	0.78	24.3
9	42+020	Service Road	RHS	GSB	26.5 mm IS Sieve Material is Slightly Finer Side in GSB -I Gradation	22	NP	NP	2.656	0.88	34.8
10	44+100	MCW	LHS	WMM	Conforming to WMM Gradation	20	NP	NP	2.605	0.67	25.6
11	49+550	MCW	LHS	GSB	Conforming to GSB- I	21	NP	NP	2.606	0.84	29.5
12	49+950	MCW	RHS	WMM	Not Confirming to WMM Gradation	22	NP	NP	2.643	0.69	27.2
13	52+540	MCW	LHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	19	NP	NP	2.598	0.94	24.7
14	54+800	MCW	RHS	GSB	Conforming to GSB- III & IV	19	NP	NP	2.603	0.85	25.1
15	60+400	MCW	RHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	23	NP	NP	2.598	0.76	32.0
16	63+700	MCW	LHS	WMM	4.75 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	21	NP	NP	2.595	1.03	25.4
17	66+310	MCW	RHS	GSB	53.0mm, 26.5mm IS Sieve Material is Slightly coarser Side in GSB III & IV	19	NP	NP	2.626	1.08	34.0
18	68+200	MCW	LHS	GSB	53.0mm IS Sieve Material is Slightly coarser Side in GSB III	20	NP	NP	2.640	0.83	27.6
19	69+010	MCW	RHS	WMM	Not Confirming to WMM Gradation	22	NP	NP	2.616	1.07	28.7
20	73+410	MCW	LHS	GSB	53.0mm IS Sieve Material is Slightly coarser Side in GSB IV	23	NP	NP	2.634	1.36	29.8
21	75+400	MCW	LHS	GSB	0.425mm IS Sieve Material is Slightly Finer Side in GSB I	20	NP	NP	2.618	0.74	30.1
22	75+500	MCW	RHS	GSB	0.425mm IS Sieve Material is Slightly Finer Side in GSB I	22	NP	NP	2.604	0.95	26.7
23	78+150	MCW	LHS	GSB	0.425mm IS Sieve Material is Slightly Finer Side in GSB I	19	NP	NP	2.596	0.87	25.3
24	80+040	MCW	RHS	WMM	Conforming to WMM Gradation	18	NP	NP	2.600	1.04	24.9
25	82+100	MCW	RHS	GSB	Conforming to GSB- IV	21	NP	NP	2.642	1.05	27.0
26	82+200	MCW	LHS	WMM	Conforming to WMM Gradation	23	NP	NP	2.623	1.13	24.6
27	84+970	MCW	LHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22	NP	NP	2.625	0.78	25.3
28	87+410	MCW	RHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	21	NP	NP	2.594	0.94	28.7
29	89+250	MCW	LHS	GSB	Conforming to GSB- III & IV	20	NP	NP	2.583	0.75	25.3
30	91+030	MCW	LHS	GSB	26.5 mm,4.75mm IS Sieve Material is Slightly Coarser Side in GSB-III & IV	20	NP	NP	2.599	0.67	27.8
31	92+980	MCW	LHS	WMM	Conforming to WMM Gradation	19	NP	NP	2.632	0.88	26.8

Sr. No.	Chainage (km)	Carriage way	Side (LHS/RHS)	Type of Layer	MoRTH 5th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
						LL (%)	PI (%)	PI			
32	95+100	MCW	RHS	GSB	Conforming to GSB- I	21	NP	NP	2.644	0.93	24.3
33	95+400	MCW	LHS	WMM	Conforming to WMM Gradation	22	NP	NP	2.648	0.84	26.0
34	97+300	MCW	LHS	GSB	Conforming to GSB- I	23	NP	NP	2.643	0.67	28.9
35	99+020	MCW	LHS	GSB	53.0 mm,26.5 mm IS Sieve Material is Slightly Coarser Side in GSB-III & IV Gradation	22	NP	NP	2.643	0.68	28.6
36	99+850	MCW	RHS	WMM	Not Confirming to WMM Gradation	24	NP	NP	2.651	0.74	24.0
37	105+030	MCW	RHS	GSB	53.0mm, 26.5mm IS Sieve Material is Slightly coarser Side in GSB III	23	NP	NP	2.634	1.01	30.1
38	105+640	MCW	LHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	21	NP	NP	2.633	0.86	26.7
39	107+210	MCW	LHS	GSB	Conforming to GSB- I	20	NP	NP	2.638	0.81	28.9
40	108+690	MCW	RHS	WMM	Conforming to WMM Gradation	20	NP	NP	2.650	0.94	25.4
41	109+270	MCW	LHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	19	NP	NP	2.614	0.68	24.3
42	114+070	MCW	LHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.656	0.94	28.0
43	114+980	MCW	RHS	GSB	53.0mm, 26.5mm IS Sieve Material is Slightly coarser Side in GSB III	20	NP	NP	2.654	0.72	28.0
44	117+200	MCW	LHS	GSB	26.5mm IS Sieve Material is Slightly Finner Side in GSB I	22	NP	NP	2.645	0.88	28.5
45	120+250	MCW	RHS	WMM	11.2mm,4.75mm IS Sieve Material is Slightly Finer Side in WMM Gradation	19	NP	NP	2.587	0.75	29.7
46	120+270	MCW	LHS	GSB	26.5mm IS Sieve Material is Slightly Finner Side in GSB I	20	NP	NP	2.567	0.58	30.7
47	122+450	MCW	LHS	WMM	Conforming to WMM Gradation	22	NP	NP	2.589	0.68	25.4
48	124+260	MCW	LHS	WMM	45.0 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	19	NP	NP	2.643	0.78	27.6
49	125+020	MCW	RHS	GSB	53.0mm, 26.5mm IS Sieve Material is Slightly coarser Side in GSB III &IV	21	NP	NP	2.619	0.69	32.1
50	127+280	MCW	LHS	GSB	53.0mm, 26.5mm IS Sieve Material is Slightly coarser Side in GSB III & IV	21	NP	NP	2.641	0.53	27.4
51	129+870	MCW	LHS	GSB	Conforming to GSB- I	23	NP	NP	2.637	0.85	30.2
52	131+020	MCW	RHS	WMM	11.2mm IS Sieve Material is Slightly Finer Side in WMM Gradation	21	NP	NP	2.628	0.67	24.6
53	132+780	MCW	LHS	WMM	4.75 mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.645	0.44	21.0
54	135+570	MCW	RHS	GSB	53.0mm, 26.5mm IS Sieve Material is Slightly coarser Side in GSB III	22	NP	NP	2.644	0.85	28.6
55	137+830	MCW	LHS	GSB	53.0mm, 26.5mm IS Sieve Material is Slightly coarser Side in GSB III	21	NP	NP	2.638	0.87	26.5
56	138+620	MCW	RHS	WMM	Conforming to WMM Gradation	20	NP	NP	2.589	0.89	23.8

Sr. No.	Chainage (km)	Carriage way	Side (LHS/RHS)	Type of Layer	MoRTH 5th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
						LL (%)	PI (%)	PI			
57	141+200	MCW	RHS	GSB	53.0mm, IS Sieve Material is Slightly coarser Side in GSB III	20	NP	NP	2.590	1.03	26.0
58	147+100	MCW	LHS	WMM	Not Confirming to WMM Gradation	23	NP	NP	2.636	0.61	26.0
59	149+130	MCW	RHS	WMM	45.0mm,22.4mm IS Sieve Material is Slightly coarser Side in WMM Gradation	20	NP	NP	2.641	1.24	26.3
60	151+700	MCW	LHS	GSB	53.0mm,26.5mm IS Sieve Material is Slightly coarser Side in GSB III	22	NP	NP	2.594	1.52	27.8
61	154+890	MCW	LHS	WMM	45.0mm,22.4mm IS Sieve Material is Slightly coarser Side in WMM Gradation	20	NP	NP	2.636	1.36	25.7
62	155+300	MCW	RHS	GSB	53.0mm,26.5mm IS Sieve Material is Slightly coarser Side in GSB III	22	NP	NP	2.592	1.39	27.0
63	161+170	MCW	RHS	WMM	Conforming to WMM Gradation	22	NP	NP	2.634	1.35	28.4
64	161+500	MCW	LHS	GSB	53.0mm,26.5mm IS Sieve Material is Slightly coarser Side in GSB III & IV	20	NP	NP	2.582	1.53	27.4
65	163+610	MCW	LHS	WMM	22.4mm,11.2mm IS Sieve Material is Slightly Finner Side in WMM Gradation	19	NP	NP	2.588	1.47	28.2
66	165+050	MCW	RHS	GSB	53.0mm,26.5mm IS Sieve Material is Slightly coarser Side in GSB III	21	NP	NP	2.575	1.53	31.0
67	166+100	MCW	LHS	WMM	Conforming to WMM Gradation	20	NP	NP	2.613	1.27	26.3
68	169+080	MCW	LHS	GSB	53.0mm, IS Sieve Material is Slightly coarser Side in GSB III	21	NP	NP	2.635	1.31	29.0
69	170+020	MCW	RHS	WMM	Conforming to WMM Gradation	19	NP	NP	2.584	1.31	29.3
70	172+500	MCW	LHS	WMM	Conforming to WMM Gradation	22	NP	NP	2.587	1.04	28.6
71	174+200	MCW	RHS	GSB	53.0mm,26.5mm IS Sieve Material is Slightly coarser Side in GSB III & IV	21	NP	NP	2.588	1.50	30.0
72	177+400	MCW	LHS	GSB	Not Conforming to GSB Gradation	20	NP	NP	2.584	1.33	29.4
73	180+020	MCW	RHS	WMM	22.4mm,11.2mm IS Sieve Material is Slightly Finer Side in WMM Gradation	20	NP	NP	2.616	0.91	26.0
74	182+450	MCW	LHS	WMM	11.2mm,4.75mm,2.36mm IS Sieve Material is Slightly coarser Side in WMM Gradation	18	NP	NP	2.606	0.87	25.0
75	185+530	MCW	RHS	GSB	53.0mm,26.5mm IS Sieve Material is Slightly coarser Side in GSB III & IV	20	NP	NP	2.585	1.53	26.0
76	186+700	Service Road	LHS	GSB	53.0mm,26.5mm IS Sieve Material is Slightly coarser Side in GSB III	21	NP	NP	2.579	1.37	28.0
77	192+200	MCW	LHS	WMM	45.0mm,22.4mm IS Sieve Material is Slightly coarser Side in WMM Gradation	19	NP	NP	2.627	0.95	25.0
78	193+500	MCW	RHS	GSB	26.5mm IS Sieve Material is Slightly coarser Side in GSB III	20	NP	NP	2.569	1.12	27.0

Sr. No.	Chainage (km)	Carriage way	Side (LHS/RHS)	Type of Layer	MoRTH 5th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
						LL (%)	PI (%)	PI			
79	197+200	Service Road	RHS	WMM	Conforming to WMM Gradation	19	NP	NP	2.650	0.85	24.0
80	197+400	Service Road	LHS	GSB	26.5mm IS Sieve Material is Slightly Finer Side in GSB I	21	NP	NP	2.581	1.12	28.0

4.7.2 Existing Pavement Composition and Analysis

The Concessionaire has carried out the existing pavement investigation for the Project Road. The test results of the same, as provided by the Concessionaire, are tabulated below.

Table 4-7 Summary Pavement Crust Details along the project corridor

Sr. No.	Location (Km)	Carriage way	Side (RHS/LHS)	Pavement Composition (mm)					
				Flexible Pavement		Rigid Pavement			Total Thickness (mm)
				Bituminous Layer	Granular Layer	PQC	DLC	GSB	
1	23+700	Service Road	RHS	70	490				560
2	24+140	Service Road	LHS	90	380				470
3	27+220	Service Road	RHS	100	400				500
4	29+300	Service Road	LHS	130	340				470
5	31+360	Service Road	RHS	120	430				550
6	35+640	Service Road	RHS	130	400				530
7	35+920	MCW	LHS	140	390				530
8	39+600	MCW	LHS	165	530				695
9	42+020	Service Road	RHS	100	320				420
10	44+100	MCW	LHS			310	140	210	660
11	49+550	MCW	LHS			310	180	170	660
12	49+950	MCW	RHS	400	370				770
13	52+540	MCW	LHS			290	160	260	710
14	54+800	MCW	RHS	180	510				690
15	60+400	MCW	RHS	130	430				560
16	63+700	MCW	LHS			300	140	150	590
17	66+310	MCW	RHS	140	620				760
18	68+200	MCW	LHS	250	510				760
19	69+010	MCW	RHS	145	440				585
20	73+410	MCW	LHS			290	130	310	730
21	75+400	MCW	LHS	150	390				540
22	75+500	MCW	RHS	160	450				610
23	78+150	MCW	LHS			285	140	210	635
24	80+040	MCW	RHS	150	540				690
25	82+100	MCW	RHS			300	130	150	580
26	82+200	MCW	LHS	180	430				610
27	84+970	MCW	LHS	150	400				550
28	87+410	MCW	RHS			320	150	160	630
29	89+250	MCW	LHS	130	310				440
30	91+030	MCW	LHS	160	460				620
31	92+980	MCW	LHS			310	130	270	710
32	95+100	MCW	RHS	165	600				765
33	95+400	MCW	LHS	170	610				780
34	97+300	MCW	LHS	170	560				730
35	99+020	MCW	LHS	185	610				795
36	99+850	MCW	RHS	140	450				590
37	105+030	MCW	RHS	140	550				690
38	105+640	MCW	LHS	120	420				540
39	107+210	MCW	LHS	150	440				590
40	108+690	MCW	RHS	170	610				780

Sr. No.	Location (Km)	Carriage way	Side (RHS/LHS)	Pavement Composition (mm)					
				Flexible Pavement		Rigid Pavement			Total Thickness (mm)
				Bituminous Layer	Granular Layer	PQC	DLC	GSB	
41	109+270	MCW	LHS	160	430				590
42	114+070	MCW	LHS	140	510				650
43	114+980	MCW	RHS	135	520				655
44	117+200	MCW	LHS	140	480				620
45	120+250	MCW	RHS	165	460				625
46	120+270	MCW	LHS			310	150	400	860
47	122+450	MCW	LHS	150	500				650
48	124+260	MCW	LHS	145	450				595
49	125+020	MCW	RHS	140	610				750
50	127+280	MCW	LHS	170	410				580
51	129+870	MCW	LHS	150	450				600
52	131+020	MCW	RHS	170	500				670
53	132+780	MCW	LHS	150	510				660
54	135+570	MCW	RHS	170	580				750
55	137+830	MCW	LHS	180	420				600
56	138+620	MCW	RHS			300	130	310	740
57	141+200	MCW	RHS	100	605				705
58	147+100	MCW	LHS	130	425				555
59	149+130	MCW	RHS	120	390				510
60	151+700	MCW	LHS	130	480				610
61	154+890	MCW	LHS	190	600				790
62	155+300	MCW	RHS	120	570				690
63	161+170	MCW	RHS	160	430				590
64	161+500	MCW	LHS	140	450				590
65	163+610	MCW	LHS	150	500				650
66	165+050	MCW	RHS	155	540				695
67	166+100	MCW	LHS	150	510				660
68	169+080	MCW	LHS	145	490				635
69	170+020	MCW	RHS	140	560				700
70	172+500	MCW	LHS	140	460				600
71	174+200	MCW	RHS	150	640				790
72	177+400	MCW	LHS	135	600				735
73	180+020	MCW	RHS	165	460				625
74	182+450	MCW	LHS	140	500				640
75	185+530	MCW	RHS	120	460				580
76	186+700	Service Road	LHS	70	430				500
77	192+200	MCW	LHS	175	470				645
78	193+500	MCW	RHS	125	640				765
79	197+200	Service Road	RHS	240	450				690
80	197+400	Service Road	LHS	70	470				540

4.8 Periodic Maintenance Strategy

The Project Road is taken over by the Concessionaire in FY 2022. After taking over, the Concessionaire has done overlay in FY 2022 with 30 mm / 40 mm BC, in the sections wherever the Roughness value is exceeding as mentioned in the Concession Agreement. The Concessionaire has also done overlay with 50 mm DBM and 30 mm / 40 mm BC in FY 2022 for the distressed portion. This portion of the Project Road constitutes 70% of the flexible pavement of the Project Road. Hence, major maintenance for this stretch is considered in FY 2029.

For the rest of the Project Road of about 30%, minor rectification works are carried out as there was no major distress found. The traffic volume and VDF are also found considerably less for this section. Hence, Major Maintenance for this stretch is considered in FY 2027.

As per the present condition of the rigid pavement, the surface roughness on the rigid pavement is required to be reduced. Hence, to achieve this, the Concessionaire has proposed to overlay a Bituminous Concrete (BC) layer over the existing rigid pavement, as complete panel replacement of the rigid pavement is not feasible due to heavy traffic movement on the corridor.

Furthermore, the National Highways Authority of India (NHAI) has awarded certain portion of the project stretch to various contractors, including Gawar Construction Limited, Chaudhary Construction Company Private Limited, and Atlas Construction Pvt. Ltd. Hence, the total length of this particular stretch, which is about **14.016 km**, has been descoped from the Concessionaire's scope. Consequently, this length is also excluded from the Concessionaire's maintenance obligations for the remaining Concession period.

Earlier on the service roads, a Bituminous Concrete (BC) overlay of 30 mm / 40 mm thickness was provided on both sides at distressed locations during FY 2022. However, during the recent site visit, it was observed that several portions of the service road are deteriorated due to waterlogging during the rains. The Concessionaire is responsible for maintaining the service roads in good condition and, therefore, will be required to carry out BC overlay over a length of **38.0 km**, out of the total **102.0 km** of service road, during **FY 2027**.

The maintenance can be carried out as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. Only improvement in Riding Quality is expected if the roughness value exceeds 2500 mm/km.

The table below shows the Major / Periodic maintenance cycle throughout the concession period for the project road.

Table 4-8 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2022	Major Maintenance completed at Site	
2	FY 2024 to FY 2026	-	-
3	FY 2027	Major maintenance with 30 mm PMB (100%) + Milling & 50 mm DBM (7%) (For section from km. 20.500 to km. 64.500)	Major maintenance with 30 mm BC (40%) + Micro-surfacing (60%) for 38.0 Km Length
4	FY 2028	-	-
5	FY 2029	Major maintenance with 40 mm PMB (100%) + Milling & 50 mm DBM (5%) (For section from km. 64.500 to km. 200.000)	Major maintenance with 30 mm BC (50%) + Micro-surfacing (50%) for 64.0 Km Length
6	FY 2030 to FY 2033	-	-
7	FY 2034	Major maintenance with 30 mm PMB (100%) + Milling & 50 mm DBM (7%) (For section from km. 20.500 to km. 64.500)	-
7	FY 2035	-	-
8	FY 2036	Major maintenance with 40 mm PMB (86%) & 30 mm PMB (14%) + Milling & 50 mm DBM (5%) (For section from km. 64.500 to km. 200.000)	Major maintenance with 30 mm BC (45%) + Micro-surfacing (55%)

Sr. No.	Year	Main Carriageway	Service Road
9	FY 2037 to FY 2040	-	-
10	FY 2041	Major maintenance with 30 mm PMB (100%) + Milling & 50 mm DBM (1%) (For section from km. 20.500 to km. 64.500)	-
11	FY 2042	-	-
12	FY 2043	Major maintenance with 30 mm BC (100%) (For section from km. 64.500 to km. 200.000)	Major maintenance with 30 mm BC (45%) + Micro-surfacing (55%)

**Actual end of concession period as per Concession Agreement is October 2038. As informed by Concessionaire, the revised concession period is up to March 2044*

**About 14.016 Km of the project length has been descoped from the total project length of 179.50 Km. Thus, 165.484 Km is the remaining length of project, considered under the Concessionaire's scope and under Tollable length.*

The projected cost for Periodic / Major Maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine Maintenance (O&M) Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

      Therefore, bitumen prices are considered as per the forecast of the Client. Current published rates of bitumen are considered for unit rate calculation for FY 2026 and FY 2027. Average bitumen price for 10 years is considered for unit rate calculation for FY 2028 and onwards, as the bitumen prices have been range bound over the last five-six years. Polymer and modification costs are provided by the Client to work out the BC rate with PMB

      Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST.

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Market rates are considered from the nearest local market.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Rates of items as per Work Order:** The rates of items such as kerb raising, micro-surfacing, milling, road marking, road stud etc. are based on the actual rates at which the work to be executed and thus are considered as per the Work Orders shared by the Client which is issued to the Contractors executing these works at the site.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.) for FY 2027	Rates (Rs.) for FY 2028
1	Dense Bituminous Macadam	Cum	10,435	8,765
2	Bituminous Concrete	Cum	12,017	9,970
3	Bituminous Concrete with PMC	Cum	14,106	12,233
4	Milling	Sqm	89	89
5	Micro-surfacing	Sqm	156	156
6	Kerb raisings	Rm	303	303
7	Road Marking	Sqm	464	464
8	Road Studs	Nos.	185	185

5.3 Balance Work Cost

As discussed in the previous chapter, an approximate cost of balance works is about **Rs. 3.87 Crores**. These works are mainly in the sections where there is LA / utility issue; and thus, these works are pending and not taken up due to massive law & order and LA / utilities issues. These works are expected to be taken up as & when the land is made available by NHAI to the Concessionaire. Concessionaire has already informed to NHAI for considering all the balance works under Punch list B.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power & electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management Services
5. Electricity and Diesel Charges
6. TMS / HTMS / System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Horticulture & ROW Maintenance
16. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of O&M Cost

Sr. No.	Particulars	Amount (FY 2026-44)
1	Salary and Welfare Expenses	3,00,96,000
2	Tolling Operations Services	13,27,96,392
3	Toll Security Services	1,77,56,300
4	Incident Management & Emergency Services	5,20,72,172
5	Electricity and Diesel Charges	3,59,11,022
6	TMS/HTMS/System Expenses	1,27,18,472
7	Office Operating Expenses	78,09,016
8	Vehicle Running Expenses	58,74,000

Sr. No.	Particulars	Amount (FY 2026-44)
9	Professional Fees Expense	1,23,58,566
10	Community Development	62,51,227
11	Communication Expenses	10,48,163
12	Conveyance Expenses	3,81,150
13	Insurance Expense	17,37,707
14	IE Fees	1,39,16,091
15	Routine Maintenance Cost (Project Road)	9,36,70,938
16	Horticulture & ROW Maintenance	6,22,79,206
17	Miscellaneous including Contingency	1,32,29,051
	Total Cost (Rs.)	**49,99,05,474**
	Total Cost (in Crores.)	49.99
	Per km Cost (in Lakhs)	**27.85**

5.5 Major Maintenance Cost

The Concessionaire has completed an overlay on both sides of the project MCW in about 70% of the flexible road part of the project length. As per the Concessionaire, 30mm / 40 mm BC overlay has been laid and at distress portion 50 mm DBM has been laid at the site in FY 2022.

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II.**

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2024 to FY 2026	-	
2	FY 2027	86.78	
3	FY 2028	-	
4	FY 2029	254.53	
5	FY 2030 to FY 2033	-	
6	FY 2034	55.32	
7	FY 2035	-	
8	FY 2036	260.61	
9	FY 2037 to FY 2040	-	
10	FY 2041	56.00	
11	FY 2042	-	
12	FY 2043	190.54	
Total Cost		**903.78**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, Replacement Cost of major TMS/ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	2.20	
2	FY 2034	2.20	
3	FY 2041	2.20	
Total Cost (Cr.)		**6.60**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	3.99%
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Routine Maintenance (O&M) costs and the Periodic Maintenance costs have been worked out based on the investigations and assessment carried out for the Project Road. Cost for each of the category has already been discussed in previous sections. Since the forecasting has been carried out for the remaining Concession Period, the cost is summarised year wise in the following table for the remaining Concession Period along with the escalation as mentioned in Clause 5.7.

Escalated O&M Cost (Cr.)

Sr.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44
1	Routine O&M Cost																			
1.01	Salary and Welfare Expense	3.01	3.17	3.32	3.47	3.62	3.77	3.92	4.08	4.24	4.41	4.59	4.77	4.96	5.16	5.36	5.58	5.80	6.03	6.27
1.02	Tolling Operations Services	13.28	13.98	14.66	15.31	15.96	16.61	17.29	17.99	18.71	19.46	20.24	21.04	21.88	22.76	23.67	24.61	25.59	26.61	27.68
1.03	Toll Security Services	1.78	1.87	1.96	2.05	2.13	2.22	2.31	2.40	2.50	2.60	2.71	2.81	2.93	3.04	3.16	3.29	3.42	3.56	3.70
1.04	Incident Management Services	5.21	5.48	5.75	6.00	6.26	6.51	6.78	7.05	7.34	7.63	7.94	8.25	8.58	8.92	9.28	9.65	10.04	10.44	10.85
1.05	Electricity and Diesel Charges	3.59	3.78	3.96	4.14	4.31	4.49	4.68	4.86	5.06	5.26	5.47	5.69	5.92	6.15	6.40	6.66	6.92	7.20	7.48
1.06	TMS/HTMS/System Expenses	0.92	0.97	1.02	1.07	1.11	1.16	1.20	1.25	1.30	1.36	1.41	1.47	1.52	1.58	1.65	1.71	1.78	1.85	1.93
1.07	Office Operating Expenses	0.78	0.82	0.86	0.90	0.94	0.98	1.02	1.06	1.10	1.14	1.19	1.24	1.29	1.34	1.39	1.45	1.50	1.57	1.63
1.08	Vehicle Running Expenses	0.59	0.62	0.65	0.68	0.71	0.73	0.76	0.80	0.83	0.86	0.90	0.93	0.97	1.01	1.05	1.09	1.13	1.18	1.22
1.09	Professional Fees Expense	1.24	1.30	1.36	1.42	1.48	1.55	1.61	1.67	1.74	1.81	1.88	1.96	2.04	2.12	2.20	2.29	2.38	2.48	2.58
1.10	Community Development	0.63	0.66	0.69	0.72	0.75	0.78	0.81	0.85	0.88	0.92	0.95	0.99	1.03	1.07	1.11	1.16	1.20	1.25	1.30
1.11	Communication Expenses	0.10	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.21	0.22
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08
1.13	Insurance Expense	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.24	0.25	0.26	0.28	0.29	0.30	0.31	0.32	0.33	0.35	0.36
1.14	IE Fees	1.39	1.46	1.54	1.60	1.67	1.74	1.81	1.88	1.96	2.04	2.12	2.21	2.29	2.38	2.48	2.58	2.68	2.79	2.90
1.15	Routine Maintenance Cost	9.37	9.86	10.34	10.80	11.25	11.72	12.20	12.69	13.19	13.73	14.28	14.84	15.44	16.05	16.69	17.36	18.05	18.77	19.52
1.16	Horticulture & ROW Maintenance	6.23	6.55	6.87	7.18	7.48	7.79	8.11	8.44	8.77	9.13	9.49	9.87	10.26	10.67	11.10	11.54	12.00	12.48	12.98
1.17	Miscellaneous and Contingency	1.32	1.39	1.46	1.52	1.59	1.66	1.72	1.79	1.86	1.94	2.02	2.10	2.18	2.27	2.36	2.45	2.55	2.65	2.76
	Subtotal of O&M Cost	49.64	52.25	54.79	57.22	59.65	62.11	64.64	67.24	69.93	72.75	75.66	78.67	81.80	85.08	88.47	92.00	95.67	99.49	103.46
2	Major Maintenance Cost	-	89.85	-	277.48	-	-	-	-	67.91	-	342.72	-	-	-	-	84.92	-	320.42	-
3	Periodic Cost of TMS/HTMS Replacement	-	2.31	-	-	-	-	-	-	3.10	-	-	-	-	-	-	4.07	-	-	-
4	Balance Works Cost	3.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**53.52**	**144.41**	**54.79**	**334.70**	**59.65**	**62.11**	**64.64**	**67.24**	**140.94**	**72.75**	**418.38**	**78.67**	**81.80**	**85.08**	**88.47**	**180.99**	**95.67**	**419.92**	**103.46**

* Cost of the Balance works is approximately **Rs. 3.87 Cr.** These balance works are expected to be executed as and when NHAI makes the land available for the construction.

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Delhi Agra Project	
Ordinary Repair Cost for year 2025-26	**9,36,70,938**
(Inclusive of GST)	**= 5.54 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 2.5m wide shoulders - Flexible Pavement									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description**		**Factor**	**Cost Per km. as per Traffic Intensity**		**Project Length (km)**		**Per Year Project Maintenance Cost**	
				Normal	**Urban**				
				More than 4500 CVD	More than 4500 CVD				
				2,05,002	**2,48,030**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	313653.00	3,79,486.00	-	-	-	-
		Paved shoulder	1.70	348503.00	4,21,651.00	3.55	-	12,37,883	-
2	Six lane with divided carriageway	without Paved shoulder	2.09	428454.00	5,18,383.00	-	-	-	-
		with Paved shoulder	2.26	463304.00	5,60,548.00	63.40	-	2,93,75,327	-
3	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	524805.00	6,34,957.00	-	-	-	-
		with Paved shoulder	2.76	565805.00	6,84,563.00	96.98	5.10	5,48,69,506	34,94,010
TOTAL							**169.036**		**8,89,76,725**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.5
	Rs/m^3			10384
	Cost in Rupees			25,960
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			415
	Cost in Rupees			20,750
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			79
	Cost in Rupees			19,750
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			53
	Cost in Rupees			7,950
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			415

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	Cost in Rupees			31,125
	v) Road marking	15.00%	Once in 7th year & @ Repaired location	21860
	SUB TOTAL			**1,27,395**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Jungle Clearance	100%	Twice in a Year	2038
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**9,340**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	2751
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**9,803**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2426
	ii) Maintenance of gang hut store, sheds, animal & debries removal		Once in a Year	3639
	iii) Lettering, Painting of Km stones, sign boards, hectometer stone etc.		Once in a Year	3639
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 5 Years	7277
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	vi) Traffic Census		Once in a Year	2426
	vii) Provision for roughness measurement		Twice in a Year	1456
	SUB TOTAL			**22,076**
	GRAND TOTAL (Normal)			**2,05,002**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	1546
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	100%	As & when required	12129
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**43,028**
	GRAND TOTAL (Urban)			**2,48,030**

ANNEXURE II - MAJOR MAINTENANCE COST

Project - Delhi - Agra										
Major Maintenance Cost (FY-2027)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						10,84,619	10	1,10,08,886
	For BC PMB	Sqm	2	39,163	12.50		9,79,075	9,79,075		
	For DBM	Sqm	2	2,741	10.50		57,570	57,570		
	For Misc. Location	Sqm	2	1,919	12.50		47,975	47,975		
2	BC PMB with 30 mm	Cum	2	41,082	12.50	0.03	30,811	30,811	14,106	43,46,34,584
3	DBM with 50 mm	Cum	2	2,741	10.50	0.05	2,878	2,878	10,435	3,00,36,656
4	Milling	Sqm	2	2,741	10.50		57,570	57,570	89	51,29,452
5	Milling at Above Palwal Bridge Portion	Sqm	2	3,552	7.50		53,280	53,280	89	47,47,248
6	BC PMB with 30 mm	Cum	2	3,552	7.50	0.03	1,598	1,598	14,106	2,25,47,430
	Construction Cost of PQC Road at SR									
6	PQC Construction	Cum	1	412	8.250	0.25	850	850	8,052	68,41,890
7	DLC Construction	Cum	1	412	9.000	0.15	556	556	4,593	25,54,571
8	WMM layer Replacement	Cum	1	412	9.000	0.13	464	464	3,321	15,39,497
	Service Road									
9	Tack coat	Sqm	2	15,200	6.70		2,03,680	2,03,680	10	20,67,352
10	BC with 30 mm	Cum	2	15,200	6.70	0.03	6,110	6,110	11,563	7,06,51,683
11	Micro Surfacing	Sqm	2	22,800	6.70		3,05,520	3,05,520	156	4,77,22,224
12	Glass Gird used for Concrete pavement	Sqm	2	6.242	5,500.00	0.80	54,925	54,925	100	54,92,520
	Other Works									
5	Raising of Road Kerb	Rmt	2	39,163			78,326	78,326	303	2,36,93,615
6	Replacement of Road Stud									
	Normal Road Stud	Nos	2	4,788			9,576	9,576	185	17,69,645
7	Painting of Kerb	Sqm	2	39,163	0.315		24,673	24,673	105	25,90,632
8	Road Marking	Sqm					57,940	57,940	464	2,68,95,616
	MCW									

Project - Delhi - Agra										
Major Maintenance Cost (FY-2027)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	a) Median & Edge line	Sqm	4	41,121	0.15		24,673			
	b) Lane line	Sqm	4	13,570	0.10		5,428			
	Service road									
	a) Median & Edge line	Sqm	4	39,900	0.15		23,940			
	b) Lane line	Sqm	2	11,970	0.10		2,394			
	Junction crossing	Sqm					1,505			
9	Filling of Earthen shoulder	Cum					1,017	1,017	463	4,70,820
	MCW		2	1,163	1.50	0.03	105			
	Service Road		2	15,200	1.00	0.03	912			
10	Miscellaneous	5%								3,50,19,716
Total Major Maintenance Cost (Rs.)										**73,54,14,037**
Total Major Maintenance Cost with 18% GST (Rs.)										**86,77,88,564**
Total Major Maintenance Cost with GST (Cr.)										**86.78**
Per km Cost (lakh)										**48.34**
Escalation Factor for Major Maintenance Cost (FY-2027)										**1.05**
Total Escalated Cost for Major Maintenance Cost (FY-2027) (Cr.)										**89.85**

Major Maintenance Cost (FY - 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						33,37,944	10	3,38,80,130
	For BC PMB	Sqm	2	1,24,140	12.50		31,03,500	31,03,500		
	For DBM	Sqm	2	6,207	10.50		1,30,347	1,30,347		
	For Misc. Location	Sqm	2	4,164	12.50		1,04,097	1,04,097		
2	BC PMB with 40 mm	Cum	2	1,28,304	12.50	0.04	1,28,304	1,28,304	12,234	1,56,96,38,789
3	DBM with 50 mm	Cum	2	6,207	10.50	0.05	6,517	6,517	8,765	5,71,25,550
4	Milling	Sqm	2	6,207	10.50		1,30,347	1,30,347	89	1,16,13,918
	Main Carriageway - Rigid Pavement									

Major Maintenance Cost (FY - 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
5	Joint Sealant Replacement @ 10% length	Rmt	10%	8,406	3.50	4.50	6,725	6,725	68	4,57,294
6	Dismantling of CC Panels @ 1.5% area	Cum	2%	1,32,397		0.30	596	596	995	5,92,807
7	Replacement of Panels - PQC @ 1.5% area	Cum	2%	1,32,397		0.30	596	596	7,871	46,89,452
	Service Road									
8	Tack coat	Sqm	2	32,040	6.70		4,29,336	4,29,336	10	43,57,760
9	BC with 30 mm	Cum	2	32,040	6.70	0.03	12,880	12,880	9,970	12,84,10,018
10	Micro Surfacing	Sqm	2	32,040	6.70		4,29,336	4,29,336	156	6,70,62,283
	Other Works									
11	Raising of Road Kerb	Rmt	2	1,56,180			3,12,360	3,12,360	303	9,44,88,900
12	Replacement of Road Stud									
	Normal Road Stud	Nos	2	17,153			34,306	34,306	185	63,39,749
13	Painting of Kerb	Sqm	2	2,04,417	0.315		1,28,783	1,28,783	105	1,35,22,185
14	Road Marking	Sqm					1,28,336	1,28,336	464	5,95,73,601
	MCW									
	a) Median & Edge line	Sqm	4	1,24,140	0.15		74,484			
	b) Lane line	Sqm	4	40,966	0.10		16,386			
	Service Road									
	a) Edge line	Sqm	4	67,284	0.10		26,914			
	b) Lane line	Sqm	2	22,204	0.10		4,441			
	Junction crossing	Sqm					6,111			
15	Filling of Earthen shoulder	Cum					5,526	5,526	463	25,59,091
	MCW		2	60,060	1.00	0.03	3,604			
	Service Road		2	32,040	1.00	0.03	1,922			
16	Miscellaneous	5%								10,27,15,576
Total Major Maintenance Cost (Rs.)										**2,15,70,27,104**
Total Major Maintenance Cost with 18% GST (Rs.)										**2,54,52,91,983**
Total Major Maintenance Cost with GST (Cr.)										**254.53**
Per km Cost (lakh)										**141.80**
Escalation Factor for Major Maintenance Cost (FY - 2029)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY - 2029) (Cr.)										**277.48**

Major Maintenance Cost (FY - 2034)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						10,44,378	10	1,06,00,441
	For BC PMB	Sqm	2	37,710	12.50		9,42,750	9,42,750		
	For DBM	Sqm	2	2,640	10.50		55,434	55,434		
	For Misc. Location	Sqm	2	1,848	12.50		46,195	46,195		
2	BC PMB with 30 mm	Cum	2	39,558	12.50	0.03	29,668	29,668	12,234	36,29,55,382
3	DBM with 50 mm	Cum	2	2,640	10.50	0.05	2,772	2,772	8,765	2,42,94,235
4	Milling	Sqm	2	2,640	10.50		55,434	55,434	89	49,39,143
5	BC PMB with 30 mm over Palwal Flyover	Cum	2	3,552	7.50	0.03	1,598	1,598	12,234	1,95,54,442
6	Milling over the Palwal Flyover	Sqm	2	3,552	7.50		53,280	53,280	89	47,47,248
	Other Works									
7	Raising of Road Kerb	Rmt	-	37,710			-	-	303	-
8	Replacement of Road Stud									
	Normal Road Stud	Nos	2	4,610			9,220	9,220	185	17,03,856
9	Painting of Kerb	Sqm	2	37,710	0.315		23,757	23,757	105	24,94,517
10	Road Marking	Sqm					30,433	30,433	464	1,41,27,046
	MCW									
	a) Median & Edge line	Sqm	4	39,596	0.15		23,757			
	b) Lane line	Sqm	4	13,067	0.10		5,227			
	Junction crossing	Sqm					1,449			
11	Filling of Earthen shoulder	Cum					2,263	2,263	463	10,47,810
	MCW		2	37,710	1.00	0.03	2,263			
12	Miscellaneous	5%								2,23,23,206
Total Major Maintenance Cost (Rs.)										**46,87,87,325**
Total Major Maintenance Cost with 18% GST (Rs.)										**55,31,69,043**
Total Major Maintenance Cost with GST (Cr.)										**55.32**
Per km Cost (lakh)										**30.82**
Escalation Factor for Major Maintenance Cost (FY - 2034)										**1.41**
Total Escalated Cost for Major Maintenance Cost (FY - 2034) (Cr.)										**67.91**

Major Maintenance Cost (FY - 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						34,38,841	10	3,49,04,237
	For BC PMB	Sqm	2	1,27,774	12.50		31,94,350	31,94,350		
	For DBM	Sqm	2	6,389	10.50		1,34,163	1,34,163		
	For Misc. Location	Sqm	2	4,413	12.50		1,10,328	1,10,328		
2	BC PMB with 40 mm	Cum	2	1,10,524	12.50	0.04	1,10,524	1,10,524	12,234	1,35,21,17,973
3	BC PMB with 30 mm		2	21,664	10.50	0.03	13,648	13,648	12,234	16,69,67,466
3	DBM with 50 mm	Cum	2	6,389	10.50	0.05	6,708	6,708	8,765	5,87,97,809
4	Milling	Sqm	2	6,389	10.50		1,34,163	1,34,163	89	1,19,53,897
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	8,406	3.50	4.50	6,725	6,725	68	4,57,294
6	Dismantling of CC Panels @ 1.5% area	Cum	2%	1,32,397		0.30	596	596	995	5,92,807
7	Replacement of Panels - PQC @ 1.5% area	Cum	2%	1,32,397		0.30	596	596	7,871	46,89,452
	Service Road									
8	Tack coat	Sqm	2	45,936	6.70		6,15,542	6,15,542	10	62,47,755
9	BC with 30 mm	Cum	2	45,936	6.70	0.03	18,466	18,466	9,970	18,41,02,453
10	Micro Surfacing	Sqm	2	56,144	6.70		7,52,330	7,52,330	156	11,75,13,884
	Other Works									
11	Raising of Road Kerb	Rmt	2	1,27,774			2,55,548	2,55,548	303	7,73,03,270
11	Replacement of Road Stud									
	Normal Road Stud	Nos	2	17,331			34,662	34,662	185	64,05,538
12	Painting of Kerb	Sqm	2	1,41,790	0.315		89,328	89,328	105	93,79,409
13	Road Marking	Sqm					1,50,652	1,50,652	464	6,99,32,764
	MCW									
	a) Median & Edge line	Sqm	4	1,27,774	0.15		76,664			
	b) Lane line	Sqm	4	42,165	0.10		16,866			
	Service Road									
	a) Edge line	Sqm	4	1,07,184	0.10		42,874			
	b) Lane line	Sqm	2	35,371	0.10		7,074			
	Junction crossing	Sqm					7,174			

Major Maintenance Cost (FY - 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
14	Filling of Earthen shoulder	Cum					4,298	4,298	463	19,90,311
	MCW		2	25,694	1.00	0.03	1,542			
	Service Road		2	45,936	1.00	0.03	2,756			
15	Miscellaneous	5%								10,51,67,816
Total Major Maintenance Cost (Rs.)										**2,20,85,24,135**
Total Major Maintenance Cost with 18% GST (Rs.)										**2,60,60,58,480**
Total Major Maintenance Cost with GST (Cr.)										**260.61**
Per km Cost (lakh)										**145.18**
Escalation Factor for Major Maintenance Cost (FY - 2036)										**1.52**
Total Escalated Cost for Major Maintenance Cost (FY - 2036) (Cr.)										**342.72**

Major Maintenance Cost (FY - 2041)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						9,97,807	10	1,01,27,737
	For BC PMB	Sqm	2	37,710	12.50		9,42,750	9,42,750		
	For DBM	Sqm	2	377	10.50		7,919	7,919		
	For Misc. Location	Sqm	2	1,886	12.50		47,138	47,138		
2	BC PMB with 30 mm	Cum	2	39,596	12.50	0.03	29,697	29,697	12,234	36,33,01,383
3	DBM with 50 mm	Cum	2	377	10.50	0.05	396	396	8,765	34,70,605
4	Milling	Sqm	2	377	10.50		7,919	7,919	89	7,05,592
5	BC PMB with 30 mm over Palwal Flyover	Cum	2	3,552	7.50	0.03	1,598	1,598	12,234	1,95,54,442
6	Milling over the Palwal Flyover	Sqm	2	3,552	7.50		53,280	53,280	89	47,47,248
7	Milling below Palwal Flyover	Sqm	2	3,552	12.50		88,800	88,800	89	79,12,080
	Other Works									
5	Raising of Road Kerb	Rmt	2	37,710			75,420	75,420	303	2,28,14,550
6	Replacement of Road Stud									
	Normal Road Stud	Nos	2	4,610			9,220	9,220	185	17,03,856
7	Painting of Kerb	Sqm	2	37,710	0.315		23,757	23,757	105	24,94,517

Major Maintenance Cost (FY - 2041)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
8	Road Marking	Sqm					30,433	30,433	464	1,41,27,046
	MCW									
	a) Median & Edge line	Sqm	4	39,596	0.15		23,757			
	b) Lane line	Sqm	4	13,067	0.10		5,227			
	Junction crossing	Sqm					1,449			
9	Filling of Earthen shoulder	Cum					2,263	2,263	463	10,47,810
	MCW		2	37,710	1.00	0.03	2,263			
10	Miscellaneous	5%								2,26,00,343
Total Major Maintenance Cost (Rs.)										**47,46,07,208**
Total Major Maintenance Cost with 18% GST (Rs.)										**56,00,36,506**
Total Major Maintenance Cost with GST (Cr.)										**56.00**
Per km Cost (lakh)										**31.20**
Escalation Factor for Major Maintenance Cost (FY - 2041)										**1.85**
Total Escalated Cost for Major Maintenance Cost (FY - 2041) (Cr.)										**84.92**

Major Maintenance Cost (FY - 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						34,18,725	10	3,47,00,059
	For BC	Sqm	2	1,27,774	12.50		31,94,350	31,94,350		
	For DBM	Sqm	2	-	10.50		-	-		
	For Misc. Location	Sqm	2	8,975	12.50		2,24,375	2,24,375		
2	BC with 30 mm	Cum	2	1,36,749	12.50	0.03	1,02,562	1,02,562	9,970	1,02,25,05,777
3	DBM with 50 mm	Cum	2	-	10.50	0.05	-	-	8,765	-
4	Milling	Sqm	2	-	10.50		-	-	89	-
	Main Carriageway - Rigid Pavement									
3	Joint Sealant Replacement @ 5% length	Rmt	5%	8,406	3.50	4.50	3,362	3,362	68	2,28,647
4	Dismantling of CC Panels @ 1.5% area	Cum	2%	1,32,397		0.30	596	596	995	5,92,807
5	Replacement of Panels - PQC @ 1.5% area	Cum	2%	1,32,397		0.30	596	596	7,871	46,89,452

Major Maintenance Cost (FY - 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Service Road									
6	Tack coat	Sqm	2	45,936	6.70		6,15,542	6,15,542	10	62,47,755
7	BC with 30 mm	Cum	2	45,936	6.70	0.03	18,466	18,466	9,970	18,41,02,453
8	Micro Surfacing	Sqm	2	56,144	6.70		7,52,330	7,52,330	156	11,75,13,884
	Other Works									
9	Raising of Road Kerb	Rmt	2	1,27,774			2,55,548	2,55,548	303	7,73,03,270
10	Replacement of Road Stud									
	Normal Road Stud	Nos	2	17,331			34,662	34,662	185	64,05,538
11	Painting of Kerb	Sqm	2	1,41,790	0.315		89,328	89,328	105	93,79,409
12	Road Marking	Sqm					1,55,563	1,55,563	464	7,22,12,151
	MCW									
	a) Median & Edge line	Sqm	4	1,34,163	0.15		80,498			
	b) Lane line	Sqm	4	44,274	0.10		17,709			
	Service Road									
	a) Edge line	Sqm	4	1,07,184	0.10		42,874			
	b) Lane line	Sqm	2	35,371	0.10		7,074			
	Junction crossing	Sqm					7,408			
13	Filling of Earthen shoulder	Cum					4,298	4,298	463	19,90,311
	MCW		2	25,694	1.00	0.03	1,542			
	Service Road		2	45,936	1.00	0.03	2,756			
14	Miscellaneous	5%								7,68,93,576
Total Major Maintenance Cost (Rs.)										**1,61,47,65,087**
Total Major Maintenance Cost with 18% GST (Rs.)										**1,90,54,22,803**
Total Major Maintenance Cost with GST (Cr.)										**190.54**
Per km Cost (lakh)										**106.15**
Escalation Factor for Major Maintenance Cost (FY - 2043)										**2.00**
Total Escalated Cost for Major Maintenance Cost (FY - 2043) (Cr.)										**320.42**

FP Project Management

Technical Due Diligence of Borgaon to Watambare Section of NH-166 from km. 224+000 to km. 276+000 in the State of Maharashtra on Hybrid Annuity Mode (HAM)

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Service Road 6
2.9 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 8
3.3 Major / Minor Intersection 10
3.4 Inventory and Condition Survey of Structures and Bridges 11
3.4.1 Cross Drainage Structures (Culverts) 11
3.4.2 Minor Bridges 14
3.4.3 Major Bridge (length > 60 m) 16
3.4.4 Underpasses 18
3.4.5 Light Vehicular Underpasses 19
3.5 Drainage 21
3.6 Slope Protection 22
3.7 Road Furniture 23
3.7.1 Pavement Marking 23
3.7.2 Traffic Signage 24
3.7.3 Highway Lighting 24
3.7.4 Road Studs / Cat's Eye 25

3.7.5 Avenue Plantation and Median Plantation 25
3.7.6 Traffic Signage / Median kerb painting / KM Stone 26
3.7.7 Crash Barriers 28
3.7.8 Delineators 28
3.8 Toll Plaza 29
3.9 Bus Bays and Passenger Shelters 31
3.10 Truck Lay Bye 32
3.11 Advanced Traffic Management System (ATMS) 32
3.11.1 Automatic Traffic Counter cum classifier (ATCC) 33
3.11.2 Emergency Call Boxes (ECB) 33
3.11.3 CCTV Surveillance Cameras 34
3.12 Video Incident Detection System 34
3.13 Balance Work Status: Nil 34
3.14 Operation and Maintenances 34
3.14.1 O&M Contract 34
3.14.2 Organization Chart 35
3.14.3 Operation 36
3.14.4 Routine Maintenance 36
4 Pavement Investigation and Assessment 37
4.1 General 37
4.2 Surveys and Investigation 37
4.2.1 Pavement Condition Survey 37
4.2.2 Network Survey Vehicles (NSV) Survey 37
4.2.3 Roughness Survey 37
4.2.4 Periodic Maintenance Strategy 39
5 Cost Estimates 40
5.1 General 40
5.2 Rate Assumption 40
5.3 Balance Work Cost (CAPEX) 41
5.4 Routine O&M Cost 41
5.5 Major Maintenance Cost 42
5.6 Periodic Replacement of TMS / ATMS System 42
5.7 Escalation Assumption 43
5.8 Summary of Cost 43
Annexures 45
Annexure I - Routine Maintenance Cost 46
Annexure II - Major Maintenance Cost 50

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 11
Table 3-2 Details of New Minor Bridges 14
Table 3-3 Details of Major Bridges 16
Table 3-4 Details of Vehicular Underpasses 18
Table 3-5 Details of Light Vehicular Underpasses 19
Table 3-6 Details of Summary for Toll Plaza Items 29
Table 4-1 Summary of Pavement Condition 37
Table 4-2 Result of Roughness Survey 38
Table 4-3 Result of Roughness Survey as per CA 38
Table 4-4 Major Maintenance Cycle 39
Table 5-1 Summary of Unit Rates 40
Table 5-2 Summary of Operation Cost 42
Table 5-3 Escalation 43

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of the Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 7
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photographs of Major Junction 10
Figure 3-4 Photographs of Minor Junctions 10
Figure 3-5 Photographs of Culverts 13
Figure 3-6 Photographs of Minor Bridge 15
Figure 3-7 Photographs of Major Bridges 16
Figure 3-8 Photographs of Underpasses 18
Figure 3-9 Photographs of Light Vehicular Underpasses 19
Figure 3-10 Photographs of Drainage 21
Figure 3-11 Photographs of Slope Protection 22
Figure 3-12 Photographs of Road Marking 23
Figure 3-13 Photographs of Traffic Signage 24
Figure 3-14 Photographs of Highway Lighting 24
Figure 3-15 Photographs of Road studs / Cat Eyes 25
Figure 3-16 Photographs of Avenue and Median Plantation 26
Figure 3-17 Photographs of Road Signages 26
Figure 3-18 Photographs of MBCB / Crash Barrier 28
Figure 3-19 Photographs of Delineator 28
Figure 3-20 Photographs of Toll Plaza 29
Figure 3-21 Photographs of Bus Bays / Passenger Shelter 31
Figure 3-22 Photographs of Truck lay bye 32
Figure 3-23 Photographs of ATCC 33
Figure 3-24 Photographs of ECB 33
Figure 3-25 Photographs of CCTV Surveillance Camera 34

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of National Highway No. 166 including the section from Borgaon to Watambare (km. 224+000 to km. 276+000) on Hybrid Annuity Mode in the State of Maharashtra (approx. 52.000 kms) (hereinafter referred as "Project Road").

M/s. DBL Borgaon Watambare Highway Private Limited (DBWHPL) (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for development, maintenance and management of National Highway No. 166 including the section from Borgaon to Watambare (Sangli Solapur Pkg-II) on Hybrid Annuity Mode.

The Date of Concession Agreement is 10th May 2018. The concession period of the project is 17 years commencing from the Appointed Date including implementation period. The Appointed Date of the project is 22nd April 2019. The Provisional Completion Certificate was issued on 24th September 2021 for the length of 50.146 kms out of the project length of 52.000 kms. The project has also received Final Completion Certificate for the length of 51.802 km with effective from 01st March 2023.

Sr. No.	Description	Date
1	Date of Signing the Concession Agreement	10th May 2018
2	Appointed Date	22nd April 2019
3	Scheduled Project Completion Date	21st April 2021
4	Revised Scheduled Project Completion Date	19th October 2021
5	Scheduled End of Concession	17th April 2036
6	Date of issue of Provisional Completion Certificate	24th September 2021
7	Date of Commencement of Commercial Operation	24th September 2021
8	Date of Issue of Completion Certificate	1st March 2023

Presently, the project is under operation and maintenance and the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy

- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period.

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings.
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority.
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets, mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimates.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Client. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyses the same as per the best engineering / industry practices.

The site visit and inspection of the project site was carried out during the period from **15th February 2025 to 16th February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for technical due diligence study**.**

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development etc.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on the site visit**.**

Chapter 4 **Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance

Chapter 5 **Cost Estimates:** This chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/s. DBL Borgaon to Watambare Highway Private Limited (DBWHPL),** is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 22nd April 2019.

2.2 Location

The Site of the Four-Lane divided Project Road comprises the section of National Highway 166 commencing from Design km. 224+000 at Borgaon to Design km. 276+000 (Approx length is 52.00 kms) at Watambare in the State of Maharashtra.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of the Project Road

Start of Project at km. 224+000

Start of Project at km. 224+000

Figure 2-3 End of Project Road

End of Project at km. 276+000

End of Project at km. 276+000

2.3 Climate

The project location has three distinct seasons. Summer takes place from the middle of February to the middle of June, characterised by largely dry conditions towards the start, with rainfall tending to increase as the season progresses. Temperatures in summer are largely characterised by hot days and mild nights. Monsoon takes place from the middle of June to late October. Rainfall is most common in this season than at any other time of year. Temperatures in the monsoon season are characterised by warm, humid days and mild, humid nights. Winter takes place from early November to early February. This season is largely dry, with rain mostly concentrated in November. Temperatures in winter are characterised by warm days and cool nights. The total rainfall is around 22 inches (580 mm).

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The Project Road passes through residential and agricultural zones.

2.6 Right of Way

Right of Way is 60 m for the entire length except for Wayside Amenities and Toll Plaza.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services located along the Project Road were shifted out / at the edge of the ROW. The different types of utilities found along the road includes electrical poles, telephone poles, hand pumps, permanent structures, temples etc.

2.8 Service Road

The total length of service road on both sides is 12.908 kms.

2.9 Development as per Schedule-B

The Project Road from Design km. 224.00 at Borgaon to Design km. 276.000 at Watambare (Approx Length is 52.000 kms) has been developed as a four-lane paved carriageway 18.0m wide excluding median. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Operation and maintenance of the Project in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of the Concession Agreement and matters incidental thereto or necessary for the performance of any or all the obligations of the Concessionaire under the Concession Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Particulars	Unit	Scope as per Schedule-B	Constructed as per site
1	O&M of Main Carriageway	km	52.000	51.802*
2	Rail Over Bridge (ROB)	Nos.	00	00
3	Major Bridge	Nos.	04	04
4	Minor Bridge	Nos.	14	14
5	Vehicular Underpass	Nos.	04	04
6	Light Vehicular Underpass	Nos.	16+1 (COS)	17
7	Box Culverts	Nos.	14	14
8	Hume Pipe Culverts	Nos.	115	115

**Project has received Completion Certificate for the length of 51.802 km.*

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The paved carriageway is 18.0 m wide excluding the median. The project is widened to a four lane-carriageway with a width of 18.0 m as per standard cross section including paved shoulders. Service / Slip Road of 7.5 m width has been provided on one side or both sides wherever required in built up area to cater for the local traffic.

The entire stretch of Project Road, Service / Slip Road & Toll Plaza are constructed with rigid pavement. Rigid pavements for Main Carriage way and Service / Slip Roads are designed for a design life of 30 years.

3.1.1 Pavement Condition Survey

A pavement condition survey was carried out from **15th February 2025 to 16th February 2025** through visual inspection for the entire project length. From the visual inspection, the pavement condition of the project road is found to be Good. The total project length of 51.802 kms. is in good condition. During site visits at some location cracks are observed on the pavement, however rectification work is in progress at such locations of the Project Road.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

Pavement Condition at km. 271+150 (RHS)

Pavement Condition at km. 270+900 (RHS)

Pavement Condition at km. 240+200 (RHS)

Pavement Condition at km. 234+650 (RHS)

Repair WIP at km. 227+400 (LHS)

Pavement Condition at km. 257+000 (LHS)

Pavement Condition at km. 246+600 (LHS)

Pavement Condition at km. 270+000 (LHS)

3.2 Service Road / Slip Road

The service / slip road of width 7.5 m is constructed in built-up areas and adjoining underpass locations. The Project Road has total service / slip road length of 12.908 kms. At some locations, service / slip road construction work is balance and at some place concrete panels are damaged and need to be repaired or replaced.

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Pavement Condition at km. 273+980

Pavement Condition at km. 270+944

Pavement Condition km. 258+105

Pavement Condition at km. 255+100

Pavement Condition at km. 246+900

Pavement Condition at km. 225+200

3.3 Major / Minor Intersection

There are 01 No. of Major junctions and 49 Nos. of Minor junctions along Project Road.

The photographs taken during site visit are presented as below.

Figure 3-3 Photographs of Major Junction

Major Junction at km. 245+926

Figure 3-4 Photographs of Minor Junctions

T-Junction at km. 274+010

Y-Junction at km. 272+000

Y-Junction at km. 224+900

Y-Junction at km. 259+100

3.4 Inventory and Condition Survey of Structures and Bridges

The inventory of structures including major bridges, minor bridges, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Sr. No.	Particulars	Unit	Total Number of Structures As per Concession Agreement	Total Number of Structures as per site
1	Rail Over Bridge (ROB)	Nos.	00	00
2	Major Bridge	Nos.	04	04
3	Minor Bridge	Nos.	14	14
4	Vehicular Underpass	Nos.	04	04
5	Light Vehicular Underpass	Nos.	16 + 1 (COS)	17
6	Box Culverts	Nos.	14	14
7	Hume Pipe Culverts	Nos.	115	115

All major structures and CD works were visually inspected. The structures are generally sufficient for storm water drainage. The waterway needs regular cleaning. All the old bridges are 2-lane and widened to 2 additional lanes. The type of foundation for these structures is open foundation. In case of some bridges, settlement in approaches and cracks in the pavement has been observed. New bridges are constructed in 2-lane with footpath keeping a provision of converting into 3-lane in future. The wearing course and expansion joints are found okay. The crash barriers are RCC type and are in sound condition. Return wall are RCC type and pitching has been provided in almost all bridges. RE walls are provided for the approaches of the structures.

The detailed condition survey of major bridges, minor bridges, flyovers and culverts was carried out by visual inspection. The observations and findings are presented below.

3.4.1 Cross Drainage Structures (Culverts)

Box culverts are visually inspected. The quality of concrete of abutment, slab and wing wall / return wall, parapet wall is satisfactory. Minor settlement on approach is observed in few culverts. The slope protection was done at major locations. The slopes are stable. Generally, all the box culverts are found in sound condition. The waterway needs to be

cleaned on both sides of the culverts. The structure number is painted on the parapet wall or crash barrier in most of the culverts. The waterway is clear in most of the culverts and needs to be cleared for a few culverts, particularly in urban areas.

Pipe culverts are visually inspected. The pipe culverts are either newly constructed or reconstructed. Some of the pipe culverts are retained and widened. The widening is either concentric or eccentric. In most of the culverts, the ends are blocked by debris, garbage or vegetation especially in urban areas or buried under the ground. These require regular cleaning of the waterway to avoid damage to the pavement.

The following photographs were taken during the inspection of culverts.

Figure 3-5 Photographs of Culverts

Box culvert at km. 273+300

Pipe culvert at km. 272+000

Box culvert at km. 269+000

Box culvert at km. 266+500

Box culvert at km. 252+400

Box culvert at km. 242+100

Pipe culvert at km. 234+025

Pipe culvert at km. 260+970

Box culvert at km. 237+650

Pipe culvert at km. 266+100

Pipe culvert at km. 234+650

Pipe culvert at km. 224+300

3.4.2 Minor Bridges

Table 3-2 Details of New Minor Bridges

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Type of Structure	Proposed Span Arrangement (m)	Remarks	Total Width (m)	FPPM Comments
1	-	246.490	RCC Box type	1 x 10.0	-	16.0 + 3.0 + 16.0	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
2	246.850	250.881	RCC Box type	2 x 9	-	16.0 + 3.0 + 16.0	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
3	250.099	253.998	RCC Girder Type	1 x 15.0	-	16.0 + 3.0 + 16.0	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
4	-	256.749	RCC Girder Type	1 x 14.0	-	16.0 + 3.0 + 16.0	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
5	-	257.568	RCC Box type	3 x 10.0	New Bridges on Service / Slip road also to be constructed	14.5 + 3.0 + 14.5	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
6	221.813	225.858		4 x 5.30	New Bridges on Service / Slip road also to be constructed	14.5 + 3.0 + 14.5	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
7	224.317	228.359		1 x 22.0	New Bridges on Service / Slip road also to be constructed	14.5 + 3.0 + 14.5	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
8	224.830	228.877		2 x 9.40 (Sk.)	New Bridges on Service / Slip road also to be constructed	14.5 + 3.0 + 14.5	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
9	226.719	230.762		2 x 10.0	-	16.0 + 3.0 + 16.0	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
10	228.881	232.939		1 x 16.0	New Bridges on Service / Slip road also to be constructed	14.5 + 3.0 + 14.5	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
11	234.776	238.823		1 x 6.30	New Bridges on Service / Slip road also to be constructed	14.5 + 3.0 + 14.5	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
12	265.066	268.727		1 x 7.5	-	16.0 + 3.0 + 16.0	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.

The following photographs were taken during the inspection of Minor Bridges.

Figure 3-6 Photographs of Minor Bridge

MNB at km. 247+450

MNB at km. 228+359

MNB at km. 225+858

MNB at km. 228+877

MNB at km. 232+939

MNB at km. 246+490

MNB at km. 250+881

MNB at km. 253+998

MNB at km. 256+749

MNB at km. 257+568

MNB at km. 268+727

3.4.3 Major Bridge (length > 60 m)

There are 04 Nos. of Major Bridges on Project Road. All the Major Bridges are visually inspected. The structures are generally sufficient for the crossing of river water. The waterway needs regular cleaning. The sub-structures are constructed with RCC piers. Expansion joints on both the bridges need to be cleaned. Minor settlement in approaches and damage on pavement has been observed. New bridges are constructed in 2-lane with footpath. The wearing course and expansion joints are found to be in good condition. W-beam and RCC type crash barriers are in sound condition. Drainage spouts and expansion joints need to be cleaned regularly. Further, vegetation and silt need to be removed from the waterway for smooth flow of water.

Table 3-3 Details of Major Bridges

Sr. No.	Location	Existing Chainage (Km)	Design Chainage (Km)	Type of crossing	Proposed Span Arrangement (m)	Total Width (m)	FPPM Comments
1	Agran River	221.058	225.100	PSC Girder type	4 x 30.0	16.0 + 3.0 + 16.0	The structure is in good condition. RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat is found to be good. Minor settlement on approaches is noticed.
2	-	242.535	246.637	PSC Girder type	3 x 30.0	16.0 + 3.0 + 16.0	The structure is in good condition. RCC railing & Concrete crash barriers are in good condition. Waterway cleaning is required.
3	Bhelwal River	261.462	265.174	PSC Girder type	4 x 30.0	16.0 + 3.0 + 16.0	The structure is in good condition. RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat is found to be good. Minor settlement on approaches is noticed.
4	Vibag River	268.078	271.742	PSC Girder type	4 x 30.0	16.0 + 3.0 + 16.0	The structure is in good condition. RCC railing & Concrete crash barriers are in good condition. Waterway cleaning is required.

The following photographs were taken during the inspection of Major Bridges.

Figure 3-7 Photographs of Major Bridges

Major Bridge at km. 225+100 (New structure)

Abutment wall & Return wall of Major Bridge at km. 225+100

Girders of Major Bridge at km. 225+100

Major Bridge at km. 225+100

Major Bridge at km. 225+100

Abutment wall and Girders of Major Bridge at km. 225+100

Major Bridge at km. 246+650

Condition on Major Bridge at km. 246+637

Abutment condition of Major Bridge at km. 246+637

Pavement, Footpath condition on Major Bridge at km. 265+170

Girders & Abutment wall of MJB at km. 265+170

Sub-structure Condition of Major Bridge at km. 265+170

Pavement, Footpath condition on Major Bridge at km. 271+720

Major Bridge at km. 271+720 (LHS & RHS)

Girders & abutment wall of MJB at km. 271+720

3.4.4 Underpasses

Table 3-4 Details of Vehicular Underpasses

Sr. No.	Design Chainage (Km)	Span / Opening (m)	Structure	Construction Scheme	FPPM Comments
1	224.900	1 x 15.0 x 5.5	VUP	New construction	The overall structure condition of all underpasses is found to be good. RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat is found to be good. Minor settlement on approaches is noticed. RE Wall, Lighting arrangement under structures, pavement under structures is in good condition.
2	228.548	1 x 20.0 x 5.5	VUP	New construction	
3	246.400	1 x 20.0 x 5.5	VUP	New construction	
4	274.006	1 x 15.0 x 5.5	VUP	New construction	

The following photographs were taken during the inspection of Underpasses:

Figure 3-8 Photographs of Underpasses

VUP at km. 224+900

RE wall for VUP at km. 224+900

VUP at km. 228+548

RE Wall of VUP at km. 228+548

VUP at km. 246+400

Girders of VUP at km. 246+400

VUP at km. 274+006

RE Wall of VUP at km. 274+006

3.4.5 Light Vehicular Underpasses

Table 3-5 Details of Light Vehicular Underpasses

Sr. No.	Design Chainage (Km)	Span / Opening (m)	Structure	Construction scheme	FPPM Comments
1	225.200	1 x 12.0 x 4.0	LVUP	New construction	The overall structure condition of all underpasses is found to be good. RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat is found to be good. RE Wall, Lighting arrangement under structures, pavement under structures is in good condition.
2	225.500	1 x 12.0 x 4.5	LVUP	New construction	
3	228.000	1 x 12.0 x 4.5	LVUP	New construction	
4	230.010	1 x 12.0 x 4.0	LVUP	New construction	
5	232.976	1 x 12.0 x 4.5	LVUP	New construction	
6	237.420	1 x 12.0 x 4.5	LVUP	New construction	
7	239.086	1 x 12.0 x 4.0	LVUP	New construction	
8	242.900	1 x 12.0 x 4.5	LVUP	New construction	
9	255.100	1 x 12.0 x 4.0	LVUP	New construction	
10	258.105	1 x 12.0 x 4.5	LVUP	New construction	
11	262.100	1 x 12.0 x 4.5	LVUP	New construction	
12	264.445	1 x 12.0 x 4.5	LVUP	New construction	
13	265.242	1 x 12.0 x 4.0	LVUP	New construction	
14	267.500	1 x 12.0 x 4.5	LVUP	New construction	
15	269.965	1 x 12.0 x 4.5	LVUP	New construction	
16	270.900	1 x 12.0 x 4.0	LVUP	New construction	

The following photographs were taken during the inspection of the Pedestrian Underpass.

Figure 3-9 Photographs of Light Vehicular Underpasses

LVUP at km. 270+900

LVUP at km. 269+965

LVUP at km. 267+500

RE Wall of LVUP at km. 267+500

LVUP at km. 262+100

LVUP at km. 258+105

LVUP at km. 255+100

LVUP at km. 245+927

LVUP at km. 242+900

LVUP at km. 239+086

LVUP at km. 237+420

LVUP at km. 232+976

LVUP at km. 230+010

LVUP at km. 228+000

LVUP at km. 225+500

LVUP at km. 225+200

3.5 Drainage

Drains are to be constructed at the Project Road to have good drainage. Covered Lined drains are provided at sides of the service. Median cut drains are provided at superelevation locations. The drainage condition of Project Road is in order. Silt deposits need to be removed during routine maintenance. Earther drains are also provided in rural areas. The condition of the same is good to fair.

Figure 3-10 Photographs of Drainage

RCC Covered Drain at Service Road

Median Drain

Earthen Drain

3.6 Slope Protection

Slope protection is found on Project Road at some locations. Some of the photographs of slope protection work are presented below.

Figure 3-11 Photographs of Slope Protection

Slope Protection for MNB

Slope Protection

Slope Protection at high embankments

3.7 Road Furniture

3.7.1 Pavement Marking

Pavement marking for the Project Road is done as per the design standard. Pavement marking is faded at some locations which need to be repainted by the Concessionaire. Some of the photographs of road marking are presented below.

Figure 3-12 Photographs of Road Marking

Pavement marking at km. 237+660

Pavement marking at km. 249+950

Pavement Marking at km. 230+700

Pavement Marking

3.7.2 Traffic Signage

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards.

Figure 3-13 Photographs of Traffic Signage

Chevron Sign Board

Restaurant Ahead Sign Board

3.7.3 Highway Lighting

Highway Lighting is provided in urban and semi-urban areas of the Project Road. Lighting is provided at the locations of truck lay-bye, rest areas, toll plazas, underpasses, service road stretches and at intersections / interchanges. IS:1944 (Part I and II) is followed for lighting installations. High mast lighting systems are provided at toll plaza.

Figure 3-14 Photographs of Highway Lighting

Highway Lighting

High Mast at Toll Plaza

Highway Lighting at Bus Bay

Highway Lighting at Truck Lay-Bye (BHS)

3.7.4 Road Studs / Cat's Eye

The Concessionaire has provided cat's eye / studs as per Schedule-D on the curves, road junctions, zebra crossings, in municipal area and village settlement and ramps etc. to provide the proper visibility to the road users.

Figure 3-15 Photographs of Road studs / Cat Eyes

Road Studs on Project Road

Road Studs on Service Road

3.7.5 Avenue Plantation and Median Plantation

Avenue plantations and median plantations are done along the project length as per IRC specification except at built-up locations. Median plantation too needs proper regular maintenance. Avenue plantation work is in progress at required location as per CA.

Figure 3-16 Photographs of Avenue and Median Plantation

Avenue Plantation

Median Plantation

3.7.6 Traffic Signage / Median kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Median kerb paint is faded at few locations which will be rectified by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-17 Photographs of Road Signages

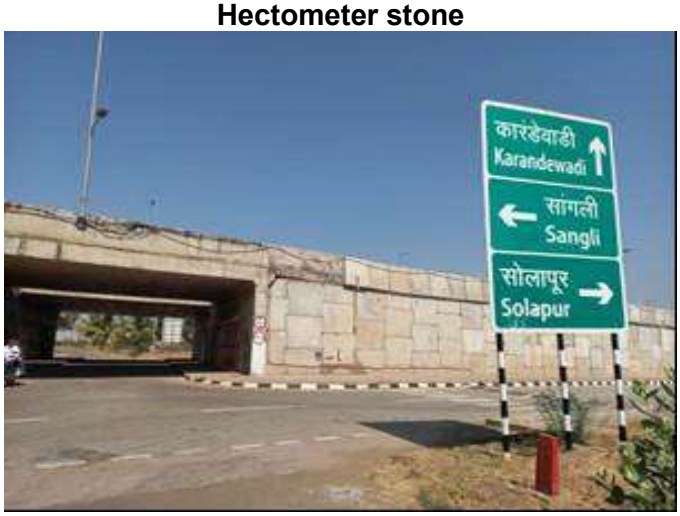
Kerb painting work

Kilometer stone at km. 272+000

Kilometer stone at km. 275+000

Hectometer stone

Overhead gantry at km. 245+200



Sign Board on Project Road

3.7.7 Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and at sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of metal beam crash barriers are presented below.

Figure 3-18 Photographs of MBCB / Crash Barrier

MBCB on Project Road

RCC Crash Barrier at structure locations

3.7.8 Delineators

The traffic delineators are provided by the Concessionaire on the Project Road for road users. The same are maintained by the Concessionaire.

Some of the photographs of delineators are presented below.

Figure 3-19 Photographs of Delineator

Delineators along the Project Road

3.8 Toll Plaza

As per the Concession Agreement, there is one toll plaza on the Project Road at km. 274+800. Details of the Toll Plaza are as follows.

Table 3-6 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details		Remarks
		LHS	RHS	
1	Number of Tolling Lanes	8	8	
2	Weigh in Motion Facility (Number of Lanes)	8	8	
3	No. of ETC lanes	8	8	
4	No of Toll booths	15		
5	Canopy	Present		
6	Administrative building	Present		
7	Parking cum Toilet box	Present		
8	Availability of Tunnel or Elevated walkaway for movement between Toll lanes and administrative building	Tunnel / Yes		
9	Availability of static weigh bridge	No		Descoped
10	Availability of Loading/Unloading Facility for Overloading vehicles	No		
11	Storage facility for Overloaded material	No		
12	High mast light	Yes		
13	Streetlight	Yes		
14	Low mast light	No		
15	User fee boards	Yes		
16	Cantilever/Gantry boards	Yes		
17	Automatic boom barrier	Yes		

Figure 3-20 Photographs of Toll Plaza

View of Toll Plaza - km. 274+800

Admin Building

View of Toll Plaza

Server Room at Toll Plaza

Tunnel at Toll Plaza

Lane Controller at Toll Plaza

Toilet Block at Toll Plaza

Control Room at Toll Plaza

Traffic and Medical Aid Post at Toll Plaza

Lab & O&M center at Toll Plaza

Crane and Ambulance on Project Road

3.9 Bus Bays and Passenger Shelters

There are 38 Nos. of bus bays / passenger shelters along the Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-21 Photographs of Bus Bays / Passenger Shelter

Bus shelter at km. 262+150

Bus bay at km. 255+850

3.10 Truck Lay Bye

There are 02 Nos. of Truck Lay Bye along the Project Road. Some of the photographs of the Truck Lay Bye are presented below.

Figure 3-22 Photographs of Truck lay bye

Truck Lay Bye at km. 273+025

3.11 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS centre at toll plaza location (km. 274+800). The ATMS is provided and being maintained as per the requirement of the Concession Agreement. The ATMS provided are listed below.

- Automatic Traffic Counter cum Classifier (ATCC)
- Emergency Call Box
- Variable message Signs System (Fixed/Portable)
- Mobile communication System
- Mobile Radio Communication System
- Integrated ATMS Software and System Architecture
- ATMS Control Center integrated with above sub-components
- Weigh-in-motion (Portable)
- Vehicle actuated speed detection camera.

Status of these systems at site are described below:

3.11.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km. 278+800).

Figure 3-23 Photographs of ATCC

At Toll Plaza

At Toll Plaza

3.11.2 Emergency Call Boxes (ECB)

ECB is installed on the Project Road. Some of the photographs of the ECB are presented below.

Figure 3-24 Photographs of ECB

ECB at km. 266+100

ECB at km. 247+300

3.11.3 CCTV Surveillance Cameras

Surveillance cameras are installed as per CA requirement along the Project Road. The HTMS control room has video wall to monitor these locations through the cameras installed.

Figure 3-25 Photographs of CCTV Surveillance Camera

On Project Road

At Toll Plaza location

3.12 Video Incident Detection System

CCTV cameras are installed as part of Video incident detection system.

3.13 Balance Work Status: Nil

Concessionaire has received Completion Certificate for the length of 51.802 kms with effective from 01st March 2023. Hence, there is no balance work on Project Road.

3.14 Operation and Maintenances

3.14.1 O&M Contract

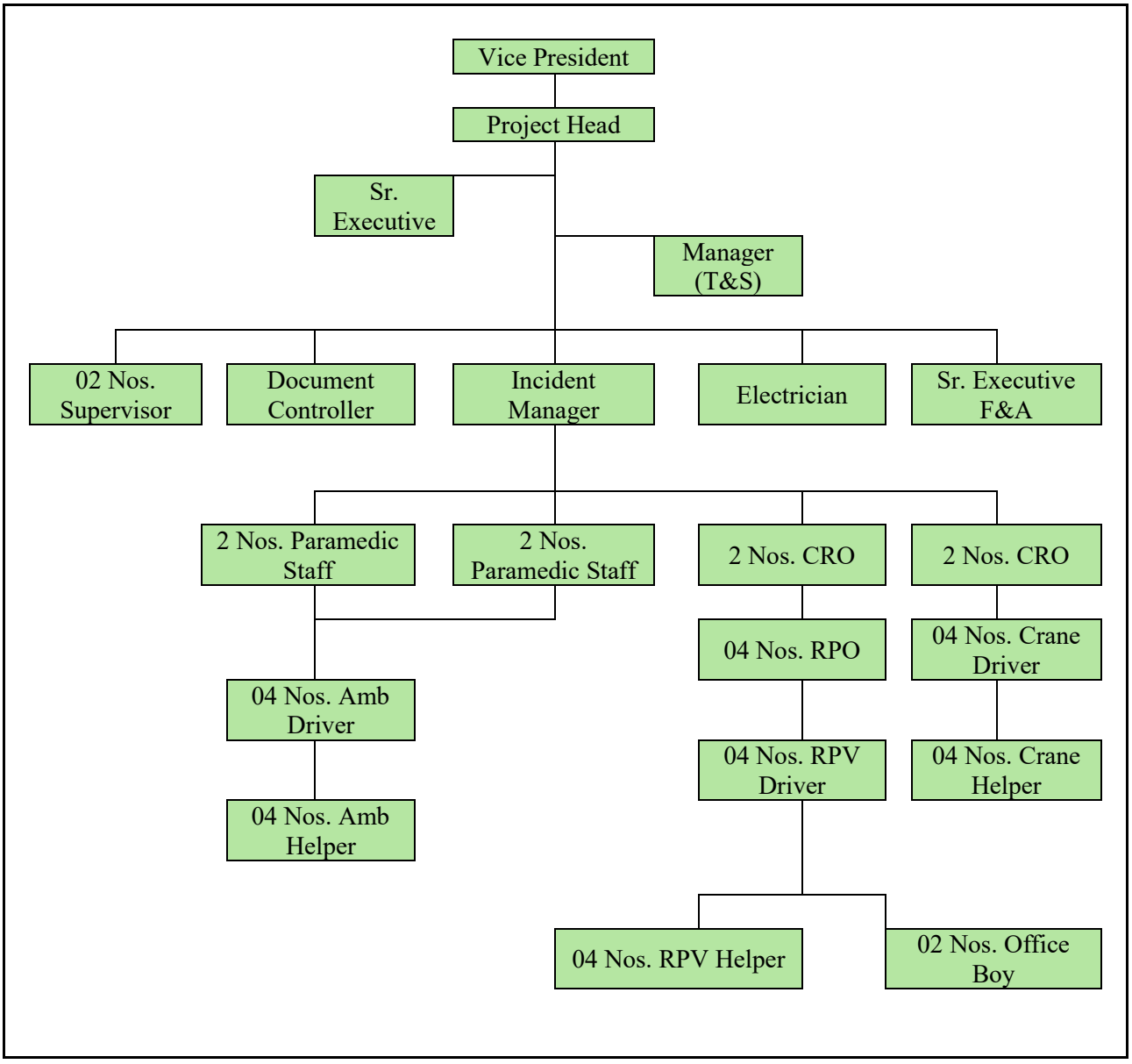
As per Clause 17.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

The Concessionaire has outsourced for carrying out activities related to operation and maintenance of the Project Road including security services, Incident management services.

3.14.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive- Maintenance, 02 Supervisor, 01 Electrician, 01 Incident Manager, 01 Document Controller to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Charts



3.14.3 Operation

Operation cost is comprised of manpower cost, Security cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.14.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire has received the Completion Certificate on 01st March 2023 for the length of 51.802 out of 52.000 kms.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 17 years from the Appointed Date 22nd April 2019 including construction period of 2 years.

4.2 Surveys and Investigation

4.2.1 Pavement Condition Survey

Pavement condition survey was carried out by the Technical Consultant from **15th February 2025 to 16th February 2025** through visual inspection for the project road and for the entire project length.

The summary of pavement condition based on the visual inspection is tabulated below.

Table 4-1 Summary of Pavement Condition

Sr. No.	Chainage (km)		Length (km)	Visual Condition (As per IRC:115-2014)	
	From	To		Left Carriageway	Right Carriageway
1	224+000	276+000	52.00	Good	Good

Observation and Conclusion:

From the above table, it is observed that the overall pavement condition for the entire project stretch is found to be Good. The repair and rectification work are in progress wherever required on the Project Road.

4.2.2 Network Survey Vehicles (NSV) Survey

The Concessionaire has conducted pavement condition survey on each lane of each carriageway with NSV. The NSV survey was conducted on the project corridor on 11th and 12th October 2024.

4.2.3 Roughness Survey

Roughness Survey results were provided by the Concessionaire for analysis and to assess the riding quality on each direction (each lane) of the carriageway of Project Road.

The side-wise results of Roughness Survey are presented as below.

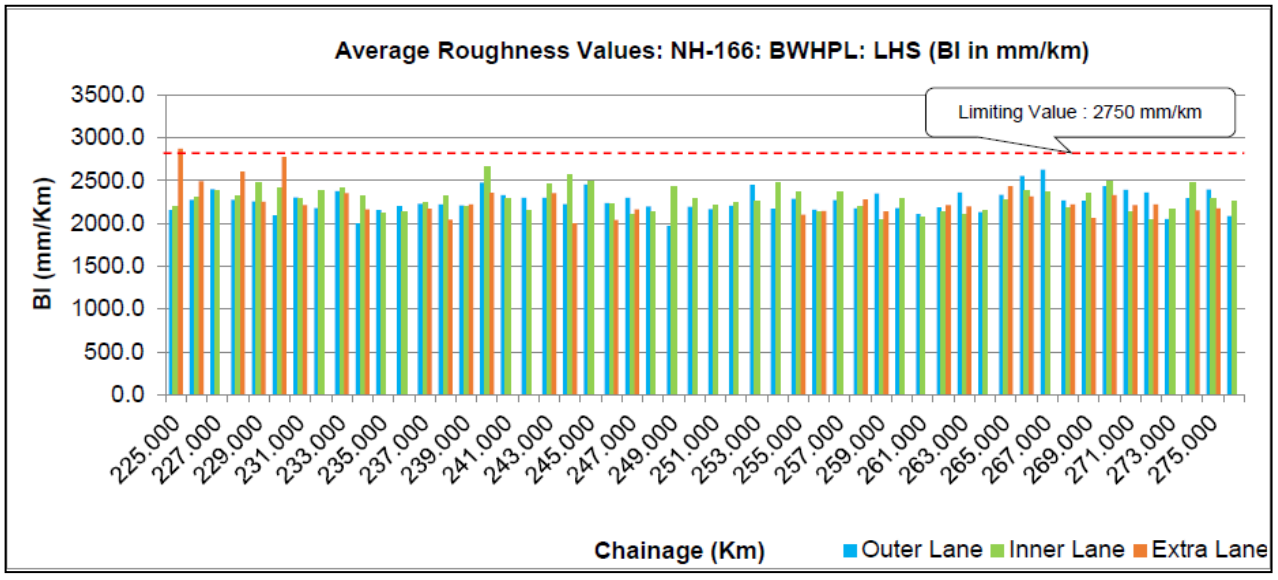
Table 4-2 Result of Roughness Survey

Roughness Summary as per IRC: SP:16-2019										
Sr. No.	Condition	BI (mm/km)	LHS				RHS			
			Outer Lane		Inner Lane		Outer Lane		Inner Lane	
			Length (km)	Length (%)	Length (km)	Length (%)	Length (km)	Length (%)	Length (km)	Length (%)
1	Good	<2000	1.000	1.90	0.000	0.00	0.000	0.00	2.850	5.50
2	Fair	2000-2400	45.000	86.50	40.600	79.10	38.000	73.10	37.700	73.10
4	Poor	>2400	6.000	11.50	10.700	20.90	14.000	26.90	11.000	21.30
			52.000	100.00	51.300	100.00	52.000	100.00	51.550	100.0

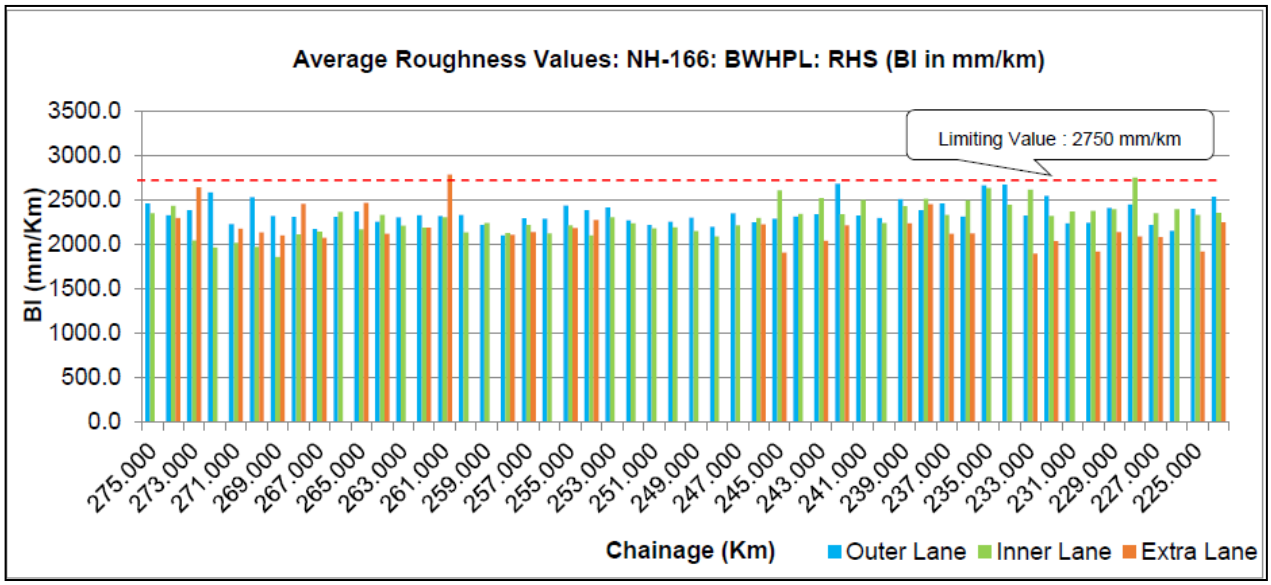
Table 4-3 Result of Roughness Survey as per CA

Sr. No.	Condition	BI (mm/Km)	LHS (Km)	LHS (Km)
1	Good & Fair	<=2750	51.802	50.800
2	Poor	>2750	0.000	1.000
		Total Length (Km)	**0.000**	**1.000**

Summary of Roughness on LHS



Summary of Roughness on RHS



Observation and Conclusion:

As per CA, the roughness value for this project is 2750 mm/km, so that the overall pavement condition for the entire project stretch is found to be Good to Fair condition, except 1 km section of project Road where the Concessionaire has already started repair and rectification work of PQC panels. The cost of panel replacement is considered in routine maintenance cost.

4.2.4 Periodic Maintenance Strategy

As per Schedule-K of Concession Agreement, the riding quality of the pavement shall be ensured by satisfying the minimum requirements given herein under:

- Surface roughness of the Project Road on completion of construction shall not exceed 2750 mm/km as measured by a standard rough meter / bump integrator.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-4 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2023 to FY 2028	-	-
2	FY 2029	Major maintenance with Retexturing and Grinding with 40% + Replacement of PQC Panel 2%	Major maintenance with Retexturing and Grinding with 25% + Replacement of PQC Panel 1%
3	FY 2030 to FY 2035	-	-
4	FY 2036	Major maintenance with Retexturing and Grinding with 60% + Replacement of PQC Panel 2%	Major maintenance with Retexturing and Grinding with 25% + Replacement of PQC Panel 1%
5	FY 2037	-	-

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Work Cost (CAPEX)
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

Unit rates of different items (Concrete, PQC, DLC etc.) are calculated as per Govt. of Maharashtra P.W.D. SSR 2022-23. The input rates for SSR were adopted as below.

a. Manpower and Labour: As per applicable minimum wages published by State Schedule of Rates, Government of Maharashtra.

b. Sand and Aggregate: Market rates are considered from the quarry located nearest to the Project Road.

c. Cement: Rate of Cement is taken from MH SSR 2022-23.

d. Steel : Rate of steel is taken from MH SSR 2022-23.

e. Machinery Hire charges: Hire charges for the machinery are considered in accordance with applicable MH SSR 2022-23.

f. Rates of items as per Work Order: The rates of Milling, Road marking, road Stud etc. are considered as per the Work Order issued to Contractor at Site shared by the client.

g. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines**.**

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-1 Summary of Unit Rates

Sr. No.	Description	Unit	Rates (Rs.)
1	Pavement Quality Concrete	Cum	7,007
2	Dry Lean Concrete	Cum	4,188
3	Retexturing and grinding	Sqm	120

Sr. No.	Description	Unit	Rates (Rs.)
4	Joint sealant	Sqm	75
5	Road Marking	Sqm	464
6	Road Studs	Nos.	185

5.3 Balance Work Cost (CAPEX)

As discussed in the previous chapter, there is no balance work on the Project Road.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Toll Security Services
3. Incident Management Services
4. Electricity
5. HTMS Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Community Development
10. Communication Expenses
11. Conveyance Expenses
12. Insurance Expense
13. IE Fees
14. Horticulture & ROW Maintenance
15. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-2 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-36)
1	Salary and Welfare Expenses	46,86,000
2	Security Expenses	15,43,716
3	Incident Management & Emergency Services	1,95,46,567
4	Electricity Charges	1,65,11,633
5	TMS / HTMS / System Expenses	96,37,650
6	Office Operating Expenses	31,46,000
7	Vehicle Running Expenses	24,42,000
8	Professional Fees Expense	1,43,00,000
9	Community Development	14,30,000
10	Communication Expenses	3,48,920
11	Conveyance Expenses	3,71,800
12	Insurance Expense	1,08,68,000
13	IE Fees	1,25,84,000
14	Routine Maintenance Cost (Project Road)	1,99,90,561
15	Horticulture & ROW Maintenance	1,61,99,040
16	Miscellaneous including Contingency	38,96,651
	Total Cost (Rs.)	**13,75,02,539**
	Total Cost (Cr.)	**13.75**
	Per km Cost (Lakhs)	26.44

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2022 to FY 2028	-	
2	FY 2029	24.88	
3	FY 2030 to FY 2035	-	
4	FY 2036	29.21	
5	FY 2037	-	
Total Cost (Cr.)		**54.09**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement cost of major TMS / ATMS system is considered. The same is provided as below:

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2029	4.09	
2	FY 2036	4.09	
Total Cost (Cr.)		**8.18**	

5.7 Escalation Assumption

The following escalation is considered basis discussions with Client and our internal estimates.

Table 5-3 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	4.00%
2026	-	**2042**	3.99%
2027	5.23%	**2043**	3.99%
2028	4.92%	**2044**	3.99%
2029	4.63%	**2045**	3.98%
2030	4.33%	**2046**	3.98%
2031	4.12%	**2047**	3.96%
2032	4.07%	**2048**	3.96%
2033	4.06%	**2049**	3.95%
2034	4.00%	**2050**	3.95%
2035	4.01%	**2051**	3.95%
2036	3.99%	**2052**	3.95%
2037	4.00%	**2053**	3.95%
2038	4.02%	**2054**	3.95%
2039	4.00%	**2055**	3.95%
2040	3.98%	**2056**	3.95%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in Clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37
1	Routine O&M Cost												
1.01	Salary and Welfare Expense	0.47	0.49	0.52	0.54	0.56	0.59	0.61	0.64	0.66	0.69	0.72	0.74
1.02	Security Expenses	0.15	0.16	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.24	0.25
1.03	Incident Management Services	1.95	2.06	2.16	2.26	2.36	2.45	2.55	2.66	2.76	2.87	2.99	3.11
1.04	Electricity and Diesel Charges	1.65	1.74	1.82	1.91	1.99	2.07	2.16	2.24	2.33	2.43	2.52	2.63
1.05	TMS/HTMS/System Expenses	0.29	0.49	0.64	-	0.21	0.22	0.23	0.40	0.66	0.86	-	0.28
1.06	Office Operating Expenses	0.31	0.33	0.35	0.36	0.38	0.39	0.41	0.43	0.44	0.46	0.48	0.50
1.07	Vehicle Running Expenses	0.24	0.26	0.27	0.28	0.29	0.31	0.32	0.33	0.35	0.36	0.37	0.39
1.08	Professional Fees Expense	1.43	1.50	1.58	1.65	1.72	1.79	1.87	1.94	2.02	2.10	2.19	2.27
1.09	Community Development	0.14	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23
1.10	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06
1.11	Conveyance Expenses	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06
1.12	Insurance Expense	1.09	1.14	1.20	1.26	1.31	1.36	1.42	1.48	1.54	1.60	1.66	1.73
1.13	IE Fees	1.26	1.32	1.39	1.45	1.52	1.58	1.64	1.71	1.78	1.85	1.92	2.00
1.14	Routine Maintenance Cost	2.00	2.10	2.21	2.31	2.41	2.51	2.61	2.72	2.83	2.94	3.06	3.18
1.15	Horticulture & ROW Maintenance	1.62	1.70	1.79	1.87	1.95	2.03	2.12	2.20	2.29	2.38	2.48	2.58
1.16	Miscellaneous and Contingency	0.36	0.39	0.41	0.41	0.43	0.45	0.47	0.49	0.52	0.55	0.54	0.57
1	Subtotal of O&M Cost	13.05	13.93	14.74	14.73	15.58	16.23	16.89	17.74	18.71	19.63	19.49	20.56
2	Major Maintenance Cost	-	-	-	28.57	-	-	-	-	-	-	44.09	-
3	Periodic Cost of TMS/HTMS Replacement	-	-	-	4.72	-	-	-	-	-	-	6.25	-
4	Balance Works Cost (CAPEX)												
5	Balance Repair / Rectification Works	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**13.05**	**13.93**	**14.74**	**48.02**	**15.58**	**16.23**	**16.89**	**17.74**	**18.71**	**19.63**	**69.83**	**20.56**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Routine Maintenance Cost (with GST)	**1,99,90,561**
(Inclusive of GST)	**= 3.84 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways - Rigid Pavement									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m/2m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Rigid Pavement**		**Project Length (km)**		**Per Year Project Maintenance Cost**	
				Normal	**Urban**				
				More than 4500 CVD	More than 4500 CVD				
				1,58,014	**1,92,172**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	241761.00	294023.00	-	-	-	-
		Paved shoulder	1.70	268623.00	326692.00	38.38	-	1,03,10,557	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	316027.00	384343.00	-	-	-	-
		Paved shoulder	2.20	347630.00	422778.00	-	-	-	-
3	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.90	458239.00	557298.00	-	-	-	-
		with Paved shoulder	3.10	489842.00	595732.00	-	13.62	-	81,12,083
4	Panel Replacement								15,67,921
TOTAL							**52.000**		**1,99,90,561**

Ordinary Repair

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **CC Surface**
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.00%
	Volume (cum)			0.00
	Rs/m^3			14603
	Cost in Rupees			0
	ii) Patch repair	100 % Patch less	As & when required	0.00%
	Area (sqm)			10
	Rs/m^2			584
	Cost in Rupees			5,841
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			100
	Cost in Rupees			25,075
	b) Width less than 3 mm	75 % Crack Less	As & when required	1.50%
	Area (sqm)			112.5
	Rs/m^2			76
	Cost in Rupees			8,496
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	0.00%
	Area (sqm)			10
	Rs/m^2			584
	Cost in Rupees			5,841
	v) Road marking	10%		13545

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				CC Surface
1	**2**	**3**	**4**	**5**
	vi) Joint Sealant Repair/Replacement	7%		21609
	SUB TOTAL			**80,407**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Jungle Clearance	100%	Twice in a Year	2038
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**9,340**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	2751
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**9,803**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	4852
	ii) Maintenance of gang hut store, sheds, animal & debris		Once in a Year	3639

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				CC Surface
1	**2**	**3**	**4**	**5**
	removal			
	iii) Lettering, Painting of Km stones & kerbs, sign boards, Hectometer stone etc.		Once in a Year	3639
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 5 Years	7277
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	1456
	SUB TOTAL			**22,076**
	GRAND TOTAL (Normal)			**1,58,014**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	10%		4805
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**34,158**
	GRAND TOTAL (Urban)			**1,92,172**

ANNEXURE II - MAJOR MAINTENANCE COST

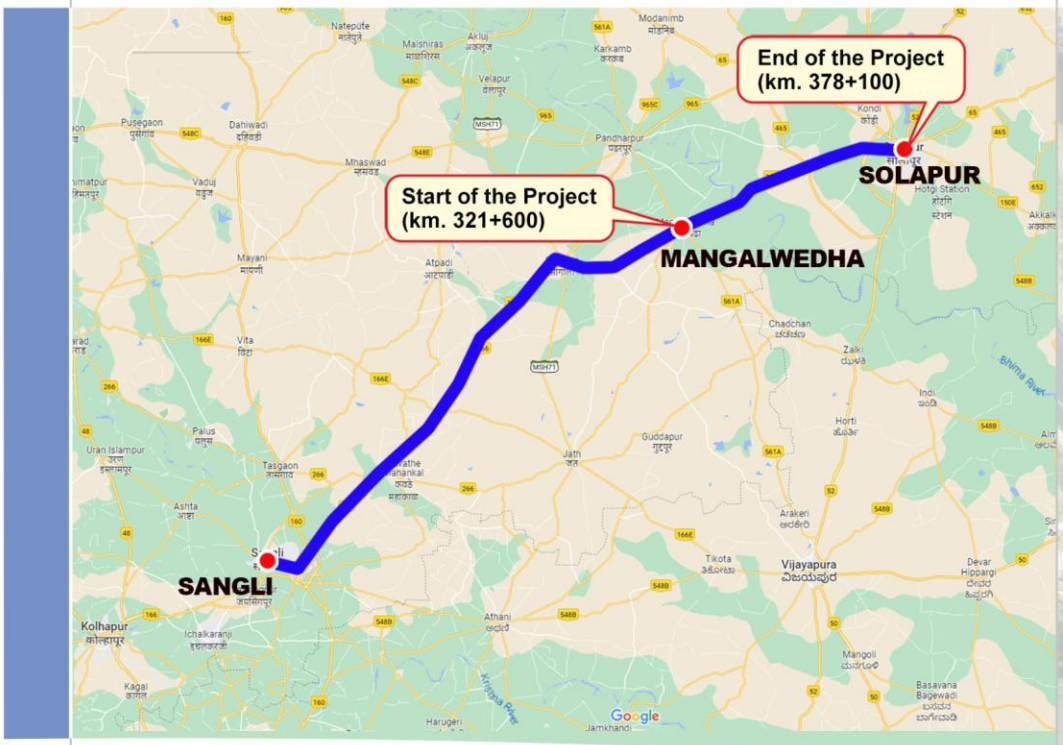
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity (Cum)**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
A	**Main Carriageway:**									
1	Retexturing and Grinding	Sqm	40%	51,057	20.23		4,13,236	4,13,236	120	4,95,88,351
2	Replacement of PQC Slab	Cum	2%	51,057	20.23	0.30	6,199	6,199	10,118	6,27,16,867
3	Joint sealant (Silicone)	RMT	40%	65,593	4.50	3.50	2,09,898	2,09,898	75	1,57,42,334
4	Retexturing and Grinding for Misc. Location	Sqm	7%	4,13,236			28,927	28,927	120	34,71,185
5	Replacement of PQC Slab for Misc. Location	Cum	7%	6,199			434	434	10,118	43,90,181
6	Joint sealant (Silicone) for Misc. Location	RMT	7%	2,09,898			14,693	14,693	75	11,01,963
7	Filling of Earthen shoulder	Cum	20%	1,53,532.00		0.05	1,535	1,535	601	9,22,727
B	**Service Road**									
8	Retexturing and Grinding	Sqm	25%	25,870	7.50		48,507	48,507	120	58,20,840
9	Replacement of PQC Slab	Sqm	1%	25,870	7.50	0.25	485	485	10,118	49,07,938
10	Joint sealant (Silicone)	Cum	25%	12,319	4.50	3.50	24,638	24,638	75	18,47,886
C	**Structure- Deck Slab**									
11	Milling	Sqm	100%	943	27.00		25,462	25,462	89	22,68,695
12	Tack Coat	Sqm	100%	943	27.00		25,462	25,462	15	3,81,935
13	Bituminous Concrete	Cum	100%	943	27.00	0.05	1,273	1,273	12,384	1,57,66,287
14	Painting of Crash Barrier	Rmt	2.00	943	1.00	1.20	2,263	2,263	111	2,51,229
D	**Miscellaneous**									
15	Kerb Replacement	Rmt	0%	1,27,984			-	-	297	-
16	Painting of Kerbs	Sqm	1	1,27,984		0.32	40,315	40,315	111	44,74,971
17	Painting of Crash Barrier	Sqm	2	25,348		1.12	56,526	56,526	111	62,74,366
18	Thermoplastic paint									
	a) Median & Edge line	Sqm	100%				42,447	42,447	464	1,97,03,721
	Main Carriageway 4L		4	38,383	0.15		23,030			
	Main Carriageway 6L		4	12,674	0.15		7,604			
	Service Road		2	12,935	0.10		2,587			
	b) Lane line									
	Main Carriageway 4L		2	13,434	0.10		2,687			
	Main Carriageway 6L		4	4,436	0.10		1,774			

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity (Cum)**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Service Road		2	4,527	0.10		905			
	c) Junction crossing						3,859			
19	Replacement of Road Stud	No	50%				6,396	6,396	185	11,81,981
	Main Carriageway 4L		4	2,133			8,532			
	Main Carriageway 6L		4	705			2,820			
	Service Road		2	720			1,440			
20	Miscellaneous	5%								1,00,40,673
									Total Major Maintenance Cost (Rs.)	**21,08,54,130**
									Total Major Maintenance Cost with 18% GST (Rs.)	**24,88,07,873**
									Total Major Maintenance Cost with GST (Cr.)	**24.88**
									Per km Cost (lakh)	**47.85**
									Escalation Factor for Major Maintenance Cost (FY 2029)	**1.16**
									Total Escalated Cost for Major Maintenance Cost (FY 2029) (Cr.)	**28.57**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity (Cum)**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
A	**Main Carriageway:**									
1	Retexturing and Grinding	Sqm	60%	51,057	20.23		6,19,854	6,19,854	120	7,43,82,527
2	Replacement of PQC Slab	Cum	2%	51,057	20.23	0.30	6,199	6,199	10,118	6,27,16,867
3	Joint sealant (Silicone)	RMT	60%	65,593	4.50	3.50	3,14,847	3,14,847	75	2,36,13,501
4	Retexturing and Grinding For Misc. Location	Sqm	7%	6,19,854			43,390	43,390	120	52,06,777
5	Replacement of PQC Slab For Misc. Location	Cum	7%	6,199			434	434	10,118	43,90,181
6	Joint sealant (Silicone) For Misc. Location	RMT	7%	3,14,847			22,039	22,039	75	16,52,945
7	Filling of Earthen shoulder	Cum	20%	1,53,532.00		0.05	1,535	1,535	601	9,22,727
B	**Service Road**									
8	Retexturing and Grinding	Sqm	25%	25,870	7.50		48,507	48,507	120	58,20,840
9	Replacement of PQC Slab	Sqm	1%	25,870	7.50	0.25	485	485	10,118	49,07,938
10	Joint sealant (Silicone)	Cum	25%	12,319	4.50	3.50	24,638	24,638	75	18,47,886
C	**Structure- Deck Slab**									

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity (Cum)**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
11	Milling	Sqm	100%	943	27.00		25,462	25,462	89	22,68,695
12	Tack Coat	Sqm	100%	943	27.00		25,462	25,462	15	3,81,935
13	Bituminous Concrete	Cum	100%	943	27.00	0.05	1,273	1,273	12,384	1,57,66,287
14	Painting of Crash Barrier	Rmt	2.00	943	1.00	1.20	2,263	2,263	111	2,51,229
D	**Miscellaneous**									
15	Kerb Replacement	Rmt	0%	1,27,984			-	-	297	-
16	Painting of Kerbs	Sqm	1	1,27,984		0.32	40,315	40,315	111	44,74,971
17	Painting of Crash Barrier	Sqm	2	25,348		1.12	56,526	56,526	111	62,74,366
18	Thermoplastic paint									
	a) Median & Edge line	Sqm	100%				42,447	42,447	464	1,97,03,721
	Main Carriageway 4L		4	38,383	0.15		23,030			
	Main Carriageway 6L		4	12,674	0.15		7,604			
	Service Road		2	12,935	0.10		2,587			
	b) Lane line									
	Main Carriageway 4L		2	13,434	0.10		2,687			
	Main Carriageway 6L		4	4,436	0.10		1,774			
	Service Road		2	4,527	0.10		905			
	c) Junction crossing						3,859			
19	Replacement of Road Stud	No	50%				6,396	6,396	185	11,81,981
	Main Carriageway 4L		4	2,133			8,532			
	Main Carriageway 6L		4	705			2,820			
	Service Road		2	720			1,440			
20	Miscellaneous	5%								1,17,88,269
Total Major Maintenance Cost (Rs.)										**24,75,53,642**
Total Major Maintenance Cost with 18% GST (Rs.)										**29,21,13,298**
Total Major Maintenance Cost with GST (Cr.)										**29.21**
Per km Cost (lakh)										**56.18**
Escalation Factor for Major Maintenance Cost (FY 2036)										**1.53**
Total Escalated Cost for Major Maintenance Cost (FY 2036) (Cr.)										**44.09**

FP Project Management



Technical Due Diligence of Mangalwedha to Solapur Section of NH-166 from km. 321+600 to km. 378+100 in the State of Maharashtra on Hybrid Annuity Mode (HAM)

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Service Road 6
2.9 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 8
3.3 Major / Minor Intersection 10
3.4 Inventory and Condition Survey of Structures and Bridges 11
3.4.1 Cross Drainage (Bridges and Culverts) 12
3.4.2 Minor Bridges 14
3.4.3 Major Bridge (length > 60 m) 15
3.4.4 Vehicular Underpasses 17
3.4.5 Light Vehicular Underpasses 18
3.4.6 ROB 20
3.5 Drainage 21
3.6 Slope Protection 22
3.7 Road Furniture 22
3.7.1 Pavement Marking 22
3.7.2 Traffic Signage 23

3.7.3 Highway Lighting 23
3.7.4 Road Studs / Cat eyes 24
3.7.5 Pedestrian Guard Rail 24
3.7.6 Avenue Plantation and Median Plantation 25
3.7.7 Traffic Signage / Median kerb painting / KM Stone 25
3.7.8 Crash Barriers 27
3.7.9 Delineators 27
3.8 Toll Plaza 28
3.9 Bus Bays and Passenger Shelters 30
3.10 Truck Lay Bye 31
3.11 Advanced Traffic Management System (ATMS) 31
3.11.1 Automatic Traffic Counter cum classifier (ATCC) 32
3.11.2 Emergency Call Boxes (ECB) 32
3.11.3 Variable Message Signs System 32
3.11.4 CCTV Surveillance Cameras 33
3.12 Video Incident Detection System 33
3.13 Balance Work Status 33
3.14 Operation and Maintenances 34
3.14.1 O&M Contract 34
3.14.2 Organization Chart 34
3.14.3 Operation 35
3.14.4 Routine Maintenance 35
4 Pavement Investigation and Assessment 36
4.1 General 36
4.2 Surveys and Investigation 36
4.2.1 Pavement Condition Survey 36
4.2.2 Observation and Conclusion 36
4.2.3 Network Survey Vehicles (NSV) Survey 36
4.2.4 Roughness Survey 36
4.2.5 Periodic Maintenance Strategy 38
5 Cost Estimates 39
5.1 General 39
5.2 Rate Assumption 39
5.3 Balance Work Cost (CAPEX) 40
5.4 Routine O&M Cost 40
5.5 Major Maintenance Cost 41
5.6 Periodic Replacement of TMS / ATMS System 41

5.7 Escalation Assumptions 41
5.8 Summary of Cost.....42
Annexures 44
Annexure I - Routine Maintenance Cost.....45
Annexure II - Major Maintenance Cost.....49

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 11
Table 3-2 Details of New Minor Bridges 14
Table 3-3 Details of Major Bridges 15
Table 3-4 Details of Vehicular Underpasses 17
Table 3-5 Details of Light Vehicular Underpasses 18
Table 3-6 Details of ROB 20
Table 3-7 Details of Summary for Toll Plaza Items 28
Table 4-1 Summary of Pavement Condition 36
Table 4-2 Result of Roughness Survey as per IRC:SP:16-2019 37
Table 4-3 Result of Roughness Survey as per CA 37
Table 4-4 Major Maintenance Cycle 38
Table 5-1 Summary of Unit Rates 39
Table 5-2 Summary of Operation Cost 40
Table 5-3 Escalation 41

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of the Project Roads 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 7
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photograph of Major Junction 10
Figure 3-4 Photographs of Minor Junctions 10
Figure 3-5 Photographs of Culverts 13
Figure 3-6 Photographs of Minor Bridge 14
Figure 3-7 Photographs of Major Bridges 16
Figure 3-8 Photographs of Vehicular Underpasses 17
Figure 3-9 Photographs of Light Vehicular Underpass 19
Figure 3-10 Photographs of Drainage 21
Figure 3-11 Photographs of Slope Protection 22
Figure 3-12 Photographs of Road Marking 22
Figure 3-13 Photographs of Traffic Signage 23
Figure 3-14 Photographs of Highway Lighting 23
Figure 3-15 Photographs of Road Studs 24
Figure 3-16 Photographs of Pedestrian Guard Rail 24
Figure 3-17 Photographs of Avenue and Median Plantation 25
Figure 3-18 Photographs of Road Signages 26
Figure 3-19 Photographs of MBCB / Crash Barrier 27
Figure 3-20 Photographs of Delineator 27
Figure 3-21 Photographs of Toll Plaza 28
Figure 3-22 Photographs of Bus Bays / Passenger Shelter 30
Figure 3-23 Photographs of Truck Lay Bye 31
Figure 3-24 Photographs of ATCC 32
Figure 3-25 Photographs of ECB 32
Figure 3-26 Photographs of VMS 33
Figure 3-27 Photographs of CCTV Surveillance Camera 33

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of National Highway No. 166 including the section from Mangalwedha to Solapur (km. 321+600 to km. 378+100) on Hybrid Annuity Mode in the State of Maharashtra (approx. 56.500 kms) (hereinafter referred as "Project Road").

M/s. DBL Mangalwedha Solapur Highway Private Limited (DMSHPL) (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for development, maintenance and management of National Highway No. 166 including the section from Mangalwedha to Solapur (Sangli Solapur Package-4) on Hybrid Annuity Mode.

The Date of Concession Agreement is 10th May 2018. The concession period of the project is 17 years commencing from the Appointed Date including implementation period. Appointed Date of the project is 23rd May 2019. The Provisional Completion Certificate was issued on 14th December 2021 for the length of 52.760 km out of 56.500 kms. The project has also received Final Completion Certificate for the length of 55.800 kms with effective from 01st March 2023.

Sr. No.	Description	Date
1	Date of Signing the Concession Agreement	10th May 2018
2	Appointed Date	23rd May 2019
3	Scheduled Project Completion Date	21st May 2021
4	Scheduled End of Concession	18th May 2036
5	Date of issue of Provisional Completion Certificate	14th December 2021
6	Date of Commencement of Commercial Operation	14th December 2021
7	Date of Issue of Completion Certificate	1st March 2023

Presently, the project is under operation and maintenance and the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.,
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.,
- Formulation of future major maintenance strategy

- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings.
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority.
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets, mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimates.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Client. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyses the same as per the best engineering / industry practices.

The site visit and inspection of the project site was carried out during the period from **13th February 2025 to 14th February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for technical due diligence study**.**

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development etc.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on the site visit**.**

Chapter 4 **Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance

Chapter 5 **Cost Estimates**: This chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/s. DBL Mangalwedha Solapur Highway Private Limited (DMSHPL),** is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 10th May 2018.

2.2 Location

The Site of the Four-Lane divided Project Road comprises the section of National Highway 166 commencing from Design km. 321+600 at Mangalwedha to Design km. 378+100 (Approx Length is 56.500 kms) at Solapur in the State of Maharashtra.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of the Project Roads

Start of Project at km. 321+600

Figure 2-3 End of Project Road

End of Project at km. 378+100 (BHS)

Actual End of Project at km. 377+400

2.3 Climate

The project location has three distinct seasons: summer, monsoon and winter. Typical summer months are from March to May, with maximum temperatures ranging from 30 °C to 45 °C. The monsoon lasts from June to the end of September, with moderate rainfall. The project location receives an average rainfall of 545 mm (21.5 in) per year. Winter begins in November and lasts until the end of February with the temperatures occasionally dropping below 10 °C (50 °F).

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The Project Road passes through residential and agricultural zones.

2.6 Right of Way

The width of the existing Right of Way (RoW) varies from 20 m to 30 m in rural areas and 20 m to 25 m in built-up areas, except Toll Plaza area.

2.7 Existing Utilities

During the widening of the Project Road, various affected utility services located along the Project Road were shifted out / at the edge of the ROW. The different types of utilities found along the road include, electrical poles, telephone poles, hand pumps, permanent structures, temples etc.

2.8 Service Road

The total length of service road on both sides is 30.098 kms.

2.9 Development as per Schedule-B

The Project Road from Design Chainage km. 321.100 at Mangalwedha to Design Chainage km. 378.100 at Solapur (Approx Length is 56.500 kms) has been developed as a four-lane paved carriageway 18.0m wide excluding median. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the concession period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Operation and maintenance of the Project in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of the Concession Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under the Concession Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Particulars	Unit	Scope as per Schedule-B	Constructed as per site
1	O&M of Main Carriageway	Km	56.500	55.800*
2	Service road / Slip Road	Km	30.098	29.909
3	Rail Over Bridge (ROB)	Nos.	01	Descope
4	Major Bridge	Nos.	03	03
5	Minor Bridge	Nos.	18	18
6	Vehicular Underpass	Nos.	4 + 1 (COS)	05
7	Light Vehicular Underpass	Nos.	13 - 1 (COS)	12
8	Slab and Box Culverts	Nos.	12	12
9	Hume Pipe Culverts	Nos.	92	92

** 0.700 km length is Descoped from total length of the Project. Project has received Completion Certificate for the length of 55.800 km.*

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The paved carriageway is 18.0 m wide excluding the median. The project is widened to a four lane-carriageway with a width of 18.0 m as per standard cross section including paved shoulders. Service / Slip Road of 7.5 m width has been provided on one side or both sides wherever required in built-up area to cater for the local traffic.

The entire stretch of Project Road, Service / Slip Road and Toll Plaza are constructed with rigid pavement. Rigid pavement for main carriageway and service / slip roads are designed for a design life of 30 years.

3.1.1 Pavement Condition Survey

A pavement condition survey was carried out from **13th February 2025 to 14th February 2025** through visual inspection for the entire project length. From the visual inspection, the pavement condition of the Project Road is found to be Good. The total project length of 55.800 kms is in good condition. During the site visit, at some locations cracks are observed on the pavement. However, rectification work is in progress at such location of the Project Road.

Some of the photographs taken during the site visit are presented below.

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

Pavement Condition at km. 376+150 (RHS)

Pavement Condition at km. 367+100 (RHS)

Pavement Condition at km. 364+000 (RHS)

Pavement Condition at km. 363+000 (RHS)

Pavement Condition km. 332+150 (LHS)

Pavement Condition at km. 360+300 (LHS)

Repair WIP at km. 336+350 (LHS)

Pavement Condition at km. 368+200 (RHS)

3.2 Service Road / Slip Road

The service / slip road of width 7.5 m is constructed in built-up areas and adjoining underpass locations. The Project Road has total service / slip road length of 29.909 kms.

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Pavement Condition at km. 370+050

Pavement Condition at km. 359+360 (RHS)

Pavement Condition at km. 351+580 (RHS)

Pavement Condition at km. 337+350

Pavement Condition at km. 324+550 (LHS)

Pavement Condition at km. 325+500 (LHS)

3.3 Major / Minor Intersection

There are 01 no. of major junction and 90 nos. of minor junctions along the Project Road.

The photographs taken during site visit are presented as below.

Figure 3-3 Photograph of Major Junction

km. 370+400

Figure 3-4 Photographs of Minor Junctions

T-Junction at km. 322+100

T-Junction at km. 357+250

T-Junction at km. 360+500

T-Junction at km. 354+485

T - Junction at km. 350+100

T - Junction at km. 328+150

3.4 Inventory and Condition Survey of Structures and Bridges

The inventory of structures including major bridges, minor bridges, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Sr. No.	Particulars	Unit	Total Number of Structures As per Concession Agreement	Total Number of Structures as per site
1	Rail Over Bridge (ROB)	Nos.	01	Descope
2	Major Bridge	Nos.	03	03
3	Minor Bridge	Nos.	18	18
4	Vehicular Underpass	Nos.	4 + 1 (COS)	05
5	Light Vehicular Underpass	Nos.	13 - 1 (COS)	12
6	Slab and Box Culverts	Nos.	12	12
7	Hume Pipe Culverts	Nos.	92	92

All major structures and CD works were visually inspected. The CD structures are generally sufficient for storm water drainage. The waterway needs regular cleaning. All the old bridges are 2-lane and are widened to 2 additional lanes. The type of foundation for these structures is open foundation. In case of some bridges, settlement in

approaches and cracks in the pavement has been observed which need to be repaired. New bridges are constructed in 2-lane with footpath keeping a provision of converting into 3-lane in future. The wearing course and expansion joints are found in good condition. Crash barriers are RCC type and are in sound condition. Return wall are of RCC type and pitching has been provided in almost all bridges. RE walls are provided for the approaches of the structure.

The detailed condition survey of major bridges, minor bridges, flyovers and culverts was carried out by visual inspection. The observations and findings are presented below.

3.4.1 Cross Drainage (Bridges and Culverts)

Slab culverts are visually inspected. Some culverts are old and widened. The old structures have been strengthened with repair and rehabilitation during widening. The widening is either concentric or eccentric. The quality of concrete of abutment, slab, and wing wall, or return wall, parapet wall is satisfactory. Minor settlement on approach is observed in few culverts. The slope protection has been done at major locations. The slopes are stable. Generally, all the slab culverts are found in sound condition. The waterway needs to be cleaned on both sides of the culverts. Box culverts are visually inspected. The RCC box culverts are retained and widened. The RCC quality of new box culverts is good. The structure number is painted on the parapet wall or crash barrier in most of the culverts. The waterway is clear in some of the culverts and needs to be cleared for a few culverts, particularly in urban areas.

Pipe culverts are visually inspected. The pipe culverts are either newly constructed or reconstructed. Some of the pipe culverts are retained and widened. The widening is either concentric or eccentric. In most of the culverts, the ends are blocked by debris, garbage or vegetation especially in urban areas or buried underground. Regular cleaning of the waterway is required to avoid damage to pavement.

The following photographs were taken during the inspection of culverts.

Figure 3-5 Photographs of Culverts

Box Culvert at km. 374+450 (RHS)

Pipe Culvert at km. 370+051 (RHS)

Box Culvert at km. 361+750 (RHS)

Box Culvert at km. 356+450 (RHS)

Pipe Culvert at km. 334+150 (RHS)

Pipe Culvert at km. 322+710 (RHS)

Pipe Culvert at km. 324+515 (LHS)

Pipe Culvert at km. 329+850 (LHS)

Box Culvert at km. 342+900 (RHS)

Pipe Culvert at km. 360+200 (LHS)

3.4.2 Minor Bridges

Table 3-2 Details of New Minor Bridges

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Proposed structural configuration	Proposed Structure type	Proposed span arrangement (m)	Total width of the structure (m)	TDD Consultant's Remarks
New Construction							
1	-	351+348	2 lane c/w with footpath	RCC Box Structure	2 x 10.00	32.00	Structure is in good condition. The pavement is in good condition.
Re-construction							
2	317+060	323+654	2 lane c/w with footpath	RCC Structure	2 x 3.70	32.00	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
3	341+400	348+936	2 lane c/w with footpath	RCC Structure	3 x 4.80	32.00	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts needs to be cleaned regularly.
4	351+803	359+355	2 lane c/w with footpath	RCC Structure	2 x 12.00	32.00	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
5	359+816	367+265	2 lane c/w with footpath	RCC Structure	1 x 10.00	32.00	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
6	362+620	370+054	2 lane c/w with footpath	RCC Structure	1 x 6.40	32.00	The structure is in good condition. Condition of pavement, crash barrier, slope protection is in good condition. Waterway, drainage spouts need to be cleaned regularly.
Widening, Repair & Rehabilitation							
7	320+100	327+649	2 lane c/w	RCC Structure	3 x 4.40	35.00	All structures are in good condition. Pavement condition, footpath, railing, Crash barriers are in good condition. Debris and silt removal is necessary at some locations. Minor settlement of approach is observed in some locations. Vegetation removal, drainage spouts cleaning is required.
8	320+620	328+164	2 lane c/w	RCC Structure	1 x 6.40	35.00	
9	323+239	331+054	2 lane c/w	RCC Structure	4 x 5.90	35.00	
10	323+953	331+469	2 lane c/w	RCC Structure	1 x 6.30	35.00	
11	325+183	332+715	2 lane c/w	RCC Structure	2 x 4.00	35.00	
12	337+100	344+585	2 lane c/w	RCC Structure	1 x 7.30	35.00	
13	339+720	347+221	2 lane c/w	RCC Structure	3 x 7.00	35.00	
14	348+200	355+900	2 lane c/w (Skew)	RCC Structure	2 x 5.50	35.00	
15	350+330	357+771	2 lane c/w	RCC Structure	3 x 4.80	35.00	
16	362+007	369+421	2 lane c/w	RCC Structure	2 x 5.80	35.00	
17	365+300	372+649	2 lane c/w	RCC Structure	3 x 6.80	35.00	
18	368+900	376+493	2 lane c/w	RCC Structure	4 x 8.50	35.00	

The following photographs were taken during the inspection of Minor Bridges.

Figure 3-6 Photographs of Minor Bridge

MNB at km. 376+481 (RHS)

MNB at km. 372+636 (RHS)

MNB at km. 369+421

MNB at km. 367+265

MNB at km. 357+771 (RHS)

MNB at km. 355+900 (RHS)

MNB at km. 351+348 (RHS)

MNB at km. 347+221

MNB at km. 344+585 (RHS)

MNB at km. 332+715 (RHS)

MNB at km. 327+649 (LHS)

MNB at km. 328+164 (RHS)

3.4.3 Major Bridge (length > 60 m)

There are 03 Nos. of Major Bridges on Project Road, out of which 2 Nos. are new construction and 1 No. is widening of existing Major Bridge. All Major Bridges are visually inspected. The structures are generally sufficient for the crossing of river water. The waterway needs regular cleaning. Old structures are present on the right side of locations. The old bridges are 2-lane with footpaths. Old bridges have RCC railing. The sub-structures are constructed with RCC piers. The expansion joints in the bridges need to be cleaned. Minor settlement in approaches has been observed. New bridges are constructed in 2-lane with footpath. Old bridges on RHS have RCC pier and T-beam girders. The wearing course and expansion joints are found to be in good condition. W-beam and RCC type crash barriers are in sound condition. Drainage spouts need to be cleaned regularly. Further, vegetation and silt need to be removed from the waterway for smooth flow of water.

Table 3-3 Details of Major Bridges

Sr. No.	Design Chainage (km)	New Chainage (km)	Type of Structure	No. of Span	Span Arrangement (m)	No. of Lane	Side	Construction Scheme	TDD Consultant's Remarks
1	331+563	339+050	Major Bridge (Bhima River)	8	8 x 30.00	2	LHS	New Construction	The structure is in good condition. RCC railing & Concrete crash barriers are in good condition. Waterway cleaning is required.
				8	8 x 30.00	2	RHS	New Construction	The structure is in good condition. RCC railing & Concrete crash barriers are in good condition. Waterway cleaning is required.
2	357+352	364+829	Major Bridge (Sina River)	7	7 x 32.00	2	LHS	New Construction	The structure is in good condition. RCC railing, Concrete crash barriers are in good condition. Cleaning of Expansion joint is required.
				7	7 x 32.00	2	RHS	New Construction	The structure is in good condition. RCC railing, Concrete crash barriers are in good condition. Cleaning of Expansion joint is required.

Sr. No.	Design Chainage (km)	New Chainage (km)	Type of Structure	No. of Span	Span Arrangement (m)	No. of Lane	Side	Construction Scheme	TDD Consultant's Remarks
3	366+354	373+943	Major Bridge (Adila Nala)	11	-	2	LHS	Old Construction	The structure is in sound condition. Pipe railing is in good condition. Vegetation over the structure needs to be removed, reinforcement is exposed at some locations which needs to be rectified. Pavement over the structure is in good condition.
				6	6 x 19.60	2	RHS	New Construction	The structure is in good condition. RCC railing, Concrete crash barriers are in good condition. Cleaning of Expansion joint is required.

The following photographs were taken during the inspection of Major Bridges.

Figure 3-7 Photographs of Major Bridges

Major Bridge at km. 373+924 (RHS - New structure)

Girders of Major Bridge at km. 373+924 (RHS)

Road condition on Major Bridge at km. 373+924 (BHS)

Railing & Road condition of Major Bridge at km. 373+924 (LHS)

Piers & Girders of Major Bridge at km. 364+924

Abutment wall and Girders of Major Bridge at km. 364+924

Sub-structure of Major Bridge at km. 364+924 (BHS)

Expansion Joint at Major Bridge at km. 364+924 (RHS)

Railing & Road condition of Major Bridge at km. 364+924 (LHS)

Sub-structure of Major Bridge at km. 339+048

Abutment condition of Major Bridge at km. 339+048 (RHS)

Return wall of MJB at km. 339+048

3.4.4 Vehicular Underpasses

Table 3-4 Details of Vehicular Underpasses

Sr. No.	New Chainage (km)	Type of Structure	No. of Span	Span Width (m)	No. of Lane	Construction scheme	TDD Consultant's Remarks
1	322+710	VUP	1	15.00	4	New construction	The overall structure condition of all underpasses is found to be good. RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat is found to be good. Minor settlement on approaches is noticed. RE Wall, Lighting arrangement under structures, pavement under structures is in good condition.
2	326+100	VUP	1	20.00	4	New construction	
3	357+328	VUP	1	20.00	4	New construction	
4	367+041	VUP	1	20.00	4	New construction	
5	324+540	VUP	2	15.00	4	New Construction	

Following photographs were taken during the inspection of Underpasses:

Figure 3-8 Photographs of Vehicular Underpasses

VUP at km. 367+041

Sub-structure of VUP at km. 367+041

VUP at km. 357+328

Sub-structure of VUP at km. 357+238

VUP at km. 326+090

Sub-structure of VUP at km. 326+090

VUP at km. 324+540

VUP at km. 322+710

3.4.5 Light Vehicular Underpasses

Table 3-5 Details of Light Vehicular Underpasses

Sr. No.	New Chainage (km)	Type of Structure	No. of Span	Span Width (m)	No. of Lane	Construction scheme	TDD Consultant's Remarks
1	323+565	LVUP	1	12.00	4	New construction	The overall structure condition of all Light vehicular underpasses is found to be good. RE Wall, RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat, lighting arrangement under structure is found to be good. Cleaning of drainage spout is required.
2	337+347	LVUP	1	12.00	4	New construction	
3	338+700	LVUP	1	12.00	4	New construction	
4	339+317	LVUP	1	12.00	4	New construction	
5	345+054	LVUP	1	12.00	4	New construction	
6	348+382	LVUP	1	12.00	4	New construction	
7	351+580	LVUP	1	12.00	4	New construction	
8	359+300	LVUP	1	12.00	4	New construction	
9	354+350	LVUP	1	12.00	4	New construction	
10	365+216	LVUP	1	12.00	4	New construction	
11	368+220	LVUP	1	12.00	4	New construction	
12	370+065	LVUP	1	12.00	4	New construction	

The following photographs were taken during the inspection of the Light Vehicular Underpass.

Figure 3-9 Photographs of Light Vehicular Underpass

LVUP at km. 370+051

LVUP at km. 368+170

LVUP at km. 364+360

LVUP at km. 364+982

LVUP at km. 359+285

LVUP at km. 351+571

LVUP at km. 345+050

LVUP at km. 339+317

LVUP at km. 338+715

LVUP at km. 337+340

LVUP at km. 323+563

3.4.6 ROB

There was 01 No. of ROB on Project Road at km. 377+800 as per the Concession Agreement. Due to some issues, the Authority has de-scoped the construction of ROB.

Table 3-6 Details of ROB

Sr. No.	Design Chainage (km)	Type of Structure	No. of Span	Span Width (m)	Length (m)	No. of Lane	Construction scheme	TDD Consultant's Remarks
1	377+800	ROB	1	25.00	64.01	4	New Construction on LHS & Re-construction on RHS	De-scoped

3.5 Drainage

Drains are constructed at the Project Road to have good drainage. Covered lined drains are provided at the sides of the service. Median cut drains are provided at superelevation locations. Chute drains are also constructed at a high embankment portion of the Project Road. The drainage condition of Project Road is in order. Silt deposits need to be removed during routine maintenance. Earthen drains are also provided in rural areas. The condition of the same is good to fair.

The photographs taken during the site visit are presented below.

Figure 3-10 Photographs of Drainage

Earthen Drain

Chute Drain provided at slope

RCC Drain at MCW

Drain at Service Road

3.6 Slope Protection

Slope protection is found on Project Road at some locations. At a few locations, the slope protection is damaged, which needs to be rectified by the Concessionaire.

The photographs taken during the site visit are presented below.

Figure 3-11 Photographs of Slope Protection

Slope Protection

Slope Protection at km. 351+320

3.7 Road Furniture

3.7.1 Pavement Marking

Pavement marking for the Project Road is done as per the design standards. Pavement marking has faded out at some locations which need to be rectified by the Concessionaire.

Some of the photographs of road marking are presented below.

Figure 3-12 Photographs of Road Marking

Pavement Marking work in progress

Pavement Marking at km. 323+100

3.7.2 Traffic Signage

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards.

Some of the photographs of traffic signage are presented below.

Figure 3-13 Photographs of Traffic Signage

Speed limit Sign board

Sign board

3.7.3 Highway Lighting

Highway Lighting is provided in urban and semi-urban areas of the Project Road. Lighting is provided at the locations of truck lay-bye, bus bay, toll plazas, underpasses, service road stretches and at intersections / interchanges. IS:1944 (Part I and II) is followed for lighting installations. High mast lighting systems are provided at toll plaza.

Some of the photographs taken during site visit are presented below.

Figure 3-14 Photographs of Highway Lighting

Highway Lighting at in urban area

High Mast at Toll Plaza

3.7.4 Road Studs / Cat eyes

The Concessionaire has provided cat's eyes / studs as per Schedule-D on the curves, road junctions, zebra crossings, in municipal area and village settlement and ramps etc. to provide the proper visibility to the road users.

Some of the photographs taken during site visit are presented below.

Figure 3-15 Photographs of Road Studs

Road Studs on Project Road

Road Studs on Project Road

3.7.5 Pedestrian Guard Rail

The pedestrian guard rails are provided between main carriageway and service road at built-up locations. The pedestrian guard rails are observed to be in good condition.

Some of the photographs taken during site visit are presented below.

Figure 3-16 Photographs of Pedestrian Guard Rail

Pedestrian Guard Rail at km. 347+000 (RHS)

Pedestrian Guard Rail at km. 347+400 (LHS)

3.7.6 Avenue Plantation and Median Plantation

Avenue plantations and median plantation are done along the project length except at built-up locations as per IRC specification. Median Plantation needs proper regular maintenance. Avenue plantation work is provided at required locations.

Some of the photographs taken during site visit are presented below.

Figure 3-17 Photographs of Avenue and Median Plantation

Median Plantation

Avenue Plantation

3.7.7 Traffic Signage / Median kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Median kerb paint is found faded at few locations which will be rectified by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-18 Photographs of Road Signages

Km Stone at km. 360+000

Km Stone at km. 332+000

Kerb Painting done on Project Road

VMS and Overhead Gantry at km. 356+450

Hectometer stone at km. 328+800

Overhead Gantry on Project Road

3.7.8 Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of metal beam crash barriers are presented below.

Figure 3-19 Photographs of MBCB / Crash Barrier

MBCB provided in median in Urban area

MBCB provided in approaches and high embankments

3.7.9 Delineators

The traffic delineators are provided by Concessionaire on the Project Road for road users. The same are maintained by the Concessionaire.

Some of the photographs of delineators are presented below.

Figure 3-20 Photographs of Delineator

Delineators along the Project Road

3.8 Toll Plaza

As per the Concession Agreement, there is one toll plaza on the Project Road at km. 343+510. The details of the Toll Plaza are as follows.

Table 3-7 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details		Remarks
		LHS	RHS	
1	Number of Tolling Lanes	8	8	
2	Weigh in Motion Facility (Number of Lanes)	8	8	
3	No. of ETC lanes	8	8	
4	No of Toll booths	15		
5	Canopy	Present		
6	Administrative building	Present		
7	Parking cum Toilet box	Present		
8	Availability of Tunnel or Elevated walkaway for movement between Toll lanes and administrative building	Tunnel/Yes		
9	Availability of static weigh bridge	Yes		2 numbers
10	Availability of Loading/Unloading Facility for Overloading vehicles	No		
11	Storage facility for Overloaded material	No		
12	High mast light	Yes		
13	Streetlight	Yes		
14	Low mast light	No		
15	User fee boards	Yes		
16	Cantilever/Gantry boards	Yes		
17	Automatic boom barrier	Yes		

Figure 3-21 Photographs of Toll Plaza

View of Toll Plaza at km. 343+510

Admin Building at Toll Plaza

Control Room at Toll Plaza

Server Room at Toll Plaza

Tunnel at Toll Plaza

Lane Controller at Toll Plaza

Toilet Block at Toll Plaza

Static Weigh Bridge at Toll Plaza

Traffic and Medical Aid Post at Toll Plaza

Lab & O&M center at Toll Plaza

3.9 Bus Bays and Passenger Shelters

There are 38 Nos. of bus bays / passenger shelters along the Project Road.

Some of the photographs of the bus bays are presented below.

Figure 3-22 Photographs of Bus Bays / Passenger Shelter

Bus Bay at Inchgaon

Bus Bay at km. 367+700

3.10 Truck Lay Bye

There is 01 Nos. of truck lay bye at km. 349+950 (LHS) constructed and km. 349+950 (RHS) is descope.

Some of the photographs of the truck lay bye are presented below.

Figure 3-23 Photographs of Truck Lay Bye

Truck lay bye at km. 349+950 (LHS)

Toilet Block at Truck lay bye at km. 349+950 (LHS)

3.11 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at toll plaza location (km. 343+440). The ATMS is provided and being maintained as per the requirement of the Concession Agreement. The ATMS provided are listed below.

- Automatic Traffic Counter cum Classifier (ATCC)
- Emergency Call Box
- Variable Message Signs System (Fixed/Portable)
- Mobile communication System
- Mobile Radio Communication System
- Integrated ATMS Software and System Architecture
- ATMS Control Center integrated with above sub-components
- Weigh-in-motion (Portable)
- Vehicle actuated speed detection camera.

Status of these systems at site are described below.

3.11.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km. 343+440).

Figure 3-24 Photographs of ATCC

At Toll Plaza

At Toll Plaza

3.11.2 Emergency Call Boxes (ECB)

ECB is installed on the Project Road at the locations as per the requirement. Some of the photographs of the ECB are presented below.

Figure 3-25 Photographs of ECB

ECB at km. 354+000

ECB at km. 336+000

3.11.3 Variable Message Signs System

VMS is installed on the Project Road at the locations as per the requirement. Some of the photographs of the VMS are presented below.

Figure 3-26 Photographs of VMS

VMS at km. 371+000

VMS at km. 322+450

3.11.4 CCTV Surveillance Cameras

Surveillance cameras are installed as per CA requirement along the Project Road. The HTMS control room has video wall to monitor these locations through the cameras installed.

Figure 3-27 Photographs of CCTV Surveillance Camera

At km. 366+100

At Toll Plaza

3.12 Video Incident Detection System

CCTV cameras are installed as part of Video incident detection system.

3.13 Balance Work Status

The Concessionaire has received Completion Certificate for the length of 55.800 kms with effective from 01st March 2023. Hence, there is no balance work on Project Road.

3.14 Operation and Maintenances

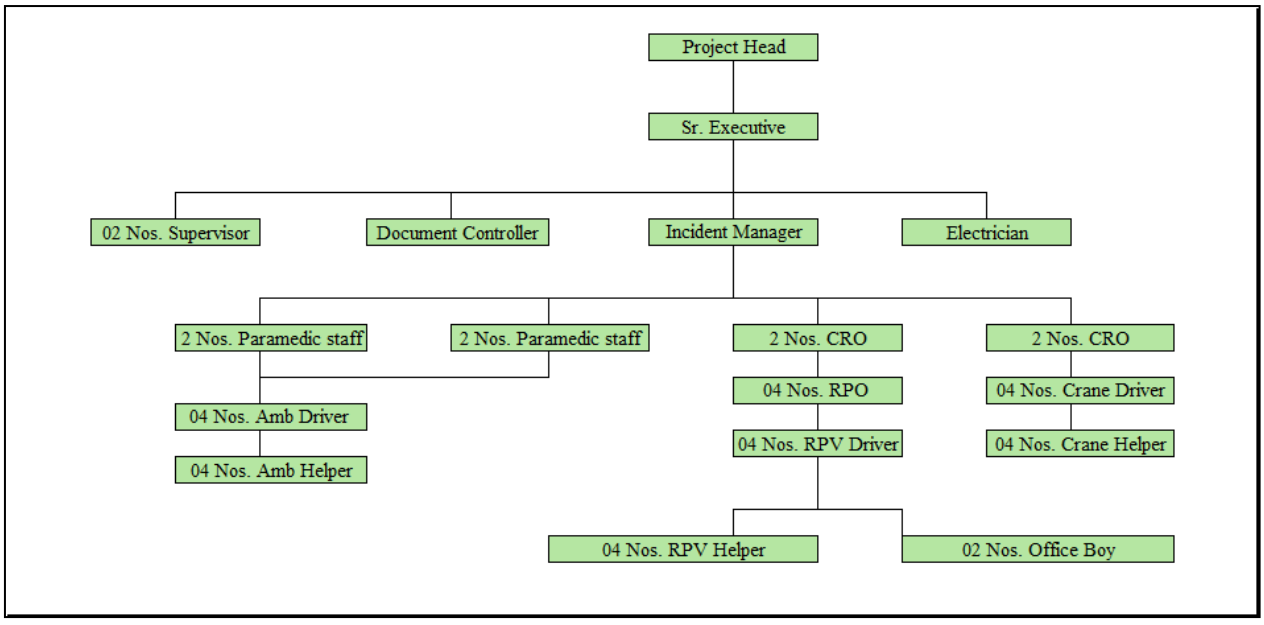
3.14.1 O&M Contract

As per Clause 17.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement. The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including security services, Incident management services.

3.14.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive- Maintenance, 02 Supervisor, 01 Electrician, 01 Incident Manager, 01 Document Controller to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Charts



3.14.3 Operation

Operation cost is comprised of manpower cost, Security cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.14.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per scope of work. The Concessionaire has received Completion Certificate on 01st March 2023 for the length of 55.800 out of the length project is 56.500 kms (55.80 kms length after descope).

The project is currently under the Operation and Maintenance stage. The concession period of the project is 17 years from the Appointed Date 23rd May 2019 including construction period of 2 years.

4.2 Surveys and Investigation

4.2.1 Pavement Condition Survey

Pavement condition survey was carried out by the Technical Consultant from **13th February 2025 to 14th February 2025** through visual inspection for the project road and for the entire length.

The summary of pavement condition based on the visual inspection is tabulated below.

Table 4-1 Summary of Pavement Condition

Sr. No.	Chainage (km)		Length (km)	Visual Condition (As per IRC:115-2014)	
	From	To		Left Carriageway	Right Carriageway
1	321+600	377+450	55.800	Good	Good

4.2.2 Observation and Conclusion

From the above table, it is observed that the overall pavement condition for the entire project stretch is found to be Good. The repair & rectification work, wherever required, is in progress on the Project Road.

4.2.3 Network Survey Vehicles (NSV) Survey

The Concessionaire has conducted pavement condition survey on each lane of each carriageway with NSV. The NSV survey was conducted on the Project Road from 10th October 2024 to 11th October 2024.

4.2.4 Roughness Survey

Roughness survey results were provided by the Concessionaire for analysis and to assess the riding quality on each direction (each lane) of the carriageway of Project Road.

The side-wise results of Roughness Survey are presented as below.

Table 4-2 Result of Roughness Survey as per IRC:SP:16-2019

Sr. No.	Condition	BI (mm/km)	LHS Length (km)		RHS Length (km)	
			Outer	Inner	Outer	Inner
1	Good	<2000	2.000	0.000	0.000	0.000
2	Fair	2000-2400	44.150	46.800	36.600	45.500
3	Poor	>2400	9.000	9.000	19.000	9.800
Total Surveyed length (km)			**55.150**	**55.800**	**55.600**	**55.300**

Table 4-3 Result of Roughness Survey as per CA

Sr. No.	Condition	BI (mm/km)	RHS Length (km)	LHS Length (km)
1	Good & Fair	<2750	54.8000	48.800
2	Poor	>2750	0.500	3.500
Total Surveyed length (km)			**55.800**	**55.800**

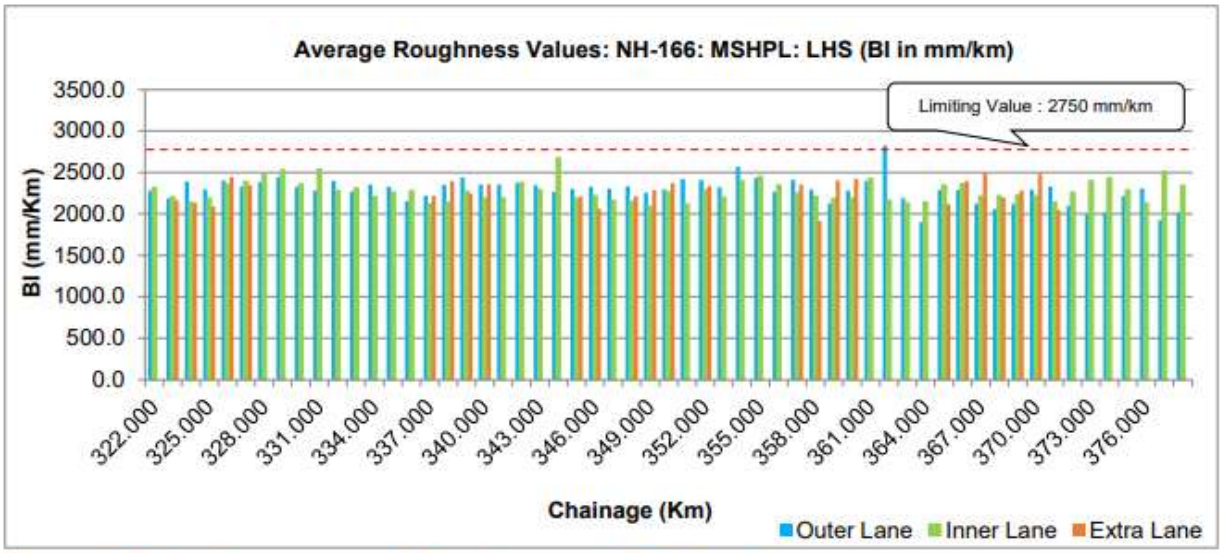


Figure 1-1 Illustrative summary of Roughness on LHS direction

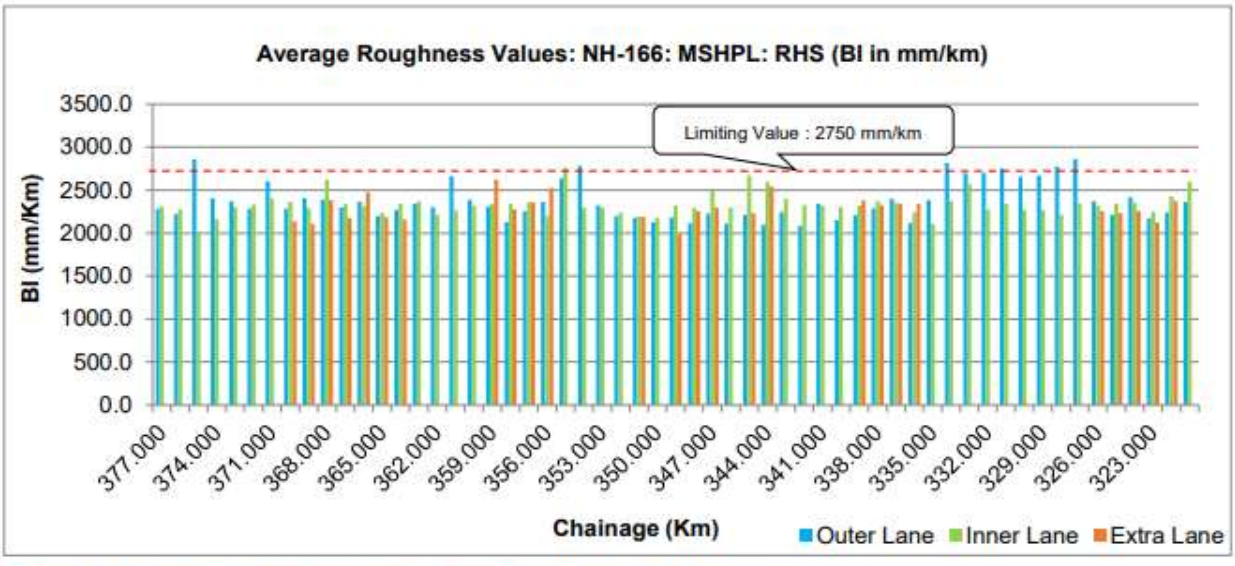


Figure 1-2 Illustrative summary of Roughness on RHS direction

Observation and Conclusion:

As per CA, the roughness value for this project is 2750 mm/km, so that overall pavement condition for the entire project stretch is found to be Good to Fair condition except 4.00 kms. The Concessionaire has already initiated the replacement PQC panel work at site. The cost of PQC panel replacement is considered under routine maintenance.

4.2.5 Periodic Maintenance Strategy

As per Schedule-K of Concession Agreement, the riding quality of the pavement shall be ensured by satisfying the minimum requirements given herein under:

1. Surface roughness of the Project Road on completion of construction shall not exceed 2750 mm/km as measured by a standard rough meter / bump integrator.

   The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-4 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2023 to FY 2028	-	-
2	FY 2029	Major maintenance with Re-texturing and Grinding with 40% + Replacement of PQC Panel 2%	Major maintenance with Re-texturing and Grinding with 25% + Replacement of PQC Panel 1%
3	FY 2030 to FY 2035	-	-
4	FY 2036	Major maintenance with Re-texturing and Grinding with 60% + Replacement of PQC Panel 2%	Major maintenance with Re-texturing and Grinding with 25% + Replacement of PQC Panel 1%
5	FY 2037	-	-

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Work Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

Unit rates of different items (Concrete, PQC, DLC etc.) are calculated as per Govt. of Maharashtra P.W.D. SSR 2022-23. The input rates for SSR were adopted as below.

a. **Manpower and Labour:** As per applicable minimum wages published by State Schedule of Rates, Government of Maharashtra.

b. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to the Project Road.

c. Cement: Rate of Cement is taken from MH SSR 2022-23.

d. Steel : Rate of steel is taken from MH SSR 2022-23.

e. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable MH SSR 2022-23.

f. **Rates of items as per Work Order:** The rates of Milling, Road marking, road Stud etc. are considered as per the Work Order issued to Contractor at Site shared by the client.

1. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-1 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Pavement Quality Concrete	Cum	7,007
2	Dry Lean Concrete	Cum	4,188
3	Retexturing and grinding	Sqm	120
4	Joint sealant	Sqm	75
5	Road Marking	Sqm	464
6	Road Studs	Nos.	185

5.3 Balance Work Cost (CAPEX)

As discussed in the previous chapter, there is no balance work in the Project Highway.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Toll Security Services
3. Incident Management Services
4. Electricity
5. HTMS Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Community Development
10. Communication Expenses
11. Conveyance Expenses
12. Insurance Expense
13. IE Fees
14. Horticulture & ROW Maintenance
15. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-2 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-36)
1	Salary and Welfare Expenses	70,88,400
2	Security Expenses	15,41,881
3	Incident Management & Emergency Services	1,96,58,560
4	Electricity Charges	2,64,18,074
5	TMS/HTMS/System Expenses	1,01,73,075

Sr. No.	Particulars	Amount (FY 2026-36)
6	Office Operating Expenses	34,18,250
7	Vehicle Running Expenses	24,42,000
8	Professional Fees Expense	1,55,37,500
9	Community Development	15,53,750
10	Communication Expenses	3,79,115
11	Conveyance Expenses	4,03,975
12	Insurance Expense	88,00,440
13	IE Fees	1,36,73,000
14	Routine Maintenance Cost (Project Road)	2,13,35,844
15	Horticulture & ROW Maintenance	1,73,82,816
16	Miscellaneous including Contingency	44,43,521
	Total Cost (Rs.)	**15,42,50,200**
	Total Cost (Cr.)	**15.43**
	Per km Cost (Lakhs)	27.30

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2023 to FY 2028	-	
2	FY 2029	26.78	
3	FY 2030 to FY 2035	-	
4	FY 2036	31.46	
5	FY 2037	-	
Total Cost (Cr.)		**58.24**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2029	4.32	
2	FY 2036	4.32	
Total Cost (Cr.)		**8.64**	

5.7 Escalation Assumptions

The following escalation is considered basis discussions with Client and our internal estimates.

Table 5-3 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	4.00%
2026	-	**2042**	3.99%
2027	5.23%	**2043**	3.99%
2028	4.92%	**2044**	3.99%
2029	4.63%	**2045**	3.98%
2030	4.33%	**2046**	3.98%

Year	Escalation	Year	Escalation
2031	4.12%	**2047**	3.96%
2032	4.07%	**2048**	3.96%
2033	4.06%	**2049**	3.95%
2034	4.00%	**2050**	3.95%
2035	4.01%	**2051**	3.95%
2036	3.99%	**2052**	3.95%
2037	4.00%	**2053**	3.95%
2038	4.02%	**2054**	3.95%
2039	4.00%	**2055**	3.95%
2040	3.98%	**2056**	3.95%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in Clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37
1	Routine O&M Cost												
1.01	Salary and Welfare Expense	0.71	0.75	0.78	0.82	0.85	0.89	0.93	0.96	1.00	1.04	1.08	1.13
1.02	Security Expenses	0.15	0.16	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.24	0.25
1.03	Incident Management Services	1.97	2.07	2.17	2.27	2.37	2.47	2.57	2.67	2.78	2.89	3.01	3.13
1.04	Electricity and Diesel Charges	2.64	2.78	2.92	3.05	3.18	3.32	3.45	3.59	3.73	3.88	4.04	4.20
1.05	TMS/HTMS/System Expenses	0.31	0.52	0.68	-	0.22	0.23	0.24	0.42	0.70	0.91	-	0.29
1.06	Office Operating Expenses	0.34	0.36	0.38	0.39	0.41	0.43	0.45	0.46	0.48	0.50	0.52	0.54
1.07	Vehicle Running Expenses	0.24	0.26	0.27	0.28	0.29	0.31	0.32	0.33	0.35	0.36	0.37	0.39
1.08	Professional Fees Expense	1.55	1.63	1.72	1.79	1.87	1.95	2.03	2.11	2.20	2.28	2.38	2.47
1.09	Community Development	0.16	0.16	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.24	0.25
1.10	Communication Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
1.11	Conveyance Expenses	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
1.12	Insurance Expense	0.88	0.93	0.97	1.02	1.06	1.10	1.15	1.20	1.24	1.29	1.35	1.40
1.13	IE Fees	1.37	1.44	1.51	1.58	1.65	1.72	1.79	1.86	1.93	2.01	2.09	2.17
1.14	Routine Maintenance Cost	2.13	2.25	2.36	2.46	2.57	2.68	2.79	2.90	3.02	3.14	3.26	3.39
1.15	Horticulture & ROW Maintenance	1.74	1.83	1.92	2.01	2.09	2.18	2.27	2.36	2.46	2.56	2.66	2.76
1.16	Miscellaneous and Contingency	0.42	0.45	0.47	0.47	0.50	0.52	0.54	0.57	0.60	0.63	0.62	0.65
1	Subtotal of O&M Cost	14.69	15.66	16.57	16.60	17.55	18.27	19.01	19.96	21.03	22.06	21.96	23.15
2	Major Maintenance Cost	-	-	-	30.74	-	-	-	-	-	-	47.45	-
3	Periodic Cost of TMS/HTMS Replacement	-	-	-	4.99	-	-	-	-	-	-	6.60	-
4	Balance Works Cost (COPEX)	-	-	-	-	-	-	-	-	-	-	-	-
	Balance Repair / Rectification Works	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**14.69**	**15.66**	**16.57**	**52.33**	**17.55**	**18.27**	**19.01**	**19.96**	**21.03**	**22.06**	**76.01**	**23.15**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**2,13,35,844**
(Inclusive of GST)	**= 3.82 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways - Rigid Pavement									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m/2m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Rigid Pavement**		**Project Length (km)**		**Per Year Project Maintenance Cost**	
				Normal	**Urban**				
				More than 4500 CVD	More than 4500 CVD				
				1,57,608	**1,92,172**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	241141.00	294023.00	-	-	-	-
		Paved shoulder	1.70	267934.00	326692.00	39.96	-	1,07,05,625	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	315217.00	384343.00	-	-	-	-
		Paved shoulder	2.20	346739.00	422778.00	-	0.64	-	2,70,578
3	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.90	457065.00	557298.00	-	-	-	-
		with Paved shoulder	3.10	488586.00	595732.00	-	15.20	-	90,57,390
4	Panel Replacement								1302251
TOTAL							**55.800**		**2,13,35,844**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **CC Surface**
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.00%
	Volume (cum)			0.00
	Rs/m^3			14603
	Cost in Rupees			0
	ii) Patch repair	100 % Patch less	As & when required	0.00%
	Area (sqm)			10
	Rs/m^2			584
	Cost in Rupees			5,841
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			100
	Cost in Rupees			25,075
	b) Width less than 3 mm	75 % Crack Less	As & when required	1.50%
	Area (sqm)			112.5
	Rs/m^2			76
	Cost in Rupees			8,496
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	0.00%
	Area (sqm)			10
	Rs/m^2			584
	Cost in Rupees			5,841
	v) Road marking	10%		13140

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **CC Surface**
1	**2**	**3**	**4**	**5**
	vi) Joint Sealant Repair/Replacement	7%		21609
	SUB TOTAL			**80,002**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Jungle Clearance	100%	Twice in a Year	2038
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**9,340**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	2751
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**9,803**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	4852
	ii) Maintenance of gang hut store, sheds, animal & debris		Once in a Year	3639

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **CC Surface**
1	**2**	**3**	**4**	**5**
	removal			
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometre stone etc.		Once in a Year	3639
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 5 Years	7277
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	1456
	SUB TOTAL			**22,076**
	GRAND TOTAL (Normal)			**1,57,608**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Centre Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	10%		5210
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**34,563**
	GRAND TOTAL (Urban)			**1,92,172**

ANNEXURE II - MAJOR MAINTENANCE COST

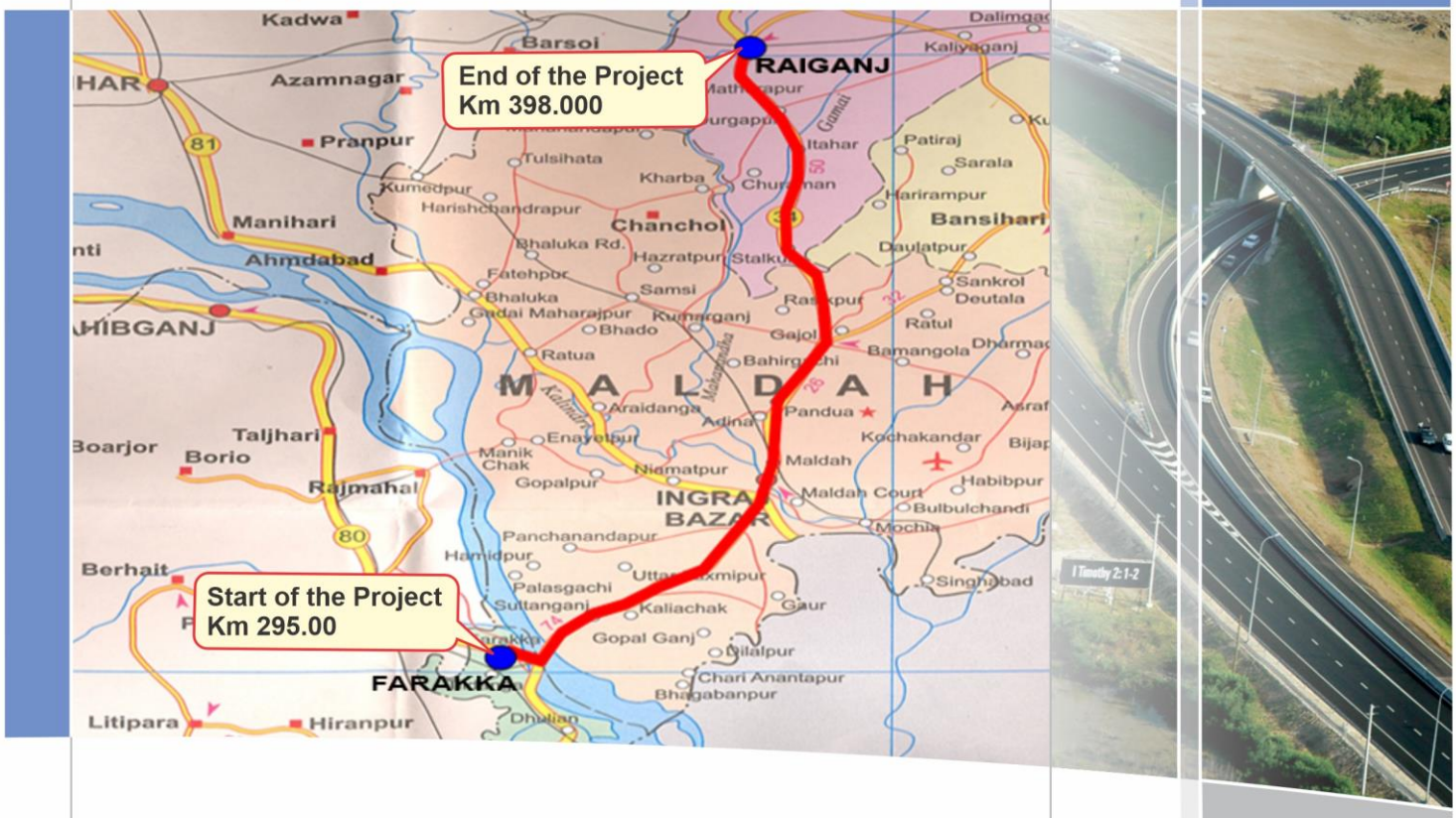
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
A	**Main Carriageway**									
1	Retexturing and Grinding	Sqm	40%	54,728	20.40		4,46,554	4,46,554	120	5,35,86,538
2	Replacement of PQC Slab	Cum	2%	54,728	20.40	0.30	6,698	6,698	10,118	6,77,73,573
3	Joint sealant (Silicone)	RMT	40%	70,882	4.50	3.50	2,26,821	2,26,821	75	1,70,11,599
4	Retexturing and Grinding For Misc. Location	Sqm	7%	4,46,554			31,259	31,259	120	37,51,058
5	Replacement of PQC Slab For Misc. Location	Cum	7%	6,698			469	469	10,118	47,44,150
6	Joint sealant (Silicone) For Misc. Location	RMT	7%	2,26,821			15,877	15,877	75	11,90,812
7	Filling of Earthen shoulder	Cum	20%	1,48,560.80		0.05	1,486	1,486	601	8,92,850
B	**Service Road**									
8	Retexturing and Grinding	Sqm	25%	30,006	7.50		56,261	56,261	120	67,51,260
9	Replacement of PQC Slab	Sqm	1%	30,006	7.50	0.25	563	563	10,118	56,92,437
10	Joint sealant (Silicone)	Cum	25%	14,288	4.50	3.50	28,577	28,577	75	21,43,257
C	**Structure- Deck Slab**									
11	Milling	Sqm	100%	1,072	27.00		28,944	28,944	89	25,78,910
12	Tack Coat	Sqm	100%	1,072	27.00		28,944	28,944	15	4,34,160
13	Bituminous Concrete	Cum	100%	1,072	27.00	0.05	1,447	1,447	12,384	1,79,22,125
14	Painting of Crash Barrier	Rmt	2.00	1,072	1.00	1.20	2,573	2,573	111	2,85,581
D	**Miscellaneous**									
15	Kerb Replacement	Rmt	0%	1,39,462			-	-	297	-
16	Painting of Kerbs	Sqm	1	1,39,462		0.32	43,930	43,930	111	48,76,275
17	Painting of Crash Barrier	Sqm	2	14,132		1.12	31,514	31,514	111	34,98,044
18	Thermoplastic paint									
	a) Median & Edge line	Sqm	100%				46,751	46,751	464	2,17,01,872
	Main Carriageway 4L		4	40,596	0.15		24,358			
	Main Carriageway 6L		4	15,204	0.15		9,122			
	Service Road		2	15,003	0.10		3,001			
	b) Lane line									
	Main Carriageway 4L		2	14,209	0.10		2,842			
	Main Carriageway 6L		4	5,321	0.10		2,129			

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Service Road		2	5,251	0.10		1,050			
	c) Junction crossing						4,250			
19	Replacement of Road Stud	No	50%				7,038	7,038	185	13,00,622
	Main Carriageway 4L		4	2,256			9,024			
	Main Carriageway 6L		4	846			3,384			
	Service Road		2	834			1,668			
20	Miscellaneous	5%								1,08,06,756
Total Major Maintenance Cost (Rs.)										**22,69,41,881**
Total Major Maintenance Cost with 18% GST (Rs.)										**26,77,91,419**
Total Major Maintenance Cost with GST (Cr.)										**26.78**
Per km Cost (lakh)										**47.99**
Escalation Factor for Major Maintenance Cost (FY 2029)										**1.16**
Total Escalated Cost for Major Maintenance Cost (FY 2029) (Cr.)										**30.74**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
A	**Main Carriageway:**									
1	Retexturing and grinding	Sqm	60%	54,728	20.40		6,69,832	6,69,832	120	8,03,79,806
2	Replacement of PQC Slab	Cum	2%	54,728	20.40	0.30	6,698	6,698	10,118	6,77,73,573
3	Joint sealant (Silicone)	RMT	60%	70,882	4.50	3.50	3,40,232	3,40,232	75	2,55,17,399
4	Retexturing and Grinding for Misc. Location	Sqm	7%	6,69,832			46,888	46,888	120	56,26,586
5	Replacement of PQC Slab for Misc. Location	Cum	7%	6,698			469	469	10,118	47,44,150
6	Joint sealant (Silicone) for Misc. Location	RMT	7%	3,40,232			23,816	23,816	75	17,86,218
7	Filling of Earthen shoulder	Cum	20%	1,48,560.80		0.05	1,486	1,486	601	8,92,850
B	**Service Road**									
8	Retexturing and grinding	Sqm	25%	30,006	7.50		56,261	56,261	120	67,51,260
9	Replacement of PQC Slab	Sqm	1%	30,006	7.50	0.25	563	563	10,118	56,92,437
10	Joint sealant (Silicone)	Cum	25%	14,288	4.50	3.50	28,577	28,577	75	21,43,257
C	**Structure- Deck Slab**									

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
11	Milling	Sqm	100%	1,072	27.00		28,944	28,944	89	25,78,910
12	Tack Coat	Sqm	100%	1,072	27.00		28,944	28,944	15	4,34,160
13	Bituminous Concrete	Cum	100%	1,072	27.00	0.05	1,447	1,447	12,384	1,79,22,125
14	Painting of Crash Barrier	Rmt	2.00	1,072	1.00	1.20	2,573	2,573	111	2,85,581
D	**Miscellaneous**									
15	Kerb Replacement	Rmt	0%	1,39,462			-	-	297	-
16	Painting of Kerbs	Sqm	1	1,39,462		0.32	43,930	43,930	111	48,76,275
17	Painting of Crash Barrier	Sqm	2	14,132		1.12	31,514	31,514	111	34,98,044
18	Thermoplastic paint									
	a) Median & Edge line	Sqm	100%				46,751	46,751	464	2,17,01,872
	Main Carriageway 4L		4	40,596	0.15		24,358			
	Main Carriageway 6L		4	15,204	0.15		9,122			
	Service Road		2	15,003	0.10		3,001			
	b) Lane line									
	Main Carriageway 4L		2	14,209	0.10		2,842			
	Main Carriageway 6L		4	5,321	0.10		2,129			
	Service Road		2	5,251	0.10		1,050			
	c) Junction crossing						4,250			
19	Replacement of Road Stud	No	50%				7,038	7,038	185	13,00,622
	Main Carriageway 4L		4	2,256			9,024			
	Main Carriageway 6L		4	846			3,384			
	Service Road		2	834			1,668			
20	Miscellaneous	5%								1,26,95,256
Total Major Maintenance Cost (Rs.)										**26,66,00,384**
Total Major Maintenance Cost with 18% GST (Rs.)										**31,45,88,453**
Total Major Maintenance Cost with GST (Cr)										**31.46**
Per km Cost (lakh)										**56.38**
Escalation Factor for Major Maintenance Cost (FY 2036)										**1.53**
Total Escalated Cost for Major Maintenance Cost (FY 2036) (Cr.)										**47.45**

FP Project Management



Technical Due Diligence of Farakka - Raiganj Section of NH-34 (New NH-12) from km. 294+800 to km. 394+980 in the State of West Bengal on DBFOT (Toll) Mode

Final Report

October 2025

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	RMW / TSM	AKA	SMA

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Table of Contents

1 Introduction 5
1.1 Background 5
1.2 Scope of Work 5
1.3 Our Approach Philosophy 6
1.3.1 Composition of Team 6
1.3.2 Site Visit and Data Collection 6
1.3.3 Data Analysis 7
1.4 Structure of the Report 7
2 Project Description 8
2.1 Introduction 8
2.2 Location 8
2.3 Climate 9
2.4 Terrain 9
2.5 Abutting Land Use 10
2.6 Right of Way 10
2.7 Existing Utilities 10
2.8 Development as per Schedule-B 10
3 Condition Assessment of Project Road 11
3.1 Pavement 11
3.1.1 Pavement Condition Survey 11
3.2 Service Road / Slip Road 12
3.3 Major / Minor Junctions 13
3.4 Condition Survey of Bridge & Major Structures 15
3.5 Condition Survey of Culverts 42
3.6 Drainage 44
3.7 Slope Protection 45
3.8 Road Furniture 46
3.9 Avenue Plantation and Median Plantation 52
3.10 Toll Plaza 53
3.10.1 Lane Equipment 56
3.10.2 RFID ETC Transceiver 56
3.10.3 Lane Controller with Industrial PC 57
3.10.4 Automatic Vehicle Classification (AVC) Sensors 57
3.10.5 Automatic Lane Barrier 57
3.10.6 Lane Traffic Light (LTL) & User Fare Display (UFD) 58

3.10.7 Incident Capture Camera (AVC Camera) 58
3.10.8 License Plate Image Capture Camera (LPIC) 59
3.10.9 Over Head Lane Signal (OHLS) 60
3.10.10 Medium Speed Weigh in Motion (MSWIM) 60
3.10.11 Toll Booth Equipment 60
3.11 Toll Plaza Equipment 62
3.11.1 TMS Server 62
3.11.2 LED screen for CCTV monitoring 62
3.11.3 Workstations in Control Room, POS room 62
3.12 Advanced Traffic Management System (ATMS) 63
3.12.1 Automatic Traffic Counter cum classifier (ATCC) 63
3.12.2 Emergency Call Boxes (ECB) 63
3.12.3 MET System 64
3.12.4 Variable Message Signboards (VMS) 64
3.12.5 CCTV Surveillance Cameras 64
3.12.6 Video Incident Detection System 65
3.12.7 Adequacy of Toll Collection System and ATMS 65
3.13 Truck Lay-Bye 65
3.14 Traffic Aid Post and Medical Aid Post 66
3.15 Toilet Block 66
3.16 Bus Bays and Passenger Shelters 67
3.17 Balance Work Status 67
3.18 Operation and Maintenance 68
3.18.1 O&M Contract 68
3.18.2 Organization Chart 68
3.18.3 Operation 70
3.18.4 Routine Maintenance 70
4 Pavement Investigation and Assessment 71
4.1 General 71
4.2 Surveys and Investigation 71
4.2.1 Pavement Condition Survey 71
4.2.2 Axle Load Survey 72
4.2.3 Design Traffic 72
4.2.4 Network Survey Vehicles (NSV) Survey 73
4.2.5 Structural Evaluation 74
4.2.6 Test Pit and Subgrade Investigation 77
4.2.7 Existing Granular layers Testing 77

4.2.8 Periodic Maintenance Strategy 78
5 Cost Estimates 79
5.1 General 79
5.2 Rate Assumption 79
5.3 Balance Work Cost 80
5.4 Routine O&M Cost 80
5.5 Major Maintenance Cost 82
5.6 Periodic Replacement of TMS / ATMS System 82
5.7 Escalation Assumption 82
5.8 Summary of Cost 83
Annexures 85
Annexure-I Routine Maintenance Cost 86
Annexure-II Major Maintenance Cost 90

List of Tables

Table 2-1 Scope of Work as per Schedule-B of CA 10
Table 3-1 Details of Major Intersections (Junctions / Intersections) 13
Table 3-2 Details of Summary for Structures 15
Table 3-3 Condition Survey of Major Structure 16
Table 3-4 Details of Summary for Toll Plaza Items 53
Table 3-5 Details of Truck Lay-bye 65
Table 3-6 Details of Toilet Block 66
Table 4-1 Summary of Pavement Condition 71
Table 4-2 Summary of VDF 72
Table 4-3 MSA Calculation 72
Table 4-4 Result of Roughness Survey 73
Table 4-5 Summary of Subgrade Test Results 77
Table 4-6 Summary of Granular Layers Tests Results 77
Table 4-7 Major Maintenance Cycle 78
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 79
Table 5-2 Summary of Unit Rates 80
Table 5-3 Summary of Operation Cost 81
Table 5-4 Escalation 82

List of Figures

Figure 2-1 Location Map 8
Figure 2-2 Start of the Project Road 9
Figure 2-3 End of Project Road 9
Figure 3-1 Photographs of Pavement Condition - Good (MCW) 11
Figure 3-2 Photographs of Pavement Condition - Fair (MCW) 12
Figure 3-3 Photographs of Service / Slip Road 13
Figure 3-4 Photographs of Major Junctions 14
Figure 3-5 Photographs of Minor Junctions 15
Figure 3-6 Photographs of Major Structures 33
Figure 3-7 Photographs of Box Culverts 43
Figure 3-8 Photograph of HP Culverts 44
Figure 3-9 Photographs of Drainage 44
Figure 3-10 Photographs of Slope Protection and Chute Drain 46
Figure 3-11 Photographs of Street Lighting 47
Figure 3-12 Photographs of Pavement Marking 48
Figure 3-13 Photographs of Road Studs 49
Figure 3-14 Photographs of Road Signages 49
Figure 3-15 Photographs of MBCB / Crash Barrier 51
Figure 3-16 Photographs of Pedestrian Guard Rail 52
Figure 3-17 Photographs of Avenue Plantation and Median Plantation 53
Figure 3-18 Photographs of Toll Plaza 54
Figure 3-19 Photographs of Truck Lay Bye 66
Figure 3-20 Photographs of Toilet Block 67
Figure 3-21 Photographs of Bus Bays and Passenger Shelters 67

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Farakka - Raiganj Section of NH-34 (New NH-12) from km. 294.800 to km. 394.980 in the State of West Bengal. The project is to be developed on Design, Build, Finance, Operate and Transfer (DBFOT) basis (the "Project") under NHDP Phase-III.

Farakka Raiganj Highways Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance and transfer of Farakka to Raiganj Section (from km. 294.800 to km. 394.975) of NH-34 (New NH-12). The project is to be developed on Design, Build, Finance, Operate and Transfer (DBFOT) basis (the "Project") under NHDP Phase-III. The project was awarded to Concessionaire on 3rd February 2011 with a concession period of 30 years by National Highway Authority of India (NHAI). The length of Project Road is 99.995 kms with two Toll Plazas at km. 297+867 and at km. 351+440.

The Date of Concession Agreement is 19th July 2010. The concession period of the project is 30 years commencing from the Appointed Date. Appointed Date of the project is 03rd February 2011. Provisional Completion Certificate for the project was issued on 17th October 2016 and the Commercial Operation commenced from 19th October 2016. Completion Certificate was issued on 03rd May 2021 for the project length of 99.995 kms.

Sr. No.	Description	Date
1	Date of Signing the Concession Agreement	19th July 2010
2	Appointed Date	03rd February 2011
3	Scheduled Project Completion Date	01st August 2013
4	Scheduled End of Concession	02nd February 2041
5	Date of issue of Provisional Completion Certificate	17th October 2016
6	Date of Commencement of Commercial Operation	19th October 2016
7	Date of Issue of Completion Certificate	03rd May 2021

Presently, the project is under operation and maintenance and the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is accordingly presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets

- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyzing the same as per the best engineering / industry practices.

The site visit of the project highway and inspection were carried out during the period from **28th January 2025 to 31st January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, and overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Farakka Raiganj Highway Limited**, a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 19th July 2010. The Appointed Date for the Project Road is 3rd February 2011.

2.2 Location

The Project Road is part of National Highway No. 34 of Farakka - Raiganj section in the state of West Bengal. The total project length is 99.995 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of the Project Road

Start of the Project at km. 294+800 (LHS)

Start of the Project at km. 294+800 (RHS)

Figure 2-3 End of Project Road

End of the Project at km. 394+975 (LHS)

End of the Project at km. 394+975 (RHS)

2.3 Climate

There are mainly five seasons in the West Bengal region: spring, summer, rainy season, a short autumn, and winter. A short spring is expected in some parts of the state, especially in the northern parts of North Bengal. The summer season extends from the first week of March to June. The average temperature is 30 degrees Celsius. The rainy season stretches from July to the end of September. Most of the annual average rainfall of about 125cm to 175cm occurs during this period. Autumn season is experienced in West Bengal for a very short period, from beginning of October to the middle of November. Winter season is experienced in the state from mid-November to February, with January being the coldest month. Winter is cold to mild over the plains with average minimum temperatures of 9 to 16 °C.

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

Land use along the Project Road is mostly agricultural except some part of the road stretches which passes through Built up areas.

2.6 Right of Way

The width of the existing Right of Way (RoW) throughout the project stretch is 60.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, hand pumps etc.

2.8 Development as per Schedule-B

The Project Road from Farakka to Raiganj Section (from km. 294.800 to km. 394.975) of NH-34 (New NH-12). has been developed as a four-lane divided carriageway with bypasses, service road and other arrangements. The Project Road passes through rural (agricultural) as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Tolling, operation, management, maintenance, and transfer of the Project Highway subject to and in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of the Concession Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under the Concession Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement as per which the project highway has been developed.

Table 2-1 Scope of Work as per Schedule-B of CA

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	99.995	
2	Construction of Service Road	km.	8.34	LHS+RHS
3	Rail Over Bridge	No	01	
5	Fly Over	No	03	
6	Vehicular Underpass	No	05	
7	Major Bridges	No	03	
8	Minor Bridges	No	22	
9	Culverts	No	92	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.75 m with earthen shoulder of 2.0 m on either side. The Project Road has suitable median width throughout its length. Service Road of 7.0 / 5.50 m width has been provided on one side or both sides wherever required in built up area to cater for the local traffic.
The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the toll plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out during the period from **28th January 2025 to 30th January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the overall pavement condition of the Project Road is found to be Good to Fair.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition - Good (MCW)

Pavement Condition at km. 345+200 (LHS)

Pavement Condition at km. 324+900 (LHS)

Pavement Condition at km. 338+800 (RHS)

Pavement Condition at km. 321+800 (RHS)

Figure 3-2 Photographs of Pavement Condition - Fair (MCW)

Pavement Condition at km. 321+700 (LHS)

Pavement Condition at km. 328+600 (LHS)

Pavement Condition at km. 320+850 (RHS)

Pavement Condition at km. 325+900 (LHS)

3.2 Service Road / Slip Road

The service road of width 7.0 m / 5.5 m is constructed in built-up areas and adjoining underpass locations. The project road has total service road length of 8.34 kms on both sides. The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service / Slip Road

Service Road at VUP km. 326+147 (A1-LHS)

Service Road at VUP km 334+820 COS (A1-LHS)

Service Road at VUP km. 326+147 (A1-RHS)

Service Road at VUP km 334+820 COS (A2-RHS)

3.3 Major / Minor Junctions

There are 13 nos. of major junctions and 209 nos. of minor junctions along project road. The junction details are presented in the table below.

Table 3-1 Details of Major Intersections (Junctions / Intersections)

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Category of Road	Type of Junction	Remarks
1	297.740	395.637	Township Road	4-legged	NTPC Township More
2	302.550	300.480	ODR	4-legged	Nutan 16 Mile More
3	313.250	311.425	ODR	4-legged	Jalalpur More
4	315.900	314.167	ODR	4-legged	Sujapur More
5	322.220	320.437	MDR	3-legged	Sustani More
6	Maldah Bypass	326.147	MDR	4-legged	Bulbulchandi More
7	348.755	348.340	ODR	3-legged	Alampur More
8	352.900	352.487	SH-31	3-legged	Gajol More
9	354.145	353.729	NH-80	4-legged	Kadubari More
10	356.770	362.418	ODR	4-legged	Moina More

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Category of Road	Type of Junction	Remarks
11	375.755	372.550	ODR	4-legged	Baliapara More
12	384.075	381.049	MDR	4-legged	Itahar More
13	392.920	390.090	MDR	4-legged	Durgapur More

The photographs taken during site visit are presented as below:

Figure 3-4 Photographs of Major Junctions

Junction at Gajol km. 352+782 (RHS)

Start at Malda Bypass km. 320+437

Junction at Sujapur km. 314+167

Junction at New Farakka / Ganga MJB Approach merging WIP at km. 296+000 (RHS)

Figure 3-5 Photographs of Minor Junctions

Junction at km. 295+600 (RHS)

X-Junction at Yeklakhi km. 348+350

3.4 Condition Survey of Bridge & Major Structures

The inventory of Structures including major bridges, minor bridges, ROB's, flyover, underpasses and culverts is presented in table below.

Table 3-2 Details of Summary for Structures

Type of Structure	Total Number of Structures
Rail Over Bridge (ROB)	01
Fly Over	03
Vehicular Underpass	05
Major Bridges	03
Minor Bridges	22
Culverts	92
Total	**126**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-3 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
1	296.923	Minor Bridge	**Age**	Old 2 lane Low level (1 x 6.10 m)	New (1 x 7.4 m)	The old and new bridges are in sound condition. Wearing course of the old bridge repairing completed.
			Foundation	Open foundation	Open foundation	
			Sub structure / Abutment / Pier	RCC Wall	RCC Wall	
			Super Structure	RCC slab	RCC slab, Box type	
			Slope Protection	RCC wing wall is provided. Pitching is found	RCC return & pitching is found	
			Nalla Bed	Bushes is developed		
			Parapet / Railing	RCC railing is provided	RCC parapet is provided	
			Expansion Joints	No	No	
			Wearing Coat Surface	BC Surface is found crack. No joint is found. Cracks at approach joint repairing completed	BC is in good condition	
			Approach Slope	Stable condition	Stable condition	
			Drainage	No problem	No problem	
2	302.251	Major Bridge (Pagala River)	**Age**	New 2 lane + footpath Span - 4 x 40 m +2 x20m	Existing 2 lane + footpath Low level by 8' Span - 12 x 8m + 2 x 5m	The old and new bridges are in sound condition. Some settlement is noticed at approach road A1 LHS.
			Foundation	Pile foundation	Open foundation	
			Sub structure / Abutment / Pier	Circular RCC pier	RCC wall	
			Super Structure	Segmental box girder Slab	RCC solid slab	
			Bearing	No problem	-	
			Slope Protection	RCC return & pitching is provided	RCC return & pitching is provided	
			Nalla Bed	Clear Water	Standing water clear	
			Parapet / Railing	RCC parapet & railing for	RCC railing	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				footpath		
			Expansion Joints	Strip seal – No problem		
			Wearing Coat Surface	BC – No problem	BC – No problem	
			Approach Slope	Turfing & pitching stable	Turfing & pitching stable	
			Drainage	No problem	Blocked	
3	**303.941**	**Minor Bridge (3 x 5) m**	**Age**	New 2 lane + footpath	New 2 lane + footpath	The structures are in sound condition. Bed cleaning required at up-stream and down-stream side.
			Foundation	RCC open type	RCC open type	
			Sub structure/ Abutment / Pier	RCC wall & pardi	RCC wall & pardi	
			Super Structure	RCC slab Box type Median covered	RCC slab Box type	
			Slope Protection	RCC return & pitching. No problem.	RCC return & pitching. No problem	
			Nalla Bed	Water Clear	Water Clear	
			Parapet / Railing	RCC parapet & railing	RCC parapet & railing	
			Expansion Joints			
			Wearing Coat Surface	BC – Repairing required at A1 & A2 Approach slab		
			Approach Slope	Repairing done	Repairing done	
			Drainage	No problem	No problem	
4	**304.455**	**Minor Bridge**	**Age**	New 2 lane + footpath Span - 1 x 40m	Old 2 lane - 3 span	The old and new structures and in sound condition. In urban areas cleaning the bed is required. Downstream is totally
			Foundation	Open type	RCC Open Foundation	
			Sub structure / Abutment / Pier	RCC wall	RCC wall & piers	
			Super Structure	RCC slab	RCC Arch Brick masonry solid slab	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Blocked Cleaning required	P2-A2 & A1-P1 Waterway Blocked by garbage	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
					Cleaning required	blocked by garbage. Cleaning Required
			Parapet / Railing	RCC parapet & railing	RCC railing work is completed	
			Expansion Joints	2 nos.		
			Wearing Coat Surface	BC – Distress noticed at approach road	BC	
			Approach Slope	Stable	Stable	
			Drainage	No problem	No problem	
5	**308.489**	**Minor Bridge Skew**	**Age**	New 2 lane + footpath Span 2 x 7.40 m x 3 m	Old 2 lane + footpath Span 2 x 7.40 m x 3 m	The old and new structures are in sound condition. At P1-A2 RHS span wearing coat pavement distress observed
			Foundation	RCC open type	RCC open type	
			Sub structure / Abutment / Pier	RCC wall and pardi	Abutment - Brick wall Centre RCC pier & cap	
			Super Structure	RCC slab type	RCC solid slab type	
			Slope Protection	RCC return & pitching at A1 side	RCC return & pitching cleaning required.	
			Nalla Bed	Water & bushes is present.	Water & bushes is present.	
			Parapet / Railing	RCC parapet & railing is provided.	Parapet is provided	
			Wearing Coat Surface	Balance work of BC is done. A2 side Approach joint small crack is noticed.	On BC Crack at approach slab joint is noticed.	
			Approach Slope	Stable condition	Stable condition	
			Drainage	No problem	No problem	
6	**311.654**	**Minor Bridge**	**Age**	New 2 lane + footpath Span – 2x5.00m	New 2 lane + footpath Span – 2x5.00m	The structures are in sound condition. At A2 LHS approach slab Crack on pavement & RCC railing is
			Foundation	RCC Open type	RCC Open type	
			Sub structure/ Abutment / Pier	RCC wall & pardi	RCC wall & pardi	
			Super Structure	RCC slab Box type	RCC slab Box type	
			Slope Protection	Return & pitching is provided	Return & pitching is provided	
			Nalla Bed	Water Temporary closed by	Water Temporary closed by local	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				local villagers for fishing	villagers for fishing	observed.
			Parapet / Railing	RCC parapet + railing	RCC parapet + railing	
			Expansion Joints	NA	NA	
			Wearing Coat Surface	BC is in good condition. Approach crack at joint repairing done.	BC is in good condition.	
			Approach Slope	Stable condition	Approach work is done.	
			Drainage	No problem	No problem	
7	**315.318**	**Minor Bridge (4 x 5) m**	**Age**	New 2 lane + footpath	New New lane + footpath	The structure is in sound condition. Cracks observed at A2 BHS approach slab. Waterspout cleaning required
			Foundation	RCC open foundation	RCC open foundation	
			Sub structure/ Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab Box type	RCC slab Box type	
			Slope Protection	RCC return & pitching is provided.	RCC return & pitching is provided.	
			Nalla Bed	Cleaning is reqd.	Cleaning is reqd	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joints	-	-	
			Wearing Coat Surface	BC is in good condition.	BC is in good condition.	
			Approach Slope	Stable condition	Stable condition	
			Drainage	No problem	No problem	
8	**316.155**	**Major Bridge 3 span (20+25+20) m**	**Age**	Old 2 lane	New 2 lane+ Footpath	The old and new structure is in sound condition. P1& P2 RHS pile cap PCC with back filling matl. totally
			Foundation	RCC open foundation	Pile foundation	
			Sub structure/ Abutment / Pier	RC wall RCC piers	RC wall RCC piers	
			Super Structure	Segmental Arches Balance condition 5 span	4 girders & slab	
			Bearing	Rocker & Roller Bearing 6 nos. - No problem	Elastomeric Bearing 4 nos. No problem	
			Slope Protection	RCC return & pitching	RCC return & pitching	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Nalla Bed	Clear Water	Clear Water	damaged/ wash out.
			Parapet / Railing	RCC railing	RCC Parapet	
			Expansion Joints	-	No problem	
			Wearing Coat Surface	Condition of BC is good	Condition of BC is good	
			Approach Slope	Stable condition	Stable condition	
			Drainage	No problem	No problem	
9	**320.335**	**Minor Bridge (4x5) m**	**Age**	New 2 lane + Footpath	New 2 lane + Footpath	The structure is in sound condition. Repair for honey combing at RCC wall is done. Repair of BC surface, settlement at Approach repair work is done.
			Foundation	RCC open foundation	RCC open foundation	
			Sub Structure Abutment/Pier	RCC wall RCC pardi Repairing done	RCC wall RCC pardi Repairing done	
			Super Structure	RCC slab Box type	RCC slab Box type	
			Bearing	-	-	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Water & Bushes observed	Water & Bushes observed	
			Parapet /Railing	RCC parapet	RCC parapet	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Approach Settlement repair is done.	BC – Repairing done.	
			Approach Slope	Stable condition	Stable condition	
			Drainage	No problem	No problem	
10	**321.700**	**Minor Bridge Bypass Malda (3x5.75) m**	**Age**	New 2 lane + Footpath	New 2 lane + Footpath	The structure is in sound condition. The BC surface repair is done. Waterspouts Cleaning is required.
			Foundation	RCC open Foundation	RCC open Foundation	
			Sub structure Abutment / Pier	RCC wall & pardi	RCC wall & pardi	
			Super Structure	RCC slab	RCC slab	
			Slope Protection	RCC wing wall & pitching	RCC wing wall & pitching	
			Parapet / Railing	RCC parapet	RCC parapet	
			Wearing Coat / Surface	BC - Completed	BC – No problem	
			Approach Slope	Stable condition	Stable condition	
			Drainage	No problem	No problem	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
11	**323.180**	**Minor Bridge (6 x 5) m**	**Age**	New Footpath + 2 lane	New Footpath + 2 lane	Waterspout cleaning is done. at LHS Footpath. The structure is in sound condition..
			Foundation	Open foundation	Open foundation	
			Sub structure Abutment/Pier	RCC wall type	RCC wall type	
			Super Structure	RCC solid slab	RCC solid slab	
			Slope Protection	RCC wing wall Pitching is provided	RCC wing wall Pitching is provided	
			Nalla Bed	Cleaning is required	Cleaning is required	
			Parapet /Railing	RCC wing wall Pitching	RCC wing wall Pitching	
			Wearing Coat / Surface	BC completed	BC completed	
			Approach Slope	Stable	Stable	
			Drainage	No problem	No problem	
12	**325.223**	**Major Bridge Span - (5 x 28)+ (6 x 48) m Mahananda River Bypass Malda**	**Age**	New 2 lane + footpath	New 2 lane + footpath	The structures are in sound condition. Span P8-P9 & P9-A2 cross crack observed on wearing coat. A1-P1-P2 LHS span 1st lane damage BC milling and relaying work completed. A1-P1 LHS 2nd lane BC crack, rutting
			Foundation	Pile foundation	Pile foundation	
			Sub Structure Abutment/Pier	RCC wall RCC circular piers	RCC wall RCC circular piers	
			Super Structure	RCC girders – 5 nos. RCC slab Pre-stress Box girder	RCC girders – 5 nos. RCC slab	
			Bearing	POT PTFE	POT PTFE	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Clear Water	Clear Water	
			Parapet /Railing	RCC parapet	RCC parapet	
			Expansion Joint	Strip seal type No problem	Strip seal type No problem	
			Wearing Coat / Surface	Mastic & BC completed.	Mastic & BC completed.	
			Approach Slope	Retaining wall completed	Retaining wall completed	
			Drainage	Provided	Provided	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
						observed. At all approach slab some settlement observed On P8 LHS Expansion Joint rubber packing damaged. Waterspout cleaning required.
13	**326.147**	**VUP (1x 12x 7.50) m**	**Age**	New	New	The structure is in sound condition. The balance work is completed. RCC built up drain is constructed at A1 both hand side service road. Waterspouts cleaning is required
			Foundation	RCC open foundation	RCC open foundation	
			Sub Structure Abutment/Pier	Abutment - RE Wall RCC pier	Abutment - RE Wall RCC pier	
			Super Structure	4 RCC girder RCC slab Median open	4 RCC girder RCC slab Median open	
			Bearing	4 PTFE	4 PTFE	
			Slope Protection	R.E. Wall	R.E. Wall	
			Nalla Bed	Road	Road	
			Parapet /Railing	RCC parapet Completed	RCC parapet Completed	
			Wearing Coat / Surface	BC - Completed	BC - Completed	
			Approach Slope	Completed	Completed	
			Drainage	A1 side RCC Drain	Proposed	
14	**328.540**	**VUP (COS) (1 x 12.1 x 5.50) m**	**Age**	New 2 lane + footpath	New 2 lane + footpath	Embankment is very high The structure is in sound
			Foundation	RCC open foundation	RCC open foundation	
			Sub Structure	RCC wall	RCC wall	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Abutment/Pier			condition.
			Super Structure	RCC slab Box type	RCC slab Box type	
			Slope Protection	Wing wall & pitching	Wing wall & pitching	
			Nalla Bed	Road	Road	
			Parapet /Railing	RCC parapet is not reqd.as structure is buried	RCC parapet is not reqd.as structure is buried	
			Wearing Coat / Surface	BC – Completed	BC – Completed	
			Approach Slope	Slope Toe wall Pitching	Slope Toe wall Pitching done	
			Drainage	Not reqd. as Toe wall provided	Not reqd. as Toe wall provided	
15	**328.747**	**ROB Skew 5 spans Central Railway Span (5x40) m**	**Age**	New 2 lane + footpath	New 2 lane + footpath	The structure is in sound condition. At Approach slab some settlement observed at BHS and both ends.
			Foundation	Pile foundation	Pile foundation	
			Sub Structure Abutment/Pier	RCC circular piers – Twin Abutment RCC wall	RCC circular piers – Twin Abutment RCC wall	
			Super Structure	PSC girder Railway MS girder	PSC girder Railway MS girder	
			Bearing	POT PTFE	POT PTFE	
			Slope Protection	RVV return pitching completed.	RVV return pitching completed.	
			Nalla Bed	Rail Track	Rail Track	
			Parapet /Railing	RCC parapet & railing	RCC parapet & railing	
			Expansion Joint	completed	completed	
			Wearing Coat / Surface	BC – completed	BC – completed	
			Approach Slope	Retaining wall completed. Filling completed. Pitching completed.	Retaining wall completed. Filling completed. Pitching completed.	
16	**329.029**	**Minor Bridge 3 span (18 + 23 + 18) m**	**Age**	New 2 lane + footpath	New 2 lane + footpath	The structure is in sound condition. At Approach slab some
			Foundation	RCC open foundation & pile foundation	RCC open foundation & pile foundation	
			Sub Structure	Abutment – RCC wall circular	Abutment – RCC wall circular	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		(Near to ROB) **Skew Crossing**	**Abutment/Pier**	pier	pier	settlement observed at BHS and both ends. On RHS A1side RCC crash barrier vertical crack observed.
			Super Structure	4 RCC girders & RCC slab	RCC girders & RCC slab	
			Bearing	POT PTFE	POT PTFE	
			Slope Protection	RCC return Pitching completed.	RCC return Pitching completed.	
			Nalla Bed	Clear	Clear	
			Parapet /Railing	RCC parapet & railing	RCC parapet & railing	
			Expansion Joint	4 nos. provided	4 nos. provided	
			Wearing Coat / Surface	BC completed.	BC completed.	
			Approach Slope	completed.	completed.	
			Drainage	Spout provided.	Spout provided.	
17	**329.961**	**Minor Bridge 3 spans (18 + 23 + 18) m**	**Age**	New	New	The structure is in sound condition. Expansion joint rubber packing damaged at P1 & A2 LHS
			Foundation	Pile foundation	Pile foundation	
			Sub Structure Abutment/Pier	Abutment RCC wall Circular pier	Abutment RCC wall Circular pier	
			Super Structure	RCC girders - 4 nos. & RCC slab	RCC girders - 4 nos. & RCC slab	
			Bearing			
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Water Clear	Water Clear	
			Parapet /Railing	RCC parapet	RCC parapet	
			Expansion Joint	4 nos. provided Strip seal	4 nos. provided Strip seal	
			Wearing Coat / Surface	BC – completed.	BC – completed.	
			Approach Slope	Pitching completed.	Pitching completed.	
			Drainage	Spout provided.	Spout provided.	
18	**334.889**	**VUP (COS) (1 x 12 x 5.50) m**	**Age**	New	New	The structure is in sound condition. Drainage down take
			Foundation	RCC open foundation	RCC open foundation	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab	RCC slab	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Box type Median Covered	Box type Median Covered	PVC pipe at A1 RHS approach not found
			Slope Protection	RCC return	RCC return	
			Nalla Bed	Road and Service Road	Road and Service Road	
			Parapet /Railing	RCC parapet	RCC parapet	
			Expansion Joint	NA	NA	
			Wearing Coat / Surface	BC – No problem	BC – No problem	
			Approach Slope	RE wall	RE wall	
			Drainage	No problem	No problem	
19	**345.221**	**Minor Bridge Span Old - (1x6.10) m New - (2x5) m**	**Age**	Old Low level Both side widening 2 lane + footpath	New 2 lane + footpath	The old and new structures are in sound condition. On LHS A2 & A1 slope protection work damaged.
			Foundation	RCC open type	RCC open type	
			Sub Structure Abutment / Pier	RCC wall	RCC wall and RCC Pardi	
			Super Structure	RCC slab	RCC slab Box type	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Water Clear	Water Clear	
			Parapet /Railing	RCC parapet & railing	RCC parapet & railing	
			Expansion Joint	NA	NA	
			Wearing Coat / Surface	BC – Potholes repaired	BC – no problem	
			Approach Slope	Stable	Stable	
			Drainage	No problem	No problem	
20	**350.638**	**Minor Bridge span (1 x 6.10) m**	**Age**	Old – Low Widening 2 lane + footpath Span	New 2 lane + footpath	The structures, both old and new are in sound condition. Cracks on pavement
			Foundation	RCC open type	RCC open type	
			Sub Structure Abutment/Pier	RCC wall (Honey combing) Repairing done	RCC wall	
			Super Structure	RCC slab	RCC slab Box type	
			Bearing	NA	NA	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Slope Protection	RCC return & pitching	RCC return & pitching	observed at A1 & A2 RHS Approach.
			Nalla Bed	Waterway Clearing Required	Waterway Cleaning Required	
			Parapet /Railing	RCC parapet		
			Expansion Joint	NA		
			Wearing Coat / Surface	BC – No problem	BC – No problem	
			Approach Slope	Stable	Stable	
			Drainage	No problem	No problem	
21	**352.782**	**VUP (2 x 11 x 5.50) m Super elevation**	**Age**	New	New	The structure is in sound condition.
			Foundation	RCC open type and pile foundation	RCC open Type and pile foundation	
			Sub Structure Abutment / Pier	Abutment – RE wall RCC piers	Abutment – RE wall RCC pier	
			Super Structure	RCC girder 4 nos. RCC slab	RCC girder 4 nos. RCC slab	
			Bearing	4 Nos.	4 Nos.	
			Slope Protection	RE wall	RE wall	
			Nalla Bed	Road BC Overlaying done on Service Road	Road BC Overlaying done on Service Road	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint	3 nos. No problem	3 nos. No problem	
			Wearing Coat / Surface	BC -No problem	BC -No problem	
			Approach Slope	Stable	Stable	
			Drainage	Cleaning done	Down take Pipe provided & Cleaning done	
22	**357.782**	**Minor Bridge (4 x 4.8) m + (2 x 4.8)**	**Age**	Old 2 lane (No footpath)	New 2 lane + footpath	The old and new structures are in sound condition.
			Foundation	RCC open type	RCC open type	
			Sub Structure Abutment/Pier	RCC wall & pier	RCC wall & RCC pier	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		m Approach Abutment slab	**Super Structure**	RCC solid slab	RCC solid slab (skew)	
			Bearing			
			Slope Protection	RCC return & pitching. Bushes to be removed	RCC return & pitching	
			Nalla Bed	Clear Bushes	Clear Bushes	
			Parapet /Railing	RCC railing	RCC parapet & railing	
			Expansion Joint	NA	NA	
			Wearing Coat / Surface	BC - No problem	BC - No problem	
			Approach Slope	Stable	Stable	
			Drainage	No problem	No problem	
23	**360.132**	**Major Bridge Span (3 x 40) m**	**Age**	New 2 Lane + Footpath	New 2 Lane + Footpath	The structure is in sound condition. The quality of RCC is good. Span A1-P1, P1-P2 & P2-A2 LHS wearing coat rutting ,Cracks & pot holes observed.
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment RCC – Wall Centre	Abutment RCC Wall	
			Super Structure	PSC – girder RCC – Slab	PSC – girder RCC – Slab	
			Bearing	PoT PTFE	PoT PTFE	
			Slope Protection	RCC return Pitching	RCC return Pitching	
			Nalla Bed	No water clear	No water clear	
			Parapet / Railing	RCC Parapet	RCC Parapet	
			Expansion Joint	3 Nos. rubber damaged	4 Nos. No Problem Cleaning is done.	
			Wearing Coat / Surface	BC – Approach pavement cracks & pot holes observed.	BC – Longitudinal cracks observed at shoulder side.	
			Approach Slope	A2 side some settlement observed	Stable	
			Drainage	No Problem	No Problem	
24	**364.149**	**Minor Bridge Span (1 x**	**Age**	New 2 Lane + Footpath	New 2 Lane + Footpath	Expansion joint rubber damaged.
			Foundation	Pile Foundation	Pile Foundation	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
		18 + 1 x 23 + 1 x 18) m	**Sub Structure Abutment/Pier**	RCC Wall RCC Circular pier	RCC Wall RCC Circular pier	The structure is in sound condition. The quality of RCC is good. Waterspouts & Expansion joint cleaning to be done. Span P2-A2 RHS 1st Lane wearing coat some rutting, & Cracks observed
			Super Structure	RCC girder 4 Nos RCC Slab	RCC girder 4 Nos RCC Slab	
			Bearing	POT - PTFE	POT - PTFE	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Water Clear	Water Clear	
			Parapet /Railing	RCC Parapet	RCC Parapet	
			Expansion Joint	3 Nos. damaged 1 no is ok	2 Nos. damaged 2 nos. is ok	
			Wearing Coat / Surface	BC – No Problem	BC – No Problem	
			Approach Slope	Stable	Stable	
			Drainage	Grating Approach No Problem	Grating Approach No Problem	
25	**371.740**	**Minor Bridge**	**Age**	Old (9 No. x 3m x 3m) Low Level No widening-2 Lane Repaired	New 2 Lane + Footpath Span – 2 x 26.6m x 4m	The structures old and new are in sound condition. RCC Railing reconstruction work in progress at LHS
			Foundation	Open Foundation	RCC - piles	
			Sub Structure Abutment/Pier	RCC Wall RCC Pardi	RCC Wall RCC Circular Pier	
			Super Structure	RCC Solid Slab	RCC Girders 4 nos. & RCC slab	
			Bearing	--	4 Nos. POT PTFE	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Water Clear	Water Clear	
			Parapet /Railing	RCC Railing	RCC Railing	
			Expansion Joint	--	No problem	
			Wearing Coat / Surface	BC – No Problem	BC – No Problem	
			Approach Slope	Stable	Stable	
			Drainage	No Problem	No Problem	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Cleaning required.	Cleaning required.	
26	**375.885**	**Major Bridge Span - (20 + 26 + 26 x+20) m**	**Age**	New 2 Lane + Footpath	New 2 Lane + Footpath	The structure is in sound condition. On LHS BC surface rutting & pot holes observed
			Foundation	RCC Pile Foundation	RCC Pile Foundation	
			Sub Structure Abutment/Pier	RCC Wall RCC Circular Pier	RCC Wall RCC Circular Pier	
			Super Structure	RCC girder – 4 Nos. RCC Slab	RCC girder – 4 Nos. RCC Slab	
			Bearing	POT - PTFE	POT - PTFE	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Water Clear	Water Clear	
			Parapet /Railing	RCC Parapet	RCC Parapet	
			Expansion Joint	2 Nos is ok 2 nos is damaged	4 Nos.	
			Wearing Coat / Surface	BC – Repairing done	BC – Repairing done	
			Approach Slope	Stable	Stable	
			Drainage	Cleaning required	Cleaning required	
27	**km. 378.149**	**Minor Bridge Span – (4 x 4.60) m at LHS & RHS 2 x 4.60 m + 2 x 4.60 m Abutment Approach slab**	**Age**	New 2 Lane + Footpath	Old 2 Lane (No Footpath)	The old and new structure is in sound condition
			Foundation	RCC open foundation	RCC open foundation	
			Sub Structure Abutment/Pier	RCC Wall and pardi	RCC wall and wall type pier Abutment sloping wall both side Honey Combing	
			Super Structure	RCC Slab Box Type	RC Solid Slab	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Waterway not Clear Bushes available	Waterway not Clear Bushes available	
			Parapet /Railing	RCC parapet & footpath	RCC railing & footpath	
			Wearing Coat / Surface	BC - No Problem	BC - Approach Repairing done	
			Approach Slope	Stable	Stable	
			Drainage	No Problem	No Problem	
28	**km.**	**Minor**	**Age**	New	Old 2 Lane	The structures

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
	379.963	**Bridge Span - (4 x 4.60) m at LHS & RHS 2 x 4.6 m + 2 x 4.6 m Abutment Approach slab**		2 Lane + footpath	Low Level	old and new are in sound condition. At LHS return wall some honeycombing is observed.
			Foundation	RCC Open Type	RCC Footing	
			Sub Structure Abutment / Pier	RCC Wall and Pardi	RCC Wall and Centre RCC Wall type pier	
			Super Structure	Span 4 x 4.60 RCC Slab Box Type	RCC Solid Slab seen 4 x 4.6	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Water Clear	Water Clear	
			Parapet / Railing	RCC parapet & Railing	RCC Railing & Footpath	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC – No Problem Approach repairing done	BC – No Problem	
			Approach Slope	Stable	Stable	
			Drainage	No Problem	cleared	
29	**381.333 (Urban Area)**	**Major Bridge Span - (20 +26 + 26 +20) m**	**Age**	New 2 Lane with Footpath	Old 2 Lane – repaired	The structures old and new are in sound condition.
			Foundation	RCC open type Abutment	RCC Open Type Abutment	
			Sub Structure Abutment/Pier	RCC Wall Centre – 3 Circular RCC Piers – 3 Nos.	Abutment RCC Wall Centre RCC Wall Abutment Standard Support	
			Super Structure	RCC Girder Span – 4 (20+26+26+20)	RCC Solid Slab (Span – 12 Nos. x 3m) With 2 nos. in abutment approach slab.	
			Bearing	4 Nos.	-	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	A1-P1 LHS Span Waterway not clear, completely blocked by filling soil.	Water, Bushes Not clean due to Urban area	
			Parapet /Railing	RCC parapet and railing	RCC parapet and railing with footpath	
			Expansion Joint	4 Nos.	--	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Wearing Coat / Surface	BC – No Problem Approach settlement crack	BC – No Problem Settlement crack in Approach Water Supply pipe – 8" CI is removed.	
			Approach Slope	Cleaning Required	Stable	
			Drainage	No Problem	No Problem	
30	**383.309**	**Minor Bridge (New) Span (4 x 5.0) m**	**Age**	New 2 Lane + Footpath	New 2 Lane + Footpath	The structure is in sound condition.
			Foundation	RCC Open Type	RCC Open Type	
			Sub Structure Abutment/Pier	RCC Wall RCC Pardi	RCC Wall RCC Pardi	
			Super Structure	RCC Slab Box Type	RCC Slab Box Type	
			Bearing	-	-	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Waterway not Clear, bushes observed.	Water Clear	
			Parapet /Railing	RCC parapet & railing	RCC parapet & railing	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC – No Problem	BC – No Problem	
			Approach Slope	Stable	Stable	
			Drainage	Cleaning Required	Cleaning Required	
31	**386.075**	**Minor Bridge Six Span (6 x 5) m at LHS And RHS 4 x 5 + 2 x 5 m at Abutment approach slab**	**Age**	New 2 Lane + footpath	Old 2 Lane	The structures old and new both in sound condition. At A1-A2 LHS approach some cracks are observed on pavement. Honey combing
			Foundation	RCC Open Type	RCC Open Type	
			Sub Structure Abutment/Pier	RCC Wall & RCC Pardi	RCC Wall RCC pier Wall Type	
			Super Structure	RCC Slab Box Type	RCC Solid Slab	
			Slope Protection	RCC return and pitching	RCC return and pitching	
			Nalla Bed	Water Bucher	Water Bucher	
			Parapet /Railing	Footpath, RCC Parapet & Railing	RCC Railing & Footpath on BHS	
			Expansion Joint	NA	NA	
			Wearing Coat / Surface	BC – No Problem	BC – No Problem	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Approach Slope	Stable	Stable	observed on P3, P4 & P5 LHS
			Drainage	Cleaning Required	Cleaning Required	
32	**390.239**	**Major Bridge Span - (20 +26 + 26 + 20) m**	**Age**	New 2 Lane + footing Span (20+26+26+20m)	Old – (Low Level) Repaired Span 12 x 3.00m with 2 nos. Abut. Approach slab	The structures, both old and new, are in sound condition. Cleaning is required at U/S & D/S
			Foundation	Pile Foundation	RCC Open Type	
			Sub Structure Abutment/Pier	RCC Wall Centre – RCC circular piers.	RCC Wall RCC pier wall Type	
			Super Structure	RCC girder – 4 nos RCC slab	RCC solid slab	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Standing water Bushes	Standing water Bushes	
			Parapet /Railing	RCC parapet & wall	RCC railing with footpath on both side	
			Expansion Joint	3 Nos. Rubber packing damaged	Nil	
			Wearing Coat / Surface	BC –No Problem	BC – Surface cracks observed.	
			Approach Slope	Stable	Stable	
			Drainage	No Problem	No Problem	
33	**391.392**	**Minor Bridge 2 Span (2 x 26 m)**	**Age**	New 2 Lane + Footpath	New 2 Lane + Footpath	The structure is in sound condition.
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment/Pier	Abutment, RCC Wall Centre – pier – wall type	Abutment – RCC Wall Centre – pier – wall type	
			Super Structure	RCC girder 4 Nos. Slab	RCC girder 4 Nos. Slab	
			Bearing	4 Nos.	4 Nos.	
			Slope Protection	RCC return Toe Wall pitching	RCC return Toe Wall pitching	
			Nalla Bed	Dry Clear	Dry Clear	
			Parapet /Railing	RCC Parapet & railing	RCC Parapet & railing	
			Expansion Joint	Rubber damaged and cleaning	Cleaning is required.	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				is required.		
			Wearing Coat / Surface	BC – Surface cracks are observed.	BC – No problem	
			Approach Slope	Stable	Stable	
			Drainage	Cleaning Required	No Problem	

Figure 3-6 Photographs of Major Structures

Side View of ROB at km. 328+747 (A1-LHS)

Median View of ROB at km. 328+747 (A1 Side)

Approach View of ROB at km. 328+747 (A1-RHS)

RHS A2 Side view of Major Bridge at km. 302+251

Median View of Major Bridge at km. 302+251

Some hutment observed under New Major Bridge at km. 302+251 (LHS)

Bottom view of Major Bridge at km. 316+155

Median view of Major Bridge at km. 316+155

View of Major Bridge at km. 316+155 (RHS)

View of Major Bridge at km. 325+223 (A2-RHS)

A1 Side Median View of Major Bridge at km. 325+223

Pavement Condition of Major Bridge at km. 325+223

LHS A1 side View of Major Bridge at km. 360+132

Median view of Major Bridge at km. 360+132

Wearing coat on Major Bridge at km. 360+132 (RHS)

Side View of Major Bridge at km. 375+885

Median view of Major Bridge at km. 375+885

Bottom view of Major Bridge at (A1-P1 LHS) km. 381+333

Median view of Major Bridge at km. 381+333

Side view of Major Bridge at km. 390+239

Median view of Major Bridge at km. 390+239

RHS view of Minor Bridge at km. 296+923

RHS View of Minor Bridge at km. 303+941

RHS View of Minor Bridge at km. 304+455

Minor Bridge at km. 308+489

Minor Bridge at km. 308+489

Wearing coat at Minor Bridge at km. 311+654

Side View of Minor Bridge at km. 315+318

Median View of Minor Bridge at km. 315+318

Minor Bridge at km. 320+335

Side View of Minor Bridge at km. 321+700

Median view of Minor Bridge at km. 321+700

Median View of Minor Bridge at km. 323+180

Side View of Minor Bridge at km. 323+180

Median View of Minor Bridge at km. 329+029

RHS A1 Approach Slab RCC Crash barrier View of Minor Bridge at km. 329+029

Side View of Minor Bridge at km. 329+966

Median View of Minor Bridge at km. 329+966

Minor Bridge at km. 345+221

Minor Bridge at km. 350+638

RHS Side View of New Minor Bridge at km. 357+782

Top Side View of Minor Bridge at km. 364+149

Minor Bridge at km. 371+740

Minor Bridge at km. 379+963

Minor Bridge at km. 383+309

Minor Bridge at km. 391+392

Minor Bridge at km. 378+149

Minor Bridge at km. 386+075

3.5 Condition Survey of Culverts

The cross-drainage structures include hume pipe culverts and box culverts at various locations. There is total 92 culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and at some locations found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, for some culverts, pitching, apron etc. are found to be damaged which is being rectified under routine repair work.

Figure 3-7 Photographs of Box Culverts

Box culvert at km. 338+500 (LHS)

Box culvert at km. 341+350 (LHS)

Box culvert at km. 345+960 (LHS)

Box culvert at km. 369+020 (LHS)

Box culvert at km. 370+847 (LHS)

Box culvert at km. 370+570 (RHS)

Figure 3-8 Photograph of HP Culverts

Pipe culvert at km. 354+100 (RHS)

3.6 Drainage

RCC drain is constructed in built-up area and locations where service roads are provided. The photographs taken during site visit is presented as below.

Figure 3-9 Photographs of Drainage

Built-up Drain at km. 351+040 (RHS)

Built-up Drain at km. 305+900 (RHS)

Chute Drain at km. 324+970 (LHS) approach road to MJB

Median Longitudinal Built-up Drain at km. 325+800 to 326+000 (RHS)

Longitudinal Median Drainage Between MCW at km. 351+000 (LHS)

3.7 Slope Protection

Slope protection and chute drains are found on project roads at required locations. A few of the slope protection and chute drains are damaged which are being rectified by the Concessionaire. The photographs taken during site visit is presented as below.

Figure 3-10 Photographs of Slope Protection and Chute Drain

Slope Protection at A2 RHS MJB km. 360+132 (RHS)

Slope Protection at MNB km. 321+700 (A2-LHS)

Slope Protection at ROB km. 328+747 (A1-LHS)

Slope Protection at MNB km. 329+029 (A2-RHS)

3.8 Road Furniture

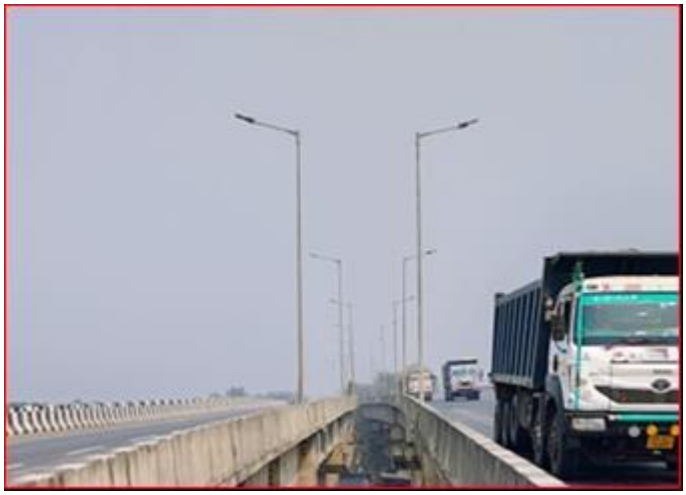
The Concessionaire has provided road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. Details of the items are provided below.

a) Highway Lighting Along the Project Road

Highway lighting is provided at major bridge, underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza and at major junction locations. Highway lighting is also provided at approaches of underpass and flyovers. Some of the photographs of highway lighting are presented below.

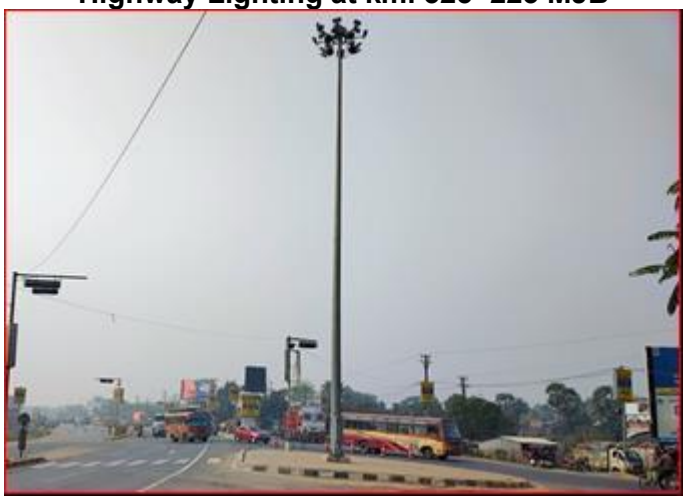
Figure 3-11 Photographs of Street Lighting

Highway Lighting at km. 326+000



Highway Lighting at km. 325+223 MJB

Highway Lighting at km. 365+200 Median



High mast Lighting at km. 321+400 Major Junction

b) Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which needs to be rectified by the Concessionaire. Some of the photographs of road marking are presented below.

Figure 3-12 Photographs of Pavement Marking

km. 324+080 (RHS)

km. 332+850 (LHS)

At km. 338+700 (RHS) and at km. 294+800 - Merging 4-lane to 2-lane Farakka Barrage MJB

c) Road Studs / Cat's eyes

Road studs / Cat's eyes for the Project Road are provided as per the design standards indicated in Section 12 of Schedule-D. Cat's eye have been fixed at junction and zebra crossings. However, at few locations some studs / cat's eye have damaged which will be rectified by the Concessionaire.

Some of the photographs of road studs are presented below.

Figure 3-13 Photographs of Road Studs

Studs at Truck lay bye at km. 356+370

Studs at Median opening at km. 324+090

d) Traffic Signages

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Concessionaire. Some of the photographs of sign boards are presented below.

Figure 3-14 Photographs of Road Signages

Petrol Pump Ahead Sign at km. 338+495 (RHS)

Truck Lay-by Sign at km. 385+550 (RHS)

Overhead Full Gantry Sign at km. 321+000

Median Opening Ahead Sign at km. 321+420

Left Hand Curve Sign at km. 323+130 (LHS)

5th Kilometre Stone at km. 325+000

e) Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-15 Photographs of MBCB / Crash Barrier

MBCB at km. 324+070 to km. 324+190 (LHS)

MBCB at km. 328+540 (LHS)

MBCB at km. 316+000 to km. 316+150 (LHS)

MBCB at km. 345+000 to km. 345+450 (Median)

f) Pedestrian Guard Rail

The pedestrian guard rails are provided in the median in the built-up sections. It is maintained by the Concessionaire.

Some of the photographs of pedestrian guard rails are presented below.

Figure 3-16 Photographs of Pedestrian Guard Rail

Pedestrian Guard Rail at km. 321+420 to km. 321+490

Pedestrian Guard Rail at km. 340+520 to km. 340+590

Pedestrian Guard Rail at km. 351+980 to km. 352+090

g) Road Boundary stone

Road boundary stone not found / available along the Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantations and median plantations are provided along the Project Road except at built-up locations as per IRC specification.

The photographs taken during site visit is presented as below.

Figure 3-17 Photographs of Avenue Plantation and Median Plantation

Median Plantation at km. 321+850

Avenue Tree Plantation at km. 338+520 (RHS)

Median Plantation at km. 325+970

Avenue Tree Plantation at km. 310+250 (LHS)

3.10 Toll Plaza

The Concession Agreement requires construction of Toll Plaza at 2 nos. of locations. Accordingly, Concessionaire has constructed 2 nos. of Toll Plaza at the following locations.

1. Toll Plaza-1 at km. 297+867
2. Toll Plaza-2 at km. 351+440

Table 3-4 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 297+867 & km. 351+440
2	Number of Tolling Lanes	12 lanes for toll operation plus 2 lanes for over dimensional vehicles at each toll plaza.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present

Sr. No.	Particulars	Details
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel / Yes
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading / Unloading Facility for Overloaded Vehicles	Yes
12	Storage facility for Overloaded Material	Yes
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	Yes
17	Cantilever / Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-18 Photographs of Toll Plaza

Toll Plaza View at km. 297+867

Toll Plaza View at km. 297+867

Toll Plaza View at km. 351+440 at Raiganj end

Toll Plaza View at km. 351+440 at Farakka end

Medical Post at Toll Plaza at km. 297+867 & Maintenance Yard at Toll Plaza at km. 351+440

Administrative and Operation Building at Toll Plaza at km. 297+867

Operation Building of Toll Plaza at km. 351+440

Nursery at Toll Plaza at km. 351+440

Stock Yard of Toll Plaza at km. 351+440

Staff Bus at Toll Plaza km. 351+440

3.10.1 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.10.2 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID at Toll Plaza at km. 297+867

3.10.3 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

Lane Controller & WEM Controller in Tunnel at Toll Plaza at km. 351+440

3.10.4 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

Automatic Vehicle Classification & Counting (AVCC) at Toll Plaza at km. 297+867

3.10.5 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity.

Automatic Lane Barrier (ALB) at Toll Plaza at km. 297+867

3.10.6 Lane Traffic Light (LTL) & User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane.

LTL & UFD at Toll Plaza at km. 297+867

3.10.7 Incident Capture Camera (AVC Camera)

The incident capturing camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera at Toll Plaza at km. 297+867

3.10.8 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC at Toll Plaza at km.297+867

3.10.9 Over Head Lane Signal (OHLS)

The Overhead Lane Signal (OHLS) for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza at km. 297+867

3.10.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

Medium Speed Weigh in Motion (MSWIM) at Toll Plaza at km. 297+867

3.10.11 Toll Booth Equipment

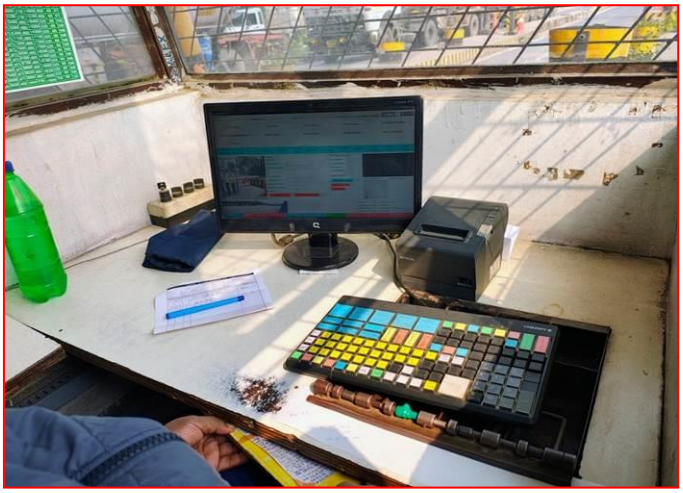
Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm

- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.



Toll Booth at TP-1 km 297+867 and Tunnel Portion at TP-2 km 351+440

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11 Toll Plaza Equipment

3.11.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch.

TMS Server at TP2 km 351+440

3.11.2 LED screen for CCTV monitoring

LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

HTMS CCTV and TMS Monitoring at TP2 at km 351+440

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.11.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and POS room.

Control Room at TP2 km 351+440

3.12 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at toll plaza location (km. 351+440). The ATMS is provided and being maintained as per the requirement of the Concession Agreement. The ATMS provided are listed below.

- Automatic Traffic Counter cum Classifier (ATCC)
- Emergency Call Box
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system

Status of these systems at site are described below:

3.12.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km 351+440).

3.12.2 Emergency Call Boxes (ECB)

ECB is installed on the Project highway at the locations as per the requirement.

ECB installed on the Project highway

3.12.3 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km 351+400.

MET System

3.12.4 Variable Message Signboards (VMS)

Variable message sign boards are installed as per CA requirement. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

Variable Message Signboards (VMS)

3.12.5 CCTV Surveillance Cameras

Surveillance cameras are installed as per CA requirement along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed

CCTV Surveillance Cameras at TP2

3.12.6 Video Incident Detection System

CCTV cameras are installed as part of Video incident detection system.

3.12.7 Adequacy of Toll Collection System and ATMS

- Adequacy - All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 7 years at the cost of the Authority.

- The Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.13 Truck Lay-Bye

The following are the truck lay-bye locations.

Table 3-5 Details of Truck Lay-bye

Sr. No.	Proposed Chainage (km)	Existing Chainage (km)	Village Name / Location
1	298.525	300.590	Both sides on Mainline NH-34 (NEW NH-12)
2	303.365	305.410	Both sides on Mainline NH-34 (NEW NH-12)
3	318.125	319.815	Both sides on Mainline NH-34 (NEW NH-12)
4	356.325	359.740	Both sides on Mainline NH-34 (NEW NH-12)
5	367.200	370.565	Both sides on Mainline NH-34 (NEW NH-12)
6	385.575	388.530	Both sides on Mainline NH-34 (NEW NH-12)

The photographs taken during the Site Visit are presented below.

Figure 3-19 Photographs of Truck Lay Bye

Truck Lay-bye at km. 318+125 (RHS)

Truck Lay-bye at km. 356+325 (RHS)

Truck Lay-bye at km. 385+575 (RHS)

3.14 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are constructed and being maintained by the Concessionaire.

3.15 Toilet Block

There are two nos. toilet blocks and maintenance of the same is being maintained by the Concessionaire.

Table 3-6 Details of Toilet Block

Sr. No.	Chainage (km)	Side		Remarks
		LHS	RHS	
1	298.525	-	Yes	
2	303.365	Yes	-	
3	318.125	-	Yes	
4	356.325	Yes	-	
5	367.200	Yes	-	
6	385.575	-	Yes	

The photographs taken during the Site Visit are presented below.

Figure 3-20 Photographs of Toilet Block

Toilet Block at km. 318+125 (RHS)

3.16 Bus Bays and Passenger Shelters

There are 19 Nos. of bus bays / shelter along the Project Road. Some of the photographs of the bus bays are presented below.

The photographs taken during the site visit are presented below.

Figure 3-21 Photographs of Bus Bays and Passenger Shelters

Bus Bay at km. 321+400 (RHS)

Bus Bay at km. 372+230 (LHS)

3.17 Balance Work Status

The project has received Completion Certificate on **03rd May 2021** by completing all the works as mentioned in the Technical Schedules of Concession Agreement. Hence, there are no balance works to be executed as per CA.

3.18 Operation and Maintenance

3.18.1 O&M Contract

As per Clause 17.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall confirm to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

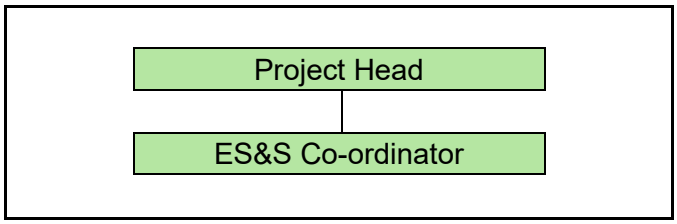
The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

3.18.2 Organization Chart

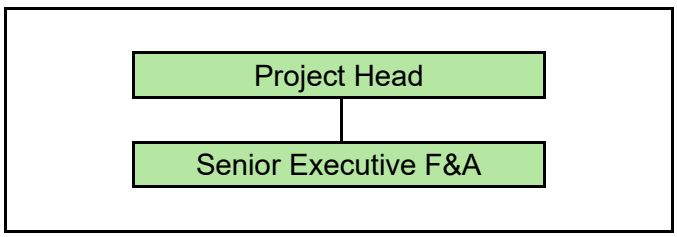
The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive- F&A, 01 ES&S Co-Ordinator, 01 Assistance Executive (HR), 01 Manager Maintenance 01 Assistant Manager (TMS / IT), 01 Executive (TMS / IT), 05 Supervisor, 02 Electrician, 01 Executive, 01 Sr. Executive, 02 Plaza Manager, 01 Document Controller, 07 Cashiers and 09 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart

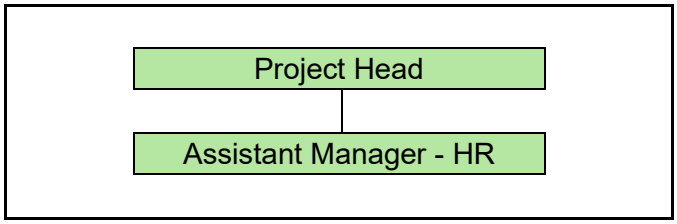
Site Administration



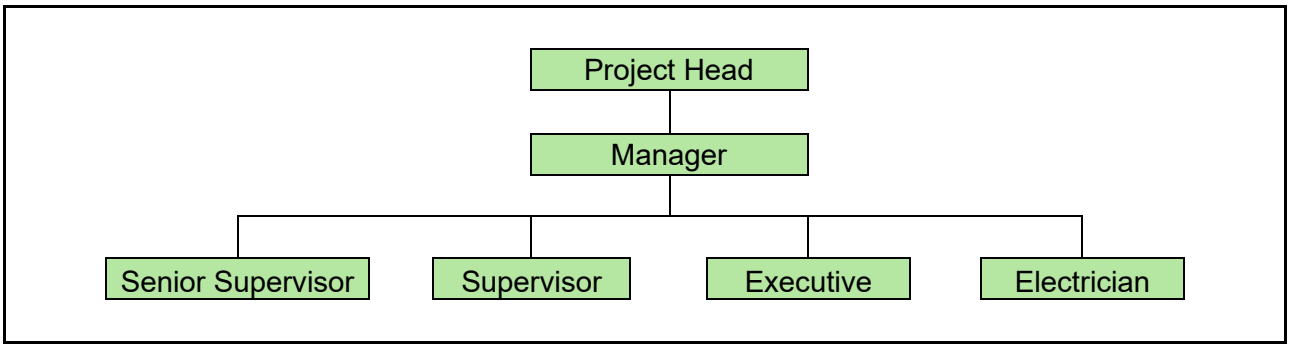
Finance & Account



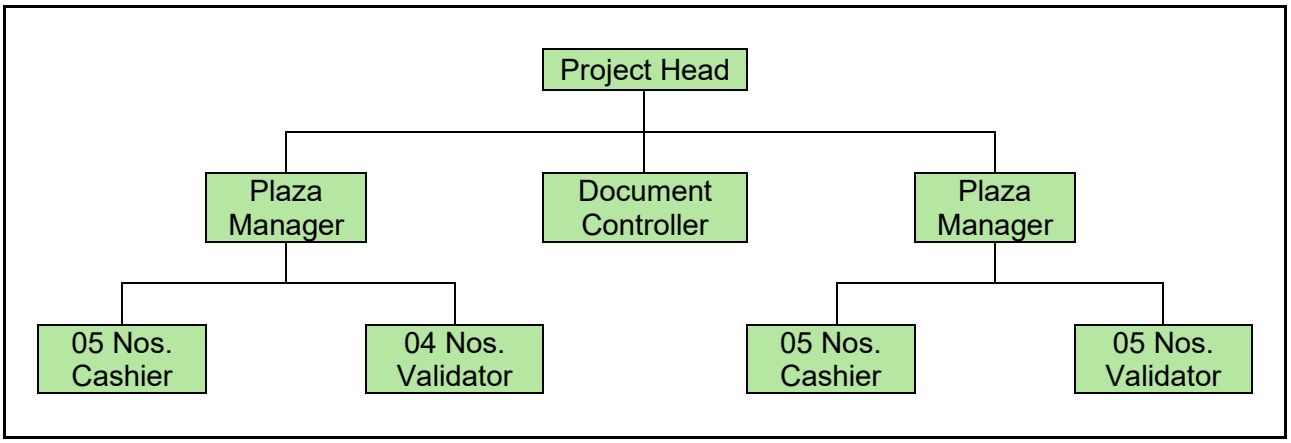
Human Resources



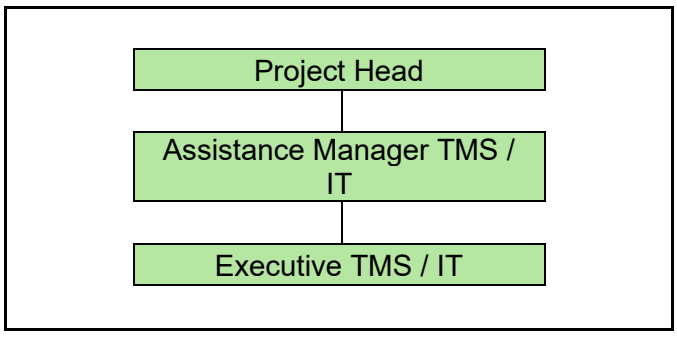
Site Maintenance



Site Operation



Operation System



3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire initially received Provisional completion certificate for the length of 79.575 km on 19th October 2016 & further received Completion Certificate on 03rd May 2021 for the complete Project stretch of 99.995 kms.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date 03rd February 2011 including construction period of 2.5 years.

4.2 Surveys and Investigation

4.2.1 Pavement Condition Survey

Pavement condition survey was carried out by the Technical Consultant from **28th January 2025 to 31st January 2025** through visual inspection for the Project Road and for the entire length.

The summary of pavement condition based on the visual inspection is tabulated below.

Table 4-1 Summary of Pavement Condition

Chainage (km)		Length (km)	LHS Pavement Condition	Chainage (km)		Length (km)	RHS Pavement Condition
From (km)	To (km)			From (km)	To (km)		
294.800	299.000	4.200	Good	294.800	304.000	9.200	Good
299.000	300.000	1.000	Fair	304.000	305.000	1.000	Fair
300.000	306.000	6.000	Good	305.000	308.000	3.000	Good
306.000	307.000	1.000	Fair	308.000	309.000	1.000	Fair
307.000	308.000	1.000	Good	309.000	315.000	6.000	Good
308.000	309.000	1.000	Fair	315.000	316.000	1.000	Fair
309.000	310.000	1.000	Good	316.000	319.000	3.000	Good
310.000	311.000	1.000	Fair	319.000	323.000	4.000	Fair
311.000	313.000	2.000	Good	323.000	324.000	1.000	Good
313.000	315.000	2.000	Fair	324.000	325.000	1.000	Fair
315.000	321.000	6.000	Good	325.000	328.000	3.000	Good
321.000	330.000	9.000	Fair	328.000	330.000	2.000	Fair
330.000	331.000	1.000	Good	330.000	370.000	40.000	Good
331.000	333.000	2.000	Fair	370.000	372.000	2.000	Fair
333.000	358.000	25.000	Good	372.000	394.975	22.975	Good
358.000	359.000	1.000	Fair				
359.000	364.000	5.000	Good		**Summary (BHS)**		
364.000	367.000	3.000	Fair		**Condition**	**Length**	
367.000	369.000	2.000	Good		**Good**	**82.175**	km
369.000	372.000	3.000	Fair		**Fair**	**18.000**	km
372.000	394.975	22.975	Good		**Poor**	**0.000**	km

4.2.2 Axle Load Survey

In order to estimate vehicle-loading pattern in the Project Area, and to determine vehicle damage factor for the commercial vehicles, axle load survey of the vehicles plying on the project road stretch was carried out at two different locations of project stretch.

Axle load survey was conducted at two locations, first at Toll Plaza-1 (km. 298.250) and second at Toll Plaza-2 (km. 351.400) from 29th June to 2nd July 2019. The survey was carried out for both directions (LHS and RHS) simultaneously and for 24 hours using standard weigh pads. The survey was carried out using random sample method for goods vehicles i.e. LCV, Bus, Trucks and Multi-axle vehicles with special axle configuration count. Vehicle damage factor for various categories of vehicles was computed.

Summary of VDF calculation is shown in below table for both TP-1 and TP-2 locations.

Table 4-2 Summary of VDF

Summary of VDF as per Axle Load Survey (June-2019)						
Type of Vehicle		**Bus**	**LCV**	**2 Axle**	**3 Axle**	**MAV**
TP - 01 (km. 298.967)	UP (F-R)	0.84	0.88	3.26	7.45	20.97
	DN (R-F)	1.04	0.98	1.71	3.92	3.86
TP - 02 (km. 351.440)	UP (F-R)	0.93	0.87	2.05	5.61	16.26
	DN (R-F)	1.20	1.56	1.71	3.96	5.46

*F - Farakka, R - Raiganj

4.2.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-3 MSA Calculation

Toll Plaza-1 (km. 297+867)					
Year	**LHS (Farraka to Raigunj)**		**RHS (Raigunj to Farraka)**		**Remarks**
	MSA	**Cumulative MSA**	**MSA**	**Cumulative MSA**	
2025-26	16.96	**16.96**	3.67	**3.67**	
2026-27	18.34	**35.30**	3.94	**7.61**	
2027-28	19.84	**55.14**	4.24	**11.85**	
2028-29	20.95	**76.09**	4.46	**16.31**	
2029-30	22.03	**98.12**	4.68	**20.99**	
2030-31	22.63	**120.75**	4.79	**25.78**	
2031-32	23.78	**144.53**	5.02	**30.80**	
2032-33	25.05	**169.58**	5.27	**36.07**	
2033-34	26.37	**195.95**	5.53	**41.60**	
2034-35	27.74	**223.69**	5.80	**47.40**	
2035-36	29.18	**252.87**	6.08	**53.48**	

Toll Plaza-1 (km. 297+867)					
Year	LHS (Farraka to Raigunj)		RHS (Raigunj to Farraka)		Remarks
	MSA	Cumulative MSA	MSA	Cumulative MSA	
2036-37	30.68	**283.55**	6.38	**59.86**	
2037-38	32.24	**315.79**	6.68	**66.54**	
2038-39	33.87	**349.66**	7.00	**73.54**	
2039-40	35.57	**385.23**	7.33	**80.87**	
2040-41	37.33	**422.56**	7.68	**88.55**	End of Concession Period

Toll Plaza-2 (km. 351+440)					
Year	LHS (Farraka to Raigunj)		RHS (Raigunj to Farraka)		Remarks
	MSA	Cumulative MSA	MSA	Cumulative MSA	
2025-26	9.99	**9.99**	3.91	**3.91**	
2026-27	10.72	**20.71**	4.18	**8.09**	
2027-28	11.40	**32.11**	4.42	**12.51**	
2028-29	12.03	**44.14**	4.65	**17.16**	
2029-30	12.64	**56.78**	4.87	**22.03**	
2030-31	12.87	**69.65**	4.95	**26.98**	
2031-32	13.51	**83.16**	5.18	**32.16**	
2032-33	14.22	**97.38**	5.44	**37.60**	
2033-34	14.96	**112.34**	5.70	**43.30**	
2034-35	15.73	**128.07**	5.98	**49.28**	
2035-36	16.53	**144.60**	6.27	**55.55**	
2036-37	17.37	**161.97**	6.57	**62.12**	
2037-38	18.24	**180.21**	6.88	**69.00**	
2038-39	19.15	**199.36**	7.20	**76.20**	
2039-40	20.10	**219.46**	7.54	**83.74**	
2040-41	21.09	**240.55**	7.89	**91.63**	End of Concession Period

4.2.4 Network Survey Vehicles (NSV) Survey

Roughness Survey

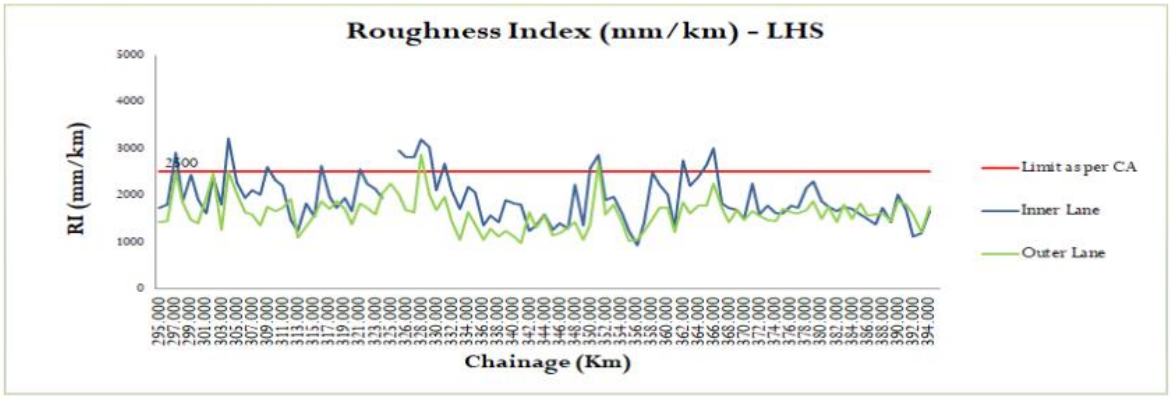
Roughness Survey results were provided by the Concessionaire for analysis and to assess the riding quality on each direction (each lane) of the carriageway of Project Road. The test is carried out on 16th October 2024.

The side-wise results of Roughness Survey are presented as below.

Table 4-4 Result of Roughness Survey

Roughness value (mm/km)	Length obtained based on roughness values (km)			
	LHS IL	LHS OL	RHS IL	RHS OL
0-1000	1.00	1.00	5.00	10.00
1000-2500	82.70	95.70	84.10	84.30
>2500	15.80	3.00	9.00	5.40

Figure 2-3: Roughness Summary for FRHL as per Schedule K of CA



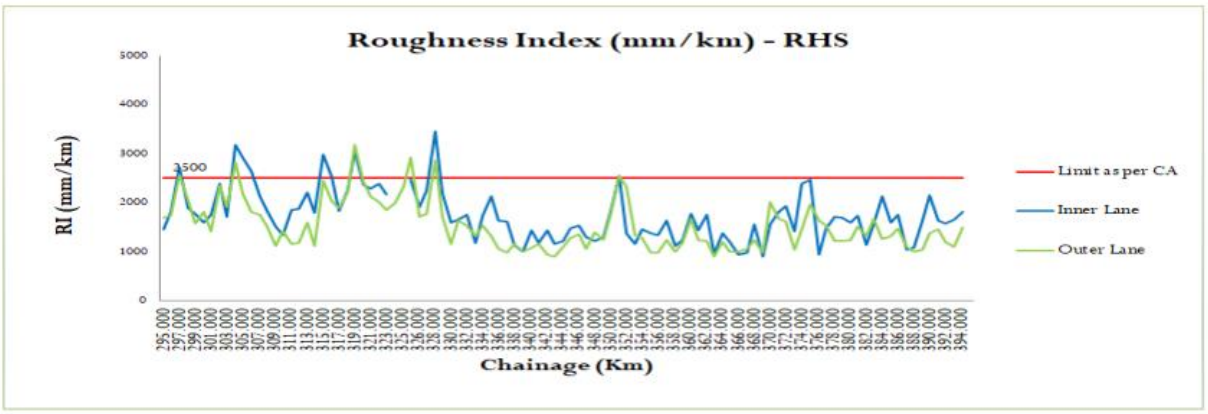


Figure 2-4: Roughness Index for FRHL as per Schedule K of CA

Observation and Conclusion:

As per the NSV test carried out in the month of October 2024 and the related Roughness results provided by the Concessionaire, it was observed that the overall pavement condition for the Project stretch is found to be Good & Fair for 90.95 kms and Poor for 8.30 kms (Survey was not conducted for the length of 0.745 km due to traffic diversion)

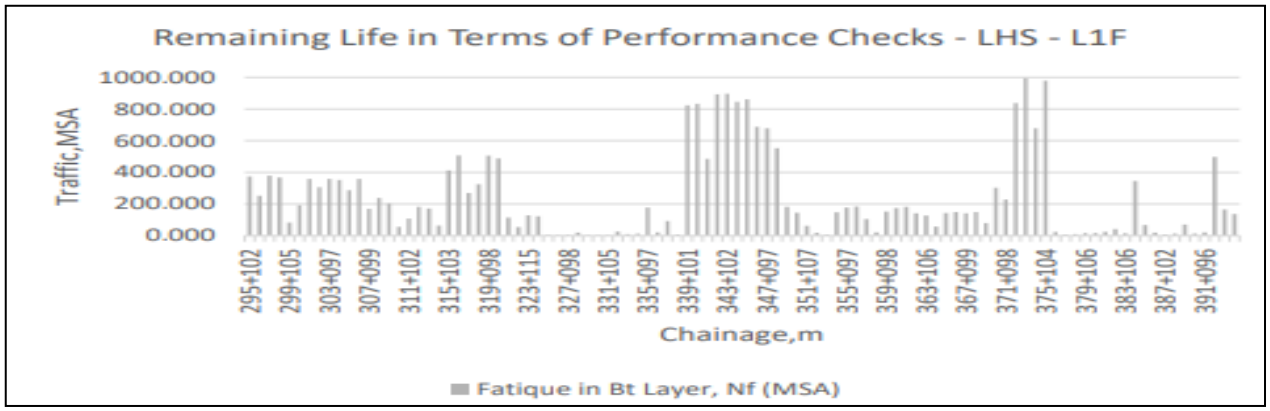
However, as on date, the road condition of the Project Road is better than NSV survey results for October 2024 shared by the Concessionaire. As per IE MPR for the month of January 2025 about 98.81 kms of Road is in satisfactory condition and 1.19 kms of the Road is in unsatisfactory condition.

As per observed by the Technical Consultant during site visit the pavement condition for the Project stretch is found to be Good to Fair for 99.99 kms.

4.2.5 Structural Evaluation

The structural evaluation and analysis of the remaining life of project was carried out in conformity with IRC:115-2014 “Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique”.

The FWD survey was conducted on the Project Road on 18th November 2024 to 25th November 2024. The summary of the same is presented below.


Remaining Life in Terms of Performance Checks - LHS - L1F
Traffic,MSA
1000.000
800.000
600.000
400.000
200.000
0.000
295+102
299+105
303+097
307+099
311+102
315+103
319+098
323+115
327+098
331+105
335+097
339+101
343+102
347+097
351+107
355+097
359+098
363+106
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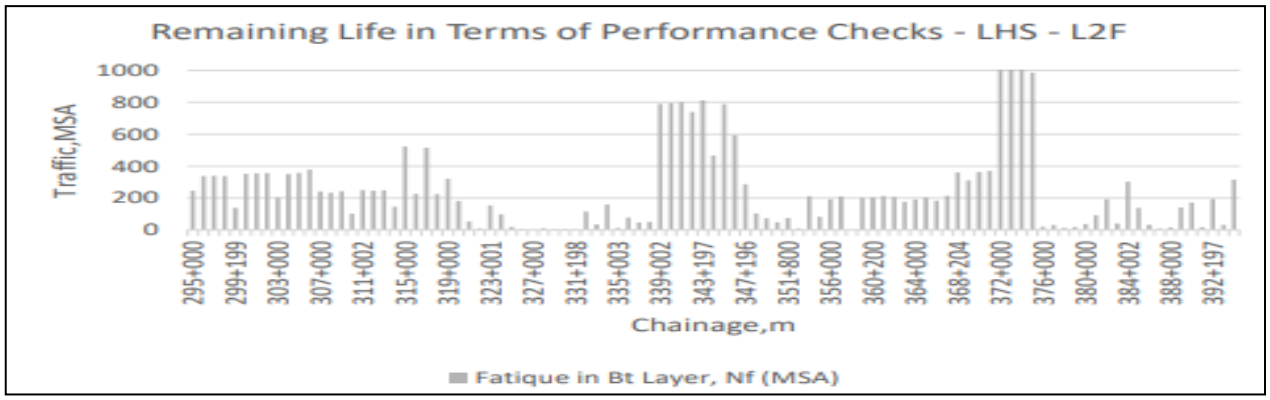
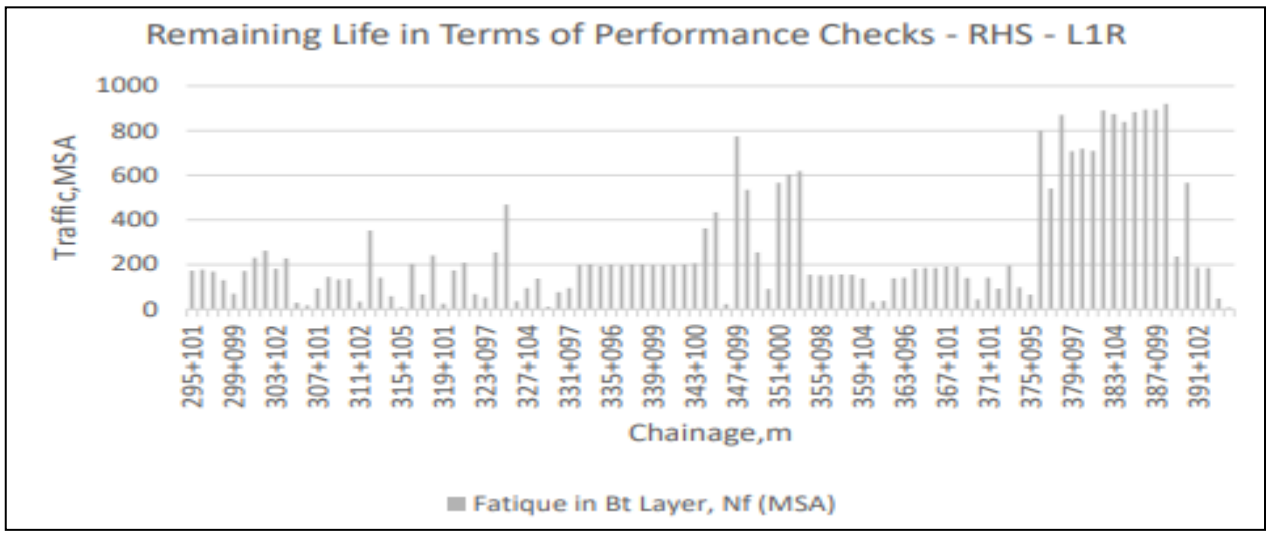
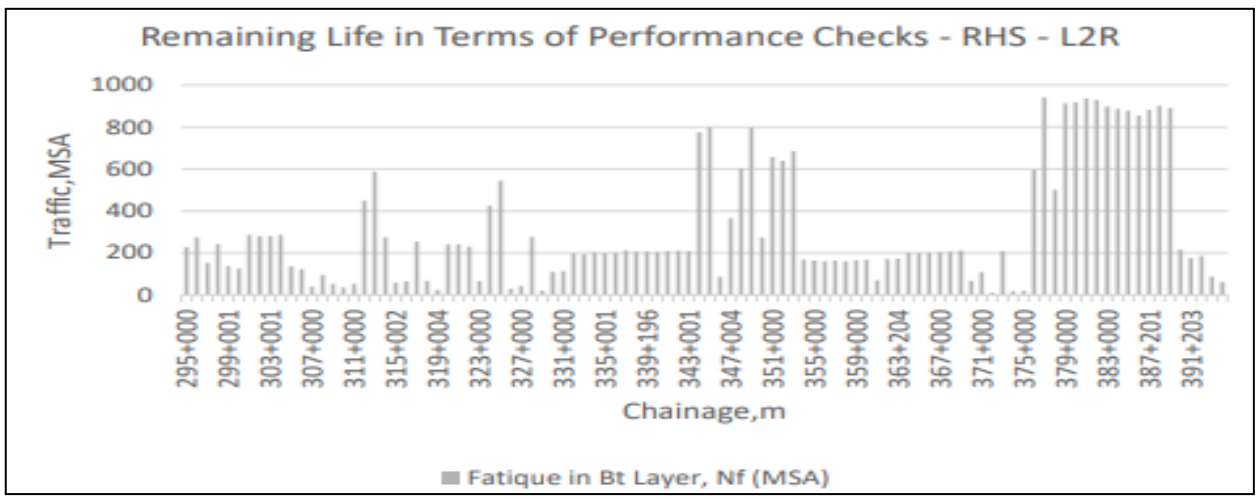
375+104
379+106
383+106
387+102
391+096
Chainage,m
Fatique in Bt Layer, Nf (MSA)


Remaining Life in Terms of Performance Checks - LHS - L2F
Traffic,MSA
1000
800
600
400
200
0
295+000
299+199
303+000
307+000
311+002
315+000
319+000
323+001
327+000
331+198
335+003
339+002
343+197
347+196
351+800
356+000
360+200
364+000
368+204
372+000
376+000
380+000
384+002
388+000
392+197
Chainage,m
Fatique in Bt Layer, Nf (MSA)


Remaining Life in Terms of Performance Checks - RHS - L1R
Traffic,MSA
1000
800
600
400
200
0
295+101
299+099
303+102
307+101
311+102
315+105
319+101
323+097
327+104
331+097
335+096
339+099
343+100
347+099
351+000
355+098
359+104
363+096
367+101
371+101
375+095
379+097
383+104
387+099
391+102
Chainage,m
Fatique in Bt Layer, Nf (MSA)


Remaining Life in Terms of Performance Checks - RHS - L2R
Traffic,MSA
1000
800
600
400
200
0
295+000
299+001
303+001
307+000
311+000
315+002
319+004
323+000
327+000
331+000
335+001
339+196
343+001
347+004
351+000
355+000
359+000
363+204
367+000
371+000
375+000
379+000
383+000
387+201
391+203
Chainage,m
Fatique in Bt Layer, Nf (MSA)

The remaining life for most of the project stretch is well above the design life. However, the maintenance can be carried out on as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. However, improvement in Riding Quality is expected if the roughness value exceeds 2500 mm/km.

4.2.6 Test Pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for project road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-5 Summary of Subgrade Test Results

S: No	Location (Km.)	Side (LHS/RHS)	Type of Pit	per IS: 1498 Soil Classification as	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	299+050	LHS	Subgrade	SC	99	95.2	80.3	65.2	58.1	47.1	47.1	34	20	14	1.9	12.7	1.78	16	9.5	30	93.7
2	301+900	RHS	Subgrade	SM	95.1	88	77.1	63.4	47.6	39.5	39.5	42	27	15	1.89	13	1.74	15	8.2	38.3	92.1
3	310+000	LHS	Subgrade	CI	96.7	91.2	87.4	82	74.5	61	61	40	24	16	1.83	12.8	1.78	16	7	37.1	97.3
4	315+200	RHS	Subgrade	ML	92.5	90.8	89.3	88.1	86.1	68.3	68.3	26	NP	NP	1.89	8.1	1.76	15	8.1	0	93.1
5	321+000	LHS	Subgrade	SM	80.9	73.1	70.6	65.6	61.5	44.9	44.9	21	NP	NP	1.86	8.6	1.79	14	8.7	0	96.2
6	332+000	LHS	Subgrade	SM	94.4	92.3	91.5	90.3	87.1	29.5	29.5	19	NP	NP	1.98	8.3	1.85	14	11.8	0	93.4
7	335+300	RHS	Subgrade	SM	100	100	99.5	98.9	96.1	23.6	23.6	24	NP	NP	1.96	8	1.82	13	12.1	0	92.9
8	340+000	LHS	Subgrade	CI	100	99	97.6	95.4	92.3	89	89	38	24	14	1.79	13.2	1.7	12	6.3	33.3	95
9	345+100	RHS	Subgrade	MI	100	97.9	94.2	88.8	83	77.6	77.6	38	26	12	1.81	12.9	1.79	10	6.1	25.2	98.9
10	350+000	LHS	Subgrade	CI	100	98.7	91.2	77.7	66.9	59.8	59.8	36	24	12	1.89	12.3	1.71	13	7.7	30	90.5
11	353+000 (SR)	LHS	Subgrade	CL	93.4	89.6	87.2	84.2	80.7	71.5	71.5	31	22	9	1.82	10.6	1.7	16	6.3	18.3	93.4
12	355+000	RHS	Subgrade	ML-CL	100	96.2	87.2	73.7	63.7	57.1	57.1	26	21	5	1.92	9.3	1.75	22	8.8	11.1	91.1
13	360+600	LHS	Subgrade	CL	100	97.7	87.4	75.6	65.8	58.3	58.3	24	16	8	1.87	11.4	1.75	14	8.4	18.3	93.6
14	365+000	RHS	Subgrade	ML-CL	98.1	92.3	88.4	78.1	70	61	61	28	21	7	1.87	9.6	1.78		7.8	15.2	95.2
15	370+000	LHS	Subgrade	ML-CL	98.6	90.7	87.2	82.7	74.7	67.4	67.4	23	17	6	1.89	9.1	1.76	8	8.8	11.1	93.1
16	375+000	RHS	Subgrade	CI	100	99	98.6	97.9	96.3	94.3	94.3	43	24	19	1.77	13.7	1.72	21	5.2	40	97.2
17	380+000	LHS	Subgrade	SM	98.3	95.4	92.7	87.3	82.8	28.6	28.6	23	NP	NP	1.94	8.1	1.7	11	10.8	0	87.6
18	380+600 (SR)	RHS	Subgrade	SM	95.8	91.6	87.5	83.7	75.7	17.3	17.3	25	NP	NP	1.91	8.3	1.78	9	11.6	0	93.2
19	384+700	RHS	Subgrade	ML	98.2	93.5	90	86.9	83.8	64.2	64.2	23	NP	NP	1.89	8.4	1.78	8	9	7.1	94.2
20	389+300	LHS	Subgrade	ML	96.1	93.4	90.4	87.9	84.8	72.7	72.7	26	NP	NP	1.84	9.4	1.74	14	8.3	11.1	94.6
21	395+000	RHS	Subgrade	ML	98.5	95.4	92.6	89.2	84.6	63.6	63.6	23	NP	NP	1.83	9	1.74	12	8.5	7.1	95.1

4.2.7 Existing Granular layers Testing

Table 4-6 Summary of Granular Layers Tests Results

S: No	Location (km)	Side (LHS /RHS)	Type of material	Gradation Sieve Size in (mm)												Gradation Conforming to Specifications (as per MORTH 5th revision)	Gradation Conforming to Specifications (as per MORTH 4th revision)	Atterberg Limits			Specify Gravity	Water Absorption (%)	Aggregate Impact Value (%)
				75	53	45	26.5	22.4	11.2	9.5	4.75	2.36	0.6	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
1	299+050	LHS	WMM	100	100	100	89.7	69.4	40.8	34.9	26.3	16.6	9.7	4.2	1.6	Conforming to WMM gradation	Conforming to WMM gradation	23	19	4	2.73	0.78	16.81
2	310+000	LHS	GSB	100	100	100	79.6	62.1	55.3	41.6	33.8	28.8	18.2	12.4	3.6	Conforming to GSB grade-I	Conforming to GSB grade-I	19	NP	NP	2.71	0.67	16.5
3	321+000	LHS	GSB	100	100	100	82.5	65.2	51.7	43.3	36.4	22.4	15.5	11.8	5.3	Conforming to GSB grade-I	Conforming to GSB grade-I	21	NP	NP	2.68	0.91	15.53
4	335+300	RHS	WMM	100	100	100	83.5	75.3	41.6	32.6	27.6	17.4	11.3	6.1	3.4	Conforming to WMM gradation	Conforming to WMM gradation	20	NP	NP	2.7	0.68	18.22
5	350+000	LHS	WMM	100	100	100	92.3	78.3	50.8	42.8	30.7	19.7	8.1	5.2	0.8	Conforming to WMM gradation	Conforming to WMM gradation	22	NP	NP	2.68	0.83	17.31
6	360+600	LHS	GSB	100	100	100	88.5	76.6	66.1	59.7	46.5	39.1	19.1	12.2	5.8	Conforming to GSB grade-I	Conforming to GSB grade-I	21	NP	NP	2.64	0.66	15.32
7	380+200	LHS	GSB	100	100	100	86.8	78.9	63.4	57.5	47.3	38.8	20.1	13.4	1.4	Conforming to GSB grade-I&II	Conforming to GSB grade-I&II	23	NP	NP	2.69	0.85	14.67
8	380+600	RHS	WMM	100	100	100	77.1	64.2	42.3	38	31.5	23.8	12.6	9.8	1	Conforming to WMM gradation	Conforming to WMM gradation	24	20	4	2.73	0.75	17.3
9	384+700	RHS	WMM	100	100	100	84.1	74.1	52.6	45.4	37.3	29.6	20.1	16.7	2.4	Conforming to WMM gradation	Conforming to WMM gradation	20	NP	NP	2.69	0.93	16.45
10	389+300	LHS	GSB	100	100	96	72.9	68.4	45.3	39.7	28.4	24.1	12.3	7.2	2.6	Conforming to GSB grade-III&IV	Conforming to GSB grade-IV&V	19	NP	NP	2.68	0.84	15.68

4.2.8 Periodic Maintenance Strategy

The Concessionaire has completed an overlay on both sides of project MCW throughout the entire project length. In Service Road, BC overlay of 30 mm / 40 mm has been provided on both sides at distress locations in FY 2023.

The maintenance can be carried out as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. Only improvement in Riding Quality is expected if the roughness value exceeds 2500 mm/km. The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-7 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2023	MM work is completed	MM work is completed
2	FY 2024 to FY 2028	-	-
3	FY 2029 & FY2030	Major maintenance with 30 mm BC (PMB) (74%) + 50 mm PMB (12%) + Micro-surfacing (14%) + Milling & 50 mm DBM (45%)	Major maintenance with 30 mm BC (100%)
4	FY 2031 to FY 2035	-	-
5	FY 2036 & FY 2037	Major maintenance with 40 mm BC (PMB) (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC (100%)
6	FY 2038 to FY 2039	-	-
7	FY 2040 & FY 2041	Major maintenance with 30 mm BC (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC (100%)

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Work Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current publish of bitumen is considered for unit rate calculation for FY 2026 and FY 2027. Average 10 years price of bitumen is considered for unit rate calculation for FY 2028 and onwards. Following rates of bitumen are considered.

   Polymer and modification costs are provided by the client to work out BC rate with PMB.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to the Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from SAIL

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Rates of items as per Work Order:** The rates of road marking, road stud, kerb raising, micro-surfacing, milling, aggregate etc. are considered as per the Work Order issued to Contractor at Site shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book / Work Order for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam	Cum	10,070
2	Bituminous Concrete (VG-40)	Cum	11,389
3	Bituminous Concrete (VG-30)	Cum	10,478
4	Bituminous Concrete (PMB)	Cum	12,730
5	Milling	Sqm	89
6	Micro-surfacing	Sqm	156
7	Kerb Raising	Rmt	297
8	Road Marking on BC Surface	Sqm	464
9	Road Studs	Nos.	185
10	Road Marking on Micro-surface	Sqm	682

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, the balance work's cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other

miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads:

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management Services
5. Electricity and Diesel Charges
6. TMS / HTMS / System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Horticulture & ROW Maintenance
16. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I.**

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-41)
1	Salary and Welfare Expenses	2,05,92,000
2	Tolling Operations Services	6,22,38,737
3	Toll Security Services	1,64,66,854
4	Incident Management & Emergency Services	3,88,25,119
5	Electricity and Diesel Charges	1,22,06,704
6	TMS / HTMS / System Expenses	87,21,275
7	Office Operating Expenses	31,31,651
8	Vehicle Running Expenses	39,07,200
9	Professional Fees Expense	1,44,38,597
10	Community Development	13,74,376
11	Communication Expenses	3,48,666

Sr. No.	Particulars	Amount (FY 2026-41)
12	Conveyance Expenses	3,80,362
13	Insurance Expense	1,48,34,137
14	IE Fees	41,30,083
15	Routine Maintenance Cost (Project Road)	3,73,37,991
16	Horticulture & ROW Maintenance	3,16,19,280
17	Miscellaneous including Contingency	80,63,830
	Total Cost (Rs.)	**27,86,16,863**
	Total Cost (Cr.)	**27.86**
	Per km Cost (Lakhs)	27.86

5.5 Major Maintenance Cost

As per the information provided by the Concessionaire, overlay has been completed at the project site with strengthening of project road in FY 2023. 40 mm BC overlay (81%) on LHS and 30 mm BC and micro-surfacing (81%) on RHS has been provided and at distress portion DBM of 50 / 95 mm has been laid.

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

The summary of Major Maintenance Cost is provided as below.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2024 to FY 2028	**-**	
2	FY 2029 & FY 2030	146.854	
3	FY 2031 to FY 2035	-	
4	FY 2036 & FY 2037	142.510	
5	FY 2037 to FY 2039	-	
6	FY 2040 & FY 2041	96.743	
	Total Cost (Cr.)	**386.107**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2026	2.46	
2	FY 2033	2.46	
3	FY 2040	2.46	
Total Cost (Cr.)		**7.38**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	3.99%
2026	-	**2042**	3.99%

Year	Escalation	Year	Escalation
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42
1	Routine O&M Cost																	
1.01	Salary and Welfare Expense	2.06	2.17	2.27	2.37	2.47	2.58	2.68	2.79	2.90	3.02	3.14	3.26	3.39	3.53	3.67	3.82	
1.02	Tolling Operations Services	6.22	6.55	6.87	7.17	7.48	7.79	8.10	8.43	8.77	9.12	9.49	9.86	10.26	10.67	11.09	11.53	
1.03	Toll Security Services	1.65	1.73	1.82	1.90	1.98	2.06	2.14	2.23	2.32	2.41	2.51	2.61	2.71	2.82	2.93	3.05	
1.04	Incident Management Services	3.88	4.09	4.29	4.48	4.67	4.86	5.06	5.26	5.47	5.69	5.92	6.15	6.40	6.65	6.92	7.20	
1.05	Electricity and Diesel Charges	1.22	1.28	1.35	1.41	1.47	1.53	1.59	1.65	1.72	1.79	1.86	1.93	2.01	2.09	2.18	2.26	
1.06	TMS/HTMS/System Expenses	0.30	0.40	0.42	0.44	0.52	0.64	0.73	0.41	0.54	0.56	0.58	0.69	0.84	0.96	0.54	0.71	
1.07	Office Operating Expenses	0.31	0.33	0.35	0.36	0.38	0.39	0.41	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	
1.08	Vehicle Running Expenses	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.64	0.67	0.70	0.72	
1.09	Professional Fees Expense	1.44	1.52	1.59	1.66	1.73	1.81	1.88	1.96	2.03	2.12	2.20	2.29	2.38	2.47	2.57	2.68	
1.10	Community Development	0.14	0.14	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.24	0.24	0.25	
1.11	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	
1.13	Insurance Expense	1.48	1.56	1.64	1.71	1.78	1.86	1.93	2.01	2.09	2.17	2.26	2.35	2.44	2.54	2.64	2.75	
1.14	IE Fees	0.41	0.43	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.61	0.63	0.65	0.68	0.71	0.74	0.77	
1.15	Routine Maintenance Cost	3.73	3.93	4.12	4.30	4.49	4.67	4.86	5.06	5.26	5.47	5.69	5.92	6.15	6.40	6.65	6.92	
1.16	Horticulture & ROW Maintenance	3.16	3.33	3.49	3.64	3.80	3.96	4.12	4.28	4.45	4.63	4.82	5.01	5.21	5.42	5.64	5.86	
1.17	Miscellaneous and Contingency	0.81	0.85	0.89	0.93	0.97	1.01	1.05	1.09	1.14	1.18	1.23	1.28	1.33	1.38	1.44	1.49	
	Subtotal of O&M Cost	27.29	28.81	30.21	31.55	32.95	34.41	35.88	36.97	38.56	40.11	41.71	43.46	45.32	47.22	48.64	50.72	
2	Major Maintenance Cost	-	-	-	80.61	80.61	-	-	-	-	-	94.49	94.49	-	-	74.35	74.35	
3	Periodic Cost of TMS/HTMS Replacement	2.46	-	-	-	-	-	-	3.33	-	-	-	-	-	-	4.38	-	
4	Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Total Cost	**29.75**	**28.81**	**30.21**	**112.16**	**113.56**	**34.41**	**35.88**	**40.29**	**38.56**	**40.11**	**136.20**	**137.94**	**45.32**	**47.22**	**127.36**	**125.07**	

ANNEXURES

ANNEXURE-I ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**3,73,37,991**
(Inclusive of GST)	**= 3.73 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,15,101**	**Urban** More than 4500 CVD **2,47,697**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	329105.00	378977.00	-	-	-	-
		Paved shoulder	1.70	365672.00	421085.00	95.69	-	3,49,89,325	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	430202.00	495394.00	-	-	-	-
		Paved shoulder	2.20	473223.00	544934.00	-	4.31	-	23,48,666
TOTAL						**99.995**		**3,73,37,991**	

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			12125
	Cost in Rupees			30,311
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			485
	Cost in Rupees			24,249
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			87
	Cost in Rupees			21,736
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			58
	Cost in Rupees			8,705
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			485
	Cost in Rupees			36,374
	v) Road marking	14%	Once in 7th year & @	30855

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
			Repaired location	
	SUB TOTAL			**1,52,230**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**2,15,101**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	3243
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**32,596**
	GRAND TOTAL (Urban)			**2,47,697**

ANNEXURE-II MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029 & FY 2030)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						21,73,071	18	3,97,45,472
	For BC PMB 30 mm	Sqm	2	72,348	8.75		12,66,083	12,66,083		
	For BC PMB 50 mm	Sqm	2	11,732	8.75		2,05,311	2,05,311		
	For DBM	Sqm	2	43,995	7.00		6,15,932	6,15,932		
	For Misc. Location	Sqm	2	4,900	8.75		85,746	85,746		
2	Micro Surfacing	Sqm	2	13,687	8.75		2,39,529	2,39,529	156	3,74,14,453
3	For BC PMB 30 mm	Cum	2	77,247	8.75	0.03	40,555	40,555	12,730	51,62,79,879
4	For BC PMB 50 mm	Cum	2	11,732	8.75	0.05	10,266	10,266	12,730	13,06,84,469
5	DBM with 50 mm	Cum	2	43,995	7.00	0.05	30,797	30,797	10,070	31,01,16,885
6	Milling	Sqm	2	43,995	7.00		6,15,932	6,15,932	89	5,48,79,550
	Main Carriageway - Rigid Pavement									
7	Joint Sealant Replacement @ 10% length	Rmt	10%	4,336	3.50	4.50	3,469	3,469	69	2,39,354
8	Dismantling of CC Panels @ 5% area	Cum	5%		68,294	0.30	1024	1024	995	10,19,389
9	Replacement of Panels - PQC @ 5% area	Cum	5%		68,294	0.30	1024	1024	8,449	86,55,619
	Service Road									
10	Tack coat	Sqm	1	8,620	5.36		46,210	46,210	18	8,45,181
11	BC with 30 mm	Cum	1	8,620	5.36	0.03	1,386	1,386	10,478	1,45,25,166
12	Micro Surfacing	Sqm								
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
12	Tack coat	Sqm	1	1,751	23.0		40,340	40,340	18	7,37,817
13	Wearing Coat PMB with 30 mm	Cum	1	1,751	23.0	0.03	1,210	1,210	12,730	1,54,06,304
14	Milling of Ex. Wearing Coat	Sqm	1	1,751	23.0		40,340	40,340	89	35,94,285
15	Painting of Crash Barrier	Sqm	4	1,751		1.20	8,406	8,406	96	8,06,999
	Other Works									
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	12,223			24,446	24,446	185	45,17,621
17	Painting of Kerb	Sqm	2	97,767		0.315	61,593	61,593	96	59,12,948

Major Maintenance Cost (FY 2029 & FY 2030)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
18	Road Marking	Sqm					65,742	65,742	464	3,05,17,437
19	Road Marking Micro Surfacing	Sqm					9,790	9,790	682	66,76,583
	MCW									
	a) Median & Edge line	Sqm	4	1,04,995	0.15		62,997			
	b) Lane line	Sqm	2	34,648	0.10		6,930			
	Service Road									
	a) Edge line	Sqm	2	8,620	0.10		1,724			
	b) Lane line	Sqm	1	2,845	0.10		284			
	Junction crossing	Sqm					3,597			
19	Filling of Earthen shoulder	Cum					6,125	6,125	439	26,90,546
	MCW		2	97,767	1.00	0.03	5,866			
	Service Road		1	8,620	1.00	0.03	259			
20	Miscellaneous	5%								5,92,63,298
Total Major Maintenance Cost (Rs)										**1,24,45,29,255**
Total Major Maintenance Cost with 18% GST (Rs)										**1,46,85,44,520**
Total Major Maintenance Cost with GST (Cr)										**146.85**
Per km Cost (lakh)										**146.86**
Escalation Factor for Major Maintenance Cost (FY 2029 & FY 2030)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY 2029 & FY 2030) (Cr)										**161.23**

Major Maintenance Cost (FY 2036 & FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						18,65,105	18	3,41,12,773
	For BC PMB	Sqm	2	97,767	8.75		17,10,923	17,10,923		
	For DBM	Sqm	2	4,888	7.00		68,437	68,437		
	For Misc. Location	Sqm	2	4,900	8.75		85,746	85,746		
2	BC PMB with 40 mm	Cum	2	1,02,667	8.75	0.04	71,867	71,867	12,730	91,48,92,919
3	DBM with 50 mm	Cum	2	4,888	7.00	0.05	3,422	3,422	10,070	3,44,57,432

Major Maintenance Cost (FY 2036 & FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
4	Milling	Sqm	2	4,888	7.00		68,437	68,437	89	60,97,728
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	4,336	3.50	4.50	3,469	3,469	69	2,39,354
6	Dismantling of CC Panels @ 5% area	Cum	5%		68,294	0.30	1024	1024	995	10,19,389
7	Replacement of Panels - PQC @ 5% area	Cum	5%		68,294	0.30	1024	1024	8,449	86,55,619
	Service Road									
8	Tack coat	Sqm	1	8,620	5.36		46,210	46,210	18	8,45,181
9	BC with 30 mm	Cum	1	8,620	5.36	0.03	1,386	1,386	10,478	1,45,25,166
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
10	Tack coat	Sqm	1	1,751	23.0		40,340	40,340	18	7,37,817
11	Wearing Coat BC PMB with 40 mm	Cum	1	1,751	23.0	0.04	1,614	1,614	12,730	2,05,41,739
12	Milling of Ex. Wearing Coat	Sqm	1	1,751	23.0		40,340	40,340	89	35,94,285
13	Painting of Crash Barrier	Sqm	4	1,751		1.20	8,406	8,406	96	8,06,999
	Other Works									
14	Raising of Road Kerb	Rmt	2	1,02,077			2,04,154	2,04,154	297	6,06,33,738
15	Replacement of Road Stud									
	Normal Road Stud	Nos	2	12,223			24,446	24,446	185	45,17,621
16	Painting of Kerb	Sqm	2	97,767		0.315	61,593	61,593	96	59,12,948
17	Road Marking	Sqm					75,532	75,532	464	3,50,61,821
	MCW									
	a) Median & Edge line	Sqm	4	1,04,995	0.15		62,997			
	b) Lane line	Sqm	2	34,648	0.10		6,930			
	Service Road									
	a) Edge line	Sqm	2	8,620	0.10		1,724			
	b) Lane line	Sqm	1	2,845	0.10		284			
	Junction crossing	Sqm					3,597			
18	Filling of Earthen shoulder	Cum					8,080	8,080	439	35,49,526
	MCW		2	97,767	1.00	0.04	7,821			
	Service Road		1	8,620	1.00	0.03	259			

Major Maintenance Cost (FY 2036 & FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
19	Miscellaneous	5%								5,75,10,103
									Total Major Maintenance Cost (Rs)	**1,20,77,12,157**
									Total Major Maintenance Cost with 18% GST (Rs)	**1,42,51,00,345**
									Total Major Maintenance Cost with GST (Cr)	**142.51**
									Per km Cost (lakh)	**142.52**
									Escalation Factor for Major Maintenance Cost (FY 2036 & FY 2037)	**1.52**
									Total Escalated Cost for Major Maintenance Cost (FY 2036 & FY 2037) (Cr)	**188.97**

Major Maintenance Cost (FY 2040 & FY 2041)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						18,65,105	18	3,41,12,773
	For BC	Sqm	2	97,767	8.75		17,10,923	17,10,923		
	For DBM	Sqm	2	4,888	7.00		68,437	68,437		
	For Misc. Location	Sqm	2	4,900	8.75		85,746	85,746		
2	BC with 30 mm	Cum	2	1,02,667	8.75	0.03	53,900	53,900	11,389	61,38,68,706
3	DBM with 50 mm	Cum	2	4,888	7.00	0.05	3,422	3,422	10,070	3,44,57,432
4	Milling	Sqm	2	4,888	7.00		68,437	68,437	89	60,97,728
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	4,336	3.50	4.50	3,469	3,469	69	2,39,354
6	Dismantling of CC Panels @ 5% area	Cum	5%		68,294	0.30	1024	1024	995	10,19,389
7	Replacement of Panels - PQC @ 5% area	Cum	5%		68,294	0.30	1024	1024	8,449	86,55,619
	Service Road									
8	Tack coat	Sqm	1	8,620	5.36		46,210	46,210	18	8,45,181
9	BC with 30 mm	Cum	1	8,620	5.36	0.03	1,386	1,386	10,478	1,45,25,166
	Micro Surfacing	Sqm	1							
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
10	Tack coat	Sqm	1	1,751	23.0		40,340	40,340	18	7,37,817

Major Maintenance Cost (FY 2040 & FY 2041)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
11	Wearing Coat BC with 30 mm	Cum	1	1,751	23.0	0.03	1,210	1,210	11,389	1,37,82,958
12	Milling of Ex. Wearing Coat	Sqm	1	1,751	23.0		40,340	40,340	89	35,94,285
13	Painting of Crash Barrier	Sqm	4	1,751		1.20	8,406	8,406	96	8,06,999
	Other Works									
14	Replacement of Road Stud									
	Normal Road Stud	Nos	2	12,223			24,446	24,446	185	45,17,621
15	Painting of Kerb	Sqm	2	97,767		0.315	61,593	61,593	96	59,12,948
16	Road Marking	Sqm					75,532	75,532	464	3,50,61,821
	MCW									
	a) Median & Edge line	Sqm	4	1,04,995	0.15		62,997			
	b) Lane line	Sqm	2	34,648	0.10		6,930			
	Service Road									
	a) Edge line	Sqm	2	8,620	0.10		1,724			
	b) Lane line	Sqm	1	2,845	0.10		284			
	Junction crossing	Sqm					3,597			
17	Filling of Earthen shoulder									
	MCW		2	97,767	1.00	0.03	5,866	5,866	439	25,76,943
18	Miscellaneous	5%								3,90,40,637
Total Major Maintenance Cost (Rs)										**81,98,53,375**
Total Major Maintenance Cost with 18% GST (Rs)										**96,74,26,983**
Total Major Maintenance Cost with GST (Cr)										**96.74**
Per km Cost (lakh)										**96.75**
Escalation Factor for Major Maintenance Cost (FY 2040 & FY 2041)										**1.78**
Total Escalated Cost for Major Maintenance Cost (FY 2040 & FY 2041) (Cr)										**148.69**

FP Project Management

Technical Due Diligence Study of Ghaziabad - Aligarh Section (NH-91) from km. 23+600 to km. 149+900 in the State of Uttar Pradesh on Build Operate and Transfer (BOT) Basis

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1. Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2. Project Description 4
2.1 Location 4
2.2 Climate 5
2.3 Terrain 5
2.4 Abutting Land Use 5
2.5 Right of Way 5
2.6 Existing Utilities 5
2.7 Development as per Schedule-B 5
3. Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 9
3.3 Major / Minor Junctions 9
3.4 Condition Survey of Bridge 10
3.5 Condition Survey of Culverts 20
3.6 Drainage 22
3.7 Slope Protection 22
3.8 Road Furniture 22
3.9 Median Plantation 25
3.10 Toll Plaza 25
3.11 Lane Equipment 27
3.11.1 RFID ETC Transceiver 28
3.11.2 Lane Controller with Industrial PC 28
3.11.3 Automatic Vehicle Classification (AVC) Sensors 28
3.11.4 Automatic Lane Barrier 29
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 29
3.11.6 Incident Capture Camera (AVC Camera) 30
3.11.7 License Plate Image Capture Camera (LPIC) 30

3.11.8 Over Head Lane Signal (OHLS) 30
3.11.9 Toll Booth Equipment 31
3.11.10 Medium Speed Weigh in Motion (MSWIM) 32
3.12 Plaza Equipment 32
3.12.1 TMS Server 32
3.12.2 55" LED screen for CCTV monitoring 32
3.12.3 Workstations in Control Room, POS room 33
3.13 Advanced Traffic Management System (ATMS) 33
3.14 Bus Bays and Passenger Shelter 33
3.15 Traffic Aid Post and Medical Aid Post 34
3.16 Toilet Block 34
3.17 Balance Work Status (Capex Augmentation to 6-laning) 35
3.18 Operation and Maintenance 35
3.18.1 O&M Contract 35
3.18.2 Organization Chart 35
3.18.3 Operation 38
3.18.4 Routine Maintenance 38
4 Pavement Investigation and Assessment 39
4.1 General 39
4.2 Axle Load and VDF 39
4.3 Design Traffic 39
4.4 Network Survey Vehicles (NSV) Survey 40
4.5 Structural Investigations 42
4.6 Test pit and Subgrade Investigation 42
4.7 Periodic Maintenance Strategy 52
5 Cost Estimates 53
5.1 General 53
5.2 Rate Assumption 53
5.3 Balance Work Cost 54
5.4 Routine O&M Cost 54
5.5 Major Maintenance Cost 56
5.6 Periodic Replacement of TMS / ATMS System 56
5.7 Escalation Assumption 56
5.8 Summary of Cost 57
Annexures 59
Annexure I - Routine Maintenance Cost 60
Annexure II - Major Maintenance Cost 64

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Pavement Condition 7
Table 3-2 Details of Summary for Structures 10
Table 3-3 Condition Survey of Minor Bridges 11
Table 3-4 Condition Survey of VUP 13
Table 3-5 Condition Survey of Flyover 16
Table 3-6 Condition Survey of ROB 18
Table 3-7 Details of Summary for Toll Plaza-1 at km. 47+500 26
Table 3-8 Details of Summary for Toll Plaza-2 at km. 113+300 27
Table 3-9 Details of Toilet Blocks 34
Table 4-1 Vehicle Damage Factor (VDF) 39
Table 4-2 Summary of Roughness Index 40
Table 4-3 Summary of Rutting 41
Table 4-4 Summary of FWD Survey 42
Table 4-5 Test result Summary of Subgrade 43
Table 4-6 Test Result of Core Cutting of Existing BT 47
Table 4-7 Major Maintenance Cycle 52
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 53
Table 5-2 Summary of Unit Rates 54
Table 5-3 Summary of Operation Cost 55
Table 5-4 Summary of Major Maintenance Cost 56
Table 5-5 Escalation 56

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 4
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 7
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photographs of Major / Minor Junctions 10
Figure 3-4 Photographs of Minor Bridges 12
Figure 3-5 Photographs of Vehicular Underpass 15
Figure 3-6 Photographs of Flyovers 17
Figure 3-7 Photographs of ROB 19
Figure 3-8 Photographs of Culverts 21
Figure 3-9 Photograph of Drainage 22
Figure 3-10 Photographs of Slope Protection and Chute Drain 22
Figure 3-11 Photographs of Pavement Marking 23

Figure 3-12 Photographs of Road Signages / Kerb Painting 24
Figure 3-13 Photographs of Highway Lighting / Crash Barrier 24
Figure 3-14 Photographs of Median Plantation 25
Figure 3-15 Photographs of Toll Plaza-1 26
Figure 3-16 Photographs of Toll Plaza-2 27
Figure 3-17 Photographs of Passenger Shelter 34
Figure 3-18 Photographs of Toilet Block 34

1. INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Four Lane Highway of Ghaziabad - Aligarh Section of NH-91 from km. 23+600 at Lalkuan near Ghaziabad Town to km. 149+900 at Aligarh in the State of Uttar Pradesh. The project is developed on Design, Build, Finance, Operate and Transfer (BOT) basis under NHDP Phase-III.

M/s. Ghaziabad Aligarh Expressway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Improvement, Operation and Maintenance, widening to 4-lane of Ghaziabad - Aligarh Section of NH-91 from km. 23+600 at Lalkuan near Ghaziabad Town to km. 149+900 at Aligarh in the State of Uttar Pradesh on BOT Basis or Project Road. The project was awarded to Concessionaire on 25th February 2011 with a concession period of 24 years (including construction period) by National Highway Authority of India (NHAI). The length of Project Road is 126.300 kms with two toll plazas at km. 47+500 and at km. 113+300.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and flied investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our proposed team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader will coordinate the activities between all the key staff who will work closely together. The key staff will be assisted by various support staff, who will report to the respective key staff in their field of expertise. The Team Leader will act as the point of contact for Client Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **27th January 2025 to 30th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, and overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2. PROJECT DESCRIPTION

2.1 Location

The Project Road is a section of NH-91 in the State of Uttar Pradesh which starts from km. 23+600 (at Lal Kuan near Ghaziabad town) with the junction of NH-24 and ends at the km. 149+900 near Aligarh. The length of the Project Road is 126.300 kms.

The existing Project Road is 4-lane carriageway excluding structures along with approaches which is of 6-lane configuration. From km. 23+600 to km. 27+000, km. 27+000 to km. 48+000, km. 48+000 to km. 108+000 and from km. 108+000 to km. 149+900 of the Project Road fall under the jurisdiction of the Districts of Ghaziabad, Gautam Buddha Nagar, Bulandshahr and Aligarh respectively. Most of the corridor traverses through rural areas. The major urban areas falling in the vicinity of the corridor are Ghaziabad, Dadri, Sikandrabad, Bulandshahr, Khurja, Gabbana and Aligarh.

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

km. 23+600

km. 23+600

Figure 2-3 End of Project Road

km. 149+900

km. 149+900

2.2 Climate

January is the coldest month with an average mean monthly temperature of 14 °C and May is the hottest month with mean monthly temperature of 38 °C in this area. The relative humidity is lowest during summers when it reaches as low as 24% and during monsoon it goes to as high as 80%.

2.3 Terrain

The Project Road runs mostly in plain terrain and passes through rich agricultural areas.

2.4 Abutting Land Use

Agriculture is the predominant land use along Project Road. However, there are some dense built-up areas and large-scale ribbon developments observed intermittently along the Project Road. At many places, large numbers of trees have been observed along Project Road.

2.5 Right of Way

The width of the existing Right of Way (ROW) for the Project Road is 60 m throughout its length.

2.6 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.7 Development as per Schedule-B

The Project Road from Ghaziabad (km. 23.600) to Aligarh (km. 149.900) has proposed to be developed as four lane and subsequent to six lane divided carriageway with median width varies from 1.20 m to 4.50 m, service roads and other arrangements.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	126.3	
2	Construction of Service Road	km.	54.6	LHS/RHS/BHS
3	Construction of slip road	Km.	9	LHS/RHS/BHS
4	Major Bridges	Nos.	Nil	
5	Minor Bridges	Nos.	10 (5+5)	
6	ROB	Nos.	4	
7	Grade Separator	Nos.	6	
8	Vehicular Underpass	Nos.	24	
9	Slab / Box Culverts	Nos.	70	
10	Pipe Culverts	Nos.	81	
11	Road marking by Thermoplastic Paint	km.	126.3	

As per Clause 12.5 of the Concession Agreement, the Concessionaire shall undertake construction of six-laning as specified in Schedule-B and Schedule-C, so that the Project Road shall have six lanes on or before the 12th anniversary of the Appointed Date.

3. CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

Project Road is four lane divided carriageway with an earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length. Currently, the Project Road is being widened to six lane carriageway.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

The pavement condition survey was carried out from **27th January 2025 to 30th January 2025** through visual inspection for the entire project length. The details of the visual condition survey are provided as below:

Table 3-1 Pavement Condition

Chainage (km)		Length (km)	Pavement Condition		Remark
From	To		Left Carriageway	Right Carriageway	
23+600	34+000	10.400	Good / Fair	Good / Fair	4-Lane overlay is completed. 6-Lane widening and strengthening is completed except 3.495 kms.
34+000	129+900	95.900	Good / Fair	Good / Fair	
129+900	149+900	20.000	Good / Fair	Good / Fair	
Total Length (km)		**126.300**			

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

6-Lane Road constructed at km. 25+950 (LHS) at incumbrance free land

Municipal Drain Spillover Damaging Road at km. 28+550 (LHS)

4-Lane at km. 28+700 (LHS)

MCW Work Affected due to Land Problem Near km. 34+200

Patch Work Carried out at km. 110+240 (LHS)

Repair of Cracks at km. 120+660 (RHS)

Cracks at km. 139+930 (LHS)

Patch Work near ROB at km. 143+980 (LHS)

Repair of Cracks at km. 133+000 (RHS)

New Upcoming Rail Line at km. 147+550

3.2 Service Road / Slip Road

The service road with a width of 8 m for total 54.60 km is constructed in built-up area and adjoining underpass locations. As compared to the main carriageway, the pavement condition of service road is poor at many locations.

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Pot holes and Detoriation in Service Road at km. 63+200 (LHS)

Pot holes and Detoriation in Service Road at km. 87+270 to 87+540 (LHS)

3.3 Major / Minor Junctions

There are 14 nos. of major and 111 nos. of minor at-grade junctions along the Project Road.

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Major / Minor Junctions

Khurja Bypass (Major Junction)

Buland Shahar (Major Junction)

T-Junction at km. 58+350 LHS (Minor)

Major Junction at km. 149+200

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-2 Details of Summary for Structures

Sr. No.	Description	As per Concession Agreement	As per Site Condition
1	Major Bridges	Nil	Nil
2	Minor Bridges	10 Nos. (5+5)	13 Nos. (7+6)
3	ROB	4 Nos.	4 Nos.
4	Grade Separator	6 Nos.	6 Nos.
5	Vehicular Underpass	24 Nos.	19 Nos. (Six Lane) + 1 Nos. (Three Lane)
6	Slab / Box Culverts	70 Nos.	70 Nos.
7	Pipe Culverts	81 Nos.	81 Nos.

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in tables below:

Table 3-3 Condition Survey of Minor Bridges

Sr. No.	Location as per CA	Location as per Site	Existing Bridge as per Concession Agreement		Proposed Span Arrangement	Proposed Width (m)	Bridge as per Site Condition	TDD Consultant's Comments
			Span Arrangement	Type of Structure				
1	25+956	25+947	-	-	2x5	1x45	New construction-RCC Box in Both CW	Structure is in good condition.
2	35+720	36+200	-	-	2x5	1x33.5	New construction-RCC Box in Both CW	Structure is in good condition.
3	36+840	37+300	-	-	2x5	1x33.5	New construction-RCC Box in Both CW	Structure is in good condition.
4	40+501	41+100	-	-	1x21.6	2 x 14.25	New 6 lane bridge RCC T-Girder with slab	Structure is in good condition. Steel is exposed in LHS side of Dirt wall.
5	44+908	45+300	-	-	2x5	1x45	New construction-RCC Box in Both CW	Structure is in good condition.
6	46+805	47+500	3	1 span RCC slab + 2 span arch	103 m length	1 x 14.25	New Bridge RHS with 3 Lane RCC T-girder & slab while existing LHS bridge is 2 Lane with one span RC slab and 2 span arches	New Bridge (RHS) - Good condition. Existing bridge (LHS) - need periodic maintenance
7	56+800	58+190	-	-	2x5	1x33.5	New construction-RCC Box in Both CW	Structure is in good condition.
8		61+000	-	-	COS	1x33.5	New construction-RCC Box in Both CW	Structure is in good condition.
9	61+900	63+300	-	-	3x5	1x33.5	New construction-RCC Box in Both CW	Structure is in good condition.
10	-	75+800	-	-	1-span	2 x 14.25	New construction-RCC solid slab in Both CW	Structure is in good condition.
11	111+490	115+200	7x7.5	RCC solid slab	4x15	1 x 14.25	New 3 Lane bridge -RCC T-girder with slab and Existing bridge is 2 Lane with one span RC solid slab	New bridge - Structure is in good condition. Existing bridge - Found in good condition. Expansion joint need to be replace.
12	140+000	144+500	-	-	3x5	1X33.5	New construction-3 lane RCC Box in Both Service Road	Structure is in good condition.

Figure 3-4 Photographs of Minor Bridges

Minor Bridge at km. 36+900

Minor Bridge at km. 37+300

Minor Bridge at km. 46+880

Minor Bridge at km. 59+550

Minor Bridge at km. 45+300

Minor Bridge at km. 46+880 (LHS - Existing arch bridge for Canal)

Minor Bridge at km. 47+900 (RHS - for 3rd Canal)

Minor Bridge at km. 73+990

Minor Bridge at km. 63+300

Minor Bridge at km. 75+800

Minor Bridge at km. 112+100

Minor Bridge at km. 141+250

Minor Bridge at km. 148+740

Table 3-4 Condition Survey of VUP

Sr. No.	Location as Per CA	Location as Site	Proposed Span Arrangement	Proposed Width (m)	Bridge as per Site Condition	TDD Consultant's Comments
1	25+550	-	-	-	-	Not available at site.
2	27+100	-	-	-	-	Not available at site.
3	29+680	-	-	-	-	Not available at site.
4	31+050	-	-	-	-	Not available at site.
5	-	38+100	1 x 10.0 x 5.5	1 x 25.25	New 6-Lane RCC Box Structure	Structure is in good condition.
6	38+705	39+200	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box	Structure found in good condition, crash barrier which

Sr. No.	Location as Per CA	Location as Site	Proposed Span Arrangement	Proposed Width (m)	Bridge as per Site Condition	TDD Consultant's Comments
					Structure	needs to be rectified.
7	42+970					Not available at site.
8	50+600	51+300	1 x 10.0 x 5.5	1 x 25.20	New 6-Lane RCC Box Structure	Structure found in sound condition MBCB need to be repaired.
9	55+905	57+100	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	Structure found in sound condition
10	62+250	63+800	1 x 10.0 x 5.5	1 x 25.20	New 3-Lane RCC Box Structure	Due to LA issues, VUP constructed of 3-lane in RHS while not constructed on LHS is to be repaired.
11	65+870	67+600	1 x 10.0 x 5.5	1 x 25.20	New 6-Lane RCC Box Structure	Structure found in sound condition. At
12		73+600	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	found in satisfactory condition.
13	-	78+800	1 x 10.0 x 5.5	1 x 25.20	New 6-Lane RCC Box Structure	found in satisfactory condition.
14	79+500	81+800	1 x 10.0 x 5.5	1 x 25.20	New6-Lane RCC Box Structure	found in satisfactory condition.
15	87+360	90+100	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	The structure is in sound condition. MBCB to be repaired provide as per specifications.
16	91+330	91+800	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	Structure found in good condition.
17	105+000		3 Cell Box		New 6-Lane RCC Box Structure	After Site inspection structure is very good condition.
18	106+450	107+350	1 x 10.0 x 5.5	1 x 25.25	New 6-Lane RCC Box Structure	Found in satisfactory condition.
19	131+010	131+150	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	Found in satisfactory condition.
20	132+020	136+400	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	Structure found in sound condition.
21	134+180	138+500	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	Structure found in sound condition. Damaged earthen slope need rectification
22	-	139+980	1 x 10.0 x 5.5	1 x 28.50	New 6-Lane RCC Box Structure	Structure found in sound condition. Slope protection requires at quadrants near approaches

Figure 3-5 Photographs of Vehicular Underpass

VUP at km. 37+480

VUP at km. 38+705

3 Cell Box type Underpass at km. 105+500

VUP at km. 50+600

VUP at km. 55+905

VUP at km. 62+250

VUP at km. 67+870

VUP at km. 73+600

VUP at km. 79+500

VUP at km. 87+360

VUP at km. 91+800

VUP at km. 106+450

VUP at km. 131+010

VUP at km. 132+020

VUP at km. 134+080

VUP at km. 139+980

Table 3-5 Condition Survey of Flyover

Sr. No.	Existing Bridge No.	Location as Per Concession Agreement	Location as Site Condition	Existing Bridge as per Concession Agreement		Proposed Span Arrangement	Proposed Width (m)	Bridge as per Site Condition	TDD Consultant's Comments
				Span Arrangement	Type of Structure				
1	FLY-01 Entry of Dadri Bypass	33+650	34+300	-	-	1x30x5.5	1x12.5	3 Lane Flyover PSC T girder RE wall in Approach POT Bearing. Strip seal joint	Structure found in sound condition. Construction of approach towards Ghaziabad side is incomplete as well as crash barrier adjacent to structure is balance towards Aligarh side. Some of reinforcement of incomplete structure are exposed to the atmosphere.
2	FLY-02 Exist of Dadri Bypass	41+800	42+200	-	-	1x30x5.5	1x12.5	3 Lane Flyover PSC T girder RE wall in Approach POT Bearing. Strip seal joint	Structure found in sound condition. Approach slab is settled on both sides.
3	FLY-03 Entry of Aligarh Bypass	129+700	134+200	-	-	1x30x5.5	1x12.5	3 Lane Flyover PSC T girder RE wall in Approach POT Bearing. Strip	Structure and RE wall approach found in good condition.

Sr. No.	Existing Bridge No.	Location as Per Concession Agreement	Location as Site Condition	Existing Bridge as per Concession Agreement		Proposed Span Arrangement	Proposed Width (m)	Bridge as per Site Condition	TDD Consultant's Comments
				Span Arrangement	Type of Structure				
								seal joint	
4	FLY-04 In Aligarh Bypass	140+620	144+500	-	-	2x30x5.5	2x12.5	6 Lane Flyover PSC T girder RE wall in Approach POT Bearing. Strip seal joint	Structure found in sound condition. Damaged earthen Slope to be repaired.
5	FLY-05 In Aligarh Bypass	141+260	145+400	-	-	1x30x5.5	2x12.5	6 Lane Flyover PSC T girder RE wall in Approach POT Bearing. Strip seal joint	Structure found in sound condition. as well as expansion joint to be replaced immediately. Even approach slab has been settled and a deep has been created.
6	FLY-06 In Aligarh Bypass	143+980	146+950	-	-	1x30x5.5	2x12.5	6 Lane Flyover PSC T girder RE wall in Approach POT Bearing. Strip seal joint	Structure found in sound condition and expansion joint rubber need to be replaced.

Figure 3-6 Photographs of Flyovers

Flyover at km. 33+650

Flyover at km. 41+800

Flyover at km. 129+700

Flyover at km. 140+620

Repair of Approach Slab & Crash Barrier at km. 41+800 (RHS)

Flyover at km. 141+260

Flyover at km. 143+980

Table 3-6 Condition Survey of ROB

Sr. No.	Existing Bridge No.	Location as per CA	Location as per Site	Existing Bridge as per Concession Agreement		Proposed Span Arrangement	Proposed Width (m)	Bridge as per Site Condition	FPPM's Comments
				Span Arrangement	Type of Structure				
1	ROB-1 Dadri Bypass	36+340	36+800	BG line without Structure		1 x 31 + 1 x 40 + 1 x 15	2 x 14.25	New Construction of ROB to 6-lane configuration - PSC T Girder with Railway span composite Girder	Structure is in good condition. Erection is balance on LHS of Ghaziabad side approach due to LA issue. Bulging of RE Wall is being repaired.
2	ROB-2 Khurja Bypass	83+935	85+900	BG line without Structure		2 x 36 + 1 x 23 (Skew 70 degree)	2 x 14.25	New Construction of ROB to 6-lane configuration - PSC T Girder with Railway span composite Girder	Structure is in good condition. Crack found in arrester (Aligarh side). RE wall approaches found satisfactory.
3	ROB-3	120.169	124+100	1 x 25.7 (Skew 30 deg)	RCC Slab	1 x 40 + 2 x 15 (Skew 30 deg)	1 x 14.25	New 3 lane bridge PSC T Girder with Railway span composite Girder and old 2 lane bridge	Structure and approaches found in good condition and expansion joint and pavement surface needs maintenance.

Sr. No.	Existing Bridge No.	Location as per CA	Location as per Site	Existing Bridge as per Concession Agreement		Proposed Span Arrangement	Proposed Width (m)	Bridge as per Site Condition	FPPM's Comments
				Span Arrangement	Type of Structure				
								RCC Slab	
4	ROB-4 Aligarh Bypass	145+825	149+200	BG line without Structure		1 x 40 + 2 x 15 (Skew 17degree)	2 x 14.25	New Construction of ROB to 6-lane configuration - PSC T Girder with Railway span composite Girder	Structure and RE Wall found in sound condition.

Figure 3-7 Photographs of ROB

ROB at km. 36+340

ROB at km. 83+935

ROB at km. 120+169

ROB at km. 145+825

Repair of Bulging of RE Wall at ROB at km. 36+340

Repair of Bulging of RE Wall at ROB at km. 36+340

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 81 Nos. of pipe culverts, 70 Nos. of box / slab culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly, except some locations. Reconstruction / widening of many culverts has been done and some are being widened to 6-lane configuration.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching has been observed damaged which required to be repaired under routine repair work by the Concessionaire.

There is total 62 Nos. of culverts which are to be reconstructed and 89 Nos. of culverts which are to be additionally constructed during six laning of the Project Road. The same is being executed at site.

Figure 3-8 Photographs of Culverts

HPC at km. 33+960

Box Culvert at km. 54+795

Box Culvert at km. 69+712

Box Culvert at km. 85+230

Box Culvert at km. 86+824

Box Culvert at km. 115+475

HPC at km. 132+780

3.6 Drainage

There are of existing drain on both side of the Project Road as per Concession Agreement. However, RCC drain is constructed in built-up areas and locations where service roads are provided. At some of the places covers of RCC drains has broken / exposed and choked. The photograph taken during site visit is presented as below:

Figure 3-9 Photograph of Drainage

km. 99+700

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations. The photographs taken during the site visit are presented below.

Figure 3-10 Photographs of Slope Protection and Chute Drain

km. 121+000 (RHS-ROB)

km. 131+500 (LHS-VUP)

3.8 Road Furniture

The Concessionaire has provided road furniture along Project Road as per the standards and specifications mentioned in Schedule-C. The details of the items are provided below.

Pavement Marking and Road Studs

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. The pavement marking is faded at some locations which will be rectified by the Concessionaire.

Road studs / cat's eye for the project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / cat's eye has been fixed at junction and zebra crossings. However, at few locations some cat eyes have damaged which will be rectified by the Concessionaire.

Some of the photographs of road marking are presented below.

Figure 3-11 Photographs of Pavement Marking

Road Marking at MCW

Road Marking at Service Road

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Concessionaire.

Some of the photographs of sign boards are presented below:

Figure 3-12 Photographs of Road Signages / Kerb Painting

Kilometer Stone

Advanced Direction Sign Board

Kerb Painting at Median Opening

Highway Lighting / Crash Barriers

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of highway lighting and metal beam crash barriers are presented below.

Figure 3-13 Photographs of Highway Lighting / Crash Barrier

Highway lighting & MBCB at Flyover

Concrete Crash Barrier

Repair of Metal Beam Crash Barrier

Pedestrian Guard Rail

Road Land Boundary

Road land boundary pillar is not found / available on Project Road.

3.9 Median Plantation

Avenue plantations are done only where ROW is available and median plantation has been provided in the project length as per IRC specification.

The photographs taken during the site visit are presented below.

Figure 3-14 Photographs of Median Plantation

Median Plantation at km. 86+000

Median Plantation at km. 91+000

3.10 Toll Plaza

As per the Concession Agreement, there are two existing toll plazas at km. 47+500 and at km. 113+300 with the following infrastructure.

Table 3-7 Details of Summary for Toll Plaza-1 at km. 47+500

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	47+500
2	Number of Tolling Lanes	10 (lanes for toll operation for vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	One in each direction
5	Number of Toll Booths	10
6	Canopy	Present
7	Administrative Building	Present (Temporary)
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	No
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes 2 Nos
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	Yes
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

This toll plaza is near Luharli village. The work of toll plaza is completed, and toll plaza is operational. 10 lanes have been constructed including lane for overhead dimension and all are under operation. Administrative building is yet to be constructed at site. The Concessionaire is managing toll operation from porta cabin due to unavailability of land. The following works could not be completed because of non-availability of land.

- Administration, Operation and maintenance base camp
- Weigh bridge

Figure 3-15 Photographs of Toll Plaza-1

Toll Plaza

Toll Plaza

Table 3-8 Details of Summary for Toll Plaza-2 at km. 113+300

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	113+300
2	Number of Tolling Lanes	10(lanes for toll operation for vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	One in each direction
5	Number of Toll Booths	10
6	Canopy	Present
7	Administrative Building	Present (Temporary)
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	No
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes 2 Nos
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	Yes
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-16 Photographs of Toll Plaza-2

Toll Plaza

Toll Lanes with Weight in Motion Senser

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)

5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 8 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at TP

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at TP

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at TP

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera at TP

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at TP

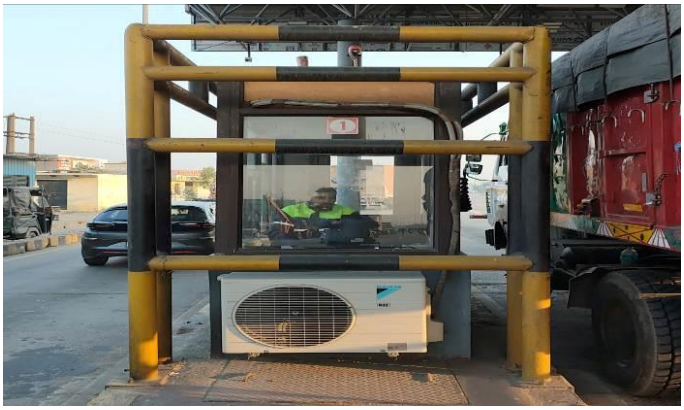
3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.



Toll Booth

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is not installed on entry lanes of Toll Plaza.

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

TMS Server Room

3.12.2 55” LED screen for CCTV monitoring

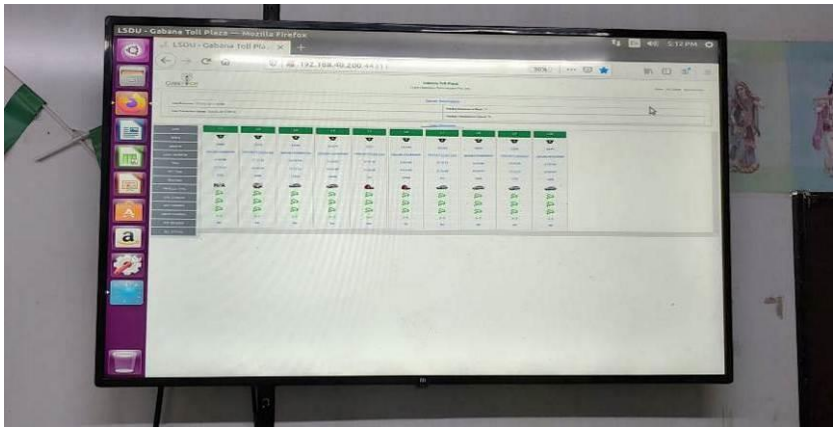
55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

CCTV Monitor

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.



3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) shall be installed and maintained as per the requirement of the Concession Agreement. As informed by the Concessionaire, the ATMS Design Report is under progress and installation will be completed by the end of FY 2024.

3.14 Bus Bays and Passenger Shelter

There are 38 Nos. of bus bays / shelter along the Project Road. Some of the photographs taken during the site visit are presented below.

Figure 3-17 Photographs of Passenger Shelter

Passenger Shelter

3.15 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are maintained by the Concessionaire.

3.16 Toilet Block

There are two nos. toilet blocks and the same are maintained by the Concessionaire.

Table 3-9 Details of Toilet Blocks

Sr. No.	Chainage (km)
1	47+500
2	113+300

Figure 3-18 Photographs of Toilet Block

3.17 Balance Work Status (Capex Augmentation to 6-laning)

The Project Road is being augmented to 6-lane configuration along with rehabilitation of existing 4-lane road. As per our observations during site visit and IE Letter no. Theme/IE/Gzb-Alg/NH-91/2023/9054 dated 16.01.2024, the Concessionaire has already completed the 6-laning work and only 3.495 km of 6-laning work is balance due to hindrances. The work is in progress and the cost of balance work is presented in subsequent chapter.

3.18 Operation and Maintenance

3.18.1 O&M Contract

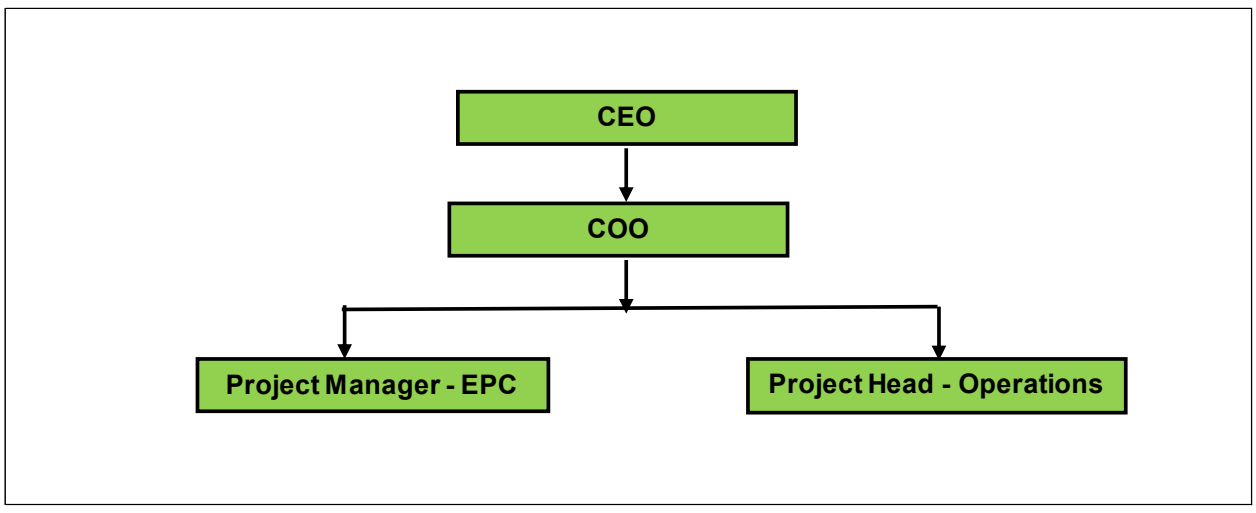
As per Clause 17.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road either by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities will confirm to all the requirements laid down in MoRT&H, IRC Specifications, and the Concession Agreement.

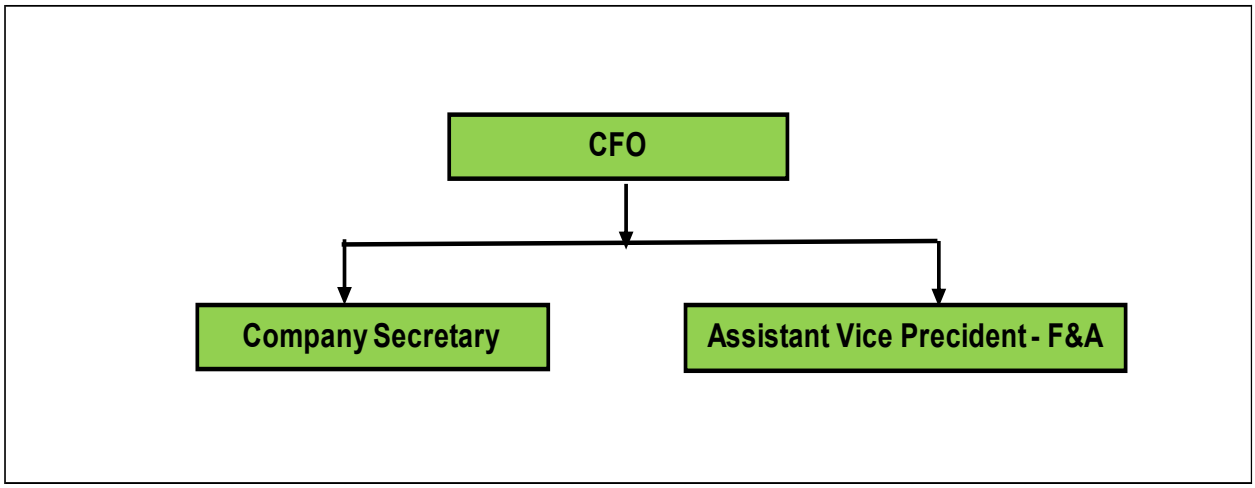
The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

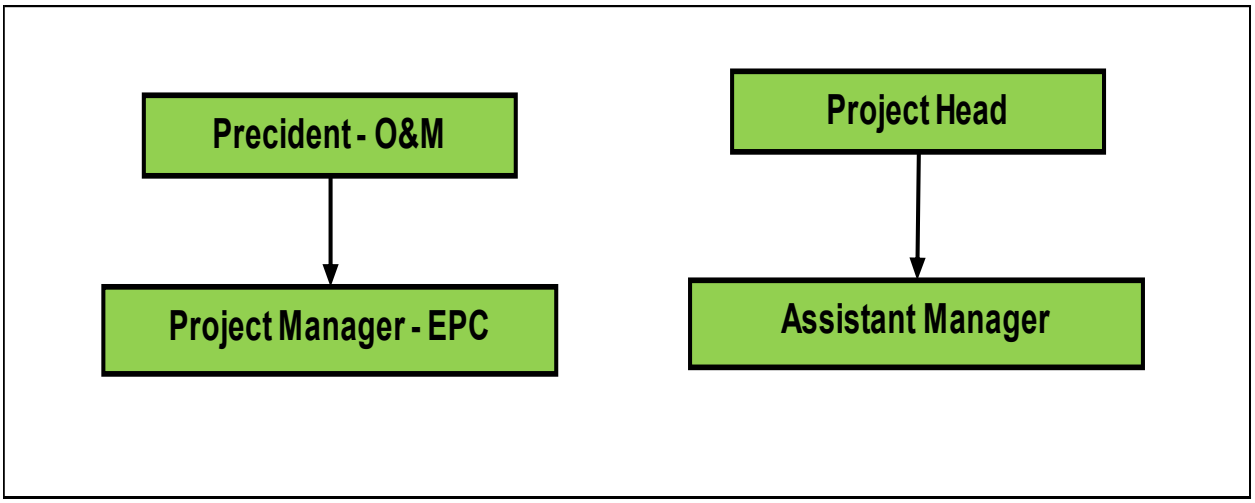
3.18.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head (Operations), 01 Project Manager (EPC), 01 CFO-CHFA, 01 Company Secretary, 01 Assistant Vice President (F&A), 02 Manager, 02 Assistant Manager, 03 Executive (F&A), 01 Executive (F&A), 01 Documentation Controller, 01 Senior Executive, 06 Executive, 02 Electrician, 02 Supervisor, 01 Sr. Supervisor, 02 Plaza Manager, 01 Assistant Plaza Manager, 01 MIS Executive, and 13 Cashier cum Validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart




CFO
Company Secretary
Assistant Vice Precident - F&A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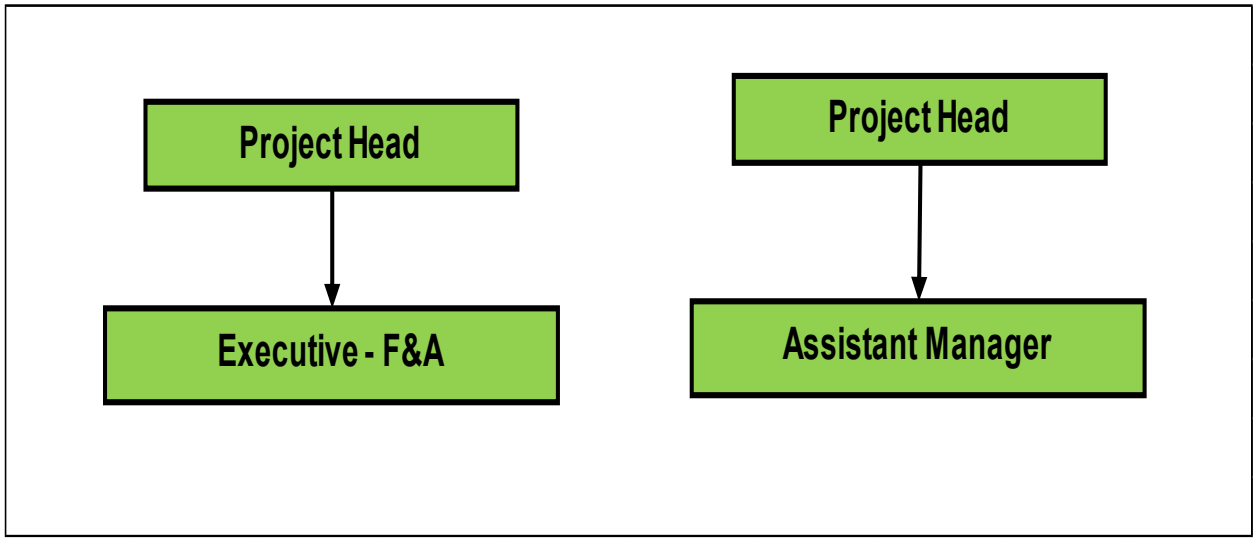
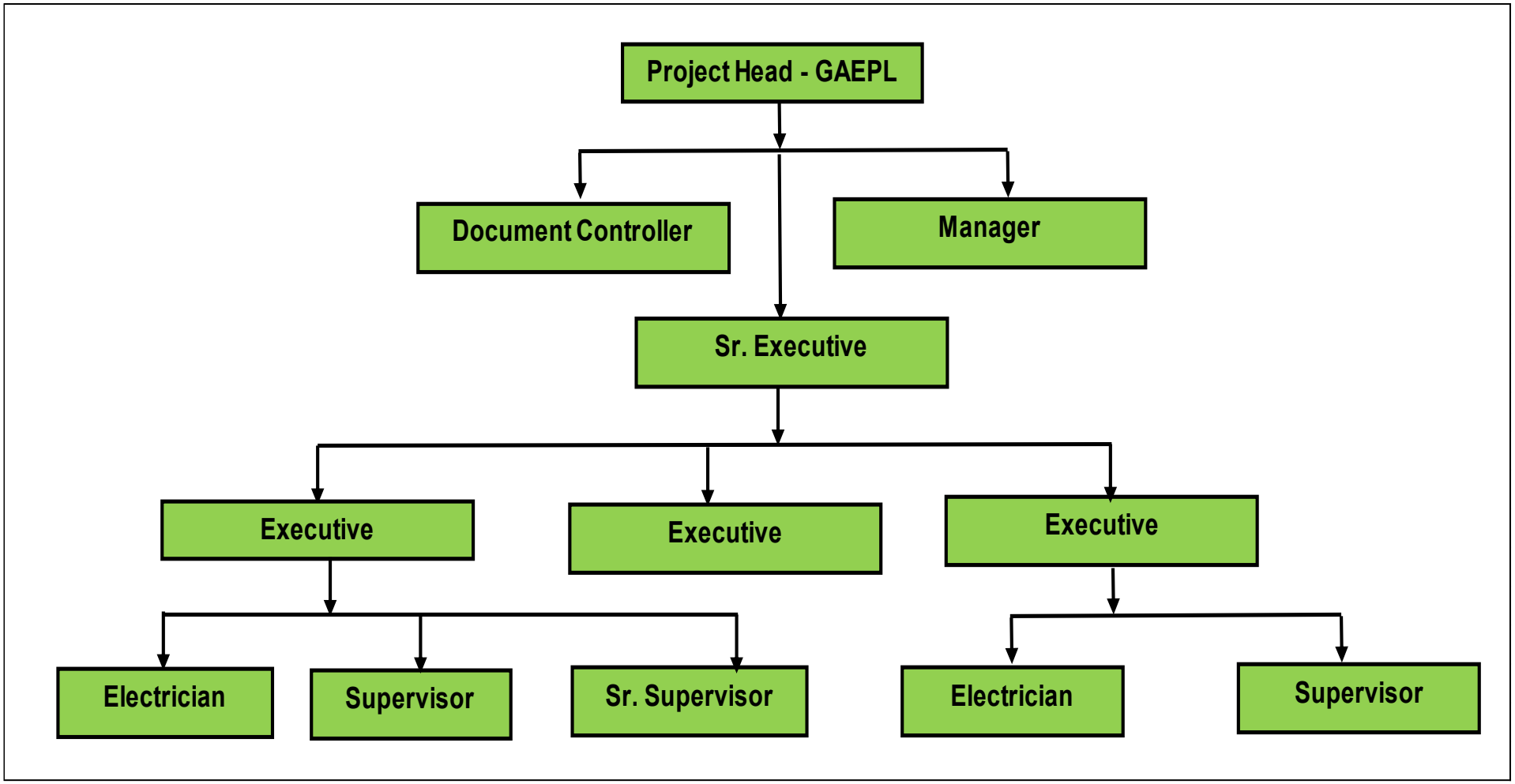
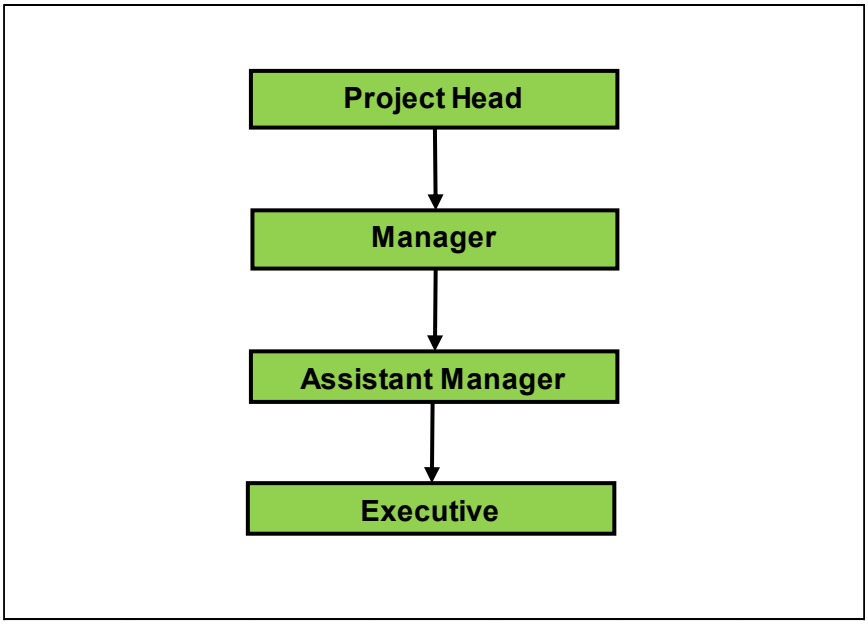
Project Manager - EPC
Project Head
Assistant Manager


Project Head
Executive - F&A
Project Head
Assistant Manager


Project Head - GAEPL
Document Controller
Manager
Sr. Executive
Executive
Executive
Executive
Electrician
Supervisor
Sr. Supervisor
Electrician
Supervisor



3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

The Concessionaire has received Completion Certificate for 125.175 kms on 23rd April 2022. Rest of the stretch of 1.125 kms is de-scoped by the Authority as a part of the Settlement Agreement executed on 8th April 2022 due to non-availability of land.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 24 years from the Appointed Date including construction period. Original Appointed Date of the project was 25th February 2011. As per the Contract Agreement, the Concessionaire shall operate and maintain the Project Road till the end of the concession period.

4.2 Axle Load and VDF

The Concessionaire conducted the Axle Load Survey on Project Road at km. 42+850, km. 47+000 (near Luharli Toll Plaza), km. 80+870 and at km. 113+650 (near Gabhana Toll Plaza) in the month of July 2021. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor (VDF)

Sr. No.	Vehicle Type	Vehicle Damage Factor (VDF)							
		km. 42+850		km. 47+000		km. 80+870		km. 113+650	
		LHS	RHS	LHS	RHS	LHS	RHS	LHS	RHS
1	BUS	0.915	0.972	0.939	0.994	0.98	1.161	1.007	1.152
2	LCV	1.069	0.854	0.796	1.15	0.728	0.851	1.022	1.054
3	2-Axle	3.762	3.975	3.213	3.429	3.593	4.07	3.553	4.089
4	3-Axle	7.35	5.964	7.705	5.348	7.621	7.537	8.066	7.683
5	MAV	14.418	12.013	11.039	14.65	12.671	9.867	13.33	10.55

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Year	At Km. 47+000 (Near Luharli Toll Plaza)				At Km. 113+650 (Near Gabhana Toll Plaza)			
	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)
2024-25	4.41	**4.41**	5.30	**5.30**	3.86	**3.86**	3.42	**3.42**
2025-26	4.49	**8.90**	5.40	**10.70**	3.89	**7.75**	3.44	**6.86**
2026-27	4.51	**13.41**	5.44	**16.14**	3.84	**11.59**	3.40	**10.26**
2027-28	4.54	**17.95**	5.48	**21.62**	3.79	**15.38**	3.36	**13.62**
2028-29	4.74	**22.69**	5.73	**27.35**	3.95	**19.33**	3.50	**17.12**
2029-30	4.92	**27.61**	5.96	**33.31**	4.10	**23.43**	3.62	**20.74**
2030-31	5.10	**32.71**	6.18	**39.49**	4.24	**27.67**	3.75	**24.49**
2031-32	5.29	**38.00**	6.42	**45.91**	4.40	**32.07**	3.89	**28.38**

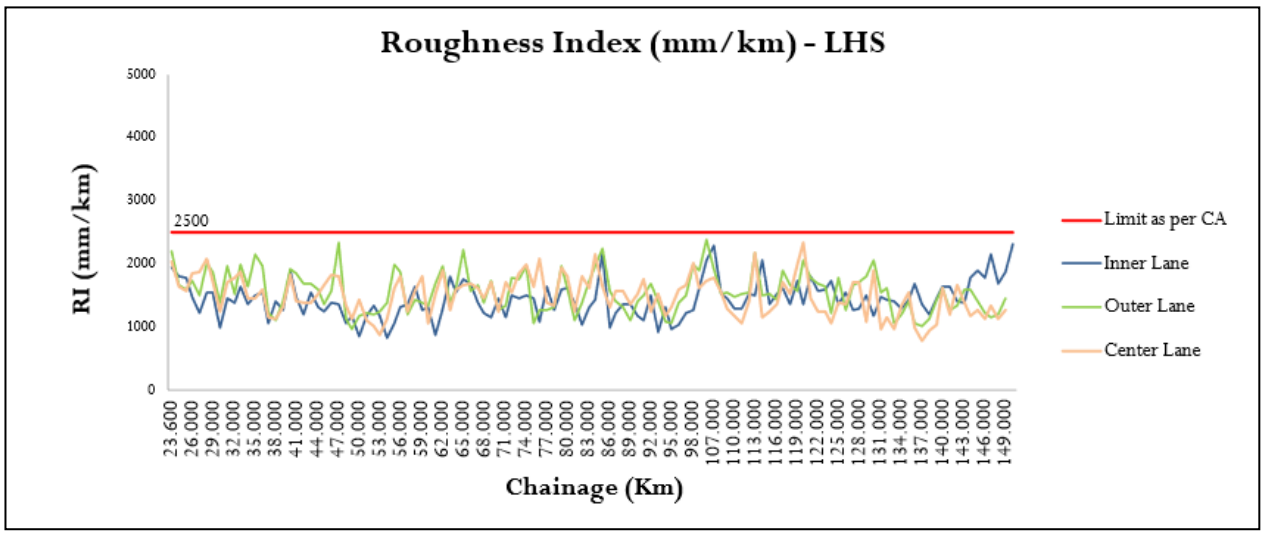
Year	At Km. 47+000 (Near Luharli Toll Plaza)				At Km. 113+650 (Near Gabhana Toll Plaza)			
	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)
2032-33	5.49	**43.49**	6.68	**52.59**	4.56	**36.63**	4.03	**32.41**
2033-34	5.70	**49.19**	6.94	**59.53**	4.74	**41.37**	4.18	**36.59**
2034-35	5.92	**55.11**	7.22	**66.75**	4.91	**46.28**	4.34	**40.93**
2035-36	6.14	**61.25**	7.50	**74.25**	5.10	**51.38**	4.50	**45.43**
2036-37	6.37	**67.62**	7.79	**82.04**	5.28	**56.66**	4.66	**50.09**
2037-38	6.61	**74.23**	8.09	**90.13**	5.48	**62.14**	4.83	**54.92**
2038-39	6.85	**81.08**	8.40	**98.53**	5.67	**67.81**	5.00	**59.92**
2039-40	7.10	**88.18**	8.71	**107.24**	5.88	**73.69**	5.18	**65.10**

4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire carried out Roughness Survey using NSV in September 2024. The Concessionaire has provided NSV survey data. The NSV data is used to assess the riding quality and pavement condition of Project Road. The summary Roughness Index and Rutting are given in the table below.

Table 4-2 Summary of Roughness Index

Sr. No.	Rating	Roughness Value (mm/km)	Length (km)					
			LHS			RHS		
			Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane
1	Good	<2000	113.70	113.70	109.10	112.50	109.50	104.80
2	Fair	2000-2500	5.10	6.40	10.40	5.40	9.00	13.00
3	Poor	>2500	0.00	0.00	0.00	1.60	1.00	1.00



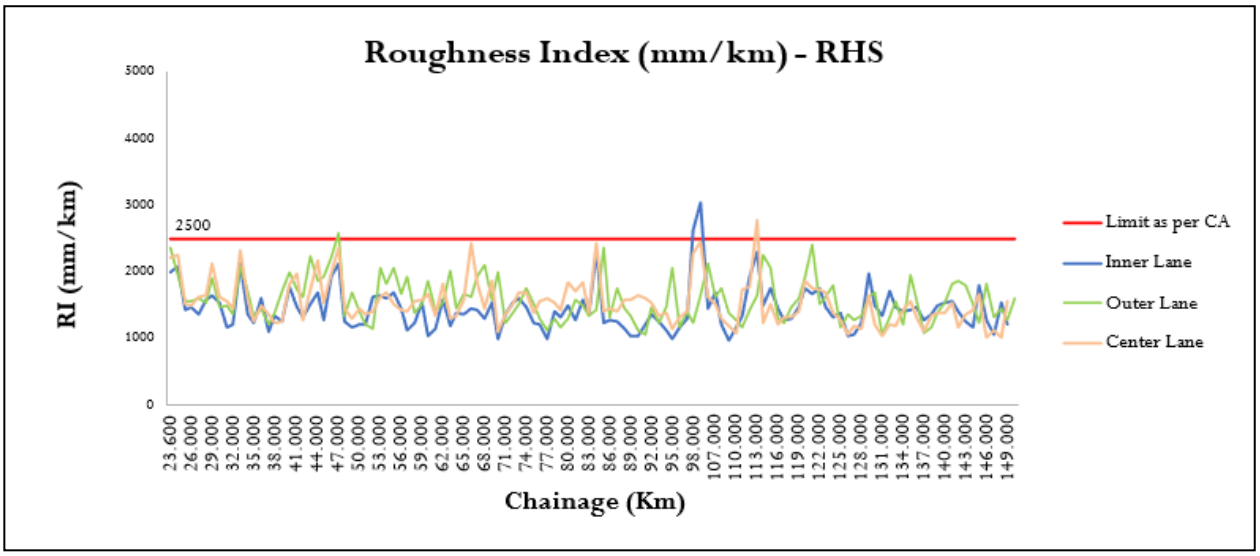
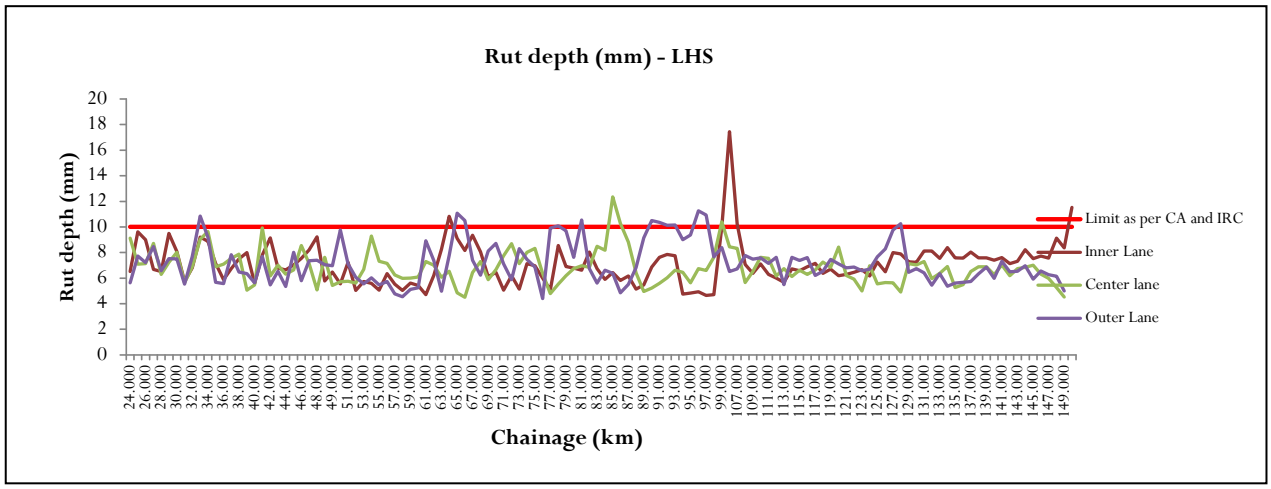
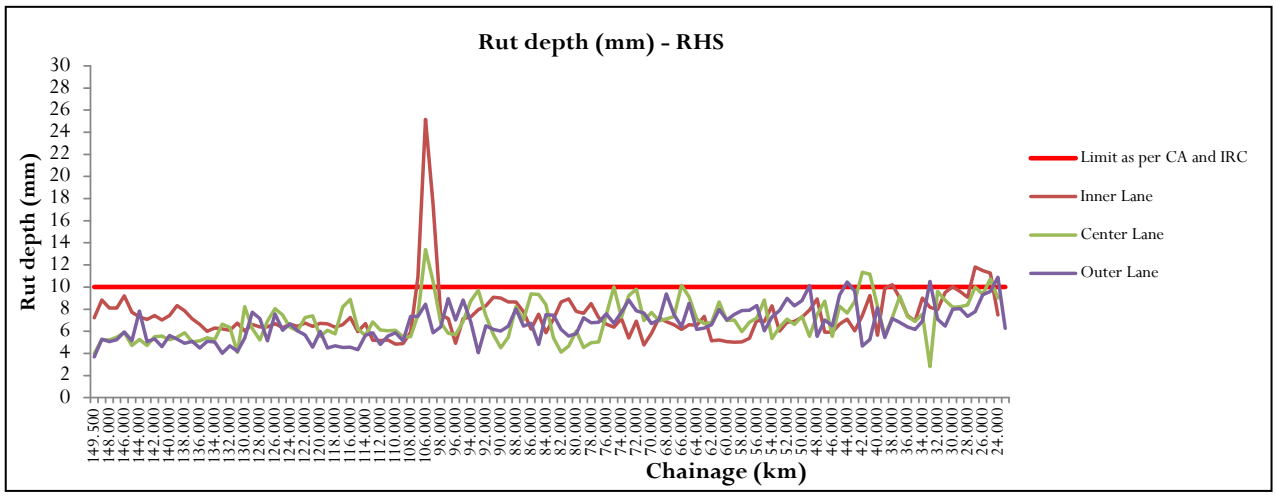


Table 4-3 Summary of Rutting

Rating	Rutting mm/km	Length (km)					
		LHS			RHS		
		Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane
Good	<5	115.70	116.90	107.50	111.90	111.90	115.60
Poor	>10	3.10	2.60	12.00	7.60	7.60	3.20





4.5 Structural Investigations

Falling Weight Deflectometer survey was conducted for flexible pavement by the Concessionaire in April 2024. The summary of the FWD survey report is presented in the table below.

Table 4-4 Summary of FWD Survey

Remaining Life (MSA)	Length (km)					
	LHS Inner	LHS Middle	LHS Outer	RHS Inner	RHS Middle	RHS Outer
<50	16.00	18.00	4.00	8.00	20.00	2.00
50-100	22.00	19.00	6.00	10.00	19.00	8.00
100-300	69.00	65.00	79.00	93.00	67.00	86.00
300-500	11.00	13.00	15.00	7.00	10.00	8.00
>500	6.00	5.00	5.00	2.00	3.00	4.00

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-5 Test result Summary of Subgrade

S. No.	Design Chainage (km)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at 97% MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	24.600	LHS	SC	27	19	8	1.92	8.4	1.78	6.0	9.5	15.2	92.7
2	25.070	RHS	ML	24	NP	NP	1.91	8.7	1.85	6.0	8.3	0.0	96.9
3	26.100	LHS	ML	21	NP	NP	1.95	8.8	1.87	5.0	8.7	0.0	95.9
4	27.050	RHS	SM	21	NP	NP	1.98	8.1	1.84	6.0	9.7	0.0	92.9
5	28.750	RHS	SM	23	NP	NP	2.02	7.9	1.78	6.0	11.0	7.1	88.1
6	29.000	LHS	SM-SC	25	19	6	2.03	8.5	1.97	7.0	11.5	11.1	97.0
7	31.100	RHS	SM	29	NP	NP	1.76	9.9	1.45	5.0	6.7	11.1	82.4
8	32.000	LHS	SM	33	NP	NP	1.72	10.4	1.50	5.0	4.1	14.3	87.2
9	33.000	RHS	CL	27	18	9	1.90	10.3	1.74	12.0	7.5	14.3	91.6
10	34.450	LHS	CL-ML	23	17	6	1.90	9.2	1.87	7.0	6.6	11.1	98.4
11	35.000	RHS	CL	25	17	8	1.89	9.6	1.77	12.0	6.3	15.2	93.7
12	37.000	LHS	SM	21	NP	NP	1.98	8.2	1.87	8.0	9.7	7.1	94.4
13	37.100	RHS	SM-SC	23	16	7	1.95	8.7	1.82	8.0	8.8	11.1	93.3
14	38.050	LHS	CL-ML	25	19	6	1.90	9.6	1.81	6.0	7.4	14.3	95.3
15	39.180	RHS	ML	22	NP	NP	1.89	8.5	1.79	7.0	8.1	0.0	94.7
16	40.010	LHS	CL-ML	25	18	7	1.95	9.3	1.92	5.0	7.0	15.2	98.5
17	41.050	RHS	CL	29	19	10	1.93	10.6	1.86	5.0	6.5	22.2	96.4
18	42.000	LHS	SC	26	18	8	1.96	9.7	1.89	5.0	7.4	12.5	96.4
19	43.400	RHS	CL-ML	29	18	11	1.89	11.7	1.86	6.0	4.1	22.2	98.4
20	44.100	LHS	CL	26	17	9	1.91	10.9	1.88	5.0	4.8	20.0	98.4
21	45.650	RHS	CL-ML	26	19	7	1.93	9.4	1.86	5.0	6.6	14.3	96.4
22	46.000	LHS	SM	23	NP	NP	1.98	8.3	1.81	6.0	9.8	0.0	91.4
23	46.700	RHS	SM-SC	25	19	6	1.99	8.7	1.98	5.0	8.3	14.3	99.5
24	48.100	LHS	SM	21	NP	NP	2.00	7.9	1.85	5.0	10.1	0.0	92.5

S. No.	Design Chainage (km)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at 97% MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
25	48.200	RHS	ML	23	NP	NP	1.91	8.9	1.87	5.0	6.4	10.0	97.9
26	50.100	LHS	ML	23	NP	NP	1.95	8.3	1.88	5.0	9.7	0.0	96.4
27	51.900	LHS	CL-ML	26	19	7	1.90	9.6	1.81	6.0	8.0	14.3	95.3
28	53.150	RHS	ML	23	NP	NP	1.99	8.3	1.86	5.0	9.4	14.3	93.5
29	54.020	LHS	SM	24	NP	NP	2.00	8.4	1.88	5.0	10.8	7.1	94.0
30	54.800	RHS	SC	24	16	8	1.93	10.2	1.88	5.0	6.1	20.0	97.4
31	56.150	LHS	ML	22	NP	NP	1.95	8.3	1.88	7.0	8.2	6.3	96.4
32	57.020	RHS	CL	32	19	13	1.90	12.6	1.86	5.0	3.6	22.2	97.9
33	58.000	LHS	SC	26	18	8	1.94	9.8	1.87	5.0	7.3	15.2	96.4
34	59.200	RHS	CL	26	18	8	1.91	10.3	1.85	5.0	6.6	14.3	96.9
35	60.050	LHS	ML	23	NP	NP	1.88	9.2	1.81	6.0	5.1	0.0	96.3
36	61.120	RHS	CL	25	16	9	1.93	11.2	1.88	6.0	4.3	20.0	97.4
37	62.000	LHS	CL	27	17	10	1.94	11.4	1.88	5.0	4.1	22.2	96.9
38	63.000	RHS	ML	23	NP	NP	1.92	8.6	1.85	5.0	8.7	12.5	96.4
39	64.000	LHS	CL	25	17	8	1.98	9.3	1.94	6.0	7.0	15.2	98.0
40	65.020	RHS	CL	25	16	9	1.90	10.5	1.88	5.0	4.6	25.0	98.9
41	66.680	LHS	CL	25	16	9	1.93	11.5	1.89	9.0	4.1	29.4	97.9
42	67.050	RHS	CL-ML	23	17	6	1.89	9.4	1.84	6.0	6.2	12.5	97.4
43	68.000	LHS	ML	22	NP	NP	1.85	9.1	1.78	8.0	6.7	0.0	96.2
44	69.000	RHS	CL	27	18	9	1.87	11.1	1.80	5.0	4.9	12.5	96.3
45	70.000	LHS	SM	21	NP	NP	2.01	8.1	1.91	5.0	10.8	0.0	95.0
46	71.000	RHS	CI	36	20	16	1.89	12.6	1.87	6.0	3.3	33.3	98.9
47	72.400	LHS	ML	23	NP	NP	1.90	8.8	1.83	6.0	8.7	0.0	96.3
48	72.900	RHS	ML	23	NP	NP	1.94	8.3	1.81	7.0	9.3	0.0	93.3
49	74.000	LHS	ML	21	NP	NP	1.93	8.0	1.86	6.0	9.6	0.0	96.4
50	74.500	RHS	ML	22	NP	NP	1.96	8.3	1.85	5.0	8.3	0.0	94.4

S. No.	Design Chainage (km)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at 97% MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
51	75.050	RHS	ML	24	NP	NP	1.93	8.6	1.86	5.0	9.2	0.0	96.4
52	76.000	LHS	SM	25	NP	NP	2.00	8.1	1.86	6.0	10.7	5.3	93.0
53	77.100	RHS	ML	22	NP	NP	1.92	9.2	1.87	6.0	6.4	0.0	97.4
54	78.000	LHS	SM	23	NP	NP	1.96	8.4	1.87	6.0	9.8	0.0	95.4
55	79.050	RHS	CL	28	18	10	1.88	10.5	1.86	5.0	5.3	20.0	98.9
56	80.480	LHS	SM	23	NP	NP	1.98	8.3	1.90	6.0	9.5	0.0	96.0
57	81.000	RHS	ML	25	NP	NP	1.92	8.8	1.88	5.0	7.4	0.0	97.9
58	82.100	LHS	SM	25	NP	NP	2.02	8.0	1.86	5.0	10.9	0.0	92.1
59	83.000	RHS	ML	24	NP	NP	1.91	8.7	1.81	6.0	7.1	11.1	94.8
60	84.850	LHS	ML	25	NP	NP	1.93	9.2	1.88	5.0	6.9	12.5	97.4
61	84.900	RHS	ML	21	NP	NP	2.00	7.8	1.99	5.0	11.8	0.0	99.5
62	86.000	LHS	CL	27	19	8	1.93	9.1	1.88	6.0	7.3	12.5	97.4
63	87.000	RHS	CL-ML	24	19	5	1.91	9.3	1.83	5.0	8.5	11.1	95.8
64	88.140	LHS	CL	28	18	10	1.94	9.8	1.90	6.0	6.0	20.0	97.9
65	89.000	RHS	SM	25	NP	NP	1.88	8.5	1.76	6.0	9.3	0.0	93.6
66	90.020	LHS	SM	23	NP	NP	1.96	8.1	1.87	6.0	9.1	5.6	95.4
67	91.100	RHS	SM	23	NP	NP	1.99	8.3	1.87	5.0	10.4	6.3	94.0
68	92.600	LHS	ML	21	NP	NP	1.95	8.7	1.88	5.0	8.1	0.0	96.4
69	92.950	RHS	ML	21	NP	NP	1.97	8.0	1.85	6.0	9.0	0.0	93.9
70	94.100	LHS	SM	19	NP	NP	2.03	7.8	1.90	6.0	12.2	0.0	93.6
71	95.020	RHS	ML	22	NP	NP	1.91	8.6	1.86	5.0	7.8	0.0	97.4
72	96.050	LHS	SM	20	NP	NP	2.00	8.2	1.92	5.0	11.9	0.0	96.0
73	97.100	RHS	ML	24	NP	NP	1.93	8.7	1.84	5.0	8.7	11.1	95.3
74	106.420	LHS	SM	23	NP	NP	1.98	8.0	1.87	6.0	9.1	0.0	94.4
75	107.250	RHS	CL	27	18	9	1.90	10.1	1.86	5.0	5.8	20.0	97.9
76	108.000	LHS	ML	24	NP	NP	1.89	9.3	1.85	6.0	7.8	0.0	97.9

S. No.	Design Chainage (km)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at 97% MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
77	108.900	RHS	SM-SC	26	19	7	1.96	8.7	1.86	5.0	9.3	11.1	94.9
78	110.000	LHS	SM	25	NP	NP	2.00	8.3	1.92	5.0	10.2	0.0	96.0
79	111.000	RHS	SC	28	19	9	1.93	9.7	1.87	5.0	6.8	14.3	96.9
80	112.080	LHS	ML	23	NP	NP	1.96	8.5	1.86	6.0	8.5	0.0	94.9
81	112.900	RHS	SM	26	NP	NP	1.97	8.0	1.87	6.0	10.6	7.1	94.9
82	114.010	LHS	CL-ML	25	19	6	1.92	8.6	1.85	7.0	8.1	14.3	96.4
83	115.010	RHS	SM-SC	25	19	6	1.90	8.3	1.83	5.0	7.7	10.0	96.3
84	116.000	LHS	SM	20	NP	NP	1.97	8.1	1.84	6.0	9.8	0.0	93.4
85	116.740	RHS	SM	25	NP	NP	1.99	8.5	1.85	5.0	10.3	0.0	93.0
86	118.000	LHS	CL	29	19	10	1.93	10.5	1.88	5.0	5.6	20.0	97.4
87	118.600	RHS	ML	24	NP	NP	1.97	8.6	1.88	6.0	7.5	0.0	95.4
88	120.000	LHS	SC	27	19	8	1.94	9.8	1.81	6.0	7.7	15.2	93.3
89	121.020	RHS	ML	26	NP	NP	1.97	9.3	1.85	5.0	8.3	0.0	93.9
90	122.000	LHS	ML	23	NP	NP	1.90	9.1	1.84	6.0	7.1	0.0	96.8
91	123.160	RHS	SM	24	NP	NP	2.00	8.3	1.89	3.0	11.3	0.0	94.5
92	124.000	LHS	SM	25	NP	NP	1.98	8.7	1.90	7.0	8.7	0.0	96.0
93	125.000	RHS	CL-ML	24	18	6	1.88	9.8	1.80	8.0	5.6	12.5	95.7
94	126.000	LHS	CL-ML	25	18	7	1.95	10.2	1.88	7.0	7.3	14.3	96.4
95	127.020	RHS	SM	26	NP	NP	1.92	8.7	1.85	7.0	8.4	0.0	96.4
96	128.100	LHS	ML	24	NP	NP	1.90	8.1	1.82	8.0	7.2	0.0	95.8
97	129.050	RHS	SM	24	NP	NP	1.97	7.9	1.89	8.0	10.1	0.0	95.9
98	131.000	LHS	SM	24	NP	NP	1.93	8.6	1.80	7.0	9.3	7.1	93.3
99	132.000	RHS	SM	24	NP	NP	1.97	8.0	1.85	7.0	8.7	7.1	93.9
100	133.000	LHS	CL	27	17	10	1.94	10.7	1.89	7.0	5.6	14.3	97.4
101	134.000	RHS	CL-ML	24	17	7	1.94	9.3	1.89	8.0	7.7	12.5	97.4
102	136.000	LHS	SM	25	NP	NP	1.98	8.1	1.87	6.0	9.0	0.0	94.4

S. No.	Design Chainage (km)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at 97% MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
103	137.000	RHS	SM	22	NP	NP	1.93	8.5	1.87	8.0	8.5	0.0	96.9
104	138.350	LHS	SM	23	NP	NP	1.99	8.7	1.91	7.0	10.1	0.0	96.0
105	140.350	RHS	ML	25	NP	NP	1.97	8.4	1.90	7.0	9.3	10.0	96.4
106	140.900	LHS	SM	21	NP	NP	2.02	8.0	1.84	7.0	11.6	0.0	91.1
107	142.200	RHS	ML	24	NP	NP	1.97	9.1	1.90	8.0	7.5	5.9	96.4
108	144.150	LHS	ML	23	NP	NP	1.90	8.5	1.83	6.0	10.7	0.0	96.3
109	146.050	RHS	ML	27	NP	NP	1.84	8.8	1.79	7.0	9.3	0.0	97.3
110	146.950	LHS	CL	31	18	13	1.89	11.3	1.84	8.0	5.0	22.2	97.4
111	148.000	RHS	ML	24	NP	NP	1.88	8.6	1.80	8.0	6.9	0.0	95.7
112	149.100	LHS	ML	27	NP	NP	1.93	9.1	1.84	7.0	7.2	0.0	95.3
113	149.800	RHS	SM	23	NP	NP	1.97	8.3	1.84	7.0	8.0	0.0	93.4

Table 4-6 Test Result of Core Cutting of Existing BT

Sr. No.	Chainage (km)	Side (LHS / RHS)	Type of Material Tested	Source of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												Bitumen Content (%)	Gradation Conforming to MoRTH 5th Revision of Table 500-10 & Table 500-17
					45	37.5	26.5	19.0	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.08	
1	28+600	RHS	Lower DBM	Core	100	100	100	95.1	58.6	29.2	16.3	9.7	7.9	7.0	5.7	3.5	1.7	2.98	Not Conforming to Any Gradation

Sr. No.	Chainage (km)	Side (LHS / RHS)	Type of Material Tested	Source of Sample	Cumulative Percentage of Passing through IS Sieve (mm)													Bitumen Content (%)	Gradation Conforming to MoRTH 5th Revision of Table 500-10 & Table 500-17
					45	37.5	26.5	19.0	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.08		
2	29+000	LHS	BC	Core	100	100	100	97.9	77.7	49.2	30.0	23.0	17.4	14.2	9.8	5.3	2.1	5.02	Not Conforming to Any Gradation
3	33+600	LHS	DBM	Core	100	100	100	100.0	92.7	75.3	49.9	35.1	27.2	23.1	18.5	12.4	5.9	4.32	19mm, 13.2mm Sieve Material slightly Finer side in DBM Grade-II
4	34+100 SR	LHS	BC	Core	100	100	100	100.0	93.8	62.6	38.4	27.4	21.5	18.7	15.7	11.1	5.4	4.84	13.2mm Sieve Material slightly Finer side, 2.36mm Sieve Material slightly Coarser side in BC Grade-I
5	38+100	RHS	BC	Core	100	100	100	100.0	100.0	82.6	51.4	29.4	21.3	17.9	14.4	10.4	5.0	4.68	13.2mm, 9.5mm Sieve Material slightly Finer side in BC Grade-I
6	41+500	LHS	DBM	Core	100	100	100	97.8	89.3	64.2	40.7	24.9	19.6	16.9	13.8	8.7	3.4	4.58	19.0mm,13.2mm Sieve Material slightly Finer side, 2.36mm Sieve Material slightly Coarser side in DBM Grade-II

Sr. No.	Chainage (km)	Side (LHS / RHS)	Type of Material Tested	Source of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												Bitumen Content (%)	Gradation Conforming to MoRTH 5th Revision of Table 500-10 & Table 500-17
					45	37.5	26.5	19.0	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.08	
7	42+150	RHS	DBM	Core	100	100	100	94.1	83.8	59.1	35.4	22.6	17.5	15.1	12.9	9.7	5.4	5.21	13.2mm Sieve Material slightly Finer side, 4.75mm & 2.36mm Sieve Material slightly Coarser side in DBM Grade-II
8	43+500	LHS	BC	Core	100	100	100	96.7	74.5	55.4	41.8	30.0	21.2	16.6	12.4	8.8	5.0	5.75	Conforming to BC Grade-I
9	47+950	RHS	BC	Core	100	100	100	100.0	98.2	76.4	42.4	29.5	23.5	20.3	16.9	11.2	5.0	5.75	13.2mm, 9.5mm Sieve Material slightly Finer side in BC Grade-I
10	57+850	RHS	BC	Core	100	100	100	100.0	97.1	75.8	47.5	30.4	22.0	18.7	14.9	10.4	5.2	4.88	13.2mm, 9.5mm Sieve Material slightly Finer side in BC Grade-I
11	66+100 SR	LHS	BC	Core	100	100	100	93.7	78.8	71.7	45.1	30.2	25.0	21.7	17.0	9.3	3.4	4.55	Conforming to BC Grade-I
12	67+750	RHS	DBM	Core	100	100	100	100.0	92.6	62.4	39.4	27.6	21.3	18.7	15.4	8.8	2.7	4.73	19mm, 13.2mm Sieve Material slightly Finer side, 2.36mm

Sr. No.	Chainage (km)	Side (LHS / RHS)	Type of Material Tested	Source of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												Bitumen Content (%)	Gradation Conforming to MoRTH 5th Revision of Table 500-10 & Table 500-17
					45	37.5	26.5	19.0	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.08	
																		Sieve Material slightly Coarser side in DBM Grade-II
13	73+300	LHS	DBM	Core	100	100	100	100.0	82.0	56.1	44.8	39.4	37.2	34.8	30.7	26.1	20.5	4.64	19mm, 13.2mm, 300µ, 75µ Sieve Material slightly Finer side in DBM Grade-II
14	78+150	RHS	BC	Core	100	100	100	100.0	94.7	71.2	48.1	33.7	26.4	22.6	17.8	11.0	2.9	5.42	13.2mm Sieve Material slightly Finer side in BC Grade-I
15	86+000	LHS	BC	Core	100	100	100	100.0	84.2	56.6	39.1	29.2	23.5	20.4	16.3	10.7	3.9	4.95	13.2mm Sieve Material slightly Finer side in BC Grade-I
16	91+600 SR	LHS	DBM	Core	100	100	100	98.2	75.8	58.2	35.3	24.3	19.2	16.6	13.9	9.9	4.4	4.18	19mm Sieve Material slightly Finer side, 4.75mm & 2.36mm Sieve Material slightly Coarser side in DBM Grade-II
17	93+400	LHS	DBM	Core	100	100	100	96.8	78.3	48.4	33.1	23.3	19.1	16.9	14.1	9.0	2.8	4.29	19mm Sieve Material slightly Finer side,

Sr. No.	Chainage (km)	Side (LHS / RHS)	Type of Material Tested	Source of Sample	Cumulative Percentage of Passing through IS Sieve (mm)													Bitumen Content (%)	Gradation Conforming to MoRTH 5th Revision of Table 500-10 & Table 500-17
					45	37.5	26.5	19.0	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.08		
																			4.75mm & 2.36mm Sieve Material slightly Coarser side in DBM Grade-II
18	97+350	RHS	DBM	Core	100	100	100	94.4	76.7	50.9	32.8	22.3	17.7	15.4	12.8	9.1	3.7	4.61	4.75mm, 2.36mm Sieve Material slightly Coarser side in DBM Grade-II
19	113+900	LHS	BC	Core	100	100	100	100.0	84.6	68.9	46.8	34.0	25.1	21.5	18.4	12.5	4.6	4.83	13.2mm Sieve Material slightly Finer side in BC Grade-I
20	127+700	RHS	BC	Core	100	100	100	93.3	75.1	64.6	46.1	29.9	21.2	17.4	13.9	9.2	2.9	4.62	Conforming to BC Grade-I

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 2500 mm/km.

Currently, the Project Road is under Capacity Augmentation. Execution of 6-laning of Project Road has started in FY 2023. The 6-laning work is completed except 3.495 km. Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-7 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2025 to FY 2029	-	-
2	FY 2030 to FY 2031	Major maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
3	FY 2032 to FY 2036	-	-
4	FY 2037 to FY 2038	Major maintenance with 30 mm BC (VG-40) (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
5	FY 2039 to FY 2040	-	-

**Actual end of concession period as per Concession Agreement is February 2035. As informed by Cube Highways, the revised concession period is up to FY 2040.*

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per SoR of Uttar Pradesh PWD, Aligarh Division for the year 2020-21. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Schedule of Rates, Government of Bihar.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from SAIL.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with MoRTH standard data book.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	9,480
2	Bituminous Concrete (VG-30)	Cum	10,413
3	Bituminous Concrete (VG-40)	Cum	10,689
4	Bituminous Concrete (PMB)	Cum	12,463
5	Milling	Sqm	95
6	Micro-surfacing	Sqm	173
7	Kerb Relaying	Rmt	440
8	Road Marking	Sqm	590
9	Road Studs	Nos.	244

5.3 Balance Work Cost

As discussed in the previous chapter, the Concessionaire has completed the 6-laning work in the available length except 3.495 kms.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the

operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (Rs.) (FY 2026 to FY 2040)
1	Salary and Welfare Expenses	1,08,90,000
2	Tolling Operations Services	4,62,97,123
3	Toll Security Services	2,51,21,532
4	Incident Management & Emergency Services	4,14,40,732
5	Electricity and Diesel Charges	2,39,65,652
6	TMS / HTMS / System Expenses	1,35,63,308
7	Office Operating Expenses	48,19,238
8	Vehicle Running Expenses	70,24,776
9	Professional Fees Expense	1,17,03,863
10	Community Development	61,96,163
11	Communication Expenses	6,88,463
12	Conveyance Expenses	4,13,078
13	Insurance Expense	1,58,34,638
14	IE Fees	1,99,65,413
15	Routine Maintenance Cost (Project Road)	6,02,64,056
16	Horticulture & ROW Maintenance	4,32,79,474
17	Contingency	91,16,959

Sr. No.	Particulars	Amount (Rs.) (FY 2026 to FY 2040)
	Total Cost (Rs.)	**34,05,84,465**
	Total Cost (Cr.)	**34.06**
	Per km Cost (Lakhs)	27.21

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Table 5-4 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2025 to FY 2029	-	
2	FY 2030 to FY 2031	191.87	
3	FY 2032 to FY 2036	-	
4	FY 2037 to FY 2038	171.43	
5	FY 2039 to FY 2040	-	
Total Cost (Cr.)		**363.30**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2030	14.80	
2	FY 2037	14.80	
Total Cost (Cr.)		**29.60**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-5 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%

Year	Escalation	Year	Escalation
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%		

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40
1	Routine O&M Cost															
1.01	Salary and Welfare Expense	1.09	1.15	1.21	1.27	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.75	1.82	1.89	1.97
1.02	Tolling Operations Services	4.63	4.89	5.14	5.39	5.63	5.87	6.11	6.36	6.62	6.88	7.16	7.45	7.74	8.05	8.37
1.03	Toll Security Services	2.51	2.65	2.79	2.93	3.06	3.18	3.32	3.45	3.59	3.73	3.88	4.04	4.20	4.37	4.54
1.04	Incident Management Services	4.14	4.37	4.60	4.83	5.04	5.25	5.47	5.69	5.92	6.16	6.41	6.66	6.93	7.21	7.49
1.05	Electricity and Diesel Charges	2.40	2.53	2.66	2.79	2.91	3.04	3.16	3.29	3.43	3.56	3.71	3.85	4.01	4.17	4.33
1.06	TMS/HTMS/System Expenses	1.14	1.61	2.34	2.91	0.67	1.44	1.50	1.56	2.18	3.14	3.86	0.89	1.90	1.97	2.76
1.07	Office Operating Expenses	0.48	0.51	0.54	0.56	0.59	0.61	0.64	0.66	0.69	0.72	0.75	0.78	0.81	0.84	0.87
1.08	Vehicle Running Expenses	0.70	0.74	0.78	0.82	0.85	0.89	0.93	0.97	1.00	1.04	1.09	1.13	1.17	1.22	1.27
1.09	Professional Fees Expense	1.17	1.23	1.30	1.36	1.42	1.48	1.55	1.61	1.67	1.74	1.81	1.88	1.96	2.03	2.12
1.10	Community Development	0.62	0.65	0.69	0.72	0.75	0.79	0.82	0.85	0.89	0.92	0.96	1.00	1.04	1.08	1.12
1.11	Communication Expenses	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.12
1.12	Conveyance Expenses	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07
1.13	Insurance Expense	1.58	1.67	1.76	1.84	1.93	2.01	2.09	2.18	2.26	2.35	2.45	2.55	2.65	2.75	2.86
1.14	IE Fees	2.00	2.11	2.22	2.33	2.43	2.53	2.64	2.74	2.85	2.97	3.09	3.21	3.34	3.47	3.61
1.15	Routine Maintenance Cost	6.03	6.36	6.69	7.02	7.33	7.64	7.96	8.28	8.61	8.96	9.32	9.69	10.08	10.48	10.90
1.16	Horticulture & ROW Maintenance	4.33	4.57	4.81	5.04	5.26	5.49	5.71	5.95	6.19	6.43	6.69	6.96	7.24	7.53	7.83
1.17	Miscellaneous and Contingency	0.91	0.96	1.01	1.06	1.11	1.16	1.20	1.25	1.30	1.36	1.41	1.47	1.52	1.59	1.65
	Subtotal of O&M Cost	33.84	36.12	38.66	40.99	40.44	42.90	44.67	46.49	48.91	51.74	54.43	53.48	56.58	58.83	61.89
2	Major Maintenance Cost	-	-	-	-	108.01	108.01	-	-	-	-	-	119.61	119.61	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	-	-	-	18.00	-	-	-	-	-	-	23.80	-	-	-
4	Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**33.84**	**36.12**	**38.66**	**40.99**	**166.46**	**150.91**	**44.67**	**46.49**	**48.91**	**51.74**	**54.43**	**196.88**	**176.19**	**58.83**	**61.89**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost (FY 2026)	
Ordinary Repair Cost for Flexible (with GST)	**6,02,64,056**
(Inclusive of GST)	**= 4.81 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,00,912**	**Urban** More than 4500 CVD **2,41,376**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	307396.00	369305.00	-	-	-	-
		Paved shoulder	1.70	341551.00	410339.00	8.71	10.00	29,74,909	41,03,390
2	Six lane with divided carriageway	without Paved shoulder	2.09	419906.00	504476.00	-	-	-	-
		with Paved shoulder	2.26	454061.00	545510.00	67.02		3,04,28,898	-
3	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	514335.00	617923.00	-	-	-	-
		with Paved shoulder	2.76	554517.00	666198.00	31.56	7.89	1,75,00,557	52,56,302
					TOTAL		**125.175**		**6,02,64,056**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			10709
	Cost in Rupees			26,771
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			428
	Cost in Rupees			21,417
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			83
	Cost in Rupees			20,833
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			56
	Cost in Rupees			8,338
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			428
	Cost in Rupees			32,126
	v) Road marking	14%	Once in 7th year & @	28556

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
			Repaired location	
	SUB TOTAL			**1,38,041**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**2,00,912**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	11111
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**40,464**
	GRAND TOTAL (Urban)			**2,41,376**

ANNEXURE II - MAJOR MAINTENANCE COST

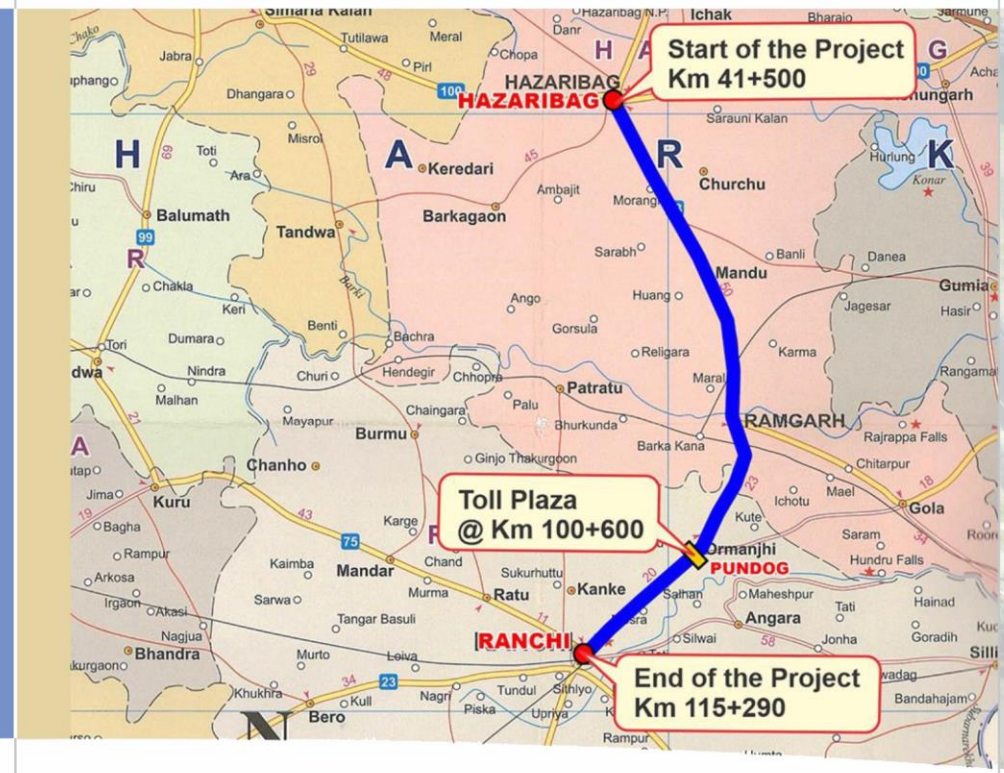
Major Maintenance Cost (FY 2030 & FY 2031)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						32,32,001	18	5,73,03,370
	4 lane section									
	For BC	Sqm	2	18,710	9.00		3,36,780	3,36,780		
	For DBM	Sqm	2	936	7.50		14,033	14,033		
	For Misc. Location	Sqm	2	936	9.00		16,839	16,839		
	6 lane section									
	For BC	Sqm	2	1,04,729	12.50		26,18,235	26,18,235		
	For DBM	Sqm	2	5,236	11.00		1,15,202	1,15,202		
	For Misc. Location	Sqm	2	5,236	12.50		1,30,912	1,30,912		
2	BC with 30 mm	Cum					93,083	93,083	12,463	1,16,00,83,778
	4 lane section	Cum	2	19,646	9.00	0.03	10,609			
	6 lane section	Cum	2	1,09,966	12.50	0.03	82,474			
3	DBM with 50 mm	Cum					6,462	6,462	9,480	6,12,56,991
	4 lane section	Cum	2	936	7.50	0.05	702			
	6 lane section	Cum	2	5,236	11.00	0.05	5,760			
4	Milling	Sqm					1,29,235	1,29,235	95	1,22,12,692
	4 lane section	Cum	2	936	7.50		14,033			
	6 lane section	Cum	2	5,236	11.00		1,15,202			
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	3,367	3.50	4.50	2,693	2,693	119	3,20,492
6	Dismantling of CC Panels @ 3% area	Cum	3%		53,023	0.30	477	477	995	4,74,817
7	Replacement of Panels - PQC @ 3% area	Cum	3%		53,023	0.30	477	477	10,589	50,53,327
	Service Road									
8	Tack coat	Sqm	1	38,367	7.91		3,03,629	3,03,629	18	53,83,333
9	BC with 30 mm	Cum	1	38,367	7.91	0.03	9,109	9,109	10,413	9,48,51,509
10	Micro Surfacing	Sqm	1	38,367	7.91		3,03,629	3,03,629	173	5,26,03,638
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									

Major Maintenance Cost (FY 2030 & FY 2031)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
11	Tack coat	Sqm	1	1,026	23		23,765	23,765	18	4,21,362
12	Wearing Coat BC with 30 mm	Cum	1	1,026	23	0.03	713	713	10,413	74,24,175
13	Milling of Ex. Wearing Coat	Sqm	1	1,026	23		23,765	23,765	95	22,45,837
14	Painting of Crash Barrier	Sqm	4	1,026		1.20	4,923	4,923	83	4,08,599
	Other Works									
15	Replacement of Road Stud						30,606	30,606	244	74,67,864
	Normal Road Stud - 4 Lane Section	Nos	2	2,288			4,576			
	Normal Road Stud - 6 Lane Section	Nos	2	13,015			26,030			
16	Painting of Kerb	Sqm	2	1,61,806		0.315	1,01,938	1,01,938	105	1,07,03,493
17	Road Marking	Sqm					1,18,445	1,18,445	590	6,98,82,311
	4 Lane MCW Section									
	a) Median & Edge line	Sqm	4	19,646	0.15		11,787			
	b) Lane line	Sqm	2	6,483	0.10		1,297			
	6 Lane MCW Section									
	a) Median & Edge line		4	1,11,805	0.15		67,083			
	b) Lane line		4	36,896	0.10		14,758			
	Service Road									
	a) Edge line	Sqm	2	76,734	0.10		15,347			
	b) Lane line	Sqm	1	25,322	0.10		2,532			
	Junction crossing	Sqm					5,640			
18	Filling of Earthen shoulder	Cum					1,036	1,036	464	4,80,765
	MCW		2	62,838	1.50	-	-			
	Service Road		1	23,020	1.50	0.03	1,036			
19	Median Filling	Cum	-	1,02,609	4.17	0.05	-	-	508	-
20	Miscellaneous	5%								7,74,28,918
Total Major Maintenance Cost (Rs.)										**1,62,60,07,272.56**
Total Major Maintenance Cost with GST (18%) (Rs.)										**1,91,86,88,581.62**
Total Major Maintenance Cost with GST (Cr.)										**191.87**
Per km Cost (lakh)										**153.28**
Escalation Factor for Major Maintenance Cost (FY-2030-31)										**1.20**
Total Escalated Cost for Major Maintenance Cost (FY-30 & FY-31) (Cr.)										**216.03**

Major Maintenance Cost (FY 2037 & FY 2038)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						32,32,001	18	5,73,03,370
	4 lane section									
	For BC	Sqm	2	18,710	9.00		3,36,780	3,36,780		
	For DBM	Sqm	2	936	7.50		14,033	14,033		
	For Misc. Location	Sqm	2	936	9.00		16,839	16,839		
	6 lane section									
	For BC	Sqm	2	1,04,729	12.50		26,18,235	26,18,235		
	For DBM	Sqm	2	5,236	11.00		1,15,202	1,15,202		
	For Misc. Location	Sqm	2	5,236	12.50		1,30,912	1,30,912		
2	BC with 30 mm	Cum					93,083	93,083	10,689	99,49,32,245
	4 lane section	Cum	2	19,646	9.00	0.03	10,609			
	6 lane section	Cum	2	1,09,966	12.50	0.03	82,474			
3	DBM with 50 mm	Cum					6,462	6,462	9,480	6,12,56,991
	4 lane section	Cum	2	936	7.50	0.05	702			
	6 lane section	Cum	2	5,236	11.00	0.05	5,760			
4	Milling	Sqm					1,29,235	1,29,235	95	1,22,12,692
	4 lane section	Cum	2	936	7.50		14,033			
	6 lane section	Cum	2	5,236	11.00		1,15,202			
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	3,367	3.50	4.50	2,693	2,693	119	3,20,492
6	Dismantling of CC Panels @ 3% area	Cum	3%		53,023	0.30	477	477	995	4,74,817
7	Replacement of Panels - PQC @ 3% area	Cum	3%		53,023	0.30	477	477	10,589	50,53,327
	Service Road									
8	Tack coat	Sqm	1	38,367	7.91		3,03,629	3,03,629	18	53,83,333
9	BC with 30 mm	Cum	1	38,367	7.91	0.03	9,109	9,109	10,413	9,48,51,509
10	Micro Surfacing	Sqm	1	38,367	7.91		3,03,629	3,03,629	173	5,26,03,638
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1,026	23		23,765	23,765	18	4,21,362
12	Wearing Coat BC with 30 mm	Cum	1	1,026	23	0.03	713	713	10,689	76,20,632

Major Maintenance Cost (FY 2030 & FY 2031)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
13	Milling of Ex. Wearing Coat	Sqm	1	1,026	23		23,765	23,765	95	22,45,837
14	Painting of Crash Barrier	Sqm	4	1,026		1.20	4,923	4,923	83	4,08,599
	Other Works									
15	Replacement of Road Stud						30,606	30,606	244	74,67,864
	Normal Road Stud - 4 Lane Section	Nos	2	2,288			4,576			
	Normal Road Stud - 6 Lane Section	Nos	2	13,015			26,030			
16	Painting of Kerb	Sqm	2	1,61,806		0.315	1,01,938	1,01,938	105	1,07,03,493
17	Road Marking	Sqm					1,18,445	1,18,445	590	6,98,82,311
	4 Lane MCW Section									
	a) Median & Edge line	Sqm	4	19,646	0.15		11,787			
	b) Lane line	Sqm	2	6,483	0.10		1,297			
	6 Lane MCW Section									
	a) Median & Edge line		4	1,11,805	0.15		67,083			
	b) Lane line		4	36,896	0.10		14,758			
	Service Road									
	a) Edge line	Sqm	2	76,734	0.10		15,347			
	b) Lane line	Sqm	1	25,322	0.10		2,532			
	Junction crossing	Sqm					5,640			
18	Filling of Earthen shoulder	Cum					1,036	1,036	464	4,80,765
	MCW		2	62,838	1.50	-	-			
	Service Road		1	23,020	1.50	0.03	1,036			
19	Median Filling	Cum	-	1,02,609	4.17	0.05	-	-	508	-
20	Miscellaneous	5%								6,91,81,164
Total Major Maintenance Cost (Rs.)										**1,45,28,04,442.94**
Total Major Maintenance Cost with GST (18%) (Rs.)										**1,71,43,09,242.67**
Total Major Maintenance Cost with GST (Cr.)										**171.43**
Per km Cost (lakh)										**136.95**
Escalation Factor for Major Maintenance Cost (FY 2037-38)										**1.58**
Total Escalated Cost for Major Maintenance Cost (FY-37 & FY-38) (Cr)										**239.21**

FP Project Management



Technical Due Diligence of Hazaribagh - Ranchi Section (from km.41+500 to km.115+290) of NH-20 in the state of Jharkhand on TOT Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 8
3.1 Pavement 8
3.1.1 Pavement Condition Survey 8
3.2 Service Road 20
3.3 Major / Minor Junction 27
3.4 Condition Survey of Structure 28
3.5 Condition Survey of Culvert 54
3.6 Drainage 57
3.7 Slope Protection 60
3.8 Road Furniture 62
3.9 Pavement Marking 63
3.10 Avenue Plantation and Median Plantation 76
3.11 Toll Plaza 78
3.12 Lane Equipment 81
3.12.1 RFID ETC Transceiver 81
3.12.2 Lane Controller with Industrial PC 82
3.12.3 Automatic Vehicle Classification (AVC) Sensors 82
3.12.4 Automatic Lane Barrier 83

3.12.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 83
3.12.6 Incident Capture Camera (AVC Camera) 84
3.12.7 License Plate Image Capture Camera (LPIC) 84
3.12.8 Over Head Lane Signal (OHLS) 84
3.12.9 Toll Booth Equipment 85
3.12.10 Medium Speed Weigh in Motion (MSWIM) 86
3.13 Plaza Equipment 86
3.13.1 TMS Server 86
3.13.2 55" LED screen for CCTV monitoring 86
3.13.3 Workstations in Control Room, POS room 87
3.14 Truck Lay-byes 87
3.15 Traffic Aid Post and Medical Aid Post 89
3.16 Toilet Block 89
3.17 Bus Bays and Passenger Shelters 89
3.18 Balance Work Status 91
3.19 Operation and Maintenance 93
3.19.1 O&M Contract 93
3.19.2 Organization Chart 93
3.19.3 Operation 94
3.19.4 Routine Maintenance 94
4 Pavement Investigation and Assessment 95
4.1 General 95
4.2 Axle Load and VDF 95
4.3 Design Traffic 95
4.4 Network Survey Vehicles (NSV) Survey 96
4.5 Structural Investigations 96
4.6 Test pit and Subgrade Investigation 96
4.7 Periodic Maintenance Strategy 96
5 Cost Estimates 98
5.1 General 98
5.2 Rate Assumption 98
5.3 Balance Work Cost 99
5.4 Routine O&M Cost 99
5.5 Major Maintenance Cost 101
5.6 Periodic Replacement of TMS / ATMS System 101
5.7 Escalation Assumption 101
5.8 Summary of Cost 102

Annexures 104
Annexure I - Routine Maintenance Cost 105
Annexure II - Major Maintenance Cost 110

List of Tables

Table 3-1 Summary of Structures 28
Table 3-2 Condition Survey of Major Structure 29
Table 3-3 Details of New Installation of Safety Barriers 62
Table 3-4 Summary for Road Furniture Items 62
Table 3-5 Details of Summary for Toll Plaza Items 78
Table 4-1 Vehicle Damage Factor 95
Table 4-2 MSA Calculation 95
Table 4-3 Major Maintenance Cycle 97
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 98
Table 5-2 Summary of Unit Rates 99
Table 5-3 Summary of Operation Cost 100
Table 5-4 Summary of Major Maintenance Cost 101
Table 5-5 Escalation 101

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start and End of Project Road (LHS) 5
Figure 2-3 Start and End of Project Road (RHS) 5
Figure 3-1 Photographs of Pavement Condition (RHS) 9
Figure 3-2 Photographs of Pavement Condition (LHS) 14
Figure 3-3 Photographs of Service Road (RHS) 21
Figure 3-4 Photographs of Service Road (LHS) 23
Figure 3-5 Photographs of Major Junction 27
Figure 3-6 Photographs of Minor Junction 27
Figure 3-7 Photographs of Major Structures 42
Figure 3-8 Photographs of Box Culvert / Pipe Culvert 55
Figure 3-9 Photographs of Existing Drains (RHS) 57
Figure 3-10 Photographs of Existing Drains (LHS) 59
Figure 3-11 Photographs of Slope Protection and Chute Drain 60
Figure 3-12 Photographs of Pavement Marking 63
Figure 3-13 Photographs of Road Studs 65
Figure 3-14 Photographs of Road Signages 66
Figure 3-15 Photographs of Street Light 70
Figure 3-16 Photographs of MBCB / Crash Barrier 72
Figure 3-17 Photographs of Delineator 73
Figure 3-18 Photographs of Pedestrian Guard Rail 74
Figure 3-19 Photographs of Road Land Boundary 76
Figure 3-20 Photographs of Median Plantation 76
Figure 3-21 Photographs of Avenue Plantation 77
Figure 3-22 Photographs of Toll Plaza 79
Figure 3-23 Details of Truck Lay-bye 87
Figure 3-24 Photograph of Truck Lay-bye 88
Figure 3-25 Photographs of Toilet Blocks 89
Figure 3-26 Photographs of Bus Bay / Passenger Shelter 90

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Hazaribagh - Ranchi section of NH-20 (Old NH-33) from km. 41+500 to km. 115+290 in the State of Jharkhand (hereinafter referred as "Project Road").

Hazaribagh Tollway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Hazaribagh to Ranchi Section (from km.41+500 to km.115+290) of NH-20 or Project Road under TOT Bundle-3. The project was awarded to Concessionaire on 27th December 2019 with a concession period of 30 years. The length of Project Road is 73.79 kms with one toll plaza at Pundag at km. 100+600.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy.
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period.
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period.
- Review of balance work cost for Project Road including estimation of quantities and item rates.

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our proposed team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader will coordinate the activities between all the key staff who will work closely together. The key is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader will act as the point of contact for Client Technical Study.

The technical study include review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the Consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **12th January 2025** to **14th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, and an overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates**: The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Hazaribagh Tollway Private Limited**, is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 27th December 2019. The Appointed Date for the Project Road is 20th October 2020.

Presently, there are two Concessionaires for Project Road. One is Cube Highways who maintains Toll Operation activities (TOT Concessionaire) and the other Concessionaire ELSAMAX a group of ILFS, (Annuity Concessionaire) who maintain the project length as per their original scope of work.

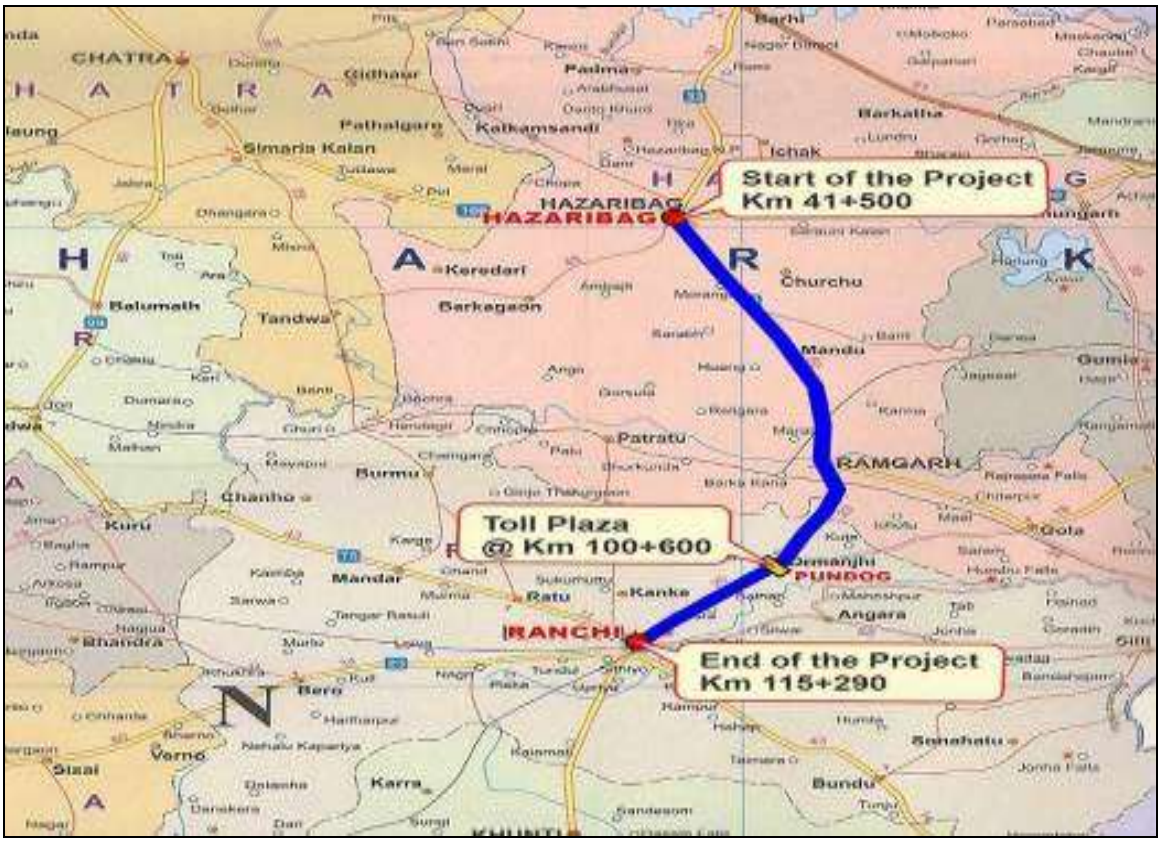
The project is being developed through Annuity BOT mode under TOT (Toll Operate Transfer) Bundle-III with a concession period of 30 years from the Appointed Date while O&M will start from March 2028 as per CA Clause 5.1.4 of Article 5.

2.2 Location

The Project Road is part of National Highway No. 20, NH-20 (Old NH-33) of Hazaribagh - Ranchi section in the state of Jharkhand. The total project length is 73.79 kms.

The Location Map of the Project Road is presented below.

Figure 2-1 Location Map



The photographs taken during the site visit are presented below.

Figure 2-2 Start and End of Project Road (LHS)

Figure 2-3 Start and End of Project Road (RHS)

2.3 Climate

Mainly there are three types of seasons observed. These are mainly Summer, Winter and monsoon. The summer in Hazaribagh begins from March to May. The normal temperature in these month ranges from 24 °C to 32 °C. Monsoon in Hazaribagh begins in June and ends in September and the average rainfall in this zone is 1234.5 mm. The average relative humidity of Hazaribagh is around 68% although it varies from 44% during summer to 89% during monsoon. The most humid month of the year is August with humidities varying from 65% to 98%.

2.4 Terrain

The Project Road passes through rolling to hilly terrain.

2.5 Abutting Land Use

The following are the various developments that are anticipated in the Four Laning of Hazaribagh Ranchi Section.

- This Project Road reduces the travel time for getting access to Dhanbad, Bokaro, Patna Kodarama and Bihar Sharif which results in better industrial growth and economy.

- A lot of development is anticipated in Hazaribagh Ranchi Section, which transits through NH-20 / NH-33 and hence the development / maintenance of this Project Road would accelerate the development as majority of traffic would use the highway for getting access to Varanasi and Patna.

- The tourism industry get a great booster as majority of people using this Project Road for going to places like Gaya, Kolkata and Jhariya etc.,

- A lot of commercial establishment along the Project Road in the form of hotels, Snack parlors may be developed in future as most of the road passing through dense forest and a local tourism may developed in the project length.

2.6 Right of Way

The width of the existing Right of Way (ROW) for the Project Road varies from 45.0 m to 60.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Hazaribagh (km. 41+500) to Ranchi (km. 115+290) has been developed as a four-lane divided carriageway with median width varies from 1.5 m to 4.5 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Tolling, operation, management, maintenance, and transfer of the Project Highway subject to and in accordance with the provisions of this Agreement.
c) Performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km	73.79	From March 2028
2	Construction of Service Road	km	7.105	14.21 kms (B/S)
3	Vehicular Underpasses	Nos.	01	
4	Widening of Existing Pipe Culvert	Nos.	05	
5	New Construction of Box Culvert	Nos.	0	
6	Reinforce Cement concrete cover Drain with footpath	km	7.105	14.21 kms (B/S)
7	Road marking by Thermoplastic Paint	km	14.20	
8	Rigid Concrete Barrier	km	1.460	
9	Pedestrian Guard Rail	km	11.400	
10	Additional cantilever Sign Boards	Nos.	06	
11	Bus Shelter	Nos.	02	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.5 m with earthen shoulder of 1.0 to 2.5 m on either side. The Project Road has median width varies from 1.5 m to 4.5 m.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **12th January 2025** to **14th January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good to Fair.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (RHS)

km. 110+700

km. 109+600

km. 103+700

km. 102+400

km. 93+800

km. 91+000

km. 90+325

km. 87+700

km. 83+600

km. 81+500

km. 77+950

km. 73+100

km. 67+400

km. 67+000

km. 63+900

km. 62+700

km. 59+500

km. 57+650

km. 54+600

km. 51+900

km. 50+900

km. 50+900

km. 49+300

Shoulder - RHS

km. 110+700

km. 109+600

km. 103+700

km. 102+400

km. 93+800

km. 91+000

km. 90+325

km. 87+700

km. 83+600

km. 81+500

km. 77+950

km. 73+100

km. 67+400

km. 67+000

km. 62+700

km. 59+500

km. 57+650

km. 54+600

km. 51+900

km. 50+900

Figure 3-2 Photographs of Pavement Condition (LHS)

km. 43+500

km. 44+900

km. 48+210

km. 49+050

km. 50+900

km. 53+300

km. 54+150

km. 54+500

km. 58+950

km. 63+000

km. 63+400

km. 68+890

km. 70+800

km. 83+000

km. 86+300

km. 89+150

km. 89+300

km. 91+700

km. 97+300

km. 101+750

km. 108+950

km. 110+200

km. 114+200

km. 1144+800

Shoulder - LHS

km. 43+500

km. 44+900

km. 48+210

km. 49+050

km. 50+900

km. 53+300

km. 58+950

km. 54+500

km. 68+890

km. 70+800

km. 83+000

km. 86+300

km. 91+700

km. 97+300

km. 101+750

3.2 Service Road

a) Construction of New Service Road

The width of service road is proposed 7.5 m and is proposed to be constructed in built-up area and adjoining underpass locations.

b) Existing Service Roads

The width of service road is found 4.0 m to 7.0 m partially and it is constructed in built-up area and adjoining Road Over Bridge (ROB) locations.

The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service Road (RHS)

km. 114+000

km. 113+200

km. 110+600

km. 108+700

km. 107+500

km. 106+950

km. 92+600

km. 92+400

km. 89+700

km. 82+030

km. 79+000

km. 78+720

km. 74+300

km. 65+200

km. 64+600

km. 64+120

km. 56+000

km. 55+350

km. 45+900

Figure 3-4 Photographs of Service Road (LHS)

km. 43+700

km. 45+800

km. 46+450

km. 46+900

km. 55+200

km. 56+200

km. 63+100

km. 63+600

km. 64+450

km. 73+800

km. 74+300

km. 75+400

km. 78+400

km. 81+900

km. 89+200

km. 92+200

km. 106+950

km. 107+400

km. 108+050

km. 109+300

Jan 14, 2025 11:05:34
NH-33
Dimanjhi
South Chotanagpur Division
Jharkhand

km. 114+400

3.3 Major / Minor Junction

The Project Road has 5 Nos. of existing major junctions and 73 Nos. of minor junctions. The photographs taken during site visit is presented as below:

Figure 3-5 Photographs of Major Junction

km. 92+400 Ramgarh Chowk

km. 89+800 (Connecting NH-23 / SH)

km. 77+600 Sarana Chowk

Figure 3-6 Photographs of Minor Junction

km. 101+870

km. 99+800

km. 99+000

km. 92+000

km. 90+900

km. 87+550

km. 85+200

km. 83+500

km. 80+600

3.4 Condition Survey of Structure

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table below:

Table 3-1 Summary of Structures

Sr. No.	Type of Structure	Numbers of Structures
1	Major Bridges	01
2	Minor Bridges	09
3	Slab Culverts	-
4	Pipe Culverts	88
5	Box Culverts	40
6	Flyovers	-
7	Road over Bridges	03
8	Road Under Bridge	01
9	Vehicular Underpasses	06
10	Pedestrian / Cattle Underpasses	02
Total		**150**

Table 3-2 Condition Survey of Major Structure

Major Bridge

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
1	85+440	Major Bridge LHS 12 x 20.5m and RHS 12 x 20.5m	Age	Old - 2 Lane	Old – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out. Approaches at BHS settled. Need to be repaired / rectified.
			Foundation	Open Foundation	Open Foundation	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	PSC Girders + Slab RCC	PSC Girders + Slab RCC	
				Footpath - Available	Footpath - Available	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	

Minor Bridge

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
1	57+780	Minor Bridge LHS 3 x 13.15m and RHS 3 x 13.15m	Age	Old - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. All expansion joints at LHS are damaged. Need to be replaced. Wearing coat & approaches @ A2-LHS are in poor condition. Clearing of bushes & repair of stone pitching is required to be carried out.
			Foundation	–	–	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition- Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition- Satisfactory	Condition- Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Damaged	Damaged	
			Wearing Coat / Surface	BC - Damaged	BC - Damaged	
			Approach Slope	Joint between approach and wearing coat is not uniform	Joint between approach and wearing coat is not uniform	
			Drainage	Water grating not clear	Water grating not clear	
2	61+720	Minor Bridge LHS 2 x 16.8m and RHS 2 x 17.15m	Age	Old - 2 Lane	New – 2 Lane	Structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			
			Component	**LHS**	**RHS**	**General Comments**
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier – Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC – Satisfactory	
			Approach Slope	Joint between approach and wearing coat is not uniform	Joint between approach and wearing coat is not uniform	
			Drainage	Water grating not clear	Water grating not clear	
3	71+020	Minor Bridge LHS 4 x 10m and RHS 2 x 18.9m	Age	Old - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
4	84+450	Minor Bridge LHS 3 x 6m and RHS 3 x 6m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			
			Component	LHS	RHS	General Comments
				Condition - Satisfactory	Condition - Satisfactory	required to be carried out.
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
5	103+420	Minor Bridge LHS 2 x 12.5m and RHS 2 x 13.15m	Age	Old - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out. A2 - BHS expansion joints damaged. Need to be replaced.
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
6	107+580	Minor Bridge LHS 3 x 6.5m	Age	Old - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is
			Sub-structure	Abutment - RCC	Abutment - RCC	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		and RHS 1 x 18.9m		Wall type	Wall type	required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
7	109+200	Minor Bridge LHS 2 x 12m and RHS 2 x 13.15m	Age	Old - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
8	112+480	Minor Bridge LHS 1 x 26m and RHS 2 x 18.9m	Age	Old - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
9	115+000	Minor Bridge LHS 3 x 8.7m and RHS 3 x 8.7m	Age	Old - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier – Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC – Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			
			Component	LHS	RHS	General Comments
			Drainage	Water grating not clear	Water grating not clear	

Road Over Bridge (ROB)						
Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			
			Component	LHS	RHS	General Comments
1	67+570	Road Over Bridges LHS 1 x 3.99m and RHS 1 x 3.99m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Foundation	Box	Box	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
2	80+492	Road Over Bridges LHS 1 x 19.54m and RHS 1 x 19.54m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Foundation	Wall	Wall	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers – RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	

Road Over Bridge (ROB)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
				Condition - Satisfactory	Condition – Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier – Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC – Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
3	90+030	Road Over Bridges LHS 1 x 20.8 + 2 x 10.61 and RHS 1 x 20.8 + 2 x 10.61	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Vent cleaning is required. Clearing of bushes & repair of stone pitching is required to be carried out.
			Foundation	Wall	Wall	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
			Super Structure	Condition - Satisfactory	Condition - Satisfactory	
				RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	Stone Pitching	Stone Pitching	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Satisfactory	Satisfactory	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	

Road Under Bridge (RUB)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
1	58+870	Road Under Bridge B/S 1 x 45.7m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition.
			Foundation	RCC	RCC	
			Sub-structure	Steel Truss		

Vehicular Underpass (VUP)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
1	55+350	Vehicular Under Pass LHS 1 x 6m and RHS 1 x 6m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing of bushes at RE Wall & repair of PCC at slope is required to be carried out. Electrification is done but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	PCC	PCC	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
2	74+240	Vehicular Under Pass LHS 1 x 6m and RHS 1 x 6m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing of bushes & repair of PCC at slope is required to be carried out. Electrification is done but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	

Vehicular Underpass (VUP)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
			Slope Protection	PCC	PCC	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC – Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage			
3	76+137	Vehicular Under Pass LHS 1 x 6m and RHS 1 x 6m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing of bushes & repair of PCC at slope is required to be carried out. Electrification is done but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	PCC	PCC	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage			
4	78+614	Vehicular Under Pass LHS 1 x 6m and RHS 1 x 6m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing of bushes & repair of PCC at slope is required to be carried out. Electrification work but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	PCC	PCC	

Vehicular Underpass (VUP)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC – Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage			
5	82+080	Vehicular Under Pass LHS 1 x 6m and RHS 1 x 6m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing of bushes & repair of PCC at slope is required to be carried out. Electrification is done but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	PCC	PCC	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage			
6	89+644	Vehicular Under Pass LHS 2 x 11m and RHS 2 x 11m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing bushes from RE Wall & repair of PCC at slope is required to be carried out. Electrification is done but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	PCC	PCC	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	

Vehicular Underpass (VUP)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
			Wearing Coat / Surface	BC - Satisfactory	BC – Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage			
7	New 91+600	Vehicular Under Pass	Age	New - 2 Lane	New – 2 Lane	Structure is in good condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Pear Type	Abutment - RCC Pear Type	
			Abutment / Pier	Piers -	Piers -	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	RE Wall	RE Wall	
			Nalla Bed	–	–	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	

Pedestrian / Cattle Underpass (PUP / CUP)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
1	64+877	Pedestrian Under Pass B/S 1 x 3.5 x2.5m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing of bushes & repair of PCC at slope is required to be carried out. No crash barrier casted @ BHS, require to be casted. Electrification is done but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition -	Condition –	

Pedestrian / Cattle Underpass (PUP / CUP)						
Sr. No.	**Design Chainage (km)**	**Type of Bridge / Spans**	**Features and Observation**			
			Component	**LHS**	**RHS**	**General Comments**
				Satisfactory	Satisfactory	
			Slope Protection	PCC	PCC	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC – Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
2	74+240	Pedestrian Under Pass B/S 1 x 3.5 x2.5m	Age	New - 2 Lane	New – 2 Lane	The structure is in good condition. Clearing of bushes & repair of PCC at slope is required to be carried out. Electrification is done but not in working condition.
			Foundation	Open	Open	
			Sub-structure	Abutment - RCC Wall type	Abutment - RCC Wall type	
			Abutment / Pier	Piers - RCC	Piers - RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Super Structure	RCC	RCC	
				Condition - Satisfactory	Condition - Satisfactory	
			Slope Protection	PCC	PCC	
			Parapet / Railing	Crash Barrier -	Crash Barrier -	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	

Figure 3-7 Photographs of Major Structures

Major Bridge

Wearing Coat over MJB at km. 85+400 (RHS)

RCC Railing / Walkway of MJB at km. 85+400 (RHS)

Settled Approach @ A2 over MJB at km. 85+400 (RHS)

Side View of MJB at km. 85+400 (RHS)

Side View of MJB at km. 85+400 (LHS)

Mid Portion of MJB at km. 85+400 (LHS)

Settled Approach @ A1 over MJB at km. 85+400 (LHS)

Wearing Coat over MJB at km. 85+400 (LHS)

Minor Bridge

Wearing Coat over MNB at km. 57+780 (RHS)

Side View of MNB at km. 57+780 (RHS)

Damaged Expansion Joint of MNB at km. 57+780 (LHS)

Side View of MNB at km. 57+780 (LHS)

Wearing Coat over MNB at km. 61+720 (RHS)

Side View of MNB at km. 61+720 (RHS)

Side View of MNB at km. 61+720 (LHS)

Wearing Coat over MNB at km. 61+720 (LHS)

Wearing Coat over MNB at km. 71+020 (RHS)

Side View of MNB at km. 71+020 (RHS)

Side View of MNB at km. 71+020 (LHS)

Wearing Coat over MNB at km. 71+020 (LHS)

Wearing Coat over MNB at km. 84+450 (RHS)

Side View of MNB at km. 84+450 (RHS) (Not accessible)

Side View of MNB at km. 84+450 (LHS) (Not accessible)

Wearing Coat over MNB at km. 84+450 (LHS)

Wearing Coat over MNB at km. 103+420 (RHS)

Side View of MNB at km. 103+420 (RHS)

Side View of MNB at km. 103+420 (LHS) (Not accessible)

Wearing Coat over MNB at km. 103+420 (LHS)

Wearing Coat over MNB at km. 107+580 (RHS)

Side View of MNB at km. 107+580 (RHS)

Side View of MNB at km. 107+580 (LHS)

Wearing Coat over MNB at km. 107+580 (LHS)

Wearing Coat over MNB at km. 109+200 (RHS)

Side View of MNB at km. 109+200 (RHS)

Side View of MNB at km. 109+200 (LHS)

Wearing Coat over MNB at km. 109+200 (LHS)

Side View of MNB at km. 112+460 (RHS)

Wearing Coat over MNB at km. 112+460 (RHS)

Wearing Coat over MNB at km. 112+460 (LHS)

Side View of MNB at km. 112+460 (LHS)

Wearing Coat over MNB at km. 115+000 (RHS)

Side View of MNB at km. 115+000 (RHS)

Side View of MNB at km.115+000 (LHS)

Wearing Coat over MNB at km. 115+000 (LHS)

Road Over Bridge (ROB)

Wearing Coat over ROB at km. 67+570 (RHS)

Side View of ROB at km. 67+570 (RHS)

Side View of ROB at km. 67+570 (LHS)

Wearing Coat over ROB at km. 67+570 (LHS)

Wearing Coat over ROB at km. 80+492 (RHS)

Side View of ROB at km. 80+492 (RHS)

Bottom View of ROB at km. 80+492 (LHS)

Side View of ROB at km. 80+492 (LHS)

Wearing Coat over ROB at km. 90+030 (RHS)

Side View of ROB at km. 90+030 (RHS)

Side View of ROB at km. 90+030 (LHS)

Wearing Coat over ROB at km. 90+030 (LHS)

Road Under Bridge (RUB)

Side View of RUB at km. 58+870 - A2 side

Bottom View of RUB at km. 58+870 (RHS)

Bottom View of RUB at km. 58+870 (LHS)

Side View of RUB at km. 58+870 - A1 side

Vehicular Underpass (VUP)

Side View of VUP at km. 55+350 (RHS)

Bottom View of VUP at km. 55+350 (BHS)

Side View of VUP at km. 55+350 (LHS)

RE Panel Wall of VUP at km. 55+350 (LHS)

Side View of VUP at km. 74+240 (RHS)

Bottom View of VUP at km. 74+240 (BHS)

Side View of VUP at km. 74+240 (LHS)

RE Wall of VUP at km. 74+240 (LHS)

Wearing Coat over VUP at km. 76+137 (RHS)

Side View of VUP at km. 76+137 (RHS)

Bottom View of VUP at km. 76+137 (BHS)

Side View of VUP at km. 76+137 (LHS)

Side View of VUP at km. 78+614 (RHS)

Bottom View of VUP at km. 78+614 (BHS)

Side View of VUP at km. 78+614 (LHS)

Wearing Coat over VUP at km. 78+614 (LHS)

Side View of VUP at km. 82+020 (RHS)

Bottom View of VUP at km. 82+020 (BHS)

Side View of VUP at km. 82+020 (LHS)

RE Wall of VUP at km. 82+020 (RHS)

Wearing Coat over VUP at km. 89+644 (RHS)

Side View of VUP at km. 89+644 (RHS)

Side View of VUP at km. 89+644 (LHS)

Bottom View of VUP at km. 89+644 (BHS)

New VUP at km. 92+500

Pedestrian / Cattle Underpass (PUP / CUP)

Side View of PUP at km. 64+877 (RHS) - Concreting of Crash Barrier not done

Bottom View of PUP at km. 64+877 (BHS)

Side View of PUP at km. 64+877 (LHS) - Concreting of Crash Barrier not done

RE Wall of PUP at km. 64+877 (LHS)

Wearing Coat over PUP at km. 68+250 (RHS)

Side View of PUP at km. 68+250 (RHS)

Bottom View of PUP at km. 68+250 (BHS)

Side View of PUP at km. 68+250 (LHS)

3.5 Condition Survey of Culvert

The cross-drainage structure includes hume pipe culverts, box culverts and slab culverts at various locations. There are 88 Nos. of pipe culverts, 40 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC railing has not been provided at culvert locations.

In most of culverts, the waterway is clear. However, near to urban area and some location, it is found blocked due to debris, drainage water or bushes, tree growth which must be removed and cleaned before and after monsoon to clear waterway. The wing wall has been provided for slope protection.

The culverts are maintained by the Annuity Concessionaire during O&M period. However, in case of some culverts, damaged wing walls have been observed at culverts, which need to be addressed under routine maintenance by Annuity Concessionaire.

Figure 3-8 Photographs of Box Culvert / Pipe Culvert

Box Culvert

Box Culvert at km. 79+179 (LHS)

Box Culvert at km. 82+840 (LHS) (Not accessible)

Box Culvert at km. 82+840 (RHS)

Box Culvert at km. 89+700 (LHS)

Box Culvert at km. 89+700 (RHS)

Box Culvert at km. 91+290 (LHS)

Box Culvert at km. 92+651 (LHS)

Box Culvert at km. 92+651 (RHS)

Hume Pipe Culvert

HPC at km. 48+210 (LHS)
(Not Visible)

HPC at km. 48+210 (RHS)
(Not Visible)

HPC at km. 63+010 (LHS)
(Not Visible)

HPC at km. 63+010 (RHS)
(Not Visible)

HPC at km. 87+250 (LHS)
(Not Visible)

HPC at km. 87+250 (RHS)
(Not Visible)

3.6 Drainage

There are 14,210 linear meter reinforced concrete covered drain with footpath constructed newly in the built-up area as well as in the locations where service roads are provided.

The photographs taken during site visit is presented below:

Figure 3-9 Photographs of Existing Drains (RHS)

km. 114+000

km. 113+200

km. 110+600

km. 108+700

km. 107+500

km. 106+950

km. 98+320

km. 97+300

km. 94+400

km. 92+600

km. 83+500

km. 82+030

km. 78+720

km. 74+300

km. 64+120

Figure 3-10 Photographs of Existing Drains (LHS)

km. 43+700

km. 45+800

km. 46+450

km. 46+900

km. 51+200

km. 52+900

km. 53+500

km. 55+200

km. 59+000

km. 63+100

3.7 Slope Protection

There have been found slope protection and chute drains in damaged condition. The same will be rectified by the Annuity Concessionaire.

The photographs taken during site visit is presented as below:

Figure 3-11 Photographs of Slope Protection and Chute Drain

km. 67+570 (RHS)

km. 68+250 (LHS)

km. 71+080 (Median)

km. 76+137 (LHS)

km. 78+614 (RHS)

km. 78+614 (LHS)

km. 80+492 (LHS)

km. 84+450 (RHS)

km. 103+420 (RHS)

km. 107+650 (LHS)

km. 109+200 (LHS)

km. 112+460 (RHS)

3.8 Road Furniture

The Concessionaire has provided the following additional road furniture along the Project Road as per standards and specifications mentioned in Schedule-C. The details of the items are provided below.

a) Transverse / Thermoplastic Bar Marking Locations

Transverse / thermoplastic bar markings are provided on either side of carriageway on proposed service road / VUP / VUP approaches.

b) New Installation of Safety Barriers

The Concessionaire has installed new safety barriers at the following locations.

Table 3-3 Details of New Installation of Safety Barriers

Sr. No.	Chainage (km)		Length (m)	Location	Type of Barrier
	From	To			
1	109+650	110+380	730	BHS	Rigid Crash Barrier

c) Pedestrian Guard Rails

The Concessionaire has provided 5,700 linear meter of pedestrian guard rail along the Project Road.

d) Additional Gantry / Cantilever Sign Board

The Concessionaire has provided 2 nos. of cantilever overhead sign board at VUP locations along Project Road.

e) Summary of Quantity for Road Furniture Items

The following details show the summary of quantity for road furniture items provided by Annuity Concessionaire.

Table 3-4 Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Solar Blinkers	Nos.	Nil
2	Streetlights	m	Nil
3	High Mast Lights	Nos.	Nil
4	Transverse Bar Makings / Thermoplastic Bar Markings	km.	14.20
5	New installation of Safety Barriers		
	W-Beam Safety Barriers	m	Nil
	Concrete Median Barrier	m	Nil
	Rigid Concrete Barrier	m	1460.00
6	Guard Posts	m	Nil
7	Pedestrian Guard Rails	m	11400.00
8	Road Studs / Raised Pavement Markers	As per Section 9 of IRC:SP:84-2014	
9	Road Markings		
10	Traffic Delineators		
11	Kilometer / Hectometer / Boundary Stones		
12	Additional Sign Boards		

Sr. No.	Description	Unit	Quantity
	Gantry Sign Boards	Nos.	Nil
	Cantilever Sign Boards	Nos.	6
	Shoulder Mounted Dual Post Sign Boards	As per Section 9 of IRC:SP:84-2014	
	Shoulder Median Mounted Single Post Sign Boards		

3.9 Pavement Marking

The pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which will be rectified by the Annuity Concessionaire. Some of the photographs of road marking are presented below:

Figure 3-12 Photographs of Pavement Marking

RHS

km. 106+800

km. 103+700

km. 93+600

km. 91+000

km. 67+000

km. 42+900

LHS

km. 48+210

km. 49+050

km. 53+300

km. 54+500

km. 63+000

km. 68+890

Road Studs

Road studs for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs have been fixed at junction, edge of paved shoulder and at zebra crossing. However, at few locations some road studs have damaged which will be rectified by the Annuity Concessionaire. Some of the photographs of road studs are presented below.

Figure 3-13 Photographs of Road Studs

RHS

km. 103+700

km. 93+600

km. 91+000

km. 54+600

km. 42+900

Traffic Signage / Median Kerb Painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The traffic signs along the Project Road is provided as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and at urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations. The Annuity Concessionaire will rectify the same.

Some of the photographs of sign boards are presented below.

Figure 3-14 Photographs of Road Signages

RHS

km. 114+500

km. 114+450

km. 114+000

km. 112+400

km. 110+700

km. 109+200

km. 107+600

km. 99+800

km. 99+000

km. 98+320

km. 92+900

km. 92+000

km. 85+550

km. 80+850

km. 80+600

km. 77+900

km. 76+800

km. 75+000

km. 73+000

km. 72+770

km. 45+000

km. 41+200

km. 41+100

km. 41+000

LHS

km. 41+000

km. 46+450

km. 50+850

km. 50+850

km. 51+000

km. 52+900

km. 58+800

km. 59+000

km. 63+200

km. 67+530

km. 68+800

km. 70+000

km. 70+400

km. 72+500

km. 73+800

Highway Lighting / Solar Blinker

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location as well as on major locations.

Solar amber blinker signals are provided at each median opening location. These lights need to be maintained by the Annuity Concessionaire. Regular maintenance work should be carried out to ensure their efficient operation.

Some of the photographs of highway lightings are presented below.

Figure 3-15 Photographs of Street Light

km. 114+100

km. 108+700

km. 107+500

km. 104+150

km. 98+320

km. 89+700

km. 80+600

km. 65+200

km. 56+000

km. 99+800

km. 90+900

km. 89+050

km. 87+550

km. 80+600

km. 72+800

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and at sharp curves. All the crash barriers provided and maintained by the Annuity Concessionaire. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-16 Photographs of MBCB / Crash Barrier

km. 80+079 (RHS)

km. 91+500 (LHS)

km. 80+492 (RHS)

km. 85+440 (LHS)

km. 96+750 (Median)

km. 109+200 (RHS)

km. 80+482 (RHS)

km. 85+440 (RHS)

km. 90+030 (LHS)

Delineators

The traffic delineators are provided and maintained by Annuity concessionaire for the Project Road. However, regular maintenance work should be carried out to ensure their efficient operation. Some of the photographs of delineators are presented below.

Figure 3-17 Photographs of Delineator

km. 97+900 (RHS)

km. 94+400 (RHS)

km. 92+000 (RHS)

km. 89+050 (RHS)

km. 87+550

km. 84+450 (RHS)

km. 70+000 (LHS)

km. 70+700 (LHS)

km. 74+000 (LHS)

Pedestrian Guard Rail

The pedestrian guard rails are provided at median between service road and main carriageway. It is maintained by Annuity Concessionaire. However, regular maintenance work should be carried out to ensure their efficient purpose. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-18 Photographs of Pedestrian Guard Rail

km. 114+100 (RHS)

km. 113+200 (RHS)

km. 108+700 (RHS)

km. 107+500 (RHS)

km. 65+200 (RHS)

km. 64+600 (RHS)

km. 56+000 (RHS)

km. 45+000 (RHS)

km. 45+800 (LHS)

km. 46+450 (LHS)

km. 55+200 (LHS)

km. 56+200 (LHS)

km. 64+450 (LHS)

km. 73+800 (LHS)

km. 89+250 (LHS)

Road Land Boundary

Road land boundary pillars are available in project length. It is maintained by Annuity Concessionaire. However, the paint of RLB has faded at all locations which needs to be re-painted. Some of the photographs of road boundary pillars are presented below.

Figure 3-19 Photographs of Road Land Boundary

km. 109+150 (RHS)

km. 89+050 (RHS)

km. 68+250 (RHS)

3.10 Avenue Plantation and Median Plantation

This project length passes through the dense forest zone. However, Annuity Concessionaire has provided avenue plantation on both side of the main carriageway as well as median plantation.

Some of the photographs taken during the site visit are presented below.

Figure 3-20 Photographs of Median Plantation

km. 108+200

km. 106+200

km. 103+420

km. 98+320

km. 92+000

km. 90+000

km. 87+550

km. 61+730

Figure 3-21 Photographs of Avenue Plantation

km. 85+200 (RHS)

km. 77+900 (RHS)

km. 72+770 (RHS)

km. 71+150 (RHS)

km. 66+700 (RHS)

km. 60+100 (RHS)

km. 43+400 (LHS)

km. 48+000 (LHS)

km. 60+150 (LHS)

3.11 Toll Plaza

There is one existing toll plaza at km.100+600 near Pundag village in the Project Road with the following infrastructure.

Table 3-5 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 100+600
2	Number of Tolling Lanes	14 lanes including 2 for over dimensional lanes
3	Weigh in Motion Facility (Number of Lanes)	Yes, in every lane
4	No. of ETC Lanes	12
5	Number of Toll Booths	14 Nos.
6	Canopy	Yes
7	Administrative Building	Yes
8	Parking cum Toilet Block	Yes (02 Nos.)
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Yes
10	Availability of Static Weigh Bridge	Yes

Sr. No.	Particulars	Details
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	Not Available
12	Storage facility for Overloaded Material	Not Available
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	Not Available
16	User Fee Boards	Yes
17	Cantilever / Gantry Boards	Available

Note:

- *Rehabilitation work of Toll Plaza is generally completed.*
- *TOT Concessionaires maintains only Toll Plaza activities as per scope of work.*
- *ATMS / HTMS is in the scope of Annuity concessionaire.*

Figure 3-22 Photographs of Toll Plaza

Signage Board Toll Plaza View

Toll Plaza View

Fog Light Weigh Bridge CCTV Camera

DG Room Computer education training Office View Center

Computer Classroom Conference Room Account Room

Tunnel View Tunnel UPS

3.12 Lane Equipment

Following are the Lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.12.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 3 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID ETC Transceiver

3.12.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside the Tunnel. Each toll booth which are connected to the common server and are capable of independent storage of data.

Lane Controller in Toll Tunnel

3.12.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Lane

3.12.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6-0.9 sec. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Lane

3.12.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

Lane Traffic Light and User Fare Display

3.12.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the image capture system.

AVC Camera

3.12.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC

3.12.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

Overhead Lane Signal (OHLS)

3.12.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal Printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.12.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM on entry lane

3.13 Plaza Equipment

3.13.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi Fi module. Firewall with Sophos antivirus is provided.

Server

3.13.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

CCTV Monitor

The Toll Plaza Manager is able to observe the activities at the toll lanes and toll booth. When the Toll Collector calls up on the intercom, the Manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.13.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

POS Cabin

3.14 Truck Lay-byes

The following are the Truck Lay-bye cum Rest Room locations.

Figure 3-23 Details of Truck Lay-bye

Sr. No.	Chainage (km)	Side
1	104+100	RHS
2	60+300	RHS
3	60+250	(LHS)
4	75+100	(LHS)

Some of the photographs taken during the site visit are presented below.

Figure 3-24 Photograph of Truck Lay-bye

km. 101+100 (RHS)

km. 75+000 (RHS)

km. 60+100 (RHS)

km. 60+150 (LHS)

km. 75+000 (LHS)

km. 104+000 (LHS)

3.15 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are in the scope of Annuity Concessionaire.

3.16 Toilet Block

There are 02 Nos. of Toilet Block on Project Road. The same is maintained by Annuity Concessionaire.

Some of the photographs taken during the site visit are presented below.

Figure 3-25 Photographs of Toilet Blocks

3.17 Bus Bays and Passenger Shelters

There are 22 nos. of bus bays / passenger shelters along the Project Road. All are in damaged condition. The same have to be rectified / repaired by the Annuity Concessionaire.

Some of the photographs are presented below:

Figure 3-26 Photographs of Bus Bay / Passenger Shelter

km. 112+650 (RHS)

km. 101+900 (RHS)

km. 97+950 (RHS)

km. 51+200 (LHS)

km. 94+950 (LHS)

km. 105+800 (LHS)

3.18 Balance Work Status

During the site visit, it has been observed that TOT Concessionaire has expedited the work at site. However, due to some hindrance at two locations work is yet to start. The reasons for delay in work completion are due to unavailability of ROW and non-shifting the utility and encroachments and forest tree cutting permission. The status of work as on date is summarized in the table below.

Sr. No.	Chainage (km)		Length (m)	Scope / Status of Work	Remark
	From	To			
1	41+500	42+900	2800	Construction of Service Road & Drain works is in progress	Due to late permissions and approval from electrical and forest Dept. Work start late however presently utility works and Tree cutting works has completed and the work is in progress in the said chainage except in 500-meter length due to encroachment.
2	43+600	44+250	1300	Construction of Service Road & Drain works is in progress	Due to late permissions and approval from electrical and forest Dept. Work start late however presently utility works and Tree cutting works has completed and the work is in progress in the said chainage except in 200-meter length due to encroachment.
3	46+685	47+400	1430	Construction of Service Road & Drain works is in progress	Due to late permissions and approval from electrical and forest Dept. Work start late however presently utility works and Tree cutting works has completed and the work is in progress in the said chainage except in 300-meter length due to encroachment.
4	48+400	49+300	1800	Work not started	Due to late permissions and approval from electrical and forest Dept as well as encroachment, work did not start however presently utility works and Tree cutting works has completed and the work will start from February 25 in the said chainage except in 1000-meter length due to encroachment.
5	56+850	57+100	500	Work not started	Due to late permissions and approval from electrical and forest Dept as well as encroachment, work did not start however presently utility works and Tree cutting works has completed and the work will start from February 25 in the said chainage except in 100-meter length due to encroachment.

Sr. No.	Chainage (km)		Length (m)	Scope / Status of Work	Remark
	From	To			
6	63+150	64+350	2400	• Drain – 2500 m Constructed • Service Road - 2000 m BC Completed.	Due to late permissions and approval from electrical and forest Dept. Work start late however presently utility works and Tree cutting works has completed and the work is in progress in the said chainage except in 270-meter length due to encroachment and LA issue.
7	78+400	79+000	1200	• Retaining Wall - 800 m completed • Drain – 950 m completed • Service Road - Earthwork in Progress	Due to late permissions and approval from electrical and forest Dept. Work start late, however, presently utility works and Tree cutting works has completed and the work is in progress in the said chainage except in 170-meter length due to DVC lines hindrance.
8	81+840	82+350	1020	• Retaining Wall - 620 m completed • Drain – 1000 m completed • Service Road - 620m BC completed. • GSB & WMM Work is in Progress.	Due to late permissions and approval from electrical and forest Dept. Work start late however presently utility works and Tree cutting works has completed and the work is in progress as well as there is no hindrance in the chainage.
9	109+650	110+380	1460	• Drain – 700 m Completed • Service Road - 800m BC Completed remaining 660 m is Hindered.	VUP construction is not started due to late decision from IE/NHAI. IE has recommended the COS to NHAI vide their letter no. UIC-SAICPL/O&M/HZB-RNC/NH-33/2025/5188 Dated 13.01.2025. Further Part Utility Shifting (Electrical), is pending due to standing encroachments which is also pending at NHAI end.
10	110+450	110+600	300	• Drain – 300 m completed • Service Road - 150 m BC completed	
11				Rehabilitation work at Toll Plaza	Work Completed

Note:

1. As informed by the TOT Concessionaire, correspondence is in progress with the Authority to resolve the issue of encroachment and utility shifting etc.
2. The Concessionaire has informed IE / NHAI about removal of encroachment and utility shifting vide their letter no. HTPL/IE/2024/120 Dated 30-12-2024.
3. The work specified in schedule-B is not completed by Concessionaire in a given time due to the above reasons. Hence, the Concessionaire has again requested Authority for extension of time vide their letter no. HTL/IE/019 Dated 05-04-2023 which is under review from NHAI.

3.19 Operation and Maintenance

3.19.1 O&M Contract

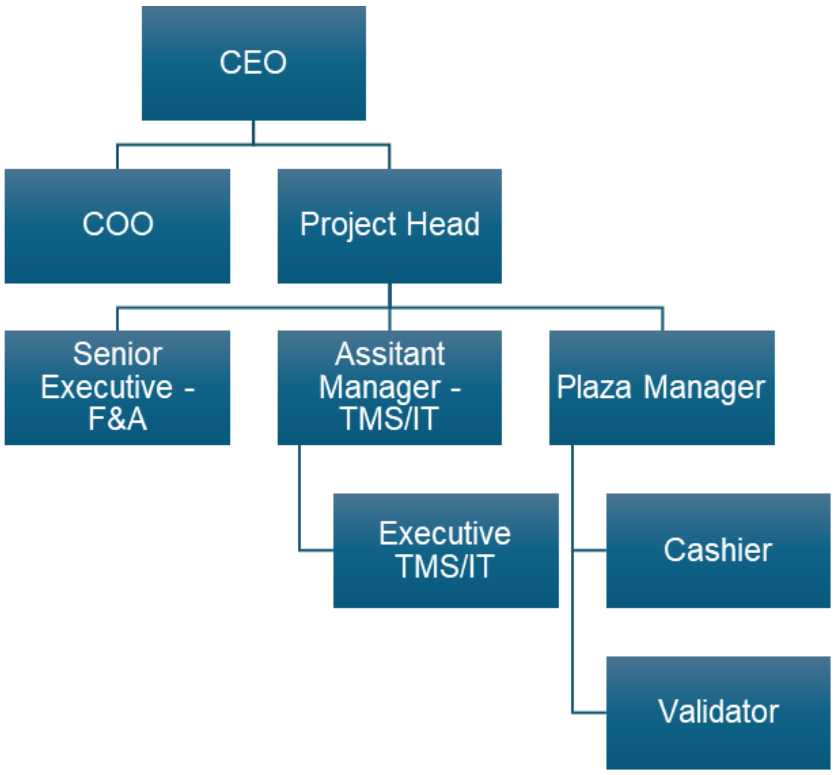
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications, and the Concession Agreement.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

3.19.2 Organization Chart

The Concessionaire has given the Organization Chart at site for operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (F&A), 01 Assistant Manager (TMS / IT), 01 Executive (TMS / IT), 01 Plaza Manager, 03 Cashiers and 04 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

Organization Chart



3.19.3 Operation

The Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.19.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2028. Hence, routine maintenance is considered from the year 2028 till end of concession period.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Annuity Concessionaire as per the Scope of Work. The Annuity Concessionaire has received Completion Certificate on 13th April 2013.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period. The project will be handed over to TOT Concessionaire in March 2028.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 100+600 (near Toll Plaza) on 28th May 2019. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Sr. No.	Vehicle Type	Direction	
		Hazaribagh - Ranchi	Ranchi - Hazaribagh
1	BUS	1.33	0.94
2	LCV	2.33	0.93
3	2-Axle	2.98	1.76
4	3-Axle	6.31	5.17
5	MAV	16.32	17.00

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

Year	MSA ((LHS))	Cumulative MSA ((LHS))	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2025-26	7.20	**7.20**	7.06	**7.06**	
2026-27	6.40	**13.60**	6.25	**13.31**	
2027-28	6.44	**20.04**	6.29	**19.60**	Handing over in March 2028
2028-29	6.80	**26.84**	6.66	**26.26**	
2029-30	7.16	**34.00**	7.02	**33.28**	
2030-31	7.51	**41.51**	7.37	**40.65**	1st MM Cycle
2031-32	7.87	**49.38**	7.73	**48.38**	
2032-33	8.28	**57.66**	8.14	**56.52**	
2033-34	8.69	**66.35**	8.56	**65.08**	
2034-35	9.13	**75.48**	9.00	**74.08**	PCU crossed 40,000

Year	MSA ((LHS))	Cumulative MSA ((LHS))	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2035-36	9.58	**85.06**	9.45	**83.53**	PCU crossed 40,000
2036-37	10.06	**95.12**	9.93	**93.46**	PCU crossed 40,000
2037-38	10.55	**105.67**	10.43	**103.89**	DPR Preparation- 2nd MM Cycle
2038-39	11.06	**116.73**	10.94	**114.83**	DPR Preparation
2039-40	11.60	**128.33**	11.48	**126.31**	Construction Period (6-Laning)
2040-41	12.15	**140.48**	12.04	**138.35**	Construction Period (6-Laning)
2041-42	12.73	**153.21**	12.62	**150.97**	Construction Period (6-Laning)
2042-43	10.79	**164.00**	10.70	**161.67**	
2043-44	11.29	**175.29**	11.21	**172.88**	
2044-45	11.81	**187.10**	11.74	**184.62**	
2045-46	12.35	**199.45**	12.28	**196.90**	
2046-47	12.91	**212.36**	12.85	**209.75**	3rd MM Cycle
2047-48	13.49	**225.85**	13.43	**223.18**	
2048-49	14.09	**239.94**	14.04	**237.22**	
2049-50	14.71	**254.65**	14.67	**251.89**	
2050-51	15.32	**269.97**	15.29	**267.18**	End of concession period as per Appointed Date & CA

4.4 Network Survey Vehicles (NSV) Survey

The O&M is not under the scope of Concessionaire / Client.

4.5 Structural Investigations

The O&M is not under the scope of Concessionaire / Client.

4.6 Test pit and Subgrade Investigation

The O&M is not under the scope of Concessionaire / Client.

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

As per Article 14 of CA, the Authority shall carry out capacity augmentation under EPC contract if traffic exceeds 40,000 PCU for three consecutive accounting years. As per the traffic study report submitted by the Company it is observed that the project traffic crosses 40,000 PCU in FY 2035, FY 2036, FY 2037. Assumption has made that execution of 6-laning of project highway will start in the year 2040 or 2041. It is also assumed that during 6-laning of Project Road, overlay of existing four lane road will be

the part of the capacity augmentation. Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-3 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 to FY 2027	-	-
2	FY 2028	Handing over of Project Site from Annuity Concessionaire	
3	FY 2029 to FY 2030	-	-
4	FY 2031	Major Maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (VG-40) (100%)	Major Maintenance with 30 mm BC (VG-40) (50%) + Micro-surfacing (50%)
5	FY 2032 to FY 2037	-	-
6	FY 2038	Major Maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (VG-40) (5%)	Major Maintenance with 30 mm BC (VG-40) (50%) + Micro-surfacing (50%)
7	FY 2039 to FY 2041	-	-
6	FY 2042	Assumption of Capacity Augmentation to Six Lane Configuration	
7	FY 2043 to FY 2046	-	-
8	FY 2047	Major Maintenance with 30 mm BC (VG 40) (100%) + Milling & 50 mm DBM (VG-40) (5%)	Major maintenance with 30 mm BC (VG-40) (50%) + Micro-surfacing (50%)
9	FY 2048 to FY 2050	-	-
11	FY 2051	End of concession period	

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per Jharkhand SoR 2021-22. The input rates for MoRTH standard data book were adopted as below:

   a. Manpower and labour: As per applicable minimum wages published by Schedule of Rates, Government of Bihar.

   b. Bitumen: Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. Sand and Aggregate: Market rates are considered from the quarry located nearest to Project Road.

d. Cement: Market rates are considered from the nearest local market.

e. Steel : Rate of steel is taken from market rate.

f. Machinery Hire charges: Hire charges for the machinery are considered in accordance with MoRTH standard data book.

g. Actual Rates of items as per work order: The rates of road marking, road stud, kerb raising, micro surfacing, milling rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	8,119
2	Bituminous Concrete (VG-40)	Cum	9,400
3	Bituminous Concrete (VG-30)	Cum	9,105
4	Bituminous Concrete (PMB 70-10E)	Cum	11,421
5	Milling	Sqm	89
6	Micro-surfacing	Sqm	155
7	Kerb Re-laying	Rmt	297
8	Road Marking	Sqm	501
9	Road Studs	Nos.	179

5.3 Balance Work Cost

The Concessionaire has provided the details of balance work. The total cost of Balance Work is Rs. 88.37 Crores.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the

operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2028. Hence, the routine maintenance and horticulture maintenance is considered from year 2028 till end of concession period. The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-28)	After Annuity Amount (FY 2029-42)	After Capacity Augmentation (FY 2043-51)
1	Salary and Welfare Expenses	11,127,600	11,127,600	11,127,600
2	Tolling Operations Services	39,672,048	39,672,048	39,672,048
3	Toll Security Services	6,738,645	6,738,645	6,738,645
4	Incident Management & Emergency Services	-	24,451,599	24,451,599
5	Electricity and Diesel Charges	2,595,133	9,233,930	9,233,930
6	TMS / HTMS / System Expenses	2,956,800	9,102,658	7,590,777
7	Office Operating Expenses	3,118,094	3,118,094	3,118,094
8	Vehicle Running Expenses	3,456,000	3,456,000	3,456,000
9	Professional Fees Expense	9,789,667	12,013,015	13,124,689
10	Community Development	746,071	746,071	746,071
11	Communication Expenses	347,156	347,156	347,156
12	Conveyance Expenses	378,716	378,716	378,716
13	Insurance Expense	3,155,966	3,155,966	3,155,966

Sr. No.	Particulars	Amount (FY 2026-28)	After Annuity Amount (FY 2029-42)	After Capacity Augmentation (FY 2043-51)
14	IE Fees	3,155,966	3,155,966	3,155,966
15	Routine Maintenance Cost (Project Road)	-	25,898,928	38,805,811
16	Horticulture & ROW Maintenance	-	19,883,808	19,883,808
17	Miscellaneous including Contingency	3,489,514	5,067,898	5,051,890
	Total Cost (Rs.)	**90,727,375**	**177,548,097**	**190,038,765**
	Total Cost (Cr.)	**9.07**	**17.75**	**19.00**
	Per km Cost (Lakhs)	12.30	24.06	25.75

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Table 5-4 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2028	-	Handing over of Project Site
2	FY 2029 to FY 2030	-	
3	FY 2031	159.32	
4	FY 2032 to FY 2037	-	
5	FY 2038	83.68	
6	FY 2039 to FY 2046	-	
7	FY 2047	93.04	
8	FY 2048 to FY 2050	-	
9	FY 2051	-	End of Concession period
Total Cost (Cr.)		**336.04**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2028	2.11	
2	FY 2035	7.71	
3	FY 2042	7.71	
4	FY 2049	7.71	
Total Cost (Cr.)		**25.24**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-5 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%

Year	Escalation	Year	Escalation
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%	**2057**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49	FY50	FY51
Routine O&M Cost																										
Salary and Welfare Expense	1.11	1.17	1.24	1.30	1.35	1.41	1.47	1.53	1.59	1.65	1.72	1.79	1.86	1.93	2.01	2.09	2.18	2.26	2.35	2.45	2.54	2.65	2.75	2.86	2.98	3.09
Tolling Operations Services	3.97	4.19	4.41	4.62	4.83	5.03	5.24	5.45	5.67	5.90	6.13	6.38	6.63	6.90	7.17	7.46	7.76	8.07	8.39	8.72	9.07	9.43	9.81	10.20	10.61	11.03
Toll Security Services	0.67	0.71	0.75	0.78	0.82	0.85	0.89	0.93	0.96	1.00	1.04	1.08	1.13	1.17	1.22	1.27	1.32	1.37	1.43	1.48	1.54	1.60	1.67	1.73	1.80	1.87
Incident Management Services	-	-	-	2.85	2.97	3.10	3.23	3.36	3.49	3.63	3.78	3.93	4.09	4.25	4.42	4.60	4.78	4.97	5.17	5.38	5.59	5.81	6.05	6.29	6.54	6.80
Electricity and Diesel Charges	0.26	0.27	0.29	1.08	1.12	1.17	1.22	1.27	1.32	1.37	1.43	1.49	1.54	1.61	1.67	1.74	1.81	1.88	1.95	2.03	2.11	2.20	2.28	2.37	2.47	2.57
TMS/HTMS/System Expenses	0.30	0.31	0.33	0.62	0.85	1.19	1.45	1.72	1.79	0.44	0.83	1.12	1.56	1.90	2.27	2.36	0.58	1.09	1.47	2.06	2.50	2.98	3.10	0.76	1.43	1.93
Office Operating Expenses	0.31	0.33	0.35	0.36	0.38	0.40	0.41	0.43	0.45	0.46	0.48	0.50	0.52	0.54	0.56	0.59	0.61	0.63	0.66	0.69	0.71	0.74	0.77	0.80	0.83	0.87
Vehicle Running Expenses	0.35	0.36	0.38	0.40	0.42	0.44	0.46	0.47	0.49	0.51	0.53	0.56	0.58	0.60	0.62	0.65	0.68	0.70	0.73	0.76	0.79	0.82	0.85	0.89	0.92	0.96
Professional Fees Expense	0.98	1.03	1.09	1.40	1.46	1.52	1.59	1.65	1.72	1.79	1.86	1.93	2.01	2.09	2.17	2.26	2.35	2.67	2.78	2.89	3.00	3.12	3.25	3.38	3.51	3.65
Community Development	0.07	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21
Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10
Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.11
Insurance Expense	0.32	0.33	0.35	0.37	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.69	0.72	0.75	0.78	0.81	0.84	0.88
IE Fees	0.32	0.33	0.35	0.37	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.69	0.72	0.75	0.78	0.81	0.84	0.88
Routine Maintenance Cost	-	-	-	3.02	3.15	3.28	3.42	3.56	3.70	3.85	4.00	4.17	4.33	4.50	4.68	4.87	5.06	7.89	8.21	8.53	8.87	9.23	9.60	9.98	10.38	10.79
Horticulture & ROW Maintenance	-	-	-	2.32	2.42	2.52	2.63	2.73	2.84	2.96	3.07	3.20	3.33	3.46	3.60	3.74	3.89	4.04	4.20	4.37	4.55	4.73	4.92	5.11	5.32	5.53
Miscellaneous and Contingency	0.35	0.37	0.39	0.59	0.62	0.64	0.67	0.70	0.72	0.75	0.78	0.82	0.85	0.88	0.92	0.95	0.99	1.03	1.07	1.11	1.16	1.20	1.25	1.30	1.35	1.40
Subtotal of O&M Cost	9.07	9.57	10.08	20.24	21.33	22.54	23.68	24.87	25.87	25.48	26.87	28.21	29.73	31.19	32.73	34.04	33.52	38.19	40.05	42.18	44.23	46.37	48.22	47.68	50.22	52.67
Major Maintenance Cost	-	-	-	-	-	191.97	-	-	-	-	-	-	121.33	-	-	-	-	-	-	-	-	178.68	-	-	-	-
Periodic Cost of TMS/ HTMS Replacement	-	-	2.35	-	-	-	-	-	-	11.45	-	-	-	-	-	-	15.07	-	-	-	-	-	-	19.82	-	-
Balance Works Cost	88.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Cost	**97.45**	**9.57**	**12.42**	**20.24**	**21.33**	**214.51**	**23.68**	**24.87**	**25.87**	**36.93**	**26.87**	**28.21**	**151.06**	**31.19**	**32.73**	**34.04**	**48.59**	**38.19**	**40.05**	**42.18**	**44.23**	**225.06**	**48.22**	**67.50**	**50.22**	**52.67**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost (Up to FY 2042)	
Ordinary Repair Cost for Flexible (with GST)	**25,898,928**
(Inclusive of GST)	**= 3.51 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	More than 4500 CVD				
				1,86,901	**2,28,168**	**Normal**	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	285959.00	349097.00	-	-	-	-
		Paved shoulder	1.70	317732.00	387885.00	60.47	-	19,214,207	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	373802.00	456336.00	-	-	-	-
		Paved shoulder	2.20	411182.00	501969.00	-	13.32	-	6,684,721
					TOTAL		**73.790**		**25,898,928**

Routine Maintenance Cost (From FY 2043 onwards)	
Ordinary Repair Cost for Flexible (with GST)	**38,805,811**
(Inclusive of GST)	**= 5.26 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	More than 4500 CVD				
				1,86,901	**2,28,168**	**Normal**	**Urban**	**Normal**	**Urban**
1	Six lane with divided carriageway	without Paved shoulder	2.43	454170.00	554448.00	-	-	-	-
		with Paved shoulder	2.60	485943.00	593237.00	60.47	-	29,386,431	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.90	542013.00	661687.00	-	-	-	-
		with Paved shoulder	3.10	579393.00	707320.00	-	13.32	-	9,419,380
					TOTAL	**73.790**			**38,805,811**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			9617
	Cost in Rupees			24,043
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			385
	Cost in Rupees			19,234
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			77
	Cost in Rupees			19,302
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.50%
	Area (sqm)			187.5
	Rs/m^2			50
	Cost in Rupees			9,414
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			385
	Cost in Rupees			28,851
	v) Road marking	14%	Once in 7th year & @ Repaired location	23186
	SUB TOTAL			**124,030**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**186,901**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	11914
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**41,267**
	GRAND TOTAL (Urban)			**228,168**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2031)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						2,397,627	12	29,850,452
	For BC	Sqm	2	72,633	8.75		1,271,076	1,271,076		
	For DBM	Sqm	2	73,089	7.00		1,023,245	1,023,245		
	For Misc. Location	Sqm	2	5,903	8.75		103,306	103,306		
2	BC with 30 mm	Cum	2	78,536	8.75	0.03	41,231	41,231	11,421	470,911,901
3	DBM with 50 mm	Cum	2	73,089	7.00	0.05	51,162	51,162	8,119	415,371,877
4	Geogrid below DBM	Sqm	2	73,089	7.00		1,023,245	1,023,245	115	117,673,145
5	Milling	Sqm	2	73,089	7.00		1,023,245	1,023,245	89	90,608,322
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	1,311	3.50	4.50	2,065	2,065	50	103,231
7	Dismantling of CC Panels @ 5% area	Cum	5%		20,646		0.30	310	310	995
8	Replacement of Panels - PQC @ 5% area	Cum	5%		20,646		0.30	310	310	8,374
	Service Road									
9	Tack coat	Sqm	1	14,649	6.33		92,784	92,784	12	1,155,163
10	BC with 30 mm	Cum	1	14,649	6.33	0.03	2,784	2,784	9,400	26,166,418
11	Micro Surfacing	Sqm	1	14,649	6.33		92,784	92,784	155	14,404,743
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
12	Tack coat	Sqm	1	701	20.2		14,130	14,130	12	175,922
13	Wearing Coat BC with 30 mm	Cum	1	701	20.2	0.03	424	424	11,421	4,841,526
14	Milling Ex. Wearing Coat	Sqm	1	701	20.2		14,130	14,130	89	1,251,234
15	Painting of Crash Barrier	Sqm	4	701		1.20	3,365	3,365	97	326,428
	Other Works									
16	Raising of Road Kerb	Rmt	2	99,267			198,534	198,534	297	58,964,545

Major Maintenance Cost (FY 2031)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
17	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,020			18,040	18,040	179	3,229,160
	Solar Road Stud	Nos	1	-			-	-	1,894	-
18	Painting of Kerb	Sqm	2	99,267		0.375		74,450	74,450	97
19	Road Marking	Sqm								
	on BC						57,595	57,595	501	28,854,875
	on Micro surfacing						3,103	3,103	682	2,117,004
	MCW									
	a) Median & Edge line	Sqm	4	77,480	0.15		46,488			
	b) Lane line	Sqm	2	25,568	0.10		5,114			
	Service Road									
	a) Edge line	Sqm	2	26,634	0.10		5,327			
	b) Lane line	Sqm	1	8,789	0.10		879			
	Junction crossing	Sqm					2,890			
20	Filling of Earthen shoulder	Cum					13,074	13,074	743	9,707,388
	MCW		2	72,633	1.50	0.06	13,074			
21	Median Filling	Cum	1	71,080	4.17	-	-	-	317	-
22	Miscellaneous	5%								64,291,824
Total Major Maintenance Cost (Rs)										**1,350,128,296**
Total Major Maintenance Cost with GST (Rs)										**1,593,151,390**
Total Major Maintenance Cost with GST (Cr)										**159.32**
Per km Cost (lakh)										**215.90**
Escalation Factor for Major Maintenance Cost (FY 2031)										**1.32**
Total Escalated Cost for Major Maintenance Cost (FY 2031) (Cr)										**191.97**

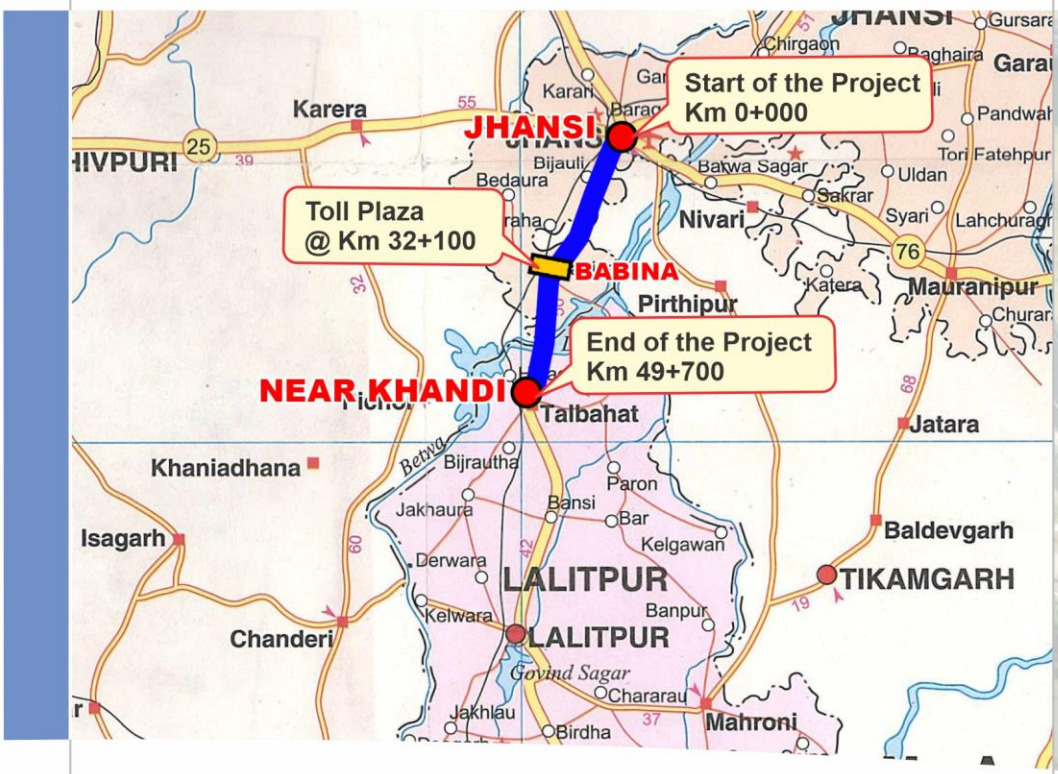
Major Maintenance Cost (FY 2038)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						1,425,544	12	17,748,025
	For BC	Sqm	2	72,633	8.75		1,271,076	1,271,076		
	For DBM	Sqm	2	3,654	7.00		51,162	51,162		
	For Misc. Location	Sqm	2	5,903	8.75		103,306	103,306		
2	BC with 30 mm	Cum	2	78,536	8.75	0.03	41,231	41,231	11,421	470,911,901
3	DBM with 50 mm	Cum	2	3,654	7.00	0.05	2,558	2,558	8,119	20,768,594
4	Geogrid below DBM	Sqm	-	3,654	7.00		-	-	115	-
5	Milling	Sqm	2	3,654	7.00		51,162	51,162	89	4,530,416
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	1,311	3.50	4.50	2,065	2,065	50	103,231
7	Dismantling of CC Panels @ 5% area	Cum	5%		20,646		0.30	310	310	995
8	Replacement of Panels - PQC @ 5% area	Cum	5%		20,646		0.30	310	310	8,374
	Service Road									
9	Tack coat	Sqm	1	14,649	6.33		92,784	92,784	12	1,155,163
10	BC with 30 mm	Cum	1	14,649	6.33	0.03	2,784	2,784	9,400	26,166,418
11	Micro Surfacing	Sqm	1	14,649	6.33		92,784	92,784	155	14,404,743
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
12	Tack coat	Sqm	1	701	20.2		14,130	14,130	12	175,922
13	Wearing Coat BC with 30 mm	Cum	1	701	20.2	0.03	424	424	11,421	4,841,526
14	Milling Ex. Wearing Coat	Sqm	1	701	20.2		14,130	14,130	89	1,251,234
15	Painting of Crash Barrier	Sqm	4	701		1.20	3,365	3,365	97	326,428
	Other Works									
16	Raising of Road Kerb	Rmt	2	99,267			198,534	198,534	297	58,964,545
17	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,020			18,040	18,040	179	3,229,160

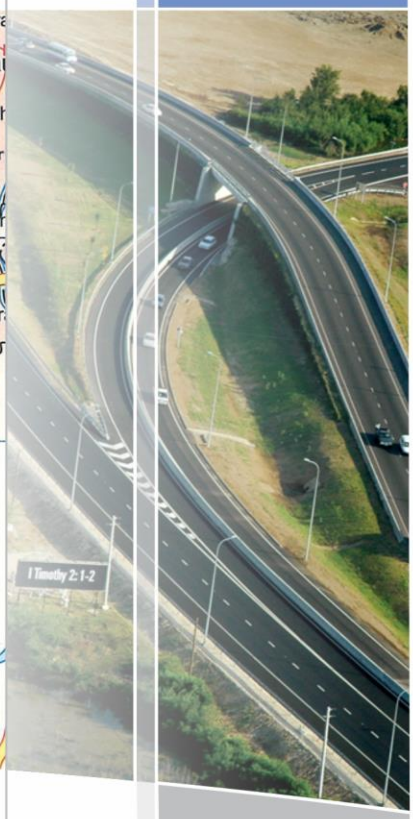
Major Maintenance Cost (FY 2038)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Solar Road Stud	Nos	1	-			-	-	1,894	-
18	Painting of Kerb	Sqm	2	99,267		0.375		74,450	74,450	97
19	Road Marking	Sqm								
	on BC						57,595	57,595	501	28,854,875
	on Micro surfacing						3,103	3,103	682	2,117,004
	MCW									
	a) Median & Edge line	Sqm	4	77,480	0.15		46,488			
	b) Lane line	Sqm	2	25,568	0.10		5,114			
	Service Road									
	a) Edge line	Sqm	2	26,634	0.10		5,327			
	b) Lane line	Sqm	1	8,789	0.10		879			
	Junction crossing	Sqm					2,890			
20	Filling of Earthen shoulder	Cum					13,074	13,074	743	9,707,388
	MCW		2	72,633	1.50	0.06	13,074			
21	Median Filling	Cum	1	71,080	4.17	-	-	-	317	-
22	Miscellaneous	5%								33,768,986
Total Major Maintenance Cost (Rs)										**709,148,698**
Total Major Maintenance Cost with GST (Rs)										**836,795,463**
Total Major Maintenance Cost with GST (Cr)										**83.68**
Per km Cost (lakh)										**113.40**
Escalation Factor for Major Maintenance Cost (FY 2038)										**1.74**
Total Escalated Cost for Major Maintenance Cost (FY 2038) (Cr)										**121.33**

Major Maintenance Cost (FY 2047)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						2,137,448	12	26,611,233
	For BC	Sqm	2	72,633	13.50		1,961,089	1,961,089		
	For DBM	Sqm	2	3,654	10.50		76,743	76,743		
	For Misc. Location	Sqm	2	3,690	13.50		99,617	99,617		
2	BC with 30 mm	Cum	2	76,322	13.50	0.03	61,821	61,821	9,400	581,147,267
3	DBM with 50 mm	Cum	2	3,654	10.50	0.05	3,837	3,837	8,119	31,152,891
4	Milling	Sqm	2	3,654	10.50		76,743	76,743	89	6,795,624
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	1,311	3.50	4.50	2,065	2,065	50	103,231
6	Dismantling of CC Panels @ 5% area	Cum	5%		20,646		0.30	310	310	995
7	Replacement of Panels - PQC @ 5% area	Cum	5%		20,646		0.30	310	310	8,374
	Service Road									
8	Tack coat	Sqm	1	14,649	6.33		92,784	92,784	12	1,155,163
9	BC with 30 mm	Cum	1	14,649	6.33	0.03	2,784	2,784	9,400	26,166,418
10	Micro Surfacing	Sqm	1	14,649	6.33		92,784	92,784	155	14,404,743
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	701	28.0		19,631	19,631	12	244,400
12	Wearing Coat BC with 30 mm	Cum	1	701	28.0	0.03	589	589	9,400	5,536,078
13	Milling of Ex. Wearing Coat	Sqm	1	701	28.0		19,631	19,631	89	1,738,283
14	Painting of Crash Barrier	Sqm	4	701		1.20	3,365	3,365	97	326,428
	Other Works									
15	Raising of Road Kerb	Rmt	-	99,267			-	-	297	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,020			18,040	18,040	179	3,229,160

Major Maintenance Cost (FY 2047)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Solar Road Stud	Nos	1	-			-	-	1,894	-
17	Painting of Kerb	Sqm	2	99,267		0.315		62,538	62,538	97
18	Road Marking	Sqm								
	on BC						62,964	62,964	501	31,544,909
	on Micro surfacing						3,103	3,103	682	2,117,004
	MCW									
	a) Median & Edge line	Sqm	4	77,480	0.15		46,488			
	b) Lane line	Sqm	4	25,568	0.10		10,227			
	Service Road									
	a) Edge line	Sqm	2	26,634	0.10		5,327			
	b) Lane line	Sqm	1	8,789	0.10		879			
	Junction crossing	Sqm					3,146			
19	Filling of Earthen shoulder	Cum					13,074	13,074	743	9,707,388
	MCW		2	72,633	1.50	0.06	13,074			
20	Median Filling	Cum	-	71,080	4.17	-	-	-	317	-
21	Miscellaneous	5%								37,547,395
Total Major Maintenance Cost (Rs)										**788,495,288**
Total Major Maintenance Cost with GST (Rs)										**930,424,440**
Total Major Maintenance Cost with GST (Cr)										**93.04**
Per km Cost (lakh)										**126.09**
Escalation Factor for Major Maintenance Cost (FY 2047)										**2.47**
Total Escalated Cost for Major Maintenance Cost (FY 2047) (Cr)										**178.68**

FP Project Management





Technical Due Diligence of Jhansi - Lalitpur Section [Package-I] of NH - 44 (from km. 0+000 to km. 49+700) in the State of Uttar Pradesh on TOT Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 8
3.3 Major / Minor Junction 8
3.4 Condition Survey of Bridge 9
3.5 Condition Survey of Culverts 20
3.6 Drainage 22
3.7 Slope Protection 22
3.8 Road Furniture 23
3.9 Avenue Plantation and Median Plantation 27
3.10 Toll Plaza 28
3.11 Lane Equipment 30
3.11.1 RFID ETC Transceiver 30
3.11.2 Lane Controller with Industrial PC 30
3.11.3 Automatic Vehicle Classification (AVC) Sensors 30
3.11.4 Automatic Lane Barrier 31
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 31

3.11.6 Incident Capture Camera (AVC Camera) 32
3.11.7 License Plate Image Capture Camera (LPIC) 32
3.11.8 Over Head Lane Signal (OHLS) 33
3.11.9 Toll Booth Equipment 33
3.11.10 Medium Speed Weigh in Motion (MSWIM) 34
3.12 Plaza Equipment 34
3.12.1 TMS Server 34
3.12.2 55" LED screen for CCTV monitoring 35
3.12.3 Workstations in Control Room, POS room 35
3.13 Advanced Traffic Management System (ATMS) 35
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 36
3.13.2 Mobile Radio communication System (MRCS) 36
3.13.3 Emergency Call Boxes (ECB) 36
3.13.4 Portable Weigh-in-Motion (PWIM) 36
3.13.5 MET System 36
3.13.6 Variable Message Signboards (VMS) 37
3.13.7 CCTV Surveillance Cameras 37
3.13.8 Video Incident Detection System 37
3.13.9 Vehicle Actuated Speed Display (VASD) 38
3.13.10 Adequacy of Toll Collection System and ATMS 38
3.14 Truck Lay-bye 38
3.15 Traffic Aid Post and Medical Aid Post 39
3.16 Toilet Block 39
3.17 Bus Bays and Passenger Shelters 40
3.18 Balance Work Status 40
3.19 Operation and Maintenance 40
3.19.1 O&M Contract 40
3.19.2 Organization Chart 40
3.19.3 Operation 42
3.19.4 Routine Maintenance 42
4 Pavement Investigation and Assessment 43
4.1 General 43
4.2 Axle Load and VDF 43
4.3 Design Traffic 43
4.4 Network Survey Vehicles (NSV) Survey 44
4.5 Structural Investigations 44
4.6 Periodic Maintenance Strategy 44

5 Cost Estimates 46
5.1 General 46
5.2 Rate Assumption 46
5.3 Balance Work Cost 47
5.4 Routine O&M Cost 47
5.5 Major Maintenance Cost 49
5.6 Periodic Replacement of TMS / ATMS System 49
5.7 Escalation Assumption 49
5.8 Summary of Cost 50
Annexures 52
Annexure I - Routine Maintenance Cost 53
Annexure II - Major Maintenance Cost 57

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 9
Table 3-2 Condition Survey of Major Structure 10
Table 3-3 Details of Summary for Road Furniture Items 23
Table 3-4 Details of Summary for Toll Plaza Items 28
Table 3-5 Details of Truck Lay-bye 38
Table 3-6 Details of Toilet Block 39
Table 4-1 Vehicle Damage Factor 43
Table 4-2 MSA Calculation 43
Table 4-3 Major Maintenance Cycle 45
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 46
Table 5-2 Summary of Unit Rates 47
Table 5-3 Summary of Operation Cost 48
Table 5-4 Escalation 50

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 7
Figure 3-2 Photographs of Service Road 8
Figure 3-3 Photographs of Major / Minor Junctions 9
Figure 3-4 Photographs of Major Structures 16
Figure 3-5 Photographs of Drainage 22
Figure 3-6 Photographs of Slope Protection and Chute Drain 23
Figure 3-7 Photographs of Pavement Marking and Road Studs 24
Figure 3-8 Photographs of Road Signages 25
Figure 3-9 Photographs of Highway Lighting / Crash Barrier / Delineator 26
Figure 3-10 Photographs of Avenue and Median Plantation 28
Figure 3-11 Photographs of Toll Plaza 29
Figure 3-12 Photographs of Truck Lay-bye 39
Figure 3-13 Photographs of Toilet Block 39
Figure 3-14 Photographs of Bus Bay / Passenger Shelter 40

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Jhansi - Lalitpur section [Package-I] of NH-44 (old "NH-26") from km. 0+000 to km. 49+700 in the State of Uttar Pradesh (hereinafter referred as "Project Road").

M/s. Jhansi Lalitpur Tollway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Jhansi to Lalitpur Section (from km. 0+000 to km. 49+700) of NH-44 or Project Road under TOT. The project was awarded to Concessionaire on 20th October 2020 with a concession period of 30 years by National Highway Authority of India (NHAI). The length of Project Road is 49.700 kms with one toll plaza at km. 32+100 near Babina.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and filed investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

1. A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
2. Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
3. Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
4. Formulation of future major maintenance strategy
5. Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
6. Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
7. Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
8. Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **13th January 2025** to **17th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features and overviews of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates**: The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Jhansi Lalitpur Tollway Private Limited**, is a company promoted by Cube Highways or Special Purpose Vehicle (SPV) formed for implementing this project. The Appointed Date of the project was 20th October 2020 (as TOT Package). The concession period of the project is 30 years including construction period. The project has received COD on 12th November 2014.

Presently, there are two Concessionaires for Project Road. One is Cube Highways who maintains Toll Operation activities (TOT Concessionaire) and the other Concessionaire is Gayatri Group (Annuity Concessionaire) who maintains the project length as per their original scope of work.

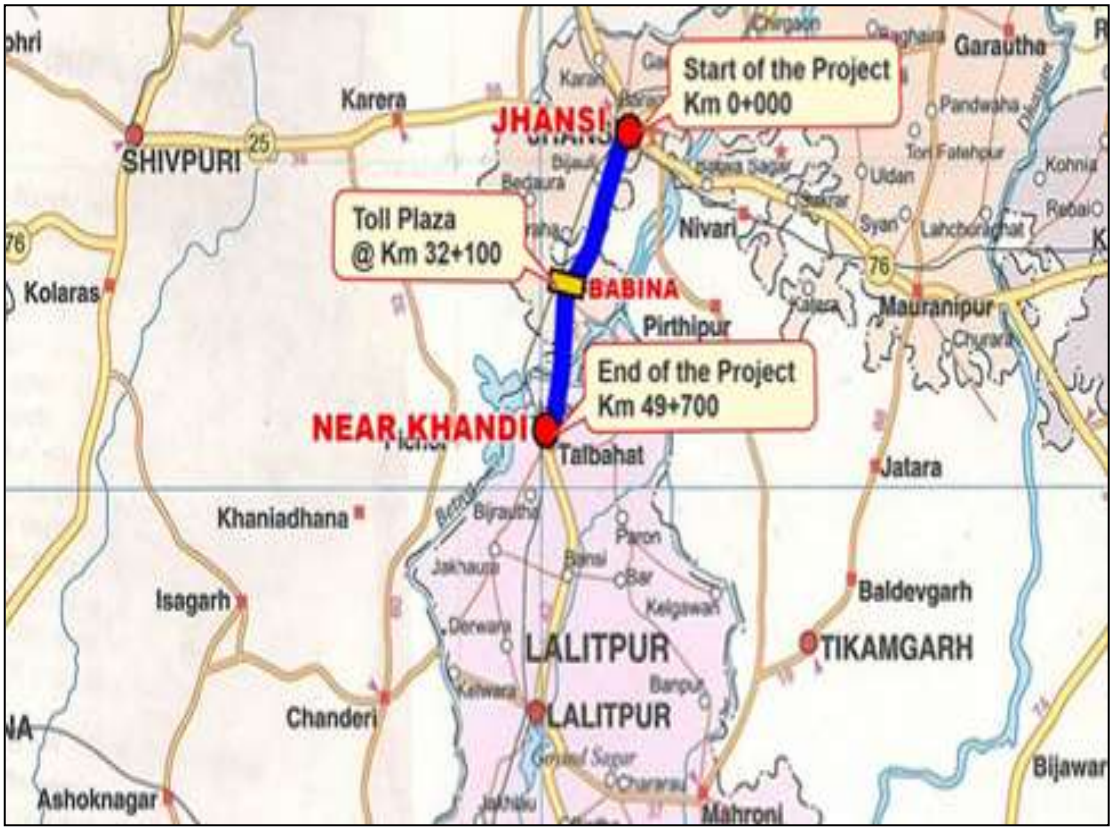
The project is being developed through Annuity BOT mode under TOT (Toll Operate Transfer) Bundle-3 with concession period of 30 years from the Appointed Date while O&M will start from April 2027 as per Clause 10.2.2 of Concession Agreement.

2.2 Location

The Project Road is part of National Highway No. 44 (old "NH-26") of Jhansi - Lalitpur section in the state of Uttar Pradesh. The total project length is 49.700 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map



The photographs taken during the site visit are presented below:

Figure 2-2 Start of Project Road

Figure 2-3 End of Project Road

2.3 Climate

The project area being on a rocky plateau, Jhansi experiences extreme temperatures. Winter begins in October and peaks in mid-December. Temperature is about 4 °C minimum and 21 °C maximum. Summer begins by April and summer temperatures can peak 47 °C in May. The rainy season starts by the third week of June, while the monsoon rains gradually weaken in September and end before the last week of September. In the rainy season, the average daily high temperature hovers around 36 °C with high humidity. The average rainfall for the project is about 850 mm per year, occurring almost entirely within the three-and-a-half months of the Southwest Monsoon. In summer, temperatures as high as 45 to 47 °C while in winter the temperatures can fall as low as 0 to 1 °C as recorded in winter 2011.

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up areas.

2.6 Right of Way

The width of the existing Right of Way (ROW) throughout the Project Road is 60 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Jhansi (km. 0+000) to Lalitpur (km. 49+700) has been developed as a four-lane divided carriageway with median width of 2 m, service road and other arrangements. The Project Road passes through rural as well as built-up section.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.

b) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement.

c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	49.700	From April 2027
2	Construction of Service Road	km.	3.310	
3	Reconstruction of Pipe Culvert	Nos.	01	
4	Reconstruction of Box Culvert	Nos.	05	
5	New Construction of Box Culvert	Nos.	-	
6	Vehicular Underpasses	Nos.	-	
7	Reinforce Cement concrete cover Drain with footpath	km.	3.310	
8	Road marking by Thermoplastic Paint	km.	3.310	
9	Rigid Concrete Barrier	km.	-	
10	Additional cantilever Sign Boards	Nos.	-	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with an earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

The pavement condition survey was carried out from **13th January 2025** to **17th January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the pavement condition of the Project Road is Good to Fair.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

Pavement condition at km. 48+240 (RHS)

Pavement condition at km. 36+700 (LHS)

Pavement condition at km. 28+800 (RHS)

Pavement condition at km. 25+800 (LHS)

Pavement condition at km. 19+400 (RHS)

Pavement condition at km. 08+300 (LHS)

3.2 Service Road / Slip Road

The service road with width 5.5 is constructed in built-up area and adjoining underpass locations. The total service road length is 3.310 kms. The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

km. 14+100 (RHS)

km. 13+600 (RHS)

3.3 Major / Minor Junction

There are 01 no. of major junctions and 14 nos. of minor junctions along Project Road.

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Major / Minor Junctions

Junction at km. 0+000

Junction at km. 0+000

Orcha Junction at km. 21+300 (LHS)

Y-Junction at km. 31+900 (RHS)

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Road Over Bridge (ROB)	01
Flyover	01
Major Bridges (MJB)	05
Minor Bridges (MNB)	04
Vehicular Underpass (VUP)	12
Light Vehicular Underpass (LVUP)	-
Pedestrian Underpass (PUP)	04
Cattle Underpass (CUP)	-
Foot over Bridge	-
Culverts (Box / Slab / HPC)	79
Total	**106**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
Major Bridge										
1	03+560	LHS	5 x 13	7.5	12	1.5	Slab RCC	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
		RHS	5 x 13	7.5	12	1.5	Slab RCC	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
2	06+700	LHS	3 x 33	7.5	10	1.5	PSC Girder	RCC	Open	Structure is in good condition. However, weep holes and vent cleaning are required. Also screen grid is not found in two drainage spouts.
		RHS	3 x 33	7.5	10	1.5	PSC Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
3	15+000	LHS	6 x 32 + 1 x 60 + 1 x 16	7.5	10	1.5	Box + PSC Girder	RCC	Open	Structure is in good condition. However, weep holes and vent cleaning are required. Reflection cracks are also found at pavement surface of deck slab.
		RHS	6 x 32 + 1 x 60 + 1 x 16	7.5	10	1.5	Box + PSC Girder	RCC	Open	Structure is in good condition. However, weep holes and vent cleaning are required. Reflection cracks are also found at pavement surface of deck slab
4	20+660	LHS	4 x 32	7.5	10	1.5	Box Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
		RHS	4 x 33	7.5	10	1.5	Box Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
5	42+000	LHS	31 x 20	7.5	10	0	Arch Type Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
		RHS	31 x 20	7.5	12	1.5	PSC Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required. Little bit settlement at approach slab is there.
Minor Bridge										
1	17+520	LHS	1 x 15	7.5	10.5	1.5	PSC Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required. Also Unauthorized median opening is also found towards A1 site where vehicles were crossing. Which can cause fatal accident.
		RHS	1 x 15	7.5	10.5	1.5	PSC Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required. Also Unauthorized median opening is also found towards A1 site where vehicles were crossing. Which can cause fatal accident.
2	19+050	LHS	2 x 20	7.5	10.5	1.5	PSC Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required. Cracks has been found on pavement surface of Approach slab.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
		RHS	2 x 20	7.5	10.5	1.5	PSC Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
3	22+680	LHS	1 x 45	7.5	10.5	1.5	Box Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
		RHS	1 x 45	7.5	10.5	1.5	Box Girder	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
4	41+160	LHS	1 x 10	7.5	12	1.5	Solid Slab	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
		RHS	1 x 10	7.5	12	1.5	Solid Slab	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning are required.
Flyover										
1	13+800	LHS	1 x 12 + 1 x 45 + 1 x 11.5 (SK) x 6	9.00	12	No	Steel Girder & RCC Slab	RCC	Open	Structure is in good condition. However, weep holes and vent cleaning are required.
		RHS		9.00	12	No				Structure is in good condition. However, weep holes and vent cleaning are required.
Road over Bridges										
1	10+500	LHS	1 x 23 + 1 x 20 + 1 x 32 + 1 x 18 + 1 x 24	7.5	10.5	1.5	PSC Girder & Steel Beam	RCC	Open	Structure is in good condition. However, weep holes and vent cleaning are required.
		RHS								Structure is in good condition. However,

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
							Girder			weep holes and vent cleaning are required.
Vehicular Underpasses										
1	1+270	LHS	1 x 10.5	9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance.
		RHS		9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
2	5+240	LHS	1 x 10	9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
3	8+280	LHS	1 x 10	9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
4	9+040	LHS	1 x 17 (SK)	9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
5	10+280	LHS	1 x 16 (SK)	9.25	40	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		9.25	40	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
6	12+740	LHS	1 x 14.5 (SK)	9.25	34	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		9.25	34	No	RCC Solid	RCC	-	Structure is in good condition. Stone

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
							Slab			pitching at slope is need maintenance
7	16+000	LHS	1 x 10	9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		9.25	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
8	23+340	LHS	1 x 11.5 (SK)	9.25	27.5	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		9.25	27.5	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
9	28+780	LHS	1 x 15 (SK)	7.5	36	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		7.5	36	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
10	30+420	LHS	1 x 15 (SK)	7.5	36	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		7.5	36	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
11	36+300	LHS	2 x 10 (SK) + 1 x 13.5	7.5	39	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		7.5	39	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
12	38+960	LHS	1 x 11.5 (SK)	7.5	28	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
		RHS		7.5	28	No	RCC Solid Slab	RCC	-	Structure is in good condition. Stone pitching at slope is need maintenance
Pedestrian / Cattle Underpasses										

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
1	18+840	LHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.
		RHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.
2	21+720	LHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.
		RHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.
3	24+710	LHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.
		RHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.
4	45+810	LHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.
		RHS	1 x 6	7.5	24	No	RCC Solid Slab	RCC	-	Structure is in good condition. Shrubs, vegetation need to be cleaned.

Figure 3-4 Photographs of Major Structures

Existing VUP at km. 1+270

Existing VUP at km. 5+240

Existing VUP at km. 8+280

Existing VUP at km. 9+040

Existing VUP at km. 10+280

Existing VUP at km. 12+740

Existing VUP at km. 16+100

Existing PUP / CUP at km. 18+840

Existing PUP / CUP at km. 21+720

Existing VUP at km. 23+340

Existing PUP / CUP at km. 24+710

Existing VUP at km. 28+780

Existing VUP at km. 30+450

Existing VUP at km. 36+300

Existing VUP at km. 38+600

Existing PUP / CUP at km. 24+710

Existing Major Bridge at km. 3+560

Existing Major Bridge at km. 6+800

Existing Major Bridge at km. 15+950

Existing Major Bridge at km. 20+660

Existing Major Bridge at km. 42+000

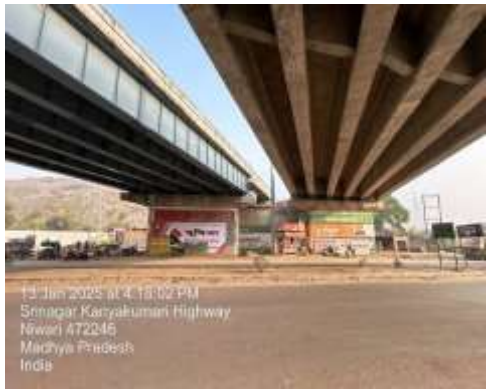
Existing Minor Bridge at km. 17+520

Existing Minor Bridge at km. 19+050

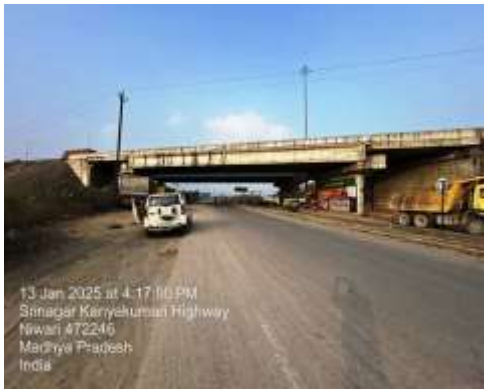
Existing Minor Bridge at km. 22+680

Existing Minor Bridge at km. 41+160

Existing ROB at km. 10+500



Existing Flyover at km. 13+800



Existing Flyover at km. 13+800

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 23 Nos. of pipe culverts, 66 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Annuity Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Annuity Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching has been observed damage which required to be addressed under routine repair work by the Annuity Concessionaire.

Box Culvert at km. 4+950

Box Culvert at km. 18+800

Box Culvert at km. 23+600

Box Culvert at km. 24+200

Box Culvert at km. 30+100

Box Culvert at km. 48+100

Slab Culvert at km. 45+800

Box Culvert at km. 48+410

Note: Pipe culverts were not visible during the visual inspection of Project Road.

3.6 Drainage

There are 4.87 kms of existing covered drain on both side of the Project Road at urban section and between MCW and SR. The photographs taken during site visit are presented below.

Figure 3-5 Photographs of Drainage

km. 8+900 Service Road (LHS)

km. 8+200 Service Road (LHS)

km. 9+200 Underpass (RHS)

km. 38+600 Service Road (LHS)

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations. At a few locations the slope protection and chute drains are damaged which will be rectified by the Annuity Concessionaire.

Some of the photographs taken during the site visit are presented below.

Figure 3-6 Photographs of Slope Protection and Chute Drain

km. 9+200 (Box Culvert)

km. 10+400 (VUP)

km. 14+100 (LHS - Service Road)

Chute Drain at km. 30+100 (Box Culvert)

3.8 Road Furniture

The Concessionaire has provided additional road furniture along Project Road as per the standards and specifications mentioned in Schedule-C.

Table 3-3 Details of Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Solar Blinkers	Nos.	Nil
2	Streetlights	Nos.	Nil
3	High Mast Lights	Nos.	Nil
4	Transverse Bar Makings / Thermoplastic Bar Markings	km.	4.870
5	New installation of Safety Barriers		
	W-Beam Safety Barriers	m	Nil
	Concrete Median Barrier	m	Nil
	Rigid Concrete Barrier	m	Nil
6	Guard Posts	m	Nil
7	Pedestrian Guard Rails	m	Nil
8	Road Studs / Raised Pavement Markers		
9	Road Markings		
10	Traffic Delineators	As per Section-9 of	

Sr. No.	Description	Unit	Quantity
		IRC:SP:84-2014	
11	Kilometer / Hectometer / Boundary Stones		
12	Additional Sign Boards		
	Gantry Sign Boards	Nos.	Nil
	Cantilever Sign Boards	Nos.	Nil
	Shoulder Mounted Dual Post Sign Boards	As per Section 9 of IRC:SP:84-2014	
	Shoulder / Median Mounted Single Post Sign Boards		

Pavement Marking and Road Studs

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which will be rectified by the Annuity Concessionaire.

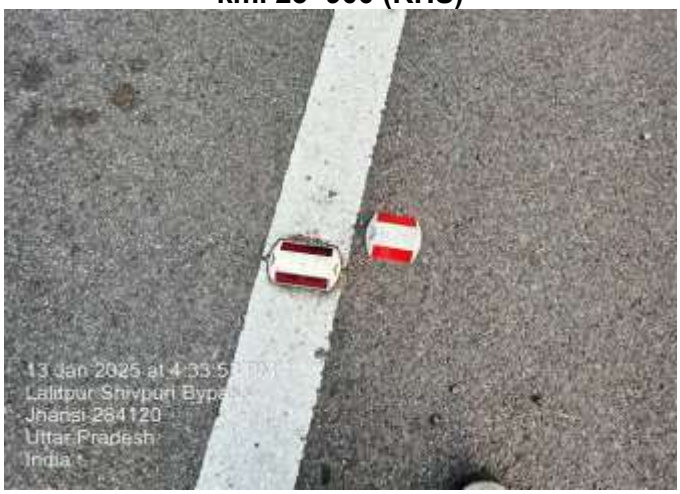
Cat's eye / road studs for the Project Road are done as per the design standards indicated in section 12 of Schedule-D. Cat's eye has been fixed at junction and zebra crossings. However, at few locations some road studs have damaged which will be rectified by the Annuity Concessionaire.

Some of the photographs of road marking and road studs are presented below.

Figure 3-7 Photographs of Pavement Marking and Road Studs

km. 23+900 (RHS)

km. 18+800 (LHS)



km. 10+400 (LHS)

km. 0+200 (RHS)

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Annuity Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-8 Photographs of Road Signages

5th km Stone at km. 30+000

km. stone at km. 24+000

NHAI Emergency Sign Board

Overhead Sign Board

Stop Sign at km. 8+300

Over Head Gantry at km. 0+200

Highway Lighting / Crash Barriers / Delineators

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

The traffic delineators are provided by Concessionaire for road users in abnormal condition of weather for the Project Road. The same is maintained by the Annuity Concessionaire.

Some of the photographs of highway lighting, crash barrier and delineators are presented below.

Figure 3-9 Photographs of Highway Lighting / Crash Barrier / Delineator

Highway Lighting at km. 32+100 Toll Plaza

Crash Barrier at Km. 22+700

MBCB at km. 21+700

Road Delineator at km. 18+000

Road Land Boundary

Road land boundary pillars are found at km 19+000 along Project Road.

Road land boundary pillars at km. 19+000 (MCW)

Road land boundary pillars at km. 12+720 (SR)

3.9 Avenue Plantation and Median Plantation

Avenue plantations are done only where ROW is available, and median plantation has been providing in the project length as per IRC specification.

Some of the photographs of avenue plantation and median plantation are presented below.

Figure 3-10 Photographs of Avenue and Median Plantation

km. 23+600

km. 28+800

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at km. 32+100 near Babina with the following infrastructure.

Table 3-4 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 32+100
2	Number of Tolling Lanes	8 (4+4) lanes for toll operation for vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	8
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel/Yes
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	3
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Note:

- *Presently, the Concessionaire is using Annuity Concessionaire's building as an administration building for toll plaza.*

- *The electricity supply for the existing streetlights is provided by the TOT Concessionaire. The maintenance of these streetlights is in the scope of Annuity Concessionaire.*
- *Toll plaza is completed as per rehabilitation work and as per scope given in schedule-B.*

Figure 3-11 Photographs of Toll Plaza

Toll Plaza at km. 32+100

Weight Bridge at Toll Plaza

Toll Booth Equipment at Toll Plaza

Control Room of Toll Plaza

ATMS Room

Admin Building

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza

3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Toll Collector Display (TCD)

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at Toll Plaza

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

TMS Server

3.12.2 55" LED screen for CCTV monitoring

55" LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

CCTV Monitor

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and POS.

Work Station

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location. As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system

- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza.

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.13.3 Emergency Call Boxes (ECB)

Emergency Call Boxes (ECB) is not installed at site.

3.13.4 Portable Weigh-in-Motion (PWIM)

Portable Weigh-in-Motion (PWIM) is provided at the site.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km. 42+650.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 14 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

VMS at km. 11+800

VMS at km. 49+100

3.13.7 CCTV Surveillance Cameras

Surveillance cameras are installed at various locations along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed.

km. 30+000 (RHS)

km. 22+300 (LHS)

3.13.8 Video Incident Detection System

62 Nos. of fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at locations each on LHS and RHS.

km. 46+740

km. 21+700

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy-All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.

- The Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.14 Truck Lay-bye

The Concessionaire has constructed truck lay-bye at the following locations.

Table 3-5 Details of Truck Lay-bye

Sr. No.	Chainage (km)	Remarks
1	0+280	LHS
2	33+900	RHS

The photographs taken during the site visit are presented below.

Figure 3-12 Photographs of Truck Lay-bye

Truck lay-bye at km. 0+280 (LHS)

Truck lay-bye at km. 33+900 (RHS)

3.15 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are in the scope of Annuity Concessionaire.

3.16 Toilet Block

The Annuity Concessionaire has constructed 02 Nos. of Toilet Blocks along the Project Road and maintenance of the same is in Annuity Concessionaire's scope.

Table 3-6 Details of Toilet Block

Sr. No.	Chainage (km)	Side		Remarks
		LHS	RHS	
1	32+250	Yes	-	
2	32+050	-	Yes	

The photographs taken during the site visit are presented below.

Figure 3-13 Photographs of Toilet Block

Highway Nest & Toilet Block at Toll Plaza

3.17 Bus Bays and Passenger Shelters

There are 04 Nos. of bus bays / passenger shelters along Project Road. The photographs taken during the site visit are presented below.

Figure 3-14 Photographs of Bus Bay / Passenger Shelter

Km. 40+440 (LHS)

Km. 42+000 (RHS)

3.18 Balance Work Status

The project has received Final Completion Certificate on 12th November 2014 by completing all the works as mentioned in the Technical Schedules of Concession Agreement. There are no balance works to be executed as per Concession Agreement.

3.19 Operation and Maintenance

3.19.1 O&M Contract

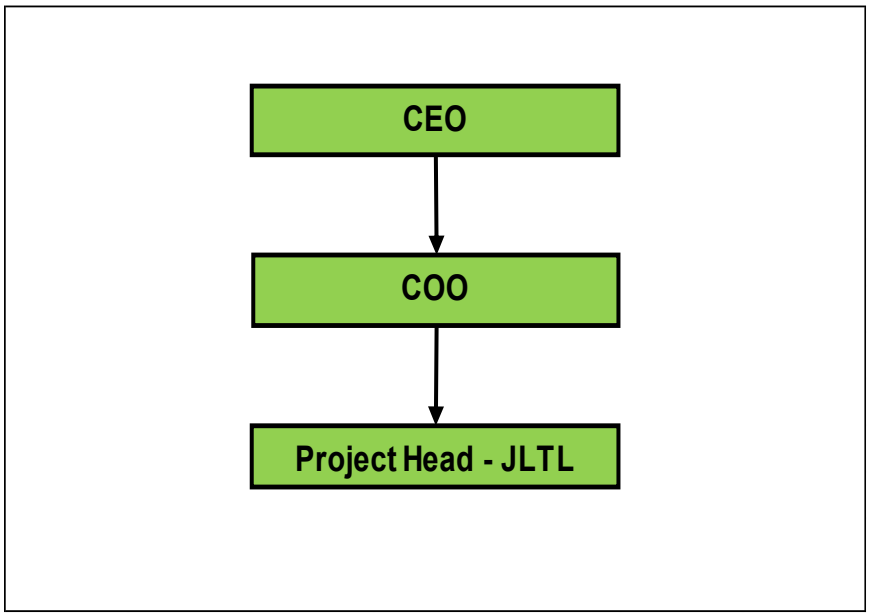
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall confirm to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

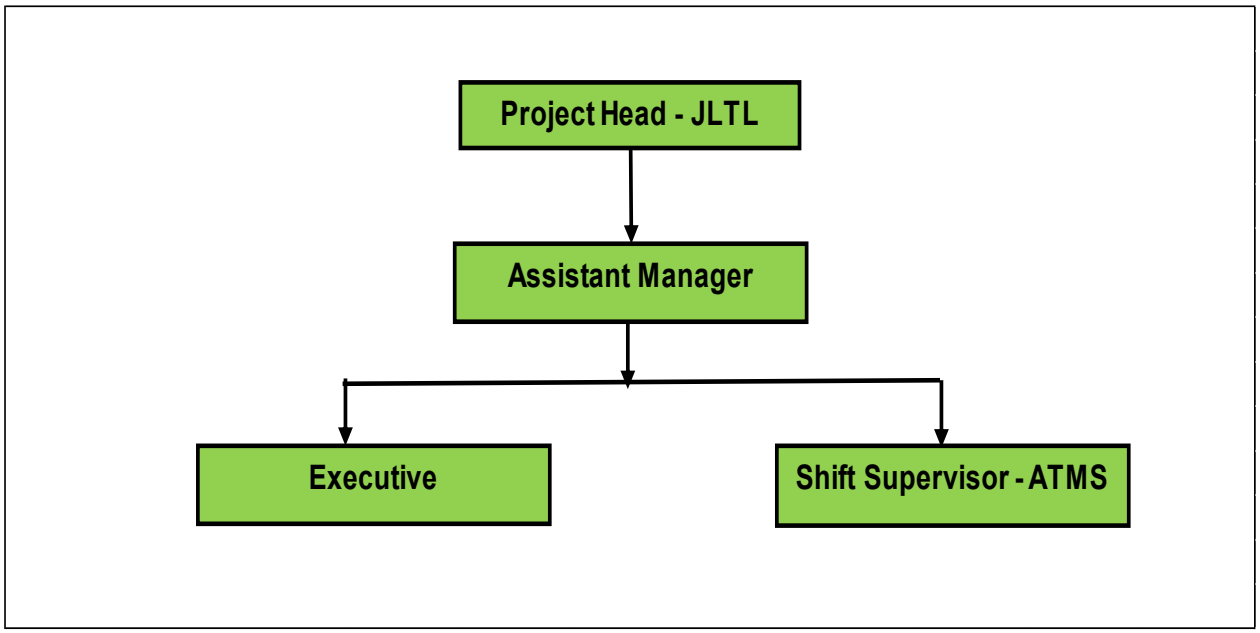
The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

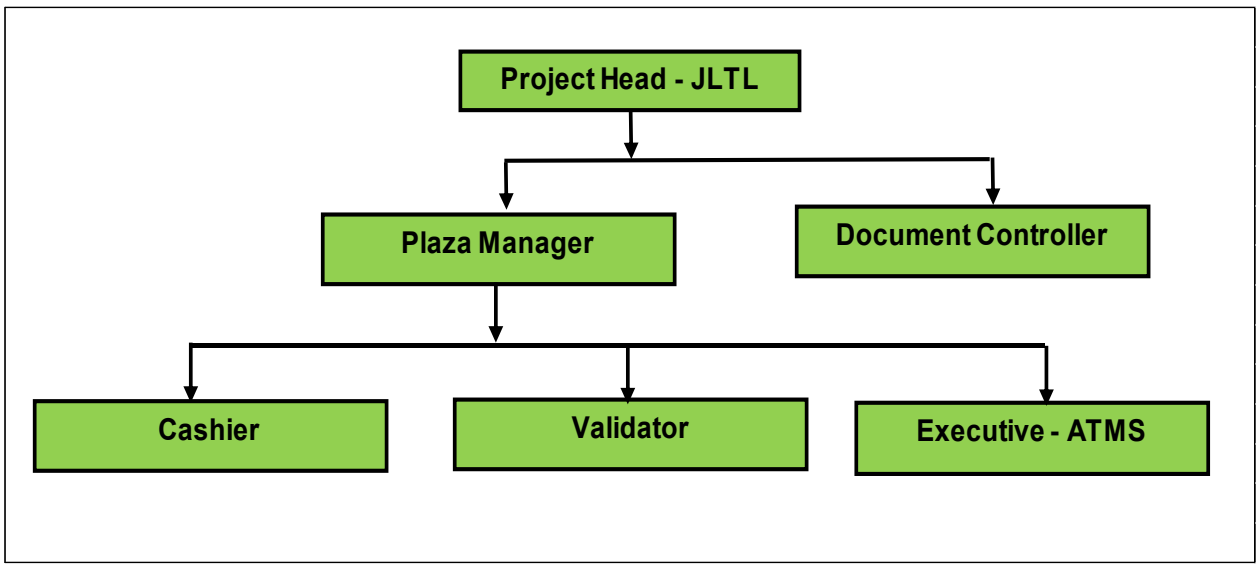
3.19.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (HR), 01 Assistant Manager (TMS / IT), 01 Executive (TMS / IT), 01 Plaza Manager, 01 Assistant Plaza Manager, 04 Cashiers and 04 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

Organization Chart







3.19.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.19.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by Annuity Concessionaire. The project will be handed over to TOT Concessionaire in April 2027. Hence, the routine maintenance is considered from FY 2028 till end of concession period.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Annuity Concessionaire as per Scope of Work. The Annuity Concessionaire received Completion Certificate on 12th November 2014.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period. The project will be handed over to TOT Concessionaire in April 2027.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 32+100 (near Toll Plaza) on 19th July 2019 and 20th July 2019. The summary of Vehicle Damage Factor (VDF) as calculated and provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Vehicle Category	Vehicle Damage Factor	
	LHS	RHS
Bus	0.86	1.13
LCV	1.08	0.63
2A	2.59	2.44
3A	5.40	5.04
MAV	11.38	10.96

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

Year	LHS		RHS		Remarks
	MSA	Cumulative	MSA	Cumulative	
2024-25	4.61	**4.61**	4.39	**4.39**	
2025-26	4.86	**9.47**	4.63	**9.02**	
2026-27	4.92	**14.39**	4.69	**13.71**	Handing over from Annuity Concessionaire in FY 2027
2027-28	5.14	**19.53**	4.90	**18.61**	
2028-29	5.41	**24.94**	5.15	**23.76**	
2029-30	5.68	**30.62**	5.42	**29.18**	MM Cycle 1
2030-31	5.96	**36.58**	5.69	**34.87**	
2031-32	6.04	**42.62**	5.76	**40.63**	

Year	LHS		RHS		Remarks
	MSA	Cumulative	MSA	Cumulative	
2032-33	6.36	**48.98**	6.07	**46.70**	
2033-34	6.69	**55.67**	6.38	**53.08**	
2034-35	7.04	**62.71**	6.72	**59.80**	
2035-36	7.40	**70.11**	7.06	**66.86**	
2036-37	7.78	**77.89**	7.43	**74.29**	MM Cycle 2
2037-38	8.18	**86.07**	7.81	**82.10**	
2038-39	8.59	**94.66**	8.21	**90.31**	
2039-40	9.02	**103.68**	8.62	**98.93**	
2040-41	9.48	**113.16**	9.06	**107.99**	
2041-42	9.95	**123.11**	9.51	**117.50**	
2042-43	8.35	**131.46**	7.98	**125.48**	
2043-44	8.76	**140.22**	8.38	**133.86**	
2044-45	9.19	**149.41**	8.79	**142.65**	MM Cycle 3
2045-46	9.63	**159.04**	9.21	**151.86**	End of CP as per Client

4.4 Network Survey Vehicles (NSV) Survey

The O&M is not under the scope of Concessionaire / Client.

4.5 Structural Investigations

The O&M is not under the scope of Concessionaire / Client.

4.6 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Currently, the Project Road is maintained by the existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in April 2027. It is assumed that the pavement will be overlaid before handing over the project confirming the pavement parameters kept within the limits as per Table-1 (Maintenance Criteria for Pavements) of Schedule-F. Hence, the major maintenance cycles are proposed between FY 2028 and the end of concession period i.e. FY 2046.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-3 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2028	Handing over of Project Road from Annuity Concessionaire	
2	FY 2029	-	-
3	FY 2030	Major maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (100%)	Major maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
4	FY 2031 to FY 2036	-	-
5	FY 2037	Major maintenance with 40 mm BC (PMB) (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
6	FY 2038 to FY 2044	-	-
7	FY 2045	Major maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
8	FY 2046*	End of Concession Period	

**Actual end of concession period as per Concession Agreement is October 2050. However, as per traffic details submitted by the Concessionaire, the revised concession period is up to FY 2046 as per provision of Article 14 of CA.*

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Work Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Some discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years.

   Polymer cost and modification costs are provided by client to work out BC rate with PMB.

   Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 & FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,308
IOC Mathura	VG-30	47,505	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492

Refineries	Grade	Rate for FY 2026 & FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
Barauni	VG-10	47,702	33,971
Barauni	VG-30	48,502	34,540
Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from Tata Tiscon website.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	8,552
2	Bituminous Concrete (PMB)	Cum	11,291
3	Bituminous Concrete (VG-30)	Cum	9,348
4	Milling	Sqm	95
5	Micro-surfacing	Sqm	173
6	Kerb Re-laying	Rmt	440
7	Road Marking	Sqm	596
8	Road Studs	Nos.	244

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per Concession Agreement. Hence, balance work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements

towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in April 2027. Hence, the routine maintenance and horticulture maintenance is considered from FY 2028 till end of concession period.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-27)	After Annuity Amount (FY 2028-2046)
1	Salary and Welfare Expenses	87,12,000	87,12,000
2	Tolling Operations Services	2,13,43,507	2,13,43,507
3	Toll Security Services	56,10,659	56,10,659
4	Incident Management & Emergency Services	-	1,54,98,763
5	Electricity and Diesel Charges	29,46,587	66,24,096
6	TMS/HTMS/System Expenses	44,63,455	47,46,278
7	Office Operating Expenses	33,51,504	33,51,504
8	Vehicle Running Expenses	34,84,800	34,84,800
9	Professional Fees Expense	78,63,802	78,63,802
10	Community Development	4,25,040	4,25,040

Sr. No.	Particulars	Amount (FY 2026-27)	After Annuity Amount (FY 2028-2046)
11	Communication Expenses	3,48,666	3,48,666
12	Conveyance Expenses	3,80,362	3,80,362
13	Insurance Expense	25,35,751	25,35,751
14	IE Fees	31,95,045	31,95,045
15	Routine Maintenance Cost (Project Road)	-	1,81,51,475
16	Horticulture & ROW Maintenance	-	1,39,34,290
17	Miscellaneous including Contingency	25,86,447	33,64,811
	Total Cost (Rs)	**6,72,47,625**	**11,95,70,849**
	Total Cost (Cr)	**6.72**	**11.96**
	Per km Cost (Lakh)	13.53	24.06

5.5 Major Maintenance Cost

As mentioned in earlier chapter, the Project Road is maintained by existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in April 2027. It is assumed that the pavement will be overlaid before handing over of the project confirming the pavement parameters kept within the limits as per Table-1 (Maintenance Criteria for Pavements) of Schedule-F. Hence, the major maintenance cycles are proposed between FY 2028 and end of concession period.

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2030	95.60	
2	FY 2037	60.85	
3	FY 2045	47.87	
Total Cost (Cr.)		**204.32**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	5.15	
2	FY 2034	5.15	
3	FY 2041	5.15	
Total Cost (Cr.)		**15.45**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%		

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46
1	Routine O&M Cost																					
1.01	Salary and Welfare Expense	0.87	0.92	0.96	1.00	1.05	1.09	1.13	1.18	1.23	1.28	1.33	1.38	1.44	1.49	1.55	1.61	1.68	1.75	1.82	1.89	1.96
1.02	Tolling Operations Services	2.13	2.25	2.36	2.46	2.56	2.67	2.78	2.89	3.01	3.13	3.25	3.38	3.52	3.66	3.80	3.96	4.11	4.28	4.45	4.63	4.81
1.03	Toll Security Services	0.56	0.59	0.62	0.65	0.67	0.70	0.73	0.76	0.79	0.82	0.86	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.17	1.22	1.26
1.04	Incident Management Services	-	-	1.71	1.79	1.86	1.94	2.02	2.10	2.18	2.27	2.36	2.46	2.55	2.66	2.76	2.87	2.99	3.11	3.23	3.36	3.49
1.05	Electricity and Diesel Charges	0.29	0.31	0.73	0.76	0.80	0.83	0.86	0.90	0.93	0.97	1.01	1.05	1.09	1.14	1.18	1.23	1.28	1.33	1.38	1.44	1.49
1.06	TMS/HTMS/System Expenses	0.66	0.24	0.43	0.45	0.47	0.63	0.86	1.04	0.33	0.58	0.60	0.62	0.82	1.13	1.37	0.43	0.76	0.79	0.82	1.08	1.49
1.07	Office Operating Expenses	0.34	0.35	0.37	0.39	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.76
1.08	Vehicle Running Expenses	0.35	0.37	0.38	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.76	0.79
1.09	Professional Fees Expense	0.79	0.83	0.87	0.91	0.94	0.98	1.02	1.07	1.11	1.15	1.20	1.25	1.30	1.35	1.40	1.46	1.52	1.58	1.64	1.70	1.77
1.10	Community Development	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10
1.11	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09
1.13	Insurance Expense	0.25	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57
1.14	IE Fees	0.32	0.34	0.35	0.37	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.69	0.72
1.15	Routine Maintenance Cost	-	-	2.00	2.09	2.18	2.27	2.36	2.46	2.56	2.66	2.77	2.88	2.99	3.11	3.23	3.36	3.50	3.64	3.78	3.93	4.09
1.16	Horticulture & ROW Maintenance	-	-	1.54	1.61	1.67	1.74	1.81	1.89	1.96	2.04	2.12	2.21	2.30	2.39	2.48	2.58	2.69	2.79	2.90	3.02	3.14
1.17	Miscellaneous and Contingency	0.26	0.27	0.37	0.39	0.40	0.42	0.44	0.46	0.47	0.49	0.51	0.53	0.55	0.58	0.60	0.62	0.65	0.67	0.70	0.73	0.76
	Subtotal of O&M Cost	6.94	6.85	13.11	13.69	14.27	14.99	15.81	16.59	16.50	17.40	18.10	18.82	19.75	20.81	21.83	21.71	22.89	23.80	24.75	25.97	27.37
2	Major Maintenance Cost	-	-	-	-	107.42	-	-	-	-	-	-	80.54	-	-	-	-	-	-	-	79.65	-
3	Periodic Cost of TMS/HTMS Replacement	-	5.43	-	-	-	-	-	-	7.26	-	-	-	-	-	-	9.55	-	-	-	-	-
	Total Cost	**6.94**	**12.28**	**13.11**	**13.69**	**121.69**	**14.99**	**15.81**	**16.59**	**23.76**	**17.40**	**18.10**	**99.36**	**19.75**	**20.81**	**21.83**	**31.26**	**22.89**	**23.80**	**24.75**	**105.62**	**27.37**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**1,81,51,475**
(inclusive of GST)	**= 3.65 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				2,09,709	**2,42,909**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	320854.00	371651.00	-	-	-	-
		Paved shoulder	1.70	356505.00	412946.00	47.27	-	1,68,50,209	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	419418.00	485819.00	-	-	-	-
		Paved shoulder	2.20	461359.00	534401.00	-	2.44	-	13,01,266
					TOTAL		**49.700**		**1,81,51,475**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year (Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			10089
	Cost in Rupees			25,223
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			404
	Cost in Rupees			40,356
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	1.50%
	Area (sqm)			150
	Rs/m^2			95
	Cost in Rupees			14,204
	b) Width less than 3 mm	75 % Crack Less	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			64
	Cost in Rupees			4,780
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			404
	Cost in Rupees			30,267

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	v) Road marking	14%	Once in 7th year & @ Repaired location	32008
	SUB TOTAL			**1,46,838**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Jungle Clearance	100%	Twice in a Year	0
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**2,09,709**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	3848
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**33,201**
	GRAND TOTAL (Urban)			**2,42,909**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2030)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						15,70,724	15	2,40,47,791
	For BC	Sqm	2	47,702	8.95		8,53,878	8,53,878		
	For DBM	Sqm	2	48,026	7.00		6,72,364	6,72,364		
	For Misc. Location	Sqm	2	2,485	8.95		44,482	44,482		
2	BC with 30 mm	Cum	2	50,187	8.95	0.03	26,951	26,951	11,291	30,43,11,599
3	DBM with 50 mm	Cum	2	48,026	7.00	0.05	33,618	33,618	8,552	28,75,09,234
4	Milling	Sqm	2	48,026	7.00		6,72,364	6,72,364	95	6,35,38,398
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,079	3.50	4.50	432	432	119	51,383
6	Dismantling of CC Panels @ 2% area	Cum	2%		17,002	0.30	102	102	995	1,01,500
7	Replacement of Panels - PQC @ 2% area	Cum	2%		17,002	0.30	102	102	8,289	8,45,571
	Service Road									
8	Tack coat	Sqm	1	2,435	5.50		13,393	13,393	15	2,05,039
9	BC with 30 mm	Cum	1	2,435	5.50	0.03	402	402	9,348	37,55,777
10	Micro Surfacing	Sqm	1	2,435	5.50		13,393	13,393	173	23,20,251
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1,674	15.3		25,664	25,664	15	3,92,917
12	Wearing Coat BC with 30 mm	Cum	1	1,674	15.3	0.03	770	770	11,291	86,93,483
13	Milling of Ex. Wearing Coat	Sqm	1	1,674	15.3		25,664	25,664	95	24,25,257
14	Painting of Crash Barrier	Sqm	4	1,674		1.12	7,466	7,466	105	7,83,934
	Other Works									
15	Raising of Road Kerb	Rmt	2	47,702			95,404	95,404	440	4,19,77,760
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,075			12,150	12,150	244	29,64,600
	Solar Road Stud	Nos					-	-	1,647	-
17	Painting of Kerb	Sqm	2	47,702		0.315	30,052	30,052	129	38,76,742
18	Road Marking	Sqm					37,684	37,684	596	2,24,59,912

Major Maintenance Cost (FY 2030)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW									
	a) Median & Edge line	Sqm	4	52,185	0.15		31,311			
	b) Lane line	Sqm	2	17,221	0.10		3,444			
	Service Road									
	a) Edge line	Sqm	2	4,870	0.10		974			
	b) Lane line	Sqm	1	1,607	0.10		161			
	Junction crossing	Sqm					1,794			
19	Filling of Earthen shoulder	Cum					2,935	2,935	449	13,16,717
	MCW		2	47,702	1.00	0.03	2,862			
	Service Road		1	2,435	1.00	0.03	73			
20	Median Filling	Cum		47,270	4.17	0.10	-	-	431	-
21	Miscellaneous	5%								3,85,78,893
Total Major Maintenance Cost (Rs)										**81,01,56,757**
Total Major Maintenance Cost with GST @18% (Rs)										**95,59,84,974**
Total Major Maintenance Cost with GST (Cr)										**95.60**
Per Km Cost (Lakh)										**192.35**
Escalation Factor for Major Maintenance Cost (FY 2030)										**1.20**
Total Escalated Cost for Major Maintenance Cost (FY 2030) (Cr)										**107.42**

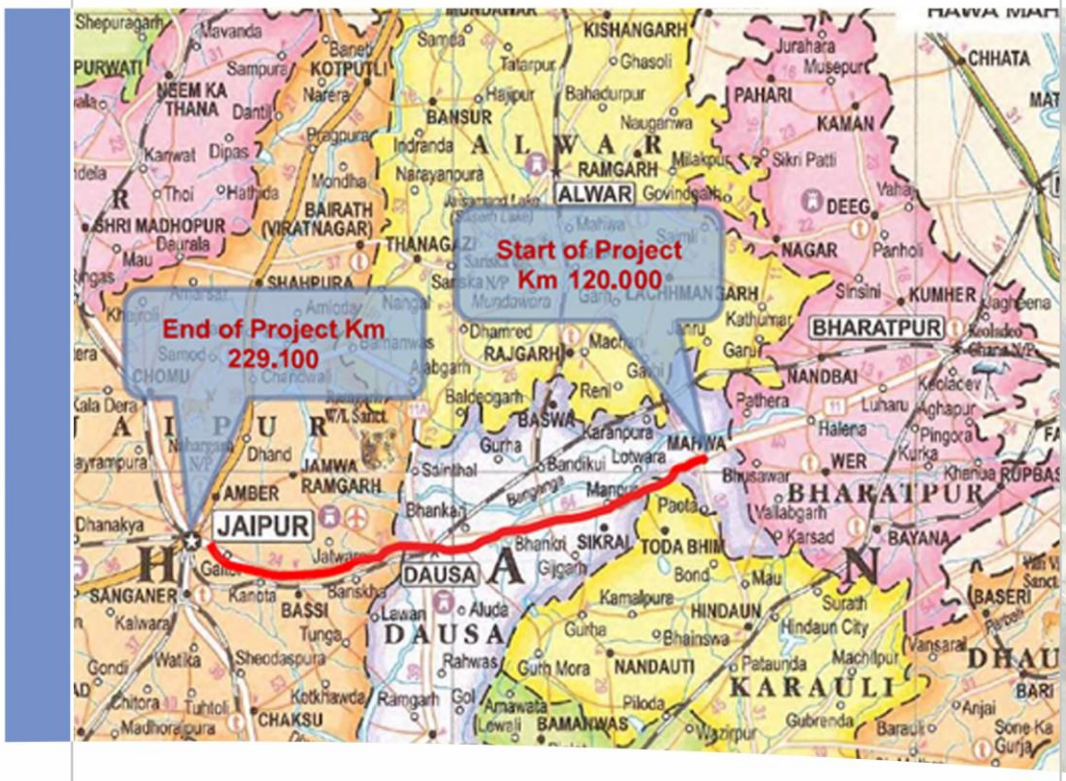
Major Maintenance Cost (FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						9,31,979	15	1,42,68,593
	For BC	Sqm	2	47,702	8.95		8,53,878	8,53,878		
	For DBM	Sqm	2	2,401	7.00		33,618	33,618		
	For Misc. Location	Sqm	2	2,485	8.95		44,482	44,482		
2	BC with 40 mm	Cum	2	50,187	8.95	0.04	35,934	35,934	11,291	40,57,48,799
3	DBM with 50 mm	Cum	2	2,401	7.00	0.05	1,681	1,681	8,552	1,43,75,462
4	Milling	Sqm	2	2,401	7.00		33,618	33,618	95	31,76,920
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,079	3.50	4.50	432	432	119	51,383
6	Dismantling of CC Panels @ 2% area	Cum	2%		17,002	0.30	102	102	995	1,01,500
7	Replacement of Panels - PQC @ 2% area	Cum	2%		17,002	0.30	102	102	8,289	8,45,571
	Service Road									
8	Tack coat	Sqm	1	2,435	5.50		13,393	13,393	15	2,05,039
9	BC with 30 mm	Cum	1	2,435	5.50	0.03	402	402	9,348	37,55,777
10	Micro Surfacing	Sqm	1	2,435	5.50		13,393	13,393	173	23,20,251
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1,674	15.3		25,664	25,664	15	3,92,917
12	Wearing Coat BC with 40 mm	Cum	1	1,674	15.3	0.04	1,027	1,027	11,291	1,15,91,311
13	Milling of Ex. Wearing Coat	Sqm	1	1,674	15.3		25,664	25,664	95	24,25,257
14	Painting of Crash Barrier	Sqm	4	1,674		1.12	7,466	7,466	105	7,83,934
	Other Works									
15	Raising of Road Kerb	Rmt	-	47,702			-	-	440	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,075			12,150	12,150	244	29,64,600
	Solar Road Stud	Nos	-	-			-	-	1,647	-
17	Painting of Kerb	Sqm	2	47,702		0.315	30,052	30,052	129	38,76,742
18	Road Marking	Sqm					37,684	37,684	596	2,24,59,912
	MCW									
	a) Median & Edge line	Sqm	4	52,185	0.15		31,311			

Major Maintenance Cost (FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	17,221	0.10		3,444			
	Service Road									
	a) Edge line	Sqm	2	4,870	0.10		974			
	b) Lane line	Sqm	1	1,607	0.10		161			
	Junction crossing	Sqm					1,794			
19	Filling of Earthen shoulder	Cum					3,889	3,889	449	17,44,700
	MCW		2	47,702	1.00	0.04	3,816			
	Service Road		1	2,435	1.00	0.03	73			
20	Median Filling	Cum	-	47,270	4.17	0.05	-	-	431	-
21	Miscellaneous	5%								2,45,54,433
Total Major Maintenance Cost (Rs)										**51,56,43,099**
Total Major Maintenance Cost with GST @18% (Rs)										**60,84,58,857**
Total Major Maintenance Cost with GST (Cr)										**60.85**
Per Km Cost (Lakh)										**122.43**
Escalation Factor for Major Maintenance Cost (FY 2037)										**1.58**
Total Escalated Cost for Major Maintenance Cost (FY 2037) (Cr)										**80.54**

Major Maintenance Cost (FY 2045)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						9,31,979	15	1,42,68,593
	For BC	Sqm	2	47,702	8.95		8,53,878	8,53,878		
	For DBM	Sqm	2	2,401	7.00		33,618	33,618		
	For Misc. Location	Sqm	2	2,485	8.95		44,482	44,482		
2	BC with 30 mm	Cum	2	50,187	8.95	0.03	26,951	26,951	11,291	30,43,11,599
3	DBM with 50 mm	Cum	2	2,401	7.00	0.05	1,681	1,681	8,552	1,43,75,462
4	Milling	Sqm	2	2,401	7.00		33,618	33,618	95	31,76,920
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,079	3.50	4.50	432	432	119	51,383
6	Dismantling of CC Panels @ 2% area	Cum	2%		17,002	0.30	102	102	995	1,01,500
7	Replacement of Panels - PQC @ 2% area	Cum	2%		17,002	0.30	102	102	8,289	8,45,571
	Service Road									
8	Tack coat	Sqm	1	2,435	5.50		13,393	13,393	15	2,05,039
9	BC with 30 mm	Cum	1	2,435	5.50	0.03	402	402	9,348	37,55,777
10	Micro Surfacing	Sqm	1	2,435	5.50		13,393	13,393	173	23,20,251
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1,674	15.3		25,664	25,664	15	3,92,917
12	Wearing Coat BC with 30 mm	Cum	1	1,674	15.3	0.03	770	770	11,291	86,93,483
13	Milling of Ex. Wearing Coat	Sqm	1	1,674	15.3		25,664	25,664	95	24,25,257
14	Painting of Crash Barrier	Sqm	4	1,674		1.12	7,466	7,466	105	7,83,934
	Other Works									
15	Raising of Road Kerb	Rmt	-	47,702			-	-	440	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,075			12,150	12,150	244	29,64,600
	Solar Road Stud	Nos	-	-			-	-	1,647	-
17	Painting of Kerb	Sqm	2	47,702		0.315	30,052	30,052	129	38,76,742
18	Road Marking	Sqm					37,684	37,684	596	2,24,59,912
	MCW									
	a) Median & Edge line	Sqm	4	52,185	0.15		31,311			

Major Maintenance Cost (FY 2045)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	17,221	0.10		3,444			
	Service Road									
	a) Edge line	Sqm	2	4,870	0.10		974			
	b) Lane line	Sqm	1	1,607	0.10		161			
	Junction crossing	Sqm					1,794			
19	Filling of Earthen shoulder	Cum					2,935	2,935	449	13,16,717
	MCW		2	47,702	1.00	0.03	2,862			
	Service Road		1	2,435	1.00	0.03	73			
20	Median Filling	Cum	-	47,270	4.17	0.05	-	-	431	-
21	Miscellaneous	5%								1,93,16,283
Total Major Maintenance Cost (Rs)										**40,56,41,938**
Total Major Maintenance Cost with GST @18% (Rs)										**47,86,57,487**
Total Major Maintenance Cost with GST (Cr)										**47.87**
Per Km Cost (Lakh)										**96.31**
Escalation Factor for Major Maintenance Cost (FY 2045)										**2.17**
Total Escalated Cost for Major Maintenance Cost (FY 2045) (Cr)										**79.65**

FP Project Management



Technical Due Diligence of Mahua - Jaipur Section of NH-11 from km. 120+000 to km. 229+100 in the State of Rajasthan on BOT Basis

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

FP Project Management
Formerly Frischmann Prabhu (India) Private Limited

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REVISION RECORD					
Document No. 255051 / HE / LIE / TDD_Final Report / R0					
Rev	**Description**	**Date**	**Originator**	**Checked**	**Approved**
R0	Final Report	27-Oct-2025	RW / NHA	RMW	SMA

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FP India Project Management Consultancy Services Pvt. Ltd. * Mumbai

Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 10
3.3 Major / Minor Junctions 10
3.4 Condition Survey of Structure 12
3.5 Condition Survey of Culverts 26
3.6 Drainage 31
3.7 Slope Protection 31
3.8 Road Furniture 32
3.9 Avenue Plantation and Median Plantation 38
3.10 Toll Plaza 39
3.10.1 Lane Equipment 40
3.10.2 RFID ETC Transceiver 40
3.10.3 Lane Controller with Industrial PC 41
3.10.4 Automatic Vehicle Classification (AVC) Sensors 41
3.10.5 Automatic Lane Barrier 42
3.10.6 Lane Traffic Light (LTL) and User Fare Display (UFD) 42
3.10.7 Incident Capture Camera (AVC Camera) 42

3.10.8 License Plate Image Capture Camera (LPIC) 43
3.10.9 Over Head Lane Signal (OHLS) 43
3.10.10 Toll Booth Equipment 43
3.11 Plaza Equipment 44
3.11.1 TMS Server 44
3.11.2 55" LED screen for CCTV monitoring 45
3.11.3 Workstations in Control Room, POS room 45
3.12 Truck Lay-bye 45
3.13 Administrative, Operation and Maintenance Base Camp 46
3.14 Toilet Block 46
3.15 Bus Bays and Passenger Shelters 47
3.16 Balance Work Status 48
3.17 Operation and Maintenance 48
3.17.1 O&M Contract 48
3.17.2 Operation 48
3.17.3 Routine Maintenance 48
3.17.4 Organization Chart 48
4 Pavement Investigation and Assessment 54
4.1 General 54
4.2 Axle Load and VDF 54
4.3 Design Traffic 54
4.4 Network Survey Vehicles (NSV) Survey 55
4.5 Structural Investigations 57
4.6 Test pit and Subgrade Investigation 58
4.7 Periodic Maintenance Strategy 61
5 Cost Estimates 62
5.1 General 62
5.2 Rate Assumption 62
5.3 Balance Works Cost 63
5.4 Routine O&M Cost 64
5.5 Major Maintenance Cost 65
5.6 Periodic Replacement of TMS / ATMS System 65
5.7 Escalation Assumption 65
5.8 Summary of Cost 66
Annexures 68
Annexure I - Routine Maintenance Cost 69
Annexure II - Major Maintenance Cost 73

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 12
Table 3-2 Condition Survey of Major Structure 13
Table 3-3 Details of Summary for Toll Plaza Items 39
Table 3-4 Details of Truck Lay-bye 46
Table 3-5 Details of Toilet Block 47
Table 4-1 Vehicle Damage Factor (VDF) 54
Table 4-2 MSA Calculation 54
Table 4-3 Summary of FWD Survey 57
Table 4-4 Test Results Summary of Natural Ground Soil Samples 58
Table 4-5 Test Results Summary of Bituminous Layer Samples 60
Table 4-6 Major Maintenance Cycle 61
Table 5-1 Bitumen Rates - Ex- MI Supply excluding discount and GST 62
Table 5-2 Summary of Unit Rates 63
Table 5-3 Summary of Operation Cost 64
Table 5-4 Escalation 65

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW-LHS) 8
Figure 3-2 Photographs of Pavement Condition (MCW-RHS) 9
Figure 3-3 Photographs of Service Road 10
Figure 3-4 Photographs of Major Junctions 11
Figure 3-5 Photographs of Minor Junctions 11
Figure 3-6 Photographs of Road Over Bridge (ROB) 21
Figure 3-7 Photographs of Major Bridge 22
Figure 3-8 Photographs of Minor Bridge 22
Figure 3-9 Photographs of Grade Separator 25
Figure 3-10 Photographs of Underpasses 26
Figure 3-11 Photographs of Box Culverts 27
Figure 3-12 Photographs of Pipe Culverts 29
Figure 3-13 Photographs of Drainage 31
Figure 3-14 Photographs of Slope Protection and Chute Drain 32
Figure 3-15 Photographs of Pavement Marking 33
Figure 3-16 Photographs of Road Studs 33
Figure 3-17 Photographs of Traffic Signages 34
Figure 3-18 Photographs of Street Light 35
Figure 3-19 Photographs of MBCB / Crash Barrier 35
Figure 3-20 Photographs of Delineators 36
Figure 3-21 Photographs of Pedestrian Guard Rail 37
Figure 3-22 Photographs of Road Land Boundary 37

Figure 3-23 Photographs of Avenue Plantation and Median Plantation 38
Figure 3-24 Photographs of Toll Plaza 39
Figure 3-25 Photographs of Truck Lay-Bye 46
Figure 3-26 Photographs of Toilet Block 47
Figure 3-27 Photographs of Bus Bays 47

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InVIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Mahua - Jaipur section of NH-11 from km. 120+000 to km. 229+100 in the State of Rajasthan (hereinafter referred as "Project Road").

Jaipur Mahua Tollway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Jaipur to Mahua Section (from km. 120+000 to km. 229+100) of NH-11 BOT Basis. The project was awarded to Concessionaire on 23rd September 2005 with a concession period of 25 years including construction period of 3 years by National Highway Authority of India (NHAI). The length of Project Road is 109.100 kms with two toll plazas at km. 156+600 (Sikandra) and at km. 204+700 (Rajadhok).

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and filed investigations. Same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **13th January 2025 to 15th January 2025**.

The report is organized with the following chapters for easy understandings of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement **Jaipur Mahua Tollway Private Limited**, is a company promoted by Cube Highways or a Special Purpose Vehicle (SPV) formed for implementing this project on 23rd September 2005. The Appointed Date of the Project Road is on 20th March 2006.

The project is being developed through BOT basis with concession period of 25 years from the Appointed Date including construction period of 3 years. The Concessionaire received Completion Certificate on 9th March 2015. The Project Road is currently under Operation and Maintenance stage.

2.2 Location

The Project Road is part of National Highway No. 11 of Jaipur - Mahua section in the state of Rajasthan. The total project length is 109.100 kms.

The Location Map of the Project Road is presented below:

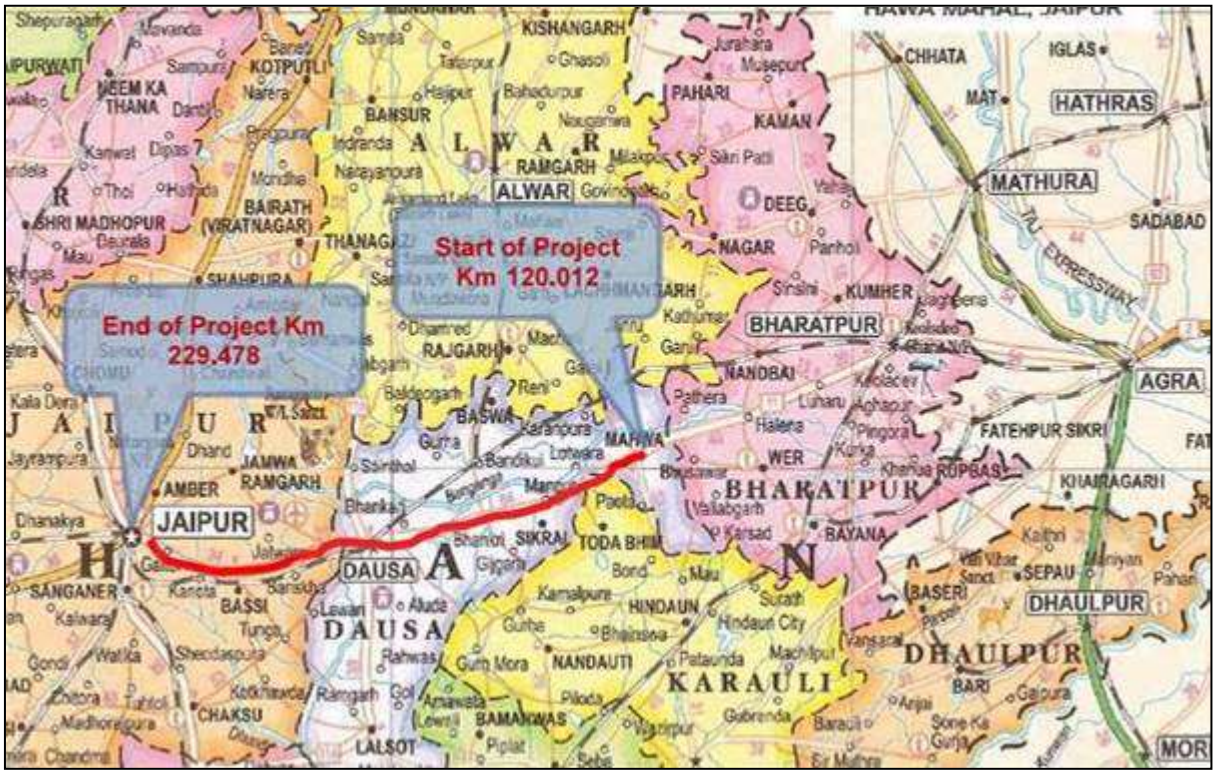


Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

Start of Project Road (LHS)

Start of Project Road (RHS)

Figure 2-3 End of Project Road

End of Project Road

End of Project Road

2.3 Climate

The climate features of the area covered by the Project Road are:

Summer	March - May, with maximum temperature up to 47C.
Monsoon	June - August, with annual rainfall of about 560-660 mm.
Retreating monsoon season	September - November, with dry weather and moderate temperature.
Winter	December - February, temperature falls up to 3C.

2.4 Terrain

This section of National Highway traverses through plain terrain.

2.5 Abutting Land Use

The Project Road is characterized by a mix of habituated area and agriculture lands.

2.6 Right of Way

The width of existing Right of Way (RoW) for the Project Road varies from 13.50 m to 22.50 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services located along the Project Road were shifted to the PROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Mahua (km. 120+000) to Jaipur (km. 229+100) has been developed as a four-lane divided carriageway with median width of 4.5 m and 2.0 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.

b) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement.

c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	109.100	
2	Construction of Service Road	km.	28.628	each Side
3	Major Bridge	Nos.	01	
4	Minor Bridge	Nos.	17	
5	Reconstruction of Pipe Culvert	Nos.	24	
6	Reconstruction of Slab Culvert	Nos.	65	
7	New Construction of Box Culvert	Nos.	01	
8	Underpasses	Nos.	07	
9	Grade Separated Structure	Nos	01	
10	Rail Over Bridge	Nos	01	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has median width of 4.5 m and 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza is rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **13th January 2025 to 15th January 2025**. through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW-LHS)

Pavement Condition at km. 126+100

Pavement Condition at km.129+000

Pavement Condition at km. 133+550

Pavement Condition at km. 136+300

Rigid Pavement at km. 156+500

Rigid Pavement at km. 156+500

Pavement Condition at km. 162+125

Pavement Condition at km. 170+200

Pavement Condition at km. 184+150

Pavement Condition at km. 193+280

Pavement Condition at km. 221+675

Pavement Condition at km. 227+650

Figure 3-2 Photographs of Pavement Condition (MCW-RHS)

Pavement Condition at km. 228+350

Pavement Condition at km. 227+075

Pavement Condition at km. 221+675

Pavement Condition at km. 215+125

Rigid Pavement at km. 204+700

Pavement Condition at km. 199+150

Pavement Condition at km. 193+280

Pavement Condition at km. 181+200

Pavement Condition at km. 166+250

Pavement Condition at km. 160+970

Pavement Condition at km. 150+175

Pavement Condition at km. 120+125

3.2 Service Road / Slip Road

The service road of width 5.5 m is constructed in built-up area and adjoining underpass locations. The Project Road has total service road length of 28.628 kms on each side. The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service Road

Service Road at km. 145+275 (LHS)

Service Road at km. 133+560 (LHS)

Service Road at km. 22+650 (LHS)

Service Road at km. 130+600 (RHS)

Service Road at km. 184+475 (RHS)

Service Road at km. 225+350 (RHS)

3.3 Major / Minor Junctions

There are 11 nos. of major junctions and 62 nos. of minor junctions along Project Road.

The photographs taken during site visit is presented as below:

Figure 3-4 Photographs of Major Junctions

Major Junction at km. 177+430 (RHS)

Major Junction at km. 182+050 (RHS)

Major Junction at km. 183+000 (LHS)

Major Junction at km. 182+050 (LHS)

Figure 3-5 Photographs of Minor Junctions

Minor Junction at km. 200+100 (LHS)

Minor Junction at km. 193+380 (LHS)

Minor Junction at km. 143+900 (LHS)

Minor Junction at km. 181+200 (RHS)

3.4 Condition Survey of Structure

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	01
Grade Separator	01
Major Bridges (MJB)	01
Minor Bridges (MNB)	17
Underpass (UP)	07
Culverts:	
Pipe Culverts	24
Slab Culverts	65
Total	**116**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
1	131+825	Minor Bridge	RCC Slab	2 x 6.72 (skew)2 x 5.82 (Sq)	12.5	**LHS-** Newly constructed, Substructure RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are cleaned, Structure is in sound condition. **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC deck slab, Tar paper bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail., Crash barrier and slope protection are in good condition. Drainage spouts are cleaned, Structure is in sound condition.
2	135+000	Underpass	RCC Box Type	1 x 10 x 4	12.5	Newly constructed, RCC box type structure and Structure is in sound condition. Drainage spouts are choked
3	144+700	Underpass	RCC Box Type	1 x 10 x 4	12.5	Newly constructed, RCC box type structure and Structure is in sound condition. Drainage spouts are choked
4	148+606	Minor Bridge	T beam bridge	1 x 11.00	12.5	**LHS-** Newly constructed, Substructure RCC abutment and pier, RCC Girder 5 no. for each span, Elastomeric Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Expansion Joint, Crash barrier and slope protection are in good condition. Drainage spouts are choked, Structure is in sound condition. **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC T-Beam Girder 5 no. for each span, Elastomeric bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with hand rail., Expansion Joint, Crash barrier and slope protection are in good condition. Drainage spouts are Cleaned, Structure is in sound condition. Partly Masonry and Partly PCC Return wall with handrail.

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
5	149+750	Minor Bridge	RCC Slab	3 x 7.0	12.5	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are Cleaned, Structure is in sound condition. RCC return wall and RCC Crash Barrier with handrail. At slab joint cracks are seen on Main Carriageway **RHS-** Existing Bridge, Stone masonry is used for Abutment and Pier, RCC deck slab, Tar Paper bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are cleaned, Structure is in sound condition. Masonry and PCC Return wall with handrail.
6	153+600	Underpass	RCC Box Type	1 x 10 x 4	12.5	Newly constructed, RCC box type structure and Structure is in sound condition. Drainage spouts are choked.
7	154+952	Minor Bridge	RCC Slab	6 x 6.0	12.5	**LHS-** Newly constructed, Substructure RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, shoulder side RCC Crash Barrier with handrail. Crash barrier is in good condition. The structure is in sound condition. Drainage spouts are choked. No Slope protection. At slab joint cracks are seen on Main Carriageway **RHS-** Newly constructed, Substructure RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Return wall RCC crash Barrier with handrail. Footpath side RCC Railing, shoulder side RCC Crash Barrier with handrail. Crash barrier is in good condition. The structure is in sound condition. Drainage spout chocked. No Slope protection. At slab joint cracks are seen on Main Carriageway. Vegetation seen on Pier Top and Slab joint
8	161+016	Minor Bridge	RCC Slab	5 x 6.0	12.5	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
						and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are chocked, Structure is in sound condition. At slab joint cracks are seen on Main Carriageway **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC deck slab, Tar Paper bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail., Crash barrier and slope protection are in good condition. Drainage spouts are choked, Structure is in sound condition.
9	164+279	Minor Bridge	RCC Slab	2 x 15.5	12.5	**LHS-** Newly constructed, Substructure RCC abutment and pier, RCC girder 5 nos. for each span, Elastomeric Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Expansion Joint, Crash barrier and slope protection are in good condition. Drainage Spouts are choked Structure is in sound condition. Expansion joints cleaning required. **RHS-** Newly constructed, Substructure RCC abutment and pier, RCC girder 5 no. for each span, Elastomeric Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with hand rail. Expansion Joint, Crash barrier and slope protection are in good condition. Drainage Spouts are chocked. The structure is in sound condition. Expansion joints cleaning required
10	166+417	Minor Bridge	RCC Slab	4 x 11.0	12.5	**LHS-** Newly constructed, Substructure RCC abutment and pier, RCC deck slab, Elastomeric Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage Spouts are chocked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway. A2 side Slop Protection damage.

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
						RHS- Newly constructed, Substructure RCC abutment and pier, RCC deck slab, Elastomeric Bearing are used, Footpath side RCC Railing, Median and Shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage Spouts are chocked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway.
11	170+319	Minor Bridge	T beam bridge	4 x 6	12.5	**LHS-** Newly constructed, Substructure RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage Spouts are chocked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway. **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC deck slab, Tar paper bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage Spouts are chocked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway.
12	178+049	ROB	T Beam Girder Bridge	LHS - 1 x 17.1 RHS - 27.6	LHS-11 RHS-12.5	**LHS-** Existing Bridge, Substructure RCC abutment, RCC T- Beam Girder 3 nos. are used, Elastomeric bearing are used, RCC Railing, Expansion Joint damage. Crash barrier and Slope protection are in good condition. Drainage spouts are choked, Structure is in sound condition. **RHS-** Newly constructed Bridge, Substructure RCC abutment, RCC T- Beam Girder 5 nos. are used, Elastomeric Bearings are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Expansion Joint, crash barrier and slope protection are in good condition. Drainage spouts are cleaned, Structure is in sound condition. Return wall with RCC parapet is constructed. One high mass erected at A2 side. Shoulder

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
						settlement is seen near Abutment A1 and A2.
13	181+575	Underpass	RCC Box Type	1 x 10 x 4	12.5	Newly constructed, RCC box type structure and Structure is in sound condition. Drainage spouts are choked.
14	182+050	Grade Separator	RCC Girder	1 x 36	12.5	Newly constructed, RCC box type Girder, POT PTFE bearing are used, RCC Crash Barrier with handrail, Expansion joints are in good condition. Drainage spouts are chocked. Structure is in sound condition.
15	182+265	Underpass	RCC Box Type	1 x 10 x 4	12.5	Newly constructed, RCC box type structure and Structure is in sound condition. Drainage spouts are choked.
16	188+612	Minor Bridge	RCC Slab	2 x 5.6	12.5	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are choked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway **RHS-** Existing Bridge, RCC abutment and pier, RCC deck slab, Tar Paper bearing are used, Return Wall with RCC crash Barrier. Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail., RCC Railing, and slope protection are in good condition. Drainage spouts are choked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway
17	194+129	Minor Bridge	T beam bridge	17.1+17.75+17.1	12.5	**LHS-** Newly constructed, Substructure RCC abutment and pier, RCC T-Beam Girder 5 no. for each span, Elastomeric Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Expansion Joint cleaning required. Crash barrier is in good condition. Slope protection on A2 side is damaged. Drainage spouts are cleaned, The Structure is in sound condition. **RHS-** Existing Bridge, Substructure RCC abutment and pier, RCC T-Beam Girder 3 no. for each span, Elastomeric bearing are used,

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
						Shoulder and Median RCC Crash Barrier with handrail., Expansion Joint damage. Crash barrier and slope protection are in good condition. Drainage spouts are cleaned. The Structure is in sound condition. Patchwork has been seen on wearing coat.
18	208+000	Underpass	RCC Box Type	1 x 10 x 4	12.5	Newly constructed, RCC box type structure and Structure is in sound condition
19	210+371	Minor Bridge	RCC Slab	9.32+9.63+9.32 (Skew), 9.0+9.3+9.0 (Sq)	12.5	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are choked, Structure is in sound condition. RCC Dirt wall. **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC deck slab, Tar Paper bearing are used, Footpath, Shoulder and Median side RCC Railing, RCC Railing and slope protection are in good condition. Drainage spouts are choked. The Structure is in sound condition. Stone masonry dirt wall with RCC Crash Barrier.
20	213+607	Minor Bridge	RCC Slab	3 x 6.83 (skew), 3 x 6.6 (sq)	LHS-12.5 RHS-10	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are choked. The Structure is in sound condition. **RHS-** Existing Bridge, Stone masonry are used for Abutment, Pier and Return wall, RCC deck slab, Tar Paper bearing are used, Shoulder and Median side RCC Crash Barrier. Stone masonry dirt wall with Parapet. Slope protection is in good condition. Drainage spouts are choked. The Structure is in sound condition.
21	214+943	Minor Bridge	RCC Slab	2 x 7.17(skew), 2 x 5.8 (sq)	LHS-12.5 RHS-	**LHS-** Newly constructed, RCC abutment, pier and Return wall, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail.

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
					11.5	Crash barrier and slope protection are in good condition. Drainage spouts are choked. The Structure is in sound condition. **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC deck slab, Tar Paper bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with hand rail., Crash barrier and slope protection are in good condition. Drainage spouts are cleaned. The Structure is in sound condition. Stone masonry return wall and RCC crash Barrier with handrail.
22	218+079	Minor Bridge	RCC Slab	3 x 8.08 (skew), 3 x 7.0(sq)	12.5	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. Drainage spouts are choked. The Structure is in sound condition. At slab joint cracks are seen on Main Carriageway. **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC deck slab, Tar Paper bearing are used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with hand rail., Crash barrier and slope protection are in good condition. Drainage spouts are choked. The Structure is in sound condition. Stone masonry return wall and RCC crash Barrier with handrail.
23	219+800	Underpass	RCC Box Type	1 x 10 x 4	12.5	RCC box type structure and Structure is in sound condition. Drainage spouts are choked.
24	221+363	Major Bridge	RHS-PSC 3-girder and LHS - RCC Box Girder	7 x 39.75	LHS-12.5, RHS-8.00	**LHS-** Newly constructed Bridge, RCC Box Girders are used, POT PTFE bearing is used, Footpath side RCC Railing, Median and shoulder side RCC Crash Barrier with handrail. Expansion Joints cleaning required. Crash barrier and slope protection are in good condition. Drainage spouts are choked, Structure is in sound condition.

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
						RHS- Existing Bridge, Substructure RCC Pier, PSC 3 no. of Girders for each span, POT PTFE bearing is used, Median and shoulder side RCC Railing, Expansion Joint, crash barrier and slope protection are in good condition. Drainage spouts are choked, Structure is in sound condition. Median side RCC railing damaged and repaired with MBCB in bits of pieces.
25	223+434	Minor Bridge	RCC Slab	5 x 7.75 (skew), 5 x 6.71 (sq)	20.75	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Service Road footpath with RCC Railing and are in good condition. Drainage spouts are chocked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway and Service Road. **RHS-** Newly constructed, RCC abutment, pier and Return Wall, RCC deck slab, Tar Paper Bearing are used, Service Road footpath with RCC Railing and are in good condition. Drainage spouts are chocked. Structure is in sound condition. At slab joint cracks are seen on Main Carriageway and Service Road.
26	225+679	Minor Bridge	RCC Slab	6.8+6.8+7.0	18.75	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Service Road footpath with RCC Railing and are in good condition. Bridge is fully blocked/ Buried with Garbage. The Structure is in sound condition. At slab joint cracks are seen on Main Carriageway as well as Service Road. The Wall Constructed in front of the Bridge. **RHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Service Road footpath with RCC Railing and are in good condition. Bridge is fully blocked/Buried. with Garbage. The Structure is in sound condition. At slab joint cracks are seen on Main Carriageway as well as Service Road.
27	227+207	Minor Bridge	RCC Slab	6.8+6.8	18.75	**LHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Service Road footpath with RCC Railing and are in good condition. Bridge is fully blocked /Buried

Sr. No.	Chainage (km)	Description	Type of Structure	Span Arrangement (No. x Length (m)	Width (m)	Remarks
						with debris. The Structure is in sound condition. **RHS-** Newly constructed, RCC abutment and pier, RCC deck slab, Tar Paper Bearing are used, Service Road footpath with RCC Railing and are in good condition. Bridge is fully blocked / Buried with debris. The Structure is in sound condition.

Figure 3-6 Photographs of Road Over Bridge (ROB)

ROB at km. 179+049 - LHS View

ROB at km. 179+049 - Exp. joint

ROB at km. 179+049 - Slope Protection

ROB at km. 179+049 - RHS View

Figure 3-7 Photographs of Major Bridge

Major Bridge at km. 221+363

View of Expansion Joint

Stone Pitching and Chute Drain

Major Bridge at km. 221+363

Figure 3-8 Photographs of Minor Bridge

Minor Bridge at km. 225+679

Minor Bridge at km. 223+434

Minor Bridge at km. 218+079

Minor Bridge at km. 218.079

Minor Bridge at km. 214+940

Minor Bridge at km. 214+940

Minor Bridge at km. 214+940

Minor Bridge at km. 213+607

Minor Bridge at km. 213+607

Minor Bridge at km. 213+607

Minor Bridge at km. 210+371

Minor Bridge at km. 210+371

Minor Bridge at km. 194+100

Minor Bridge at km. 194+100 - Parapet Wall

Minor Bridge at km. 188+600

Minor Bridge at km. 170+319

Minor Bridge at km. 170+319

Minor Bridge at km. 166+417

Minor Bridge at km. 166+417

Minor Bridge at km. 166+417

Minor Bridge at km. 164+280

Minor Bridge at km. 164+280 - Expansion Joint

Minor Bridge at km. 161+016

Minor Bridge at km. 161+016

Figure 3-9 Photographs of Grade Separator

Grade Separator at km. 182+050

Grade Separator at km. 182+050

Grade Separator at km. 182+050

Grade Separator at km. 182+050

Figure 3-10 Photographs of Underpasses

Underpass at km. 219+800

Underpass at km. 219+800

Underpass at km. 208+000 - Inside View

Underpass at km. 208+000 - RE Wall

Underpass at km. 182+265

Underpass at km. 182+265

Underpass at km. 181+575

Underpass at km. 181+575

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and slab culverts at various locations. There is 24 Nos. of pipe culverts, 65 Nos. of slab culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Annuity Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Annuity Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching have been damaged which required to be addressed under routine repair work by the Annuity Concessionaire.

Figure 3-11 Photographs of Box Culverts

Box Culvert at km. 133+275

Box Culvert at km. 138+569

Box Culvert at km. 145+272

Box Culvert at km. 157+919

Box Culvert at km. 162+259

Box Culvert at km. 163+518

Box Culvert at km. 167+401

Box Culvert at km. 173+901

Box Culvert at km. 185+690

Box Culvert at km. 189+270

Box Culvert at km. 191+248

Box Culvert at km. 195+990

Box Culvert at km. 198+640

Box Culvert at km. 200+850

Box Culvert at km. 207+376

Box Culvert at km. 227+813

Figure 3-12 Photographs of Pipe Culverts

Pipe Culvert at km. 123+434

Pipe Culvert at km. 127+837

Pipe Culvert at km. 178+662

Pipe Culvert at km. 125+947

Pipe Culvert at km. 182+117

Pipe Culvert at km. 178+662

Pipe Culvert at km. 128+539

Pipe Culvert at km. 126+963

3.6 Drainage

RCC drain is constructed in built-up area and locations where service roads are provided. The photographs taken during site visit is presented as below.

Figure 3-13 Photographs of Drainage

RCC Drain at km. 227+200 (RHS)

RCC Drain at km. 223+825 (RHS)

RCC Drain at km. 209+075 (LHS)

RCC Drain at km. 203+150 (LHS)

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations. Few of the slope protection and chute drains are damaged which will be rectified by the Concessionaire. The photographs taken during site visit is presented as below.

Figure 3-14 Photographs of Slope Protection and Chute Drain

Slope Protection at km. 214+943 (LHS-MNB)

Slope Protection at km. 166+279 (LHS-MNB)

Slope Protection at km. 149+750 (LHS-MNB)

Slope Protection at km. 161+016 (RHS-MNB)

3.8 Road Furniture

The Concessionaire has provided road furniture along the Project Road as per the Standards and Specifications mentioned in Schedule-C.

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Some of the photographs of road marking are presented below.

Figure 3-15 Photographs of Pavement Marking

Road Marking at km. 217+050 (RHS)

Pedestrian Cross Marking at km. 235+350 (RHS)

Road Marking at km. 177+400 (RHS)

Centre Lane Marking at km. 160+650 (RHS)

Road Studs

Road studs for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs has been fixed at junction and zebra crossings. Some of the photographs of road studs are presented below.

Figure 3-16 Photographs of Road Studs

Road Studs at km. 193+380

Road Studs at km. 139+000 (RHS)

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location, and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards are properly placed. Median kerb painting is completed by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-17 Photographs of Traffic Signages

Overhead Gantry Board at km. 228+200

Traffic Sign Board at km. 205+225 RHS

Information Sign Board at km. 228+325

Kilometre Stone at km. 215+000

Highway Lighting

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers. Some of the photographs of highway lighting are presented below.

Figure 3-18 Photographs of Street Light

Street Lighting at km. 225+625

Street Lighting at km. 228+350 (RHS)

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-19 Photographs of MBCB / Crash Barrier

Crash Barrier at km. 214+100 (LHS)

Crash Barrier at km. 194+000 (LHS)

Crash Barrier at km. 213+600 (LHS)

Crash Barrier at km. 188+650 (RHS)

Delineators

The traffic delineators are seen in median on curve portion and at median openings along the Project Road. Some of the photographs of delineators are presented below.

Figure 3-20 Photographs of Delineators

Delineators at km. 214+100 (RHS)

Delineators at km. 182+950

Pedestrian Guard Rail

The pedestrian guard rails are provided in between Main Carriageway and Service Road. It is maintained by the Concessionaire. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-21 Photographs of Pedestrian Guard Rail

Pedestrian Guard Rail at km. 126+100 (LHS)

Pedestrian Guard Rail at km. 160+600 (RHS)

Pedestrian Guard Rail at km. 225+700 (LHS)

Pedestrian Guard Rail at km. 227+075 (RHS)

Road Land Boundary

Some of the Road land boundary pillars are seen along the Project Road.

Figure 3-22 Photographs of Road Land Boundary

Boundary Pillar at km. 198+000 (RHS)

Boundary Pillar at km. 178+700 (LHS)

3.9 Avenue Plantation and Median Plantation

Avenue plantations and median plantations are done along the project length as per IRC specification except built-up locations. Some of the photographs of avenue plantation and median plantation are presented below.

Figure 3-23 Photographs of Avenue Plantation and Median Plantation

Avenue Plantation at km. 150+175 (RHS)

Median Plantation at km. 165+400

Avenue Plantation at km. 211+850 (RHS)

Median Plantation at km. 168+450

Avenue Plantation at km. 146+550

Avenue Plantation at km. 203+150 (RHS)

3.10 Toll Plaza

As per Concession Agreement, there are two no. of toll plazas at km. 156+500 (Sikandra) and at km. 204+700 (Rajadhok) with the following infrastructure.

Table 3-3 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 156+500 and km. 204+700
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for Class-I Vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	8 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel/Yes
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes (only 20 nos. near Toll Plaza. 10 nos. in both direction)
15	Low mast Light	No
16	User Fee Boards	3
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-24 Photographs of Toll Plaza

Sikandra Toll Plaza at km. 156+600

Sikandra Toll Plaza at km. 156+600

Rajadhok Toll Plaza at km. 204+700

Rajadhok Toll Plaza at km. 204+700

3.10.1 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.10.2 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

3.10.3 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data at Km 156+500 and at km 204+700 is located inside the Tunnel.

Lane Controller in Tunnel at TP

3.10.4 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

3.10.5 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

3.10.6 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at TP

3.10.7 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.10.8 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

3.10.9 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

3.10.10 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Camera is provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11 Plaza Equipment

3.11.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

Server Room

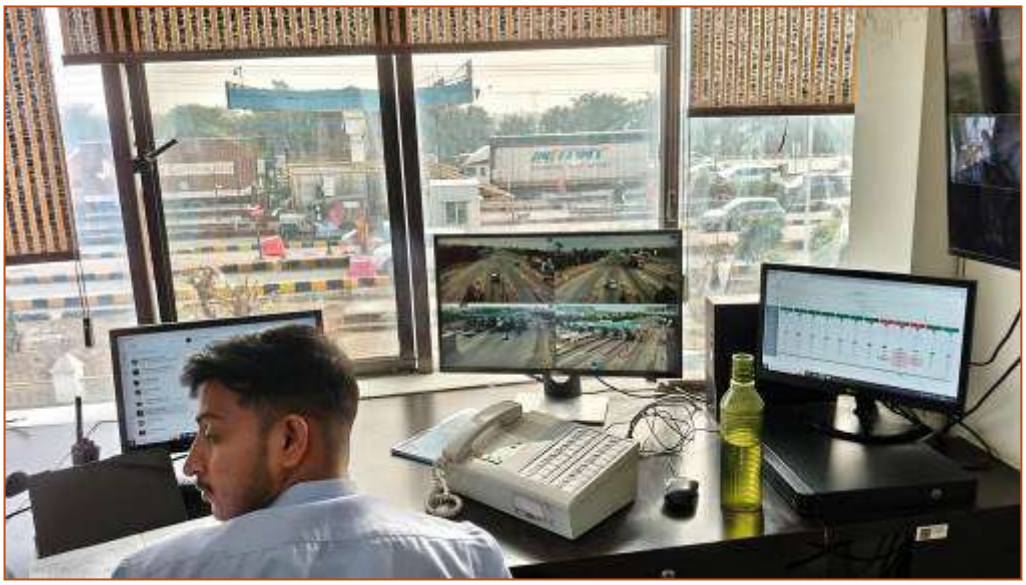
3.11.2 55" LED screen for CCTV monitoring

55" LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.11.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.



3.12 Truck Lay-bye

The following are the truck lay-bye locations.

Table 3-4 Details of Truck Lay-bye

Sr. No.	Design Chainage (km)	Name of the Village
1	154+800	Sikandra
2	182+200	Jatwara
3	210+200	Bassi

Photographs taken during the site visit are presented below.

Figure 3-25 Photographs of Truck Lay-Bye

Truck Lay-Bye at km. 136+300 (LHS)

Truck Lay-Bye at km. 162+700 (RHS)

3.13 Administrative, Operation and Maintenance Base Camp

Traffic Aid Post and Medical Aid Post are in the scope of Concessionaire. Photographs taken during the site visit are presented below.

Toll Plaza Administrative Building at km. 204+700

3.14 Toilet Block

There are three nos. toilet blocks at Truck lay-bye and maintenance of the same is in Concessionaire's scope.

Table 3-5 Details of Toilet Block

Sr. No.	Design Chainage (km)	Name of the Village
1	154+800	Sikandra
2	182+200	Jatwara
3	210+200	Bassi

Photographs taken during the site visit are presented below.

Figure 3-26 Photographs of Toilet Block

Toilet Block at km. 203+000 (RHS)

Toilet Block at km. 136+550 (LHS)

3.15 Bus Bays and Passenger Shelters

There are 43 Nos. of bus bays / passenger shelters along the Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-27 Photographs of Bus Bays

Bus Bay at km. 165+400

Bus Bay at km. 140+425

Passenger Shelter at km. 160+650

Bus Bay at km. 207+450

3.16 Balance Work Status

The project has received Final Completion Certificate on 09th March 2015 by completing all the works as mentioned in the Technical Schedules of Concession Agreement. There are no balance works to be executed as per CA.

3.17 Operation and Maintenance

3.17.1 O&M Contract

As per Clause 18.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, or otherwise make improvements to the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems, More Specifically.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services.

3.17.2 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.
The Operation Cost is presented in the subsequent chapter.

3.17.3 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

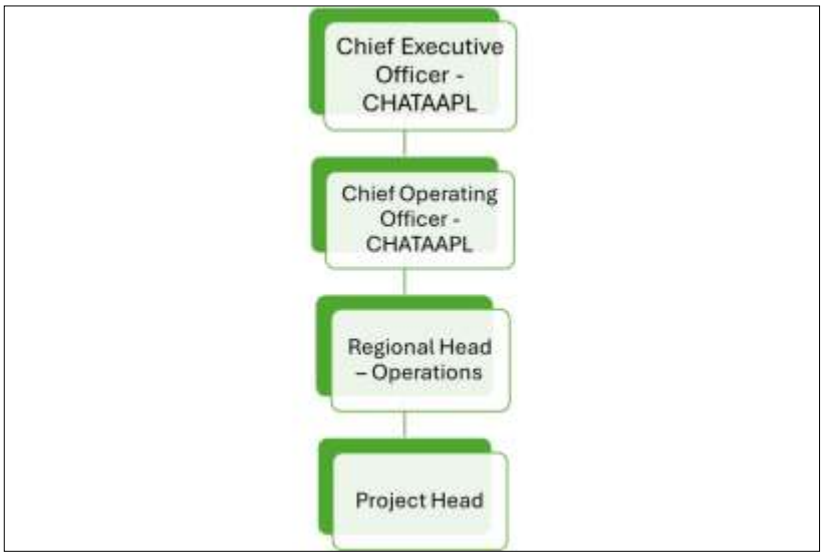
Currently, the Project Road is maintained by Concessionaire.

The Routine Maintenance Cost is presented in the subsequent chapter.

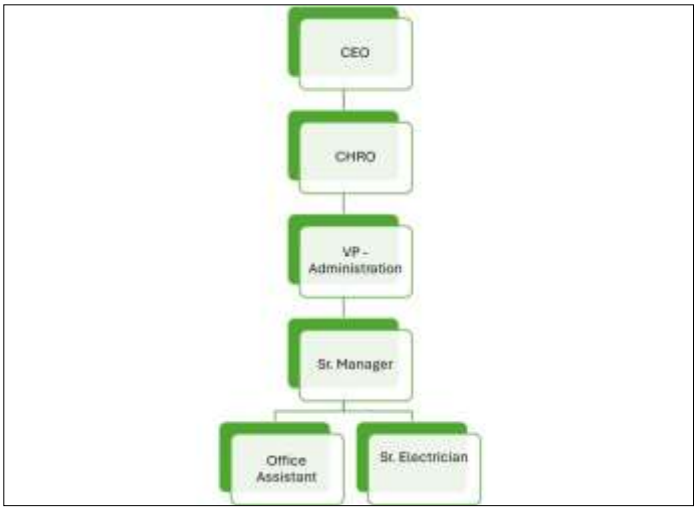
3.17.4 Organization Chart

The Concessionaire has provided the Organization Chart at site for Operation and maintenance. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

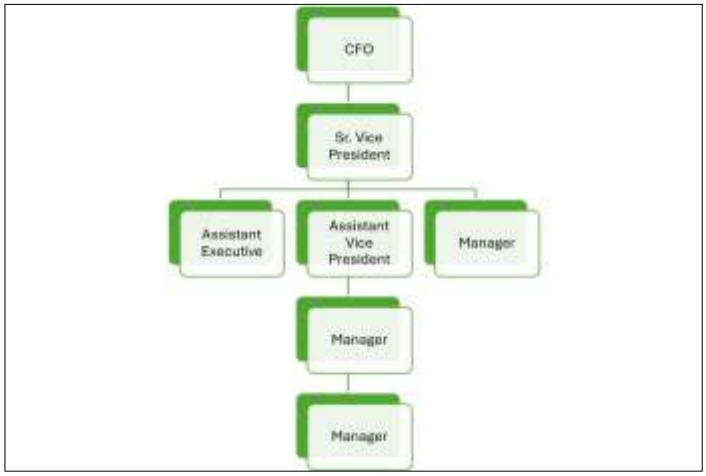
Project Head



Administration - Head Office

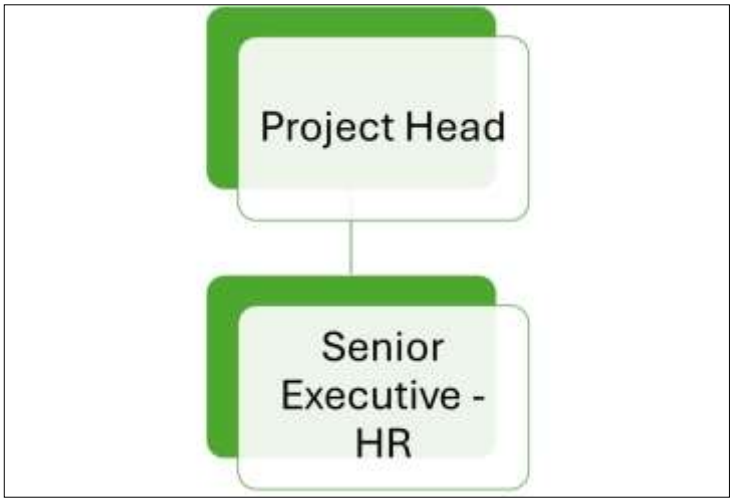


Finance & Accounts - Head Office

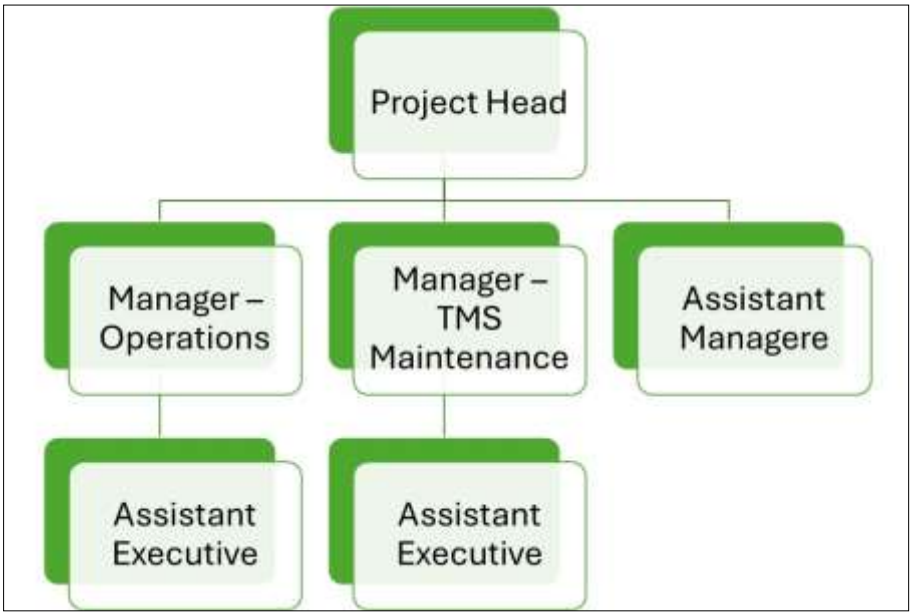


Secretarial-Head Office

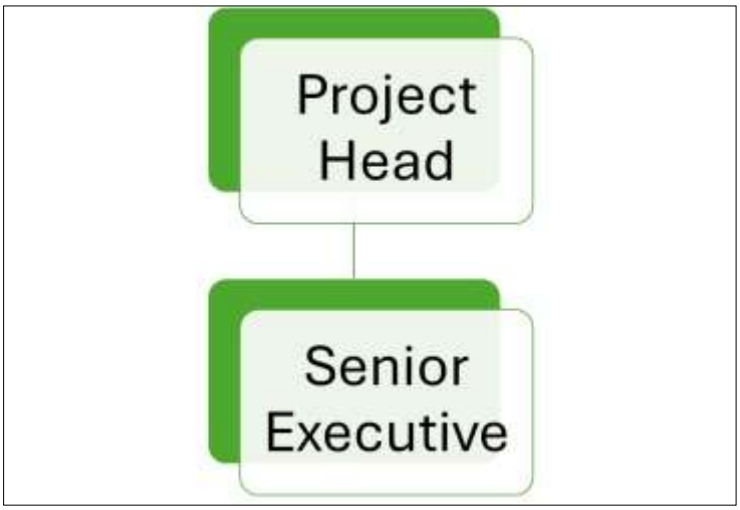
Human Resource - Site Office



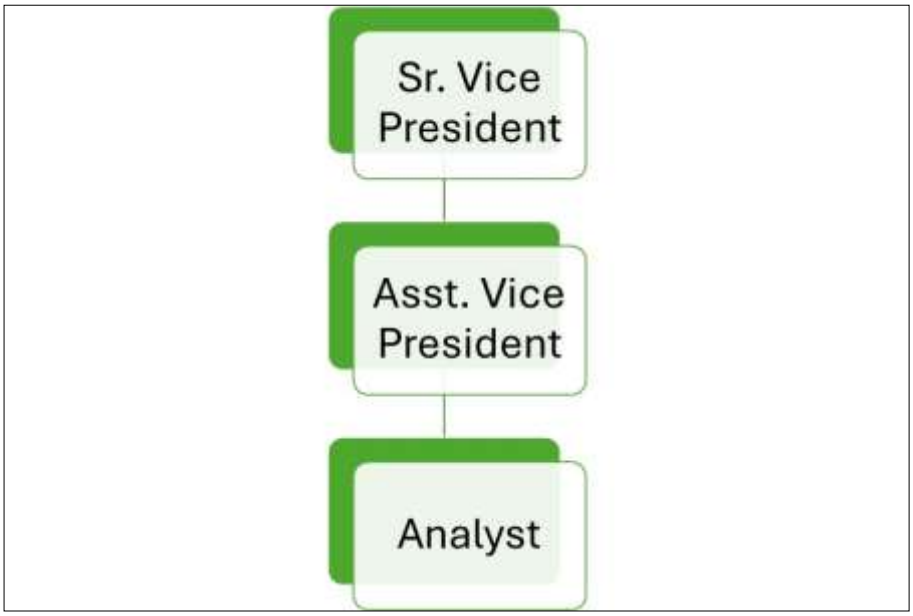
Finance & Accounts - Site Office



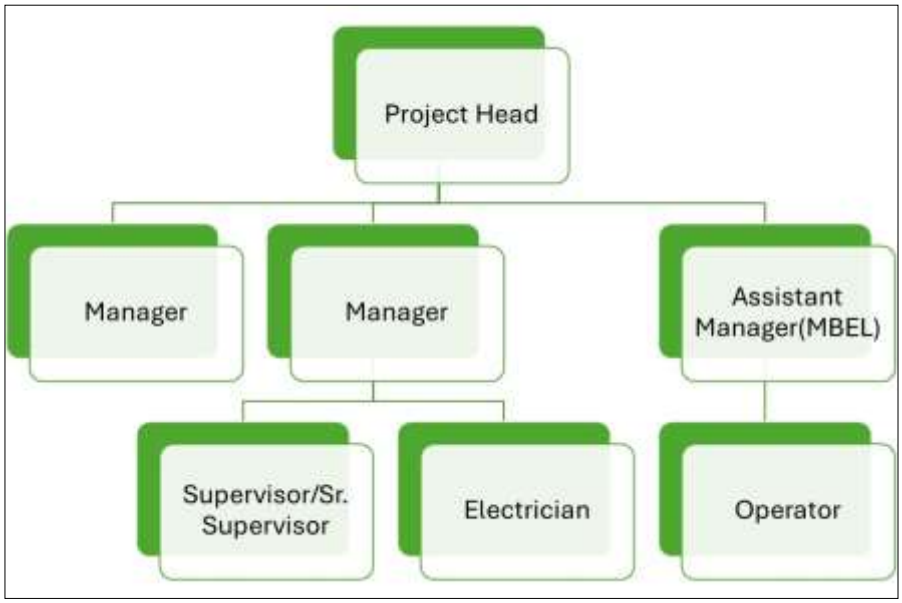
Road Safety– Site Office



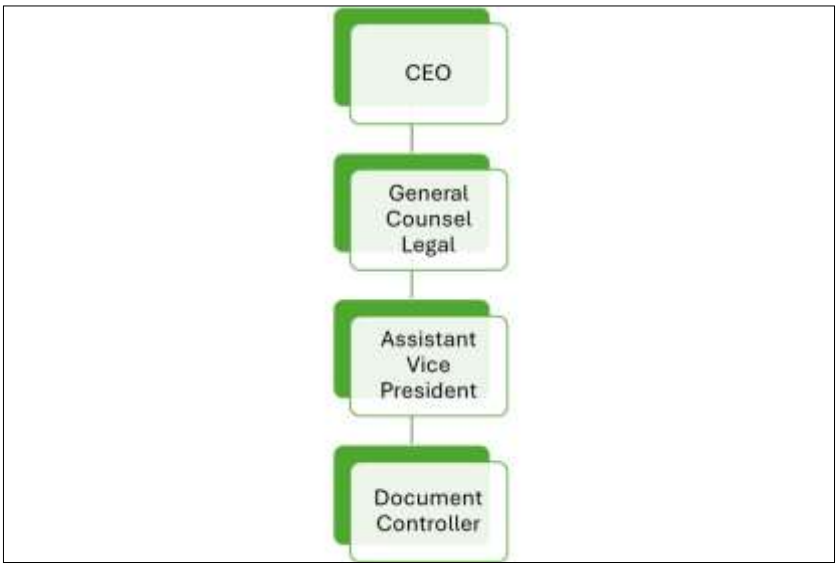
Tax Treasury & Internal Controls - HO



Administration - Site Office



Contracts – Site office



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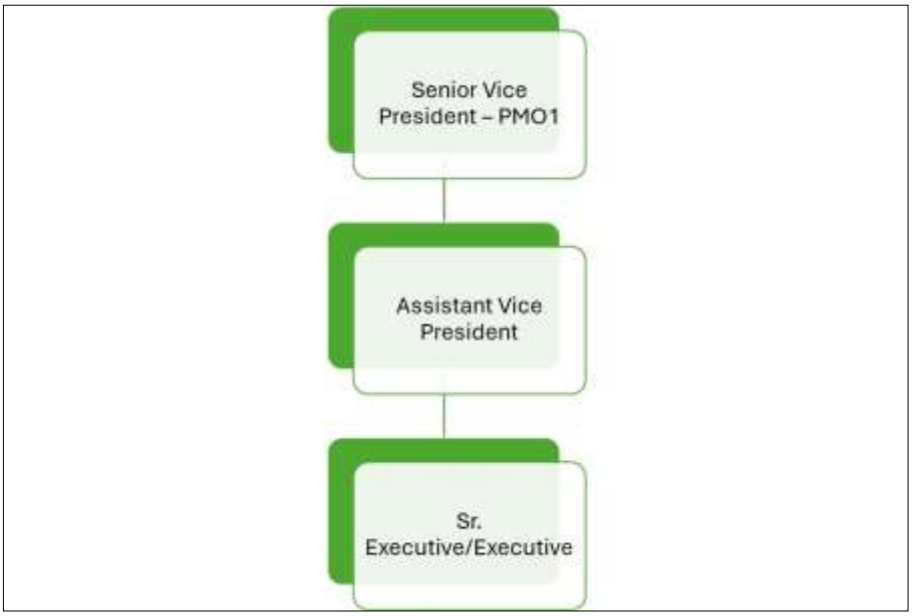
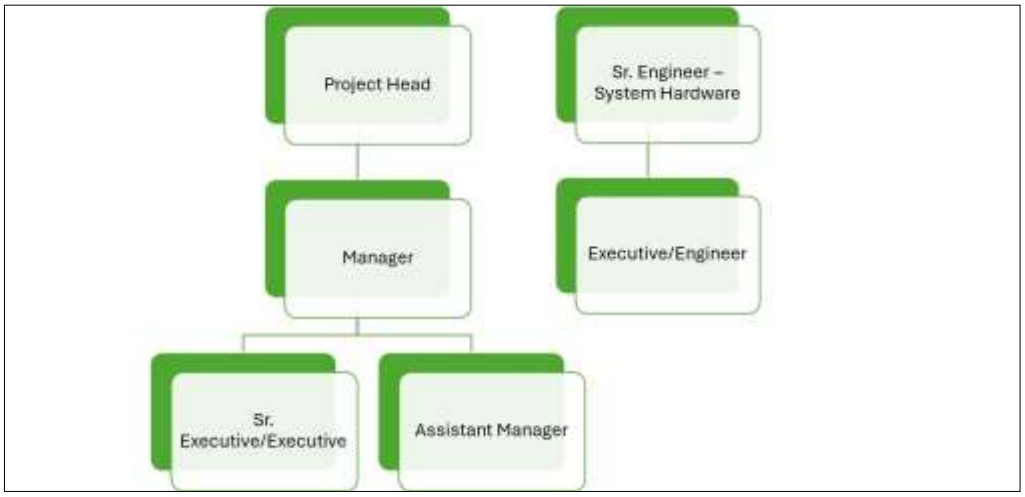
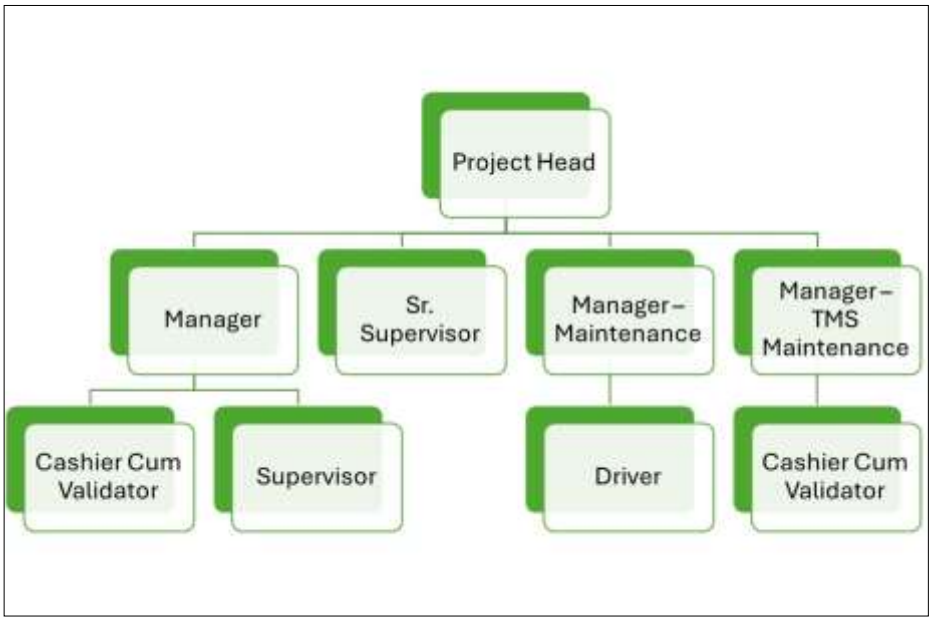


Operations - Site Office





JMTPL-Manpower Summary

S.NO.	DEPARTMENT	HEAD OFFICE	SITE	TOTAL STRENGTH
1	Administration	2	1	3
2	Finance & Accounts	0	3	3
3	Human Resource	0	1	1
4	Maintenance	0	7	7
5	TMS Maintenance	0	10	10
6	Operations	0	18	18
7	PMO-1	0	2	2
8	Secretarial	1	0	1
9	Finance Controlling	4	0	4
10	Contracts	0	1	1
11	Road Safety	0	1	1
12	Tax Treasury & Internal Controls	0	0	0
	Total	7	44	51

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire received Completion Certificate on 9th March 2015.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 25 years from the Appointed Date including construction period of 36 months. For operation and maintenance purposes, the Project Road is divided into two sections viz **MS-1** (54.729 kms, from km. 119+567 to km. 174+296) and **MS-2** (54.359 kms, from km. 174+741 to km. 229+100).

4.2 Axle Load and VDF

The Concessionaire has conducted the axle Load Survey on Project Road at km. 156+600 (near Sikandra Toll Plaza) in the month of March 2022 and at km. 204+500 (near Rajadhok Toll Plaza) in the month of August 2023. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor (VDF)

Vehicle Category	Vehicle Damage Factor (VDF)			
	MS-1		MS-2	
	LHS	RHS	LHS	RHS
Bus	1.210	1.171	1.139	1.001
LCV	0.628	1.130	0.508	1.196
2-Axle	2.666	4.842	2.487	4.053
3-Axle	6.601	7.662	4.909	7.126
MAV	16.108	24.161	12.309	20.772

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculation JMTL- MS-1 LHS (Mahua - Jaipur)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY 26	9.19	**9.19**	
FY 27	9.98	**19.17**	
FY 28	10.50	**29.67**	
FY 29	11.03	**40.70**	
FY 30	11.57	**52.27**	
FY 31	12.12	**64.39**	**End of concession period**

MSA Calculation JMTL- MS-1 RHS (Jaipur - Mahua)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY 26	13.57	**13.57**	
FY 27	14.75	**28.32**	
FY 28	15.52	**43.84**	
FY 29	16.31	**60.15**	
FY 30	17.11	**77.26**	
FY 31	17.93	**95.19**	**End of concession period**

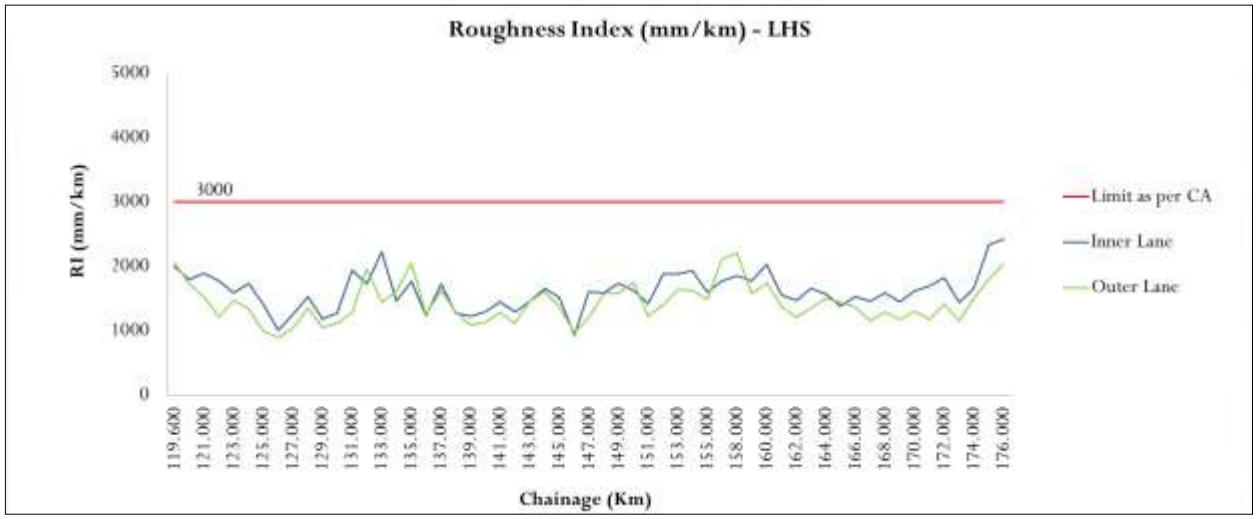
MSA Calculation JMTL- MS-2 LHS (Mahua - Jaipur)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY 26	6.35	**6.35**	
FY 27	6.55	**12.90**	
FY 28	6.89	**19.79**	
FY 29	7.24	**27.03**	
FY 30	7.59	**34.61**	
FY 31	7.95	**42.56**	**End of concession period**

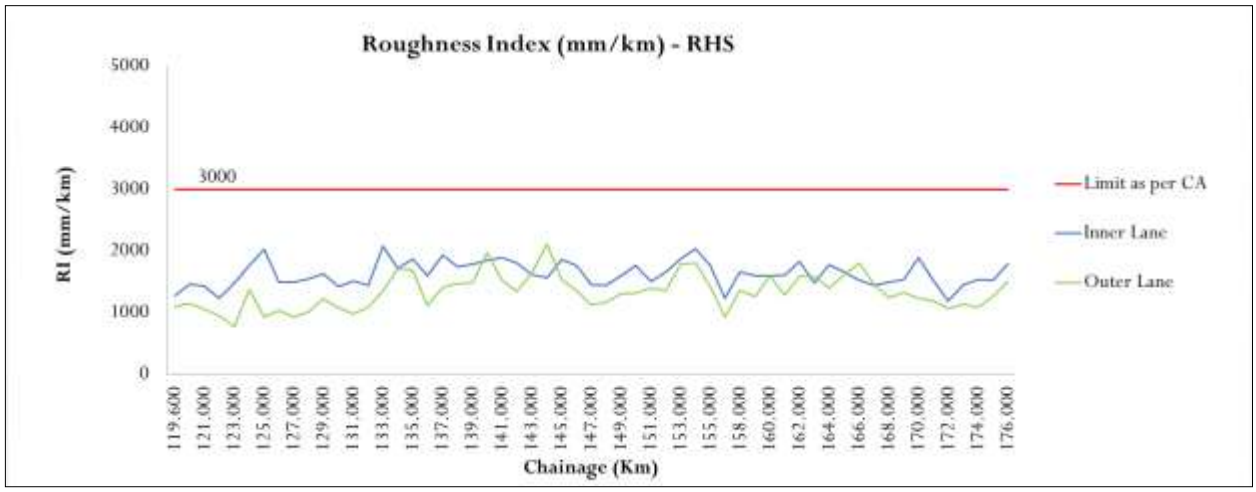
MSA Calculation JMTL- MS-2 RHS (Jaipur - Mahua)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY 26	10.45	**10.45**	
FY 27	10.79	**21.25**	
FY 28	11.36	**32.60**	
FY 29	11.93	**44.53**	
FY 30	12.52	**57.05**	
FY 31	13.12	**70.17**	**End of concession period**

4.4 Network Survey Vehicles (NSV) Survey

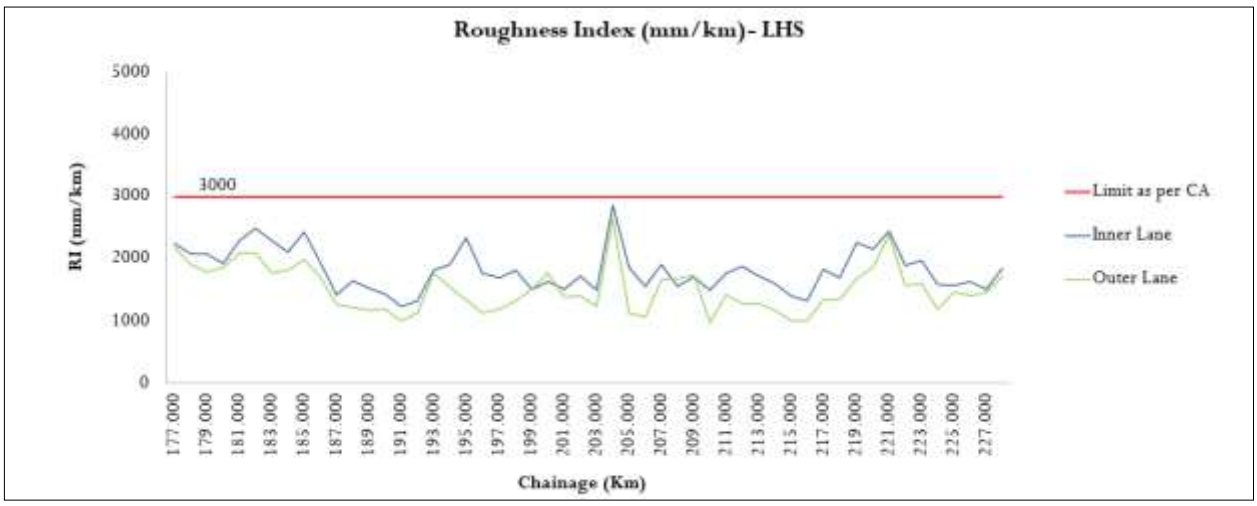
The Concessionaire has provided NSV survey data conducted on MS-1 and MS-2 on 23-April-2024 to 25 April-2024. The NSV data is used to assess the riding quality and pavement condition of Project Road. The summary of classification of pavement as per Schedule - L is given in below table:

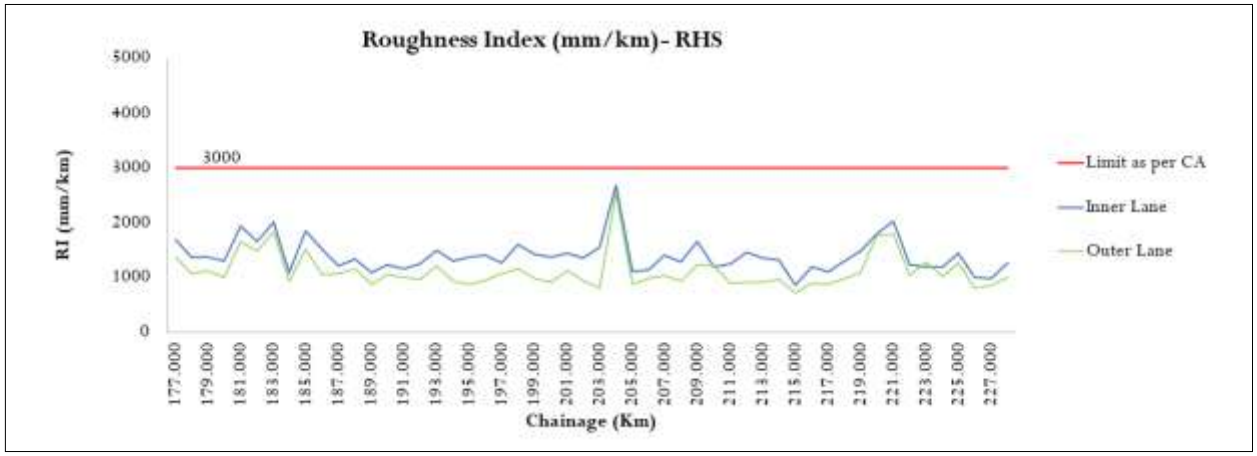
MS-1					
Riding Condition	**Roughness Index (mm/km)**	**Length (km)**			
		LHS		**RHS**	
		Inner	**Outer**	**Inner**	**Outer**
Good	<2000	52.0	52.0	53.4	55.4
Fair	2001-3000	5.4	5.4	3.0	1.0
Poor	>3000	0.0	0.0	0.0	0.0





MS-2					
Riding Condition	Roughness Index (mm/km)	Length (km)			
		LHS		RHS	
		Inner	Outer	Inner	Outer
Good	<2000	39.0	47.0	49.0	51.0
Fair	2001-3000	13.0	5.0	3.0	1.0
Poor	>3000	0.0	0.0	0.0	0.0





Conclusion:

Riding quality is generally fair to good.

4.5 Structural Investigations

Evaluation of existing pavement using Falling Weight Deflectometer (FWD) survey was carried out in the month of September 2024. Summary of FWD Survey report for is presented below:

Table 4-3 Summary of FWD Survey

Description	Length in km	
	LHS	RHS
Less than 20 MSA	10	8
20-50 MSA	18	15
Greater than 50 MSA	81.1	86.1

The strengthening / overlay of pavement for project stretch are derived from 15th percentile of corrected E moduli of existing pavement, existing crust thickness etc. The combination of existing pavement and overlay will be analysed as a four-layer system to ensure that fatigue and rutting criteria are satisfied for the calculated design traffic in terms of MSA. IITPAVE program is used to compute strain value at bottom of bituminous layer and top of subgrade in order to calculate design life of the proposed overlay. Poisson's ratio values used in overlay analysis from top to bottom of existing pavement layers are 0.5, 0.4 and 0.4 for existing bituminous, existing granular and existing subgrade layers respectively. Elastic modulus of 3000 MPa (VG-40) is used for the new bituminous layer.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire is tabulated as below.

Table 4-4 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Design Chainage (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
				19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	120+000	LHS	ML	100.0	98.0	95.8	95.2	93.4	78.4	78.4	26	NP	NP	1.93	9.2	1.77	7.0	8.2	0.0	89.4
2	122+550	RHS	CL	100.0	96.4	94.8	93.8	91.6	85.2	85.2	32	18	14	2.01	12.1	1.97	6.0	4.9	30.0	98.0
3	125+000	LHS	ML	100.0	97.6	94.5	93.4	89.6	56.3	56.3	23	NP	NP	1.95	8.7	1.90	5.0	13.4	0.0	97.4
4	127+500	RHS	CL-ML	100.0	100.0	96.6	94.3	87.9	70.0	70.0	25	18	7	1.96	9.6	1.92	7.0	8.0	15.2	98.0
5	130+000	LHS	SM	100.0	97.9	95.7	95.4	94.1	40.5	40.5	21	NP	NP	1.96	8.8	1.88	8.0	14.1	0.0	95.9
6	132+500	RHS	ML	100.0	94.0	88.4	86.7	83.4	76.1	76.1	19	NP	NP	1.92	8.9	1.85	4.0	10.7	0.0	96.4
7	135+400	LHS	SM	95.7	90.6	89.1	88.5	85.1	30.7	30.7	22	NP	NP	1.97	7.8	1.89	7.0	18.4	0.0	95.9
8	137+500	RHS	SM	100.0	100.0	99.3	99.1	98.7	40.3	40.3	24	NP	NP	1.97	7.9	1.94	4.0	14.6	0.0	98.5
9	140+000	LHS	ML	100.0	99.2	98.8	98.5	96.9	59.5	59.5	21	NP	NP	2.02	8.8	1.84	5.0	13.4	12.5	91.1
10	142+500	RHS	ML	100.0	95.4	88.9	87.2	84.3	66.6	66.6	25	NP	NP	1.98	9.2	1.91	4.5	8.3	0.0	96.5
11	145+000	LHS	SM	98.8	95.1	92.6	91.5	88.0	34.7	34.7	24	NP	NP	1.95	8.1	1.84	6.0	14.8	0.0	94.4
12	147+500	RHS	SM	100.0	98.6	96.5	95.9	94.2	48.9	48.9	22	NP	NP	1.98	9.3	1.82	5.0	11.3	0.0	91.9
13	150+000	LHS	ML	100.0	99.3	99.0	98.9	98.4	50.5	50.5	21	NP	NP	1.99	8.7	1.93	6.5	12.4	0.0	97.0

Sr. No.	Design Chainage (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
				19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
14	152+450	RHS	ML	100.0	100.0	100.0	99.9	99.8	85.5	85.5	23	NP	NP	1.93	8.8	1.81	4.0	7.9	0.0	93.8
15	155+000	LHS	SM	100.0	99.6	98.3	97.6	95.7	50.0	50.0	23	NP	NP	2.02	8.9	1.90	7.0	14.2	0.0	94.1
16	157+600	RHS	ML	99.1	97.9	96.1	95.5	93.5	56.6	56.6	21	NP	NP	1.98	8.4	1.87	8.5	11.8	0.0	94.4
17	160+000	LHS	ML	100.0	99.5	98.0	97.2	94.3	69.7	69.7	19	NP	NP	1.97	9.5	1.89	5.0	9.9	12.5	95.9
18	162+300	RHS	ML	100.0	98.6	96.1	95.4	93.2	86.5	86.5	26	NP	NP	1.93	9.6	1.90	6.5	8.1	0.0	98.4
19	165+000	LHS	SM	100.0	98.3	96.3	95.8	94.0	39.0	39.0	23	NP	NP	2.02	9.4	1.86	8.0	9.7	0.0	92.1
20	167+400	RHS	ML	100.0	96.1	86.5	82.2	75.5	64.5	64.5	22	NP	NP	2.00	9.0	1.93	7.0	10.9	0.0	96.5
21	170+350	LHS	ML	96.0	90.5	81.6	79.1	74.9	67.2	67.2	22	NP	NP	1.93	9.7	1.86	7.0	5.8	11.1	96.4
22	172+600	RHS	CL	100.0	96.3	93.1	92.0	87.4	70.1	70.1	27	19	8	1.95	10.6	1.92	9.0	7.2	20.0	98.5
23	175+000	LHS	CL	100.0	97.3	92.1	89.5	81.6	69.3	69.3	28	18	10	1.93	11.7	1.85	8.0	5.4	22.2	95.9

Table 4-5 Test Results Summary of Bituminous Layer Samples

Sr. No.	Chainage (km)	Side (LHS/ RHS)	Lane	Type of Material Tested	Source of sample	Cumulative Percentage of Passing through IS Sieve (mm)													Bitumen Content (%)	Bulk Specific gravity
						45.0	37.5	26.5	19	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.075		
1	125+000	LHS	Outer Lane	BC	CORE	100.0	100.0	100.0	98.1	95.2	72.6	49.6	37.2	23.6	17.5	12.5	5.1	2.2	5.69	-
2	125+500	RHS	Inner Lane	DBM	CORE	100.0	100.0	92.1	86.0	78.3	55.2	39.4	33.2	24.0	20.7	17.7	11.5	9.4	4.61	2.48
3	128+300	RHS	Outer Lane	BC	CORE	100.0	100.0	100.0	100.0	89.9	69.8	52.9	43.7	27.7	21.0	15.3	5.5	2.9	5.84	2.57
4	129+000	RHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	100.0	95.1	69.9	49.2	38.8	22.0	16.5	11.6	3.6	1.8	4.63	2.28
5	130+000	RHS	Outer Lane	BC	CORE	100.0	100.0	100.0	100.0	85.6	65.1	50.7	42.7	28.5	22.6	16.6	4.7	1.8	5.71	2.59
6	134+000	RHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	100.0	86.3	61.1	41.4	31.2	14.4	8.1	4.5	1.1	0.3	4.74	2.42
7	134+400	LHS	Inner Lane	BC	CORE	100.0	100.0	100.0	100.0	92.4	69.4	45.2	33.3	22.6	18.2	14.1	6.0	3.0	5.06	2.58
8	140+200	RHS	Outer Lane	DBM	CORE	100.0	100.0	95.10	95.10	84.9	58.2	39.9	29.2	19.7	16.5	13.7	6.1	2.7	4.37	-
9	141+200	LHS	Outer Lane	BC	CORE	100.0	100.0	100.0	100.0	94.4	73.4	51.2	41.8	26.7	20.3	14.7	5.2	2.8	5.52	2.59
10	144+000	LHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	100.0	85.6	59.5	39.1	30.7	18.3	13.7	9.6	3.4	1.6	4.49	2.47
11	144+000	RHS	Inner Lane	BC	CORE	100.0	100.0	100.0	100.0	89.4	64.6	49.0	41.6	25.7	19.2	13.7	3.4	1.3	5.08	-
12	145+000	LHS	Outer Lane	DBM	CORE	100.0	100.0	100.0	98.7	78.3	55.1	33.1	22.2	14.4	12.3	10.7	6.5	4.3	4.57	-
13	150+800	RHS	Outer Lane	BC	CORE	100.0	100.0	100.0	100.0	96.3	72.1	55.5	45.6	29.4	22.4	16.7	5.6	2.3	5.77	-
14	155+000	LHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	93.8	86.9	64.1	41.1	32.5	20.3	16.3	12.7	5.5	3.1	4.33	-
15	161+300	LHS	Outer Lane	BC	CORE	100.0	100.0	100.0	100.0	100.0	74.9	49.9	37.1	22.9	16.8	12.1	4.8	2.5	6.09	-
16	162+200	RHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	98.5	86.1	56.5	37.2	29.6	19.4	15.9	12.3	5.1	2.6	4.29	2.47
17	165+300	LHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	100.0	78.7	50.1	37.0	29.8	20.1	15.9	12.5	5.9	3.7	4.38	2.42
18	168+600	LHS	Outer Lane	BC	CORE	100.0	100.0	100.0	100.0	95.6	75.6	52.1	37.9	21.1	15.3	11.4	5.6	3.2	4.99	2.45
19	169+150	LHS	Inner Lane	BC	CORE	100.0	100.0	100.0	98.8	92.3	59.4	43.1	32.7	19.5	14.2	10.9	6.7	4.3	4.94	-
20	171+500	LHS	Outer Lane	DBM	CORE	100.0	100.0	100.0	92.5	72.1	51.2	41.7	34.7	22.3	17.9	14.4	7.2	4.0	4.48	-
21	171+500	RHS	Outer Lane	BC	CORE	100.0	100.0	100.0	100.0	95.4	63.4	38.5	31.4	21.6	18.5	14.1	7.2	4.3	5.50	2.53
22	172+800	LHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	97.5	67.2	30.9	19.4	15.5	9.8	7.8	5.7	2.0	1.0	3.72	-
23	174+000	RHS	Inner Lane	DBM	CORE	100.0	100.0	100.0	100.0	91.0	65.2	50.4	40.0	23.9	17.6	12.1	4.1	1.9	4.88	2.52
24	174+200	LHS	Outer Lane	BC	CORE	100.0	100.0	100.0	92.3	77.0	61.9	51.3	42.2	24.8	18.6	14.1	5.1	2.3	5.17	2.54

4.7 Periodic Maintenance Strategy

Major Maintenance is required in order to comply requirement of Concession Agreement and to maintain performance level as defined in Schedule-L. As per schedule-L of Concession Agreement, periodic maintenance shall be carried out at least once every 5th year from COD and in the last year of concession period.

It is noted that Concessionaire has carried out 1st MM in Year 2018/19 for both MS-1 and MS-2. Presently, Concessionaire has carried out 2nd MM in MS-1 in the month of March 2023 and completed 2nd MM is MS-2 in FY 25.

3rd MM for MS-1 is forecasted in FY 2028 and for MS-2 in FY 2029. As per Concession Agreement, periodic maintenance shall be carried out in the last year of concession period. Accordingly, major maintenance is proposed in FY 2031 for the entire length. Before carrying out major maintenance, structural evaluation shall be done through surveys and investigation to determine the overlay requirement.

The table below shows the major / periodic maintenance cycle throughout the balance concession period for the Project Road.

Table 4-6 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
3	FY 2028	**MS-1:** LHS: BC 30 mm (PMB) - 100%, DBM 50 mm (VG 40) - 10% RHS: BC 40 mm (PMB) - 100%, DBM 50 mm (VG 40) - 10%	30 mm BC overlay in 50% and Micro-surfacing in 50% length
4	FY 2029	**MS-2:** LHS: BC 30 mm (PMB) - 100%, DBM 50 mm (VG-40) - 10% RHS: BC 30 mm (PMB) - 100%, DBM 50 mm (VG-40) - 10%	30 mm BC overlay in 50% and Micro-surfacing in 50% length
5	FY 2030	-	-
6	FY 2031	30 mm BC (VG-40) - 100%, 50 mm DBM (VG-40) - 10%	30 mm BC overlay in 50% and Micro-surfacing in 50% length

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

- Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

- **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

- **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

  Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 26, and FY 27. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years.

  Polymer cost and modification cost are provided by the client to work out BC rate with PMB and HiMA.

  Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex- MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 26 - FY 27 (Rs. / MT)	Rate for FY 28 onwards (Rs. / MT)
IOC Mathura	VG-10	45,132	32,985
IOC Mathura	VG-30	47,432	34,666
IOC Mathura	VG-40	50,232	36,712
IOC Haldia	VG-10	47,632	33,913
IOC Haldia	VG-30	48,432	34,482
IOC Haldia	VG-40	51,232	36,476

Refineries	Grade	Rate for FY 26 - FY 27 (Rs. / MT)	Rate for FY 28 onwards (Rs. / MT)
IOC Barauni	VG-10	48,662	34,646
IOC Barauni	VG-30	49,462	35,215
IOC Barauni	VG-40	52,262	37,209
CPC Chennai	VG-10	47,632	34,091
CPC Chennai	VG-30	48,432	34,663
CPC Chennai	VG-40	51,232	36,667

- **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.
- **Cement:** Market rates are considered from the nearest local market.
- **Steel :** Rate of steel is taken from SAIL.
- **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.
- **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.
- Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

  Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below:

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.) (FY 28 onwards)
1	Dense Bituminous Macadam (PMB)	Cum	11,100
2	Dense Bituminous Macadam (VG-40)	Cum	9,183
3	Bituminous Concrete (HiMA)	Cum	14,116
4	Bituminous Concrete (PMB)	Cum	12,779
5	Bituminous Concrete (VG-40)	Cum	10,332
6	Bituminous Concrete (VG-30)	Cum	10,083
7	Milling	Sqm	75
8	Micro-surfacing	Sqm	150
9	Kerb Re-laying	Rmt	270
10	Road Marking-BC Surface	Sqm	423
11	Road Marking-Micro Surface	Sqm	526
12	Road Studs	Nos.	168

5.3 Balance Works Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, balance work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads:

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management Services
5. Electricity and Diesel Charges
6. TMS / HTMS / System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Horticulture & ROW Maintenance
16. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (Rs.) (FY 28)
1	Salary and Welfare Expenses	1,17,00,000
2	Tolling Operations Services	5,23,69,148
3	Toll Security Services	2,12,54,160
4	Incident Management & Emergency Services	3,04,29,175
5	Electricity and Diesel Charges	73,10,112
6	TMS / HTMS / System Expenses	27,52,500
7	Office Operating Expenses	32,83,980
8	Vehicle Running Expenses	39,60,000

Sr. No.	Particulars	Amount (Rs.) (FY 28)
9	Professional Fees Expense	49,25,970
10	Community Development	16,41,990
11	Communication Expenses	4,92,597
12	Conveyance Expenses	6,02,063
13	Insurance Expense	43,78,640
14	IE Fees	54,73,300
15	Routine Maintenance	5,59,51,063
16	Horticulture & ROW Maintenance	2,84,43,208
17	Miscellaneous including Contingency	60,22,945
	Total Cost (Rs.)	**24,09,90,851**
	Total Cost (Cr.)	**24.10**
	Per km Cost (Lakhs)	22.02

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost (Base year cost) is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remark
1	FY 2026	-	-
2	FY 2027	-	-
3	FY 2028	75.61	MS -1
4	FY 2029	72.92	MS -2
5	FY 2030	-	-
6	FY 2031	122.44	MS -1 & MS -2
Total Cost (Cr.)		**270.97**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	ATMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2030	0.58	
Total Cost (Cr.)		**0.58**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%

Year	Escalation	Year	Escalation
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in the above clause.

Escalated O&M Cost (in INR Cr.)

	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31
1	Routine O&M Cost						
1.01	Salary and Welfare Expense	1.17	1.23	1.29	1.35	1.41	1.46
1.02	Tolling Operations Services	5.24	5.51	5.78	6.04	6.29	6.55
1.03	Toll Security Services	2.13	2.24	2.35	2.45	2.55	2.66
1.04	Incident Management Services	3.04	3.20	3.36	3.51	3.66	3.81
1.05	Electricity and Diesel Charges	0.73	0.77	0.81	0.84	0.88	0.91
1.06	TMS/System Expenses	0.28	0.29	0.30	0.32	0.33	0.34
1.07	Office Operating Expenses	0.33	0.35	0.36	0.38	0.39	0.41
1.08	Vehicle Running Expenses	0.40	0.42	0.44	0.46	0.48	0.50
1.09	Professional Fees Expense	0.49	0.52	0.54	0.57	0.59	0.62
1.10	Community Development	0.16	0.17	0.18	0.19	0.20	0.21
1.11	Communication Expenses	0.05	0.05	0.05	0.06	0.06	0.06
1.12	Conveyance Expenses	0.06	0.06	0.07	0.07	0.07	0.08
1.13	Insurance Expense	0.44	0.46	0.48	0.50	0.53	0.55
1.14	IE Fees	0.55	0.58	0.60	0.63	0.66	0.68
1.15	Routine Maintenance Cost	5.60	5.89	6.18	6.45	6.72	7.00
1.16	Horticulture & ROW Maintenance	2.84	2.99	3.14	3.28	3.42	3.56
1.17	Miscellaneous and Contingency	0.60	0.63	0.66	0.69	0.72	0.75
	Subtotal of O&M Cost	24.10	25.36	26.60	27.78	28.96	30.15
2	Major Maintenance Cost	-	-	80.37	79.84	-	143.53
3	Periodic Cost of TMS/HTMS Replacement	-	-	-	-	0.70	-
	Total Cost (Cr.)	**24.10**	**25.36**	**106.96**	**107.62**	**29.65**	**173.68**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**5,59,51,063**
(Inclusive of GST)	**= 5.11 lakhs per km**

Sr. No.	Description for Flexible Pavement		Factor	Normal	Urban	Project Length (km)		Per Year Project Maintenance Cost	
				More than 4500 CVD	More than 4500 CVD				
				2,65,246	3,10,756	Normal	Urban	Normal	Urban
1	Four-lane with divided carriageway	Without paved shoulder	1.53	405826.00	475457.00	-	-	-	-
		Paved shoulder	1.70	450918.00	528285.00	81.15	-	3,65,91,094	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	530491.00	621512.00	-	-	-	-
		Paved shoulder	2.20	583541.00	683663.00	-	28.32	-	1,93,59,969
					TOTAL	**109.466**		**5,59,51,063**	

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Potholes repair (50 mm deep)	100 % Pothole free	As & when required	1%
	Volume (cum)			3.75
	Rs/m^3			13865
	Cost in Rupees			51,994
	ii) Patch repair	100 % Patch less	As & when required	1%
	Area (sqm)			50
	Rs/m^2			555
	Cost in Rupees			27,730
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.5%
	Area (sqm)			250
	Rs/m^2			109
	Cost in Rupees			27,140
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			89
	Cost in Rupees			13,275
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.50%
	Area (sqm)			112.5
	Rs/m^2			555
	Cost in Rupees			62,393

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
	v) Road marking	14%	Once in 7th year & @ Repaired location	19843
	SUB TOTAL			**2,02,375**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometre stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**2,65,246**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Centre Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	16157
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**45,510**
	GRAND TOTAL (Urban)			**3,10,756**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY - 28) (MS-1)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	**LHS (MS-1)**									
	Tack coat	Sqm						5,70,464	16	91,27,417
	For BC	Sqm	1	56,203	9.00		5,05,830	5,05,830		
	For DBM	Sqm	1	5,353	7.00		37,469	37,469		
2	BC PMB	Cum	1	56,203	9.00	0.03	15,175	15,175	12,779	19,39,19,960
3	BC PMB	Cum	1	-	9.00	0.04	-	-	12,779	-
4	DBM VG 40	Cum	1	5,353	7.00	0.05	1,873	2,061	9,183	1,89,24,216
5	Milling	Sqm	1	5,353	7.00		37,469	37,469	75	28,10,165
6	Micro Surfacing	Sqm	1	-	9.00		-	-	150	-
	RHS (MS-1)									
7	Tack coat	Sqm						5,70,464	16	91,27,417
	For BC	Sqm	1	56,203	9.00		5,05,830	5,05,830		
	For DBM	Sqm	1	5,353	7.00		37,469	37,469		
8	BC PMB	Cum	1	-	9.00	0.03	-	-	12,779	-
9	BC PMB	Cum	1	56,203	9.00	0.04	20,233	20,233	12,779	25,85,59,946
10	DBM VG 40	Cum	1	5,353	7.00	0.05	1,873	2,061	9,183	1,89,24,216
11	Milling	Sqm	1	5,353	7.00		37,469	37,469	75	28,10,165
12	Micro Surfacing	Sqm	1	-	9.00		-	-	150	-
	Main Carriageway - Rigid Pavement									
13	Joint Sealant Replacement @ 5% length	Rmt	5%	1,448	3.50	4.50	579	579	139	80,488
14	Dismantling of CC Panels @ 1% area	Cum	1%		22,800	0.30	68	68	1,339	91,588
15	Replacement of Panels - PQC @ 1% area	Cum	1%		22,800	0.30	68	68	7,169	4,90,360
16	Replacement of Panels - DLC @ 0% area	Cum			22,800	0.15	0	0	3,196	-
	Service Road									
17	Tack coat	Sqm	1	11,050	5.50		66,853	66,853	16	10,69,640
18	BC with 30 mm	Cum	1	11,050	5.50	0.03	2,006	2,006	10,332	2,07,21,601
19	Micro Surfacing	Sqm	1	11,050	5.50		66,853	66,853	150	1,00,27,875

Major Maintenance Cost (FY - 28) (MS-1)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Structures									
20	Tack coat	Sqm	1	445	17.8		7,908	7,908	16	1,26,529
21	Wearing Coat BC with 30 mm	Cum	1	445	17.8	0.03	237	237	12,779	30,31,715
22	Milling of Ex. Wearing Coat	Sqm	1	445	17.8		7,908	7,908	75	5,93,105
23	Painting of Crash Barrier	Sqm	4	445		1.20	2,136	2,136	85	1,81,576
	Other Works									
24	Raising of Road Kerb	Rmt	2	37,813			75,627	75,627	270	2,04,19,279
25	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,691			13,382	13,382	168	22,48,176
26	Painting of Kerb	Sqm	2	75,627		0.375	56,720	56,720	109	61,82,504
27	Road Marking	Sqm					49,578	49,578		-
	on BC						47,003	47,003	423	1,98,66,856
	on Micro-surfacing						2,575	2,575	526	13,53,328
	MCW									
	a) Median & Edge line	Sqm	4	57,470	0.15		34,482			
	b) Lane line	Sqm	4	18,965	0.10		7,586			
	Service Road									
	a) Edge line	Sqm	2	22,100	0.10		4,420			
	b) Lane line	Sqm	1	7,293	0.10		729			
	Junction crossing	Sqm					2,361			
28	Filling of Earthen shoulder	Cum					14,172	14,172	675	95,66,418
	MCW		2	53,527	2.00	0.06	12,846			
	Service Road		1	11,050	2.00	0.06	1,326			
29	Median Filling	Cum	-	52,742	4.17	0.05	-	-	315	-
30	Miscellaneous	5%								3,05,12,727
Total Major Maintenance Cost (Rs.)										**64,07,67,266**
Total Major Maintenance Cost with 18% GST (Rs.)										**75,61,05,374**
Total Major Maintenance Cost with GST (Cr.)										**75.61**
Per km Cost (lakh)										**138.14**
Escalation Factor for Major Maintenance Cost (FY - 28) (MS-1)										**1.10**
Total Escalated Cost for Major Maintenance Cost (FY - 28) (MS-1) (Cr.)										**80.37**

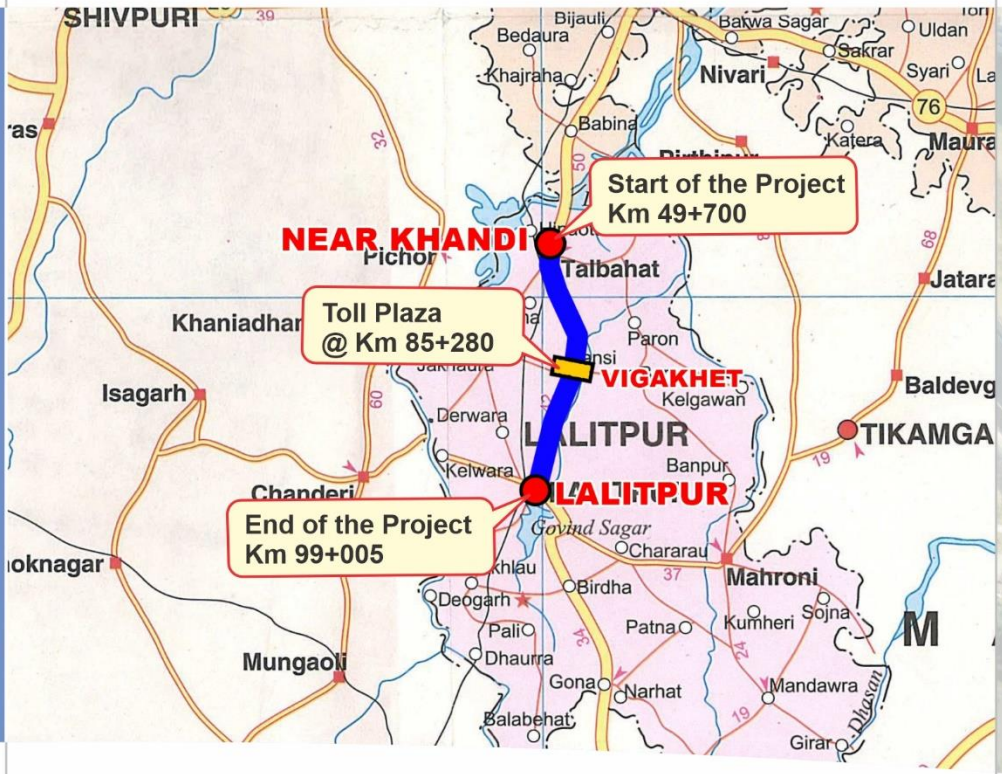
Major Maintenance Cost (FY - 29) (MS-2)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	**LHS (MS-2)**									
	Tack coat	Sqm						5,95,755	16	95,32,081
	For BC	Sqm	1	58,880	9.00		5,29,917	5,29,917		
	For DBM	Sqm	1	5,353	7.00		37,469	37,469		
2	BC with 30 mm	Cum	1	58,880	9.00	0.03	15,898	15,898	12,779	20,31,54,243
3	BC with 40 mm	Cum	1	-	7.00	0.04	-	-	12,779	-
4	DBM with 50 mm	Cum	1	5,353	7.00	0.05	1,873	2,061	9,183	1,89,24,216
5	Milling	Sqm	1	5,353	7.00		37,469	41,216	75	30,91,182
6	Micro Surfacing	Sqm	1	-	9.00		-	-	150	-
	RHS (MS-2)									
7	Tack coat	Sqm						5,95,755	16	95,32,081
	For BC	Sqm	1	58,880	9.00		5,29,917	5,29,917		
	For DBM	Sqm	1	5,353	7.00		37,469	37,469		
8	BC with 30 mm	Cum	1	58,880	9.00	0.03	15,898	15,898	12,779	20,31,54,243
9	BC with 40 mm	Cum	1		7.00	0.04	-	-	12,779	-
10	DBM with 50 mm	Cum	1	5,353	7.00	0.05	1,873	2,061	9,183	1,89,24,216
11	Milling	Sqm	1	5,353	7.00		37,469	41,216	75	30,91,182
12	Micro Surfacing	Sqm	1	-	9.00		-	-	150	-
	Main Carriageway - Rigid Pavement									
13	Joint Sealant Replacement @ 5% length	Rmt	5%	1,448	3.50	4.50	579	579	139	80,488
14	Dismantling of CC Panels @ 1% area	Cum	1%		22,800	0.30	68	68	1,339	91,588
15	Replacement of Panels - PQC @ 1% area	Cum	1%		22,800	0.30	68	68	7,169	4,90,360
	Service Road									
17	Tack coat	Sqm	1	17,578	5.50		96,679	1,01,513	16	16,24,207
18	BC with 30 mm	Cum	1	17,578	5.50	0.03	2,900	3,045	10,332	3,14,64,954
19	Micro Surfacing	Sqm	1	17,578	5.50		96,679	1,01,513	150	1,52,26,943
	Structures									
20	Tack coat	Sqm	1	445	17.8		7,908	7,908	16	1,26,529

Major Maintenance Cost (FY - 28) (MS-1)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
21	Wearing Coat BC with 30 mm	Cum	1	445	17.8	0.03	237	237	12,779	30,31,715
22	Milling of Ex. Wearing Coat	Sqm	1	445	17.8		7,908	7,908	75	5,93,105
23	Painting of Crash Barrier	Sqm	4	445		1.20	2,136	2,136	85	1,81,576
	Other Works									
24	Raising of Road Kerb	Rmt	2	44,341			88,683	88,683	270	2,39,44,399
25	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,691			13,382	13,382	168	22,48,176
	Solar Road Stud	Nos	1				-	-	1,647	-
26	Painting of Kerb	Sqm	2	88,683	0.375		66,512	66,512	109	72,49,832
27	Road Marking	Sqm					52,772	52,772		
	on BC						48,676	48,676	423	2,05,74,035
	on Micro-surfacing						4,096	4,096	526	21,52,832
	MCW									
	a) Median & Edge line	Sqm	4	57,470	0.15		34,482			
	b) Lane line	Sqm	4	18,965	0.10		7,586			
	Service Road									
	a) Edge line	Sqm	2	35,156	0.10		7,031			
	b) Lane line	Sqm	1	11,601	0.10		1,160			
	Junction crossing	Sqm					2,513			
28	Filling of Earthen shoulder	Cum					14,956	14,956	675	1,00,95,186
	MCW		2	53,527	2.00	0.06	12,846	12,846		
	Service Road		1	17,578	2.00	0.06	2,109	2,109		
29	Median Filling	Cum	-	52,742	4.17	0.05	-	-	315	-
30	Miscellaneous	5%								2,94,28,968
Total Major Maintenance Cost (Rs.)										**61,80,08,337**
Total Major Maintenance Cost with 18% GST (Rs.)										**72,92,49,837**
Total Major Maintenance Cost with GST (Cr.)										**72.92**
Per km Cost (lakh)										**133.24**
Escalation Factor for Major Maintenance Cost (FY - 29) (MS-2)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY - 29) (MS-2) (Cr.)										**79.84**

Major Maintenance Cost (FY - 31)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						23,07,239	16	3,69,15,829
	For BC	Sqm	2	1,07,815	9.00		19,40,669	20,37,702		
	For DBM	Sqm	2	5,391	7.00		75,470	75,470		
	For Misc. Location	Sqm	2	10,781	9.00		1,94,067	1,94,067		
2	BC with 30 mm	Cum	2	1,18,596	9.00	0.03	64,042	67,244	10,332	69,47,66,719
3	DBM with 50 mm	Cum	2	5,391	7.00	0.05	3,774	3,774	9,183	3,46,52,254
4	Milling	Sqm	2	5,391	7.00		75,470	75,470	75	56,60,283
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	2,841	3.50	4.50	1,137	1,137	139	1,57,980
6	Dismantling of CC Panels @ 1% area	Cum	1%		44,752	0.30	134	134	1,339	1,79,767
7	Replacement of Panels - PQC @ 1% area	Cum	1%		44,752	0.30	134	134	7,169	9,62,471
	Service Road									
8	Tack coat	Sqm	1	31,150	5.50		1,71,324	1,71,324	16	27,41,182
9	BC with 30 mm	Cum	1	31,150	5.50	0.03	5,140	5,140	10,332	5,31,03,556
10	Micro Surfacing	Sqm	1	31,150	5.50		1,71,324	1,71,324	150	2,56,98,585
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	890	17.8		15,816	15,816	16	2,53,058
12	Wearing Coat BC with 30 mm	Cum	1	890	17.8	0.03	522	522	10,332	53,92,605
13	Milling of Ex. Wearing Coat	Sqm	1	890	17.8		15,816	15,816	75	11,86,210
14	Painting of Crash Barrier	Sqm	4	890		1.20	4,272	4,272	85	3,63,153
	Other Works									
15	Raising of Road Kerb	Rmt	2	82,225			1,64,451	1,64,451	270	4,44,01,748
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	13,380			26,760	26,760	168	44,95,680
	Solar Road Stud	Nos	1	-			-	-	1,647	-
17	Painting of Kerb	Sqm	2	1,64,451	0.375		1,23,338	1,23,338	109	1,34,43,863
18	Road Marking	Sqm					1,02,198	1,02,198		-
	on BC							95,600	423	4,04,07,309
	on Micro-surfacing							6,598	526	34,68,193

Major Maintenance Cost (FY - 31)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW									
	a) Median & Edge line	Sqm	4	1,14,939	0.15		68,964			
	b) Lane line	Sqm	4	37,930	0.10		15,172			
	Service Road									
	a) Edge line	Sqm	2	56,636	0.10		11,327			
	b) Lane line	Sqm	1	18,690	0.10		1,869			
	Junction crossing	Sqm					4,867			
19	Filling of Earthen shoulder	Cum					29,614	29,614	675	1,99,89,151
	MCW		2	1,07,815	2.00	0.06	25,876	25,876		
	Service Road		1	31,150	2.00	0.06	3,738	3,738		
20	Median Filling	Cum	-	1,06,245	4.17	0.05	-	-	315	-
20	Miscellaneous	5%								4,94,11,980
Total Major Maintenance Cost (Rs.)										**1,03,76,51,575**
Total Major Maintenance Cost with 18% GST (Rs.)										**1,22,44,28,858**
Total Major Maintenance Cost with GST (Cr.)										**122.44**
Per km Cost (lakh)										**111.85**
Escalation Factor for Major Maintenance Cost (FY - 31)										**1.25**
Total Escalated Cost for Major Maintenance Cost (FY - 31) (Cr.)										**143.53**

FP Project Management



Technical Due Diligence of Jhansi - Lalitpur Section [Package-II] of NH-44 (km. 49+700 to km. 99+005) in the State of Uttar Pradesh on TOT Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 8
3.3 Major / Minor Junctions 9
3.4 Condition Survey of Bridge 10
3.5 Condition Survey of Culverts 18
3.6 Drainage 20
3.7 Slope Protection 20
3.8 Road Furniture 21
3.9 Avenue Plantation and Median Plantation 25
3.10 Toll Plaza 25
3.11 Lane Equipment 26
3.11.1 RFID ETC Transceiver 27
3.11.2 Lane Controller with Industrial PC 27
3.11.3 Automatic Vehicle Classification (AVC) Sensors 27
3.11.4 Automatic Lane Barrier 28
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 28

3.11.6 Incident Capture Camera (AVC Camera) 29
3.11.7 License Plate Image Capture Camera (LPIC) 29
3.11.8 Over Head Lane Signal (OHLS) 29
3.11.9 Toll Booth Equipment 30
3.11.10 Medium Speed Weigh in Motion (MSWIM) 31
3.12 Plaza Equipment 31
3.12.1 TMS Server 31
3.12.2 55" LED screen for CCTV monitoring 31
3.12.3 Workstations in Control Room, POS room 31
3.13 Advanced Traffic Management System (ATMS) 32
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 32
3.13.2 Mobile Radio communication System (MRCS) 32
3.13.3 Emergency Call Boxes (ECB) 32
3.13.4 Portable Weigh in Motion (PWIM) 32
3.13.5 MET System 33
3.13.6 Variable Message Signboards (VMS) 33
3.13.7 CCTV Surveillance Cameras 33
3.13.8 Video Incident Detection System 33
3.13.9 Vehicle Actuated Speed Display (VASD) 34
3.13.10 Adequacy of Toll Collection System and ATMS 34
3.14 Bus Bays and Passenger Shelter 34
3.15 Traffic Aid Post and Medical Aid Post 34
3.16 Toilet Block 35
3.17 Balance Work Status 35
3.18 Operation and Maintenance 35
3.18.1 O&M Contract 35
3.18.2 Organization Chart 36
3.18.3 Operation 37
3.18.4 Routine Maintenance 37
4 Pavement Investigation and Assessment 38
4.1 General 38
4.2 Axle Load and VDF 38
4.3 Design Traffic 38
4.4 Network Survey Vehicles (NSV) Survey 39
4.5 Structural Investigations 39
4.6 Periodic Maintenance Strategy 39
5 Cost Estimates 41

5.1 General 41
5.2 Rate Assumption 41
5.3 Balance Work Cost 42
5.4 Routine O&M Cost 43
5.5 Major Maintenance Cost 44
5.6 Periodic Replacement of TMS / ATMS System 44
5.7 Escalation Assumption 45
5.8 Summary of Cost 45
Annexures 47
Annexure I - Routine Maintenance Cost 48
Annexure II - Major Maintenance Cost 52

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Summary for Structures 10
Table 3-2 Condition Survey of Major Structure 11
Table 3-3 Details of New Installation of Safety Barriers 21
Table 3-4 Details of Additional Gantry / Cantilever Sign 21
Table 3-5 Details of Summary for Road Furniture Items 22
Table 3-6 Details of Summary for Toll Plaza Items 25
Table 3-7 Details of Toilet Block 35
Table 4-1 Vehicle Damage Factor 38
Table 4-2 MSA Calculation 38
Table 4-3 Major Maintenance Cycle 40
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 41
Table 5-2 Summary of Unit Rates 42
Table 5-3 Summary of Balance Works 43
Table 5-4 Summary of Operation Cost 44
Table 5-5 Escalation 45

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 7
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photographs of Major / Minor Junctions 9
Figure 3-4 Photographs of Major Structures 13
Figure 3-5 Photographs of Culverts 19
Figure 3-6 Photograph of Drainage 20
Figure 3-7 Photographs of Slope Protection and Chute Drain 20
Figure 3-8 Photographs of Pavement Marking 23
Figure 3-9 Photographs of Road Signages / Km Stone / Kerb Painting 24
Figure 3-10 Photographs of Highway Light / MBCB / Crash Barrier 24
Figure 3-11 Photographs of Avenue Plantation and Median Plantation 25
Figure 3-12 Photographs of Toll Plaza 26
Figure 3-13 Photographs of Passenger Shelter 34
Figure 3-14 Photographs of Toilet Block 35

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Jhansi - Lalitpur section of NH-44 (old "NH-26") from km. 49+700 to km. 99+005 in the State of Uttar Pradesh (hereinafter referred as "Project Road").

M/s. Jhansi Vigakhet Tollway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Jhansi to Lalitpur Section (from km. 49+700 to km. 99+005) of NH-44 or Project Road under TOT. The Project was awarded to Concessionaire on 20th October 2020 with a concession period of 30 years. The length of Project Road is 49.305 kms with one toll plaza at km. 85+280.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

1. A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
2. Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
3. Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
4. Formulation of future major maintenance strategy
5. Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
6. Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
7. Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
8. Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyzing the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **13th January 2025** to **17th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features and overviews of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates**: The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/s. Jhansi Vigakhet Tollway Private Limited**, is a company promoted by Cube Highways or a Special Purpose Vehicle (SPV) formed for implementing this project. The Appointed Date of the project was 20th October 2020 (as TOT Package). The concession period of the Project is 30 years including construction period. The project has received COD on 12th November 2014.

Presently, there are two Concessionaires for the Project Road. One is Cube Highways who maintains Toll Operation activities (TOT Concessionaire) and the other Concessionaire is Gayatri Group (Annuity Concessionaire) who maintains the project length as per their original scope of work.

The project is being developed through Annuity BOT mode under TOT (Toll Operate Transfer) Bundle-3 with a concession period of 30 years from Appointed Date while O&M will start from April 2027 as per Clause 10.2.2 of Concession Agreement.

2.2 Location

The Project Road is part of National Highway No. 44 (old "NH-26") of Jhansi - Lalitpur section in the state of Uttar Pradesh. The total project length is 49.305 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

km. 49+700

km. 49+700

Figure 2-3 End of Project Road

km. 99+005

km. 99+005

2.3 Climate

Project area being on a rocky plateau, Jhansi experiences extreme temperatures. Winter begins in October and peaks in mid-December. Temperature is about 4 °C minimum and 21 °C maximum. Summer begins by April and summer temperatures can peak 47 °C in May. The rainy season starts by the third week of June, while the monsoon rains gradually weaken in September and end before the last week of September. In the rainy season, the average daily high temperature hovers around 36 °C with high humidity. The average rainfall for the project is about 850 mm per year, occurring almost entirely within the three-and-a-half months of the Southwest Monsoon. In summer, temperatures as high as 45 to 47 °C while in winter the temperatures can fall as low as 0 to 1 °C as recorded in winter 2011.

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up areas.

2.6 Right of Way

The width of the existing Right of Way (ROW) throughout the Project Road is 60 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC cables, etc.

2.8 Development as per Schedule-B

The Project Road from Jhansi to Lalitpur has been developed as a four-lane divided carriageway with median width of 2 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.

b) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement.

c) Performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	49.305	
2	Construction of Service Road	km.	0.6	
3	Reconstruction of Pipe Culvert	Nos.	-	
4	Reconstruction of Box Culvert	Nos.	-	
5	New Construction of Box Culvert	Nos.	-	
6	Vehicular Underpasses	Nos.	01	
7	Reinforce Cement concrete cover Drain with footpath	km.	0.6	
8	Road marking by Thermoplastic Paint	km.	0.6	
9	Rigid Concrete Barrier	km.	-	
10	Additional cantilever Sign Boards	Nos.	-	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

The pavement condition survey was carried out from **13th January 2025** to **17th January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good to Fair.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

Pavement condition at km. 98+950 (LHS)

Pavement condition at km. 94+650 (RHS)

Pothole at km. 92+600 (RHS)

Cracks and Rutting at km. 87+980 (LHS)

Pavement condition at km. 86+000 (LHS)

Cracks and Rutting at km. 84+420 (RHS)

Cracks and Rutting at km. 77+200 (RHS)

Pavement condition at km. 61+100 (RHS)

Pavement condition at km. 53+830 (LHS)

Pavement condition at km. 50+000 (BHS)

3.2 Service Road / Slip Road

The service road with width 5.5 is constructed in built-up area and adjoining underpass locations. The Project Road has a total service road length of 600 m on both side (under construction).

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

km. 96+500 to km. 97+100

km. 96+500 to km. 97+100

3.3 Major / Minor Junctions

There are 04 nos. of major junctions and 20 nos. of minor junction along Project Road.

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Major / Minor Junctions

Y-Junction km. 98+950

Y-Junction km. 92+480

T-Junction km. 86+280 (Minor)

Y-Junction km. 74+340 (Minor)

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Summary for Structures

Type of Structure	Total Number of Structures
Road under Bridge (ROB)	-
Flyover	01
Major Bridges (MJB)	04
Minor Bridges (MNB)	16
Vehicular Underpass (VUP)	06
Light Vehicular Underpass (LVUP)	-
Pedestrian Underpass (PUP)	01
Cattle Underpass (CUP)	-
Foot over Bridge	-
Culverts (Box / Slab / HPC)	71
Total	**99**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
Major Bridge										
1	51+440	Both	3 x 20	2 x 8.75	2 x 12	1.5	RCC	RCC	Open	Structure is in good condition. However, drainage spouts, weep holes and vent cleaning is required.
2	66+168	LHS	3 x 30	1 x 8.75	-	1.5	RCC	RCC	Open	Structure is in good condition. However, weep holes and vent cleaning is required. Rusting has been observed on Steel girders which is need to remove.
		RHS	3 x 30	1 x 8.75	-	1.5	Steel	RCC	Well	Structure is in good condition. However, weep holes and vent cleaning is required.
3	74+108	Both	3 x 20	2 x 8.75	2 x 12	1.5	RCC	RCC	Well	Structure is in good condition. However, weep holes and vent cleaning is required.
4	96+425	LHS	3 x 32	1 x 8.75	12	1.5	RCC	RCC	Well	Structure is in good condition. However, weep holes and vent cleaning is required.
		RHS	3 x 32	1 x 8.75	12	1.5	RCC	RCC	Well	Structure is in good condition. However, weep holes and vent cleaning is required. Rusting has been observed on Steel girders which is need to remove.
Minor Bridge										
1	54+022	Both	1 x 13.5	2 x 7	2 x 9	1.5	RCC	RCC	Open	Vent cleaning is required.
2	54+712	Both	1 x 15	2 x 7	2 x 9	1.5	RCC	RCC	Open	Vent cleaning is required.
3	56+603	Both	1 x 20.7	2 x 7	2 x 9	1.5	RCC	RCC	Open	Vent cleaning is required.
4	61+088	Both	1 x 15	2 x 7	2 x 9	1.5	RCC	RCC	Open	Vent cleaning is required.
5	66+950	Both	1 x 7.1	2 x 7.5	2 x 9	-	RCC	RCC	Open	Vent cleaning is required.
6	68+636	Both	1 x 7.5	2 x 7.5	2 x 9	-	RCC	RCC	Open	Vent cleaning is required.
7	68+789	Both	1 x 7	2 x 7.5	2 x 9	-	RCC	RCC	Open	Vent cleaning is required.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
8	72+307	LHS	3 x 3.5	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
		RHS	1 x 10	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
9	81+268	Both	1 x 7	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
10	83+928	Both	1 x 13.5	2 x 7	2 x 9	1.5	RCC	RCC	Open	Vent cleaning is required.
11	85+714	LHS	3 x 3.5	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
		RHS	1 x 10	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
12	86+601	LHS	2 x 11.7 + 1 x 17.5	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
		RHS	7 x 5.8	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
13	89+453	LHS	1 x 17.3 + 1 x 14.8 + 1 x 7	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
		RHS	5 x 6.7	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
14	92+180	LHS	1 x 7	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
		RHS	1 x 7	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
15	95+813	LHS	2 x 16.5 + 1 x 7.5	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
		RHS	5 x 7.5	2 x 7	9	1.5	RCC	RCC	Open	Vent cleaning is required.
16	97+848	Both	1 x 9	2 x 7	2 x 9	1.5	RCC	RCC	Open	Vent cleaning is required.
Road Under Bridge (RUB)										
1	92+235 (skew)	Both	2 x 20	2 x 7	-	RCC	I-Girder	Wall	Open	Structure is in good condition.
Pedestrian Underpass (PUP)										
1	50+737	-	1 x 6 (sk), 1 x 5.6 (sq)	2 x 7	-	-	RCC	RCC	-	Structure is in good condition.
Vehicular Underpass (VUP)										
1	52+501	Both	1 x 12	2 x 7	24	1.5	RCC	RCC	Open	Structure is in good condition.
2	53+820	Both	1 x 11 (sk), 1	2 x 7	24	1.5	RCC	RCC	Open	Structure is in good condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Deck Width (m)	Footpath (m)	Type of Superstructure	Type of Substructure	Type of Foundation	Remarks
	(skew)		x 10 (sq)							
3	56+280	Both	1 x 10	2 x 7	24	1.5	RCC	RCC	Open	Structure is in good condition.
4	75+665 (skew)	Both	1 x 10.5 (sk), 1 x 10 (sq)	2 x 7	24	1.5	RCC	RCC	Open	Structure is in good condition.
5	76+677 (skew)	Both	1 x 11.5 (sk), 1 x 10 (sq)	2 x 7	24	1.5	RCC	RCC	Open	Structure is in good condition.
6	82+978 (skew)	Both	1 x 10.5 (sk), 1 x 10 (sq)	2 x 7	24	1.5	RCC	RCC	Open	Structure is in good condition.

Figure 3-4 Photographs of Major Structures

Existing MJB at km. 51+440

Existing MJB at km. 66+168

Existing MJB at km. 74+108

Existing MJB at km. 96+425

Existing MNB at km. 54+022

Existing MNB at km. 54+712

Existing MNB at km. 56+603

Existing MNB at km. 61+088

Existing MNB at km. 66+950

Existing MNB at km. 68+636

Existing MNB at km. 68+789

Existing MNB at km. 72+320

Existing MNB at km. 81+268

Existing MNB at km. 83+928

Existing MNB at km. 85+714

Existing MNB at km. 86+601

Existing MNB at km. 89+453

Existing MNB at km. 92+180

Existing MNB at km. 95+813

Existing MNB at km. 97+848

Existing RUB at km. 92+235

Existing PUP at km. 50+737

Existing VUP at km. 52+501

Existing VUP at km. 53+820

Existing VUP at km. 56+280

Existing VUP at km. 75+665

Existing VUP at km. 76+677

Existing VUP at km. 82+978

Under Construction VUP at km. 96+795

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 23 Nos. of pipe culverts and 66 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations which is maintained properly except culvert at km. 59+600 for which parapet wall is damaged.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Annuity Concessionaire. The Cement Concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Annuity Concessionaire during O&M period. However, in case of some culverts, Cement Concrete pitching has been damaged which required to be addressed under routine repair work by the Annuity Concessionaire.

Figure 3-5 Photographs of Culverts

Box Culvert at km. 68+780

Box Culvert at km. 72+890

Box Culvert at km 82+100

Box Culvert at km. 92+650

Box Culvert at km. 94+200

HPC at km. 95+000

Box Culvert at km. 96+870 (Newly constructed)

Box Culvert at km. 98+860

3.6 Drainage

There are existing drains on both side of the Project Road as per Concession Agreement. However, 600 m of RCC drain is additionally constructed in built-up areas and locations where service roads are provided. The photographs taken during site visit is presented as below:

Figure 3-6 Photograph of Drainage

km. 96+700 (RHS)

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations. A few of the slope protection at various locations of Box Culvert and chute drains are damaged which will be rectified by the Annuity Concessionaire. The photographs taken during site visit is presented as below:

Figure 3-7 Photographs of Slope Protection and Chute Drain

km. 85+650 (RHS - Minor Bridge)

km. 81+500 (LHS - Box Culvert)

km. 81+260 (LHS - Box Culvert)

Chute Drain at km. 88+440 (RHS - choked)

3.8 Road Furniture

The Concessionaire has provided additional road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. Details of the items are provided below.

a) Lighting Along the Project Road

Lighting including fixing of poles and LED lights are provided at following locations on the Project Road in accordance with Clause 12.3 of IRC:SP:84-2014.

b) Transverse / Thermoplastic Bar Marking Locations

Transverse / thermoplastic bar markings on either side of carriageway on proposed service road / VUP / VUP approach locations are provided as per Section 11.2 of IRC:35-2015.

c) New Installation of Safety Barriers

Following are the details of new installation of safety barriers along the Project Road.

Table 3-3 Details of New Installation of Safety Barriers

Sr. No.	Chainage (km)		Length (m)	Location	Type of Barrier
	From	To			
1	96+500	97+100	600	BHS	Rigid barrier

d) Additional Gantry / Cantilever Sign Board

As per schedule-B, additional gantry / cantilever signs are provided at the following locations:

Table 3-4 Details of Additional Gantry / Cantilever Sign

Sr. No.	Chainage (km)	Location	Type
1	96+375	VUP	Cantilever Sign Boards
2	97+365	VUP	Cantilever Sign Boards

e) Summary of Quantity for Road Furniture Items

The following details show the summary of the quantity for road furniture items provided on Project Road.

Table 3-5 Details of Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Solar Blinkers	Nos.	Nil
2	Streetlights	Nos.	600
3	High Mast Lights	Nos.	Nil
4	Transverse Bar Makings / Thermoplastic Bar Markings	km.	1.200
5	New installation of Safety Barriers		
	W-Beam Safety Barriers	m	Nil
	Concrete Median Barrier	m	Nil
	Rigid Concrete Barrier	m	1200
6	Guard Posts	m	Nil
7	Pedestrian Guard Rails	m	Nil
8	Road Studs / Raised Pavement Markers		
9	Road Markings		
10	Traffic Delineators	As per Section-9 of IRC:SP:84-2014	
11	Kilometer / Hectometer / Boundary Stones		
12	Additional Sign Boards		
	Gantry Sign Boards	Nos.	Nil
	Cantilever Sign Boards	Nos.	Nil
	Shoulder Mounted Dual Post Sign Boards	As per Section 9 of IRC:SP:84-2014	
	Shoulder / Median Mounted Single Post Sign Boards		

Pavement Marking and Road Studs

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which will be rectified by the Annuity Concessionaire.

Road studs / cat's eye for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / cat's eye has been fixed at junction and zebra crossings. However, at few locations some cat eye has damaged which will be rectified by the Annuity Concessionaire.

Some of the photographs of road marking are presented below.

Figure 3-8 Photographs of Pavement Marking

km. 84+240 - Ghost island marking at Bus Bay (RHS)

km. 86+280 - Pedestrian crossing (LHS)

Road Direction marking

km. 86+370 - Longitudinal edge marking

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Annuity Concessionaire.

Some of the photographs of sign boards, km stones and kerb paintings are presented below.

Figure 3-9 Photographs of Road Signages / Km Stone / Kerb Painting

km. 49+800

km. 86+280

km. 95+000

km. 54+000

km. 87+000

km. 86+370

Highway Lighting / Crash Barriers / Delineators

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

The traffic delineators are not found for road users in abnormal condition of weather for the Project Road.

Some of the photographs of street lighting, MBCB and concrete crash barriers are presented below.

Figure 3-10 Photographs of Highway Light / MBCB / Crash Barrier

MBCB at km. 52+490

Concrete Crush Barrier at km. 61+100

Highway Lighting at km. 78+800

Road Land Boundary

Road land boundary pillar is not found / available on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantations are done only where ROW is available and median plantation has been providing in the project length as per IRC specification. The photographs taken during site visit is presented as below:

Figure 3-11 Photographs of Avenue Plantation and Median Plantation

km. 88+400 - Avenue Plantation

km. 95+000 - Median Plantation

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at km. 85+280 with the following infrastructure.

Table 3-6 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 85+280
2	Number of Tolling Lanes	8 (4+4) lanes for toll operation for vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	One in each direction
5	Number of Toll Booths	8
6	Canopy	Present
7	Administrative Building	Present (Temporary)
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	NO
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes

Sr. No.	Particulars	Details
15	Low mast Light	No
16	User Fee Boards	4
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Note:

- *Presently, the Concessionaire is using Annuity Concessionaire's building as an administration building for toll plaza.*
- *The electricity supply for the existing streetlights is provided by the TOT Concessionaire. The maintenance of these streetlights is in the scope of Annuity Concessionaire.*
- *Toll plaza is completed as per rehabilitation work and as per scope given in schedule-B.*

Figure 3-12 Photographs of Toll Plaza

Toll Plaza at km. 85+280

Toll Booth at Toll Plaza

Control Room of Toll Plaza

Toll Booth Equipment at Toll Plaza

Toll Admin Building

ATMS Building

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at TP

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at TP

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at TP

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at TP

3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Toll Booth Equipment at Toll Plaza

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at TP

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

3.12.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

Control Room

POS Room

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location. As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.13.3 Emergency Call Boxes (ECB)

It is not installed at site.

3.13.4 Portable Weigh in Motion (PWIM)

Portable Weigh in Motion is provided at the site.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km 85+260.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 14 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

km. 96+480

km. 88+300

3.13.7 CCTV Surveillance Cameras

Surveillance cameras are installed at various locations along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed.

3.13.8 Video Incident Detection System

62 fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at locations each on LHS and RHS.

km. 95+000

km. 92+600

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy-All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.
- Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.14 Bus Bays and Passenger Shelter

There are 5 Nos. of bus bays / passenger shelter along Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-13 Photographs of Passenger Shelter

km. 84+420

km. 77+360

3.15 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are in the scope of Annuity Concessionaire.

3.16 Toilet Block

There are two nos. toilet blocks and maintenance of the same is in Annuity Concessionaire's scope.

Table 3-7 Details of Toilet Block

Sr. No.	Chainage (km)	Remarks
1	85+300	RHS

Some of the photographs of the Toilet Block are presented below.

Figure 3-14 Photographs of Toilet Block

Toilet Block

3.17 Balance Work Status

During site visit it has been observed that construction of Toll Plaza Admin Building is in progress. The construction of VUP at km. 96+795 along with slip road and drain work is in progress.

The Balance Work Cost of the Project Road is presented in the subsequent chapter.

3.18 Operation and Maintenance

3.18.1 O&M Contract

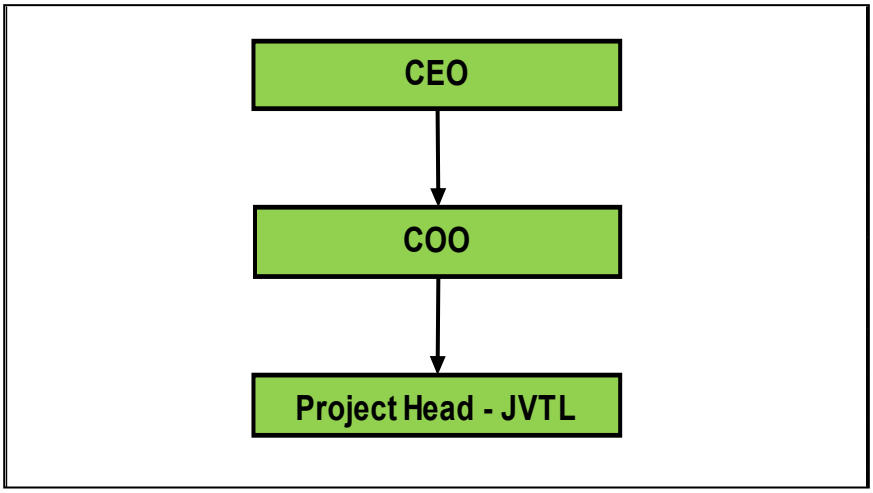
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall confirm to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

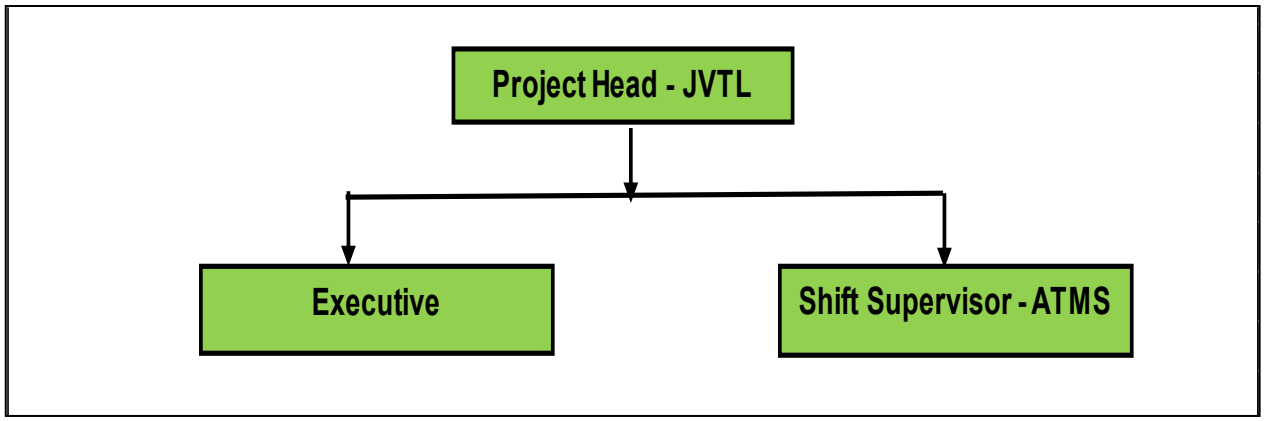
The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

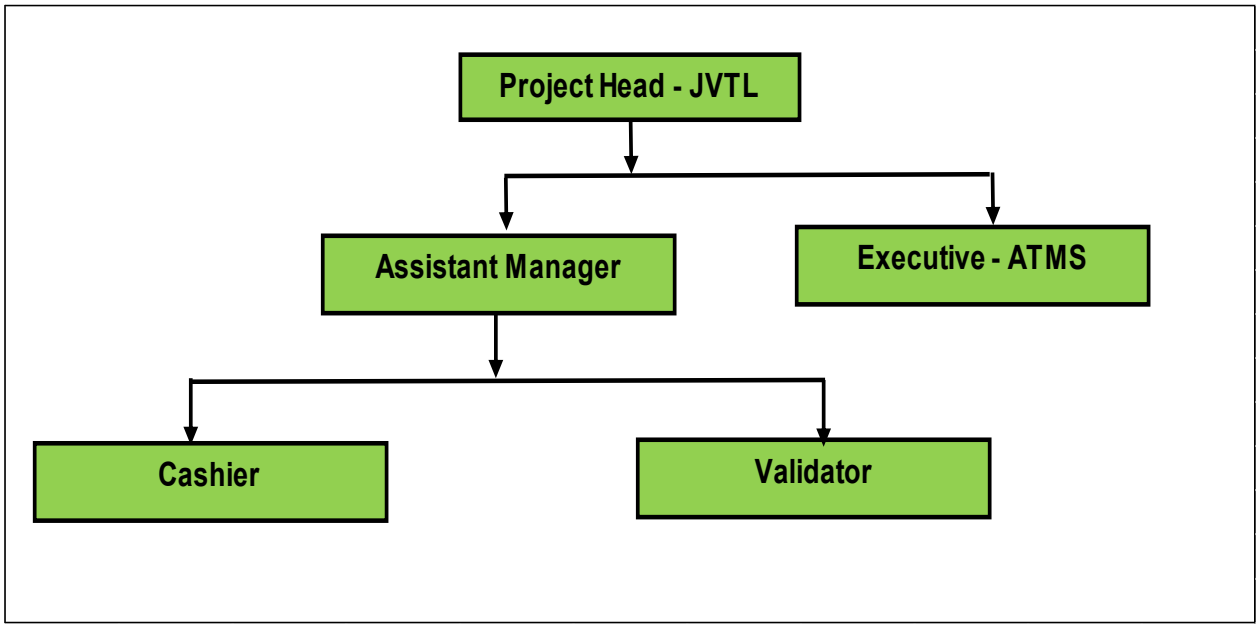
3.18.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

Organization Chart







3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by Annuity Concessionaire.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Annuity Concessionaire as per Scope of Work. The Annuity Concessionaire has received the Completion Certificate on 19th March 2012.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period. The project will be handed over to TOT Concessionaire in March 2027.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 85+160 (near Toll Plaza) on19th July 2019 and 20th July 2019. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Vehicle Category	Vehicle Damage Factor	
	LHS	RHS
Bus	1.15	0.80
LCV	1.29	0.62
2A	3.91	2.61
3A	7.29	6.06
MAV	14.96	14.31

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2024-25	5.91	**5.91**	5.24	**5.24**	
2025-26	6.23	**12.14**	5.52	**10.76**	
2026-27	6.29	**18.43**	5.59	**16.35**	Handing over from Annuity Concessionaire in FY2027
2027-28	6.56	**24.99**	5.84	**22.19**	
2028-29	6.91	**31.90**	6.16	**28.35**	
2029-30	7.25	**39.15**	6.47	**34.82**	
2030-31	7.61	**46.76**	6.80	**41.62**	MM Cycle 1

Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2031-32	7.69	**54.45**	6.88	**48.50**	
2032-33	8.09	**62.54**	7.25	**55.75**	
2033-34	8.50	**71.04**	7.63	**63.38**	
2034-35	8.94	**79.98**	8.03	**71.41**	
2035-36	9.40	**89.38**	8.45	**79.86**	
2036-37	9.87	**99.25**	8.88	**88.74**	MM Cycle 2
2037-38	10.37	**109.62**	9.34	**98.08**	
2038-39	10.90	**120.52**	9.82	**107.90**	
2039-40	11.44	**131.96**	10.32	**118.22**	
2040-41	12.01	**143.97**	10.84	**129.06**	
2041-42	12.60	**156.57**	11.39	**140.45**	
2042-43	10.57	**167.14**	9.56	**150.01**	
2043-44	11.09	**178.23**	10.04	**160.05**	
2044-45	11.63	**189.86**	10.53	**170.58**	MM Cycle 3
2045-46	12.18	**202.04**	11.04	**181.62**	End of Concession Period

4.4 Network Survey Vehicles (NSV) Survey

The O&M is not under the scope of Concessionaire / Client.

4.5 Structural Investigations

The O&M is not under the scope of Concessionaire / Client.

4.6 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Currently, the Project Road is maintained by the existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2027. It is assumed that the pavement will be overlaid before handing over the project confirming the pavement parameters kept within the limits as per Table-1 (Maintenance Criteria for Pavements) of Schedule-F. Hence, the major maintenance cycles are proposed between the year 2029 and end of concession period i.e. FY 2046.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-3 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2027	Handing over of Project from Annuity Concessionaire	
2	FY 2028	-	-
3	FY 2029	-	-
4	FY 2030	Major Maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (100%)	Major Maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
5	FY 2031 to FY 2036	-	-
6	FY 2037	Major Maintenance with 40 mm BC (PMB) (100%) + Milling & 50 mm DBM (5%)	Major Maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
7	FY 2038 to FY 2044	-	-
8	FY 2045	Major Maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (5%)	Major Maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
9	FY 2046*	End of Concession Period	

**Actual end of concession period as per Concession Agreement is October 2050. However, as per traffic details submitted by the Concessionaire, the revised concession period is up to FY 2046 as per provision of Article 14 of CA.*

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

9. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

      Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years.

      Polymer cost and modification costs are provided by client to work out BC rate with PMB. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 & FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,308
IOC Mathura	VG-30	47,505	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492

Refineries	Grade	Rate for FY 2026 & FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
Barauni	VG-10	47,702	33,971
Barauni	VG-30	48,502	34,540
Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from SAIL

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of Items as per Work Order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling etc. are considered as per the work order shared by the client.

10. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	8,560
2	Bituminous Concrete (PMB)	Cum	11,243
3	Bituminous Concrete (VG-30)	Cum	9,561
4	Milling	Sqm	95
5	Micro-surfacing	Sqm	173
6	Kerb Re-laying	Rmt	440
7	Road Marking	Sqm	596
8	Road Studs	Nos.	244

5.3 Balance Work Cost

As discussed in previous chapters, the construction of Toll Plaza Admin Building and construction of VUP along with slip road and drain is in progress. However, Concessionaire has worked out the cost of construction of these works. The same is presented below.

Table 5-3 Summary of Balance Works

Sr. No.	Description	Cost (Rs.)	Remarks
1	Construction of VUP, SR with Drains and other misc. items	2,67,91,665	Work in progress.
2	O&M Building (Admin Building for Toll Plaza)	15,12,27,409	Finishing work in progress.
	Total Cost	**17,80,19,074**	
	Total Cost including GST (18%)	**21,00,62,507**	
	Total Cost (in Cr.)	**21.01**	

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2027. Hence, the routine maintenance and horticulture maintenance is considered from FY 2028 till End of Concession Period.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-4 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-27)	Amount After Annuity (FY 2028-46)
1	Salary and Welfare Expenses	87,12,000	87,12,000
2	Tolling Operations Services	2,23,63,075	2,23,63,075
3	Toll Security Services	49,47,546	49,47,546
4	Incident Management & Emergency Services	-	1,54,48,292
5	Electricity and Diesel Charges	30,66,192	55,62,626
6	TMS/HTMS/System Expenses	44,63,455	47,46,278
7	Office Operating Expenses	34,03,028	34,03,028
8	Vehicle Running Expenses	34,84,800	34,84,800
9	Professional Fees Expense	60,81,400	60,81,400
10	Community Development	4,36,149	4,36,149
11	Communication Expenses	3,48,666	3,48,666
12	Conveyance Expenses	3,80,362	3,80,362
13	Insurance Expense	25,35,751	25,35,751
14	IE Fees	31,95,045	31,95,045
15	Routine Maintenance Cost (Project Highway)	-	1,93,77,747
16	Horticulture & ROW Maintenance	-	1,38,23,544
17	Miscellaneous including Contingency	25,36,699	32,65,801
	Total Cost (Rs)	**6,59,54,168**	**11,81,12,110**
	Total Cost (Cr)	**6.60**	**11.81**
	Per km Cost (Lakh)	13.38	23.96

5.5 Major Maintenance Cost

As mentioned in earlier chapter, Currently, the Project Road is maintained by existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2027. It is assumed that the pavement will be overlaid before handing over of the project confirming the pavement parameters kept within the limits as per Table-1 (Maintenance Criteria for Pavements) of Schedule-F. Hence, the major maintenance cycles are proposed between year FY 2028 and End of Concession Period.

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II.**

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2030	94.07	
2	FY 2037	58.32	
3	FY 2045	45.75	
Total Cost (Cr.)		**198.14**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below:

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	5.15	
2	FY 2034	5.15	
3	FY 2041	5.15	
Total Cost (Cr.)		**15.45**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-5 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%		

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46
1	Routine O&M Cost																					
1.01	Salary and Welfare Expense	0.87	0.92	0.96	1.00	1.05	1.09	1.13	1.18	1.23	1.28	1.33	1.38	1.44	1.49	1.55	1.61	1.68	1.75	1.82	1.89	1.96
1.02	Tolling Operations Services	2.24	2.35	2.47	2.58	2.69	2.80	2.91	3.03	3.15	3.28	3.41	3.54	3.69	3.83	3.99	4.14	4.31	4.48	4.66	4.85	5.04
1.03	Toll Security Services	0.49	0.52	0.55	0.57	0.59	0.62	0.64	0.67	0.70	0.72	0.75	0.78	0.82	0.85	0.88	0.92	0.95	0.99	1.03	1.07	1.12
1.04	Incident Management Services	-	-	1.71	1.78	1.86	1.93	2.01	2.09	2.18	2.26	2.35	2.45	2.55	2.65	2.75	2.86	2.98	3.10	3.22	3.35	3.48
1.05	Electricity and Diesel Charges	0.31	0.32	0.61	0.64	0.67	0.70	0.72	0.75	0.78	0.82	0.85	0.88	0.92	0.95	0.99	1.03	1.07	1.11	1.16	1.21	1.25
1.06	TMS/HTMS/System Expenses	0.66	0.24	0.43	0.45	0.47	0.63	0.86	1.04	0.33	0.58	0.60	0.62	0.82	1.13	1.37	0.43	0.76	0.79	0.82	1.08	1.49
1.07	Office Operating Expenses	0.34	0.36	0.38	0.39	0.41	0.43	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.61	0.63	0.66	0.68	0.71	0.74	0.77
1.08	Vehicle Running Expenses	0.35	0.37	0.38	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.76	0.79
1.09	Professional Fees Expense	0.61	0.64	0.67	0.70	0.73	0.76	0.79	0.82	0.86	0.89	0.93	0.96	1.00	1.04	1.08	1.13	1.17	1.22	1.27	1.32	1.37
1.10	Community Development	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10
1.11	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09
1.13	Insurance Expense	0.25	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57
1.14	IE Fees	0.32	0.34	0.35	0.37	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.69	0.72
1.15	Routine Maintenance Cost	-	-	2.14	2.23	2.33	2.42	2.52	2.62	2.73	2.84	2.95	3.07	3.19	3.32	3.45	3.59	3.73	3.88	4.04	4.20	4.37
1.16	Horticulture & ROW Maintenance	-	-	1.53	1.59	1.66	1.73	1.80	1.87	1.95	2.03	2.11	2.19	2.28	2.37	2.46	2.56	2.66	2.77	2.88	3.00	3.12
1.17	Miscellaneous and Contingency	0.25	0.27	0.36	0.38	0.39	0.41	0.43	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.61	0.63	0.65	0.68	0.71	0.74
	Subtotal of O&M Cost	6.81	6.72	12.95	13.52	14.09	14.81	15.62	16.40	16.30	17.19	17.88	18.59	19.50	20.56	21.57	21.44	22.60	23.51	24.44	25.65	27.04
2	Major Maintenance Cost	-	-	-	-	105.69	-	-	-	-	-	-	77.04	-	-	-	-	-	-	-	75.84	-
3	Periodic Cost of TMS/HTMS Replacement	-	5.43	-	-	-	-	-	-	7.26	-	-	-	-	-	-	9.55	-	-	-	-	-
	Total Cost	**6.81**	**12.14**	**12.95**	**13.52**	**119.78**	**14.81**	**15.62**	**16.40**	**23.56**	**17.19**	**17.88**	**95.63**	**19.50**	**20.56**	**21.57**	**30.99**	**22.60**	**23.51**	**24.44**	**101.49**	**27.04**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Jhansi Lalitpur Project - P2	
Ordinary Repair Cost for Flexible (with GST)	**1,93,77,747**
(Inclusive of GST)	**= 3.93 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,29,888**	**Hilly** More than 4500 CVD **2,73,310**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	351728.00	418164.00	-	-	-	-
		Paved shoulder	1.70	390809.00	464626.00	48.71	-	1,90,34,352	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	459775.00	546619.00	-	-	-	-
		Paved shoulder	2.20	505753.00	601281.00	-	0.60	-	3,43,395
					TOTAL		**49.305**		**1,93,77,747**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			9604
	Cost in Rupees			48,020
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			384
	Cost in Rupees			38,416
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	1.50%
	Area (sqm)			150
	Rs/m^2			90
	Cost in Rupees			13,432
	b) Width less than 3 mm	75 % Crack Less	As & when required	1.50%
	Area (sqm)			112.5
	Rs/m^2			60
	Cost in Rupees			6,780
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			384
	Cost in Rupees			28,812

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	v) Road marking	14%	Once in 7th year & @ Repaired location	31557
	SUB TOTAL			**1,67,017**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**2,29,888**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	907
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**30,260**
	GRAND TOTAL (Urban)			**2,60,148**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2030)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						15,68,014	15	2,41,16,061
	For BC	Sqm	2	48,265	8.75		8,44,631	8,44,631		
	For DBM	Sqm	2	48,589	7.00		6,80,241	6,80,241		
	For Misc. Location	Sqm	2	2,465	8.75		43,142	43,142		
2	BC with 30 mm	Cum	2	50,730	8.75	0.03	26,633	26,633	11,243	29,94,30,115
3	DBM with 50 mm	Cum	2	48,589	7.00	0.05	34,012	34,012	8,560	29,11,41,150
4	Milling	Sqm	2	48,589	7.00		6,80,241	6,80,241	95	6,42,82,784
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,079	3.50	4.50	432	432	119	51,383
6	Dismantling of CC Panels @ 2% area	Cum	2%		17,002	0.30	102	102	995	1,01,500
7	Replacement of Panels - PQC @ 2% area	Cum	2%		17,002	0.30	102	102	8,245	8,41,099
	Service Road									
8	Tack coat	Sqm	1	1,200	5.50		6,600	6,600	15	1,01,508
9	BC with 30 mm	Cum	1	600	5.50	0.03	99	99	9,365	9,27,144
10	Micro Surfacing	Sqm	1	600	5.50		3,300	3,300	173	5,71,725
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
10	Tack coat	Sqm	1	716	15.6		11,139	11,139	15	1,71,322
11	Wearing Coat BC with 30 mm	Cum	1	716	15.6	0.03	334	334	11,243	37,57,068
12	Milling of Ex. Wearing Coat	Sqm	1	716	15.6		11,139	11,139	95	10,52,658
13	Painting of Crash Barrier	Sqm	4	716		1.12	3,195	3,195	105	3,35,467
	Other Works									
14	Raising of Road Kerb	Rmt	2	48,265			96,529	96,529	440	4,24,72,892
15	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,027			12,054	12,054	244	29,41,176
	Solar Road Stud	Nos					-	-	1,647	-
16	Painting of Kerb	Sqm	2	48,265		0.315	30,407	30,407	129	39,22,468
17	Road Marking	Sqm					36,497	36,497	596	2,17,51,923

Major Maintenance Cost (FY 2030)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW									
	a) Median & Edge line	Sqm	4	51,770	0.15		31,062			
	b) Lane line	Sqm	2	17,084	0.10		3,417			
	Service Road									
	a) Edge line	Sqm	2	1,200	0.10		240			
	b) Lane line	Sqm	1	396	0.10		40			
	Junction crossing	Sqm					1,738			
18	Filling of Earthen shoulder	Cum					2,914	2,914	449	13,07,166
	MCW		2	48,265	1.00	0.03	2,896			
	Service Road		1	600	1.00	0.03	18			
19	Median Filling	Cum	-	-	-	-	-	-	431	-
20	Miscellaneous	5%								3,79,63,830
Total Major Maintenance Cost (Rs)										**79,72,40,438**
Total Major Maintenance Cost with GST @18% (Rs)										**94,07,43,717**
Total Major Maintenance Cost with GST (Cr)										**94.07**
Per km Cost (lakh)										**190.80**
Escalation Factor for Major Maintenance Cost (FY 2030)										**1.20**
Total Escalated Cost for Major Maintenance Cost (FY 2030) (Cr)										**105.69**

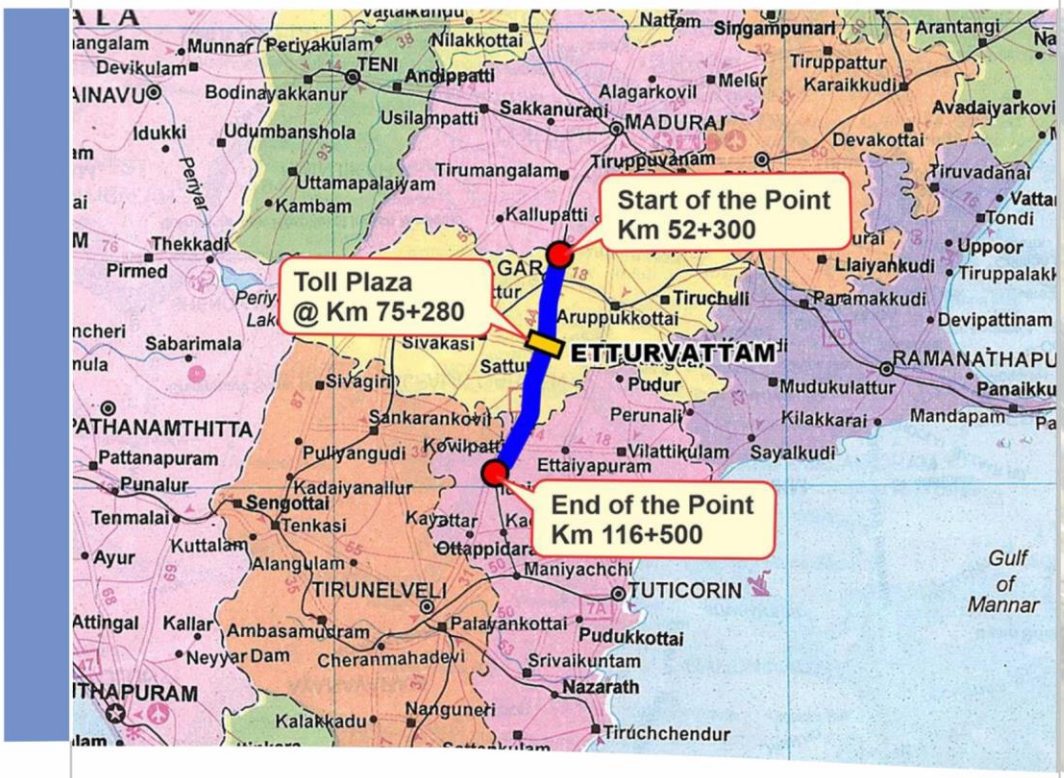
Major Maintenance Cost (FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						9,21,785	15	1,41,77,058
	For BC	Sqm	2	48,265	8.75		8,44,631	8,44,631		
	For DBM	Sqm	2	2,429	7.00		34,012	34,012		
	For Misc. Location	Sqm	2	2,465	8.75		43,142	43,142		
2	BC with 40 mm	Cum	2	50,730	8.75	0.04	35,511	35,511	11,243	39,92,40,153
3	DBM with 50 mm	Cum	2	2,429	7.00	0.05	1,701	1,701	8,560	1,45,57,058
4	Milling	Sqm	2	2,429	7.00		34,012	34,012	95	32,14,139
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,079	3.50	4.50	432	432	119	51,383
6	Dismantling of CC Panels @ 2% area	Cum	2%		17,002	0.30	102	102	995	1,01,500
7	Replacement of Panels - PQC @ 2% area	Cum	2%		17,002	0.30	102	102	8,245	8,41,099
	Service Road									
8	Tack coat	Sqm	1	1,200	5.50		6,600	6,600	15	1,01,508
9	BC with 30 mm	Cum	1	600	5.50	0.03	99	99	9,365	9,27,144
10	Micro Surfacing	Sqm	1	600	5.50		3,300	3,300	173	5,71,725
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
10	Tack coat	Sqm	1	716	15.6		11,139	11,139	15	1,71,322
11	Wearing Coat BC with 40 mm	Cum	1	716	15.6	0.04	446	446	11,243	50,09,424
12	Milling of Ex. Wearing Coat	Sqm	1	716	15.6		11,139	11,139	95	10,52,658
13	Painting of Crash Barrier	Sqm	4	716		1.12	3,195	3,195	105	3,35,467
	Other Works									
14	Raising of Road Kerb	Rmt	-	48,265			-	-	440	-
15	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,027			12,054	12,054	244	29,41,176
	Solar Road Stud	Nos	-				-	-	1,647	-
16	Painting of Kerb	Sqm	2	48,265		0.315	30,407	30,407	129	39,22,468
17	Road Marking	Sqm					36,497	36,497	596	2,17,51,923
	MCW									
	a) Median & Edge line	Sqm	4	51,770	0.15		31,062			

Major Maintenance Cost (FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	17,084	0.10		3,417			
	Service Road									
	a) Edge line	Sqm	2	1,200	0.10		240			
	b) Lane line	Sqm	1	396	0.10		40			
	Junction crossing	Sqm					1,738			
18	Filling of Earthen shoulder	Cum					3,879	3,879	449	17,40,197
	MCW		2	48,265	1.00	0.04	3,861			
	Service Road		1	600	1.00	0.03	18			
19	Median Filling	Cum						-	431	-
20	Miscellaneous	5%								2,35,35,370
Total Major Maintenance Cost (Rs)										**49,42,42,771**
Total Major Maintenance Cost with GST @18% (Rs)										**58,32,06,469**
Total Major Maintenance Cost with GST (Cr)										**58.32**
Per km Cost (lakh)										**118.29**
Escalation Factor for Major Maintenance Cost (FY 2037)										**1.58**
Total Escalated Cost for Major Maintenance Cost (FY 2037) (Cr)										**77.04**

Major Maintenance Cost (FY 2045)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						9,21,785	15	1,41,77,058
	For BC	Sqm	2	48,265	8.75		8,44,631	8,44,631		
	For DBM	Sqm	2	2,429	7.00		34,012	34,012		
	For Misc. Location	Sqm	2	2,465	8.75		43,142	43,142		
2	BC with 30 mm	Cum	2	50,730	8.75	0.03	26,633	26,633	11,243	29,94,30,115
3	DBM with 50 mm	Cum	2	2,429	7.00	0.05	1,701	1,701	8,560	1,45,57,058
4	Milling	Sqm	2	2,429	7.00		34,012	34,012	95	32,14,139
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,079	3.50	4.50	432	432	119	51,383
6	Dismantling of CC Panels @ 2% area	Cum	2%		17,002	0.30	102	102	995	1,01,500
7	Replacement of Panels - PQC @ 2% area	Cum	2%		17,002	0.30	102	102	8,245	8,41,099
	Service Road									
8	Tack coat	Sqm	1	1,200	5.50		6,600	6,600	15	1,01,508
9	BC with 30 mm	Cum	1	600	5.50	0.03	99	99	9,365	9,27,144
10	Micro Surfacing	Sqm	1	600	5.50		3,300	3,300	173	5,71,725
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
10	Tack coat	Sqm	1	716	15.6		11,139	11,139	15	1,71,322
11	Wearing Coat BC with 30 mm	Cum	1	716	15.6	0.03	334	334	11,243	37,57,068
12	Milling of Ex. Wearing Coat	Sqm	1	716	15.6		11,139	11,139	95	10,52,658
13	Painting of Crash Barrier	Sqm	4	716		1.12	3,195	3,195	105	3,35,467
	Other Works									
14	Raising of Road Kerb	Rmt	-	48,265			-	-	440	-
15	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,027			12,054	12,054	244	29,41,176
	Solar Road Stud	Nos	-				-	-	1,647	-
16	Painting of Kerb	Sqm	2	48,265		0.315	30,407	30,407	129	39,22,468
17	Road Marking	Sqm					36,497	36,497	596	2,17,51,923
	MCW									
	a) Median & Edge line	Sqm	4	51,770	0.15		31,062			

Major Maintenance Cost (FY 2045)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	17,084	0.10		3,417			
	Service Road									
	a) Edge line	Sqm	2	1,200	0.10		240			
	b) Lane line	Sqm	1	396	0.10		40			
	Junction crossing	Sqm					1,738			
18	Filling of Earthen shoulder	Cum					2,914	2,914	449	13,07,166
	MCW		2	48,265	1.00	0.03	2,896			
	Service Road		1	600	1.00	0.03	18			
19	Median Filling	Cum						-	431	-
20	Miscellaneous	5%								1,84,60,599
Total Major Maintenance Cost (Rs)										**38,76,72,575**
Total Major Maintenance Cost with GST @18% (Rs)										**45,74,53,638**
Total Major Maintenance Cost with GST (Cr)										**45.75**
Per km Cost (lakh)										**92.78**
Escalation Factor for Major Maintenance Cost (FY 2045)										**2.17**
Total Escalated Cost for Major Maintenance Cost (FY 2045) (Cr)										**75.84**

FP Project Management



Technical Due Diligence of Madurai - Kanyakumari (Package-2) of NH-44 from km. 52+300 to km. 116+500 in the state of Tamil Nadu

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	VKD / RMW	RMW	SMA

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FP India Project Management Consultancy Services Pvt. Ltd. * Mumbai

Table of Contents

1 Introduction 5
1.1 Background 5
1.2 Scope of Work 5
1.3 Our Approach Philosophy 6
1.3.1 Composition of Team 6
1.3.2 Site Visit and Data Collection 6
1.3.3 Data Analysis 7
1.4 Structure of the Report 7
2 Project Description 8
2.1 Introduction 8
2.2 Location 8
2.3 Climate 9
2.4 Terrain 9
2.5 Abutting Land Use 9
2.6 Right of Way 9
2.7 Existing Utilities 9
2.8 Development as per Schedule-B 10
3 Condition Assessment of Project Road 11
3.1 Pavement 11
3.1.1 Pavement Condition Survey 11
3.2 Service Road / Slip Road 12
3.3 Major / Minor Junctions 12
3.4 Condition Survey of Bridge 13
3.5 Condition Survey of Culverts 18
3.6 Drainage 18
3.7 Slope Protection 19
3.8 Road Furniture 19
3.9 Avenue Plantation and Median Plantation 24
3.10 Toll Plaza 25
3.11 Lane Equipment 26
3.11.1 RFID ETC Transceiver 26
3.11.2 Lane Controller with Industrial PC 27
3.11.3 Automatic Vehicle Classification (AVC) Sensors 27
3.11.4 Automatic Lane Barrier 27
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 27

3.11.6 Incident Capture Camera (AVC Camera) 28
3.11.7 License Plate Image Capture Camera (LPIC) 28
3.11.8 Over Head Lane Signal (OHLS) 28
3.11.9 Toll Booth Equipment 29
3.11.10 Medium Speed Weigh in Motion (MSWIM) 30
3.12 Plaza Equipment 30
3.12.1 TMS Server 30
3.12.2 55" LED screen for CCTV monitoring 30
3.12.3 Workstations in Control Room, POS room 31
3.13 Advanced Traffic Management System (ATMS) 31
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 31
3.13.2 Mobile Radio communication System (MRCS) 31
3.13.3 Emergency Call Boxes (ECB) 31
3.13.4 Portable Weigh in Motion (PWIM) 31
3.13.5 MET System 31
3.13.6 Variable Message Signboards (VMS) 32
3.13.7 CCTV Surveillance Cameras 32
3.13.8 Video Incident Detection System 32
3.13.9 Vehicle Actuated Speed Display (VASD) 32
3.13.10 Adequacy of Toll Collection System and ATMS 32
3.14 Traffic Aid Post and Medical Aid Post 32
3.15 Toilet Block 32
3.16 Bus Bays and Passenger Shelters 33
3.17 Balance Work Status 33
3.18 Operation and Maintenance 34
3.18.1 O&M Contract 34
3.18.2 Organization Chart 34
3.18.3 Operation 35
3.18.4 Routine Maintenance 36
4 Pavement Investigation and Assessment 37
4.1 General 37
4.2 Axle Load and VDF 37
4.3 Design Traffic 37
4.4 Network Survey Vehicles (NSV) Survey 38
4.5 Test pit and Subgrade Investigation 39
4.6 Falling Weight Deflectometer (FWD) Survey 42
4.7 Periodic Maintenance Strategy 43

5 Cost Estimates 44
5.1 General 44
5.2 Rate Assumption 44
5.3 Balance Work Cost 45
5.4 Routine O&M Cost 45
5.5 Major Maintenance Cost 47
5.6 Periodic Replacement of TMS / ATMS System 47
5.7 Escalation Assumption 47
5.8 Summary of Cost 48
Annexures 50
Annexure I : Routine Maintenance Cost 51
Annexure II : Major Maintenance Cost 56

List of Tables

Table 2-1 Details of Scope of Work 10
Table 3-1 Details of Summary for Structures 13
Table 3-2 Condition Survey of Major Structure 14
Table 3-3 Details of Lighting 19
Table 3-4 Details of New Installation of Safety Barriers 20
Table 3-5 Details of Additional Gantry / Cantilever Sign 20
Table 3-6 Details of Summary for Road Furniture Items 20
Table 3-7 Details of Summary for Toll Plaza Items 25
Table 3-8 Details of Toilet Block 33
Table 4-1 Vehicle Damage Factor (VDF) 37
Table 4-2 MSA Calculation 37
Table 4-3 Summary of NSV Survey 38
Table 4-4 CBR Analysis 39
Table 4-5 Test Results Summary of Natural Ground Soil Samples 40
Table 4-6 Major Maintenance Cycle 43
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 44
Table 5-2 Summary of Unit Rates 45
Table 5-3 Summary of Operation Cost 46
Table 5-4 Summary of Major Maintenance Cost 47
Table 5-5 Escalation 47

List of Figures

Figure 2-1 Location Map 8
Figure 2-2 Start and end of Project Road 9
Figure 3-1 Photographs of Pavement Condition (MCW) 11
Figure 3-2 Photographs of Service Road 12
Figure 3-3 Photographs of Junctions 13
Figure 3-4 Photographs of Major Structures 17
Figure 3-5 Photographs of Culverts 18
Figure 3-6 Photographs of Drainage 19
Figure 3-7 Photographs of Pavement Marking 21
Figure 3-8 Photographs of Road Studs 22
Figure 3-9 Photographs of Road Signages 22
Figure 3-10 Photographs of MBCB / Crash Barrier 23
Figure 3-11 Photographs of Delineator 24
Figure 3-12 Photographs of Pedestrian Guard Rail 24
Figure 3-13 Photographs of Avenue Plantation and Median Plantation 25
Figure 3-14 Photograph of Toll Plaza 26
Figure 3-15 Photograph of Toilet Block 33
Figure 3-16 Photograph of Bus Bay / Passenger Shelter 33

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Madurai to Kanyakumari section (Package-II) km. 52+300 to km. 116+500 in the State of Tamil Nādu (hereinafter referred as "Project Road").

Kanyakumari Etturavattam Tollway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Madurai to Kanyakumari Section (from km. 52+300 to km. 116+500) of NH-44. The project was awarded to Concessionaire on 20th October 2020. The length of Project Road is 64.20 kms with one toll plaza at Etturavattam village at km. 75+280.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, aaxle load, material investigations etc.
- Formulation of future major maintenance sstrategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets, mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out on **19th January 2025 and 20th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project feature overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates**: The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Kanyakumari Etturavattam Tollway Private Limited**, is a company promoted by Cube Highways or a Special Purpose Vehicle (SPV) formed for implementing this project on 27th December 2019. The Appointed Date for the Project Road is 20th October 2020.

The project is being developed under TOT (Toll Operate Transfer) Bundle-3 with a concession period of 30 years from the Appointed Date. The end of the concession period is 21st October 2050.

2.2 Location

The Project Road is part of National Highway No. 44 (old NH-7) of Madurai - Kanyakumari section in the state of Tamil Nādu. The total project length is 64.20 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start and end of Project Road

Start of Project Road at km. 52+300

End of Project Road at km. 116+500

2.3 Climate

The project area being in the region under southeast of the western ghats, the area is hot and dry. Temperatures range between a maximum of 37 °C and a minimum of 22 °C. April to June are the hottest months and December and January are the coldest with temperatures rising towards the end of February. Rainfall occurs mostly during the north-east monsoon in the months of October to December. However, the project stretch receives little rainfall, averaging 840 mm. Annual rainfall has ranged from 964 mm to 228 mm during past decades.

2.4 Terrain

The Project Road traverses through plain terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up area.

2.6 Right of Way

The width of the existing Right of Way (ROW) for the Project Road is 60 m throughout its length.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Virudhunagar (km. 52+300) to Nanguneri village (km. 116+500) has been developed as a four-lane divided carriageway with median width of 2 m, service road at some built-up locations and other arrangements. The Project Road passes through rural as well as built-up sections.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	64.20	
2	Construction of Service Road	km.	1.14	Total (LHS+RHS)
3	Widening of Pipe Culvert	Nos.	02	
4	Repair & rehabilitation of Major Bridges	Nos.	20	
5	Repair & rehabilitation of Box Culvert	Nos.	41	
6	Repair & rehabilitation of Pipe Culvert	Nos.	48	
7	Repair & rehabilitation of ROB	Nos.	02	
8	Repair & rehabilitation Vehicular Underpass (VUP)	Nos.	10	
9	Improvement of Major Junction	Nos.	01	
10	Improvement of Minor Junction	Nos.	11	
11	Provision of Drain	m	1.14	Total (LHS+RHS)
12	Construction of new LVUP	Nos.	01	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out on **19th January 2025 and 20th January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the pavement condition of the Project Road is Good to Fair.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

km. 55+200

km. 60+950

km. 67+100

km. 70+600

km. 96+400

km. 108+600

3.2 Service Road / Slip Road

The service road width varies from 7 m to 5.5 m and is constructed in built-up areas and adjoining underpass locations. The Project Road has total service road length of 56.05 kms (LHS + RHS).

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Service Road / Slip Road at km. 55+200 (RHS)

Service Road / Slip Road at km. 67+150 (RHS)

3.3 Major / Minor Junctions

There are 15 nos. of major junctions and 49 nos. of minor junctions along the Project Road. The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Junctions

Minor Junction at km. 69+550

Major Junction at km. 87+500

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Road Over Bridge (ROB)	2
Flyover	-
Major Bridges (MJB)	3
Minor Bridges (MNB)	20
Vehicular Underpass (VUP)	10
Culverts	89
Total	**124**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Major Bridges								
1	69+350	LHS	14 x 11.9	6.75	7.45	RCC	Open	The structure is in sound condition.
		RHS	7 x 23.8	7.5	10	RCC	Open	The structure is in sound condition.
2	76+350	LHS	9 x 8.8	7.5	7.6	RCC	Open	The structure is in sound condition.
		RHS	3 x 26.4	7.5	10	RCC	Open	The structure is in sound condition.
3	79+300	LHS	12 x 18.3	5.5	6.9	RCC	Open	The structure is in sound condition.
		RHS	12 x 18.3	7.5	10	RCC	Open	The structure is in sound condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Minor Bridges								
1	52+720	SR+LHS	3 x 8.8	8.75 + 8.75	21.2	RCC	Open	The structure is in sound condition. The vegetation has to be cleared.
		RHS+SR	3 x 8.8	8 + 8	21.2	RCC	Open	
2	55+330	SR+LHS	1 x 8.8	8.75 + 8.75	9.25 + 9.25	RCC	Open	The structure is in sound condition. The vegetation has to be cleared.
						RCC	Open	
		RHS+SR	1 x 8.8	7.5 + 7.5	9.25 + 9.25	RCC	Open	
3	60+650	LHS	2 x 6.6	7.5	8.5	RCC	Open	The structure is in sound condition.
		RHS	2 x 6.6	7.5	10.5	RCC	Open	
4	60+920	LHS	2 x 6.9	7.5	8.5	RCC	Open	The structure is in sound condition.
		RHS	2 x 6.9	9	10	RCC	Open	
5	64+140	LHS	4 x 8.8	7.5	8.3	RCC	Open	The structure is in sound condition. The vegetation has to be cleared.
		RHS	4 x 8.8	7.5	10	RCC	Open	
6	64+260	LHS	3 x 6.8	8.5	9.5	RCC	Open	The structure is in sound condition.
		RHS	3 x 6.8	9	10	RCC	Open	
7	69+680	LHS	1 x 8.6	7.5	8.5	RCC	Open	The structure is in sound condition.
		RHS	1 x 8.6	7.5	10	RCC	Open	
8	70+200	LHS	1 x 8.6	7.5	8.5	RCC	Open	The structure is in sound condition.
		RHS	1 x 8.6	7.5	10	RCC	Open	
9	75+650	LHS	3 x 3	7 + 8.7	53.8	RCC	Open	The structure is in sound condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Minor Bridges								
		RHS	3 x 3	7 + 8.7	10.25	RCC	Open	
10	79+850	SR + LHS	2 x 4.4	8.75 + 8.75	19.2	RCC	Open	The structure is in sound condition. The vegetation has to be cleared.
		RHS+SR	2 x 4.4	8 + 8	19.2	RCC	Open	
11	80+150	LHS	3 x 5.3	8 + 9	19.2	RCC	Open	The structure is in sound condition. The vegetation has to be cleared.
		RHS	3 x 5.3	9 + 8	19.2	RCC	Open	
12	86+280	LHS	1 x 6	8.7	12.4	RCC	Open	The structure is in sound condition.
		RHS	1 x 6	8.7	12.4	RCC	Open	
13	86+350	LHS	2 x 8	10.5	10.75	RCC	Open	The structure is in sound condition.
		RHS	2 x 8	10.5	10.75	RCC	Open	
14	92+110	LHS	2 x 5.5	12.5	13.5	RCC	Open	The structure is in sound condition.
		RHS	3 x 3.35	10.6	11.6	RCC	Open	
15	94+330	LHS	5.85 + 5 x 5.326 + 5 + 2 x 5.326 + 5.431	12.5	13.5	RCC	Open	The structure is in sound condition.
		RHS	5.85 + 5 x 5.326 + 5 + 2 x 5.326 + 5.431	7.5	8.5	RCC	Open	
16	94+985	LHS	1 x 8.8	12.5	13.5	RCC	Open	The structure is in sound condition.
		RHS	1 x 8.8	8.5	9.5	RCC	Open	
17	97+780	SR + LHS	2 x 5.5	7 + 9	18	RCC	Open	The structure is in sound condition.
		RHS +SR	2 x 5.5	9 + 7	18	RCC	Open	
18	98+700	SR + LHS	2 x 5.5	7 + 9	18	RCC	Open	The structure is in sound condition.
		RHS +SR	2 x 5.5	9 + 7	18	RCC	Open	
19	101+250	SR + LHS	2 x 6	7 + 8	17.8	RCC	Open	The structure is in sound condition.
		RHS +SR	2 x 6	8.75 + 7	17.75	RCC	Open	
20	107+530	LHS	1 x 8	12.5	13.5	RCC	Open	The structure is in sound condition.
		RHS	1 x 8	12.5	13.5	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
ROB									
1	54+460	LHS	1 x 5.3	5.3	7.5	8.5	RCC	Open	The structure is in sound condition.
		RHS	1 x 28.3	28.3	8.5	9.5	RCC	Open	
2	67+180	LHS	1 x 26.2	26.2	7.5	8.5	RCC	Open	The structure is in sound condition. Expansion joints need to be cleaned.
		RHS	1 x 26.2	26.2	7.5	8.5	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Condition of Structure
Vehicular Underpass (VUP)							
1	52+450	LHS	2 x 10	20	11	27.5	The structure is in sound condition.
		RHS	2 x 10	20	11		
2	67+540	LHS	1 x 9.5	9.5	9	27.5	The structure is in sound condition.
		RHS	1 x 9.5	9.5	9		
3	75+850	LHS	2 x 10	20	11	27.6	The structure is in sound condition.
		RHS	2 x 10	20	11		
4	77+670	LHS	2 x 10	20	10.5	24.7	The structure is in sound condition. Down take water pipe is missing.
		RHS	2 x 10	20	10.5		
5	80+560	LHS	2 x 10	20	11	28	The structure is in sound condition. Slab bottom steel is exposed at some location of RHS
		RHS	2 x 10	20	11		
6	81+795	LHS	1 x 10	10	9	23.5	The structure is in sound condition.
		RHS	1 x 10	10	9		
7	96+380	BHS	2 x 10	20	10.25	12.25	The structure is in sound condition.
8	100+150	LHS	2 x 10	20	11	27.5	The structure is in sound condition.
		RHS	2 x 10	20	11		
9	102+200	LHS	2 x 10	20	11	24.7	The structure is in sound condition.
		RHS	2 x 10	20	11		
10	106+700	LHS	2 x 10	20	11	24.5	The structure is in sound condition.
		RHS	2 x 10	20	11		

Figure 3-4 Photographs of Major Structures

View of VUP at km. 52+450

View of ROB at km. 54+460

View of ROB at km. 67+180

View of Major Bridge at km. 69+350

View of Major Bridge at km. 76+350

View of VUP at km. 77+670

View of Major Bridge at km. 79+300

View of Major Bridge at km. 79+300

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 89 Nos. of culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching has been damaged which required to be addressed under routine repair work by the Concessionaire.

Figure 3-5 Photographs of Culverts

Box Culvert at km. 55+200

Pipe Culvert at km. 59+893

3.6 Drainage

There is 27.40 kms of existing drain (which includes drain on both sides) on the Project Road as per Concession Agreement. However, 1.49 kms of RCC drain is additionally constructed in locations where service roads are provided. The photographs taken during site visit is presented as below.

Figure 3-6 Photographs of Drainage

Existing Drain at km. 55+330

Existing Drain at km. 81+795

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations.

3.8 Road Furniture

The Concessionaire has provided additional road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. Details of the items are provided below.

a) Lighting Along the Project Road

Lighting including fixing of poles and LED lights are provided at following locations on the Project Road in accordance with Clause 12.3 of IRC: SP:84-2014.

Table 3-3 Details of Lighting

Sr. No.	Chainage (km)		Side	Location	Length (m)
1	55+260	56+170	Both Side	For each number of light, the minimum specification shall be street lighting with a single pole and double arm fitting 45 W (5050 LUMENS)-Blue tooth enabled MPPT Based Charge Controller, 9 Mts octagonal pole with all accessories, Automatic switch on / off, Duty Cycle 12 hrs working each night.	910.00

In addition to above, suitable lighting arrangements is provided and maintained at underside of PUP, VUP and other Structures.

b) Transverse / Thermoplastic Bar Marking Locations

Transverse / thermoplastic bar markings on either side of carriageway on proposed service road / VUP / VUP approach locations are provided as per Section 11.2 of IRC:35-2015.

c) New Installation of Safety Barriers

Following are the details of new installation of safety barriers along the Project Road.

Table 3-4 Details of New Installation of Safety Barriers

Sr. No.	Chainage (km)		Length (m)	Location	Type of Barrier
	From	To			
2932.00 m					

d) Additional Gantry / Cantilever Sign Board

As per schedule-B, additional gantry / cantilever sign are provided at the following locations:

Table 3-5 Details of Additional Gantry / Cantilever Sign

Sr. No.	Chainage (km)	Side	Location	Type
1	52+400	BHS	Underpass	Cantilever Gantry Sign Board
2	80+560	BHS	Underpass	Cantilever Gantry Sign Board
3	96+350	BHS	Underpass	Cantilever Gantry Sign Board

e) Summary of Quantity for Road Furniture Items

The following details show the summary of quantity for road furniture items provided on Project Road.

Table 3-6 Details of Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Solar Blinkers	Nos.	04
2	Streetlights	m	910
3	High Mast Lights	Nos.	Nil
4	Transverse Bar Makings / Thermoplastic Bar Markings	km	64.200
	New installation of Safety Barriers		
5	W-Beam Safety Barriers	m	2932
6	Concrete Median Barrier	m	Nil
7	Rigid Concrete Barrier	m	800
8	Guard Posts	m	Nil
9	Pedestrian Guard Rails	m	14755
10	Road Studs / Raised Pavement Markers	As per Section-9 of IRC:SP:84-2014	
11	Road Markings		
12	Traffic Delineators		
13	Kilometer / Hectometer / Boundary Stones		
14	Additional Sign Boards		
15	Gantry Sign Boards	Nos.	Nil
16	Cantilever Sign Boards	Nos.	06
17	Shoulder Mounted Dual Post Sign Boards	As per Section-9 of IRC:SP:84-2014	
18	Shoulder / Median Mounted Single Post Sign Boards		

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which will be rectified by the Concessionaire. Some of the photographs of road marking are presented below.

Figure 3-7 Photographs of Pavement Marking

km. 54+460 (RHS)

km. 61+300 (LHS)

km. 68+997 (RHS)

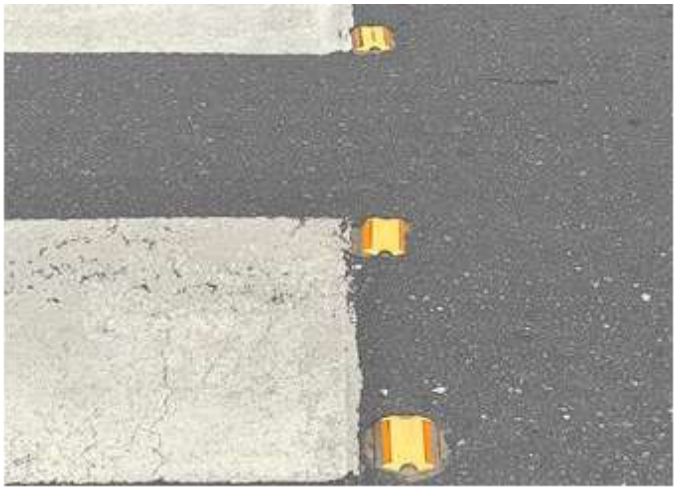
km. 96+400 (LHS)

Road Studs

Road studs / cat's eye for the project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / cat's eye has been fixed at junction and zebra crossings. However, at few locations some cat's eye has damaged which will be rectified by the Concessionaire. Some of the photographs of road studs are presented below.

Figure 3-8 Photographs of Road Studs

km. 61+300 (LHS)



km. 69+550 (LHS)

Traffic Signage / Median Kerb Painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Roadside signs, overhead signs, kerb mounted signs, kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are all in good condition. Some of the photographs of sign boards are presented below.

Figure 3-9 Photographs of Road Signages

km. 54+460

km. 55+200

km. 56+750

km. 60+600

km. 61+300

km. 64+250

km. 54+400

km. 100+150

km. 61+310

km. 92+598

km. 65+000

km. 80+560

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-10 Photographs of MBCB / Crash Barrier

km. 60+950 (RHS)

km. 54+460 (LHS)

Delineators

The traffic delineators are provided by Concessionaire for road users in abnormal condition of weather for the Project Road. The same is maintained by the Concessionaire. Some of the photographs of delineators are presented below.

Figure 3-11 Photographs of Delineator

Km. 54+460

km. 64+200

Pedestrian Guard Rail

The pedestrian guard rails are provided in the median. It is maintained by the Concessionaire. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-12 Photographs of Pedestrian Guard Rail

km. 56+750

km. 62+300

Road Land Boundary

Road land boundary pillar has been found / available on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantation is provided in open country locations and median plantation has been provided in the project length as per IRC specification. Some of the photographs of avenue plantation and median plantation are presented below.

Figure 3-13 Photographs of Avenue Plantation and Median Plantation

Median Plantation at km. 55+200

Avenue Plantation at km. 61+800

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at Etturavattam Village at km. 75+280 with the following infrastructure.

Table 3-7 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 75+280
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for over dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel / No
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	4
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-14 Photograph of Toll Plaza

Toll Plaza at km. 75+280

Toll Plaza at km. 75+280

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 5 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of camera based, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza

3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

The violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Camera is provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at Toll Plaza

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

3.12.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location (km. 42+650). As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km. 75+280).

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.13.3 Emergency Call Boxes (ECB)

ECB's are not installed at site.

3.13.4 Portable Weigh in Motion (PWIM)

PWIM is provided at site.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza at km. 75+280.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 11 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

3.13.7 CCTV Surveillance Cameras

Surveillance cameras are installed at 35 locations along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed.

3.13.8 Video Incident Detection System

44 nos. fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at 9 locations each on LHS and RHS.

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy-All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.

- The Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.14 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are maintained by the Concessionaire.

3.15 Toilet Block

There is one no. of Toilet Block constructed at site and the same is maintained by the Concessionaire. The details of the same are tabulated below. Some of the photographs taken during the site visit are presented below.

Table 3-8 Details of Toilet Block

Sr. No.	Chainage (km)	Side		Remarks
		LHS	RHS	
1	75+280	Yes	-	

Figure 3-15 Photograph of Toilet Block

3.16 Bus Bays and Passenger Shelters

There are 27 Nos. of bus bays / passenger shelter along the Project Road. Some of the passenger shelters are damaged and the same will be rectified by the Concessionaire.

Some of the photographs of the bus bay / passenger shelter photographs are presented below.

Figure 3-16 Photograph of Bus Bay / Passenger Shelter

km. 70+950

km. 88+500

3.17 Balance Work Status

During site visit it has been observed that construction of 01 No. of LVUP at km. 55+750 along with approaches and highway lighting are balance due to change in proposal from LVUP to VUP. As informed the Concessionaire, now Concessionaire issued a work order to TMP Manoharan Infrastructure Pvt Ltd. for construction of VUP at km. 55+750.

The balance works cost is presented in the subsequent chapter.

3.18 Operation and Maintenance

3.18.1 O&M Contract

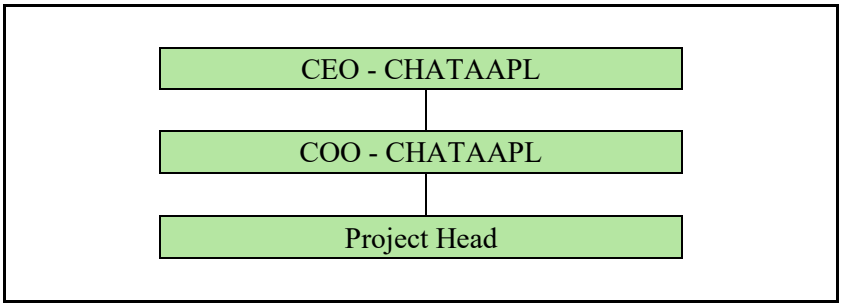
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

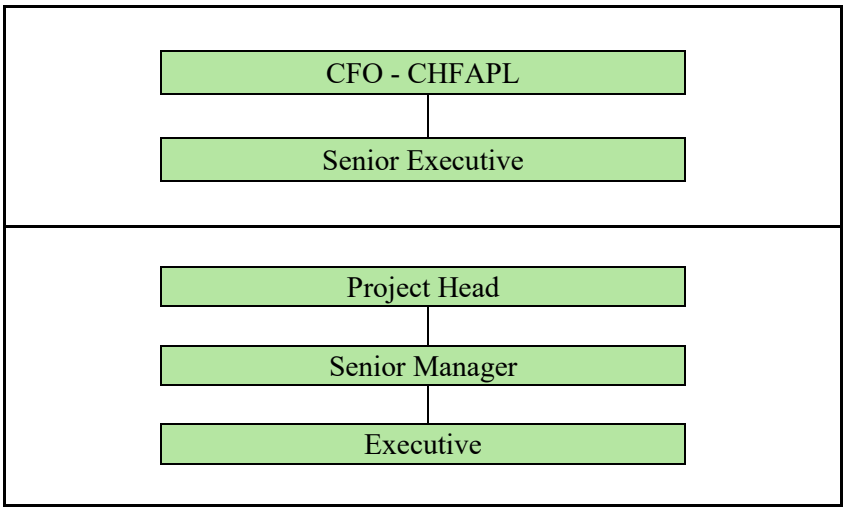
3.18.2 Organization Chart

The Concessionaire has shared the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive, 01 Senior Manager, 01 Assistant Manager (HR), 02 Assistant Manager, 01 Senior Supervisor, 02 Supervisor, 07 Executive, 02 Electrician, 01 Manager, 01 Plaza Manager, 01 Assistant Plaza Manager, 03 Cashiers and 04 Validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

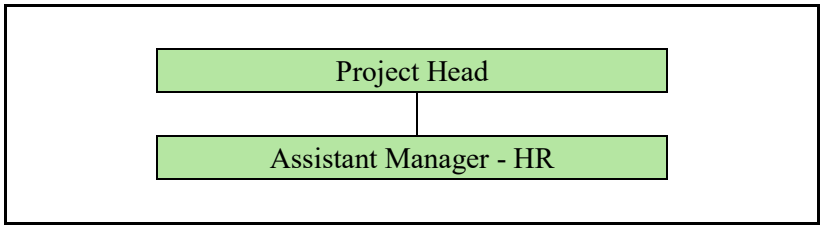
Organization Chart



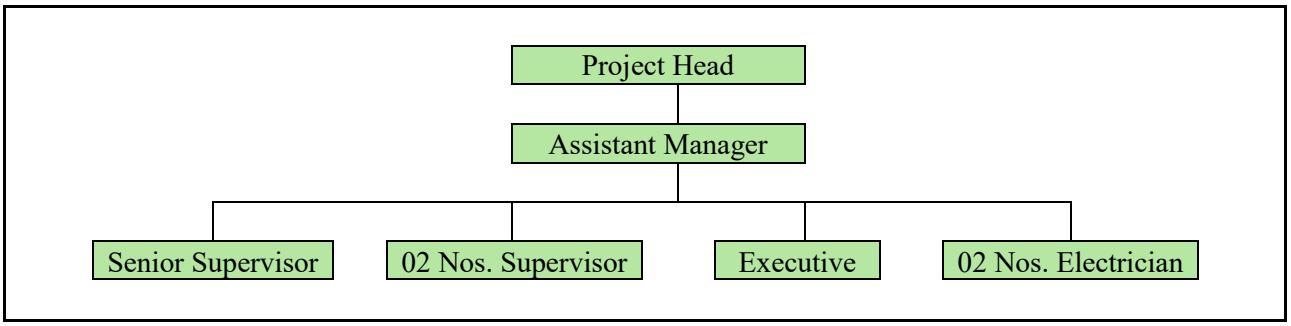
Finance & Accounts



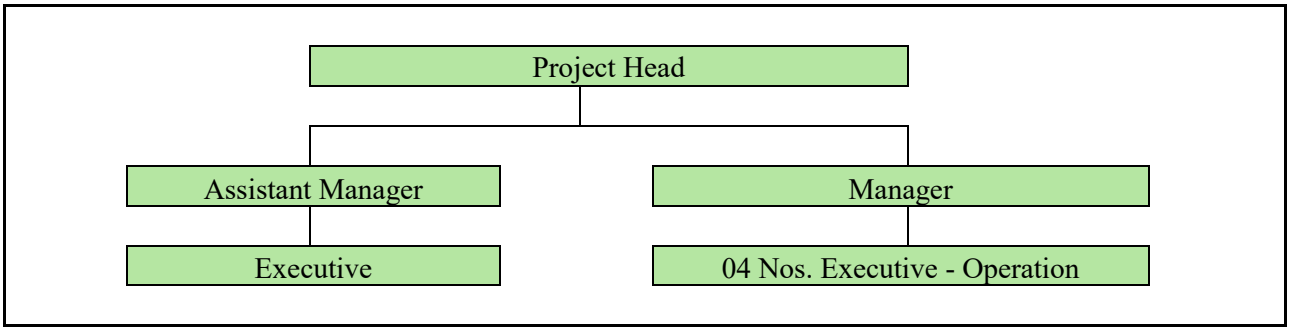
Human Resource



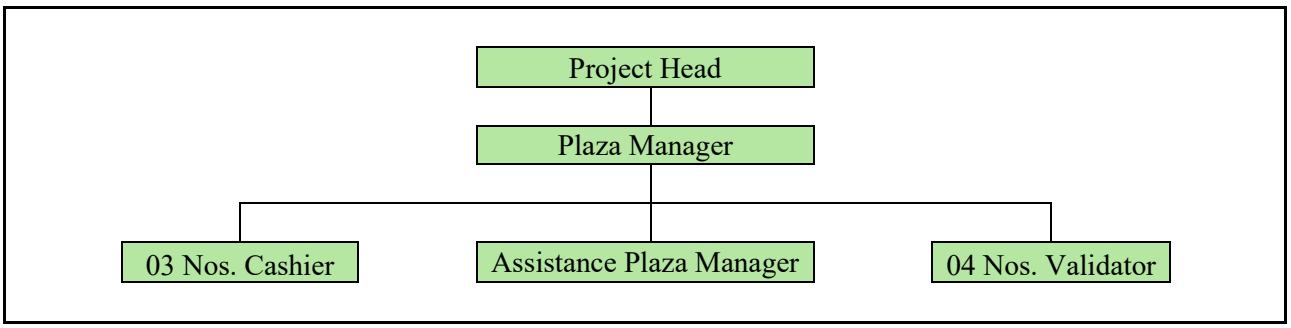
Maintenance



Operations System



Operations



3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are

projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Article 15 and Schedule-F of the Concession Agreement defines the Operation and Maintenance requirement during the concession period.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 75+280 (near Toll Plaza) from 14th March 2020 to 16th March 2020. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor (VDF)

Weighted Average VDF Values			
Sr. No	Vehicle Type	Direction	
		Madurai - Kanyakumari	Kanyakumari - Madurai
1	BUS	0.964	1.009
2	LCV	0.678	0.518
3	2-Axle	2.775	1.993
4	3-Axle	5.875	3.726
5	MAV	15.025	5.561

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculation					
Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
FY26	2.67	**2.67**	1.33	**1.33**	
FY27	2.78	**5.45**	1.38	**2.71**	
FY28	2.86	**8.31**	1.42	**2.75**	
FY29	2.93	**11.24**	1.45	**4.20**	1st MM Cycle
FY30	3.03	**14.27**	1.50	**5.70**	1st MM Cycle
FY31	3.14	**17.41**	1.55	**7.25**	
FY32	3.24	**20.65**	1.60	**8.85**	
FY33	3.36	**24.01**	1.66	**10.51**	
FY34	3.48	**27.49**	1.71	**12.22**	
FY35	3.60	**31.09**	1.77	**13.99**	

MSA Calculation					
Year	**MSA**	**Cumulative**	**MSA**	**Cumulative**	**Remarks**
FY36	3.72	**34.81**	1.83	**15.82**	2nd MM Cycle
FY37	3.84	**38.65**	1.89	**17.71**	2nd MM Cycle
FY38	3.97	**42.62**	1.95	**19.66**	
FY39	4.10	**46.72**	2.01	**21.67**	
FY40	4.23	**50.95**	2.07	**23.74**	Crossing 40,000 PCU's limit
FY41	4.36	**55.31**	2.13	**25.87**	Crossing 40,000 PCU's limit
FY42	4.50	**59.81**	2.20	**28.07**	Crossing 40,000 PCU's limit
FY43	4.64	**64.45**	2.26	**30.33**	DPR & 3rd MM Cycle
FY44	4.78	**69.23**	2.33	**32.66**	DPR & 3rd MM Cycle
FY45	4.93	**74.16**	2.40	**35.06**	Augmentation 6-Laning (Assuming 3 years Construction Period)
FY46	5.08	**79.24**	2.47	**37.53**	
FY47	5.23	**84.47**	2.54	**40.07**	
FY48	4.31	**88.78**	2.09	**42.16**	
FY49	4.44	**93.22**	2.15	**44.31**	
FY50	4.56	**97.78**	2.21	**46.52**	
FY51	4.69	**102.47**	2.27	**48.79**	End of concession period as per Appointed date & CA

4.4 Network Survey Vehicles (NSV) Survey

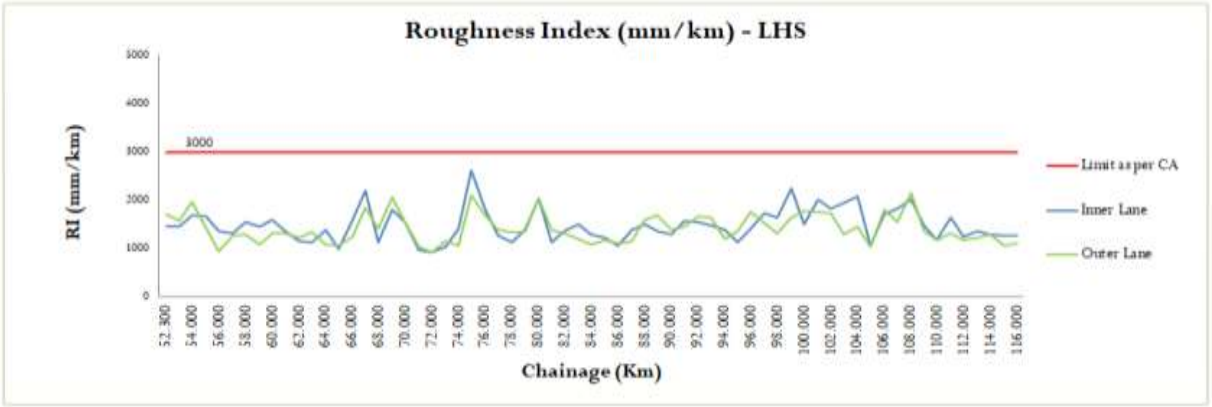
The Concessionaire has conducted pavement condition survey on each lane of carriageway through NSV. The NSV survey was conducted on the Project Road from 15th January 2025 to 18th January 2025. The summary of the same is presented below.

Table 4-3 Summary of NSV Survey

Table 2-1: Summary of RI Limit as per Schedule F of CA

Roughness Summary % as per Schedule F of CA (mm/km)					
Condition	Limit as per Schedule F of CA (mm/km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<3000	100.00%	100.00%	100.00%	100.00%
Poor	>3000	0.00%	0.00%	0.00%	0.00%

Figure 2-3: Roughness Summary for KETPL as per Schedule F of CA



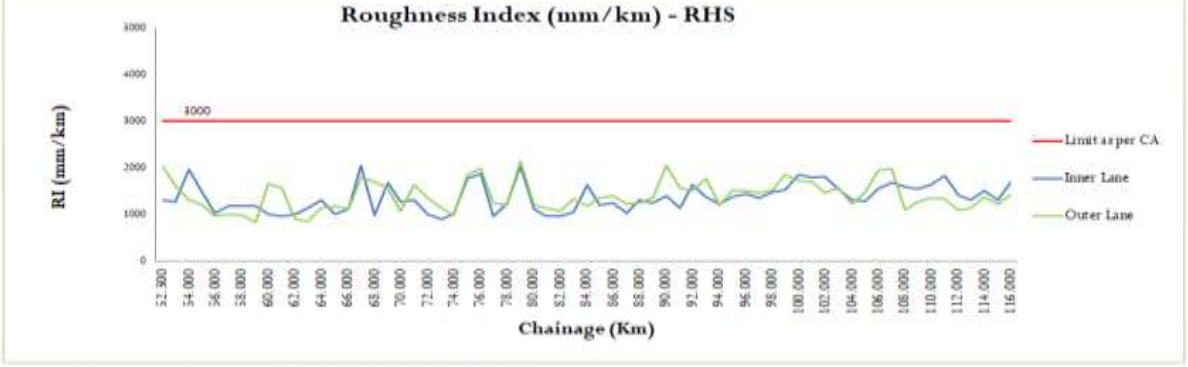


Figure 2-4: Roughness Index for KETPL as per Schedule F of CA

However, the maintenance can be carried out on as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. However, improvement in riding quality is expected if the roughness value exceeds 3000 mm/km.

4.5 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-4 CBR Analysis

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
1	NH-7	54+950	LHS	14.1
2	NH-7	55+050	RHS	21.8
3	NH-7	60+050	LHS	21.1
4	NH-7	62+450	RHS	19.5
5	NH-7	65+000	LHS	17.3
6	NH-7	67+800	RHS	17.4
7	NH-7	68+600	LHS	15.1
8	NH-7	70+000	LHS	15.3
9	NH-7	72+500	RHS	19.6
10	NH-7	74+800	LHS	19.2
11	NH-7	79+950	LHS	9.6
12	NH-7	83+000	RHS	16.3
13	NH-7	85+000	LHS	24.8
14	NH-7	87+500	RHS	22.2
15	NH-7	89+900	LHS	15.6
16	NH-7	92+800	RHS	16.3
17	NH-7	95+000	LHS	17.5
18	NH-7	105+000	LHS	10.7
19	NH-7	107+500	RHS	20.1
20	NH-7	110+200	LHS	11.1
21	NH-7	112+450	RHS	18.5
22	NH-7	115+000	LHS	18.6
Average DCP-Equivalent CBR				**17.3**

Table 4-5 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Location (km)	Side (LHS / RHS)	Soil Classification as per IS:1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		4-Days Soaked CBR (%)	Free Swell Index (%)
				19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 micron	75 micron		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	53+000	RHS	SC	100.0	95.5	88.5	76.0	65.0	44.9	44.9	29	21	8	1.94	9.5	9.7	15.0
2	53+800	RHS	CL	100.0	100.0	97.2	90.2	84.5	65.5	65.5	34	22	12	1.86	13.2	5.0	30.0
3	59+200	LHS	ML-CL	100.0	100.0	95.5	85.2	65.2	51.2	51.2	28	21	7	1.98	8.8	10.8	12.5
4	65+400	LHS	CL	100.0	99.1	88.5	72.5	68.0	61.1	61.1	32	21	11	1.85	12.2	5.2	30.0
5	65+400	RHS	ML-CL	100.0	100.0	85.1	5	70.2	68.2	58.2	28	21	7	1.95	9.3	8.7	15.0
6	83+000	LHS	SM	100.0	99.1	88.5	7	68.5	30.2	30.2	22	NP	NP	2.02	8.7	12.6	0.0
7	88+700	LHS	MI	100.0	100.0	100.0	6	88.2	78.5	78.5	38	28	10	1.82	12.9	5.1	22.2

Granular layer investigation

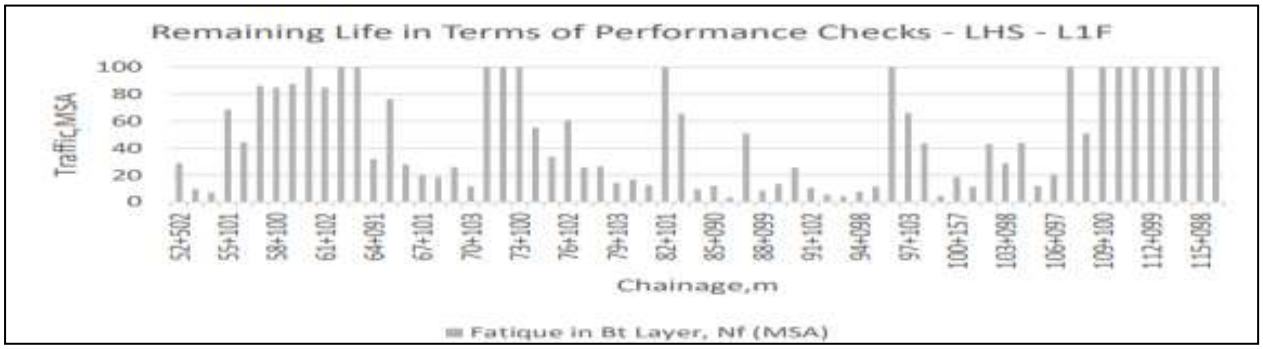
Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)											MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
1	54+950	LHS	WMM	100.0	100.0	100.0	64.8	55.9	31.0	26.7	22.7	18.4	13.0	10.5	0.5	22.4mm,11.2mm & 4.75mmIS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm & 4.75mmIS Sieve Material is Slightly Coarser Side in WMM Gradation	23	NP	NP	2.81	0.26	34.39
2	55+050	RHS	WMM	100.0	100.0	100.0	56.5	46.2	35.0	31.9	28.0	23.3	16.3	13.1	1.0	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.83	0.30	27.87
3	60+050	LHS	GSB	100.0	100.0	100.0	57.8	48.9	29.4	27.1	24.8	21.2	14.0	10.9	1.2	Conforming to GSB-III &IV	Conforming to GSB-IV & V	22	NP	NP	2.78	0.34	37.67
4	62+450	RHS	GSB	100.0	100.0	100.0	52.4	40.1	29.3	27.7	25.2	20.7	13.9	10.9	1.4	Confirming to GSB-IV	Confirming to GSB-V	20	NP	NP	2.81	0.29	35.16
5	65+000	LHS	WMM	100.0	100.0	100.0	65.9	56.0	27.9	21.2	15.7	12.0	8.5	7.0	1.1	Not Conforming to any Gradation	Not Conforming to any Gradation	22	NP	NP	2.80	0.35	30.25
6	67+800	RHS	WMM	100.0	100.0	100.0	91.9	78.6	41.0	32.7	24.6	20.7	11.8	9.4	1.0	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	20	NP	NP	2.83	0.29	31.33
7	68+600	LHS	GSB	100.0	97.0	95.7	69.3	62.7	40.1	35.6	29.9	23.6	14.1	11.1	1.0	Conforming to GSB-I	Conforming to GSB-I &IV	20	NP	NP	2.83	0.22	35.47
8	70+000	LHS	GSB	100.0	100.0	100.0	60.4	57.0	34.9	27.9	22.0	17.4	11.8	9.4	1.2	Conforming to GSB-III &IV	Conforming to GSB-IV & V	23	NP	NP	2.81	0.28	32.75
9	72+500	RHS	GSB	100.0	100.0	100.0	57.1	45.0	28.9	26.1	23.4	20.0	14.9	12.5	0.7	Conforming to GSB-III &IV	Conforming to GSB-IV & V	20	NP	NP	2.86	0.25	31.64
10	74+800	LHS	WMM	100.0	100.0	100.0	69.8	52.4	36.1	30.2	25.9	19.8	10.2	8.0	1.6	22.4mm,11.2mm IS Sieve Material	22.4mm,11.2mm IS Sieve Material Slightly	21	NP	NP	2.86	0.23	30.77

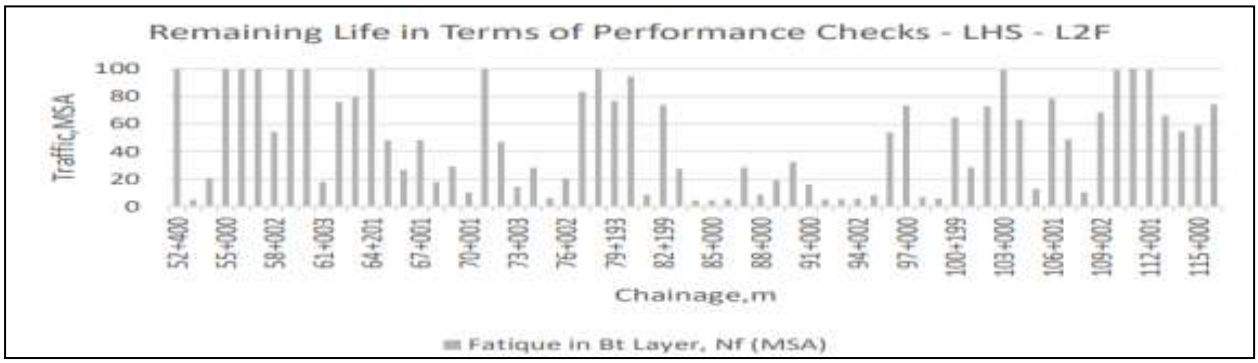
Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
																Slightly Coarser side in WMM Gradation	Coarser side in WMM Gradation						
11	79+950	LHS	GSB	100.0	100.0	96.3	60.6	52.6	33.6	28.8	23.0	19.2	9.6	7.5	0.9	Confirming to GSB III & IV	Confirming to GSB IV & V	22	NP	NP	2.84	0.27	33.46
12	83+000	RHS	GSB	100.0	100.0	100.0	49.7	27.5	6.2	4.8	4.1	3.1	2.6	2.3	0.6	26.5mm &4.75mm IS Sieve Material is Slightly Coarser side in GSB III&IV	26.5mm &4.75mm IS Sieve Material is Slightly Coarser side in GSB IV&V	20	NP	NP	2.84	0.30	35.13
13	85+000	LHS	WMM	100.0	100.0	100.0	54.4	48.5	31.0	26.8	22.2	18.9	12.8	10.0	1.0	Not Conforming to any Gradation	Not Conforming to any Gradation	21	NP	NP	2.83	0.26	29.14
14	87+500	RHS	WMM	100.0	100.0	96.6	62.9	56.2	38.5	32.4	31.8	24.1	18.2	14.5	1.3	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	23	NP	NP	2.81	0.21	30.37
15	89+900	LHS	GSB	100.0	100.0	100.0	52.1	43.1	30.4	29.3	27.0	22.5	19.1	16.0	5.2	0.075mm IS Sieve Material is Slightly Finer Side in GSB-IV	Confirming to GSB-V	20	NP	NP	2.77	0.23	29.81
16	92+800	RHS	GSB	100.0	100.0	100.0	53.8	45.7	25.7	21.4	18.0	15.1	10.2	8.3	0.5	Conforming to GSB-IV	Conforming to GSB-V	20	NP	NP	2.74	0.16	31.33
17	95+000	LHS	WMM	100.0	100.0	100.0	67.5	65.0	32.2	27.4	22.7	19.4	10.6	8.4	0.9	11.2mm,4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	11.2mm,4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	23	NP	NP	2.76	0.24	30.73
18	105+000	LHS	WMM	100.0	100.0	100.0	86.1	78.8	45.0	37.1	28.2	20.7	9.2	6.9	2.0	Conforming to WMM gradation	Conforming to WMM gradation	23	NP	NP	2.78	0.29	29.64
19	107+500	RHS	WMM	100.0	100.0	100.0	72.7	60.7	36.9	31.9	26.9	23.0	11.7	9.2	1.0	11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	20	NP	NP	2.76	0.38	28.71
20	110+200	LHS	GSB	100.0	100.0	100.0	69.5	59.5	37.4	31.8	26.0	21.6	13.2	9.6	0.5	Conforming to GSB-IV	Conforming to GSB-IV & V	19	NP	NP	2.75	0.35	36.81
21	112+450	RHS	GSB	100.0	100.0	96.2	81.6	70.0	32.6	26.7	22.0	17.2	10.9	8.7	2.7	26.5mm IS Sieve Material is Slightly Coarser side in GSB-III&IV	26.5mm IS Sieve Material is Slightly Coarser side in GSB-IV&V	20	NP	NP	2.80	0.32	35.47
22	115+000	LHS	WMM	100.0	100.0	100.0	54.3	32.6	6.2	5.4	4.6	4.2	3.1	2.8	1.0	Not Confirming to any Gradation	Not Confirming to any Gradation	22	NP	NP	2.81	0.37	34.32

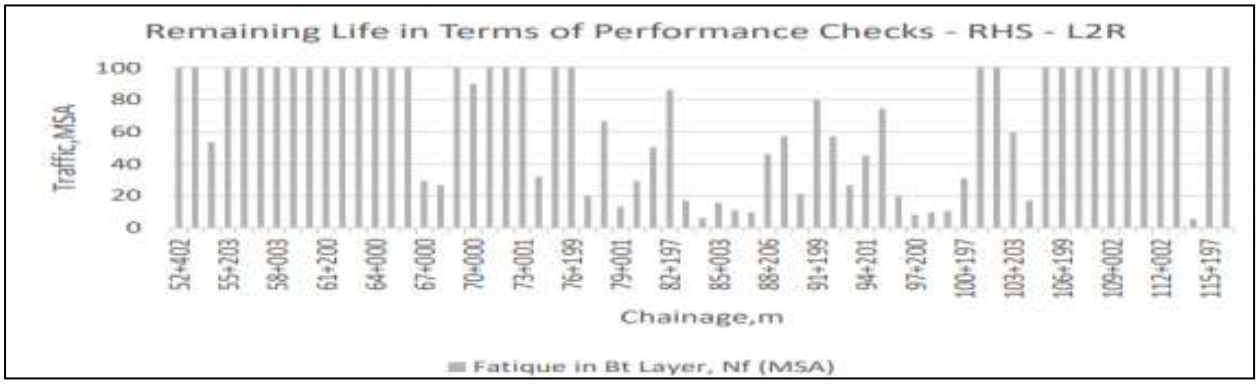
4.6 Falling Weight Deflectometer (FWD) Survey

The structural evaluation and analysis of the remaining life of project was carried out in conformity with IRC:115-2014 "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique".

The FWD survey was conducted on the Project Road from 27th January 2025 to 01st February 2025. The summary of the same is presented below.







4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Overlay work is completed at site on both side of the carriageway in the month of October 2021 i.e., FY 2022. Thus, next cycle of the overlay is proposed in FY 2029 after 7 years from previous MM cycle.

As per Article 14 of CA, the Authority shall carry out capacity augmentation under EPC contract if traffic exceeds 40,000 PCU for three consecutive accounting years. As per the traffic study report submitted by the Company it is observed that the project traffic crosses 40,000 PCU in FY 2040, FY 2041, FY 2042. Assumption has made that execution of 6-laning of Project Road will start in the year 2045 or 2046. It is also assumed that during 6-laning of Project Road, overlay of existing four lane road will be the part of the capacity augmentation. Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-6 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 to FY 2028	-	-
2	FY 2029	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC with VG40 (50%) + Micro-surfacing (50%)
3	FY 2030 to FY 2035	-	-
4	FY 2036	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC with VG40 (50%) + Micro-surfacing (50%)
5	FY 2037 to FY 2042	-	-
6	FY 2043	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (5%)	Major maintenance with 30 mm BC with VG40 (50%) + Micro-surfacing (50%)
7	FY 2044	-	-
8	FY 2045	Assumption of Capacity Augmentation to Six Lane Configuration	
9	FY 2046 to FY 2050		
10	FY 2051	End of Concession Period	

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

d. **Cement:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

e. **Steel :** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with NHAI standard data book.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, median filling rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

   Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam	Cum	8,519
2	Bituminous Concrete (VG40)	Cum	9,742
3	Bituminous Concrete (PMB)	Cum	11,511
4	Milling	Sqm	86
5	Micro-surfacing	Sqm	155
6	Kerb Re-laying	Rmt	316
7	Road Marking on BC surface	Sqm	571
8	Road Marking on micro surface	Sqm	682
9	Road Studs	Nos.	193

5.3 Balance Work Cost

As discussed in previous chapters, construction of 01 Nos. of LVUP at km. 55+750 along with approaches and highway lighting are balance due to change in proposal from LVUP to VUP. However, Concessionaire has issued work order to TMP Manoharan Infrastructure Pvt Ltd. for construction of VUP at km. 55+750. The cost of construction of VUP as per workorder is Rs. 21.652 Cr. (including GST). The construction period is 12 months from the issued of work order.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements

towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1 Salary and Welfare Expenses
2 Tolling Operations Services
3 Toll Security Services
4 Incident Management & Emergency Services
5 Electricity and Diesel Charges
6 TMS/HTMS/System Expenses
7 Office Operating Expenses
8 Vehicle Running Expenses
9 Professional Fees Expense
10 Community Development
11 Communication Expenses
12 Conveyance Expenses
13 Insurance Expense
14 IE Fees
15 Routine Maintenance Cost (Project Road)
16 Horticulture & ROW Maintenance
17 Miscellaneous including Contingency

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026 to 48)	Amount FY 2049 onwards
1	Salary and Welfare Expenses	1,33,92,950	1,33,92,950
2	Tolling Operations Services	2,40,59,683	2,40,59,683
3	Toll Security Services	55,35,087	55,35,087
4	Incident Management & Emergency Services	2,26,98,662	2,26,98,662
5	Electricity and Diesel Charges	29,77,739	29,77,739
6	TMS/HTMS/System Expenses	55,29,729	44,21,902
7	Office Operating Expenses	36,73,777	36,73,777
8	Vehicle Running Expenses	26,40,000	26,40,000
9	Professional Fees Expense	65,04,199	99,84,222
10	Community Development	12,62,386	12,62,386
11	Communication Expenses	3,32,063	3,32,063

Sr. No.	Particulars	Amount (FY 2026 to 48)	Amount FY 2049 onwards
12	Conveyance Expenses	3,62,250	3,62,250
13	Insurance Expense	65,26,714	65,26,714
14	IE Fees	24,33,432	24,33,432
15	Routine Maintenance Cost (Project Road)	3,79,40,115	4,88,92,144
16	Horticulture & ROW Maintenance	2,05,99,572	2,05,99,572
17	Miscellaneous including Contingency	39,17,147	40,12,035
	Total Cost (Rs.)	**16,03,85,505**	**17,38,04,616**
	Total Cost (Cr.)	**16.04**	**17.38**
	Per km Cost (Lakhs)	24.98	27.07

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Table 5-4 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2024 to FY 2028	-	
2	FY 2029	75.30	
3	FY 2030 to FY 2035	-	
4	FY 2036	84.62	
5	FY 2037 to FY 2042	-	
6	FY 2043	75.30	
7	FY 2044 to FY 2050	-	
8	FY 2051	-	End of concession period
Total Cost (Cr.)		**235.22**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	7.56	
2	FY 2034	7.56	
3	FY 2041	7.56	
4	FY 2048	7.56	
Total Cost (Cr.)		**30.26**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-5 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	3.99%
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%

Year	Escalation	Year	Escalation
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49	FY50	FY51
1	Routine O&M Cost																										
1.01	Salary and Welfare Expense	1.34	1.41	1.48	1.54	1.61	1.68	1.74	1.81	1.89	1.96	2.04	2.12	2.21	2.30	2.39	2.48	2.58	2.68	2.79	2.90	3.02	3.14	3.26	3.39	3.53	3.67
1.02	Tolling Operations Services	2.41	2.53	2.66	2.77	2.89	3.01	3.13	3.26	3.39	3.53	3.67	3.81	3.96	4.12	4.29	4.46	4.64	4.82	5.01	5.21	5.42	5.64	5.86	6.10	6.34	6.59
1.03	Toll Security Services	0.55	0.58	0.61	0.64	0.67	0.69	0.72	0.75	0.78	0.81	0.84	0.88	0.91	0.95	0.99	1.03	1.07	1.11	1.15	1.20	1.25	1.30	1.35	1.40	1.46	1.52
1.04	Incident Management Services	2.27	2.39	2.51	2.62	2.73	2.84	2.96	3.07	3.20	3.33	3.46	3.60	3.74	3.89	4.05	4.21	4.37	4.55	4.73	4.92	5.12	5.32	5.53	5.75	5.98	6.22
1.05	Electricity and Diesel Charges	0.30	0.31	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.75	0.78	0.82
1.06	TMS/HTMS/System Expenses	0.99	0.27	0.39	0.51	0.64	0.67	0.93	1.34	0.37	0.51	0.67	0.84	0.88	1.23	1.76	0.48	0.68	0.89	1.11	1.16	1.61	2.32	0.63	0.89	1.17	1.46
1.07	Office Operating Expenses	0.37	0.39	0.41	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.61	0.63	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.90	0.93	0.97	1.01
1.08	Vehicle Running Expenses	0.26	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.70	0.72
1.09	Professional Fees Expense	0.65	0.68	0.72	0.75	0.78	0.81	0.85	0.88	0.92	0.95	0.99	1.03	1.07	1.11	1.16	1.21	1.25	1.30	1.36	1.41	1.47	1.52	1.59	2.53	2.63	2.74
1.10	Community Development	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.30	0.31	0.32	0.33	0.35
1.11	Communication Expenses	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.10	0.10
1.13	Insurance Expense	0.65	0.69	0.72	0.75	0.78	0.82	0.85	0.88	0.92	0.96	0.99	1.03	1.08	1.12	1.16	1.21	1.26	1.31	1.36	1.41	1.47	1.53	1.59	1.65	1.72	1.79
1.14	IE Fees	0.24	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67
1.15	Routine Maintenance Cost	3.79	3.99	4.19	4.37	4.56	4.75	4.94	5.14	5.34	5.56	5.78	6.01	6.25	6.50	6.76	7.03	7.31	7.60	7.91	8.22	8.55	8.89	9.25	12.39	12.89	13.40
1.16	Horticulture & ROW Maintenance	2.06	2.17	2.27	2.37	2.48	2.58	2.68	2.79	2.90	3.02	3.14	3.26	3.39	3.53	3.67	3.82	3.97	4.13	4.29	4.46	4.64	4.83	5.02	5.22	5.43	5.65
1.17	Miscellaneous and Contingency	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.75	0.79	0.82	0.85	0.88	0.92	0.95	1.02	1.06	1.10
	Subtotal of O&M Cost	16.47	16.57	17.48	18.36	19.25	20.04	21.10	22.31	22.18	23.21	24.28	25.39	26.40	27.76	29.36	29.18	30.52	31.92	33.38	34.72	36.51	38.61	38.37	43.82	45.81	47.88
2	Major Maintenance Cost	-	-	-	83.17	-	-	-	-	-	-	116.53	-	-	-	-	-	-	127.08	-	-	-	-	-	-	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	7.96	-	-	-	-	-	-	10.66	-	-	-	-	-	-	14.02	-	-	-	-	-	-	18.44	-	-	-
4	Balance Works Cost	21.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**38.13**	**24.53**	**17.48**	**101.53**	**19.25**	**20.04**	**21.10**	**22.31**	**32.83**	**23.21**	**140.81**	**25.39**	**26.40**	**27.76**	**29.36**	**43.20**	**30.52**	**159.00**	**33.38**	**34.72**	**36.51**	**38.61**	**56.81**	**43.82**	**45.81**	**47.88**

ANNEXURES

ANNEXURE I : ROUTINE MAINTENANCE COST

Routine Maintenance Cost (4-Lane)	
Ordinary Repair Cost for Flexible (with GST)	**3,79,40,115**
(inclusive of GST)	**= 5.91 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,81,191**	**Urban** More than 4500 CVD **3,34,878**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	430222.00	512364.00	-	-	-	-
		Paved shoulder	1.70	478025.00	569293.00	36.17	-	1,72,91,359	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	562382.00	669756.00	-	-	-	-
		Paved shoulder	2.20	618620.00	736732.00	-	28.03	-	2,06,48,756
					TOTAL		**64.200**		**3,79,40,115**

Routine Maintenance Cost (6-Lane)	
Ordinary Repair Cost for Flexible (with GST)	**4,88,92,143**
(inclusive of GST)	**= 7.62 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,81,191**	**Urban** More than 4500 CVD **3,34,878**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
7	Six lane with divided carriageway	without Paved shoulder	2.09	587689.00	699895.00	-	-	-	-
		with Paved shoulder	2.26	635492.00	756825.00	36.17	-	2,29,87,334	-
8	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	719849.00	857288.00	-	-	-	-
		with Paved shoulder	2.76	776087.00	924264.00	-	28.03	-	2,59,04,809
					TOTAL		**64.200**		**4,88,92,143**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			10473
	Cost in Rupees			52,363
	ii) Patch repair	100 % Patch less	As & when required	1.50%
	Area (sqm)			150
	Rs/m^2			419
	Cost in Rupees			62,835
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			75
	Cost in Rupees			18,777
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.50%
	Area (sqm)			187.5
	Rs/m^2			50
	Cost in Rupees			9,396
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.50%
	Area (sqm)			112.5
	Rs/m^2			419
	Cost in Rupees			47,126

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	v) Road marking	14%	Once in 7th year & @ Repaired location	11836
	SUB TOTAL			**2,02,333**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6831
	ii) Jungle Clearance	100%	Twice in a Year	3
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1201
	SUB TOTAL			**8,035**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	3026
	ii) Repair of floors	100%	Once in a Year	5475
	iii) Repair of parapets	100%	As & when required	2282
	SUB TOTAL			**10,783**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	40,026
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**40,026**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2668

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	ii) Maintenance of gang hut store, sheds, animal & debries removal		Once in a Year	4003
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	4003
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	8005
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1334
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**20,013**
	GRAND TOTAL (Normal)			**2,81,191**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	21399
	ii)Repairs to footpath	100%	As & when required	5337
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	5337
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	8272
	vi) Repair of divider/ Railing in City portion	100%	As & when required	10674
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2668
	SUB TOTAL			**53,687**
	GRAND TOTAL (Urban)			**3,34,878**

ANNEXURE II : MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,19,046	18	2,17,11,210
	For BC	Sqm	1	1	11,17,612.90		11,17,613	11,17,613		
	For DBM	Sqm	1	1	45,552.50		45,553	45,553		
	For Misc. Location	Sqm	1	1	55,880.65		55,881	55,881		
2	BC with 30 mm	Cum	1	1	11,73,493.55	0.03	35,205	35,205	11,511	40,52,34,781
3	DBM with 50 mm	Cum	1	1	45,552.50	0.05	2,278	2,278	8,519	1,94,04,090
4	Milling	Sqm	1	1	45,552.50		45,553	45,553	86	39,28,903
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	978	1,29,473
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,327	12,35,350
	Service Road									
8	Tack coat	Sqm	1	28,028	7.00		1,96,193	1,96,193	18	34,94,188
9	BC with 30 mm	Cum	1	28,028	7.00	0.03	5,886	5,886	9,742	5,73,37,690
10	Micro Surfacing	Sqm	1	28,028	7.00		1,96,193	1,96,193	155	3,04,58,886
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	972	18.7		18,137	18,137	18	3,23,022
12	Wearing Coat BC with 30 mm	Cum	1	972	18.7	0.03	544	544	11,511	62,63,165
13	Milling of Ex. Wearing Coat	Sqm	1	972	18.7		18,137	18,137	86	15,64,325
14	Painting of Crash Barrier	Sqm	4	972		1.12	4,337	4,337	107	4,64,073
	Other Works									
15	Raising of Road Kerb	Rmt	-	1,18,937			-	-	316	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,848			15,696	15,696	193	30,32,467
17	Painting of Kerb	Sqm	2	1,18,937		0.375	89,202	89,202	107	95,44,658
18	Road Marking	Sqm					61,539	61,539	571	
	Road Marking on BC						54,682	54,682	571	3,12,23,670
	Road Marking on Micro surfacing						6,857	6,857	682	46,76,425

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW									
	a) Median & Edge line	Sqm	4	67,410	0.15		40,446			
	b) Lane line	Sqm	2	22,245	0.10		4,449			
	Service Road									
	a) Edge line	Sqm	2	58,858	0.10		11,772			
	b) Lane line	Sqm	1	19,423	0.10		1,942			
	Junction crossing	Sqm					2,930			
19	Filling of Earthen shoulder	Cum					18,455	18,455	415	76,58,772
	MCW		2	62,882	2.00	0.06	15,092			
	Service Road		1	28,028	2.00	0.06	3,363			
20	Miscellaneous	5%								3,03,87,649
Total Major Maintenance Cost (Rs.)										**63,81,40,634**
Total Major Maintenance Cost with GST (Rs.)										**75,30,05,948**
Total Major Maintenance Cost with GST (Cr.)										**75.30**
Per km Cost (lakh)										**117.29**
Escalation Factor for Major Maintenance Cost (FY 2029)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY 2029) (Cr.)										**83.17**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,19,046	18	2,17,11,210
	For BC	Sqm	1	1	11,17,612.90		11,17,613	11,17,613		
	For DBM	Sqm	1	1	45,552.50		45,553	45,553		
	For Misc. Location	Sqm	1	1	55,880.65		55,881	55,881		
2	BC with 30 mm	Cum	1	1	11,73,493.55	0.03	35,205	35,205	11,511	40,52,34,781
3	DBM with 50 mm	Cum	1	1	45,552.50	0.05	2,278	2,278	8,519	1,94,04,090
4	Milling	Sqm	1	1	45,552.50		45,553	45,553	86	39,28,903
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839

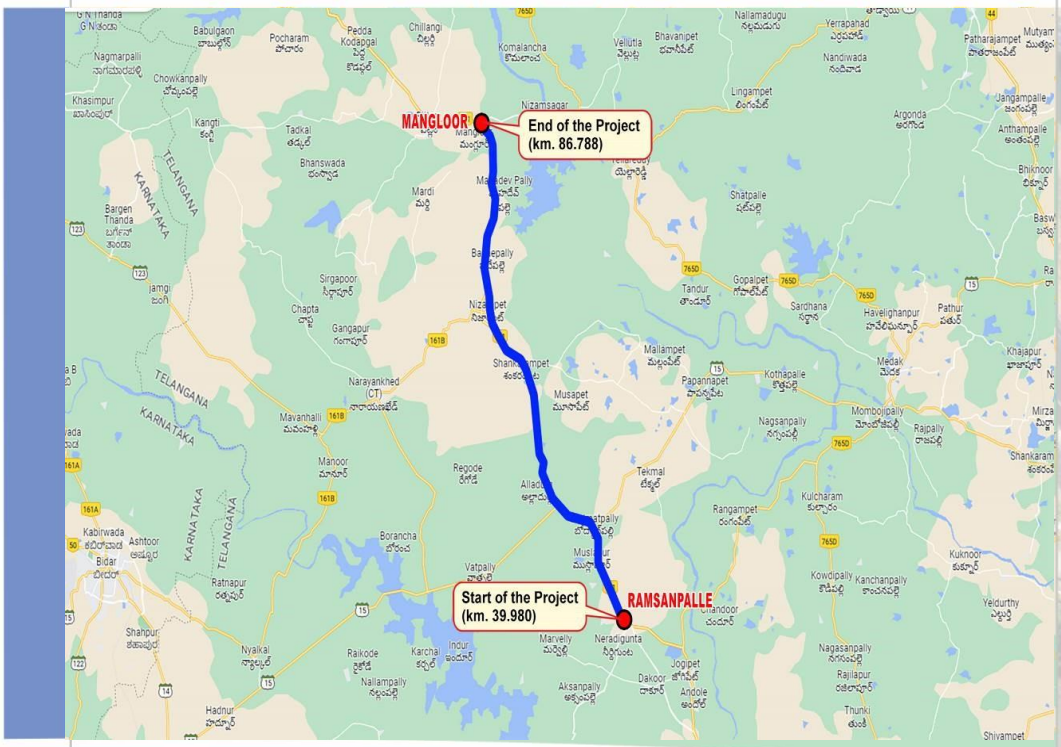
Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	978	1,29,473
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,327	12,35,350
	Service Road									
8	Tack coat	Sqm	1	28,028	7.00		1,96,193	1,96,193	18	34,94,188
9	BC with 30 mm	Cum	1	28,028	7.00	0.03	5,886	5,886	9,742	5,73,37,690
10	Micro Surfacing	Sqm	1	28,028	7.00		1,96,193	1,96,193	155	3,04,58,886
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	972	18.7		18,137	18,137	18	3,23,022
12	Wearing Coat BC with 30 mm	Cum	1	972	18.7	0.03	544	544	11,511	62,63,165
13	Milling of Ex. Wearing Coat	Sqm	1	972	18.7		18,137	18,137	86	15,64,325
14	Painting of Crash Barrier	Sqm	4	972		1.12	4,337	4,337	107	4,64,073
	Other Works									
15	Raising of Road Kerb	Rmt	2	1,18,937			2,37,873	2,37,873	316	7,52,27,368
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,848			15,696	15,696	193	30,32,467
17	Painting of Kerb	Sqm	2	1,18,937		0.375	89,202	89,202	107	95,44,658
18	Road Marking	Sqm					61,539	61,539	571	
	Road Marking on BC						54,682	54,682	571	3,12,23,670
	Road Marking on Micro surfacing						6,857	6,857	682	46,76,425
	MCW									
	a) Median & Edge line	Sqm	4	67,410	0.15		40,446			
	b) Lane line	Sqm	2	22,245	0.10		4,449			
	Service Road									
	a) Edge line	Sqm	2	58,858	0.10		11,772			
	b) Lane line	Sqm	1	19,423	0.10		1,942			
	Junction crossing	Sqm					2,930			
19	Filling of Earthen shoulder	Cum					18,455	18,455	415	76,58,772
	MCW		2	62,882	2.00	0.06	15,092			
	Service Road		1	28,028	2.00	0.06	3,363			
20	Miscellaneous	5%								3,41,49,018
								Total Major Maintenance Cost (Rs.)		**71,71,29,371**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
								Total Major Maintenance Cost with GST (Rs.)		**84,62,12,657**
								Total Major Maintenance Cost with GST (Cr.)		**84.62**
								Per km Cost (lakh)		**131.81**
								Escalation Factor for Major Maintenance Cost (FY 2036)		**1.52**
								Total Escalated Cost for Major Maintenance Cost (FY 2036) (Cr.)		**116.53**

Major Maintenance Cost (FY 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,19,046	18	2,17,11,210
	For BC	Sqm	1	1	11,17,612.90		11,17,613	11,17,613		
	For DBM	Sqm	1	1	45,552.50		45,553	45,553		
	For Misc. Location	Sqm	1	1	55,880.65		55,881	55,881		
2	BC with 30 mm	Cum	1	1	11,73,493.55	0.03	35,205	35,205	11,511	40,52,34,781
3	DBM with 50 mm	Cum	1	1	45,552.50	0.05	2,278	2,278	8,519	1,94,04,090
4	Milling	Sqm	1	1	45,552.50		45,553	45,553	86	39,28,903
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	978	1,29,473
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,327	12,35,350
	Service Road									
8	Tack coat	Sqm	1	28,028	7.00		1,96,193	1,96,193	18	34,94,188
9	BC with 30 mm	Cum	1	28,028	7.00	0.03	5,886	5,886	9,742	5,73,37,690
10	Micro Surfacing	Sqm	1	28,028	7.00		1,96,193	1,96,193	155	3,04,58,886
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	972	18.7		18,137	18,137	18	3,23,022
12	Wearing Coat BC with 30 mm	Cum	1	972	18.7	0.03	544	544	11,511	62,63,165
13	Milling of Ex. Wearing Coat	Sqm	1	972	18.7		18,137	18,137	86	15,64,325
14	Painting of Crash Barrier	Sqm	4	972		1.12	4,337	4,337	107	4,64,073
	Other Works									

Major Maintenance Cost (FY 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
15	Raising of Road Kerb	Rmt	-	1,18,937			-	-	316	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,848			15,696	15,696	193	30,32,467
17	Painting of Kerb	Sqm	2	1,18,937		0.375	89,202	89,202	107	95,44,658
18	Road Marking	Sqm					61,539	61,539	571	
	Road Marking on BC						54,682	54,682	571	3,12,23,670
	Road Marking on Micro surfacing						6,857	6,857	682	46,76,425
	MCW									
	a) Median & Edge line	Sqm	4	67,410	0.15		40,446			
	b) Lane line	Sqm	2	22,245	0.10		4,449			
	Service Road									
	a) Edge line	Sqm	2	58,858	0.10		11,772			
	b) Lane line	Sqm	1	19,423	0.10		1,942			
	Junction crossing	Sqm					2,930			
19	Filling of Earthen shoulder	Cum					18,455	18,455	415	76,58,772
	MCW		2	62,882	2.00	0.06	15,092			
	Service Road		1	28,028	2.00	0.06	3,363			
20	Miscellaneous	5%								3,03,87,649
Total Major Maintenance Cost (Rs.)										**63,81,40,634**
Total Major Maintenance Cost with GST (Rs.)										**75,30,05,948**
Total Major Maintenance Cost with GST (Cr.)										**75.30**
Per km Cost (lakh)										**117.29**
Escalation Factor for Major Maintenance Cost (FY 2043)										**2.00**
Total Escalated Cost for Major Maintenance Cost (FY 2043) (Cr.)										**127.08**

FP Project Management



Technical Due Diligence of Ramsanpalle to Mangloor section of NH-161 from km. 39+980 to km. 86+788 in the State of Telangana on Hybrid Annuity Mode (HAM)

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

FP Project Management
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Document No. 255051 / HE / LIE / TDD_Final Report / R0					
Rev	**Description**	**Date**	**Originator**	**Checked**	**Approved**
R0	Final Report	27-Oct-2025	SG / MHP / VMK	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
2.9 Bypass and Realignment 6
3 Condition Assessment of Project Road 8
3.1 Pavement 8
3.1.1 Pavement Condition Survey 8
3.2 Service Road 17
3.3 Major / Minor Junction 23
3.4 Condition Survey of Structure 25
3.5 Condition Survey of Culverts 38
3.6 Drainage 41
3.7 Slope Protection 43
3.8 Road Furniture 44
3.9 Pavement Marking 45
3.10 Road Studs 46
3.11 Highway Lighting / Solar Blinker / High Mast 53
3.12 Crash Barriers 55
3.13 Delineators 56
3.14 Pedestrian Guard Rail 57
3.15 Road Land Boundary / Chain Link Fencing 58

3.16 Avenue Plantation and Median Plantation 60
3.17 Noise Barrier 62
3.18 Toll Plaza 63
3.19 Advance Traffic Management System (ATMS) 64
3.19.1 Automatic Traffic Counter cum Classifier (ATCC) 64
3.19.2 Mobile Radio Communication System 64
3.19.3 Emergency Call Boxes (ECB) 65
3.19.4 MET System 65
3.19.5 Variable Message Signboards (VMS) 66
3.19.6 CCTV Surveillance Cameras 66
3.19.7 Vehicle Actuated speed Display (VASD-Speedometer) 67
3.20 Truck Lay bye 67
3.21 Traffic Aid Post and Medical Aid Post (Incident Management) 68
3.22 Toilet Block 69
3.23 Bus Bays and Passenger Shelters 70
3.24 Wayside Amenities 70
3.25 Organization Chart 70
3.25.1 Operation 72
3.25.2 Routine Maintenance 72
4 Pavement Investigation and Assessment 73
4.1 General 73
4.2 Axle Load and VDF 73
4.3 Design Traffic 73
4.4 Network Survey Vehicles (NSV) Survey 74
4.5 Structural Investigation 75
4.6 Periodic Maintenance Strategy 75
5 Cost Estimate 77
5.1 General 77
5.2 Rate Assumption 77
5.3 Balance Work Cost 78
5.4 Routine O&M Cost 78
5.5 Major Maintenance Cost 80
5.6 Periodic Replacement of TMS / ATMS System 80
5.7 Escalation Assumption 80
5.8 Summary of Cost 81

ANNEXURES **83**
ANNEXURE I - ROUTINE MAINTENANCE COST **84**
ANNEXURE II - MAJOR MAINTENANCE COST **88**

LIST OF TABLES

Table 2-1 Details of Bypass 7
Table 2-2 Details of Realignment 7
Table 4-1 Vehicle Damage Factor 73
Table 4-2 MSA Calculation 73
Table 4-3 Roughness Index Summary 74
Table 4-4 FWD Summary 75
Table 4-5 Major Maintenance Cycle 76
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST. 77
Table 5-2 Summary of Unit Rates 78
Table 5-3 Summary of Operation Cost 79
Table 5-4 Summary of Major Maintenance Cost 80
Table 5-5 Escalation 80

LIST OF FIGURES

Figure 2-1 Location Map 4
Figure 2-2 Start / End of Project Road (LHS) 5
Figure 2-3 Start / End of Project Road (RHS) 5
Figure 2-4 Photographs of Bypass 7
Figure 3-1 Photographs of Pavement Condition (LHS) 9
Figure 3-2 Photographs of Pavement Condition (RHS) 12
Figure 3-3 Photographs of Service Road (LHS) 18
Figure 3-4 Photographs of Service Road (RHS) 21
Figure 3-5 Photographs of Major Junctions 23
Figure 3-6 Photographs of Minor Junctions 25
Figure 3-7 Photographs of Major Structures 30
Figure 3-8 Photographs of Box Culvert / Pipe Culvert 39
Figure 3-9 Photographs of Existing Drains 41
Figure 3-10 Photographs of Slope Protection & Chute Drain 43
Figure 3-11 Photographs of Pavement Marking 45
Figure 3-12 Photographs of Road Studs 46
Figure 3-13 Photographs of Road Signages (LHS) 47
Figure 3-14 Photographs of Road Signages (RHS) 50
Figure 3-15 Photographs of Street Light / Solar Blinker / High Mast 54
Figure 3-16 Photographs of Guard Post / Crash Barrier 55
Figure 3-17 Photographs of Delineator 57
Figure 3-18 Photographs of Pedestrian Guard Rail 58
Figure 3-19 Photographs of Chain Link fencing 58
Figure 3-20 Photographs of Median Plantation 60
Figure 3-21 Photographs of Avenue Plantation 61
Figure 3-22 Photographs of Noise Barrier 62
Figure 3-23 Photograph of Truck Lay-bye 68
Figure 3-24 Photograph of Incident Management 69
Figure 3-25 Photographs of Toilet Blocks 69
Figure 3-26 Photographs of Bus Bay / Passenger Shelter 70

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Ramsanpalle - Mangloor section of NH-161 from km. 39+980 to km. 86+788 in the State of Telangana (hereinafter referred as "Project Road").

M/s. KNR Shankarampet Projects Pvt. Ltd. (hereafter known as Shankarampet Projects Private Limited**)** vide COI dated 08-Nov-2024 (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for operation, maintenance, and transfer of Ramsanpalle to Mangloor Section (Design Chainage from km. 39+980 to km. 86+788) of NH-161 or Project Road under Hybrid Annuity basis. The project was awarded to Concessionaire, **KNR Shankarampet Projects Pvt. Ltd**., a company promoted and incorporated by M/s.KNR Shankarampet Projects Pvt. Ltd. on 26-Mar-2018 (Including construction period) by National Highway Authority of India (NHAI). Cube Highway group is a shareholder in the Concessionaire company. The length of Project Road as per CA is 46.808 kms without toll plaza.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy.
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period.
- Estimation of Annual Operation expenses along with Systems cost (TMS / ATMS) till the end of concession period.
- Review of balance work cost for Project Road including estimation of quantities and item rates.

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our proposed team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader will coordinate the activities between all the key staff who will work closely together. The key is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader will act as the point of contact for Client Technical Study.

The technical study include review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings.
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority.
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **22nd February 2025 to 23rd February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**

Chapter 4 **Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates**: This chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/s. KNR Shankarampet Projects Pvt. Limited** (hereafter known as Shankarampet Projects Private Limited) is a company promoted by Cube Highway group. The Appointment Date of the project was on 02nd May 2019. The concession period of the project is 17 years including construction period. The project has received PCOD on 5th October 2021 for the length 43.138 kms out of 46.808 kms and COD on 21.06.2022 for the length 46.808 kms. The Cube Highway group is a shareholder in the Concessionaire Company.

2.2 Location

The Project Road is part of National Highway No. 161, of Ramsanpalle - Mangloor section in the state of Telangana. The total project length is 46.808 kms as per CA.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

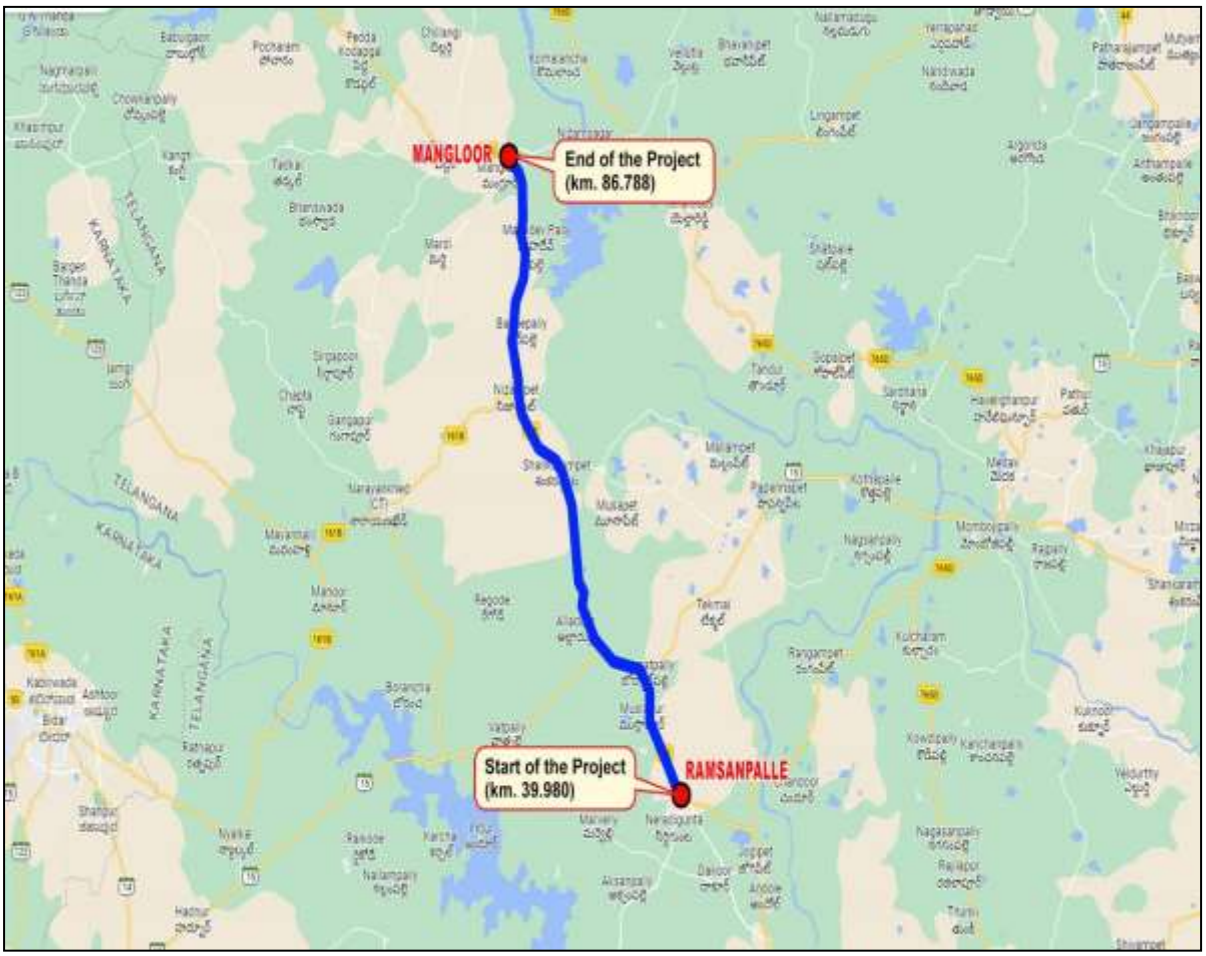


Figure 2-2 Start / End of Project Road (LHS)

Start of the Project Road

End of the Project Road

Figure 2-3 Start / End of Project Road (RHS)

Start of the Project Road

End of the Project Road

2.3 Climate

The climate of the region is marked by heavy rainfall with high humidity in the hot season. The Indian Meteorological Department (IMD) has identified the following four seasons in the region.

Sr. No.	Weather	Month
1	Summer	February to May
2	Monsoon	June to September
3	Post Monsoon	October
4	Winter	November to February
5	Maximum Temperature	38^0C
6	Minimum Temperature	18^0C
7	Average annual rainfall	910 MM

2.4 Terrain

The Project Road passes through plain to rolling terrain.

2.5 Abutting Land Use

The following are the various developments that are anticipated in the Four Lanning of Ramsanpalle Mangloor Section.

- Agriculture is the predominant land use along the Project Road.
- This Project Road reduces the travel time for getting access to Hyderabad, Nanded Sahib, Akola, Nagpur and Shegaon which results in better industrial growth and economy.
- The tourism industry gets a great booster as majority of people using this Project Road, for going to places like Nanded Sahib & Shegaon, a group of temples & Gurudwara etc.,

A lot of commercial establishments along the Project Road in the form of hotels and Snack Parlors may be developed in the coming future.

2.6 Right of Way

The width of the existing Right of Way (ROW) for the Project Road varies from 30.0 m to 60/180.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW and presently no utility shifting is balance at site. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Ramsanpalle to Mangloor (km. 39+980 to Km. 86+788) has been developed as a four-lane divided carriageway with median width varies from 4.0 m to 12.0 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Operation and maintenance of the Project in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

2.9 Bypass and Realignment

There are two Bypass on Project Road. The total length of Bypass is 7.20 kms. Apart from it there are nine realignments in the Project Road. The Bypass constructed along the Project Road as well as realignment is as tabulated below.

Table 2-1 Details of Bypass

Sr. No.	Name of Bypass	Design Chainage (km)		Length (km)
		From	To	
1	Shankarampet	60+900	63+600	2.70
2	Nizam pet	66+400	70+900	4.50
Total Length				7.20

Table 2-2 Details of Realignment

Sr. No.	Existing Chainage (km)		Design Chainage (km)		Length (km)
	From	To	From	To	
1	50+100	50+950	45+300	46+100	0.800
2	57+950	60+025	53+100	55+200	2.100
3	62+125	62+975	57+300	58+100	0.800
4	68+975	69+475	64+200	64+650	0.450
5	77+875	79+575	73+650	75+150	1.500
6	80+925	81+440	76+500	76+950	0.450
7	82+400	83+075	77+900	78+550	0.650
8	88+740	89+050	84+200	84+500	0.300
9	90+150	90+550	85+600	86+000	0.400
			TOTAL		**7.450**

Figure 2-4 Photographs of Bypass

km. 70+900

km. 66+400

km. 63+600

km. 60+900

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.5 m with earthen shoulder of 1.75 to 2.00 meter on either side. The Project Road has median width varies from 4.0 m to 12.0 m.

The entire stretch of Project Road including service road is constructed with flexible pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **22nd February 2025 to 23rd February 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is Good. The summary of pavement condition survey is presented in below table:

Table 3-1 Summary of Pavement Condition survey

Rating	Main Carriageway	
	LHS	RHS
Good	89.32 %	85.05 %
Fair	-	4.27 %
Good/Fair	10.68 %	10.68 %
Fair/Poor	-	-
Poor	-	-
Total	100.00 %	100.00 %

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (LHS)

km. 42+200

km. 43+000

km. 43+400

km. 44+200

km. 48+600

km. 50+700

km.63+800

km. 65+000

km. 68+800

km. 69+400

km. 71+600

km. 72+400

km. 80+400

km. 85+000

.

Road Shoulder (LHS)

km. 43+000

km. 57+200

km. 65+000

km. 72+400

km. 80+400

Figure 3-2 Photographs of Pavement Condition (RHS)

km. 85+600

km. 84+000

km. 83+600

km. 83+000

km. 81+400

km. 78+300

km. 77+200

km. 75+250

km. 73+450

km. 72+600

km. 70+400

km. 67+600

km. 65+800

km. 65+000

km. 62+400

km. 61+200

km. 58+200

km. 56+620

km. 53+400

km. 50+900

km. 50+200

km. 47+800

km. 45+000

Road Shoulder (RHS)

km.85+600

km. 83+000

km. 81+400

km. 77+200

km. 75+250

km. 72+600

km. 71+600

km. 65+000

km. 58+200

km. 47+800

km. 45+000

3.2 Service Road

a) Existing Service Road

The width of Service Road found 7.0 m and it is constructed in built- up area and adjoining underpasses and flyover locations. The scope of service road as per CA is 3.840 kms as well as Slip Road is 49.100 kms. Details of Service Road are presented below in table.

Table 3-2 Details of Service Road

Sr. No.	Design Chainage (km)		Length (km)		Width (m)	Side	Remarks
	From	To	LHS	RHS			
1	53+700	54+840	1+100	1+100	7.0	Both	
2	70+050	70+460	0+410	0+410	7.0	Both	
3	73+650	74+020	0+370	0+370	7.0	Both	
	Sub Total on each side		**1.920**	**1.920**			
	Total		**3.840**				

Table 3-3 Details of Slip Road

Sr. No.	Design Chainage (km)		Length (km)		Width (m)	Side	Remarks
	From	To	LHS	RHS			
1	40+900	42+100	1+200	1+200	7.0	Both	
2	43+450	44+400	0+950	0+950	7.0	Both	
3	46+150	47+650	1+500	1+500	7.0	Both	
4	48+300	48+650	0+350	0+350	7.0	Both	
5	48+650	49+100	0+450	0+450	7.0	Both	
6	49+100	51+500	2+400	2+400	7.0	Both	
7	51+500	52+200	0+700	0+700	7.0	Both	
8	52+200	53+700	1+500	1+500	7.0	Both	
9	54+840	57+050	2+210	2+210	7.0	Both	
10	58+440	59+020	0+580	0+580	7.0	Both	
11	59+020	59+350	0+330	0+330	7.0	Both	
12	60+400	64+200	3+800	3+800	7.0	Both	
13	65+650	70+050	4+400	4+400	7.0	Both	
14	70+460	71+600	1+140	1+140	7.0	Both	
15	74+020	74+950	0+930	0+930	7.0	Both	
16	77+540	79+350	1+810	1+810	7.0	Both	
17	79+350	79+650	0+300	0+300	7.0	Both	
	Length on each side		**24.550**	**24.550**			
	Total Length (km)		**49.100**				

The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service Road (LHS)

km. 41+700

km. 43+650

km. 46+400

km. 48+800

km. 50+211

km. 51+850

km. 54+000

km. 56+025

km. 58+710

km. 62+095

km. 63+032

km. 66+182

km. 67+000

km. 68+800

km. 70+900

km. 74+400

km. 78+000

km. 79+200

km. 84+950

Figure 3-4 Photographs of Service Road (RHS)

km. 79+200

km. 78+100

km. 74+400

km. 70+900

km. 68+900

km. 63+300

km. 62+400

km. 61+400

km. 58+850

km. 56+950

km. 52+650

km. 52+150

km. 51+000

km. 49+050

km. 44+000

km. 42+000

3.3 Major / Minor Junction

As per the Concession Agreement there are 15 nos. of existing major junctions as well as 15 nos. of minor junctions. The photographs taken during the site visit are presented below.

Figure 3-5 Photographs of Major Junctions

km. 41+700

km. 8+800

km. 50+211

km. 51+850

km. 56+025

km. 58+710

km. 62+095

km. 63+032

km. 68+800

km. 74+400

km. 78+000

km. 84+950

Figure 3-6 Photographs of Minor Junctions

km. 46+050

km. 60+450

km. 63+410

km. 64+250

km. 72+030

3.4 Condition Survey of Structure

The inventory of structures including Major Bridges, Minor Bridges, ROB's, Underpasses and Culverts is presented in table as below:

Table 3-4 Summary of Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	-
Flyover	-

Type of Structure	Total Number of Structures
Major Bridges (MJB)	02
Minor Bridges (MNB)	07
Vehicular Underpass (VUP)	06
Pedestrian Underpass (PUP / LVUP)	11
Culverts:	
Re-construction of Box / Slab Culverts	14
Re-construction of Pipe to Box Culvert	33
New Construction of Box Culvert	49

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-5 Condition Survey of Major Structure

Major Bridge

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Type of Sub-structure	Type of Super-structure	Type of foundation	Remarks
1	61+546	LHS	4 span - Total length 131.38 M	1 x 14.5 m	RCC	Precast Girder with RCC Slab	-	New Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition
		LHS service Road	4 span - Total length 131.38 M	1x11.0 m	RCC	Precast Girder with RCC Slab	-	New Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition
		RHS	4 span - Total length 131.38 M	1 x 14.5 m	RCC	Precast Girder with RCC Slab	-	New Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition
		RHS service Road	4 span - Total length 131.38 M	1x11.0 m	RCC	Precast Girder with RCC Slab	-	New Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition
2	83+505	LHS	10 span - Total length 106.68 M	1 x 16	RCC Wall	RCC Solid slab	-	New Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition
		RHS	Existing Bridge 7 span - Total length 106.68 M	1X8.6	RCC Wall	RCC Solid slab	-	Existing Bridge - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition
		RHS	10 span - Total length 106.68 M	1 x 12.5	RCC Wall	RCC Solid slab	-	New Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition

Minor Bridge

Sr. No.	Design Chainage (km)	Structural Configuration	Structure Type	Span Arrangement (m) (No. x Length)	Total Structure Width (m)	Remarks
1	45+787	New 6-Lane bridge	Box type	One Span -Total Length-14.23m	LHS-14.5m RHS-14.5m	New Construction - RCC box type - Structure is in sound condition. As informed, crash barrier and slope protection are in good condition.
2	45+972	New 6-Lane bridge	Box type	Two Span -Total Length-21.18m	LHS-16.0m RHS-16.0m	New Construction - RCC box type - Structure is in sound condition. As informed, crash barrier and slope protection are in good condition.
3	53+742	New 6-Lane bridge	Box type	Two Span -Total Length-21.18 m	LHS-14.5 m RHS-14.5 m LHS Service Road-11 m RHS Service Road-11 m	New Construction - RCC box type - Structure is in sound condition. As informed, crash barrier and slope protection are in good condition.
4	57+741	New 6-Lane bridge	Precast Girder with RCC Slab	Four Span - Total Length-34.04 m	LHS-16.0m RHS-16.0m	New Construction - Precast Girder with RCC Slab - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition.
5	61+008	New 6-Lane bridge	Precast Girder with RCC Slab	Single Span - Total Length-32.58 m	LHS-14.5 m RHS-14.5 m LHS Service Road-11 m RHS Service Road-11 m	New Construction - Precast Girder with RCC Slab - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition.
6	65+407	New 6-Lane bridge	Precast Girder with RCC Slab	Two Span -Total Length-34.04 m	LHS-16.0m RHS-16.0m	Re-Construction - Precast Girder with RCC Slab - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition.
7	67+035	New 6-Lane bridge	Precast Girder with RCC Slab	Two Span -Total Length-61.59 m	LHS-14.5 m RHS-14.5 m LHS Service Road-11 m RHS Service Road-11 m	New Construction - Precast Girder with RCC Slab - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition.

VUP and LVUP

Sr. No.	Chainage (km)	Side	Type	Span Arrangement (m)	Width (m)	Vertical Clearance (m)	Type of structure	Remarks
1	41+700	LHS	LVUP	1 x 12.0	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1 x 12.0	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
2	43+650	LHS	LVUP	1 x 12.0	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1 x 12.0	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
3	46+900	LHS	VUP	1x25.0	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		1x25.0	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
4	48+800	LHS	LVUP	1 x 12.0	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1 x 12.0	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
5	50+211	LHS	VUP	1x25.0	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		1x25.0	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
6	51+850	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
7	54+971	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
8	56+025	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
9	58+710	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
10	62+095	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
11	63+032	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
12	66+182	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
13	68+800	LHS	VUP	1x15+1X30+1x15	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		1x15+1X30+1x15	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
14	70+950	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
15	74+400	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition

Sr. No.	Chainage (km)	Side	Type	Span Arrangement (m)	Width (m)	Vertical Clearance (m)	Type of structure	Remarks
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
16	78+000	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
17	79+200	LHS	LVUP	1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1x12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition

Figure 3-7 Photographs of Major Structures

Major Bridge

km. 61+546
(Structure top View-SR+MCW)

km. 61+546
(Structure View)

km. 61+546
(Structure View)

km. 61+546
(Structure top View-SR+MCW)

Ext. and New MJB at km. 83+505-LHS (Top View)

Ext. MJB at km. 83+505 (Sub-structure & Super-structure LHS)

New MJB at km. 83+505 (Sub-structure & Super-structure LHS)

New MJB at km. 83+505 (Sub-structure & Super-structure RHS)

Minor Bridge

km. 45+787 (LHS) (Structure View)

km. 45+787 (RHS) (Structure View)

km. 45+992 (LHS) (Structure View)

km. 45+992 (RHS) (Structure View)

km. 53+742 (LHS)
(Super-top structure)

km. 53+742 (RHS)
(Structure View)

km. 57+741 (LHS)
(Sub-structure & Super-structure)

km. 57+741 (RHS)
(Sub-structure & Super-structure)

km. 61+008 (LHS)
(Sub-structure & Super-structure)

km. 61+008 (RHS)
(Sub-structure & Super-structure)

km. 65+405 (LHS)
(Sub-structure & Super-structure)

km. 65+405 (RHS)
(Sub-structure & Super-structure)

km. 67+035 (LHS)
(Structure top View)

km. 67+035 (LHS)
(Structure View)

km. 67+035 (RHS)
(Expansion Joint)

km. 67+035 (RHS)
(Structure View)

VUP / LVUP

LVUP at km. 41+700 (LHS)

LVUP at km. 41+700 (BHS)

LVUP at km. 43+650 (LHS)

LVUP at km. 43+650 (RHS)

VUP at km. 46+900 (LHS)

VUP at km. 46+900 (RHS)

LVUP at km. 48+800 (LHS)

VUP at km. 48+800 (RHS)

VUP at km. 50+211 (LHS)

VUP at km. 50+211 (BHS)

LVUP at km. 51+850 (RHS)

LVUP at km. 51+850 (BHS)

LVUP at km. 54+971 (LHS)

LVUP at km. 54+971 (RHS)

LVUP at km. 56+025 (LHS)

LVUP at km.56+025 (BHS)

LVUP at km. 58+710 (LHS)

LVUP at km. 58+710 (RHS)

VUP at km. 62+095 (BHS)

VUP at km. 62+095 (RHS)

VUP at km.63+032 (LHS)

VUP at km.63+032 (RHS)

LVUP at km.66+122 (LHS)

LVUP at km.66+122 (BHS)

VUP at km. 68+800 (LHS)

VUP at km. 68+800 (RHS)

VUP at km. 70+950 (LHS)

VUP at km. 70+950 (RHS)

LVUP at km. 74+400 (LHS)

LVUP at km. 74+400 (RHS)

LVUP at km. 78+000 (LHS)

LVUP at km. 78+000 (BHS)

LVUP at km. 79+200 (LHS)

LVUP at km. 79+200 (RHS)

LVUP at km. 79+200 (BHS)

3.5 Condition Survey of Culverts

The cross-drainage structures include Reconstruction and new construction of box culverts at various locations. There are total 117 Nos. of culverts in which 14 Nos. of reconstruction of box culverts, 33 Nos. of reconstruction of pipe to box culverts, 49 Nos. of new construction of box culverts, and 21 Nos. is box culvert (constructed under Change of Scope) along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway with service road on both side and construction of new four lane carriageway at proposed bypass location. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts and slab culverts is found to be satisfactory. The RCC parapet, metal beam crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

Vegetation growth and accumulation of debris at waterway is being removed and cleaned by the Concessionaire on regular basis.

Figure 3-8 Photographs of Box Culvert / Pipe Culvert

Box Culvert at km. 50+960 (LHS)

Box Culvert at km. 50+960 (RHS)

Box Culvert at km. 55+570 (LHS)

Box Culvert at km. 55+570 (RHS)

Box Culvert at km. 63+820 (LHS)

Box Culvert at km. 63+820 (RHS)

Box Culvert at km. 72+410 (LHS)

Box Culvert at km. 72+410 (RHS)

Box Culvert at km. 83+630 (LHS)

Box Culvert at km. 83+630 (RHS)

Box Culvert at km. 83+790 (LHS)

Box Culvert at km. 83+790 (RHS)

3.6 Drainage

a) Existing Drains

There are Lined and Unlined drains along the Project Road. Some of the photographs taken during the site visit are presented below.

Figure 3-9 Photographs of Existing Drains

km. 42+820 km. 5+787 (LHS)

km. 46+050

km. 48+800 (LHS)

km. 51+850 (LHS)

km. 58+710 (LHS)

km. 60+000 (LHS)

km. 63+032 (LHS)

km. 66+182 (LHS)

km. 79+700

km. 58+850 (RHS)

km. 52+150 (RHS)

km. 50+100 (RHS)

km. 49+050 (RHS)

km. 44+00 (RHS)

3.7 Slope Protection

The condition of slope protection and chute drains are found satisfactory. Some of the photographs taken during the site visit are presented below.

Figure 3-10 Photographs of Slope Protection & Chute Drain

km. 45+800 (RHS)

km. 50+980 (RHS)

km. 53+760 (RHS)

km. 61+600 (LHS)

km. 61+460 (RHS)

km. 63+850 (LHS)

km. 65+480 (LHS)

km. 72+430 (RHS)

km. 83+600 (LHS)

km. 83+650 (RHS)

3.8 Road Furniture

Concessionaire shall maintain the road furniture as per schedule-C.

a) Summary of Quantity for Road Furniture Items

The following details show the summary of quantity of items for road furniture.

Table 3-6 Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Traffic Solar Blinkers	No.	06
2	W-beam Crash Barriers in both direction	kms	29.100
3	Delineator	Nos.	1861
4	Km Stone	Nos.	94
5	Informatory Signs	Nos.	172
6	Mandatory Signs	Nos.	53
7	Cautionary Signs	Nos.	1111
8	Pedestrian Guard Rail	m	1119.2
9	Highway Patrol Vehicles	Nos.	1
10	Ambulances	Nos.	1
11	Cranes	Nos.	1
12	Way side Amenities	Nos.	-
13	Lighting (Single & Double Arm)	Nos.	594
14	High mast	Nos.	11

3.9 Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in Schedule-D. Pavement marking is maintained by the Concessionaire. Some of the photographs of road marking are presented below:

Figure 3-11 Photographs of Pavement Marking

LHS

km. 43+400

km. 44+200

Km. 57+200

km. 63+800

km. 85+000

RHS

km. 85+600

km. 81+400

km. 77+20

km. 75+250

km. 71+600

3.10 Road Studs

Road studs / cats' eye for the Project Road is done as per the design standards indicated in Schedule-D. Road studs / cat's eye has been fixed at junction, edge of paved shoulder & zebra crossing. Some of the photographs of road studs are presented below.

Figure 3-12 Photographs of Road Studs

LHS

km. 44+400

km. 57+200

km. 85+000

RHS

km. 85+400

km. 71+600

Km. 60+400

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road & Kilometre stone etc, the design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location, and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards & Median kerb paint are generally in good condition except few locations. Some of the photographs of sign boards are presented below.

Figure 3-13 Photographs of Road Signages (LHS)

km. 40+200

Km. 40+400

km. 40+700

km. 41+700

km. 42+820

km. 42+820

km. 42+800

km. 43+200

km. 43+650

km. 44+550

km. 45+787

km. 46+000

km. 46+900

km. 46+900

km. 50+211

km. 51+850

km. 51+850

km. 57+200

km. 57+550

km. 58+100

km. 58+710

km. 60+000

km. 61+500

km. 63+032

km. 64+250

km. 65+200

km. 65+400

km. 65+400

km. 68+950

km. 71+600

km. 76+200

km. 86+800

Figure 3-14 Photographs of Road Signages (RHS)

km. 83+800

km. 82+200

km. 78+100

km. 77+600

km. 77+000

km. 76+950

km. 75+200

km. 67+350

km. 66+300

km. 65+300

km. 65+000

km. 64+800

km. 64+500

km. 63+300

km. 62+400

km. 58+850

km. 57+350

km. 55+070

km. 52+650

km. 52+400

km. 52+150

km. 51+000

km. 49+050

km. 8+900

km. 48+100

km. 47+850

km.45+900

km. 45+500

km. 44+000

km. 41+000

km. 40+600

km. 39+980

3.11 Highway Lighting / Solar Blinker / High Mast

Highway lighting / high mast is provided at underpasses, flyovers, toll plaza, truck lay byes, passenger shelters, major and minor junctions, and built-up locations.

At underpass and flyover locations, highway lighting is provided at the structure locations and at its approaches.

Solar amber blinker signals are provided at median opening and service Road, junctions and bus stop locations. These lights are properly maintained and are in good working condition.

Some of the photographs of highway lightings are presented below.

Figure 3-15 Photographs of Street Light / Solar Blinker / High Mast

km. 43+650

km. 46+900

km. 50+211

km. 50+211

km. 54+971

km. 56+025

km. 57+550

km. 58+710

km. 59+600

km. 63+032

km. 66+182

km. 68+800

km. 74+400

km. 50+900

km. 54+000

km. 64+250

km. 71+850

km. 73+400

3.12 Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided and maintained by the Concessionaire. Some of the photographs of metal beam crash barriers are presented below:

Figure 3-16 Photographs of Guard Post / Crash Barrier

km. 45+787 (LHS)

km. 61+545 (RHS)

km. 67+040 (LHS)

km. 61+580 (RHS)

km. 83+450 (RHS)

km. 45+760 (LHS)

km. 83+520 (RHS)

km. 45+850 (LHS)

km. 53+765 (LHS)

km. 64+550 (LHS)

km. 83+550 (RHS)

km. 86+425 (RHS)

3.13 Delineators

The Traffic Delineators are provided and maintained by Concessionaire for road users in abnormal condition of weather in the Project Road. Some of the photographs of delineators are presented below.

Figure 3-17 Photographs of Delineator

km. 42+820

km. 44+550

km. 57+200

km. 64+550

km. 65+400

km. 72+000

km. 80+200

3.14 Pedestrian Guard Rail

The pedestrian guard rails are provided in the median between service road and main carriageway, bus shelters and truck lay bye as well as under the underpass. It is maintained by the Concessionaire. However, at few locations, rectification is needed. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-18 Photographs of Pedestrian Guard Rail

km. 41+700

km. 43+650

km. 54+971

km. 56+025

km. 63+032

km. 67+000

3.15 Road Land Boundary / Chain Link Fencing

For the Project Road, the Concessionaire has done the chain link fencing at ROW to avoid any kind of encroachments. The Concessionaire needs to rectify wherever required. The photographs are presented below.

Figure 3-19 Photographs of Chain Link fencing

LHS

km. 42+820

km. 43+650

km. 46+400

km. 46+900

km. 54+000

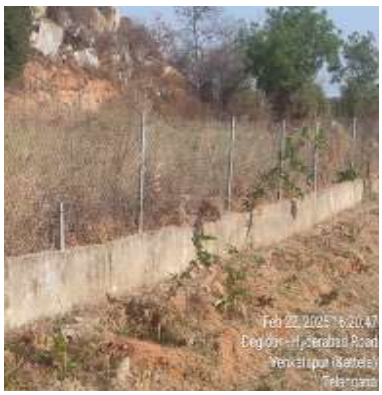
km. 54+971

km. 63+032

RHS

km. 63+300

km. 56+950



Km. 55+070

km. 52+400

km. 51+500

km. 44+000

km. 42+000

3.16 Avenue Plantation and Median Plantation

This Project Road passes through the plain and rolling terrain. The Project Road is provided with avenue plantation in three / two / single rows on either side. The Project Road is also provided with median plantation. All plantation are properly maintained by the Concessionaire. Some of the photographs of plantation are presented below.

Figure 3-20 Photographs of Median Plantation

km. 40+200

km. 42+820

km. 46+050

km. 60+000

km. 60+450

km. 64+550

km. 72+000

km. 79+700

Figure 3-21 Photographs of Avenue Plantation

LHS

km. 40+200

km. 42+820

km. 46+900

km. 54+000

km. 56+025

km. 57+550

RHS

km. 82+200

km. 79+200

km. 78+100

km. 75+200

km. 64+650

km. 64+500

3.17 Noise Barrier

Noise Barriers are provided in built-up section and are properly maintained by Concessionaire. Some of the photographs of noise barrier are presented below.

Figure 3-22 Photographs of Noise Barrier

km. 49+000 (RHS)

km. 48+650 (LHS)

km. 52+000 (RHS)

km. 51+700 (LHS)

km. 58+800 (RHS)

km. 58+550 (LHS)

km. 79+700 (RHS)

km. 78+900 (LHS)

3.18 Toll Plaza

There was one temporary Toll Plaza at km. 57+893 near Kolla Palle village along the Project Road. It was foreclosed from 02.02.2023 at 8.00 Hrs. However, the control room for ATMS is available at km. 66+700 (RHS). The same is in the scope of the Concessionaire.

km. 57+850

3.19 Advance Traffic Management System (ATMS)

Advance Traffic Management System (ATMS) installed for the project road is controlled by the ATMS center near the toll plaza location (km 96+035). As per Concession agreement ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Mobile Radio communication system
- Emergency Call Box
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)

Status of these systems at site are described below:

3.19.1 Automatic Traffic Counter cum Classifier (ATCC)

Automatic Traffic Counter Cum Classifier (ATCC) is installed at km. 65+000 (LHS) and km. 40+000 (RHS).

km. 65+000 (LHS)

km. 40+000 (RHS)

3.19.2 Mobile Radio Communication System

The mobile radio communication system is installed along the project length, and all are functional. It is maintained by the Concessionaire.

km. 68+800

km. 76+200

km. 79+700

3.19.3 Emergency Call Boxes (ECB)

The emergency call boxes are installed along the project length, and all are functional. The same is maintained by the Concessionaire.

km. 44+200

km. 45+787

km. 73+400

km. 84+000

3.19.4 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at km. 66+700 (RHS) near O&M office in Nizam Peth village.

km. 66+700

3.19.5 Variable Message Signboards (VMS)

Variable message sign boards are installed in the Project Road. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the ATMS centre. About 250 customised messages can be stored on the system.

km. 40+000

3.19.6 CCTV Surveillance Cameras

Surveillance Cameras are installed along the project corridor which are monitored through the ATMS control room.

km. 57+200

km. 58+100

km. 71+600

km. 79+700

Control Monitor

Server

Control Room Office **UPS Room**

O&M Centre

3.19.7 Vehicle Actuated speed Display (VASD-Speedometer)

VASD / Speedometers are installed along the Project Road which are monitored through the ATMS control room. The Advance Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

km. 65+200 (LHS) **km. 65+00 (RHS)**

3.20 Truck Lay bye

The following are the Truck Lay-Bye cum Rest Room locations.

Table 3-7 Details of Truck lay bye

Sr. No.	Chainage as per Site (km)	Side
1	40+400 (LHS) & 40+300 (RHS)	BHS
2	57+550	BHS
3	77+850	BHS
4	84+250	BHS

Figure 3-23 Photograph of Truck Lay-bye

km. 40+400 (LHS)

km. 57+550 (LHS)

km. 78+050 (LHS)

km. 84+250 (RHS)

km. 77+100 (RHS)

km. 57+550 (RHS)

3.21 Traffic Aid Post and Medical Aid Post (Incident Management)

Traffic and Medical Aid Post are available at O&M office and are in Concessionaire's scope. The Patrolling Vehicle, Ambulance & Crane are available at site. Some of the photographs are presented below.

Figure 3-24 Photograph of Incident Management

Patrolling Vehicle

Ambulance

Crane at site

Highway / Medical Aid Building

3.22 Toilet Block

Apart from Toll Plaza, there are 40 nos. of Toilet Block along Project Road i.e., at Truck lay-bye and passenger shelters etc. which is in Concessionaire's scope.

Figure 3-25 Photographs of Toilet Blocks

km. 66+700 (RHS)

3.23 Bus Bays and Passenger Shelters

There are 32 nos. bus bays / passenger shelters along the Project Road. All are in operational condition. Some of the photographs are presented below.

Figure 3-26 Photographs of Bus Bay / Passenger Shelter

LHS

km. 44+550

km. 71+600

km. 79+700

RHS

km. 81+200

km. 73+700

km. 57+150

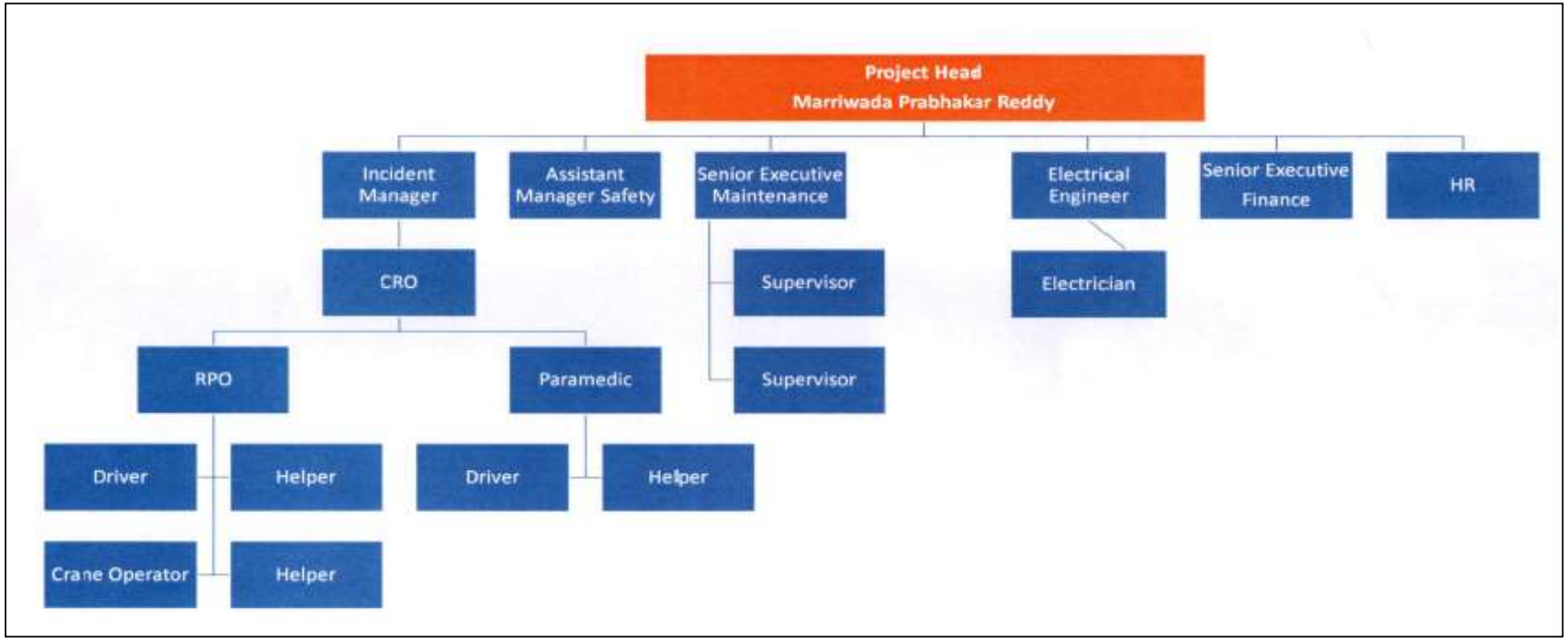
3.24 Wayside Amenities

There is no wayside amenity in this stretch of the Project Road.

3.25 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance.

Organization Chart



3.25.1 Operation

Operation cost is comprised of manpower cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. As the Project is in Annuity mode, the Toll Operation is not in the Scope of Concessionaire. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.25.2 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

The Project Road is currently in the Operation and Maintenance stage. The concession period of the project is 17 years from the Appointed / Commencement Date (i.e., 2nd May 2019) including construction period of 2 years (730 days).

The Project has received Provisional Completion Certificate on 5th October 2021.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 52+700 from 24th July 2021 to 25th July 2021. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Sr. No.	Vehicle Type	Direction	
		LHS (Ramsanpalle - Mangloor)	RHS (Mangloor - Ramsanpalle)
1	BUS	0.748	0.776
2	LCV	0.935	1.130
3	2-Axle	3.462	2.849
4	3-Axle	5.308	9.012
5	MAV	12.472	13.876

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

Year	4-Lane				6-Lane				Remarks
	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	
2024-25	-	**-**	-	**-**	-	**-**	-	**-**	
2025-26	1.65	**1.65**	1.97	**1.97**	1.32	**1.32**	1.58	**1.58**	
2026-27	1.73	**3.38**	2.07	**4.04**	1.38	**2.70**	1.65	**3.23**	
2027-28	1.81	**5.19**	2.17	**6.21**	1.45	**4.15**	1.74	**4.97**	
2028-29	1.90	**7.09**	2.28	**8.49**	1.52	**5.67**	1.82	**6.79**	1st MM cycle
2029-30	2.00	**9.09**	2.40	**10.89**	1.60	**7.27**	1.92	**8.71**	
2030-31	2.10	**11.19**	2.52	**13.41**	1.68	**8.95**	2.01	**10.72**	
2031-32	2.21	**13.40**	2.64	**16.05**	1.76	**10.71**	2.11	**12.83**	
2032-33	2.32	**15.72**	2.77	**18.82**	1.85	**12.56**	2.22	**15.05**	

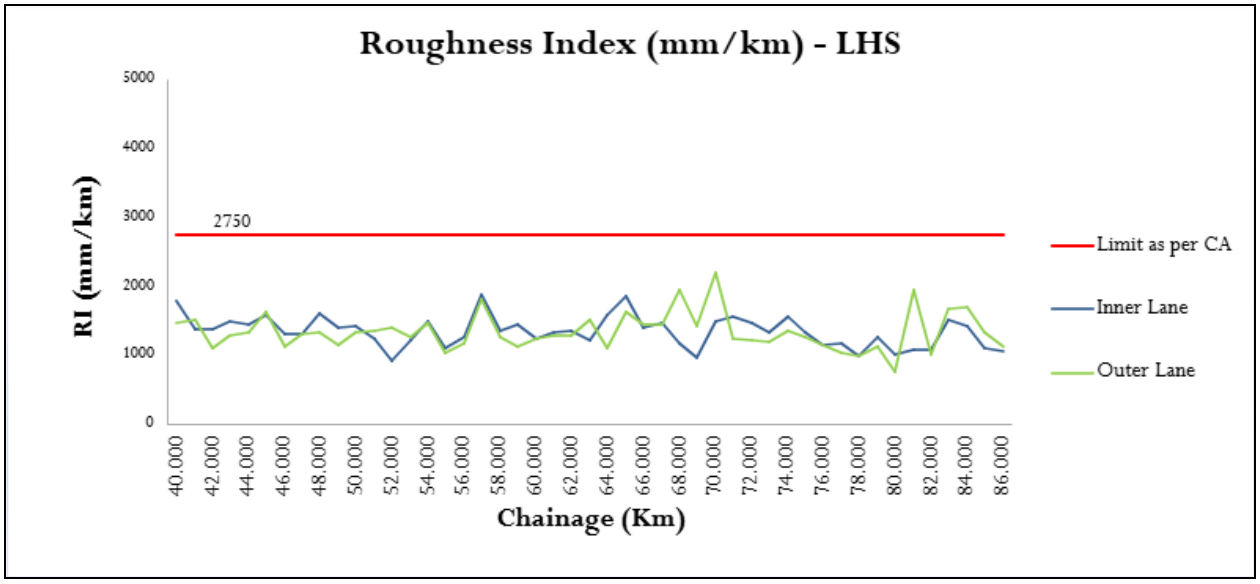
Year	4-Lane				6-Lane				Remarks
	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	
2033-34	2.43	**18.15**	2.91	**21.73**	1.95	**14.51**	2.33	**17.38**	
2034-35	2.55	**20.70**	3.06	**24.79**	2.04	**16.55**	2.45	**19.83**	
2035-36	2.68	**23.38**	3.21	**28.00**	2.14	**18.69**	2.57	**22.40**	2nd MM cycle
2036-37	2.81	**26.19**	3.37	**31.37**	2.25	**20.94**	2.70	**25.10**	

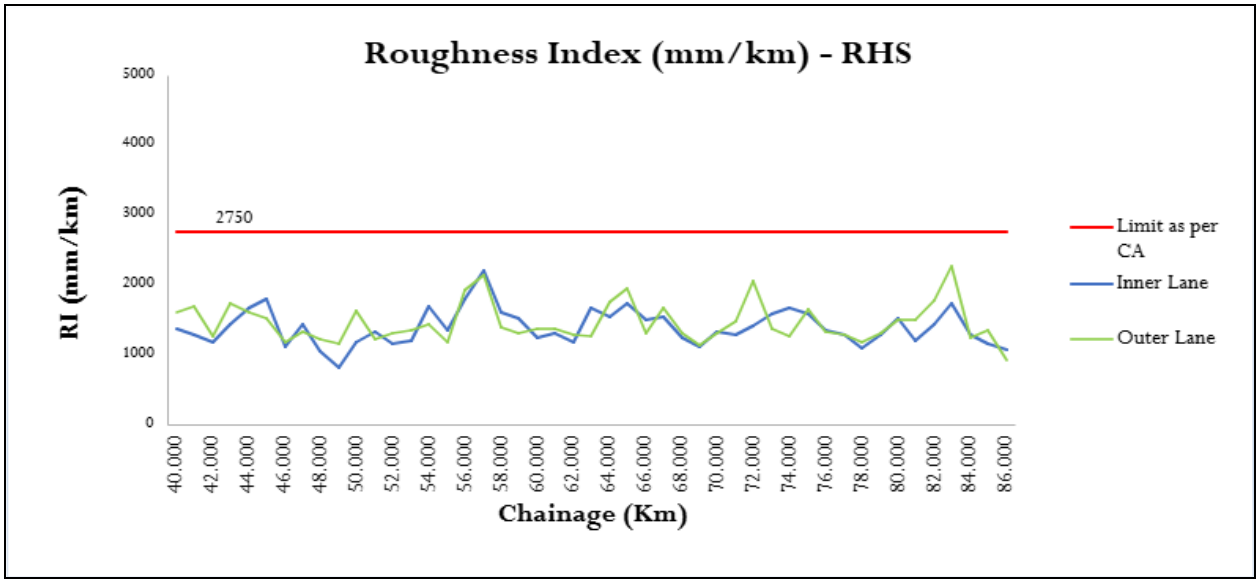
4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has provided NSV survey data conducted in November 2024. The NSV data is used to assess the riding quality and pavement condition of project road. The summary of Roughness Index is given in table below:

Table 4-3 Roughness Index Summary

Sr. No.	Rating	Roughness Value as per CA limit	Length (km)			
			LHS		RHS	
			Inner Lane	Outer Lane	Inner Lane	Outer Lane
1	Good - Fair	<2750	46.80	46.80	46.80	46.80
2	Poor	>2750	-	-	-	-





4.5 Structural Investigation

The Falling Weight Deflectometer survey was conducted for flexible pavement by the Concessionaire in October 2024. The summary of the FWD survey report is presented in the table below.

Table 4-4 FWD Summary

Remaining life (MSA)	Length (km)		Remark
	LHS	RHS	
<40	-	-	Strengthening not required
>40	46.808	46.808	
Total Length	**46.808**	**46.808**	

From the above table, it is observed that residual life of the pavement is more than the cumulative design MSA up to FY 2037 i.e., up to end of concession period. Hence, strengthening of the pavement is not required. The periodic maintenance of Project Road is proposed considering the above results.

4.6 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-K of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement in Riding Quality is expected if the roughness value exceeds 2750 mm/km.

The Provisional COD for the project was achieved in the financial year of 2021 (5th August 2021). Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-5 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 to FY 2028	-	-
2	FY 2029	Major maintenance with 35 mm BC (VG-40) (60%) +Micro surfacing (40%) + Milling & 50 mm DBM (2.5%)	Major Maintenance with Micro Surfacing (100%)
3	FY 2030 to FY 2035	-	-
4	FY 2036	Major maintenance with 35 mm BC (VG-40) (40%) +Micro surfacing (60%) + Milling & 50 mm DBM (2.5%)	Major Maintenance with Micro Surfacing (100%)

**End of concession period as per Concession Agreement is FY 2037.*

The projected cost for periodic/ major maintenance is presented in the subsequent chapter.

5 COST ESTIMATE

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per Government of Telangana Common SoR (Road & Bridge Works) 2022-23. The input rates for SoR were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Sschedule of Rates, Government of Telangana.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

      Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST.

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from market rate.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book / rate as per work order adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1.	Dense Bituminous Macadam (VG-40)	Cum	8,666
2.	Bituminous Concrete (VG-40)	Cum	9,865
3.	Bituminous Concrete (VG-30)	Cum	9,364
4.	Milling	Sqm	88
5.	Micro-surfacing	Sqm	155
6.	Kerb Re-laying	Rmt	303
7.	Road Marking	Sqm	501
8.	Road Studs	Nos.	179

5.3 Balance Work Cost

As discussed in the previous chapter, there is no balance work on the Project Road.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services (Not in Scope)

3. Incident Management Services
4. Electricity and Diesel Charges
5. HTMS Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-37)	Remark
1	Salary and Welfare Expenses	7,722,000	
2	Tolling Operations Services	-	
3	Toll Security Services	2,644,861	
4	Incident Management & Emergency Services	19,371,459	
5	Electricity and Diesel Charges	7,576,396	
6	TMS/HTMS/System Expenses	5,572,922	
7	Office Operating Expenses	2,162,530	
8	Vehicle Running Expenses	4,680,000	
9	Professional Fees Expense	8,753,096	
10	Community Development	1,441,686	
11	Communication Expenses	128,722	
12	Conveyance Expenses	257,444	
13	Insurance Expense	12,100,000	
14	IE Fees	2,136,785	
15	Routine Maintenance Cost (Project Road)	21,245,628	
16	Horticulture & ROW Maintenance	16,695,964	
17	Miscellaneous including Contingency	2,981,916	
	Total Cost (Rs.)	**115,471,410**	
	Total Cost (Cr.)	**11.55**	
	Per km Cost (Lakhs)	14.43	

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Table 5-4 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr)	Remarks
1	FY 2024 - FY 2028	-	
2	FY 2029	58.83	
3	FY 2030 - FY 2035	-	
4	FY 2036	51.64	
5	FY 2037	-	
Total Cost (Cr.)		**110.47**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr)	Remarks
1	FY 2026 - FY 2028	-	
2	FY 2029	2.62	
3	FY 2030 - FY 2035	-	
4	FY 2036	2.62	
5	FY 2037	-	
Total Cost (Cr.)		**5.24**	

5.7 Escalation Assumption

The following escalation is considered basis discussions with Client and our internal estimates.

Table 5-5 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%

Year	Escalation	Year	Escalation
2040	3.99%	**2056**	3.99%
2041	3.99%	**2057**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in above clause.

Escalated O&M Cost (in INR Cr.)

Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37
Routine O&M Cost												
Salary and Welfare Expense	0.77	0.81	0.85	0.90	0.94	0.98	1.03	1.07	1.11	1.16	1.20	1.25
Tolling Operations Services	-	-	-	-	-	-	-	-	-	-	-	-
Toll Security Services	0.26	0.28	0.29	0.31	0.32	0.34	0.35	0.37	0.38	0.40	0.41	0.43
Incident Management Services	1.94	2.03	2.13	2.25	2.36	2.46	2.57	2.68	2.79	2.90	3.02	3.14
Electricity and Diesel Charges	0.76	0.80	0.83	0.88	0.92	0.96	1.01	1.05	1.09	1.13	1.18	1.23
TMS/HTMS/System Expenses	0.11	0.20	0.33	-	0.05	0.10	0.15	0.15	0.27	0.45	-	0.06
Office Operating Expenses	0.22	0.23	0.24	0.25	0.26	0.28	0.29	0.30	0.31	0.32	0.34	0.35
Vehicle Running Expenses	0.47	0.49	0.52	0.54	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.76
Professional Fees Expense	0.88	0.92	0.96	1.01	1.06	1.11	1.16	1.21	1.26	1.31	1.36	1.42
Community Development	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.22	0.23
Communication Expenses	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Conveyance Expenses	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
Insurance Expense	1.21	1.27	1.33	1.40	1.47	1.54	1.61	1.67	1.74	1.81	1.88	1.96
IE Fees	0.21	0.22	0.24	0.25	0.26	0.27	0.28	0.30	0.31	0.32	0.33	0.35
Routine Maintenance Cost	2.12	2.23	2.34	2.46	2.58	2.70	2.82	2.94	3.06	3.18	3.31	3.44
Horticulture & ROW Maintenance	1.67	1.75	1.84	1.94	2.03	2.12	2.22	2.31	2.40	2.50	2.60	2.70
Miscellaneous and Contingency	0.30	0.31	0.33	0.35	0.36	0.38	0.40	0.41	0.43	0.45	0.46	0.48
Subtotal of O&M Cost	11.10	11.74	12.44	12.74	13.41	14.08	14.74	15.35	16.08	16.90	17.11	17.86
Major Maintenance Cost	-	-	-	68.19	-	-	-	-	-	-	80.41	-
Periodic Cost of TMS/HTMS Replacement	-	-	-	3.03	-	-	-	-	-	-	4.07	-
Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-
Total Cost	**11.10**	**11.74**	**12.44**	**83.96**	**13.41**	**14.08**	**14.74**	**15.35**	**16.08**	**16.90**	**101.60**	**17.86**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**21,245,628**
(Inclusive of GST)	**= 4.54 lakhs per km**

National Highways / State Highways (Flexible Pavement)									
Reference cost taken for Four/Six lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	**More than 4500 CVD**				
				197,334	**228,703**	**Normal**	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	301920	349916	-	-	-	-
		Paved shoulder	1.70	335467	388796	18.74		6,286,652	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	394667	457407	2.36	-	931,414	-
		Paved shoulder	2.20	434134	503148	-	-	-	-
3	Six lane with divided carriageway	without Paved shoulder	2.09	412427	477990	-	-		-
		with Paved shoulder	2.26	445974	516870	0.99	-	442,406	-
4	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	505174	585481	-	-	-	-
		with Paved shoulder	2.76	544641	631221	23.29	1.43	12,682,510	902,646
TOTAL							**46.808**		**21,245,628**

Details of Ordinary Repair in Rs. For one km. of Four lane and Six lane (7.0 or 14.0 or 21.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			10679
	Cost in Rupees			26,698
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			427
	Cost in Rupees			21,358
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			77
	Cost in Rupees			19,266
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			51
	Cost in Rupees			7,676
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			427
	Cost in Rupees			32,037
	v) Road marking	14%	Once in 7th year & @ Repaired location	27428
	SUB TOTAL			**134,463**

Details of Ordinary Repair in Rs. For one km. of Four lane and Six lane (7.0 or 14.0 or 21.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0

Details of Ordinary Repair in Rs. For one km. of Four lane and Six lane (7.0 or 14.0 or 21.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**197,334**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	2017
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**31,370**
	GRAND TOTAL (Urban)			**228,703**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						718,424	17	12,464,658
	4 lane section									
	For BC	Sqm	2	12,660	9.15		231,558	231,558		
	For DBM	Sqm	2	528	7.00		7,385	7,385		
	For Misc. Location	Sqm	2	1,266	9.15		23,156	23,156		
	6 lane section									
	For BC	Sqm	2	14,920	13.50		402,829	402,829		
	For DBM	Sqm	2	601	11.00		13,213	13,213		
	For Misc. Location	Sqm	2	1,492	13.50		40,283	40,283		
2	BC with 35 mm						24,424	24,424	9,865	240,931,098
	4 lane section	Cum	2	13,926	9.15	0.04	8,915			
	6 lane section	Cum	2	16,412	13.50	0.04	15,509			
3	DBM with 50 mm						1,030	1,030	8,666	8,925,056
	4 lane section	Cum	2	528	7.00	0.05	369			
	6 lane section	Cum	2	601	11.00	0.05	661			
4	Milling for DBM						20,598	20,598	88	1,812,642
	4 lane section	Sqm	2	528	7.00		7,385			
	6 lane section	Sqm	2	601	11.00		13,213			
5	Micro surfacing									
	4 lane section	Sqm	2	8,440	9.15		154,372	154,372	155	23,966,253
	6 lane section	Sqm	2	9,946	13.50		268,553	268,553	155	41,692,822
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	-	3.50	4.50	-	-	57	-
7	Dismantling of CC Panels @ 5% area	Cum	5%		-	0.30	0	0	990	-
8	Replacement of Panels - PQC @ 5% area	Cum	5%		-	0.30	0	0	7,493	-
	Service Road									
9	Tack coat	Sqm	1	-	7.5		-	-	17	-
10	BC with 30 mm	Cum	1	-	7.5	0.03	-	-	9,364	-

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
11	Micro Surfacing	Sqm	1	60,874	7.5		456,555	456,555	155	70,880,164
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
12	Tack coat	Sqm	2	421	13.5		11,359	11,359	17	197,079
13	Wearing Coat BC with 35 mm	Cum	2	421	13.5	0.04	398	398	9,865	3,921,804
14	Milling Ex. Wearing Coat	Sqm	2	421	13.5		11,359	11,359	88	999,592
15	Micro surfacing	Sqm	2	421	13.5		11,359	11,359	155	1,763,485
16	Painting of Crash Barrier	Sqm	2	54,556		1.12	121,660	121,660	114	13,869,226
	Other Works									
17	Raising of Road Kerb	Rmt	1	64,262			64,262	64,262	303	19,439,376
18	Replacement of Road Stud									
	Normal Road Stud	Nos	2	5,722			11,444	11,444	179	2,048,476
	Solar Road Stud	Nos	1	-			-	-	1,839	-
19	Painting of Kerb	Sqm	1	107,104		0.315	33,738	33,738	132	4,453,384
20	Road Marking	Sqm					50,686	50,686	501	25,393,762
	4 Lane MCW Section									
	a) Median & Edge line	Sqm	4	22,155	0.15		13,293			
	b) Lane line	Sqm	2	7,311	0.10		1,462			
	6 Lane MCW Section									
	a) Median & Edge line	Sqm	4	28,174	0.15		16,904			
	b) Lane line	Sqm	4	9,297	0.10		3,719			
	Service Road									
	a) Edge line	Sqm	2	55,340	0.10		11,068			
	b) Lane line	Sqm	1	18,262	0.10		1,826			
	Junction crossing	Sqm					2,414			
21	Filling of Earthen shoulder	Cum					3,907	3,907	526	2,054,345
	MCW		2		55,816	0.04	3,907			
22	Miscellaneous	5%								23,740,661
Total Major Maintenance Cost (Rs.)										**498,553,883**
Total Major Maintenance Cost with GST (Rs.)										**588,293,582**
Total Major Maintenance Cost with GST (Cr.)										**58.83**

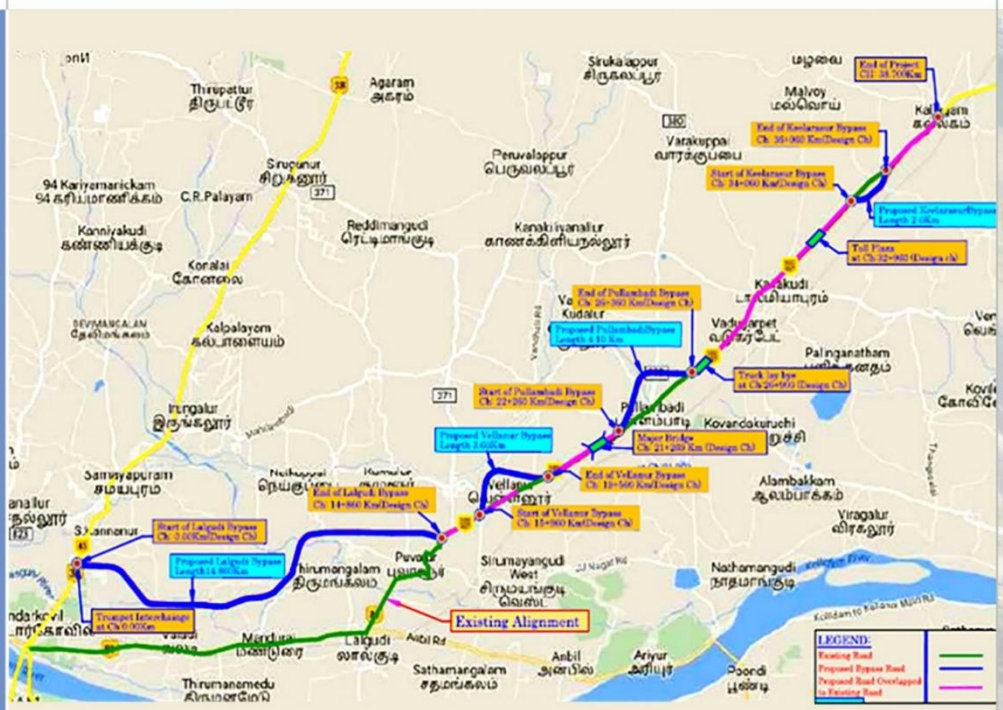
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
								Per km Cost (lakh)		**125.68**
								Escalation Factor (FY 2029)		**1.15**
								Total Escalated Cost (FY 2029) (Cr.)		**65.93**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						485,815	17	8,428,899
	4 lane section									
	For BC	Sqm	2	8,440	9.15		154,372	154,372		
	For DBM	Sqm	2	528	7.00		7,385	7,385		
	For Misc. Location	Sqm	2	844	9.15		15,437	15,437		
	6 lane section									
	For BC	Sqm	2	9,946	13.50		268,553	268,553		
	For DBM	Sqm	2	601	11.00		13,213	13,213		
	For Misc. Location	Sqm	2	995	13.50		26,855	26,855		
2	BC with 35 mm						16,283	16,283	9,865	160,620,732
	4 lane section	Cum	2	9,284	9.15	0.04	5,943			
	6 lane section	Cum	2	10,941	13.50	0.04	10,339			
3	DBM with 50 mm						1,030	1,030	8,666	8,925,056
	4 lane section	Cum	2	528	7.00	0.05	369			
	6 lane section	Cum	2	601	11.00	0.05	661			
4	Milling for DBM						20,598	20,598	88	1,812,642
	4 lane section	Sqm	2	528	7.00		7,385			
	6 lane section	Sqm	2	601	11.00		13,213			
5	Micro surfacing									
	4 lane section	Sqm	2	12,660	9.15		231,558	231,558	155	35,949,380
	6 lane section	Sqm	2	14,920	13.50		402,829	402,829	155	62,539,233
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	-	3.50	4.50	-	-	57	-

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
7	Dismantling of CC Panels @ 5% area	Cum	5%		-	0.30	0	0	990	-
8	Replacement of Panels - PQC @ 5% area	Cum	5%		-	0.30	0	0	7,493	-
	Service Road									
9	Tack coat	Sqm	1	-	7.5		-	-	17	-
10	BC with 30 mm	Cum	1	-	7.5	0.03	-	-	9,364	-
11	Micro Surfacing	Sqm	1	60,874	7.5		456,555	456,555	155	70,880,164
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
12	Tack coat	Sqm	2	421	13.5		11,367	11,367	17	197,217
13	Wearing Coat BC with 35 mm	Cum	2	421	13.5	0.04	398	398	9,865	3,924,566
14	Milling of Ex. Wearing Coat	Sqm	2	421	13.5		11,367	11,367	88	1,000,296
15	Micro surfacing	Sqm	2	421	13.5		11,367	11,367	155	1,764,727
16	Painting of Crash Barrier	Sqm	2	54,556		1.12	121,660	121,660	114	13,869,226
	Other Works									
17	Raising of Road Kerb	Rmt	1	42,842			42,842	42,842	303	12,959,584
18	Replacement of Road Stud									
	Normal Road Stud	Nos	2	5,722			11,444	11,444	179	2,048,476
	Solar Road Stud	Nos	1	-			-	-	1,839	-
19	Painting of Kerb	Sqm	1	107,104		0.315	33,738	33,738	132	4,453,384
20	Road Marking	Sqm					50,686	50,686	501	25,393,762
	4 Lane MCW Section									
	a) Median & Edge line	Sqm	4	22,155	0.15		13,293			
	b) Lane line	Sqm	2	7,311	0.10		1,462			
	6 Lane MCW Section									
	a) Median & Edge line	Sqm	4	28,174	0.15		16,904			
	b) Lane line	Sqm	4	9,297	0.10		3,719			
	Service Road									
	a) Edge line	Sqm	2	55,340	0.10		11,068			
	b) Lane line	Sqm	1	18,262	0.10		1,826			
	Junction crossing	Sqm					2,414			
21	Filling of Earthen shoulder	Cum					3,907	3,907	526	2,054,345

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW		2		55,816	0.04	3,907			
22	Miscellaneous	5%								20,841,084
									Total Major Maintenance Cost (Rs.)	**437,662,773**
									Total Major Maintenance Cost with GST (Rs.)	**516,442,072**
									Total Major Maintenance Cost with GST (Cr.)	**51.64**
									Per km Cost (lakh)	**110.33**
									Escalation Factor (FY 2036)	**1.52**
									Total Escalated Cost (FY 2036) (Cr.)	**74.30**

FP Project Management



Technical Due Diligence of Tiruchirappalli to Kallagam of NH-227 from km. 0+000 to km. 38+700 in the state of Tamil Nadu

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 5
2.7 Existing Utilities 5
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 9
3.3 Junctions / intersections 9
3.4 Condition Survey of Bridges 10
3.5 Condition Survey of Culverts 17
3.6 Drainage 18
3.7 Slope Protection 18
3.8 Road Furniture 19
3.8.1 Pavement Marking 19
3.8.2 Road Studs 20
3.8.3 Traffic Signage / Median Kerb painting / KM Stone 20
3.8.4 Highway Lighting 22
3.8.5 Crash Barriers 23
3.8.6 Delineators 23
3.8.7 Road Land Boundary 23
3.9 Avenue Plantation and Median Plantation 24

3.10 Toll Plaza 24
3.11 Lane Equipment 25
3.11.1 RFID ETC Transceiver 25
3.11.2 Lane Controller with Industrial PC 26
3.11.3 Automatic Vehicle Classification (AVC) Sensors 26
3.11.4 Automatic Lane Barrier 26
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 27
3.11.6 Incident Capture Camera (AVC Camera) 27
3.11.7 License Plate Image Capture Camera (LPIC) 27
3.11.8 Over Head Lane Signal (OHLS) 28
3.11.9 Toll Booth Equipment 28
3.11.10 Medium Speed Weigh in Motion (MSWIM) 29
3.12 Plaza Equipment 29
3.12.1 TMS Server 29
3.12.2 55” LED screen for CCTV monitoring 29
3.12.3 Workstations in Control Room, POS room 29
3.13 Advanced Traffic Management System (ATMS) 30
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 30
3.13.2 Mobile Radio communication System (MRCS) 30
3.13.3 Emergency Call Boxes (ECB) 30
3.13.4 Portable Weigh in Motion (PWIM) 30
3.13.5 MET System 31
3.13.6 Variable Message Signboards (VMS) 31
3.13.7 CCTV Surveillance Cameras 31
3.13.8 Video Incident Detection System 32
3.13.9 Vehicle Actuated Speed Display (VASD) 32
3.13.10 Adequacy of Toll Collection System and ATMS 32
3.14 Traffic Aid Post and Medical Aid Post 32
3.15 Toilet Block 33
3.16 Bus Bays and Passenger Shelters 33
3.17 Balance Work Status 33
3.18 Operation and Maintenance 33
3.18.1 O&M Contract 33
3.18.2 Organization Chart 34
3.18.3 Operation 36
3.18.4 Routine Maintenance 36
4 Pavement Investigation and Assessment 37

4.1 General 37
4.2 Axle Load and VDF 37
4.3 Design traffic 37
4.4 Network Survey Vehicles (NSV) Survey 38
4.5 Falling Weight Deflectometer (FWD) Survey 39
4.6 Test pit and Subgrade Investigation 39
4.7 Periodic Maintenance Strategy 40
5 Cost Estimates 42
5.1 General 42
5.2 Rate Assumption 42
5.3 Balance Work Cost 43
5.4 Routine O&M Cost 43
5.5 Major Maintenance Cost 45
5.6 Periodic Replacement of TMS / ATMS System 45
5.7 Escalation Assumption 45
5.8 Summary of Cost 46
Annexures 48
Annexure I - Routine Maintenance Cost 49
Annexure II - Major Maintenance Cost 53

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 10
Table 3-2 Condition Survey of Major Structure 11
Table 3-3 Details of Summary for Toll Plaza Items 24
Table 4-1 Vehicle Damage Factor 37
Table 4-2 Summary of Design Traffic 37
Table 4-3 Summary of Roughness 38
Table 4-4 Summary Pavement Crust Details 39
Table 4-5 Summary of Subgrade CBR along the project corridor 40
Table 4-6 Major Maintenance Cycle 40
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 42
Table 5-2 Summary of Unit Rates 43
Table 5-3 Summary of Operation Cost 44
Table 5-4 Escalation 45

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start and End of the Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 8
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photographs of Junctions 10
Figure 3-4 Photographs of Major Structures 13
Figure 3-5 Photographs of Culverts 17
Figure 3-6 Photographs of Drainage 18
Figure 3-7 Photographs of Slope Protection and Chute Drain 19
Figure 3-8 Photographs of Pavement Marking 19
Figure 3-9 Photographs of Road stud 20
Figure 3-10 Photographs of Sign Boards and km stones 21
Figure 3-11 Photographs of Highway Lighting 22
Figure 3-12 Photographs of MBCB / Crash Barrier 23
Figure 3-13 Photographs of Delineator 23
Figure 3-14 Photographs of Avenue and Median Plantation 24
Figure 3-15 Photographs of Toll Plaza 25

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Tiruchirappalli to Kallagam section from km. 0+000 to km. 38+700 in the State of Tamil Nādu (hereinafter referred as "Project Road").

M/s. SRIRANGAM INFRA PRIVATE LIMITED (SIPL) (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for operation, maintenance, and transfer of Tiruchirappalli to Kallagam section from km. 191+000 to km. 229+700 of NH-81. The project has been taken over by the Concessionaire in January 2023. The length of Project Road is 38.700 kms with one toll plaza at Kappalur village at km. 223+460.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, aaxle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period.
- Review of balance work cost for Project Road including estimation of quantities and item rates.

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings.
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority.
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets, mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **18th February 2025 to 20th February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**

Chapter 4 **Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance

Chapter 5 **Cost Estimates**: This chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/S. SRIRANGAM INFRA PRIVATE LIMITED**, is a company promoted by Cube Highway or company a Special Purpose Vehicle (SPV) formed for implementing this project on 11th April 2018. The Appointed Date for the Project Road is 01st March 2019.

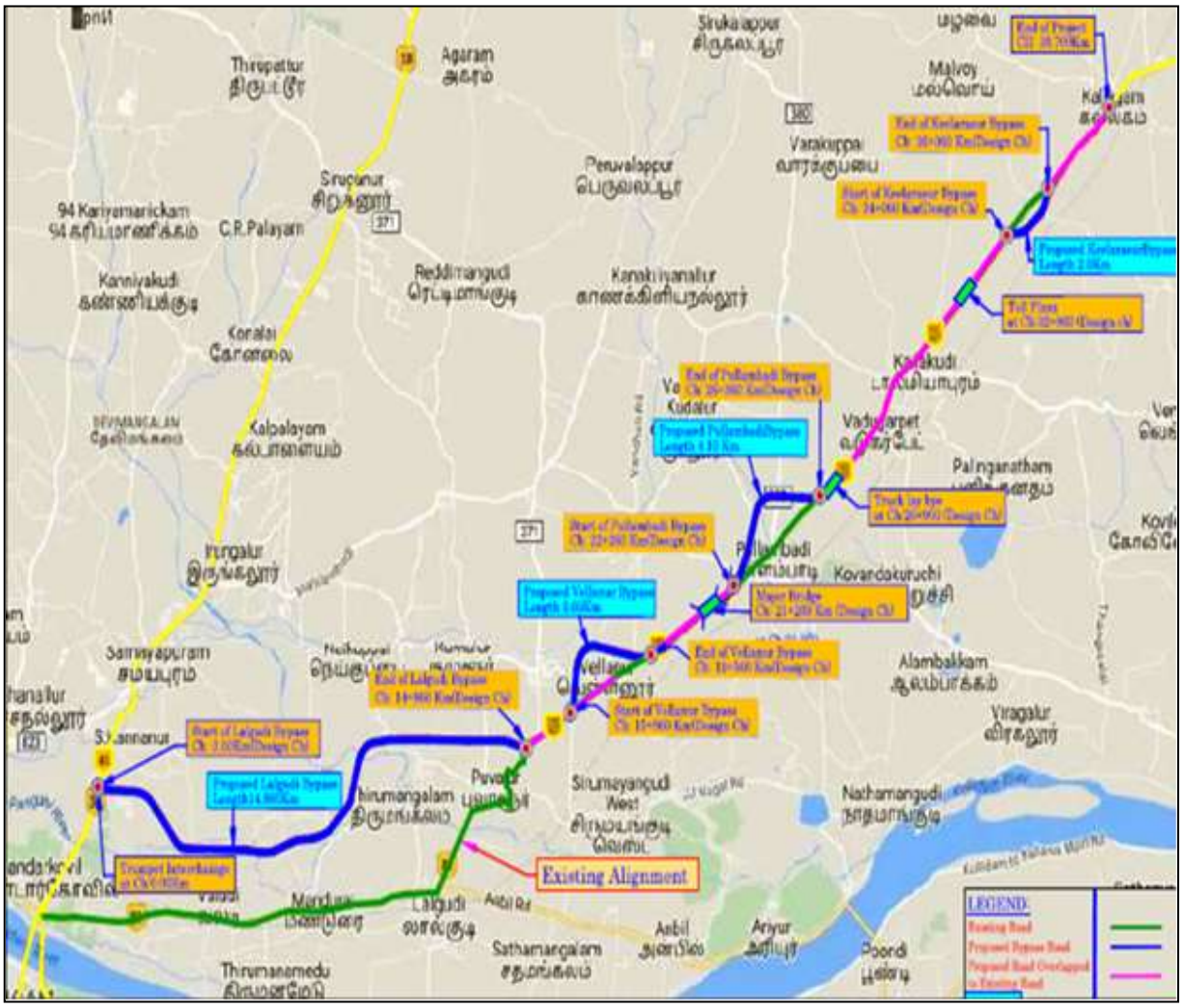
The project has been developed under HAM (Hybrid Annuity Mode) with a concession period of 15 years from COD. The end of the concession period is in the year 2038.

2.2 Location

The Project Road is part of National Highway No. 81 of Tiruchirappalli to Kallagam section in the state of Tamil Nādu, total project length is 38.700 kms.

The Location Map of the Project Road is presented below.

Figure 2-1 Location Map



The photographs taken during the site visit are presented below.

Figure 2-2 Start and End of the Project Road

Start of the Project Road at km. 191+000

End of the Project Road at km. 229+700

2.3 Climate

As the is on the Deccan Plateau, the days are extremely warm and dry; evenings are cooler because of cold winds that blow from the South-East. From June to September, the project experiences a moderate climate tempered by heavy rain and thundershowers. Rainfall is heaviest between October and December because of the North-East monsoon winds, and from December to February the climate is cool and moist. The average annual rainfall is 841.9 mm (33.15 in). Fog and dew are rare and occur only during the winter season. The project experiences a dry-summer tropical savanna climate with no major change in temperature between summer and winter. The climate is generally characterized by high temperature and low humidity, with an annual mean temperature of 28.9 °C (84.0 °F) and monthly average temperatures ranging between 25 °C (77 °F) and 32 °C (90 °F). The warmest months are from April to June

2.4 Terrain

The Project Road traverses through plain terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up area.

2.6 Right of Way

The existing Right of Way (ROW) for the Project Road is 45 m throughout its length.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Tiruchirappalli (km. 191+000) to Kallagam (km. 229+700) has been developed as a four-lane divided carriageway with median width of 3.50 m, service road at some underpass locations and other arrangements. The Project Road passes through rural as well as built-up sections.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	38.70	
2	Construction of Service Road	km.	30.72	Both side
3	Construction of Major Bridge	Nos.	01	
4	Repair & rehabilitation of Minor Bridges, widening of existing Minor Bridges	Nos.	02	
5	Minor Bridges-Reconstruction	Nos.	03	
6	Minor Bridges-New construction	Nos.	16	
7	Trumpet Interchange	Nos.	01	
8	Vehicular Underpass (VUP & LVUP)	Nos.	17	VUP-13 Nos., LVUP-04 Nos.
9	Box Culverts	Nos.	89	
10	Minor Intersections	Nos.	10	
11	Bus Bays	Nos.	35	
12	Truck Parking	No.	02	
13	Toll Plaza	No.	01	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has a median width of 3.50 m throughout its length.

The entire stretch of Project Road is constructed with flexible pavement and rigid pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **18th February 2025** to **20th February 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the pavement condition of the Project Road is found to be Good to Fair.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

km. 191+000 (Below VUP - RHS))

Trumpet at km. 191+000

km. 205+250 (RHS)

km. 205+750 (RHS)

km. 206+800 (RHS)

km. 219+100 (RHS)

km. 227+000 (RHS)

km. 227+900 (LHS)

km. 226+600 (LHS)

km. 224+600 (LHS)

km. 208+900 (LHS)

km. 203+200 (LHS)

3.2 Service Road / Slip Road

The width of the service road varies from 5.50 m to 7.50 m. The service road is constructed in built-up area and adjoining underpass locations. The Project Road has total service road length of 30.720 kms.

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Service Road at km. 191+500 (RHS)

Service Road at km. 207+260 (RHS)

Service Road at km. 228+500 (RHS)

Service Road at km. 229+700 (LHS)

3.3 Junctions / intersections

There are a total of 38 nos. of junctions / intersections along the Project Road. There are 03 Nos. of major junction and 35 Nos. of minor junction on Project Road.

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Junctions

Major Junction at km. 191+000

Minor Junction at km. 226+500

3.4 Condition Survey of Bridges

The inventory of structures including major bridges, minor bridges, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Bridges (MJB)	01
Minor Bridges (MNB)	21
Vehicular Underpass (VUP)	13
Light Vehicular Underpass (LVUP)	04
Culverts (including cross road culverts)	111

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below.

Table 3-2 Condition Survey of Major Structure

Major Bridge

Sr. No.	Chainage as per CA (km)	Chainage as per Site (km)	Structure	Span	Length	Remarks
1	21+268	212+269	MJB(W)	16 x 10.5	168.00	Structure is in sound condition.

Minor Bridge

Sr. No.	Chainage as per CA (km)	Chainage as per Site (km)	Structure	Span	Length	Remarks
1	2+978	193+978	MNB(N)	2 x 10.00	20.00	Structure is in sound condition.
2	3+082	194+082	MNB(N)	1 x 8.00	8.00	Structure is in sound condition.
3	5+190	196+190	MNB(N)	2 x 10.00	20.00	Structure is in sound condition.
4	5+762	196+762	MNB(N)	1 x 8.00	8.00	Structure is in sound condition.
5	9+420	200+420	MNB(N)	2 x 10.00	20.00	Structure is in sound condition.
6	11+520	202+520	MNB(N)	1 x 8.00	8.00	Structure is in sound condition.
7	16+668	207+668	MNB(N)	1 x 10.00	10.00	Structure is in sound condition.
8	16+785	207+785	MNB(N)	2 x 10.00	20.00	Structure is in sound condition.
9	17+832	208+832	MNB(N)	2 x 8.00	16.00	Structure is in sound condition.
10	23+273	214+273	MNB(N)	1 x 12	12.00	Structure is in sound condition.
11	23+419	214+419	MNB(N)	1 x 12	12.00	Structure is in sound condition.
12	23+620	214+620	MNB(N)	1 x 12.00	12.00	Structure is in sound condition.
13	24+336	215+336	MNB(N)	2 x 12.00	24.00	Structure is in sound condition.
14	25+740	216+740	MNB(N)	1 x 12	12.00	Structure is in sound condition.
15	28+715	219+715	MNB(R)	2 x 10	20.00	Structure is in sound condition.
16	30+660	221+660	MNB(R)	1 x 10	10.00	Structure is in sound condition.
17	32+055	223+055	MNB(R)	2 x 10 x 2.5	20.00	Structure is in sound condition.
18	33+560	224+560	MNB(W)	4 x 7.4	29.60	Structure is in sound condition.
19	34+490	225+490	MNB(N)	1 x 10	10.00	Structure is in sound condition.
20	35+361	226+361	MNB(N)	2 x 8.00	16.00	Structure is in sound condition.
21	36+787	227+787	MNB(W)	6 x 7 x 1.5	42.00	Structure is in sound condition.

Vehicular Underpass (VUP)

Sr. No.	Chainage as per CA (km)	Chainage as per Site (km)	Structure	Span	Length	Status
1	7+510	197+510	VUP(N)	1 x 25 x 5.5	25.00	Structure is in sound condition.
2	10+390	201+402	VUP(N)	1 x 15 x 5.5	15.00	Structure is in sound condition.
3	13+350	204+350	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.
4	14+460	205+460	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.
5	16+260	207+260	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.
6	19+215	210+215	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.
7	22+720	193+260	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.
8	24+915	215+915	VUP(N)	1 x12 x 5.5	12.00	Structure is in sound condition.
9	26+030	217+030	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.
10	28+803	219+803	VUP	1 x 12 x 5.5	12.00	Structure is in sound condition.
11	29+003	220+003	VUP	1 x 12 x 5.5	12.00	Structure is in sound condition.
12	34+360	225+360	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.
13	35+800	226+800	VUP(N)	1 x 12 x 5.5	12.00	Structure is in sound condition.

Light Vehicular Underpass (LVUP)

Sr. No.	Chainage as per CA (km)	Chainage as per Site (km)	Structure	Span	Length	Status
1	3+900	194+900	LVUP	1 x 12 x 5	12.00	Structure is in sound condition.
2	23+990	214+990	LVUP(N)	1 x 12 x 4	12.00	Structure is in sound condition.
3	30+960	221+960	LVUP(N)	1 x 12 x 4	12.00	Structure is in sound condition.
4	38+190	229+190	LVUP(N)	1 x 12 x 4	12.00	Structure is in sound condition.

Figure 3-4 Photographs of Major Structures

Trumpet at km. 191+000

Trumpet at km. 191+000 (Abutment & RE Wall)

Trumpet at km. 191+000 (Girders & Pier condition)

Trumpet at km. 191+000 (Expansion joint & Pavement condition)

MJB at km. 212+269 (LHS)

MJB at km. 212+269 (RHS)

MJB at km. 212+269 (Slope protection)

MJB at km. 212+269 (Pavement Condition)

VUP at km. 226+800

VUP at km. 225+360

VUP at km. 220+003

VUP at km. 219+803

VUP at km. 207+260

VUP at km. 205+460

VUP at km. 201+402

VUP at km. 198+510

LVUP at km. 229+190

LVUP at km. 221+960

PUP at km. 226+350

LVUP at km. 221+960

MNB at km. 227+800

MNB at km. 226+361

MNB at km. 224+560

MNB at km. 223+055

MNB at km. 214+273

MNB at km. 214+419

MNB at km. 215+336

MNB at km. 216+740

MNB at km. 200+420

MNB at km. 196+762

MNB at km. 196+190

MNB at km. 193+978

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are total 111 Nos. of culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involved strengthening and widening of existing road to four lane divided carriageway. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, metal beam crash barrier or RCC railing has been provided at culvert locations wherever required, which is maintained properly.

Figure 3-5 Photographs of Culverts

HPC at km. 205+800

BC at km. 208+900

BC at km. 205+500

BC at km. 200+900

BC at km. 214+950

BC at km. 204+320

3.6 Drainage

There is 7.618 kms of existing drain (which includes drain on both sides) along the Project Road as per Concession Agreement.

Figure 3-6 Photographs of Drainage

New Drain at km. 228+500 (LHS)

Drain at km. 229+500 (RHS)

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations.

Photographs taken during the site visit are presented below.

Figure 3-7 Photographs of Slope Protection and Chute Drain

Slope Protection at km. 197+200

Slope Protection at km. 200+600

3.8 Road Furniture

The Concessionaire has provided road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C.

3.8.1 Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. The pavement marking is found to be Good throughout the Project Road.

Some of the photographs of road marking are presented below.

Figure 3-8 Photographs of Pavement Marking

Pavement marking at km. 191+050

Pavement marking balance at km. 205+800

Lane marking at km. 212+300 (RHS)

Pedestrian crossing at km.208+200

3.8.2 Road Studs

Road studs / cat's eye for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / cat's eye has been fixed at junction and zebra crossings.

Some of the photographs of Road studs are presented below.

Figure 3-9 Photographs of Road stud

Road studs at km. 191+000 (Junction)

Road studs at km. 205+740

3.8.3 Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Roadside signs, overhead signs, kerb mounted signs, vertical post of sign boards, chevron boards and median kerb paint are all in good condition.

Some of the photographs of sign boards are presented below.

Figure 3-10 Photographs of Sign Boards and km stones

Informatory sign board at km. 213+800 (RHS)

Curve ahead sign board at km. 228+650

Caution sign board at km. 200+600 (RHS)

Speed limit sign board at km. 193+650 (RHS)

Gantry sign board at km. 229+500 (RHS)

Kerb painting at km. 211+650 (LHS)

Kerb painting at km. 205+700

Km stone at km. 198+000

Hectometer stone at km. 205+800 (BHS)

Boundary stone at km. 198+400

3.8.4 Highway Lighting

Highway lighting is provided at underpasses, flyovers, toll plaza and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

Some of the photographs of highway lighting are presented below.

Figure 3-11 Photographs of Highway Lighting

Highway Lighting at km. 213+600

Highway Lighting at Toll Plaza

3.8.5 Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of crash barriers are presented below.

Figure 3-12 Photographs of MBCB / Crash Barrier

Metal beam crash barrier at km. 205+700

RCC crash barrier at km. 205+700 (LHS)

3.8.6 Delineators

The traffic delineators are provided by the Concessionaire for road users in abnormal condition of weather for the Project Road. The same is maintained by the Concessionaire.

Some of the photographs of delineators are presented below.

Figure 3-13 Photographs of Delineator

Delineator at km. 205+900

Delineator at km. 228+500

3.8.7 Road Land Boundary

Road land boundary pillar have been found / available on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantation is provided in open country locations and median plantation has been provided in the project length as per IRC specification. Some of the photographs of avenue plantation and median plantation are presented below.

Figure 3-14 Photographs of Avenue and Median Plantation

Median Plantation at km. 206+200

Avenue Plantation at 228+500

3.10 Toll Plaza

As per the Concession Agreement, there is 01 No. of Toll plaza at Kallakudi Village at km. 223+955 with the following infrastructure.

Table 3-3 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 223+955 (km. 32+955)
2	Number of Tolling Lanes	14 lanes for toll operation plus 2 lanes for over dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	15 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes (only 20 nos. near Toll Plaza. 10 nos. in both direction)
15	Low mast Light	No
16	User Fee Boards	4
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-15 Photographs of Toll Plaza

View of Toll Plaza at km. 223+955

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of camera based, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

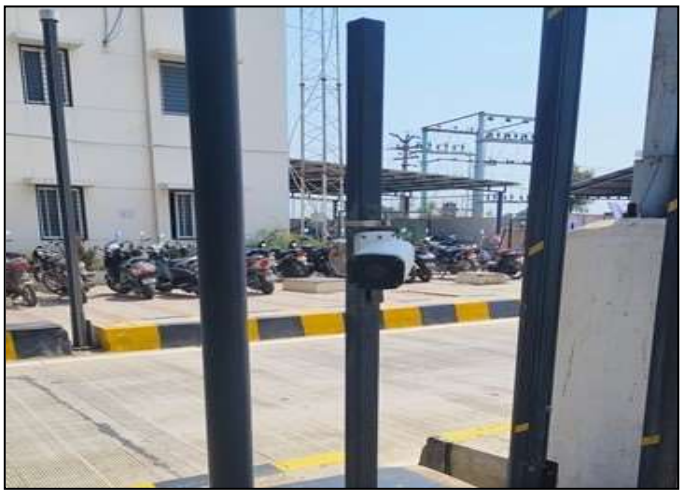
LTL at Toll Plaza

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.



LPIC at Toll Plaza

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and types of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

3.12.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location (km. 32+955). As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km 32+955).

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is installed.

3.13.3 Emergency Call Boxes (ECB)

These are installed/available at site.

3.13.4 Portable Weigh in Motion (PWIM)

It is not provided at the project site.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km. 32+955.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 04 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

3.13.7 CCTV Surveillance Cameras

There are 06 nos. PTZ cameras and 07 nos. of VIDS cameras are installed along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed. At toll plaza 4 PTZ and 10 lane cover cameras are installed.

3.13.8 Video Incident Detection System

Fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at 02 no. of locations each on LHS and RHS.

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy - All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 7 years at the cost of the Authority.

- The Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.14 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Posts are located at Toll Plaza location.

3.15 Toilet Block

There is one no. of toilet block at toll plaza.

Toilet Block at Toll Plaza

3.16 Bus Bays and Passenger Shelters

There are 35 Nos. of bus bays / passenger shelter along the Project Road.

Passenger Shelter with Bus Bay

Passenger Shelter

3.17 Balance Work Status

There are no balance works to be executed as per CA. Hence, the balance work is **NIL**.

3.18 Operation and Maintenance

3.18.1 O&M Contract

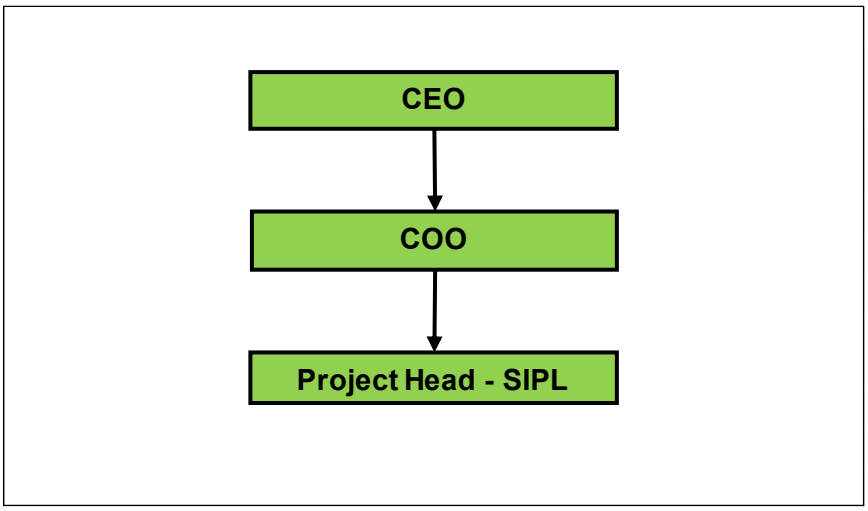
As per Clause 17.1.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

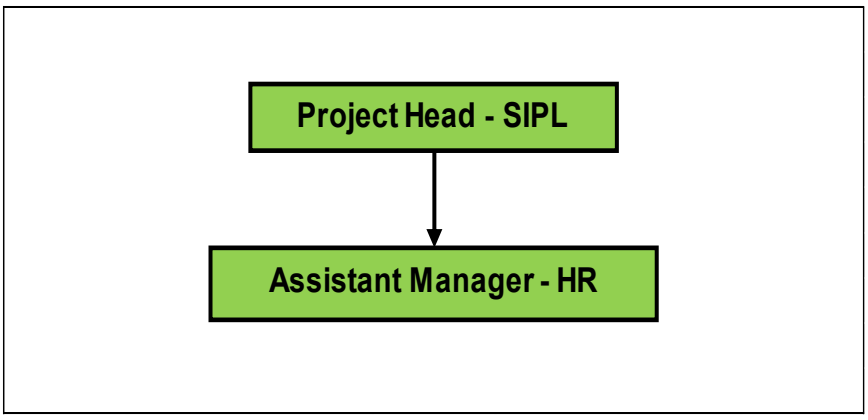
The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

3.18.2 Organization Chart

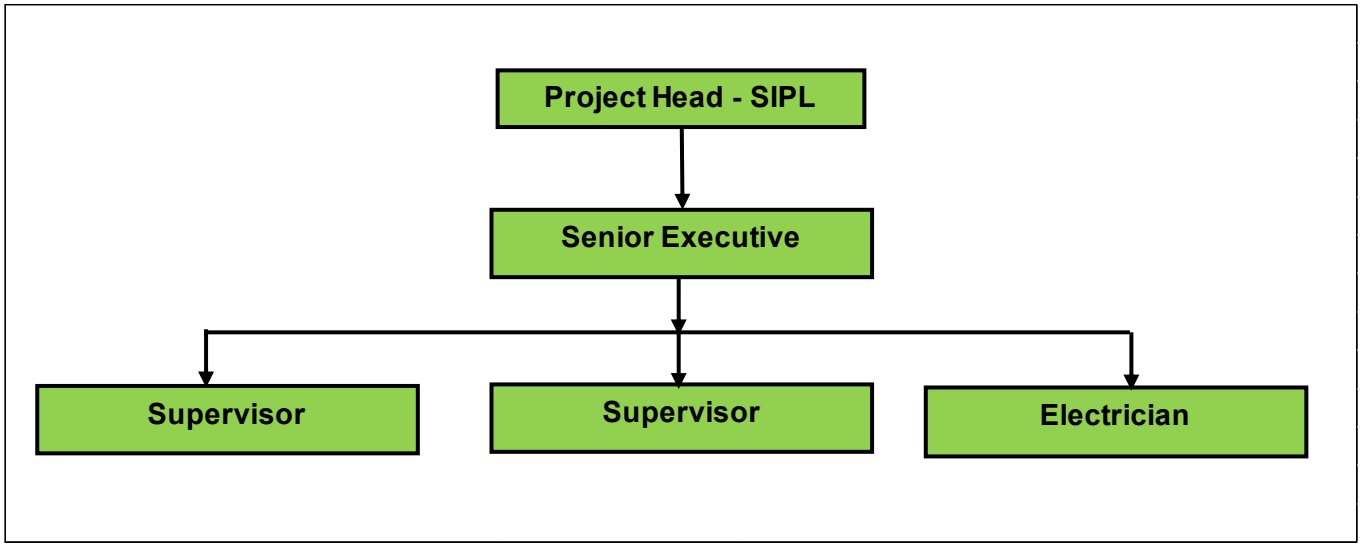
The Concessionaire has shared the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (HR), 01 Assistant Manager (TMS / IT), 01 Executive (TMS / IT), 01 Plaza Manager, 01 Assistant Plaza Manager, 03 Cashiers and 03 validators 01 traffic and road safety manager to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart

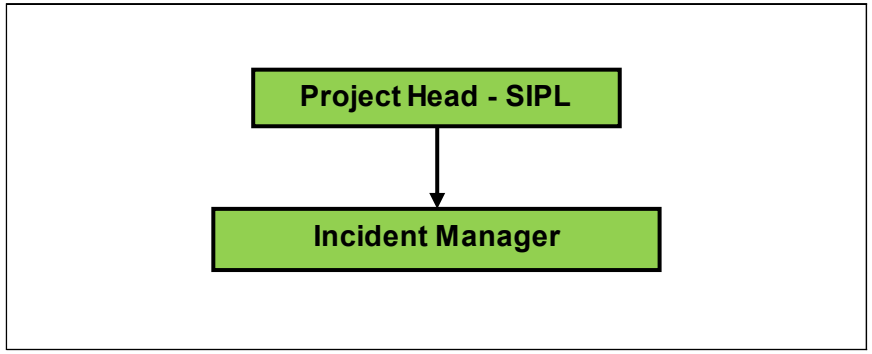




Maintenance



Operations



3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the entire length of the Project Road is maintained by Concessionaire.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per scope of work. The Concessionaire received Completion Certificate on 15th June 2023.

The project is currently under Operation and Maintenance stage. The Concession Period of the project is 15 years from the Date of Commercial Operation i.e., 03.06.2022. Appointed Date of Project Road is 01st March 2019.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 36+960 (near Toll Plaza) on 24th & 25th July 2021. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

VDF Summary				
Sr. No.	Vehicle Type	Direction		Adopted Value
		Kallagam - Trichy	Trichy - Kallagam	
1	BUS	0.867	1.074	1.074
2	LCV	1.067	0.754	1.067
3	2-Axle	5.012	4.402	5.012
4	3-Axle	10.004	7.844	10.004
5	MAV	17.151	13.091	17.151

4.3 Design traffic

Traffic surveys are conducted in July 2021. The following is the summary of total traffic count and projected traffic data.

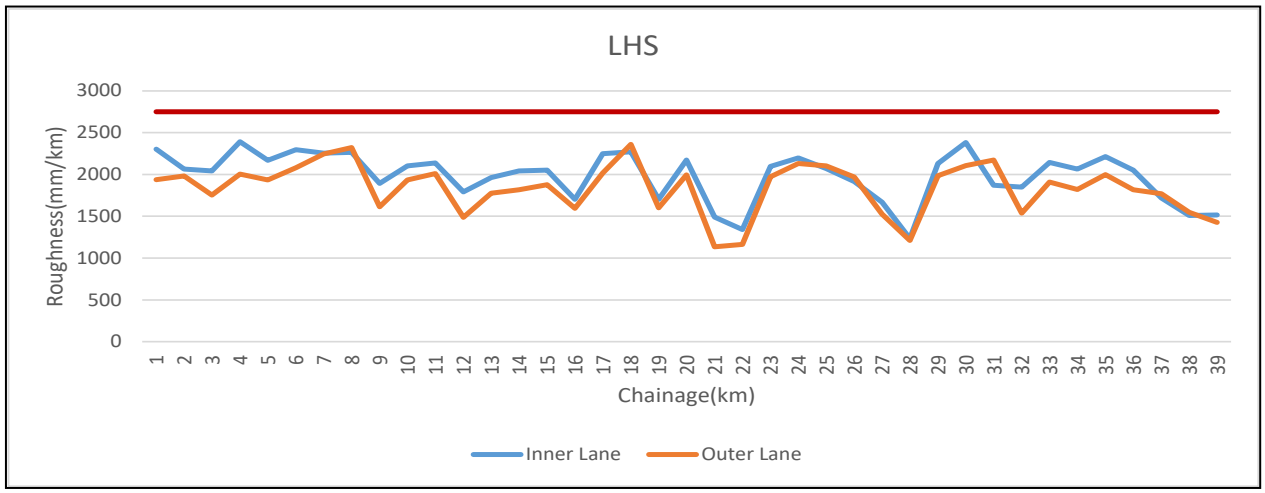
Table 4-2 Summary of Design Traffic

FY	Car	LCV	Minibus	Bus	Truck	MAV-3	MAV 4-6	OSV	Total Traffic
FY22	885	112	17	265	183	587	957	9	**3,015**
FY23	929	117	18	279	192	616	1005	10	3,166
FY24	975	123	19	293	202	647	1055	10	3,324
FY25	1024	129	20	307	212	680	1108	11	3,491
FY26	1075	136	21	323	222	714	1163	11	3,665
FY27	1129	143	22	339	234	749	1221	12	3,848
FY28	1186	150	23	356	245	787	1282	13	4,041
FY29	1245	157	24	373	258	826	1346	13	4,243
FY30	1307	165	25	392	270	867	1414	14	4,455
FY31	1373	173	27	412	284	911	1484	15	4,678
FY32	1441	182	28	432	298	956	1559	15	4,912
FY33	1513	191	29	454	313	1004	1637	16	5,157
FY34	1589	201	31	477	329	1054	1718	17	5,415
FY35	1668	211	32	500	345	1107	1804	18	5,686

FY	Car	LCV	Minibus	Bus	Truck	MAV-3	MAV 4-6	OSV	Total Traffic
FY36	1752	221	34	525	362	1162	1894	19	5,970
FY37	1839	232	36	552	381	1221	1989	20	6,269
FY38	1931	244	37	579	400	1282	2089	21	6,582
FY39	2028	256	39	608	420	1346	2193	22	6,911
FY40	2129	269	41	639	441	1413	2303	23	7,257

4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has conducted pavement condition survey on each lane of carriageway through NSV. The NSV survey was conducted on the Project Road in February 2025. The summary of the same is presented below.



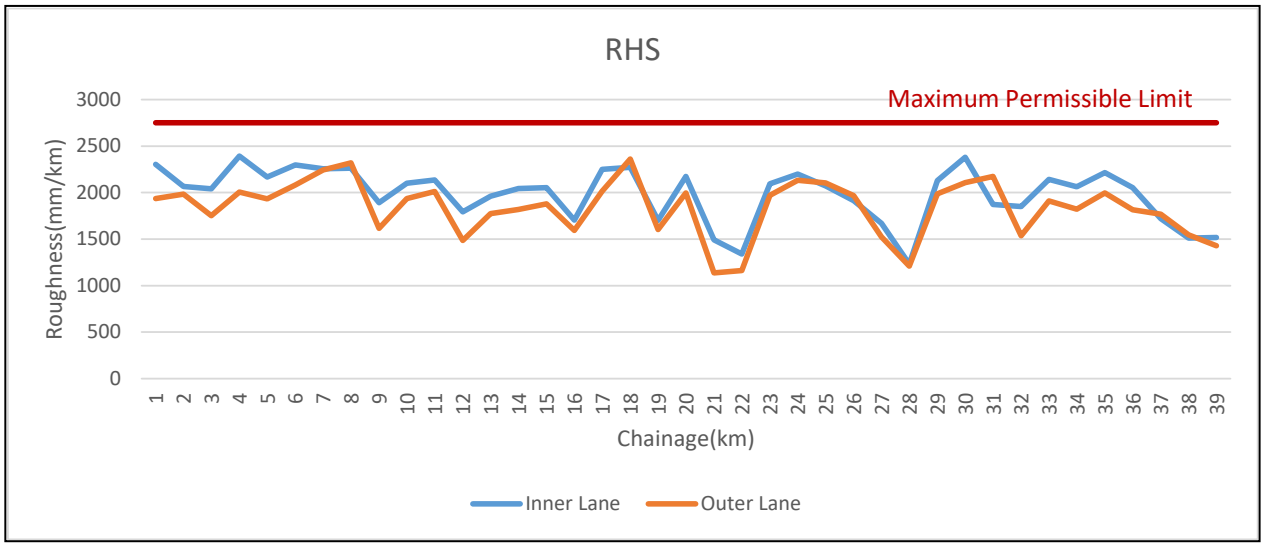
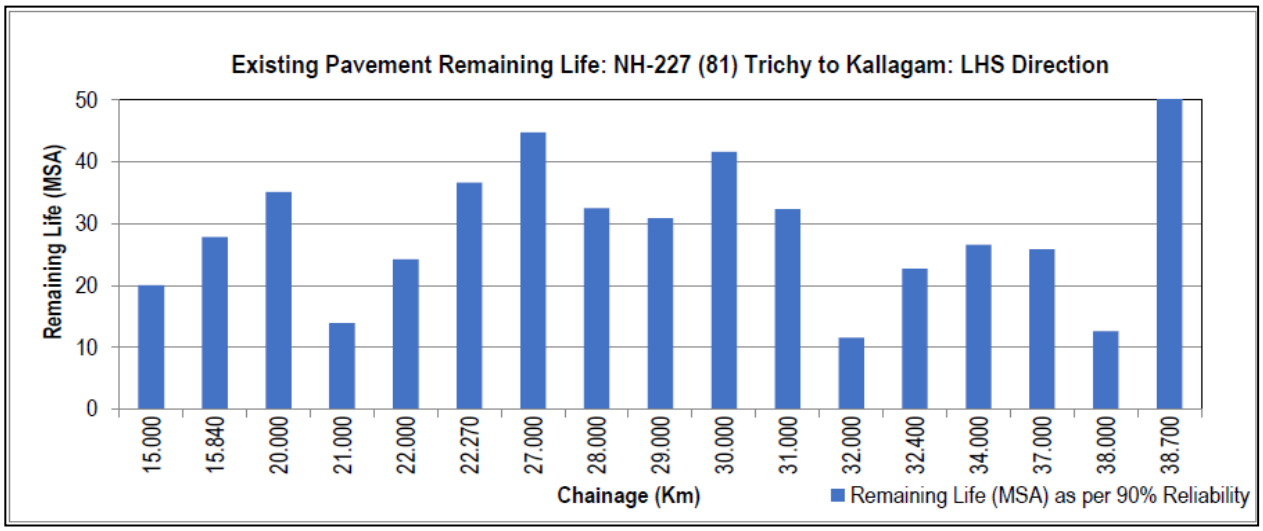


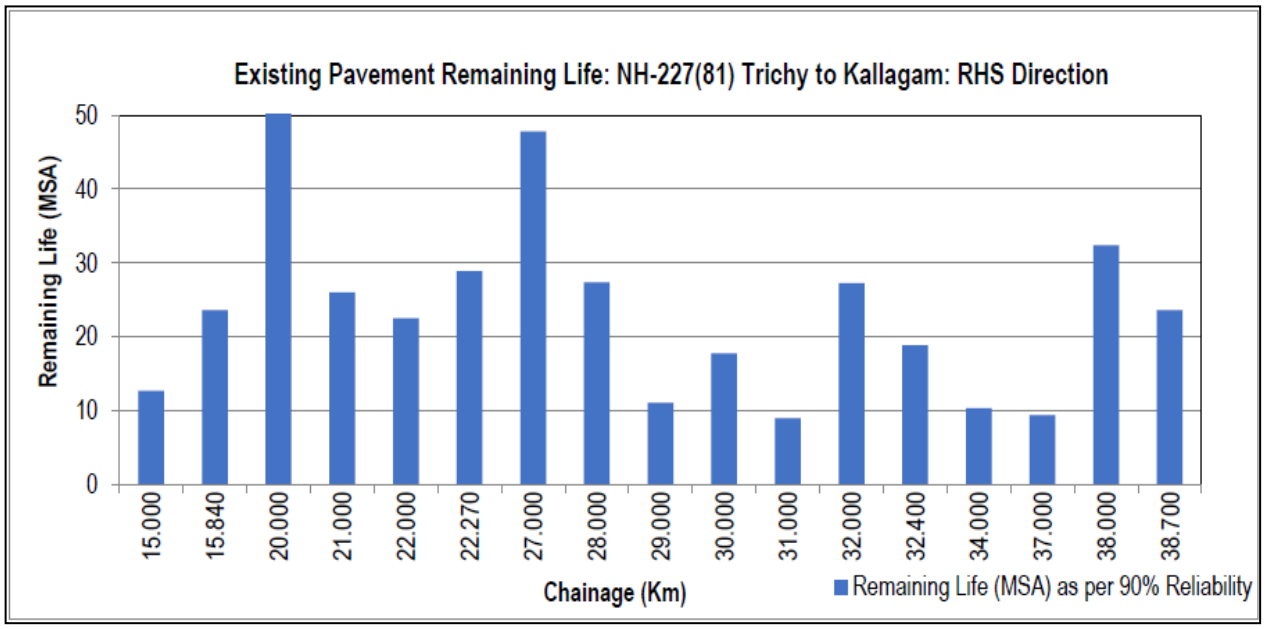
Table 4-3 Summary of Roughness

Roughness Summary as per Schedule-K of CA					
Condition	Limit as per Schedule-K of CA (mm/km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	< 2750	100.00 %	100.00 %	100.00 %	100.00 %
Poor	> 2750	-	-	-	-

4.5 Falling Weight Deflectometer (FWD) Survey

Falling Weight Deflectometer survey was conducted for flexible pavement by the Concessionaire on 24th August 2024 and 25th August 2024. The summary of the FWD survey report is presented below.





4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated below.

Table 4-4 Summary Pavement Crust Details

Sr. No.	Existing Road	Location (km)		Side (LHS / RHS)	Pavement Composition (mm)		
		From	To		Bituminous Layer	Granular Layer	Total Thickness
1	NH-227	14.760	37.300	Both Directions	135	450	585

Subgrade CBR Results

The obtained existing subgrade 4-days soaked CBR results for the entire project road from Km.14.760 to Km.37.300 is listed below for back calculation of E values, the same were used.

Table 4-5 Summary of Subgrade CBR along the project corridor

Sr. No.	Location (km)	Side (LHS/RHS)	4-Days Soaked CBR (%)
1	15+250	RHS	18
2	20+222	LHS	20
3	21+020	RHS	19
4	21+940	LHS	20
5	27+540	RHS	21
6	31+940	RHS	17
7	33+800	LHS	19
8	37+090	RHS	19

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full length periodic maintenance. Schedule-K of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 2750 mm/km.

The Concessionaire received Completion Certificate on 15th June 2023. Hence, the major maintenance cycle is projected accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-6 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2029	**Flexible -** 35 mm BC overlay 60%, 50 mm DBM 2.5% and micro-surfacing for 40% length **Rigid -** Re-texturing and Grinding 40%, Replacement of PQC Slab 1%, Joint sealant (Silicon) 40%	Re-texturing and Grinding 25%, Replacement of PQC Slab 1%, Joint sealant (Silicon) 5%.
2	FY 2036	**Flexible -** 35 mm BC overlay 40%, 50 mm DBM 2.5% and micro-surfacing for 60% length **Rigid -** Re-texturing and Grinding 40%, Replacement of PQC Slab 1%, Joint sealant (Silicon) 40%	Re-texturing and Grinding 25%, Replacement of PQC Slab 1%, Joint sealant (Silicon) 5%.

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

      Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from SAIL.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable NHAI Standard data book.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling rates etc. are considered as per the work order shared by the client.

Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam	Cum	7,860
2	Bituminous Concrete (VG-40)	Cum	9,123
3	Milling	Sqm	85
4	Micro-surfacing	Sqm	149
5	Kerb re-laying	m	303
6	Road Marking - BC Surface	Sqm	561
7	Road Marking - Micro-surface	Sqm	620
8	Road Studs	Nos.	246

5.3 Balance Work Cost

The Concessionaire has completed all the works as per Concession Agreement. Hence, there is no balance work.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The

estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Toll Security Services Outsourced
3. Incident Management & Emergency Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Community Development
10. Communication Expenses
11. Conveyance Expenses
12. Insurance Expense
13. IE Fees
14. Routine Maintenance Cost (Project Highway)
15. Horticulture & ROW Maintenance
16. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026 to FY 2037)
1	Salary and Welfare Expenses	1,29,15,000
2	Toll Security Services	15,42,799
3	Incident Management & Emergency Services	60,50,117
4	Electricity and Diesel Charges	1,73,79,484
5	TMS/HTMS/System Expenses	89,37,500
6	Office Operating Expenses	22,34,925
7	Vehicle Running Expenses	15,75,000
8	Professional Fees Expense	1,01,58,750
9	Community Development	1,15,50,000
10	Communication Expenses	2,47,874
11	Conveyance Expenses	2,64,128
12	Insurance Expense	10,15,875
13	IE Fees	44,10,000

Sr. No.	Particulars	Amount (FY 2026 to FY 2037)
14	Routine Maintenance Cost (Project Highway)	2,27,47,275
15	Horticulture & ROW Maintenance	1,09,71,450
16	Miscellaneous including Contingency	31,31,258
	Total Cost (Rs.)	**11,51,31,434**
	Total Cost (Cr.)	**11.51**
	Per km Cost (Lakh)	18.14

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2029	22.85	1st Major Maintenance cycle
2	FY 2036	23.86	2nd Major Maintenance cycle
	Total	**46.71**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2029	3.85	
2	FY 2036	3.85	
Total Cost (Cr.)		**7.70**	

5.7 Escalation Assumption

The following escalation is considered basis discussions with Client and our internal estimates.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	4.00%
2026	-	**2042**	3.99%
2027	5.23%	**2043**	3.99%
2028	4.92%	**2044**	3.99%
2029	4.63%	**2045**	3.98%
2030	4.33%	**2046**	3.98%
2031	4.12%	**2047**	3.96%
2032	4.07%	**2048**	3.96%
2033	4.06%	**2049**	3.95%
2034	4.00%	**2050**	3.95%
2035	4.01%	**2051**	3.95%
2036	3.99%	**2052**	3.95%
2037	4.00%	**2053**	3.95%

Year	Escalation	Year	Escalation
2038	4.02%	**2054**	3.95%
2039	4.00%	**2055**	3.95%
2040	3.98%	**2056**	3.95%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37
1	Routine O&M Cost												
1.01	Salary and Welfare Expense	1.29	1.36	1.43	1.50	1.57	1.64	1.70	1.77	1.85	1.92	2.00	2.08
1.02	Security Expenses	0.15	0.16	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.24	0.25
1.03	Incident Management Services	0.61	0.64	0.67	0.70	0.74	0.77	0.80	0.83	0.86	0.90	0.94	0.97
1.04	Electricity and Diesel Charges	1.74	1.83	1.93	2.02	2.11	2.20	2.29	2.39	2.48	2.58	2.69	2.79
1.05	TMS/HTMS/System Expenses	0.28	0.46	0.61	-	0.20	0.21	0.22	0.38	0.63	0.82	-	-
1.06	Office Operating Expenses	0.22	0.24	0.25	0.26	0.27	0.28	0.30	0.31	0.32	0.33	0.35	0.36
1.07	Vehicle Running Expenses	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.23	0.24	0.25
1.08	Professional Fees Expense	1.02	1.07	1.13	1.18	1.24	1.29	1.34	1.40	1.45	1.51	1.57	1.63
1.09	Community Development	1.16	1.22	1.28	1.35	1.40	1.46	1.52	1.59	1.65	1.72	1.79	1.86
1.10	Communication Expenses	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
1.11	Conveyance Expenses	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
1.12	Insurance Expense	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.16
1.13	IE Fees	0.44	0.47	0.49	0.51	0.54	0.56	0.58	0.61	0.63	0.66	0.68	0.71
1.14	Routine Maintenance Cost	2.27	2.40	2.53	2.65	2.77	2.88	3.00	3.13	3.25	3.38	3.52	3.66
1.15	Horticulture & ROW Maintenance	1.10	1.16	1.22	1.28	1.33	1.39	1.45	1.51	1.57	1.63	1.70	1.76
1.16	Miscellaneous and Contingency	0.29	0.31	0.33	0.32	0.35	0.36	0.37	0.40	0.42	0.44	0.43	0.45
2	Subtotal of O&M Cost	10.87	11.65	12.39	12.33	13.08	13.64	14.20	14.94	15.78	16.58	16.36	17.02
3	Major Maintenance Cost	-	-	-	26.34	-	-	-	-	-	-	36.36	-
4	Periodic Cost of TMS/HTMS Replacement	-	-	-	4.48	-	-	-	-	-	-	5.95	-
5	Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**10.87**	**11.65**	**12.39**	**43.15**	**13.08**	**13.64**	**14.20**	**14.94**	**15.78**	**16.58**	**58.68**	**17.02**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Project - Trichy to Kallagam (KSIPL)	
Ordinary Repair Cost (with GST)	**2,27,47,275**
(inclusive of GST)	**= 5.88 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **3,18,093**	**Urban** More than 4500 CVD **3,50,381**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	486683.00	536083.00	-	-	-	-
		Paved shoulder	1.70	540759.00	595648.00	24.03	-	1,29,94,439	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	636186.00	700762.00	-	-	-	-
		Paved shoulder	2.20	699805.00	770839.00	-	-	-	-
3	Six lane with divided carriageway	without Paved shoulder	2.09	664815.00	732297.00	14.67	-	97,52,836	-
		with Paved shoulder	2.26	718891.00	791862.00	-	-	-	-
					TOTAL		**38.700**		**2,27,47,275**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.50%
	Volume (cum)			7.50
	Rs/m^3			10119
	Cost in Rupees			75,889
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			584
	Cost in Rupees			58,410
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.00%
1	Area (sqm)			150
	Rs/m^2			69
	Cost in Rupees			10,300
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			69
	Cost in Rupees			10,300
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			584
	Cost in Rupees			43,808
	v) Road marking	10%	Once in 7th year & @	16682

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
			Repaired location	
	vi) Joint Sealant Repair/Replacement	7%		21609
	SUB TOTAL			**2,36,998**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6831
	ii) Jungle Clearance	100%	Twice in a Year	2241
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1201
	SUB TOTAL			**10,273**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	3026
	ii) Repair of floors	100%	Once in a Year	5475
	iii) Repair of parapets	100%	As & when required	2282
	SUB TOTAL			**10,783**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	40,026
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**40,026**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2668

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	ii) Maintenance of gang hut store, sheds, animal & debries removal		Once in a Year	4003
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	4003
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	8005
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1334
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**20,013**
	GRAND TOTAL (Normal)			**3,18,093**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	0
	ii)Repairs to footpath	100%	As & when required	5337
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	5337
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	8272
	vi) Repair of divider/ Railing in City portion	100%	As & when required	10674
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2668
	SUB TOTAL			**32,288**
	GRAND TOTAL (Urban)			**3,50,381**

ANNEXURE II - MAJOR MAINTENANCE COST

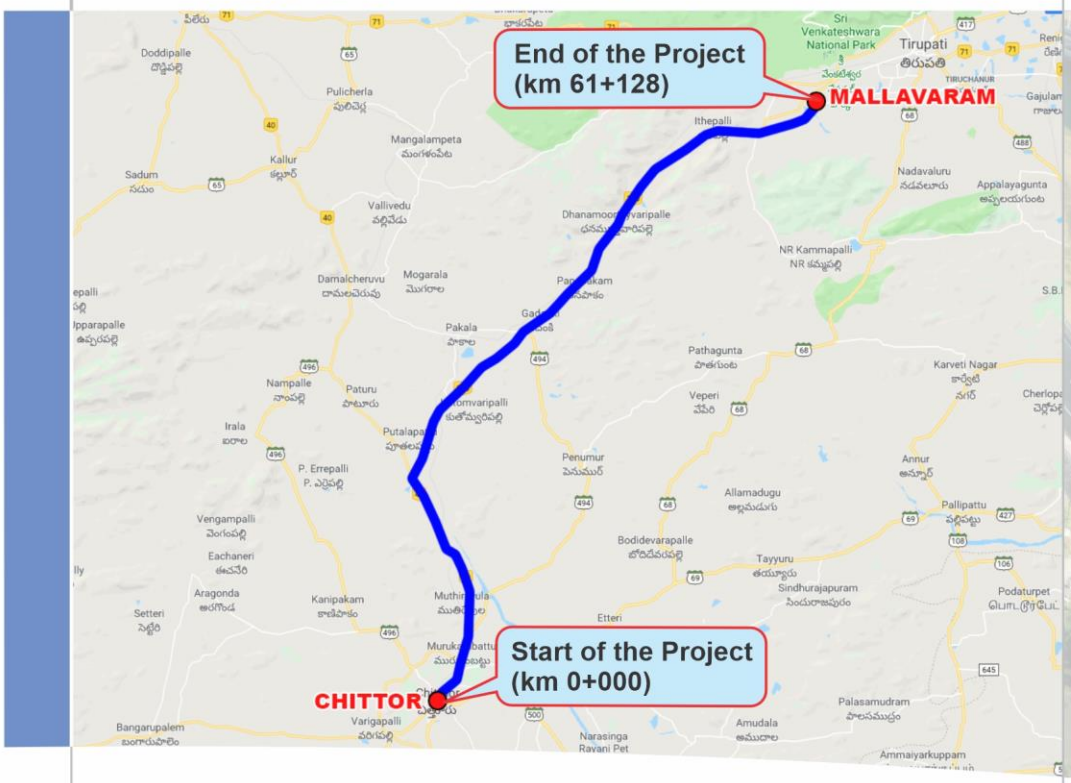
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
A	**Main Carriageway - Flexible Pavement**									
1	Tack coat	Sqm						**1,69,841**	18	29,89,196
	For BC	Sqm	1	1	2,76,223.80		2,76,224	2,76,224		
	For DBM	Sqm	1	1	6,844.00		6,844	6,844		
2	BC with 35 mm	Cum	1	1	1,65,734.28	0.04	5,801	5,801	9,123	5,29,21,350
3	Micro surfacing				1,10,489.52			1,10,490	149	1,64,07,694
4	DBM with 50 mm	Cum	1	1	6,844.00	0.05	342	342	7,860	26,89,565
6	BC with 35 mm (for miscellaneous locations)				13,811.19	0.04	483	483	9,123	44,10,113
7	Milling	Sqm	1	1	6,844.00		6,844	6,844	85	5,81,740
B	**Main Carriageway - Rigid Pavement**									
1	Retexturing and grinding	Sqm	40%	23,892	21.53		5,14,446	2,05,779	120	2,46,93,426
2	Replacement of PQC Slab	Cum	1%	23,892	22	0.30	1,543	1543	9,377	1,44,71,428
3	Joint sealant (Silicone)	RMT	40%	32,663	4.50	3.50	1,04,522	104522	119	1,24,38,170
4	Filling of Earthen shoulder	Cum	0%							
C	**Service Road**									
1	Retexturing and grinding	Sqm	25%	31,540	5.85		46,150	46,150	120	55,38,053
2	Replacement of PQC Slab	Sqm	1%	31,540	5.85	0.25	462	462	9,377	43,27,388
3	Joint sealant (Silicone)	Cum	5%	31,540	5.85	3.50	14,750	14750	119	17,55,201
D	**Miscellaneous**									
	Kerb Replacement	Rmt	20%	1,35,615			27,123	27,123	303	82,04,683
	Painting of Kerbs	Sqm	1	1,35,615		0.32	42,719	42,719	105	44,85,453
	Painting of Crash Barrier	Sqm	2	12,800		1.115	28,544	28,544	105	29,97,120
	Earthen Shoulder	cum	1	10,088				10,088	410	41,31,036
	Thermoplastic paint									-
	a) Median & Edge line	Sqm	100%				35,472	35,472	561	1,98,99,624
	Main Carriageway 4L		4	24,030	0.15		14,418			
	Main Carriageway 6L		4	14,670	0.15		8,802			
	Service Road		2	31,540	0.10		6,308			
	b) Lane line									

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway 4L		2	8,411	0.10		1,682			
	Main Carriageway 6L		4	5,135	0.10		2,054			
	Service Road		2	11,039	0.10		2,208			
	Junction crossing									
	Replacement of Road Stud	No	50%				6,057	6,057	246	14,90,022
	Main Carriageway 4L		4	1,336			5,344			
	Main Carriageway 6L		4	816			3,264			
	Service Road		2	1,753			3,506			
	Miscellaneous	5%								92,21,563
Total Major Maintenance Cost (Rs)										**19,36,52,825**
Total Major Maintenance Cost with GST (Rs)										**22,85,10,334**
Total Major Maintenance Cost with GST (Cr)										**22.85**
Per km Cost (lakh)										**59.05**
Escalation Factor (FY 2029)										**1.15**
Total Escalated Cost (FY 2029) (Cr)										**26.34**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
A	**Main Carriageway - Flexible Pavement**									
1	Tack coat	Sqm						1,13,227	18	19,92,797
	For BC	Sqm	1	1	2,76,223.80		2,76,224	2,76,224		
	For DBM	Sqm	1	1	6,844.00		6,844	6,844		
2	BC with 35 mm	Cum	1	1	1,10,489.52	0.04	3,867	3,867	9,123	3,52,80,900
3	Micro surfacing				1,65,734.28			1,65,734	149	2,46,11,541
4	DBM with 50 mm	Cum	1	1	6,844.00	0.05	342	342	7,860	26,89,565
5	DBM with 50 mm (for miscellaneous locations)	Cum	-	1	13,811.19	0.05	-	-	10,957	-
6	BC with 35 mm (for miscellaneous locations)		1		13,811.19	0.04	483	483	9,123	44,10,113
7	Milling	Sqm	1	1	6,844.00		6,844	6,844	85	5,81,740
B	**Main Carriageway - Rigid Pavement**									
1	Retexturing and grinding	Sqm	60%	23,892	21.53		5,14,446	3,08,668	120	3,70,40,139
2	Replacement of PQC Slab	Cum	1%	23,892	22	0.30	1,543	1543	9,377	1,44,71,428
3	Joint sealant (Silicone)	RMT	60%	32,663	4.50	3.50	1,56,784	156784	119	1,86,57,255
4	Filling of Earthen shoulder	Cum	0%							
C	**Service Road**									
1	Retexturing and grinding	Sqm	25%	31,540	5.85		46,150	46,150	120	55,38,053
2	Replacement of PQC Slab	Sqm	1%	31,540	5.85	0.25	462	462	9,377	43,27,388
3	Joint sealant (Silicone)	Cum	5%	31,540	5.85	3.50	14,750	14750	119	17,55,201
D	**Miscellaneous**									
	Kerb Replacement	Rmt	20%	1,35,615			27,123	27,123	303	82,04,683
	Painting of Kerbs	Sqm	1	1,35,615		0.32	42,719	42,719	105	44,85,453
	Painting of Crash Barrier	Sqm	2	12,800		1.115	28,544	28,544	105	29,97,120
	Earthen Shoulder	cum	1	10,088				10,088	410	41,31,036
	Thermoplastic paint									
	a) Median & Edge line	Sqm	100%				35,472	35,472	561	1,98,99,624
	Main Carriageway 4L		4	24,030	0.15		14,418			
	Main Carriageway 6L		4	14,670	0.15		8,802			
	Service Road		2	31,540	0.10		6,308			
	b) Lane line									
	Main Carriageway 4L		2	8,411	0.10		1,682			
	Main Carriageway 6L		4	5,135	0.10		2,054			

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Service Road		2	11,039	0.10		2,208			
	Junction crossing									
	Replacement of Road Stud	No	50%				6,057	6,057	246	14,90,022
	Main Carriageway 4L		4	1,336			5,344			
	Main Carriageway 6L		4	816			3,264			
	Service Road		2	1,753			3,506			
	Miscellaneous	5%								96,28,203
Total Major Maintenance Cost (Rs)										**20,21,92,261**
Total Major Maintenance Cost with GST (Rs)										**23,85,86,868**
Total Major Maintenance Cost with GST (Cr)										**23.86**
Per km Cost (lakh)										**61.65**
Escalation Factor (FY 2036)										**1.52**
Total Escalated Cost (FY 2036) (Cr)										**36.36**

FP Project Management



Technical Due Diligence of Chittoor to Mallavaram of NH-140 (Design km. 0+000 to km. 61+128) in the State of Andhra Pradesh on Hybrid Annuity Mode under Bharatmala Pariyojana

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 General 7
3.2 Pavement Condition Survey 7
3.3 Bypass / Realignment 11
3.4 Service Road / Slip Road 11
3.5 At-Grade Intersection 12
3.6 Condition Survey of Bridge 14
3.7 Condition Survey of Culverts 39
3.8 Drainage 45
3.9 Slope Protection 45
3.10 Road Furniture 46
3.11 Avenue Plantation and Median Plantation 51
3.12 Toll Plaza 52
3.13 Lane Equipment 53
3.13.1 RFID ETC Transceiver 53
3.13.2 Lane Controller with Industrial PC 53
3.13.3 Automatic Vehicle Classification (AVC) Sensors 54
3.13.4 Automatic Lane Barrier 54
3.13.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 55

3.13.6 Incident Capture Camera (AVC Camera) 55
3.13.7 License Plate Image Capture Camera (LPIC) 56
3.13.8 Over Head Lane Signal (OHLS) 56
3.13.9 Toll Booth Equipment 56
3.14 Plaza Equipment 57
3.14.1 TMS Server 57
3.14.2 55" LED screen for CCTV monitoring 57
3.14.3 Workstations in Control Room, POS room 58
3.15 Truck Lay-bye 58
3.16 Administrative, Operation and Maintenance Base Camp 59
3.17 Toilet Block 61
3.18 Bus Bays and Passenger Shelters 61
3.19 Balance Work Status 62
3.20 Operation and Maintenance 62
3.20.1 O&M Contract 62
3.20.2 Organization Chart 63
3.20.3 Operation 63
3.20.4 Routine Maintenance 63
4 Pavement Investigation and Assessment 64
4.1 General 64
4.2 Axle Load and VDF 64
4.3 Design traffic 64
4.4 Network Survey Vehicles (NSV) Survey 65
4.5 Structural Investigations 66
4.6 Periodic Maintenance Strategy 66
5 Cost Estimates 68
5.1 General 68
5.2 Rate Assumption 68
5.3 Balance Work Cost 69
5.4 Routine O&M Cost 69
5.5 Major Maintenance Cost 71
5.6 Periodic Replacement of TMS / ATMS System 71
5.7 Escalation Assumption 71
5.8 Summary of Cost 71
Annexures 73
Annexure I - Routine Maintenance Cost 74
Annexure II - Major Maintenance Cost 78

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 14
Table 3-2 Condition Survey of Major Structure 15
Table 3-3 Details of Truck Lay-bye 58
Table 3-4 Details of Toilet Block 61
Table 4-1 Vehicle Damage Factor 64
Table 4-2 MSA Calculation 64
Table 4-3 Major Maintenance Cycle 67
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 68
Table 5-2 Summary of Unit Rates 69
Table 5-3 Summary of Operation Cost 70
Table 5-4 Escalation 71

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of the Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 8
Figure 3-2 Photographs of Bypass 11
Figure 3-3 Photographs of Service Road 11
Figure 3-4 Photographs At-Grade Intersection 12
Figure 3-5 Photographs of Minor Junctions 13
Figure 3-6 Photographs of Road Under Bridge (RUB) 30
Figure 3-7 Photographs of Major Bridges 30
Figure 3-8 Photographs of Minor Bridges 33
Figure 3-9 Photographs of Underpasses 36
Figure 3-10 Photographs of Box Culverts 40
Figure 3-11 Photographs of Pipe Culverts 43
Figure 3-12 Photographs of Drain 45
Figure 3-13 Photographs of Slope Protection 46
Figure 3-14 Photographs of Pavement Marking 46
Figure 3-15 Photographs of Road Studs 47
Figure 3-16 Photographs of Traffic Signages 48
Figure 3-17 Photographs of Street Light 49
Figure 3-18 Photographs of MBCB / Crash Barrier 49
Figure 3-19 Photographs of Traffic Delineators 50
Figure 3-20 Photographs of Median Plantation 52
Figure 3-21 Photographs of Toll Plaza 52
Figure 3-22 Photographs of Truck Lay-bye 59
Figure 3-23 Photographs of Toilet Block 61
Figure 3-24 Photographs of Bus Bays / Passenger Shelters 61

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InVIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence study of Chittor to Mallavaram Section of National Highway No. 140 (NH-140) from km. 0+000 to km. 61+128 in the State of Andhra Pradesh (hereinafter referred as "Project Road").

M/s. KNR Tirumala Infra Private Limited (KTIPL) (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for construction, operation, maintenance, and transfer of Chittor to Mallavaram Section (from km. 0+000 to km. 61+128) of National Highway No. 140 (NH-140) on design, built, operate and transfer (the "DBOT Annuity" or "Hybrid Annuity") basis. The project was awarded to Concessionaire on 09th May 2018 with a concession period of 15 years excluding construction period of 2.5 years by National Highway Authority of India (NHAI). The length of Project Road is 61.128 kms with one toll plaza at km. 37+350 (Gadanki).

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

a) A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
b) Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
c) Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
d) Formulation of future major maintenance strategy
e) Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
f) Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
g) Estimation of Annual Operation expenses along with Systems cost (TMS) till the end of concession period
h) Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings.
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority.
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection.
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyzing the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **17th February 2025** to **19th February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**

Chapter 2 **Project Description:** The chapter describes existing project features, and overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**

Chapter 4 **Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance

Chapter 5 **Cost Estimates**: This chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement **M/s. KNR Tirumala Infra Private Limited (KTIPL),** is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 09th May 2018. The Appointed Date for the Project Road is 4th January 2019.

The project has been developed through DBOT Annuity basis with concession period of 17.5 years from the Appointed Date including construction period of 2.5 years. The Concessionaire received Provisional COD on 10th May 2021. The Concessionaire received the Completion Certificate on 8thJune 2023. The project is currently under operation and maintenance phase.

2.2 Location

The Project Road is a section of National Highway No. 140 from Chittoor to Mallavaram in the state of Andhra Pradesh. The total project length is 61.128 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of the Project Road

Start of Project Road

Figure 2-3 End of Project Road

End of Project Road

2.3 Climate

The project road has a tropical wet and dry climate, designated under the Koppen climate classification. In winter the minimum temperatures are between 18 ^{0}C and 20 ^{0}C (64.4 ^{0}F and 68.0 ^{0}F). Usually, summer lasts from March to June, with the advent of the rainy season in July, followed by winter which lasts until the end of February. The project road experiences heavy rainfall in November during the northeast monsoon season. The highest rainfall in 24 hours was on 16 November 2015, during the 2015 South India floods, with 219 millimeters or 8.62 inches. Cyclones commonly hit the Coast of Nellore and bring heavy rain.

2.4 Terrain

This section of National Highway traverses through plain / rolling terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up area.

2.6 Right of Way

The width of the existing Right of Way (RoW) throughout the project stretch is 60.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services located along the project road were shifted to the PROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Chittoor (km. 0+000) to Mallavaram (km. 61+128) has been developed as a Six-lane divided carriageway with median width of 4.0 m and 1.5 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D;
b) operation and maintenance of the Project in accordance with the provisions of the agreement; and
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	61.128	
2	Construction of Service Road	km.	118.916	Both Side (LHS+RHS)
3	Major Bridge	Nos.	06	
4	Minor Bridge	Nos.	23	
5	Vehicular Underpass (VUP)	Nos.	11	
6	Light Vehicular Underpass (LVUP)	Nos.	04	
7	RUB	Nos.	01	
8	Pipe Culvert	Nos.	11	
9	Box Culvert	Nos.	104	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 General

The Project Road is six lane divided carriageway and generally has paved carriageway of 12.5 m with earthen shoulder of 2.00 m on either side. The Project Road has a median width of 4.0 m and 1.5 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza is rigid pavement.

3.2 Pavement Condition Survey

Pavement condition survey was carried out from **17th February 2025 to 19th February 2025** through visual inspection for the entire project length. From the visual inspection, the pavement condition of the Project Road for the entire length is generally found to be Good.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

km. 3+000 (LHS)

km. 6+200 (LHS)

km. 16+200 (LHS)

km. 24+600 (LHS)

km. 21+500 (LHS)

Km. 18+200 (LHS)

km. 28+700 (LHS)

km. 37+800 (LHS)

km. 43+000 (LHS)

Km. 47+500 (LHS)

Toll Plaza - Rigid pavement

km. 14+000 (LHS)

km. 59+300 (RHS)

km. 55+800 (RHS)

km. 52+300 (RHS)

Km. 46+050 (RHS)

km. 38+900 (RHS)

km. 37+750 (RHS) TP

km. 31+000 (RHS)

km. 24+000 (RHS)

km. 19+800 (RHS)

km. 15+000 (RHS)

km. 5+700 (RHS)

km. 3+700 (RHS)

3.3 Bypass / Realignment

There are two bypasses on Project Road. The details of the bypass is tabulated below:

Bypass:

Sr. No.	Name of Bypass	Design Chainage (km)		Length (km)	Lane Configuration
		From	To		
1	Kanipakam	3+565	20+800	17.235	6-Lane
2	Kashipentla	40+700	47+700	7.000	6-Lane

Figure 3-2 Photographs of Bypass

Kanipakam Bypass at km. 11+000

Kashipentla Bypass at km. 42+000

3.4 Service Road / Slip Road

The service road with a width of 7.0 is constructed in built-up areas and adjoining underpass locations. The Project Road has total service road length of 118.916 kms on both sides. The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service Road

Service Road at km. 3+000 (LHS)

Service Road at km. 12+700 (LHS)

Service Road at km. 32+400 (LHS)

Service Road at km. 59+300 (RHS)

Service Road at km. 52+100 (RHS)

Service Road at km. 27+000 (RHS)

3.5 At-Grade Intersection

There are 44 nos. of At-Grade Intersections along Project Road. The photographs taken during site visit is presented as below:

Figure 3-4 Photographs At-Grade Intersection

Major Junction at km. 19+140 (LHS)

Major Junction at km. 19+140 (RHS)

Major Junction at km. 0+000

Major Junction at km. 56+128 (LHS)

Figure 3-5 Photographs of Minor Junctions

Minor Junction at km. 3+650 (RHS)

Minor Junction at km. 27+620 (RHS)

Minor Junction at km. 27+630 (LHS)

Minor Junction at km. 30+409 (LHS)

Minor Junction at km. 46+350 (RHS)

Minor Junction at km. 4+680 (RHS)

3.6 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, RUB, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Under Bridge (RUB)	01
Grade Separator	00
Major Bridges (MJB)	06
Minor Bridges (MNB)	23
Vehicular Underpass (VUP)	11
Light Vehicular Underpass (LVUP)	04
Culverts:	
Pipe Culverts	11
Slab Culverts	00
Box Culverts	104
Total	**160**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below.

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
1	04+215	Minor Bridge	LHS-MCW	3 x 5	1 x 14.5	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition. On LHS and RHS some vegetation observed in water way. RCC return wall on both sides.
			LHS - SR	3 x 5	1 x 11	RCC	RCC	Raft		
			RHS-MCW	3 x 5	1 x 14.5	RCC	RCC	Raft		
			RHS - SR	3 x 5	1 x 11	RCC	RCC	Raft		
2	04+683	LVUP	Both	1 x 12	2 x 14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Electrification completed.
3	06+600	Minor Bridge	LHS-MCW	2 x 3.5	1 x 14.5	RCC	RCC	Raft	NA	New Construction - Skew Box type - Structure is in sound condition. On RHS A1 side slope protection is damage and On LHS slope protection is not done.
			LHS - SR	2 x 3.5	1 x 11	RCC	RCC	Raft		
			RHS-MCW	2 x 3.5	1 x 14.5	RCC	RCC	Raft		
			RHS - SR	2 x 3.5	1 x 11	RCC	RCC	Raft		
4	07+514	VUP	Both	1 x 25	2 x 14.5	RCC	RCC	Open	POT/PTFE	PSC Girder 5 no. of each span. The structure is in sound condition. Electrification completed.
5	08+300	Major Bridge (Stilt)	LHS	12 x 25	1 x 16	RCC	RCC	Open	POT/PTFE	New Construction - PSC Girder 5 no. for each span. The structure is in sound condition. Expansion joints, crash barrier and slope protection is in good condition. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier.
			RHS	12 x 25	1 x 16	RCC	RCC	Open		

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
6	08+800	Major Bridge	LHS-MCW	8 x 25	1 x 14	RCC	RCC	Open	POT/PTFE	New Construction - PSC Girder 5 no. for each span for Main Carriageway and PSC Girder 4 no. for each span for Service Road. The structure is in sound condition. Expansion joints, crash barrier and slope protection are in good condition. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier.
			LHS - SR	8 x 25	1 x 11	RCC	RCC	Open		
			RHS-MCW	8 x 25	1 x 14	RCC	RCC	Open		
			RHS - SR	8 x 25	1 x 11	RCC	RCC	Open		
7	09+600	LVUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Electrification completed.
8	10+250	Major Bridge (Stilt)	LHS	20 x 25	1 x 16	RCC	RCC	Open	POT/PTFE	New Construction - PSC Girder 5 no. for each span. The structure is in sound condition. Expansion joints, crash barrier and slope protection are in good condition. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier.
			RHS	20 x 25	1 x 16	RCC	RCC	Open		
9	11+580	VUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Electrification completed.
10	13+263	VUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition.

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
										Electrification completed.
11	14+578	Minor Bridge	LHS - MCW	2 x 6	1 x 14.5	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition. slope protection is not done. Drainage spouts Cleaning required. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier. A2 side shoulder and slope protection erosion take place on RHS.
			LHS - SR	2 x 6	1 x 11	RCC	RCC	Raft		
			RHS - MCW	2 x 6	1 x 14.5	RCC	RCC	Raft		
			RHS - SR	2 x 6	1 x 11	RCC	RCC	Raft		
12	17+100	LVUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Electrification completed.
13	17+955	Minor Bridge	LHS - MCW	2 x 24.475	1 x 14.5	RCC	RCC	Open	POT/PTFE	New Construction (Staggered) - PSC Girder 4 no. for each span. The structure is in sound condition. Expansion joint, crash barrier and slope protection is in good condition. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier. On RHS A1 side slope protection is not done.
			LHS - SR	2 x 24.475	1 x 11	RCC	RCC	Open		
			RHS - MCW	2 x 24.475	1 x 14.5	RCC	RCC	Open		
			RHS - SR	2 x 24.475	1 x 11	RCC	RCC	Open		
14	18+855	Minor Bridge	LHS - MCW	2 x 3.75	1 x 14.5	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition. slope protection is in good condition. Vegetation observed in water way. A2
			LHS - SR	2 x 3.75	1 x 11	RCC	RCC	Raft		
			RHS - MCW	2 x 3.75	1 x 14.5	RCC	RCC	Raft		

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
			RHS - SR	2 x 3.75	1 x 11	RCC	RCC	Raft		side RCC drain Provided on both side. On LHS and RHS A1 side slope protection is not done.
15	19+140	VUP (Skew)	Both	2x30	2x14.5	RCC	RCC	Open	POT/PTFE	PSC Girder 7no.for each span. The structure is in sound condition. Electrification completed. Expansion joint, crash barrier is in good condition. Drainage spouts are cleaned.
16	20+200	Major Bridge	LHS-MCW	3 x 26	1 x 14	RCC	RCC	Open	POT/PTFE	New Construction - PSC Girder 5 no. for each span for Main Carriageway and PSC Girder 4 no. for each span for Service Road. The structure is in sound condition. Expansion joint, crash barriers and slope protection is in good condition. On RHS Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier.
			LHS - SR	3 x 26	1 x 11	RCC	RCC	Open		
			RHS-MCW	3 x 26	1 x 14	RCC	RCC	Open		
			RHS - SR	3 x 26	1 x 11	RCC	RCC	Open		
17	24+600	RUB	LHS - SR	RUB	1 x 9.8	12.5	9.8	RCC	NA	Box Type - New Structure is in sound condition. Electrification completed
			LHS-MCW	RUB	1 x 9.8	12.5	9.8	RCC		Box Type - New Structure is in sound condition. Electrification completed
			LHS-MCW	RUB	1 x 7.5	12	7.5	RCC		Retained - Girder 4 no. for each span. Structure is in

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
			RHS - MCW	RUB	1 x 7.5	12	7.5	RCC		sound condition. Both side slope protection is in good condition on both end.
			RHS - MCW	RUB	1 x 9.8	12.5	9.8	RCC		Box Type - New Structure is in sound condition. Electrification completed
			RHS - SR	RUB	1 x 9.8	12.5	9.8	RCC		Box Type - New Structure is in sound condition. Electrification completed
18	25+460	Minor Bridge	LHS-MCW	2 x 4.5	1 x 14.5	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition. Footpath, all side RCC Crash Barrier. Vegetation is observed in water way. Slope protection is not done.
			LHS - SR	2 x 4.5	1 x 11	RCC	RCC	Raft		
			RHS - MCW	2 x 4.5	1 x 14.5	RCC	RCC	Raft		
			RHS - SR	2 x 4.5	1 x 11	RCC	RCC	Raft		
19	25+706	VUP	Both	1x25	2x14.5	RCC	RCC	Open	NA	PSC Girder 5 no. for each span. The structure is in sound condition. Electrification completed. Expansion joint, RCC Crash barrier is in good condition. Drainage spouts cleaning required.
20	27+560	Minor Bridge	LHS-MCW	2 x 4.5	1 x 14.5	RCC	RCC	Raft	NA	New Construction Box type - Structure is in sound condition. Slope protection is not done. RCC Crash barrier is in good condition. On RHS vegetation observed in waterway.
			LHS - SR	2 x 4.5	1 x 11	RCC	RCC	Raft		
			RHS - MCW	2 x 4.5	1 x 14.5	RCC	RCC	Raft		
			RHS - SR	2 x 4.5	1 x 11	RCC	RCC	Raft		
21	27+630	VUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
										sound condition. Electrification completed
22	28+090	Minor Bridge	RHS - MCW	2 x 12.7	1 x 14	RCC	RCC	Open	NA	New Construction- RCC Deck Slab. The structure is in sound condition. RCC Crash barrier is in good condition. Drainage spouts are cleaned. Soil Material is dumped on Service Road footpath.
			RHS - SR	2 x 12.7	1 x 11	RCC	RCC	Open		
			LHS-MCW	2 x 12.7	1 x 11.5	RCC	RCC	Open		Retained Bridge - RCC Deck Slab. The structure is in sound condition. RCC Crash barrier is in good. Drainage spouts are cleaned.
			LHS - SR	2 x 12.7	1 x 11	RCC	RCC	Open		New Construction- RCC Deck Slab. The structure is in sound condition. RCC Crash barrier is in good. Drainage spouts are cleaned.
23	30+409	VUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Electrification completed
24	30+900	Minor Bridge	LHS-MCW	4 x 2	1 x 14	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition.
			LHS - SR	4 x 2	1 x 11	RCC	RCC	Raft		New Construction - Box type - Structure is in sound condition. RCC Crash barrier is in good.
			RHS - MCW	4 x 2	1 x 12	RCC	RCC	Raft		Retained - Box type - Structure is in sound condition.

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
			RHS - SR	4 x 2	1 x 11	RCC	RCC	Raft		New Construction - Box type - Structure is in sound condition. RCC Crash barrier is in good.
25	32+815	Minor Bridge	LHS-MCW	2 x 11.591	1 x 14.5	RCC	RCC	Open	NA	New Construction - RCC Deck Slab - Structure is in sound condition. Footpath, all side RCC Crash Barrier. Vegetation is observed in water way. Slope protection damaged on RHS. Soil debris are observed in span P1A2.
			LHS - SR	2 x 11.591	1 x 11	RCC	RCC	Open		
			RHS-MCW	2 x 11.591	1 x 14.5	RCC	RCC	Open		
			RHS - SR	2 x 11.591	1 x 11	RCC	RCC	Open		
26	33+208	VUP	Both	2x15	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Electrification completed
27	36+200	Minor Bridge	LHS-MCW	3 x 19	1 x 14.5	RCC	RCC	Open	POT/PTFE	New Construction (Staggered)- PSC Girder 5 no. for each span for Main Carriageway and PSC Girder 4 no. for each span for Service Road. The structure is in sound condition. Expansion joints, crash barrier and slope protection is in good condition. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier.
			LHS - SR	3 x 19	1 x 11	RCC	RCC	Open		
			RHS - MCW	3 x 19	1 x 14.5	RCC	RCC	Open		
			RHS - SR	3 x 19	1 x 11	RCC	RCC	Open		
28	39+645	Minor Bridge	RHS - MCW	2 x 3	1 x 14	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition. A2 side
			RHS - SR	2 x 3	1 x 11	RCC	RCC	Raft		

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
										approaches work balance due to LA issue. Slope protection not done
			LHS - MCW	2 x 3	1 x 12	RCC	RCC	Raft		Retained-Box type - Structure is in sound condition.
			LHS - SR	2 x 3	1 x 11	RCC	RCC	Raft		New Construction - Box type - Structure is in sound condition. The footpath and RCC Crash Barrier are in good condition. Both end approach work balance due to LA.
29	40+108	VUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Slab Completed on LHS side. On RHS A2 Wall is completed. A1 side balance due to LA issue.
30	41+725	Minor Bridge	LHS - MCW	2 x 21.95	1 x 14	RCC	RCC	Open	POT/PTFE	New Construction - PSC Girder 4 no. for each span. The structure is in sound condition. Expansion joints, crash barrier and slope protection are in good condition. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier.
			LHS - SR	2 x 21.95	1 x 11	RCC	RCC	Open		
			RHS - MCW	2 x 21.95	1 x 14	RCC	RCC	Open		
			RHS - SR	2 x 21.95	1 x 11	RCC	RCC	Open		
31	43+650	Minor Bridge	LHS-MCW	2 x 12.7	1 x 14	RCC	RCC	Open	NA	New Construction RCC Deck Slab- Structure is in sound condition. The crash barrier and slope protection is in good condition. At Slab joint
			LHS - SR	2 x 12.7	1 x 11	RCC	RCC	Open		
			RHS - MCW	2 x 12.7	1 x 14	RCC	RCC	Open		

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
			RHS - SR	2 x 12.7	1 x 11	RCC	RCC	Open		cracks are observed. Footpath, all side RCC Crash Barrier. Drainage spouts are choked. On RHS Service Road A2 side slope protection damaged.
32	44+327	Minor Bridge	LHS-MCW	1 x 9.816	1 x 14	RCC	RCC	Open	NA	New Construction - Box Type Structure is in sound condition. On LHS Service Road A1 side Slope protection is not done and Approach DBM and BC balance due to Landowner. Drainage spout cleaning required. Footpath, all side RCC Crash Barrier. At slab joint cracks are observed on RHS of Service Road. On LHS vegetation observed in waterway.
			LHS - SR	1 x 9.816	1 x 11	RCC	RCC	Open		
			RHS-MCW	1 x 9.816	1 x 14	RCC	RCC	Open		
			RHS - SR	1 x 9.816	1 x 11	RCC	RCC	Open		
33	44+736	VUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Electrification completed
34	45+675	Minor Bridge	LHS-MCW	2 x 3.5	1 x 14	RCC	RCC	Raft	NA	New Construction - Box Type. The structure is in sound condition. RCC Crash barrier and slope protection is in good condition. portions. On LHS and RHS vegetation observed in waterway and median portion also.
			LHS - SR	2 x 3.5	1 x 11	RCC	RCC	Raft		
			RHS - MCW	2 x 3.5	1 x 14	RCC	RCC	Raft		
			RHS - SR	2 x 3.5	1 x 11	RCC	RCC	Raft		
35	46+375	Minor	LHS-	1 x 26.95	1 x 14	RCC	RCC	Open	POT/PTFE	New Construction

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
		Bridge	MCW							(Staggered) - PSC Girder 5 no. for each span. The structure is in sound condition. Expansion joints, crash barrier and slope protection are in good condition. Drainage spouts are choked. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier. On RHS A1 side slope protection not done.
			LHS - SR	1 x 26.95	1 x 11	RCC	RCC	Open		
			RHS - MCW	1 x 26.95	1 x 14	RCC	RCC	Open		
			RHS - SR	1 x 26.95	1 x 11	RCC	RCC	Open		
36	46+535	Minor Bridge	LHS-MCW	2 x 26.475	1 x 14	RCC	RCC	Open	POT/PTFE	New Construction staggered type (COS) - PSC Girder 4 no. for each span. The structure is in sound condition. Expansion joints, crash barrier and slope protection are in good condition. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and all other side RCC Crash Barrier. On RHS A1 side slope protection not done.
			LHS - SR	2 x 26.475	1 x 11	RCC	RCC	Open		
			RHS - MCW	2 x 26.475	1 x 14	RCC	RCC	Open		
			RHS - SR	2 x 26.475	1 x 11	RCC	RCC	Open		
37	47+495 (Skew)	Minor Bridge	LHS-MCW	2 x 5	1 x 14	RCC	RCC	Raft	NA	New Construction - Box Type Skew Structure is in sound condition. All side RCC Crash Barrier. RHS A1 side Slop protection damage.
			LHS - SR	2 x 5	1 x 11	RCC	RCC	Raft		
			RHS-MCW	2 x 5	1 x 14	RCC	RCC	Raft		
			RHS - SR	2 x 5	1 x 11	RCC	RCC	Raft		
38	48+555	Minor	LHS-	2 x 5.5	1 x 14	RCC	RCC	Raft	NA	New Construction - Box Type

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
	(Skew)	Bridge	MCW							skew Structure is in sound condition. Slope protection. Required on LHS. Drainage spouts are cleaned. All sides RCC Crash Barrier. On LHS slope protection not done. Footpath cleaning is required.
			LHS - SR	2 x 5.5	1 x 11	RCC	RCC	Raft		
			RHS - MCW	2 x 5.5	1 x 14	RCC	RCC	Raft		
			RHS - SR	2 x 5.5	1 x 11	RCC	RCC	Raft		
39	49+145	Major Bridge	RHS - MCW	3 x 21.6	1 x 14	RCC	RCC	Pile	POT/PTFE	New Construction - RCC 4 no. of Girder for each span. The structure is in sound condition. Expansion joint, crash barrier and slope protection are good. Drainage spouts are cleaned. Both sides of the RCC Crash Barrier.
			RHS - SR	3 x 21.6	1 x 11	RCC	RCC	Pile		New Construction - RCC 4 no. of Girder for each span. Structure is in sound condition. Expansion joint, crash barrier is good. Footpath side RCC Pipe Railing and Inner side RCC Crash Barrier.
			LHS - MCW	3 x 21.6	1 x 10.9	RCC	RCC	Pile		Retained Bridge-RCC 4 no. of Girder for each span. Structure is in sound condition. Expansion joints, crash barrier and slope protection are good. Drainage spout cleaning required. On both sides, RCC Crash

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
										Barrier.
			LHS - MCW	3 x 21.6	1 x 10.5	RCC	RCC	Pile		New Construction - RCC 4 no. of Girder for each span. Structure is in sound condition. Expansion joints, crash barrier and slope protection are good. Drainage spouts are cleaned. Both sides of the RCC Crash Barrier.
			LHS - SR	3 x 21.6	1 x 11	RCC	RCC	Pile		New Construction - RCC 4 no. of Girder for each span. Structure is in sound condition. Expansion joints, crash barrier and slope protection are good. Footpath side RCC Pipe Railing and Inner side RCC Crash Barrier. Drainage spouts are cleaned.
40	50+520	Minor Bridge	LHS-MCW	1 x 11	1 x 14	RCC	RCC	Open	NA	Re-construction - Skew-RCC deck slab. The structure is in sound condition. Crash barriers and slope protection are good. All sides RCC Crash Barrier. At slab joint cracks are observed on RHS of Service Road.
			LHS - SR	1 x 11	1 x 11	RCC	RCC	Open		
			RHS - MCW	1 x 11	1 x 14	RCC	RCC	Open		
			RHS - SR	1 x 11	1 x 11	RCC	RCC	Open		
41	51+155	Minor Bridge	LHS-MCW	3 x 2.5	1 x 14	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition. Both side RCC Crash Barrier

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
			LHS - SR	3 x 2.5	1 x 11	RCC	RCC	Raft		New Construction - Box type - Structure is in sound condition. Footpath side RCC Crash Barrier and Metal Beam Crash Barrier balance. Slope protection not done.
			RHS - MCW	3 x 2.5	1 x 11	RCC	RCC	Raft		Retained - Box type - Structure is in sound condition. Vegetation needs to be cleaned. Both side RCC Crash Barrier
			RHS - SR	3 x 2.5	1 x 11	RCC	RCC	Raft		New Construction - Box type - Structure is in sound condition. Vegetation needs to be cleaned. On both side RCC Crash Barrier. Slope protection is not done.
42	52+185	Minor Bridge	LHS-MCW	4 x 2.5	1 x 14	RCC	RCC	Raft	NA	New Construction - Box type - Structure is in sound condition. Vegetation needs to be cleaned. Slope protection is not done. Footpath is filled with debris, cleaning required.
			LHS - SR	4 x 2.5	1 x 11	RCC	RCC	Raft		
			RHS - MCW	4 x 2.5	1 x 11	RCC	RCC	Raft		Retained - Box type - Structure is in sound condition. Vegetation needs to be cleaned.
			RHS - SR	4 x 2.5	1 x 11	RCC	RCC	Raft		New Construction - Box type - Structure is in sound condition. Vegetation needs to be cleaned. Slope

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
										protection is not done.
43	56+128	VUP	Both	1x25	2x14.5	RCC	RCC	Open	POT/PTFE	PSC Girder 5 no. for each span. The structure is in sound condition. Expansion Joints are in good condition. Both sides RCC Crash Barrier. Electrification completed. Drainage spouts are cleaned.
44	59+542	LVUP	Both	1x12	2x14.5	RCC	RCC	Open	NA	Box Type - Structure is in sound condition. Both sides of the RCC Crash Barrier. Electrification completed.
45	60+400	Major Bridge	LHS - MCW	8 x 25	1 x 14	RCC	RCC	Open	POT/PTFE	New Construction PSC Girder 5 no. for each span. - Structure is in sound condition. Expansion joint, crash barrier and slope protection are good. Drainage spouts are cleaned. Both side RCC Crash Barrier.
			LHS - SR	8 x 25	1 x 11	RCC	RCC	Open		New Construction PSC Girder 4 no. for each span. - Structure is in sound condition. Expansion joint, crash barrier and slope protection are good. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and Inner side RCC Crash Barrier.

Sr. No.	Chainage (km)	Type of Structure	Side	Span Arrangement (m)	Width (m)	Type of Sub-structure	Type of Super-structure	Type of Foundation	Type of Bearings	Remarks
			RHS - MCW	8 x 25	1 x 11	RCC	RCC	Open		Retained Bridge - PSC Girder 4 no. for each span. Structure is in sound condition. Expansion joint and Crash Barrier are good. Drainage spouts are cleaned. Both side RCC Crash Barrier.
			RHS - MCW	8 x 25	1 x 10.5	RCC	RCC	Open		New Construction PSC Girder 4 no. for each span. - Structure is in sound condition. Expansion joint, crash barrier and slope protection are good. Drainage spouts are cleaned. Both side RCC Crash Barrier.
			RHS - SR	8 x 25	1 x 11	RCC	RCC	Open		New Construction PSC Girder 4 no. for each span. - Structure is in sound condition. Expansion joint, crash barrier and slope protection are good. Drainage spouts are cleaned. Footpath side RCC Pipe Railing and Inner side RCC Crash Barrier.

Figure 3-6 Photographs of Road Under Bridge (RUB)

View of Existing RUB at km. 24+600

View of New RUB at km. 24+600 (LHS)

View of New RUB at km. 24+600 (RHS)

View of underside of the Slab of New RUB at km. 24+600

Figure 3-7 Photographs of Major Bridges

View of Major Bridge at km. 8+300 (LHS)

View of Major Bridge at km. 8+300 (RHS)

Major Bridge Expansion Joint at km. 8+300 (RHS Deck MCW)

Major Bridge Girder and Abutment at km. 8+800

View Major Bridge at km. 8+800 (LHS)

Major Bridge Crash Barrier at km. 8+800

View of Major Bridge at km. 10+250 (LHS)

Major Bridge Expansion Joint at km. 10+250

View of Major Bridge at km. 10+250 (RHS)

View of Major Bridge at km. 20+200 (RHS)

View of Major Bridge at km. 20+200 (LHS)

Major Bridge Drainage Spout at km. 20+200

View of Pier and Girder of Major Bridge at km. 20+200

View of Major Bridge at km. 49+145 (LHS)

View of Pier and Girder of Major Bridge at km. 49+145

Major Bridge - Drainage Spout at km. 49+145

View of Major Bridge at km. 60+400 (LHS)

View of Major Bridge at km. 60+400 (RHS)

Major Bridge Railing and MBCB at km. 60+400 (LHS)

Major Bridge Expansion Joint at km. 60+400 (LHS Deck MCW)

Figure 3-8 Photographs of Minor Bridges

Minor Bridge at km. 4+215

Minor Bridge at km. 6+600

Minor Bridge at km. 14+578

Minor Bridge at km. 17+955

Minor Bridge at km. 18+855

Minor Bridge at km. 25+460

Minor Bridge at km. 27+560

Minor Bridge at km. 28+090

Minor Bridge at km. 30+900

Minor Bridge at km. 32+815

Minor Bridge at km. 36+200

Minor Bridge at km. 39+645

Minor Bridge at km. 41+725

Minor Bridge at km. 43+650

Minor Bridge at km. 44+327

Minor Bridge at km. 45+675

Minor Bridge at km. 46+375

Minor Bridge at km. 46+535

Minor Bridge at km. 47+495

Minor Bridge at km. 48+555

Minor Bridge at km. 50+520

Minor Bridge at km. 51+155

Minor Bridge at km. 52+185

Figure 3-9 Photographs of Underpasses

LVUP at km. 4+683 (LHS)

LVUP at km. 4+683 (RHS)

VUP at km. 7+514 (LHS)

VUP at km. 7+514 (RHS)

LUVP at km. 9+600 (LHS)

LVUP at km. 9+600 (RHS)

VUP at km. 11+580 (LHS)

VUP at km. 11+580 (RHS)

VUP at km. 13+263 (RE Wall - LHS)

VUP at km. 13+263 (RHS)

VUP at km. 19+140 (RHS)

Girder arrangement of VUP at km. 19+140

LVUP at km. 17+100 (LHS)

View of LVUP Slab at km. 17+100

VUP at km. 25+706 (LHS)

VUP at km. 25+706 (RE wall)

VUP at km. 27+630 (RHS)

VUP at km. 27+630 (View of Slab)

VUP at km. 30+409 (LHS)

of VUP at km. 30+409 (RHS)

VUP at km. 33+208 (LHS)

VUP at km. 33+208 (RHS)

VUP at km. 33+208 (RE Wall - RHS)

VUP at km. 40+108 (Partially completed)

VUP at km. 44+736 (LHS)

VUP at km. 44+736 (RHS)

VUP at km. 44+736 (RE Wall)

VUP at km. 56+128 (LHS)

VUP at km. 56+128 (RHS)

VUP at km. 56+128 (View of Girder and Abutment)

LVUP at km. 59+542 (LHS)

LVUP at km. 59+542 (RHS)

3.7 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 11 No. of pipe culverts, 104 No. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 4.0 m from bed level. During the condition survey of structures, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to six lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface

concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching has been damaged which required to be addressed under routine repair work by the Concessionaire.

Figure 3-10 Photographs of Box Culverts

Box Culvert at km. 0+265

Box Culvert at km. 2+711

Box Culvert at km. 3+070

Box Culvert at km. 5+020

Box Culvert at km. 9+348

Box Culvert at km. 11+055

Box Culvert at km. 11+770

Box Culvert at km. 15+300

Box Culvert at km. 16+422

Box Culvert at km. 17+050

Box Culvert at km. 19+854

Box Culvert at km. 22+465

Box Culvert at km. 30+420

Box Culvert at km. 33+918

Box Culvert at km. 35+760

Box Culvert at km. 40+887

Box Culvert at km. 45+197

Box Culvert at km. 50+074

Box Culvert at km. 54+177

Box Culvert at km. 57+030

Box Culvert at km. 60+128

Box Culvert at km. 60+730

Box Culvert at km. 26+311

Box Culvert at km. 18+387

Figure 3-11 Photographs of Pipe Culverts

Pipe Culvert at km. 23+952

Pipe Culvert at km. 26+120

Pipe Culvert at km. 26+195

Pipe Culvert at km. 30+258

Pipe Culvert at km. 36+720

Pipe Culvert at km. 52+265

Pipe Culvert at km. 60+020

3.8 Drainage

RCC cover drains are constructed at built-up areas and at locations where service roads are provided. RCC drain and PCC V/U type lined drain is constructed in between main carriageway and service road. Longitudinal and transverse drain is provided at the median. The photographs taken during site visit is presented as below.

Figure 3-12 Photographs of Drain

RCC Covered Drain at km. 51+500

Open Lined Drain at km. 14+000

RCC Covered Drain at km. 18+500

U-Shape Drain at km. 26+400

Median Chute Drain at km. 52+300

RCC Covered Drain at km. 4+000

3.9 Slope Protection

Slope protection is found on Project Road at required locations. A few of the slope protection is damaged which will be rectified by the Concessionaire. The photographs taken during site visit is presented as below.

Figure 3-13 Photographs of Slope Protection

km. 46+375 (RHS-MNB)

km. 46+535 (LHS-MNB)

km. 46+535 (RHS-MNB)

km. 48+555 (RHS-MNB)

3.10 Road Furniture

The Concessionaire has provided road furniture along Project Road as per the standards and specifications mentioned in Schedule-C.

Pavement Marking

Pavement marking for the Project Road is done as per the design standards. Some of the photographs of road marking are presented below.

Figure 3-14 Photographs of Pavement Marking

Road Marking at km. 49+145

Lane Marking at km. 48+200 (RHS)

Road Marking at Toll Plaza

Pedestrian crossing marking at km. 9+600 (RHS - Slip Lane)

Road Studs

Cat's eye / road studs for the Project Road are done as per the design standards. Cat's eye has been fixed at junction and zebra crossings. The road studs are found in good condition. Some of the photographs of cat's eye / road studs are presented below.

Figure 3-15 Photographs of Road Studs

km. 14+200 (LHS)

km. 52+300 (RHS)

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, and kerb mounted signs etc. along the entire Project Road. Kilometre stones, vertical post of sign boards, chevron boards are properly placed. Some of the photographs of sign boards are presented below.

Figure 3-16 Photographs of Traffic Signages

Cantilever Sign Board at km. 32+400

Overhead Gantry Sign Board at km. 18+250

Chevron Sign Board at km. 16+350

Kilometer Stone at km. 3+000

Speed Limit Sign Board at km. 55+800

Informatory Sign Board at km. 37+700

Highway Lighting

Highway lighting is provided at underpasses, toll plaza, RUB, and built-up locations. High mast lighting is provided at toll plaza and Underpass location. Highway lighting is also provided at approaches of underpass. Some of the photographs of highway lighting are presented below.

Figure 3-17 Photographs of Street Light

Street Lighting at km. 5+500

High Mast at km. 0+050

High Mast light at Toll Plaza

Street Lighting at built-up location

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, built-up locations, locations of high embankment and sharp curves. RCC crash barrier is provided on the approaches of underpasses and at structure locations. Some of the photographs of crash barriers are presented in below table.

Figure 3-18 Photographs of MBCB / Crash Barrier

RCC Crash Barrier at km. 60+400 (MJB)

MBCB at km. 21+500

MBCB at km. 38+900

MBCB at km. 52+185 (MNB)

Delineators

The traffic delineators are provided on the Project Road. Few of the photographs captured during site visit are provided below.

Figure 3-19 Photographs of Traffic Delineators

Traffic Delineator at km. 14+100

Traffic Delineator at km. 26+400

Traffic Delineator at km. 52+300

Pedestrian Guard Rail

The pedestrian guard rails are not provided in between the main carriageway and service road.

LED Traffic Blinkers

LED traffic blinkers are provided on the entire Project Road near pedestrian crossings, crossroads and median openings. Few photographs of LED traffic blinker captured during site visit are presented below.

Solar Blinker at km. 39+400

Solar Blinker at km.53+600

Solar Blinker at km.40+700

Road Land Boundary

Road land boundary pillars are not found / available on Project Road.

Emergency Call Box (ECB)

Emergency call boxes are provided on the Project Road as per the Schedules. Few photographs are provided below:

ECB at km. 28+200

ECB at km. 2+000

ECB at km. 50+000

3.11 Avenue Plantation and Median Plantation

Avenue plantation is not done due to ROW constraint and median plantation are done along the project length as per IRC specification except at built-up Locations. The photographs taken during site visit is presented as below.

Figure 3-20 Photographs of Median Plantation

Median Plantation at km. 49+900

Median Plantation at km. 3+700

3.12 Toll Plaza

As per the Concession Agreement, there is one no. of toll plaza at km. 37+350 (Gadanki) with the following infrastructure.

Figure 3-21 Photographs of Toll Plaza

Toll Plaza Near Gadanki at km. 37+350

Toll Plaza Near Gadanki at km. 37+350

Toll Booth at Toll Plaza

WIM Bridge at Toll Lane

3.13 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.13.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

3.13.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data at Km 37+350 is in Tunnel.

Lane Controller in Booth at TP

3.13.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVC Height Sensor

3.13.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition. The Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. Torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at TP

3.13.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

Lane Traffic Light

3.13.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

3.13.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

3.13.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at TP

3.13.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and types of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras is provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.14 Plaza Equipment

3.14.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

Server Room

3.14.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.14.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.15 Truck Lay-bye

The Concessionaire has provided truck lay-bye at the following locations.

Table 3-3 Details of Truck Lay-bye

Sr. No.	Location (km)	Side
1	5+550	Left
2	49+830	Left
3	5+550	Right
4	51+375	Right

Figure 3-22 Photographs of Truck Lay-bye

Truck Lay-Bye at km. 49+830

Truck Lay-Bye at km. 5+550

3.16 Administrative, Operation and Maintenance Base Camp

Traffic Aid Post and Medical Aid Post are in the scope of Concessionaire.

Toll Plaza Administrative Building at km. 37+350

Toll Plaza Administrative Building at km. 37+750

Traffic and Medical Aid Post

Meteorological System

Patrolling Vehicle at Toll Plaza

3.17 Toilet Block

There are 04 Nos. toilet blocks at truck lay bye locations and the same are being maintained by the Concessionaire.

Table 3-4 Details of Toilet Block

Sr. No.	Design Chainage (km)	Side
1	5+250	Left
2	51+350	Left
3	5+515	Right
4	51+493	Right

Figure 3-23 Photographs of Toilet Block

3.18 Bus Bays and Passenger Shelters

There are 26 Nos. of bus bays / passenger shelters along Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-24 Photographs of Bus Bays / Passenger Shelters

Passenger Shelter at km. 56+200

Bus Bay and Shelter at km. 7+500

Passenger Shelter at km. 35+400

Passenger Shelter at km. 12+700

3.19 Balance Work Status

The project has received Provisional Completion Certificate on 10th May 2021 by completing the project length of 56.304 kms. All the works completed in available land and the balance work in encumbered land is de-scoped by the Authority as mentioned in the Technical Schedules of Concession Agreement. There is no balance work to be executed as per CA. The Project Director, PIU Tirupati has recommended the proposal for issuance of Completion Certificate to the Concessionaire for a completed length of 60.538 kms with effect from 08.06.2023 to the RO NHAI, Vijayawada vide their letter no. 484 dated 19th June 2023.

3.20 Operation and Maintenance

3.20.1 O&M Contract

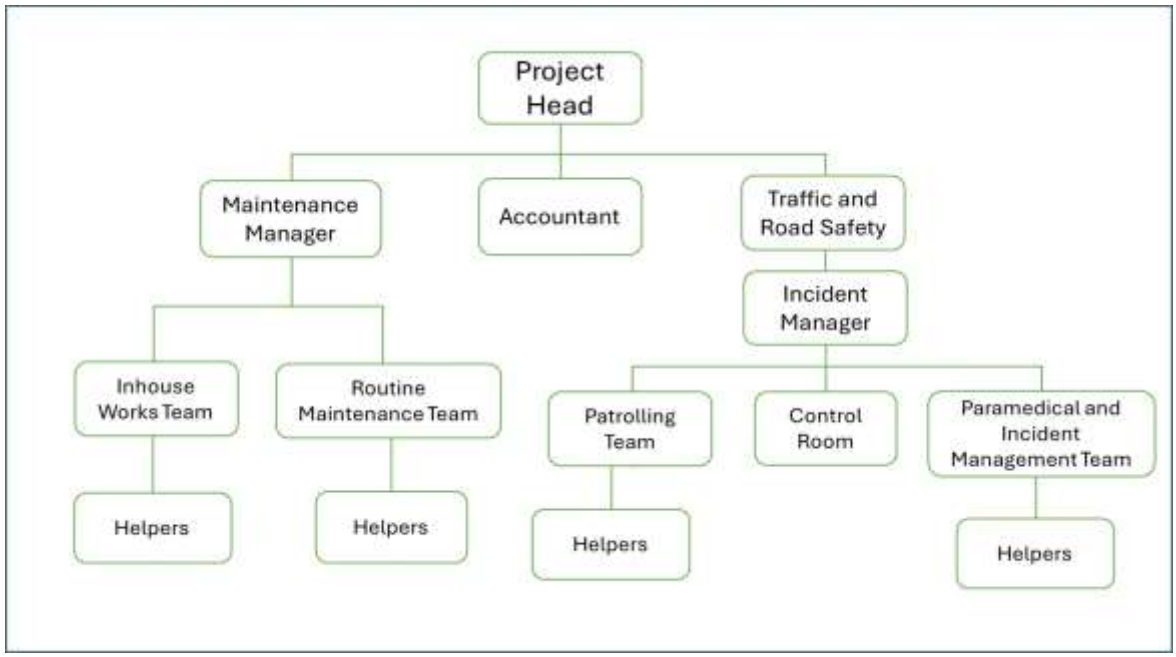
As per Clause 17.1.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, or otherwise make improvements to the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems, More Specifically.

Toll Gazette notification completed, and e tenders were conducted by NHAI. The NHAI selected M/s Sahakar Global Pvt. Ltd. For operating the toll collection and toll collection started from 26.06.2021 - 8.00 am. The Concessionaire has been carrying out the activities related to the operation and maintenance of the Project Road. The Operation Cost is presented in the subsequent chapter.

3.20.2 Organization Chart

The Concessionaire has provided the Organization Chart at site for Operation and maintenance. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

Organization Chart



3.20.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. The Concessionaire has provided the expenses incurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

3.20.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways-Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the entire length of the Project Road is maintained by Concessionaire.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire received the Completion Certificate on 8th June 2023.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 17.5 years from the Appointed Date including construction period of 30 months.

4.2 Axle Load and VDF

The Concessionaire conducted the axle load survey on Project Road at Toll Plaza in July 2021. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Sr. No.	Vehicle Type	Direction	
		Chittoor - Mallavaram	Mallavaram -Chittoor
1	BUS	0.975	0.802
2	LCV	1.087	0.592
3	2-Axle	3.066	3.151
4	3-Axle	5.078	5.772
5	MAV	8.799	11.614

4.3 Design traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the traffic data provided by the Concessionaire has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire, were used.

Table 4-2 MSA Calculation

MSA Calculation KTIPL- LHS			
Year	MSA	Cumulative MSA	Remarks
FY 26	2.93	2.93	
FY 27	3.08	6.01	
FY 28	3.23	9.23	
FY 29	3.39	12.63	MM-I
FY 30	3.56	16.19	
FY 31	3.74	19.92	
FY 32	3.93	23.85	
FY 33	4.12	27.97	
FY 34	4.33	32.30	
FY 35	4.54	36.84	
FY 36	4.77	41.62	MM-II

MSA Calculation KTIPL- LHS			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY 37	5.01	46.63	End of concession period

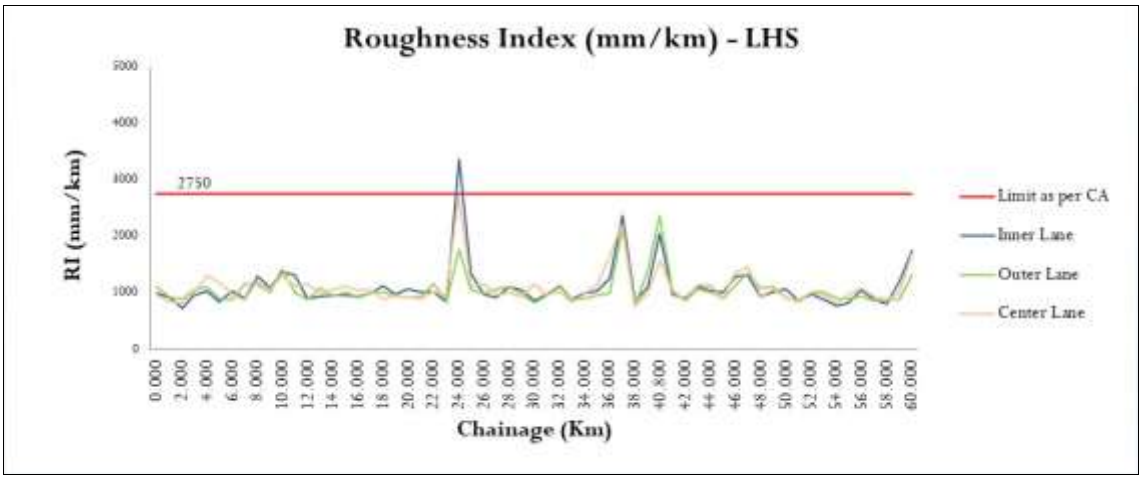
MSA Calculation KTIPL- RHS			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY 26	3.56	3.56	
FY 27	3.73	7.29	
FY 28	3.92	11.21	
FY 29	4.12	15.33	MM-I
FY 30	4.32	19.65	
FY 31	4.54	24.19	
FY 32	4.77	28.96	
FY 33	5.00	33.96	
FY 34	5.25	39.21	
FY 35	5.52	44.73	
FY 36	5.79	50.52	MM-II
FY 37	6.08	56.61	End of concession period

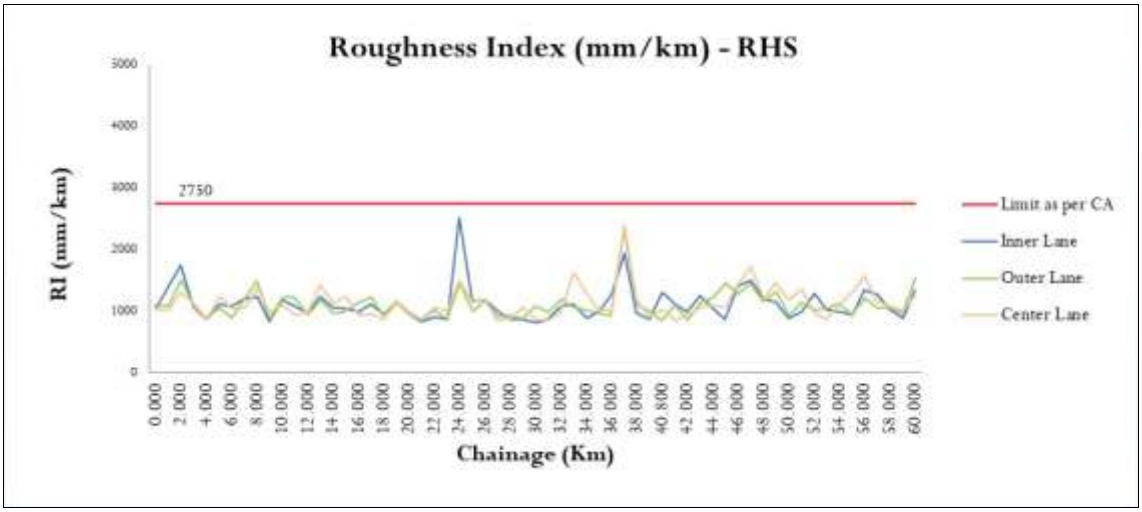
4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has provided NSV survey data conducted in November 2024. The NSV data is used to assess the riding quality and pavement condition of Project Road. The summary of classification of pavement as per CA is given in the table below:

Roughness Summary as per Schedule K of CA							
Condition	**Limit as per Schedule K of CA (mm/km)**	**Length (km)-LHS**			**Length (km)-RHS**		
		Outer Lane	**Middle Lane**	**Inner Lane**	**Outer Lane**	**Middle Lane**	**Inner Lane**
Good	<2750	100%	100%	98.32%	100%	100%	100%
Poor	>2750	0.0	0.0	1.68%	0.0	0.0	0.0

From the above table it is observed that the overall condition of pavement is good. At a few stretches the condition is found to be fair. Graphical representation of the results is presented below:





4.5 Structural Investigations

An evaluation of existing pavements using Falling Weight Deflectometer (FWD) survey was carried out by concessionaire in August 2024. Summary of FWD Survey report is presented in the table below:

Residual life (MSA)	Length (km)	
	LHS	RHS
<20	9.00	8.02
20-50	32.708	39.838
>50	16.79	10.64

The strengthening / overlay of pavement for project stretch are derived from 15th percentile of corrected E moduli of existing pavement, existing crust thickness etc. The combination of existing pavement and overlay will be analyzed as a four-layer system to ensure that fatigue and rutting criteria are satisfied for the calculated design traffic in terms of MSA. IITPAVE program is used to compute strain value at bottom of bituminous layer and top of subgrade in order to calculate design life of the proposed overlay. Poisson's ratio values used in overlay analysis from top to bottom of existing pavement layers are 0.5, 0.4 and 0.4 for existing bituminous, existing granular and existing subgrade layers respectively. Elastic modulus of 3000 MPa (VG-40) is used for the new bituminous layer.

4.6 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-K of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-K requirement to keep the road in serviceable condition. Only improvement in riding quality is expected if the roughness value exceeds 2750 mm/km.

The Provisional COD for the project was achieved on 10th May 2021. Hence, the major maintenance cycle is projected accordingly.

The table below shows the major/ periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-3 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2029	35 mm BC overlay for 60%, 50 mm DBM in 2.5% and Micro-surfacing in 40% length	Micro-surfacing for 100% length
2	FY 2036	35 mm BC overlay for 40%, 50mm DBM in 2.5% and Micro-surfacing in 60% length	Micro-surfacing for 100% length

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS system
V. Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1 Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

a) **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

b) **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 26 and FY 27. Average 10 years of price of bitumen are considered for unit rates calculation for FY 28 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 26 and FY 27 (Rs. / MT)	Rate for FY 28 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c) **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d) **Cement:** Market rates are considered from the nearest local market.

e) **Steel :** Rate of steel is taken from SAIL.

f) **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

2 Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (FY 27 onwards)
1	Dense Bituminous Macadam	Cum	8,197
2	Bituminous Concrete	Cum	9,246
3	Milling	Sqm	75
4	Micro-surfacing	Sqm	165
5	Kerb Re-laying	Rmt	270
6	Road Marking	Sqm	515
7	Road Studs	Nos.	175

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, the balance work is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of labour cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The O&M estimate has been divided into following major heads:

1 Salary and Welfare Expenses

2 Toll Security Services Outsourced

3 Incident Management & Emergency Services Outsourced

4 Electricity and Diesel Charges

5 ATMS/HTMS/System Expenses

6 Office Operating Expenses

7 Vehicle Running Expenses
8 Professional Fees/Expense
9 Community Development
10 Communication Expenses
11 Conveyance Expenses
12 Insurance Expense
13 IE Fees
14 Routine Maintenance Cost (Project)
15 Horticulture & ROW Maintenance
16 Contingency

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 14 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (Rs.)
1	Salary and Welfare Expenses	1,10,16,568
2	Toll Security Services	10,58,007
3	Incident Management & Emergency Services	1,78,42,136
4	Electricity and Diesel Charges	72,35,271
5	ATMS/HTMS/System Expenses	79,98,000
6	Office Operating Expenses	5,47,800
7	Vehicle Running Expenses	50,36,512
8	Professional Fees/Expense	33,88,000
9	Community Development	5,50,000
10	Communication Expenses	1,32,000
11	Conveyance Expenses	3,96,000
12	Insurance Expense	1,49,29,200
13	IE Fees	66,00,000
14	Routine Maintenance Cost (Project Road)	4,44,46,302
15	Horticulture & ROW Maintenance	1,81,91,693
16	Contingency (3%)	23,01,885
	Total Cost (Rs.)	**14,16,69,374**
	Total Cost (Cr.)	**14.17**
	Per km Cost (Lakhs)	23.18

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2029	86.56	
2	FY 2036	78.60	
Total Cost (Cr.)		**165.16**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS system is considered. The same is provided as below.

Sr. No.	Year	ATMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	3.96	
2	FY 2034	3.96	
Total Cost (Cr.)		**7.92**	

5.7 Escalation Assumption

The following escalation is considered basis discussions with Client and our internal estimates.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.23%	**2043**	3.99%
2028	4.92%	**2044**	3.99%
2029	4.63%	**2045**	3.98%
2030	4.33%	**2046**	3.98%
2031	4.12%	**2047**	3.96%
2032	4.07%	**2048**	3.96%
2033	4.06%	**2049**	3.95%
2034	4.00%	**2050**	3.95%
2035	4.01%	**2051**	3.95%
2036	3.99%	**2052**	3.95%
2037	4.00%	**2053**	3.95%
2038	4.02%	**2054**	3.95%
2039	4.00%	**2055**	3.95%
2040	3.98%	**2056**	3.95%
2041	4.00%		

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
1	Routine O&M Cost											
1.01	Salary and Welfare Expense	1.10	1.16	1.22	1.27	1.33	1.38	1.44	1.50	1.56	1.62	1.68
1.02	Tolling Operations Services	-	-	-	-	-	-	-	-	-	-	-
1.03	Toll Security Services	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.16	0.16
1.04	Incident Management Services	1.78	1.88	1.97	2.06	2.15	2.24	2.33	2.42	2.52	2.62	2.73
1.05	Electricity and Diesel Charges	0.72	0.76	0.80	0.84	0.87	0.91	0.94	0.98	1.02	1.06	1.11
1.06	TMS/HTMS/System Expenses	0.80	0.84	0.88	0.92	0.96	1.00	1.04	1.09	1.13	1.18	1.22
1.07	Office Operating Expenses	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08
1.08	Vehicle Running Expenses	0.50	0.53	0.56	0.58	0.61	0.63	0.66	0.68	0.71	0.74	0.77
1.09	Professional Fees Expense	0.34	0.36	0.37	0.39	0.41	0.43	0.44	0.46	0.48	0.50	0.52
1.10	Community Development	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08
1.11	Communication Expenses	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1.12	Conveyance Expenses	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
1.13	Insurance Expense	1.49	1.57	1.65	1.72	1.80	1.87	1.95	2.03	2.11	2.19	2.28
1.14	IE Fees	0.66	0.69	0.73	0.76	0.80	0.83	0.86	0.90	0.93	0.97	1.01
1.15	Routine Maintenance Cost	4.44	4.68	4.91	5.13	5.36	5.58	5.80	6.04	6.28	6.53	6.79
1.16	Horticulture & ROW Maintenance	1.82	1.91	2.01	2.10	2.19	2.28	2.38	2.47	2.57	2.67	2.78
1.17	Miscellaneous and Contingency	0.23	0.24	0.25	0.27	0.28	0.29	0.30	0.31	0.33	0.34	0.35
	Subtotal of O&M Cost	14.17	14.91	15.64	16.36	17.07	17.78	18.50	19.25	20.02	20.83	21.66
2	Major Maintenance Cost	-	-	-	97.23	-	-	-	-	-	-	113.70
3	Periodic Cost of TMS Replacement	-	4.17	-	-	-	-	-	-	5.60	-	-
	Total Cost (Cr.)	**14.17**	**19.08**	**15.64**	**113.60**	**17.07**	**17.78**	**18.50**	**19.25**	**25.63**	**20.83**	**135.36**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**4,44,46,302**
(Inclusive of GST)	**= 7.27 lakhs per km**

CONVERSION FACTORS										
National Highways / State Highways										
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders										
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)										
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Hilly**	**Project Length (km)**		**Per Year Project Maintenance Cost (Cr.)**	
				More than 4500 CVD	**More than 4500 CVD**	**More than 4500 CVD**				
				2,61,488	**2,91,968**	**3,04,714**				
							Normal	**Urban**	**Normal**	**Urban**
1	Six lanes with divided carriageway	without Paved shoulder	2.09	5,46,509	6,10,213	6,36,851	-	-	-	-
		with Paved shoulder	2.26	5,90,962	6,59,848	6,88,653	-	-	-	-
2	Six lanes with divided carriageway and service lane on either side	without Paved shoulder	2.56	6,69,408	7,47,438	7,80,067	-	-	-	-
		with Paved shoulder	2.76	7,21,706	8,05,832	8,41,010	57.21	3.92	4,12,86,635	31,59,667
						TOTAL	**61.128**		**4,44,46,302**	

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Potholes repair (50 mm deep)	100 % Pothole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			9100
	Cost in Rupees			45,500
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			364
	Cost in Rupees			36,400
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			166
	Cost in Rupees			41,426
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.50%
	Area (sqm)			187.5
	Rs/m^2			158
	Cost in Rupees			29,595
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			364
	Cost in Rupees			27,300

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	v) Road marking	14%	Once in 7th year & @ Repaired location	7875
	SUB TOTAL			**1,88,096**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6182
	ii) Jungle Clearance	100%	Twice in a Year	2029
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1087
	SUB TOTAL			**9,298**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	2738
	ii) Repair of floors	100%	Once in a Year	4955
	iii) Repair of parapets	100%	As & when required	2065
	SUB TOTAL			**9,758**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,224
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,224**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2415

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	ii) Maintenance of gang hut store, sheds, animal & debris removal		Once in a Year	3622
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometre stone etc.		Once in a Year	3622
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7245
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1207
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**18,111**
	GRAND TOTAL (Normal)			**2,61,488**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Centre Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	1259
	ii)Repairs to footpath	100%	As & when required	4830
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4830
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7486
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9660
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2415
	SUB TOTAL			**30,480**
	GRAND TOTAL (Urban)			**2,91,968**

ANNEXURE II - MAJOR MAINTENANCE COST

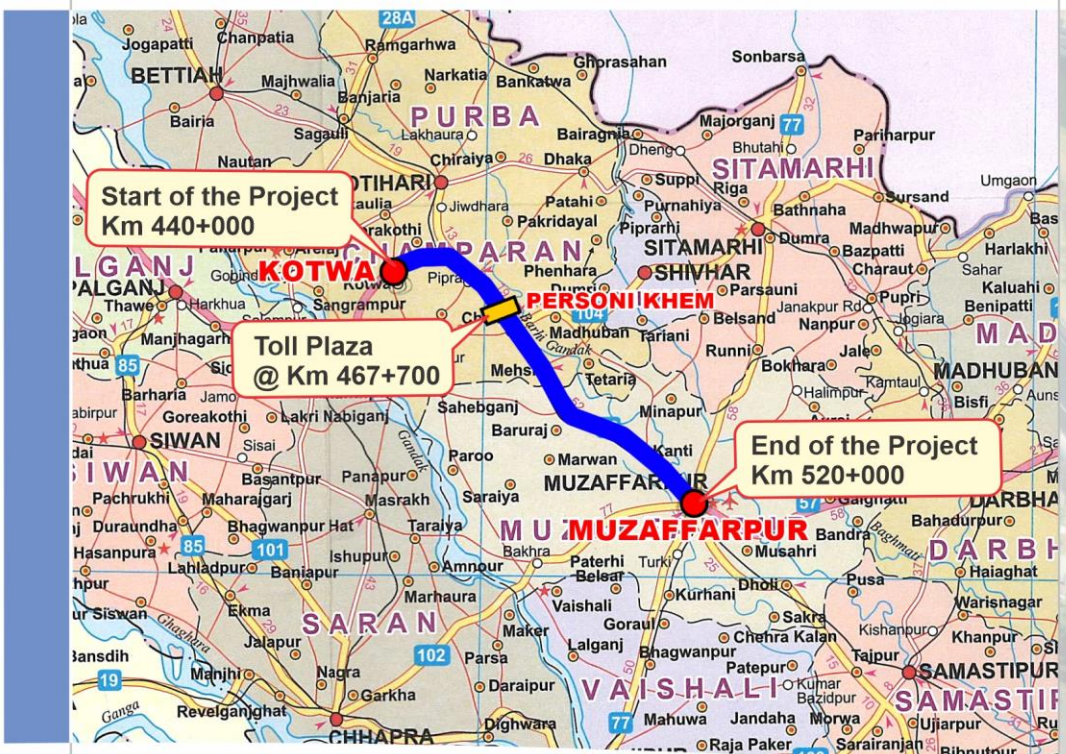
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	NCW - Flexible Pavement									
1	Tack coat	Sqm						9,82,545	12	1,14,36,827
	For BC	Sqm	2	35,248	12.50		8,81,207	8,81,207		
	For DBM	Sqm	2	1,469	10.50		30,842	30,842		
	For Misc. Location	Sqm	2	2,820	12.50		70,497	70,497		
2	BC with 35 mm	Cum	2	38,068	12.50	0.035	33,310	33,310	9,246	30,79,65,969
3	DBM with 50 mm	Cum	2	1,469	10.50	0.05	1,542	1,542	8,197	1,26,40,564
4	Micro Surfacing	Sqm	2	23,499	12.50		5,87,471	5,87,471	165	9,69,32,718
5	Milling	Sqm	2	1,469	10.50		30,842	30,842	75	23,13,167
	MCW- Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	1,402	3.50	4.50	1,121	1,121	91	1,02,038
7	Dismantling of CC Panels @ 5% area	Cum	5%		22,076	0.30	331	331	850	2,81,464
8	Replacement of Panels - PQC @ 5% area	Cum	5%		22,076	0.30	331	331	9,211	30,50,026
	Service Road									
9	Tack coat	Sqm	1	-	7.00		-	-	12	-
10	BC with 30 mm	Cum	1	-	7.00	0.03	-	-	9,118	-
11	Micro Surfacing	Sqm	1	1,18,916	7.00		8,32,412	8,32,412	165	13,73,47,980
	Structures (incl. VUP, PUP and bridges)									
12	Tack coat	Sqm	1	1,017	27		27,058	27,058	12	3,14,951
13	Wearing Coat BC with 35 mm	Cum	1	1,017	27	0.035	947	947	9,246	87,55,701
14	Milling of Ex. Wearing Coat	Sqm	1	1,017	27		27,058	27,058	75	20,29,322
15	Micro Surfacing	Sqm	1	1,017	27		27,058	27,058	165	44,64,508
16	Painting of Crash Barrier	Sqm	4	2,034		1.12	9,071	9,071	101	9,16,190
	Other Works									
17	Raising of Road Kerb	Rmt	2	1,06,598			2,13,196	2,13,196	270	5,75,62,845
18	Replacement of Road Stud									
	Normal Road Stud	Nos	2	14,943			29,886	29,886	175	52,30,050
19	Painting of Kerb	Sqm	2	1,06,314		0.315	66,978	66,978	101	67,64,728
20	Road Marking	Sqm					78,424	78,424	515	4,03,88,423

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW									
	a) Median & Edge line	Sqm	4	64,183	0.15		38,510			
	b) Lane line	Sqm	4	21,181	0.10		8,472			
	Service Road									
	a) Edge line	Sqm	2	1,18,916	0.10		23,783			
	b) Lane line	Sqm	1	39,242	0.10		3,924			
	Junction crossing	Sqm					3,734			
21	Filling of Earthen shoulder	Cum					217	217	544	1,18,032
	MCW		2	1,669	1.00	0.065	217			
	Service Road		1	-	1.00	0.060	-			
22	Miscellaneous	5%								3,49,30,775
Total Major Maintenance Cost (Rs.)										**73,35,46,276**
Total Major Maintenance Cost with 18% GST (Rs.)										**86,55,84,606**
Total Major Maintenance Cost with GST (Cr.)										**86.56**
Per km Cost (lakh)										**141.60**
Escalation Factor for FY 2029										**1.16**
Total Escalated Cost for FY 2029 (Cr.)										**97.23**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	NCW - Flexible Pavement									
1	Tack coat	Sqm						6,65,311	12	77,44,219
	For BC	Sqm	2	23,499	12.50		5,87,471	5,87,471		
	For DBM	Sqm	2	1,469	10.50		30,842	30,842		
	For Misc. Location	Sqm	2	1,880	12.50		46,998	46,998		
2	BC with 35 mm	Cum	2	25,379	12.50	0.04	22,206	22,206	9,246	20,53,10,646
3	DBM with 50 mm	Cum	2	1,469	10.50	0.05	1,542	1,542	8,197	1,26,40,564
4	Micro-Surfacing	Sqm	2	35,248	12.50		8,81,207	8,81,207	165	14,53,99,077
5	Milling	Sqm	2	1,469	10.50		30,842	30,842	75	23,13,167
	MCW- Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	1,402	3.50	4.50	1,121	1,121	91	1,02,038
7	Dismantling of CC Panels @ 5% area	Cum	5%		22,076	0.30	331	331	850	2,81,464
8	Replacement of Panels - PQC @ 5% area	Cum	5%		22,076	0.30	331	331	9,211	30,50,026
	Service Road									
9	Tack coat	Sqm	1	-	7.00		-	-	12	-
10	BC with 30 mm	Cum	1	-	7.00	0.03	-	-	9,118	-
11	Micro Surfacing	Sqm	1	1,18,916	7.00		8,32,412	8,32,412	165	13,73,47,980
	Structures (incl. VUP, PUP and bridges)									
12	Tack coat	Sqm	1	1,017	27		27,058	27,058	12	3,14,951
13	Wearing Coat BC with 35 mm	Cum	1	1,017	27	0.035	947	947	9,246	87,55,701
14	Milling of Ex. Wearing Coat	Sqm	1	1,017	27		27,058	27,058	75	20,29,322
15	Micro Surfacing	Sqm	1	1,017	27		27,058	27,058	165	44,64,508
15	Painting of Crash Barrier	Sqm	4	2,034		1.12	9,071	9,071	101	9,16,190
	Other Works									
16	Raising of Road Kerb	Rmt	2	94,848			1,89,697	1,89,697	270	5,12,18,158
17	Replacement of Road Stud									
	Normal Road Stud	Nos	2	14,943			29,886	29,886	175	52,30,050
18	Painting of Kerb	Sqm	2	1,06,314		0.315	66,978	66,978	101	67,64,728
19	Road Marking	Sqm					78,424	78,424	515	4,03,88,423
	MCW									
	a) Median & Edge line	Sqm	4	64,183	0.15		38,510			

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	4	21,181	0.10		8,472			
	Service Road									
	a) Edge line	Sqm	2	1,18,916	0.10		23,783			
	b) Lane line	Sqm	1	39,242	0.10		3,924			
	Junction crossing	Sqm					3,734			
20	Filling of Earthen shoulder	Cum					217	217	544	1,18,032
	MCW		2	1,669	1.00	0.065	217			
	Service Road		1	-	1.00	0.06	-			
21	Miscellaneous	5%								3,17,19,462
Total Major Maintenance Cost (Rs.)										**66,61,08,705**
Total Major Maintenance Cost with 18% GST (Rs.)										**78,60,08,272**
Total Major Maintenance Cost with GST (Cr.)										**78.60**
Per km Cost (lakh)										**128.59**
Escalation Factor for FY 2036										**1.53**
Total Escalated Cost for FY 2036 (Cr.)										**113.70**

FP Project Management



Technical Due Diligence of Kotwa - Muzaffarpur Section (from km. 440+000 to km. 520+000) of NH-28 in the State of Bihar on TOT Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 6
1.1 Background 6
1.2 Scope of Work 6
1.3 Our Approach Philosophy 7
1.3.1 Composition of Team 7
1.3.2 Site Visit and Data Collection 7
1.3.3 Data Analysis 8
1.4 Structure of the Report 8
2 Project Description 9
2.1 Introduction 9
2.2 Location of the Project Road 9
2.3 Climate 10
2.4 Terrain 10
2.5 Abutting Land Use 11
2.6 Right of Way 11
2.7 Existing Utilities 11
2.8 Development as per Schedule B 11
3 Condition Assessment of Project Road 13
3.1 Pavement 13
3.2 Pavement Condition Survey 13
3.3 Service Road / Slip Road 23
3.4 Major / Minor Junctions 26
3.5 Condition Survey of Bridge 28
3.6 Condition Survey of Culverts 53
3.7 Drainage 57
3.8 Slope Protection 59
3.9 Road Furniture 61
3.10 Avenue Plantation and Median Plantation 74
3.11 Toll Plaza 76
3.12 Lane Equipment 79
3.12.1 RFID ETC Transceiver 79
3.12.2 Lane Controller with Industrial PC 79
3.12.3 Automatic Vehicle Classification (AVC) Sensors 80
3.12.4 Automatic Lane Barrier 80
3.12.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 81

3.12.6 Incident Capture Camera (AVC Camera) 81
3.12.7 License Plate Image Capture Camera (LPIC) 81
3.12.8 Over Head Lane Signal (OHLS) 82
3.12.9 Toll Booth Equipment 82
3.12.10 Medium Speed Weigh in Motion (MSWIM) 83
3.13 Plaza Equipment 84
3.13.1 TMS Server 84
3.13.2 55" LED screen for CCTV monitoring 84
3.13.3 Workstations in Control Room, POS room 84
3.14 Advanced Traffic Management System (ATMS) 85
3.14.1 Automatic Traffic Counter cum classifier (ATCC) 85
3.14.2 Mobile Radio communication System (MRCS) 85
3.14.3 Emergency Call Boxes (ECB) 85
3.14.4 MET System 85
3.14.5 Variable Message Signboards (VMS) 86
3.14.6 CCTV Surveillance Cameras 87
3.14.7 Vehicle Actuated Speed Display (VASD) 87
3.14.8 Adequacy of Toll Collection System and ATMS 88
3.15 Truck Layby 88
3.16 Traffic Aid Post and Medical Aid Post 89
3.17 Toilet Block 89
3.18 Bus Bays and Passenger Shelters 90
3.19 Balance Work Status 91
3.20 Operation and Maintenance 92
3.20.1 O&M Contract 92
3.20.2 Organization Chart 92
3.20.3 Operation 95
3.20.4 Routine Maintenance 95
4 Pavement Investigation and Assessment 96
4.1 General 96
4.2 Axle Load and VDF 96
4.3 Design Traffic 96
4.4 Network Survey Vehicles (NSV) Survey 97
4.5 Structural Investigations 98
4.6 Test pit and Subgrade Investigation 99
4.7 Periodic Maintenance Strategy 106
5 Cost Estimates 107

5.1 General 107
5.2 Rate Assumption 107
5.3 Balance Work Cost 108
5.4 Routine O&M Cost 109
5.5 Major Maintenance Cost 110
5.6 Periodic Replacement of TMS / ATMS System 110
5.7 Escalation Assumption 110
5.8 Summary of Cost 111
Annexure 113
Annexure-I Routine Maintenance Cost 114
Annexure-II Major Maintenance Cost 122

List of Tables

Table 3-1 Pavement Details 13
Table 3-2 Summary of Pavement Condition 13
Table 3-3 Summary of Structures 28
Table 3-4 Condition Survey of Major Structure 30
Table 3-5 Summary for Road Furniture Items 61
Table 3-6 Details of Summary for Toll Plaza Items 76
Table 4-1 Vehicle Damage Factor 96
Table 4-2 MSA Calculation 96
Table 4-3 Roughness Index Summary 97
Table 4-4 FWD Summary 98
Table 4-5 Test Results Summary of Natural Ground Soil Samples 100
Table 4-6 Granular Layer's Test Result Summary 100
Table 4-7 Test Results Summary of Subgrade 102
Table 4-8 Test Results Summary of Granular Layer's Test Result Summary 103
Table 4-9 DCP-Equivalent CBR Summary 104
Table 4-10 Major Maintenance Cycle 106
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 107
Table 5-2 Summary of Unit Rates 108
Table 5-3 Summary of Balance Works 108
Table 5-4 Summary of Operation Cost 109
Table 5-5 Summary of Major Maintenance Cost 110
Table 5-6 Escalation 110

List of Figures

Figure 2-1 Location Map 9
Figure 2-2 Start and End of Project Road (LHS) 10
Figure 2-3 Start and End of Project Road (RHS) 10
Figure 3-1 Photographs of Pavement Condition (MCW) - RHS 14
Figure 3-2 Photographs of Pavement Condition (MCW) - LHS 18
Figure 3-3 Photographs of Service Road (RHS) 23
Figure 3-4 Photographs of Service Road (LHS) 25
Figure 3-5 Photographs of Major Junctions 27
Figure 3-6 Photographs of Minor Junctions 27
Figure 3-7 Photographs of Major Structures 42
Figure 3-8 Photographs of Box Culverts / Hume Pipe Culverts 54
Figure 3-9 Photographs of Existing Drain (RHS) 57
Figure 3-10 Photographs of Existing Drain (LHS) 58
Figure 3-11 Photographs of Slope Protection and Chute Drain 60
Figure 3-12 Photographs of Pavement Marking 62
Figure 3-13 Photographs of Road Studs 64
Figure 3-14 Photographs of Road Signages (RHS) 65
Figure 3-15 Photographs of Road Signages (LHS) 67
Figure 3-16 Photographs of Street Light 70
Figure 3-17 Photographs of Crash Barrier 71
Figure 3-18 Photographs of Delineator 72
Figure 3-19 Photographs of Pedestrian Guard Rail 73
Figure 3-20 Photographs of Road Land Boundary 74
Figure 3-21 Photographs of Avenue Plantation and Median Plantation 75
Figure 3-22 Photographs of Toll Plaza 77
Figure 3-23 Photographs of Truck Layby 88
Figure 3-24 Photograph of Traffic Aid Post / Medical Aid Post 89
Figure 3-25 Photograph of Toilet Block 90
Figure 3-26 Photograph of Passenger Shelter 90

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed M/s. **FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Kotwa - Muzaffarpur section of NH-27 (Old NH-28) from km. 440+000 to km. 520+000 [Bundle-III] in the State of Bihar through Annuity BOT basis (hereinafter referred as "Project Road").

Kotwa Muzaffarpur Tollway Private Limited, (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Kotwa - Muzaffarpur section (from km. 440+000 to km. 520+000) of NH-27 or Project Road under TOT Bundle-3. The project was awarded to Concessionaire on 20th October 2020 with a concession period of 30 years by National Highway Authority of India (NHAI). The length of Project Road is 80.0 km with one toll plaza at Parsonikhem at km. 467+700.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, Punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle Load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our proposed team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study shall include review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement survey conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project as per the contract and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams are expected to carry out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection.
- The information like material sources and the probable cost is collected for the purpose of cost estimates.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity are gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the Consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

The site visit and inspection for the reconnaissance, road inventory and condition survey were carried from **08th January 2025** to **10th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features and overviews of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India had signed the Concession Agreement with **Kotwa Muzaffarpur Tollway Private Limited**, is a company promoted by Cube Highways or a Special Purpose Vehicle (SPV) formed for implementing this project on 27th December 2019. The Appointed Date for the Project Road is 20th October 2020.

The project is being developed through BOT mode under TOT (Toll Operate Transfer) Bundle-3 with a concession period of 30 years from the Appointed Date.

2.2 Location of the Project Road

The Project Road is a part of National Highway No. 27, (Old NH-28) of Kotwa - Muzaffarpur section in the state of Bihar. The total project length is 80.00 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The Photographs taken during the site visit are presented as below.

Figure 2-2 Start and End of Project Road (LHS)

Figure 2-3 Start and End of Project Road (RHS)

2.3 Climate

The climate of the project area is characterized by general dryness (except in the southwest monsoon season), a hot summer and a cold winter. The year may be divided into four seasons. The period from about the middle of December to February is the cold season. This is followed by the summer season from March to about the end of June. The south-west monsoon season commences in June and continues up to about the end of September. The month with the most days of rain alone in Muzaffarpur is July, with an average of 20.0 days. Based on this categorization, the most common form of precipitation throughout the year is rain alone, with a peak probability of 66% in July. The period from mid-September to the middle of November constitutes the post-monsoon or transition season. The temperature ranges from a minimum of 9°C in winter to 38°C in summer. April, May and June are generally the hottest months and December and January are the coldest months. Relative humidity is high, averaging about 60% to 67% in May month and decrease it gradually up to 85% at the end of season due to gradual warming. The average annual rainfall in the district is 720 millimeters.

2.4 Terrain

This section of National Highway traverses through plain / rolling terrain.

2.5 Abutting Land Use

As NH-27 is a part of the East West Corridor, the following are the various developments that are anticipated in the Four Lanning of Kotwa Muzaffarpur Section.

This Project Road reduces the travel time for getting access to Gorakhpur, Lucknow, Bongaigaon, Siliguri, Darbhanga and Porbandar which results in better industrial growth and economy.

Lots of development is anticipated in Kotwa Muzaffarpur Corridor, which transits through NH-27 / NH-28 and hence the development / maintenance of the Project Road would accelerate the development as majority of traffic would use the highway for getting access to Champaran region.

The tourism industry gets a great booster as majority of people using this highway, for going to foreign like Nepal etc.,

A lot of commercial establishments along the Project Road in the form of hotels, snack parlors may be developed in coming future as tourist will use this road for going to Nepal / Ashok Stambh.

2.6 Right of Way

The width of the existing Right of Way (Row) for the Project Road varies from 35.0 m to 45.0 / 120 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services located along the Project Road were shifted to the PROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule B

The Project Road from Kotwa (km. 440.000) to Muzaffarpur (km. 520.000) has been developed as a four-lane divided carriageway with median width 1.5 m to 4.5 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement; and
b) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all the obligations of the Concessionaire under this Agreement.

The following is the Scope of Work as per Schedule-B of the Concession Agreement.

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	80.00	From October 2020
2	Construction of Service Road	km.	0.450	0.900 B/S
3	Widening of Existing Pipe Culvert	Nos.	01	
4	Widening of Existing Box Culvert	Nos.	01	
5	Improvement of Major Junction	Nos.	01	X Type
6	Improvement of Minor Junction	Nos.	21	
7	Reinforce Cement concrete cover Drain with footpath	km.	0.450	0.900 B/S
8	Solar Blinker	Nos.	74	As per Corrigendum-04
9	W-Beam Safety Barrier	Km.	1.940	
10	Guard Post	Km.	0.900	
11	Bar marking by Thermoplastic Paint	km.	80.00	
12	Cantilever Sign Boards	Nos.	04	

Note:

1. *The above quantities are the minimum to be provided and any addition to the above shall not be treated under change of scope.*

2. *The Concessionaire has completed most of the above-said work given in table and the same has been confirmed by the IE vide their letter no. CPCPL/IE/03-24/315 Dated 27.03.2024 and letter no. CPC/IE/06-24/335 Dated 14.06.2024. However, some work is balance due to land unavailability. The balance work details are as below.*

Sr. No.	Descriptions	Unit	Balance Quantity	Chainage (km)	Remark
1	Service Road	km	0.175	455+590 to 455+765	LHS
2	Drain	km	0.174	455+596 to 455+770	LHS
3	PGR	km	0.113	455+587 to 455+700	LHS

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.75 m with earthen shoulder of 1.0 m to 2.0 m on either side. The Project Road has a median width of 1.5 m to 4.5 m throughout its length. The entire stretch of Project Road including service road is constructed with flexible pavement (except few stretches of MCW). The pavement type for the toll plaza including taper and few stretches of main carriageway is of rigid pavement. The details of the existing pavement of the Project Road are tabulated below.

Table 3-1 Pavement Details

Sr. No.	Chainage (km)		Pavement Type		Length (km)
	From	To	LHS	RHS	
1	440.000	467.600	BT-Bituminous	BT-Bituminous	27.600
2	467.600	468.050	CC-Cement Concrete	CC-Cement Concrete	0.450
3	468.050	482.000	BT-Bituminous	BT-Bituminous	13.950
4	482.000	493.000	CC-Cement Concrete	BT-Bituminous	11.000
5	493.000	494.700	BT-Bituminous	BT-Bituminous	1.700
6	494.700	501.200	CC-Cement Concrete	BT-Bituminous	6.500
7	501.200	502.500	BT-Bituminous	BT-Bituminous	1.300
8	502.500	504.000	CC-Cement Concrete	BT-Bituminous	1.500
9	504.000	504.900	BT-Bituminous	BT-Bituminous	0.900
10	504.900	508.000	CC-Cement Concrete	BT-Bituminous	3.100
11	508.000	520.000	BT-Bituminous	BT-Bituminous	12.000

3.2 Pavement Condition Survey

The pavement condition survey was carried out from **08th January 2025** to **10th January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is Good to Fair. The summary of pavement condition survey is presented in table below:

Table 3-2 Summary of Pavement Condition

Rating	Main carriageway	
	LHS	RHS
Good	40%	75%
Fair	47%	25%
Fair / Poor	08%	-
Poor	05%	-
Very Poor	-	-
Total	**100%**	**100%**

The photographs taken during the site visit are presented below.

Figure 3-1 Photographs of Pavement Condition (MCW) - RHS

km. 519+500

km. 519+100

km. 517+000

km. 514+000

km. 511+300

km. 504+500

km. 498+760

km. 496+000

km. 492+600

km. 485+200

km. 483+000

km. 463+850

km. 458+700

km. 455+650

km. 450+550

km. 445+250

km. 440+600

Shoulder - RHS

km. 498+760

km. 492+600

km. 484+400

km. 466+650

km. 463+850

km. 458+700

km. 450+550

km. 445+250

km. 440+600

Figure 3-2 Photographs of Pavement Condition (MCW) - LHS

km. 441+300

km. 443+000

km. 445+050

km. 446+000

km. 458+500

km. 465+000

km. 466+700

km. 472+400

km. 474+800

km. 480+650

km. 482+450

km. 484+800

km. 486+150

km. 487+800

km. 492+400

km. 499+200

km. 505+400

km. 513+200

km. 516+350

km. 518+100

km. 519+500

Shoulder - LHS

km. 441+300

km. 445+050

km. 446+00

km. 458+500

km. 466+300

km. 466+700

km. 472+400

km. 482+450

km. 486+150

km. 487+800

km. 492+400

km. 499+200

3.3 Service Road / Slip Road

a) Construction of New Service Road

Service Road with a partial width of 5.50 m to 7.0 m is constructed in a built-up area and adjoining underpass locations. The length of service road as per Concession Agreement / Corrigendum-05, 2019 is 53.870 kms on B/S. The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service Road (RHS)

km. 519+500

km. 517+200

km. 515+500

km. 511+735

km. 508+650

km. 504+370

km. 501+800

km. 495+600

km. 493+937

km. 481+255

km. 475+050

km. 472+982

km. 461+800

km. 455+500

km. 453+812

Shoulder - RHS

km. 517+200

km. 515+150

km. 509+200

km. 504+370

km. 496+600

Figure 3-4 Photographs of Service Road (LHS)

km. 442+800

km. 451+400

km. 453+200

km. 454+00

km. 455+400

km. 461+200

km. 472+500

km. 474+000

km. 475+000

km. 493+400

km. 501+400

km. 504+500

km. 508+400

km. 513+000

km. 515+000

Shoulder - LHS

km. 451+400

km. 504+500

km. 513+000

km. 515+000

3.4 Major / Minor Junctions

There are 07 nos. of major junctions and 86 nos. of minor junctions along Project Road. The photographs taken during the site visit are presented below.

Figure 3-5 Photographs of Major Junctions

Major Junction at km. 519+650

Major Junction at km. 516+900

Major Junction at km. 492+860

Major Junction at km. 491+350

Figure 3-6 Photographs of Minor Junctions

km. 508+650

km. 504+370

km. 501+800

km. 499+300

km. 497+430

km. 487+320

km. 485+700

km. 476+450

km. 472+000

km. 471+750

km. 457+470

km. 453+812

3.5 Condition Survey of Bridge

The inventory of structures including Major Bridges, Minor Bridges, ROB's, Underpasses and Culverts is presented in table as below:

Table 3-3 Summary of Structures

Type of Structure	Total No. of Structures	Remarks
Major Structures:		
Road Over Bridge (ROB)	2	
Flyover	2	
Vehicular Underpass (VUP)	2	
Light Vehicular Underpass (LVUP)	6	
Pedestrian Underpass (PUP)	1	
Cattle Underpass (CUP)	-	
Major Bridges (MJB)	1	

Type of Structure	Total No. of Structures	Remarks
Minor Bridges (MNB)	7	
Culverts:		
Pipe Culverts	20	
Box Culverts	81	
Slab Culverts	16	
Total	**138**	

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-4 Condition Survey of Major Structure

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
1	442.280	Major Bridge (Canal) LHS- 1 x 26 + 1 x 24 + 1 x 26 m RHS – 6 x 12 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Expansion Joints need to be clean.
			Foundation	Pile Foundation	Well Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC piers Condition - Satisfactory	
			Super Structure	3 Span RCC Girders and Slab Footpath - Shoulder side Condition - Satisfactory	6 Span RCC Girders and Slab Footpath – Not Available Condition - Satisfactory	
			Bearing	Bearing – POT/PTFE	Bearing – Tar Paper	
			Slope Protection	RCC Return and CC Pitching	RCC Return and CC Pitching	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	RCC railing with Crash Barrier - Satisfactory	Crash Barrier -Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
2	443.375	Minor Bridge LHS - 2 x 13.50 m for MCW LHS - 2 x 13.50 m for SR RHS - 2 x 13.50 m for MCW RHS - 2 x 13.50 m for SR	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Expansion Joints need to be clean.
			Foundation	Pile Foundation	Pile Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC piers Condition - Satisfactory	
			Super Structure	2 Span RCC Girders and RCC Slab Footpath – Not Available Condition - Satisfactory	2 Span RCC Girders and RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – Elastomeric	Bearing – Elastomeric	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Slope Protection	RCC Return	RCC Return	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
3	443.800	LVUP 1 x 10.0 m	Age	Old - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Drainage arrangement not provided at approaches. Observed vegetation on RE wall. Needs to be removed.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - NA Condition - Satisfactory	Abutment - RCC Wall type Piers - NA Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Footpath – Shoulder side Condition - Satisfactory	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – Tar Paper	Bearing – Tar Paper	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
4	451.986	ROB 4 x 24.5 + 1 x 27.5 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Expansion
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment – RE Wall & RCC Piers Piers - RCC Piers	Abutment - RE Wall & RCC Piers Piers - RCC Piers	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory	Condition - Satisfactory	Joints need to be clean. Approach slab @ A1-LHS & A2-RHS settled, requires to be repaired.
			Super Structure	5 Span PSC Girders and RCC Slab Footpath - Shoulder side Condition - Satisfactory	5 Span PSC Girders and RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – POT/PTFE	Bearing – POT/PTFE	
			Slope Protection	RCC Return and Stone Pitching	RCC Return and Stone Pitching	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
5	453.612	Flyover 1 x 35 + 4 x 24 m	Age	New-Single Lane	New-Single Lane	The structure is in sound condition. Expansion Joints need to be clean. Approach slab @ both sides settled, requires to be repaired. Drainage arrangement not provided at approaches.
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment - RE Panel wall Pires – RCC Piers Condition - Satisfactory	Abutment - RE Panel wall Pires – RCC Piers Condition - Satisfactory	
			Super Structure	PSC Girders + RCC slab Condition - Satisfactory	PSC Girders + RCC slab Condition – Satisfactory (Epoxy done in girders)	
			Bearing	POT/PTFE	POT/PTFE	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier	Crash Barrier	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Drainage	Drain spout provided	Drain spout provided	
6	457.430	Minor Bridge 1 x 7 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition. Expansion Joints need to be clean.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment – RCC Wall Condition - Satisfactory	Abutment – RCC Wall Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	1 Span RCC slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – Tar Paper	Bearing – Tar Paper	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
7	461.678	LVUP 1 x 10 m	Age	Old - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Drainage arrangement not provided at approaches.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Box type Piers - NA Condition - Satisfactory	Abutment - RCC Box type Piers - NA Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – Tar Paper	Bearing – Tar Paper	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
8	471.965	Minor Bridge 2 x 10.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition. Expansion joints need to be cleaned.
			Foundation	Pile Foundation	Pile Foundation	
			Sub structure Abutment / Pier	Abutment – RCC Box Type Wall/Pier – RCC Wall Condition - Satisfactory	Abutment – RCC Box Type Wall/Pier – RCC Wall Condition - Satisfactory	
			Super Structure	2 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	2 Span RCC slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – Elastomeric	Bearing – Elastomeric	
			Slope Protection	RCC Return and CC Pitching	RCC Return and CC Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drain spout provided	Drain spout provided	
9	472.555	Minor Bridge 1 x 10.5 m	Age	New - 2 lane	New - 2 lane	The Structure is in sound condition, Expansion joints need to be clean. Observed vegetation / bushes from both waterway ends.
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment – RCC Box Type Wall/Pier – RCC Wall Condition - Satisfactory	Abutment – RCC Box Type Wall/Pier – RCC Wall Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Footpath - Shoulder side	1 Span RCC slab Footpath - Shoulder side	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory	Condition - Satisfactory	Needs to be cleaned.
			Bearing	Bearing – Elastomeric	Bearing – Elastomeric	
			Slope Protection	RCC Return and CC Pitching	RCC Return and CC Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier with RCC Railing- Satisfactory	Crash Barrier with RCC Railing- Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drain spout provided	Drain spout provided	
10	472.982	LVUP 1 x 10 m	Age	Old - 2 Lane	New – 2 Lane	The Structure is in sound condition, Drainage spout to be clean at both sides. Drainage arrangement not provided at approaches. Observed vegetation / bushes from both waterway ends. Needs to be cleaned.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Box type Condition - Satisfactory	Abutment - RCC Box type Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – Tar Paper	Bearing – Tar Paper	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
11	481.255	LVUP 1 x 10 m	Age	Old - 2 Lane	New – 2 Lane	The Structure is in sound condition, Drainage spout to
			Foundation	Open Foundation	Open Foundation	
			Sub Structure	Abutment - RCC Box type	Abutment - RCC Box type	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Abutment / Pier	Condition - Satisfactory	Condition - Satisfactory	be clean at both sides. Drainage arrangement not provided at approaches. Observed vegetation / bushes from both waterway ends. Needs to be cleaned.
			Super Structure	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – Tar Paper	Bearing – Tar Paper	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
12	488.155	Minor Bridge 1 x 44.5 m	Age	New - 2 lane (Bottleneck)	New - 2 lane	The structure is in sound condition. Expansion joints need to be clean. Approach slab @ A1-LHS settled, requires to be repaired.
			Foundation	Well Foundation	Well Foundation	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	1 Span RCC Slab Footpath - NA Condition - Satisfactory	1 Span RCC slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	POT/PTFE	Plate Bearing	
			Slope Protection	RCC Return and CC Pitching	RCC Return and CC Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drain spout provided	Drain spout provided	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
13	490.558	Minor Bridge 1 x 13.50 m	Age	New - 2 lane	New - 2 lane (Bottleneck)	The structure is in sound condition. Expansion joints need to be clean. Wearing coat damaged in RHS which needs to be repaired.
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	1 Span RCC slab Footpath - NA Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	RCC Return & CC Pitching	RCC Return & CC Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable	Stable	
			Drainage	Drain spout provided	Drain spout provided	
14	493.937	VUP 2 x 12.56 m	Age	Old - 2 Lane	New – 2 Lane	The Structure is in sound condition. Drainage spouts to be clean at both sides. Drainage arrangement not provided at approaches. Expansion Joints need to be clean. Vegetation on RE wall need to be removed.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Box type Condition - Satisfactory	Abutment - RCC Box type Condition - Satisfactory	
			Super Structure	2 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	2 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat /	BC - Satisfactory	BC - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Surface			
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
15	496.842	Minor Bridge 2 x 13.5 m	Age	New - 2 lane	New - 2 lane (Bottleneck)	The structure is in sound condition. Expansion joints to be clean. Approach slab @ A2-LHS settled, requires to be repaired.
			Foundation	Pile Foundation	Pile Foundation	
			Sub structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	2 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	2 Span RCC slab Footpath -NA Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	RCC Return & CC Pitching	RCC Return & CC Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Crash Barrier- Satisfactory	Crash Barrier- Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable	Stable	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
16	501.800	LVUP 1 x 10 m	Age	Old - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Drainage arrangement not provided at approaches. Observed vegetation / bushes from both
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Box type Condition - Satisfactory	Abutment - RCC Box type Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Tar Paper	Tar Paper	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	waterway ends. Needs to be cleaned.
			Expansion Joint	-	-	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
17	508.648	VUP 2 x 12.56 m	Age	Old - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Drainage arrangement not provided at approaches. Expansion Joints need to be clean. Observed vegetation / bushes from both waterway ends. Needs to be cleaned.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Box type Condition - Satisfactory	Abutment - RCC Box type Condition - Satisfactory	
			Super Structure	2 Span RCC Slab Footpath - Shoulder Side Condition - Satisfactory	2 Span RCC Slab Footpath - Shoulder Side Condition - Satisfactory	
			Bearing	Elastomeric	Elastomeric	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
18	511.735	LVUP 1 x 10 m	Age	Old - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage spouts to be clean at both sides. Drainage arrangements not provided at approaches
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Box type Condition - Satisfactory	Abutment - RCC Box type Condition - Satisfactory	
			Super Structure	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	1 Span RCC Slab Footpath - Shoulder side Condition - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	**LHS**	**RHS**	
			Bearing	Tar Paper	Tar Paper	Observed vegetation / bushes from both waterway ends. Needs to be cleaned.
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drainage spout to be clean	Drainage spout to be clean	
19	515.600	PUP 1 X 3 m	Age	Old - 2 Lane	New – 2 Lane	The structure is in sound condition.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Box type Condition - Satisfactory	Abutment - RCC Box type Condition - Satisfactory	
			Super Structure	Single Span RCC Slab Footpath - Not Available Condition - Satisfactory	Single Span RCC Slab Footpath - Not Available Condition - Satisfactory	
			Bearing	-	-	
			Slope Protection	Stone Pitching	Stone Pitching	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	MBCB - Satisfactory	MBCB- Satisfactory	
			Expansion Joint	Not Available	Not Available	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Not Available	Not Available	
20	516.035	ROB 6 x 21.7 + 1 x 37.5 m (Skew)	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Expansion Joints need to be clean. Approach slab @
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment - RE Wall & RCC Piers Piers - RCC Piers	Abutment - RE Wall & RCC Piers Piers - RCC Piers	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory	Condition - Satisfactory	all sides settled, requires to be repaired.
			Super Structure	7 Span PSC Girders and RCC Slab Footpath - Shoulder side Condition - Satisfactory	7 Span PSC Girders and RCC Slab Footpath - Shoulder side Condition - Satisfactory	
			Bearing	Bearing – POT/PTFE	Bearing – POT/PTFE	
			Slope Protection	RCC Return and Stone Pitching	RCC Return and Stone Pitching	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
21	519.600	Flyover 1 x 35 + 4 x 24 m	Age	New-Single Lane	New-Single Lane	The structure is in sound condition. Expansion Joints need to be clean. Approach slab @ both ends settled, require to be repaired.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RE Panel wall Pires – RCC Piers Condition - Satisfactory	Abutment - RE Panel wall Pires – RCC Piers Condition - Satisfactory	
			Super Structure	PSC Girders + RCC slab Condition - Satisfactory	PSC Girders + RCC slab Condition – Satisfactory	
			Bearing	POT/PTFE	POT/PTFE	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available (Require cleaning)	Available (Require cleaning)	
			Wearing Coat / Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drain spout provided	Drain spout provided	

Figure 3-7 Photographs of Major Structures

Side View of ROB at km. 451+986 (RHS)

Bottom Portion of ROB at km. 451+986 (BHS)

Wearing Coat of ROB at km. 451+986 (LHS)

Mid Portion of ROB at km. 451+986 (LHS)

Side View Coat of ROB at km. 516+035 (RHS)

Expansion Joint of ROB at km. 516+035 (RHS)

Bottom Portion of ROB at km. 516+035 (BHS)

Side View of ROB at km. 516+035 (LHS)

Side View of Flyover at km. 453+612 (RHS)

Mid Portion of Flyover at km. 453+612 (RHS)

Wearing Coat of Flyover at km. 453+612 (LHS)

Side View of Flyover at km. 453+612 (LHS)

Side View of Flyover at km. 519+600 (RHS)

Mid Portion of Flyover at km. 519+600 (RHS)

Mid Portion of Flyover at km. 519+600 (LHS)

Side View of Flyover at km. 519+600 (LHS)

Side View of Major Bridge at km. 442+280 (RHS)

Wearing Coat of Major Bridge at km. 442+280 (RHS)

Side View of Major Bridge at km. 442+280 (LHS)

Expansion Joint of Major Bridge at km. 442+280 (LHS)

Side View of Minor Bridge at km. 443+375 (RHS-SR)

Wearing Coat of Minor Bridge at km. 443+375 (RHS-MCW+SR)

Wearing Coat of Minor Bridge at km. 443+375 (LHS-SR)

Side View of Minor Bridge at km. 443+375 (LHS-SR)

Side View of Minor Bridge at km. 457+430 (RHS)

Wearing Coat of Minor Bridge at km. 457+430 (LHS)

Mid Portion of Minor Bridge at km. 457+430 (BHS)

Side View of Minor Bridge at km. 457+430 (LHS)

Wearing Coat of Minor Bridge at km. 471+965 (RHS)

Side View of Minor Bridge at km. 471+965 (RHS)

Side View of Minor Bridge at km. 471+965 (LHS)

Wearing Coat of Minor Bridge at km. 471+965 (LHS)

Wearing Coat of Minor Bridge at km. 472+555 (RHS-MCW+SR)

Side view of Minor Bridge at km. 472+555 (RHS-SR)

Wearing Coat of Minor Bridge at km. 472+555 (LHS-MCW+SR)

Side view of Minor Bridge at km. 472+555 (LHS-SR)

Wearing Coat of Minor Bridge at km. 488+155 (RHS)

Side View of Minor Bridge at km. 488+155 (RHS)

Side View of Minor Bridge at km. 488+155 (LHS)

Wearing Coat of Minor Bridge at km. 488+155 (LHS)

Side View of Minor Bridge at km. 490+558 (RHS)

Wearing Coat of Minor Bridge at km. 490+558 (RHS)

Wearing Coat of Minor Bridge at km. 490+558 (LHS)

Side View of Minor Bridge at km. 490+558 (LHS)

Wearing Coat of Minor Bridge at km. 496+848 (RHS)

Side View of Minor Bridge at km. 496+848 (RHS)

Wearing Coat of Minor Bridge at km. 496+848 (LHS)

Side View of Minor Bridge at km. 496+848 (LHS)

Side View of LVUP at km. 443+800 (RHS)

Side View of LVUP at km. 443+800 (LHS)

Bottom Portion of LVUP at km. 443+800 (BHS)

RE Panel Wall of LVUP at km. 443+800 (LHS)

Wearing Coat of LVUP at km. 461+678 (RHS)

Side View of LVUP at km. 461+678 (RHS)

Bottom Portion of LVUP at km. 461+678 (BHS)

Side View of LVUP at km. 461+678 (LHS)

RE Wall of LVUP at km. 472+982 (RHS)

Side View of LVUP at km. 472+982 (RHS)

Bottom Portion of LVUP at km. 472+982 (BHS)

Side View of LVUP at km. 472+982 (LHS)

Side View of LVUP at km. 481+255 (RHS)

Bottom Portion of LVUP at km. 481+255 (BHS)

Side View of LVUP at km. 481+255 (LHS)

Wearing Coat of LVUP at km. 481+255 (LHS)

Side View of VUP at km. 493+937 (RHS)

Bottom Portion of VUP at km. 493+937 (BHS)

RE Wall of VUP at km. 493+937 (LHS)

Side View of VUP at km. 493+937 (LHS)

Wearing Coat of LVUP at km. 501+800 (RHS)

Side View of LVUP at km. 501+800 (RHS)

Bottom Portion of LVUP at km. 501+800 (BHS)

Side View of LVUP at km. 501+800 (LHS)

Side View of VUP at km. 508+648 (RHS)

Bottom Portion of VUP at km. 508+648 (BHS)

RE Wall of VUP at km. 508+648 (LHS)

Side View of VUP at km. 508+648 (LHS)

Wearing Coat of LVUP at km. 511+735 (RHS)

Side View of LVUP at km. 511+735 (RHS)

Bottom Portion of LVUP at km. 511+735 (BHS)

Side View of LVUP at km. 511+735 (LHS)

Side View of PUP at km. 515+600 (RHS)

Bottom Portion of PUP at km. 515+600 (BHS)

Side View of PUP at km. 515+600 (LHS)

Wearing Coat of PUP at km. 515+600 (LHS)

3.6 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts, box culverts and slab culverts at various locations. There are 20 Nos. of pipe culverts, 16 Nos. of slab culverts and 81 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts and slab culverts is satisfactory. The RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location, it is found blocked due to debris, drainage water or bushes, tree growth, which must be removed and cleaned before monsoon. The wing wall has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of some culverts, damaged wing walls have been observed at culverts, which need to be addressed under routine repair work.

Figure 3-8 Photographs of Box Culverts / Hume Pipe Culverts

Box culvert at km. 448+480 (RHS)

Box culvert at km. 448+480 (LHS)

Box culvert at km. 497+510 (RHS) -Widening is in progress

Box culvert at km. 497+510 (LHS) -Widening is in progress

Box culvert at km. 504+430 (RHS)

Box culvert at km. 504+430 (LHS)

Box culvert at km. 507+620 (LHS) - Widening is in progress

Slab culvert at km. 445+390 (LHS)

Slab culvert at km. 445+390 (RHS)

Slab culvert at km. 491+725 (LHS)

Slab culvert at km. 491+725 (RHS)

HP culvert at km. 445+200 (LHS)

HP culvert at km. 445+200 (RHS)

HP culvert at km. 451+100 (LHS)

HP culvert at km. 451+100 (RHS)

HP culvert at km. 477+900 (LHS)

HP culvert at km. 477+900 (RHS)

3.7 Drainage

There are 0.9 kms of existing drain on both side of the Project Road as per Concession Agreement. However, there also exist 26.780 kms of shoulder drain (BHS) and 22.06 kms of median drain along the Project Road. The photographs taken during site visit is presented as below:

Figure 3-9 Photographs of Existing Drain (RHS)

km. 517+200

km. 511+735

km. 510+560

km. 501+800

km. 494+400

km. 493+937

km. 493+850

km. 481+255

km. 475+050

km. 472+982

km. 461+800

km. 455+500

km. 453+812

km. 483+200

km. 444+300

km. 443+800

Figure 3-10 Photographs of Existing Drain (LHS)

km. 442+800

km. 453+200

km. 454+00

km. 455+450

km. 461+200

km. 474+00

km. 475+00

km. 493+400

km. 501+400

km. 504+500

km. 508+400

3.8 Slope Protection

Slope protection for high embankment areas has been done / being done by providing revetment, chute drain and pitching at some locations. It has been found as per the standards of O&M contract. The photographs taken during the site visit are presented below.

Figure 3-11 Photographs of Slope Protection and Chute Drain

km. 451+986 (RHS-ROB)

Chute Drain at km. 451+986 (LHS-ROB)

At km. 451+986 (LHS-ROB)

km. 471+965 (LHS-MNB)

km. 472+200 (Median)

km. 488+155 (RHS-MNB)

km. 488+155 (LHS-MNB)

km. 490+558 (RHS-MNB)

km. 496+842 (LHS-MNB)

km. 496+842 (RHS-MNB)

km. 515+600 (LHS-ROB/PUP)

km. 516+035 (RHS-ROB)

3.9 Road Furniture

The Concessionaire has provided additional road furniture along Project Road as per the standards and specifications mentioned in Schedule-C. The details of the items are provided below.

a) Solar Blinkers

The Concessionaire has provided a total of 74 Nos. solar blinkers at median opening locations for the entire length of Project Road.

b) Transverse / Thermoplastic Bar Marking Locations

Transverse / Thermoplastic Bar Marking is provided on either side of carriageway for the entire length of Project Road.

c) New Installation of Safety Barriers

The Concessionaire has newly installed 1940 m of safety barrier wherever required along the Project Road.

d) Pedestrian Guard Rails

The Concessionaire has additionally provided pedestrian guard rail for 450 m length along the Project Road.

e) Additional Gantry / Cantilever Sign Board

The Concessionaire has additionally provided gantry / cantilever sign boards (4 Nos.) at VUP and flyover locations along the Project Road.

f) Summary of Quantity for Road Furniture Items

Following are the details of the summary of quantity for road furniture's items provided at Site.

Table 3-5 Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Solar Blinkers	Nos.	74
2	Transverse Bar Makings / Thermoplastic Bar Markings	Km.	80.0
3	New installation of Safety Barriers		
a	W-Beam Safety Barriers	Length, in m	1940.00
4	Pedestrian Guard Rails	Length, in m	900.00
5	Road Studs / Raised Pavement Markers	As per Section-9 of IRC:SP:84-2014	
6	Road Markings		
7	Traffic Delineators		
8	Kilometer / Hectometer / Boundary Stones		
9	Additional Sign Boards		
10	Cantilever Sign Boards	Nos.	4
11	Shoulder Mounted Dual Post Sign Boards	As per Section-9 of IRC: SP:84-2014	
12	Shoulder / Median Mounted Single Post Sign Boards		

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which needs rectification. Some of the photographs of road marking are presented below.

Figure 3-12 Photographs of Pavement Marking

RHS

km. 517+900

km. 517+000

km. 511+300

km. 504+500

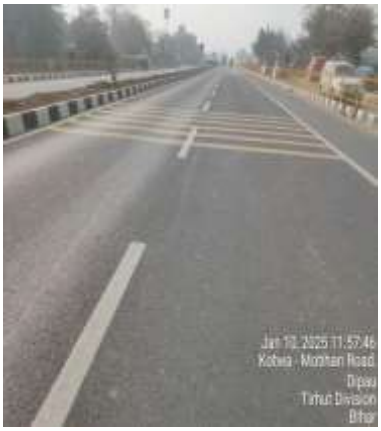
km. 496+000

km. 483+000

km. 455+650

km. 450+550

LHS



km. 443+000

km. 446+000

km. 466+300

km. 472+400

km. 480+650

km. 487+800

km. 499+200

km. 519+500

Road Studs

Cat's eye / road studs for the Project Road are done as per the design standards indicated in section 12 of Schedule-D. Cat's eye has been fixed at junction and zebra crossings. However, at few locations some cat's eyes have damaged which need rectification in O&M. Some of the photographs of road studs are presented below.

Figure 3-13 Photographs of Road Studs

RHS

km. 517+900

km. 504+400

km. 482+700

km. 450+550

LHS

km. 446+00

km. 466+300

km. 499+200

Traffic signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations. The Concessionaire needs to rectify the same. Some of the photographs of sign boards are presented below:

Figure 3-14 Photographs of Road Signages (RHS)

km. 516+035

km. 511+735

km. 511+200

km. 508+650

km. 502+600

km. 501+800

km. 501+400

km. 501+250

km. 500+400

km. 497+430

km. 497+430 **km. 497+000**

km. 497+000 **km. 495+000** **km. 493+000**

km. 493+000

km. 491+100

km. 483+850

km. 482+150

km. 476+450

km. 475+800

km. 465+000

km. 440+600

km. 445+250

km. 455+650

Figure 3-15 Photographs of Road Signages (LHS)

km. 442+500

km. 443+375

km. 445+200

km. 447+400

km. 448+400

km. 448+700

km. 452+800

km. 457+350

km. 458+000

km. 458+100

km. 460+700

km. 462+700

km. 472+500

km. 479+000

km. 513+000

km. 443+000

km. 480+650

Highway Lighting / Solar Blinker

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location.

At underpass and flyover locations, highway lighting is provided at the structure locations and at its approaches.

Solar amber blinker signals are provided at each median opening location. These lights are properly maintained and are in good working condition. Regular maintenance work is carried out to ensure their efficient operation. Some of the photographs of highway lightings are presented below.

Figure 3-16 Photographs of Street Light

km. 519+400

km. 518+800

km. 468+700

km. 499+300

km. 496+000

km. 492+860

km. 485+700

km. 476+450

km. 471+750

Crash Barriers

Metal beam / concrete crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are properly maintained except at few locations. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-17 Photographs of Crash Barrier

km. 461+700 (LHS)

km. 471+850 (RHS)

km. 483+200 (RHS)

km. 488+200 (LHS)

km. 490+590 (LHS)

km. 472+555 (RHS)

km. 481+275 (RHS)

km. 496+860 (LHS)

km. 508+655 (LHS)

km. 516+150 (RHS)

Delineators

The traffic delineators are provided by Concessionaire for road users in abnormal condition of weather in the Project Road. It is maintained by the Concessionaire. Some of the photographs of delineators are presented below.

Figure 3-18 Photographs of Delineator

km. 516+900

km. 509+250

km. 504+400

km. 496+000

km. 483+200

km. 451+250

Pedestrian Guard Rail

The pedestrian guard rails are provided in the median between service road and main carriageway. It is maintained by the Concessionaire. Pedestrian Guard Rail are damaged at few locations which needs rectification. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-19 Photographs of Pedestrian Guard Rail

km. 518+800

km. 517+200

km. 475+050

km. 473+350

Road Land Boundary

Road land boundary pillars are available along project length. It is maintained by the Concessionaire. Painting on ROW pillar is required as it has faded at some locations. Some of the photographs of road boundary pillars are presented below.

Figure 3-20 Photographs of Road Land Boundary

km. 515+500 (RHS)

km. 501+800 (RHS)

Km. 475+800 (RHS)

km. 442+800 (LHS)

km. 457+350 (LHS)

km. 483+600 (LHS)

3.10 Avenue Plantation and Median Plantation

Avenue plantations are provided within the available ROW and median plantation has been provided along the project length as per IRC specification. The photographs taken during the site visit are presented below.

Figure 3-21 Photographs of Avenue Plantation and Median Plantation

km. 490+558

km. 488+150

km. 472+000

km. 469+00

km. 457+470

km. 450+500

km. 518+200 (RHS)

km. 509+250 (RHS)

km. 506+000 (RHS)

km. 500+040 (RHS)

km. 488+600 (RHS)

km. 450+000 (RHS)

km. 445+450 (LHS)

km. 449+000 (LHS)

km. 491+800 (LHS)

3.11 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at km. 467+700 near Parsoni Khem village with the following infrastructure.

Table 3-6 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 467.700
2	Number of Tolling Lanes	10 lanes including 2 for over dimensional lanes
3	Weigh in Motion Facility (Number of Lanes)	Yes, in every lane
4	No. of ETC Lanes	10
5	Number of Toll Booths	10 Nos.
6	Canopy	Yes
7	Administrative Building	Yes
8	Parking cum Toilet Block	Yes (02 Nos.) LHS & RHS
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	No
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	Not Available
12	Storage facility for Overloaded Material	Not Available

Sr. No.	Particulars	Details
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	Not Available
16	User Fee Boards	Yes
17	Cantilever / Gantry Boards	Available
18	Automatic boom Barrier	Yes

Note:

- *Rehabilitation work and scope given in schedule-B for Toll Plaza is generally completed.*
- *New construction of Administrative Building is completed and finishing work is in progress.*
- *The Concessionaire is maintaining the Project Road including Toll Plaza as per scope of work.*
- *ATMS / HTMS is in the scope of Concessionaire and the work is completed.*

Some of the photographs of toll plaza are presented below.

Figure 3-22 Photographs of Toll Plaza

Toll Plaza Signages

Toll Plaza View

Toll Plaza View

Weigh Bridge

DG Room

Admin Building

O&M Centre

Storeroom

Electric Panel Room

Computer Training Centre

Inside view of Computer Centre

Fog Light

3.12 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.12.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 3 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.12.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

Lane Controller in Toll Booth at TP

3.12.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at TP

3.12.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at TP

3.12.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at TP

3.12.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

3.12.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC

3.12.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed

OHLS at TP

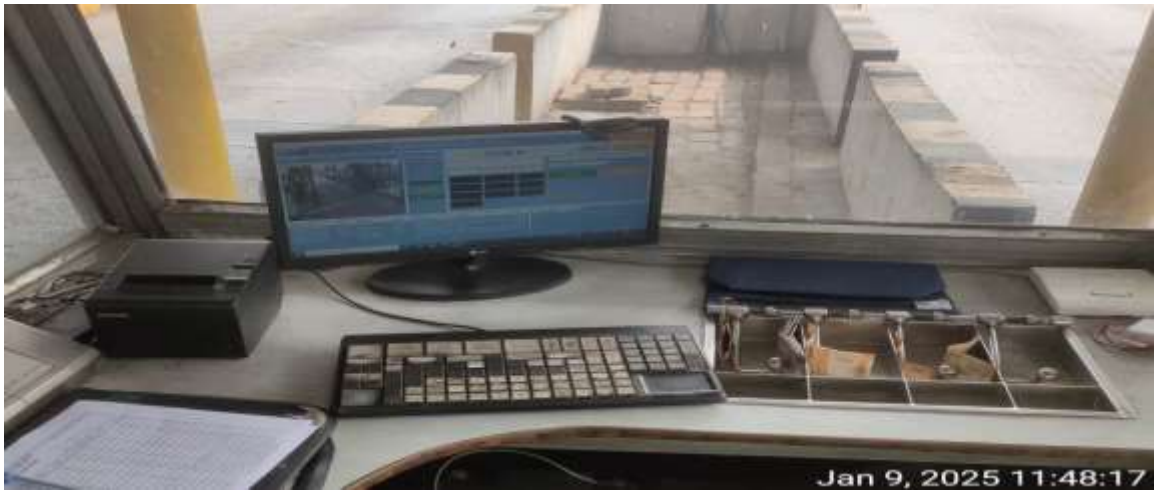
3.12.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.



TBE

Thermal Printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.12.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at TP

3.13 Plaza Equipment

3.13.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

Server

3.13.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

Control Room

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.13.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.14 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the project road is controlled by the ATMS center at the toll plaza location (km. 467.700). As per Concession agreement ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site are described below:

3.14.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at km. 467.290 and at km. 450.510

ATCC

3.14.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.14.3 Emergency Call Boxes (ECB)

It is not installed at site.

3.14.4 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km. 467.700.

MET

3.14.5 Variable Message Signboards (VMS)

Variable message sign boards are installed at 17 locations out of which 4 nos. are full and 13 nos. are compact type. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

km. 513+900 (RHS)

km. 506+200 (RHS)

km. 440+600 (LHS)

km. 447+350 (LHS)

3.14.6 CCTV Surveillance Cameras

Surveillance Cameras are installed at 56 locations along the project corridor. The ATMS control room has video wall to monitor these locations through the cameras installed.

At Toll Plaza Building

km. 519+400

km. 517+800

km. 511+700

3.14.7 Vehicle Actuated Speed Display (VASD)

VASD is installed at 12 locations each on LHS and RHS.

km. 491+750 (RHS)

km. 470+600 (RHS)

km. 450+300 (LHS)

km. 455+200 (LHS)

3.14.8 Adequacy of Toll Collection System and ATMS

- Adequacy - All lanes are hybrid ETC system as stipulated by NHAI in technical specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years, at the cost of the authority.
- Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition. Some components such as ECB and MRCS have not been installed.

3.15 Truck Layby

There are 14 Nos. of truck lay-bye in the Project Road. The photographs taken during the site visit are presented below.

Figure 3-23 Photographs of Truck Layby

km. 475+680 (RHS)

km. 468+100 (RHS)

km. 445+500 (LHS)

km. 450+400 (LHS)

3.16 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post have been shifted in newly constructed building at Toll Plaza. It is being maintained by the Concessionaire.

Figure 3-24 Photograph of Traffic Aid Post / Medical Aid Post

First Aid Centre

Bed arrangment in First Aid Center

Hydra Crane

Ambulance

3.17 Toilet Block

The Concessionaire has constructed 02 No. of Toilet Block along the Project Road at Toll Plaza. The photographs taken during the site visit are presented below.

Figure 3-25 Photograph of Toilet Block

3.18 Bus Bays and Passenger Shelters

The Concessionaire has constructed 20 Nos. of bus bays and passenger shelters along Project Road. The photographs taken during the site visit are presented below.

Figure 3-26 Photograph of Passenger Shelter

km. 515+150 (RHS)

km. 513+350 (RHS)

km. 501+250 (RHS)

km. 495+250 (RHS)

km. 491+150 (LHS)

3.19 Balance Work Status

During the site visit, it has been observed that the Concessionaire has completed most of the civil work. However, due to unavailability of land the following work is balance at site and the same has been confirmed by the IE vide their letter no. CPCPL/IE/03-24/315 Dated 27.03.2024 and letter no. CPC/IE/06-24/335 Dated 14.06.2024. The balance work details are as below.

The same is presented as below:

- The civil work of toll plaza building is completed. However, finishing works are found in progress at Medical and Highway aided building. Technical Consultants are of the opinion that all the finishing work in Toll Plaza may be completed by June 2025.

- ATMS and other civil work has been completed, and IE has confirmed for the same in their letters (COD).

- Work between km. 455.400 to km. 455.850 (BHS) i.e. service road drain and its associate work etc. is in progress. It is being delayed due to LA and not shifting the utility. However, as on date Concessionaire has started the SR work where utility shifting, and LA has done.

Sr. No.	Descriptions	Unit	Balance Quantity	Chainage (km)	Remark
1	Service Road	km	0.175	455+590 to 455+765	LHS
2	Drain	km	0.174	455+596 to 455+770	LHS
3	PGR	km	0.113	455+587 to 455+700	LHS

- During visual condition survey, It has been observed at site, NHAI has awarded new Structures and Service Road work under COS through separate tender. NHAI has appointed to M/s. Dhariwal Builtech. Ltd. With JV M/s. Evarascon Uarpal to execute these COS work vide their letter no. NHAI/PIU-DBGVUP's/DBL/ATMS/1465 Dated 29.11.2024. Details are as under.

Sr. No	Chainage (km)		Length (m)	Location	Structure Name	Contractor Name	Work Status
	From	To					
1	502+960	503+820	860	Kharika Chowk	LVUP	M/s Dhariwal Builtech Limited.	In Progress
2	507+270	508+090	820	Near Maa Chhinmasti ka Mandir	LVUP	M/s Dhariwal Builtech Limited.	In Progress
3	509+200	510+210	1010	Kanti Thermal Power	FLYOVER	M/s Dhariwal Builtech Limited.	In Progress
4	510+210	511+100	890	Neta Chowk	LVUP	M/s Dhariwal Builtech Limited.	In Progress
5	469+550	470+500	950	Banjhula Chowk	VUP & LVUP	M/s EVRASCON UARPL JV	In Progress
6	486+850	488+040	1190	Bargi Bazar	-	M/s EVRASCON UARPL JV	Work yet to start
7	492+100	493+425	1325	Kali Mandir Motipur	-	M/s EVRASCON UARPL JV	Work yet to start
8	496+700	497+870	1170	Pansalwa Chowk	Widening of Box Culvert	M/s EVRASCON UARPL JV	In Progress
9	498+824	499+790	966	Narriyar	-	M/s EVRASCON UARPL JV	Work yet to start
10	453+650	455+055	1405	Piprakothi	Service Road	M/s EVRASCON UARPL JV	In Progress

3.20 Operation and Maintenance

3.20.1 O&M Contract

As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall confirm to all the requirements laid down in MoRT&H, IRC Specifications, and the Concession Agreement.

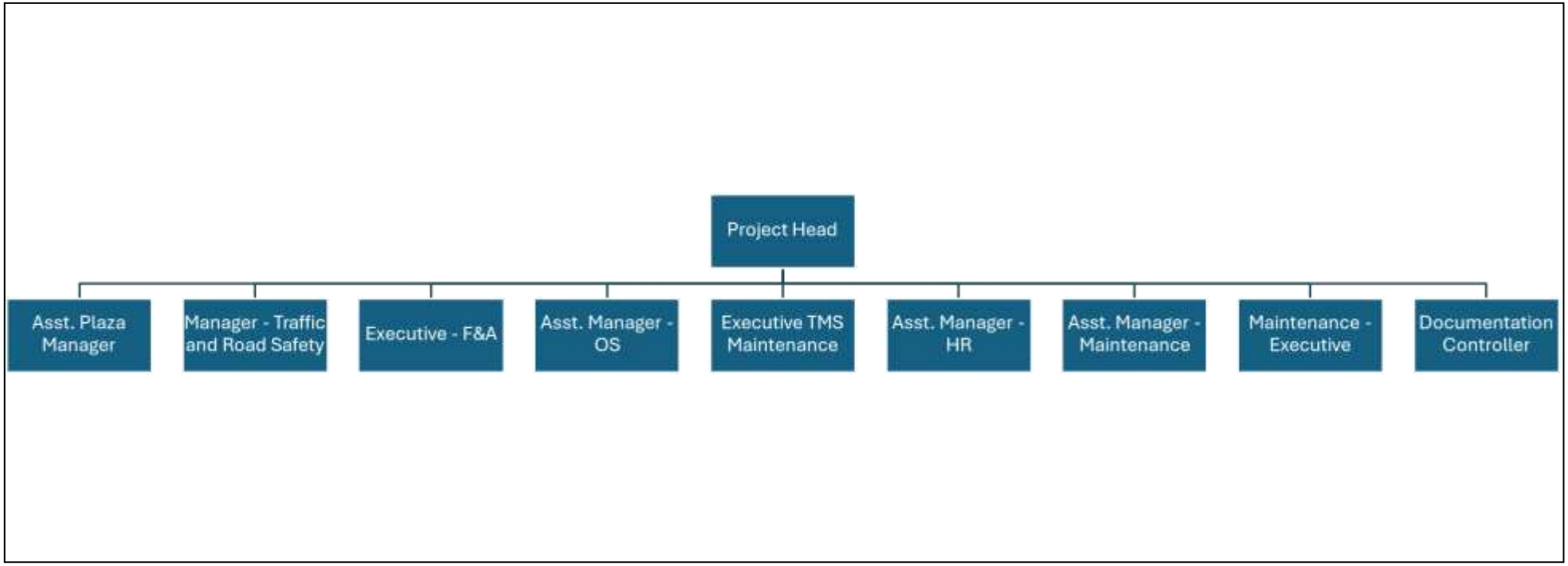
The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

3.20.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Plaza Manager, 01 Manager (Traffic and Road Safety), 01 Asst. Manager (IT), 01 Executive (F&A), 01 Asst. Manager

(HR), Manager (Maintenance) to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart



3.20.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.20.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 467+700 (near Toll Plaza) on 16th March 2020 and 17th March 2020. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Sr. No.	Vehicle Type	Direction	
		Muzaffarpur - Kotwa	Kotwa - Muzaffarpur
1	BUS	1.954	1.477
2	LCV	1.712	0.602
3	2-Axle	3.039	2.811
4	3-Axle	9.576	5.875
5	MAV	14.097	11.301

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2025-26	6.95	**6.95**	5.32	**5.32**	
2026-27	7.33	**14.28**	5.63	**10.95**	
2027-28	7.73	**22.01**	5.94	**16.89**	
2028-29	8.11	**30.12**	6.25	**23.14**	MM Cycle on 4 Lane highway
2029-30	8.49	**38.61**	6.56	**29.70**	
2030-31	8.87	**47.48**	6.86	**36.56**	
2031-32	9.27	**56.75**	7.18	**43.74**	
2032-33	9.70	**66.45**	7.52	**51.26**	
2033-34	9.97	**76.42**	7.74	**59.00**	
2034-35	9.67	**86.09**	7.52	**66.52**	
2035-36	10.11	**96.20**	7.88	**74.40**	MM Cycle on 4 Lane highway
2036-37	10.58	**106.78**	8.25	**82.65**	

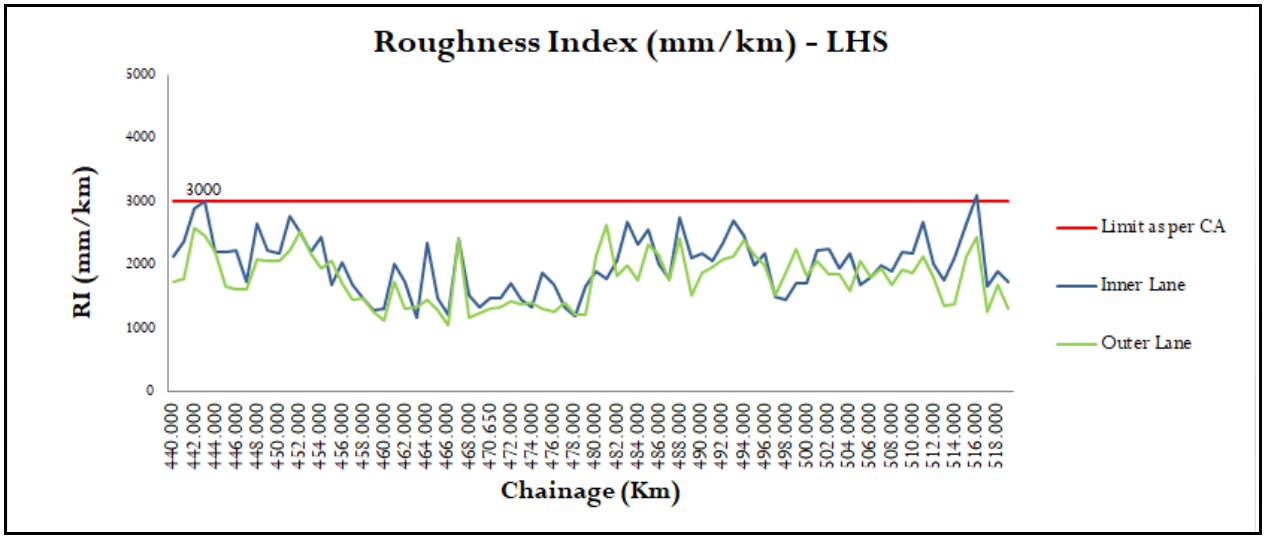
Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2037-38	11.07	**117.85**	8.64	**91.29**	
2038-39	11.57	**129.42**	9.05	**100.34**	Crossing 40000 PCU's
2039-40	12.10	**141.52**	9.47	**109.81**	Crossing 40000 PCU's
2040-41	12.64	**154.16**	9.91	**119.72**	Crossing 40000 PCU's
2041-42	13.21	**167.37**	10.36	**130.08**	DPR
2042-43	13.80	**181.17**	10.83	**140.91**	DPR
2043-44	14.41	**195.58**	11.32	**152.23**	Six Laning
2044-45	15.04	**210.62**	11.83	**164.06**	Six Laning
2045-46	12.56	**223.18**	9.89	**173.95**	End of Concession Period
2046-47	13.10	**236.28**	10.32	**184.27**	
2047-48	13.75	**250.03**	10.85	**195.12**	
2048-49	14.34	**264.37**	11.32	**206.44**	
2049-50	14.95	**279.32**	11.81	**218.25**	
2050-51	15.55	**294.87**	12.29	**230.54**	End of concession period as per Appointed date & CA

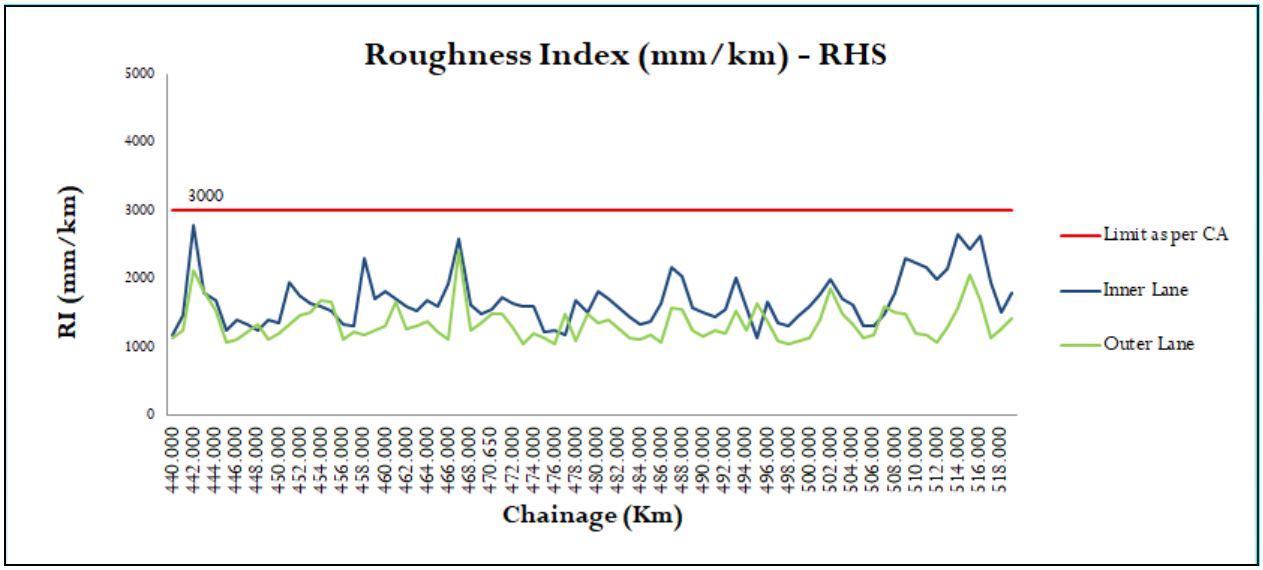
4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has provided NSV survey data conducted in October 2024. The NSV data is used to assess the riding quality and pavement condition of project road. The summary Roughness Index is given in the table below:

Table 4-3 Roughness Index Summary

Rating	Roughness Value	Length (km)			
		LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<2000	37.30	52.30	65.30	75.30
Fair	2000-3000	40	26	13	3
Poor	>3000	1	-	-	-





4.5 Structural Investigations

Falling Weight Deflectometer survey was conducted for flexible pavement by the Concessionaire in FY 2025. The summary of the FWD survey report is presented in the table below.

Table 4-4 FWD Summary

Fatigue in BT Layer, N_f (MSA)	Length (km)			
	LHS		RHS	
	Inner Lane	Outer Lane	Inner Lane	Outer Lane
<50	-	-	-	-
50-100	4.715	-	-	-
100-200	7.705	4.942	3.523	-
200-300	3.766	4.004	4.265	5.975
300-400	1.005	9.736	6.259	0.751
400-500	4.228	5.756	1.493	7.738
>500	15.173	11.445	38.95	39.494
Total Length	**36.592**	**35.883**	**54.49**	**53.958**

From the above table, it is observed that residual life of the pavement is more than the cumulative design MSA up to FY 2031. Hence, strengthening of the pavement is not required till FY 2031. The periodic maintenance of the Project Road is proposed in FY 2029 as per the requirement of the Schedule-F of the CA.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-5 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Location (Km.)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		4-Days Soaked CBR (%)	Free Swell Index (%)
				19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 micron	75 micron		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	19	18
1	455+420	LHS	ML	100.0	98.6	96.8	96.0	93.4	78.6	78.6	26	NP	NP	1.82	9.3	6.4	0.0
2	455+600	RHS	ML	100.0	100.0	99.6	98.8	95.6	81.0	81.0	28	NP	NP	1.79	9.4	6.1	0.0

Table 4-6 Granular Layer's Test Result Summary

Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)											
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075
1	440+700	LHS	WMM	100.0	100.0	100.0	78.3	69.3	43.5	36.4	28.2	21.2	11.6	8.6	0.8
2	442+500	RHS	WMM	100.0	100.0	92.3	72.3	59.3	52.3	43.1	36.8	23.9	16.2	5.6	1.3
3	445+100	LHS	GSB	100.0	83.0	63.2	28.1	24.6	15.9	14.3	13.0	11.4	8.9	7.5	0.1
4	447+700	RHS	GSB	100.0	100.0	98.7	22.0	17.4	13.5	12.6	11.5	10.3	8.3	7.2	0.3
5	450+250	LHS	WMM	100.0	100.0	100.0	76.8	68.8	56.3	40.6	22.8	14.3	12.6	8.6	1.9
6	451+200	RHS	WMM	100.0	100.0	98.8	73.5	60.5	41.4	37.5	32.6	25.3	16.8	14.6	0.9
7	455+000	LHS	GSB	100.0	100.0	100.0	55.9	46.3	29.3	26.3	23.3	21.0	16.8	15.3	4.9
8	457+700	RHS	GSB	100.0	100.0	100.0	46.7	34.0	28.0	0.7	0.3	0.2	0.2	0.2	0.0
9	459+900	LHS	WMM	100.0	100.0	98.0	62.8	49.9	16.0	12.3	10.4	9.2	7.6	7.0	1.0
10	462+300	RHS	WMM	100.0	100.0	100.0	57.9	44.0	16.9	15.0	13.8	12.4	9.8	8.9	0.2
11	465+050	LHS	GSB	100.0	100.0	97.4	45.6	33.6	7.8	4.0	1.9	1.4	1.0	0.9	0.3
12	467+000	RHS	GSB	100.0	100.0	97.2	31.2	20.1	9.7	9.0	8.4	7.9	7.0	6.6	0.6

Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)											
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075
13	469+700	LHS	WMM	100.0	100.0	100.0	86.4	78.1	42.8	31.6	21.3	15.6	8.7	6.9	0.9
14	472+800	RHS	WMM	100.0	100.0	100.0	81.3	58.1	34.2	31.5	28.7	23.3	16.3	14.5	1.5
15	475+250	LHS	GSB	100.0	100.0	95.3	42.2	31.8	12.8	10.9	9.5	8.3	6.5	5.7	0.8
16	477+300	RHS	GSB	100.0	93.0	83.8	40.1	35.6	19.3	16.7	14.8	12.9	10.5	9.3	2.0
17	479+950	LHS	WMM	100.0	100.0	100.0	73.5	62.3	30.8	25.6	20.0	16.8	12.5	11.1	0.9
18	482+160	RHS	WMM	100.0	97.5	84.5	44.3	33.0	15.7	12.6	10.8	9.3	7.9	6.8	0.4
19	484+400	LHS	GSB	100.0	100.0	90.4	63.2	56.9	41.4	36.5	32.5	29.6	24.4	21.4	2.0
20	487+520	RHS	GSB	100.0	82.8	64.7	26.7	22.8	14.3	13.0	11.8	10.7	9.1	8.3	0.5
21	489+400	LHS	GSB	100.0	84.6	64.3	52.3	38.6	29.1	18.8	12.3	9.0	5.2	2.6	0.8
22	492+460	RHS	WMM	100.0	100.0	98.1	86.0	55.1	38.1	36.2	28.0	19.2	15.3	13.6	1.1
23	494+800	LHS	GSB	100.0	97.1	91.6	44.7	38.9	26.1	23.5	20.6	19.0	16.1	14.4	1.4
24	497+300	RHS	GSB	100.0	97.6	94.0	56.3	45.8	23.3	16.5	10.6	7.6	4.9	4.1	0.8
25	500+000	LHS	GSB	100.0	89.3	69.2	54.1	41.2	32.5	21.0	14.2	11.2	6.1	3.4	0.9
26	501+180	RHS	WMM	100.0	100.0	96.9	83.2	55.8	43.8	30.4	27.6	19.6	12.9	8.4	2.1
27	505+000	LHS	GSB	100.0	97.0	82.0	40.6	35.7	26.4	24.6	22.6	21.0	17.3	14.7	0.9
28	506+900	RHS	GSB	100.0	97.8	92.1	29.8	21.8	14.9	14.0	13.3	12.4	9.9	8.9	1.4
29	509+800	RHS	WMM	100.0	100.0	98.5	34.7	25.8	12.7	10.2	8.2	6.9	5.3	4.7	0.2
30	511+180	LHS	WMM	100.0	100.0	96.0	78.3	70.0	50.5	47.6	44.7	42.5	39.2	37.3	28.2
31	515+200	LHS	GSB	100.0	98.1	73.5	39.4	32.9	19.5	17.4	15.5	14.0	11.8	9.8	0.3
32	517+400	RHS	GSB	100.0	92.4	85.5	32.2	26.4	14.4	12.9	11.4	9.9	7.9	6.6	0.3
33	520+000	LHS	WMM	100.0	100.0	95.4	61.1	56.2	39.2	32.5	25.6	19.6	15.2	10.9	2.1

Table 4-7 Test Results Summary of Subgrade

Sr. No.	Location (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	440+700	LHS	CL	31	22	9	1.85	11.3	1.78	12.5	7.5	15.2	96.2
2	442+500	RHS	CL	31	19	12	1.84	12.0	1.78	12.5	7.3	20.0	96.7
3	445+100	LHS	ML	26	NP	NP	1.85	9.4	1.77	12.5	7.2	12.5	95.7
4	447+700	RHS	ML	25	NP	NP	1.79	10.0	1.72	14.5	5.0	0.0	96.1
5	450+250	LHS	ML-CL	29	22	7	1.88	12.6	1.75	12.0	4.7	18.2	93.1
6	451+200	RHS	ML	23	NP	NP	1.91	10.7	1.80	11.5	7.8	0.0	94.2
7	455+000	LHS	ML-CL	30	24	6	1.82	10.3	1.76	12.5	6.3	12.5	96.7
8	457+700	RHS	ML	28	NP	NP	1.79	10.7	1.78	12.5	5.1	7.1	99.4
9	459+900	LHS	ML	26	NP	NP	1.93	8.7	1.85	12.5	11.5	0.0	95.9
10	462+300	RHS	ML	25	NP	NP	1.91	8.6	1.83	10.0	10.1	0.0	95.8
11	465+050	LHS	ML	27	NP	NP	1.86	9.8	1.80	13.0	8.3	0.0	96.8
12	467+000	RHS	SM	25	NP	NP	1.97	9.2	1.84	10.5	12.4	0.0	93.4
13	469+700	LHS	ML	26	NP	NP	1.91	10.3	1.80	14.5	9.0	0.0	94.2
14	472+800	RHS	ML	24	NP	NP	1.89	9.8	1.83	10.5	7.2	12.5	96.8
15	475+250	LHS	ML	35	25	10	1.93	10.1	1.85	8.0	8.5	22.2	95.9
16	477+300	RHS	ML	27	NP	NP	1.81	9.7	1.78	9.5	6.9	0.0	98.3
17	479+950	LHS	SM	26	NP	NP	1.94	9.7	1.79	7.5	9.8	0.0	92.3
18	482+160	RHS	CL	32	23	9	1.83	11.6	1.79	11.0	4.7	20.0	97.8
19	484+400	LHS	ML	27	NP	NP	1.83	9.4	1.77	7.0	6.6	0.0	96.7
20	487+520	RHS	SM	23	NP	NP	1.99	9.0	1.86	10.0	12.5	0.0	93.5
21	489+400	LHS	ML-CL	31	25	6	1.86	9.6	1.82	7.5	7.1	15.2	97.8
22	492+460	RHS	ML	22	NP	NP	1.82	10.0	1.78	10.5	5..5	10.0	97.8
23	494+800	LHS	ML	25	NP	NP	1.85	9.5	1.79	8.5	6.7	11.1	96.8
24	497+300	RHS	CL	33	22	11	1.77	13.5	1.76	10.0	5.4	25.2	99.4

Sr. No.	Location (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
25	500+000	LHS	ML	20	NP	NP	1.86	9.6	1.75	7.5	6.7	7.1	94.1
26	501+180	RHS	CL	32	21	11	1.81	11.7	1.78	10.5	5.0	25.2	98.3
27	505+000	LHS	ML-CL	29	24	5	1.84	10.1	1.75	9.5	6.5	12.5	95.1
28	506+900	RHS	CL	33	19	14	1.79	12.9	1.75	10.0	5.1	30.0	97.8
29	509+800	RHS	CL	29	21	8	1.92	10.6	1.81	10.5	6.3	20.0	94.3
30	511+180	LHS	CL	33	22	11	1.84	12.7	1.77	10.0	5.6	25.2	96.2
31	515+200	LHS	CL	30	22	8	1.83	11.4	1.75	10.0	6.2	18.2	95.6
32	517+400	RHS	ML	22	NP	NP	1.91	9.0	1.82	10.0	10.1	0.0	95.3
33	520+000	LHS	ML	22	NP	NP	1.92	9.5	1.85	10.0	8.9	0.0	96.4

Table 4-8 Test Results Summary of Granular Layer's Test Result Summary

Sr. No.	Side (RHS/LHS)	Pavement Composition (mm)					
		Flexible Pavement		Rigid Pavement			Total Thickness (mm)
		Bituminous Layer (mm)	Granular Layers (mm)	PQC (mm)	DCL (mm)	GSB (mm)	
1	LHS	180	460				640
2	RHS	180	440				620
3	LHS	200	460				660
4	RHS	220	470				690
5	LHS	220	480				700
6	RHS	260	430				690
7	LHS	230	490				720
8	RHS	190	450				640
9	LHS	250	470				720
10	RHS	200	440				640

Sr. No.	Side (RHS/LHS)	Pavement Composition (mm)					
		Flexible Pavement		Rigid Pavement			Total Thickness (mm)
		Bituminous Layer (mm)	Granular Layers (mm)	PQC (mm)	DCL (mm)	GSB (mm)	
11	LHS	180	500				680
12	RHS	220	480				700
13	LHS	200	450				650
14	RHS	150	470				620
15	LHS	240	480				720
16	RHS	190	440				630
17	LHS	220	480				700
18	RHS	260	430				690
19	LHS			300	150	320	770
20	RHS	270	450				720
21	LHS			310	140	300	750
22	RHS	270	440				710
23	LHS			330	130	240	700
24	RHS	230	480				710
25	LHS			280	140	290	710
26	RHS	210	450				660
27	LHS			300	150	260	710
28	RHS	250	450				700
29	RHS	160	460				620
30	LHS	170	480				650
31	LHS	190	450				640
32	RHS	220	440				660
33	LHS	240	440				680

Table 4-9 DCP-Equivalent CBR Summary

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
1	NH-28	440+700	LHS	14.2
2	NH-28	442+500	RHS	12.1
3	NH-28	445+100	LHS	17.8

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
4	NH-28	447+700	RHS	10.7
5	NH-28	450+250	LHS	9.9
6	NH-28	451+200	RHS	13.3
7	NH-28	455+000	LHS	11.0
8	NH-28	457+700	RHS	9.1
9	NH-28	459+900	LHS	11.0
10	NH-28	462+300	RHS	14.4
11	NH-28	465+050	LHS	14.6
12	NH-28	467+000	RHS	16.1
13	NH-28	469+700	LHS	15.0
14	NH-28	472+800	RHS	10.0
15	NH-28	475+250	LHS	15.4
16	NH-28	477+300	RHS	14.9
17	NH-28	479+950	LHS	15.5
18	NH-28	482+160	RHS	6.2
19	NH-28	484+400	LHS	13.0
20	NH-28	487+520	RHS	26.6
21	NH-28	489+400	LHS	12.7
22	NH-28	492+460	RHS	12.9
23	NH-28	494+800	LHS	15.0
24	NH-28	497+300	RHS	10.6
25	NH-28	500+000	LHS	10.0
26	NH-28	501+180	RHS	8.8
27	NH-28	505+000	LHS	10.0
28	NH-28	506+900	RHS	11.1
29	NH-28	509+800	RHS	8.9
30	NH-28	511+180	LHS	11.0
31	NH-28	515+200	LHS	11.4
32	NH-28	517+400	RHS	9.8
33	NH-28	520+000	LHS	13.5
			Average DCP - Equivalent CBR	**12.6**

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

As per Article 14 of CA, the Authority shall carry out capacity augmentation under EPC contract if traffic exceeds 40,000 PCU for three consecutive accounting years. As per the traffic study report submitted by the Company it is observed that the project traffic crosses 40,000 PCU in FY 2039, FY 2040, FY 2041. Assumption has made that execution of 6-laning of project highway will start in the year 2044 or 2045. It is also assumed that during the 6-laning of project highway, overlay of existing four lane road will be the part of the capacity augmentation. As informed by the Concessionaire, major maintenance for the entire length of the Project Road was carried out in FY 2022. The major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-10 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 to FY 2028	-	-
2	FY 2029	Major Maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (VG-40) (10%)	Major Maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
3	FY 2030 to FY 2035	-	-
4	FY 2036	Major Maintenance with 30 mm BC (PMB) (100%) + Milling & 50 mm DBM (VG-40) (5%)	Major Maintenance with 30 mm BC (VG-30) (50%) + Micro-surfacing (50%)
6	FY 2037 to FY 2043	-	-
8	FY 2044 to FY 2045	Assumption of Capacity Augmentation to Six Lane Configuration	
9	FY 2046*	End of Concession Period	

**Actual end of concession period as per Concession Agreement is October 2051. However, as per traffic details submitted by the Concessionaire, the revised concession period is up to FY 2046 as per provision of Article 14 of CA.*

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per PWD SoR 2024. The input rates for PWD SoR were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Schedule of Rates, Government of Bihar.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

      Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from Market rate.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	10,336
2	Bituminous Concrete (VG-30)	Cum	11,027
3	Bituminous Concrete (PMB)	Cum	13,185
4	Milling	Sqm	88
5	Micro-surfacing	Sqm	155
6	Kerb Re-laying	Rmt	297
7	Road Marking	Sqm	682
8	Road Studs	Nos.	290

5.3 Balance Work Cost

The Concessionaire has provided the detail of balance work. The summary of balance cost is presented in below table.

Table 5-3 Summary of Balance Works

Sr. No.	Items of Work	Cost (Rs.)
1	Earth Work	1,288,221
2	Subbase, Base (Non-Bituminous) & Shoulder	8,692,235
3	Bases and Surface course (Bituminous layer)	14,247,849
4	Box Culvert	1,808,760
5	Pipe Culvert	2,875,589
6	Junction	9,070,137
7	Drain	1,038,623
8	Miscellaneous	3,803,061
	Total Balance Amount (Rs.)	**42,824,476**
	Total Balance Amount (Cr.)	**4.28**

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-4 Summary of Operation Cost

Sr. No.	Particulars	Amount after (FY 2026-45)	Amount after Capacity Augmentation (FY 2046)
1	Salary and Welfare Expenses	14,491,008	14,491,008
2	Tolling Operations Services	26,039,856	26,039,856
3	Toll Security Services	6,506,817	6,506,817
4	Incident Management & Emergency Services	32,897,094	32,897,094
5	Electricity and Diesel Charges	3,550,783	3,550,783
6	TMS/HTMS/System Expenses	5,268,421	7,485,936
7	Office Operating Expenses	3,567,584	3,567,584
8	Vehicle Running Expenses	2,664,000	2,664,000

Sr. No.	Particulars	Amount after (FY 2026-45)	Amount after Capacity Augmentation (FY 2046)
9	Professional Fees Expense	8,128,298	9,753,958
10	Community Development	1,863,282	1,863,282
11	Communication Expenses	347,156	347,156
12	Conveyance Expenses	378,716	378,716
13	Insurance Expense	19,566,989	19,566,989
14	IE Fees	4,418,352	4,418,352
15	Routine Maintenance Cost (Project Road)	36,056,922	47,682,978
16	Horticulture & ROW Maintenance	22,803,264	22,803,264
17	Miscellaneous including Contingency	5,190,611	5,341,261
	Total Cost (Rs.)	**193,739,153**	**209,359,033**
	Total Cost (Cr.)	**19.37**	**20.94**
	Per km Cost (Lakhs)	24.22	26.17

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Table 5-5 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2026 to FY 2028	-	
2	FY 2029	93.53	
3	FY 2030 to FY 2035	-	
4	FY 2036	97.40	
5	FY 2037 to FY 2046	-	
Total Cost (Cr.)		**190.93**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	8.77	
2	FY 2034	8.77	
3	FY 2041	8.77	
Total Cost (Cr.)		**26.31**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-6 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%

Year	Escalation	Year	Escalation
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%	**2057**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr)

	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46
1	Routine O&M Cost																					
1.01	Salary and Welfare Expense	1.45	1.53	1.61	1.69	1.76	1.84	1.91	1.99	2.07	2.15	2.24	2.33	2.42	2.52	2.62	2.73	2.83	2.95	3.06	3.19	3.31
1.02	Tolling Operations Services	2.60	2.75	2.89	3.03	3.17	3.30	3.44	3.58	3.72	3.87	4.03	4.19	4.35	4.53	4.71	4.90	5.09	5.30	5.51	5.73	5.95
1.03	Toll Security Services	0.65	0.69	0.72	0.76	0.79	0.82	0.86	0.89	0.93	0.97	1.01	1.05	1.09	1.13	1.18	1.22	1.27	1.32	1.38	1.43	1.49
1.04	Incident Management Services	3.29	3.47	3.65	3.83	4.00	4.17	4.34	4.52	4.70	4.89	5.09	5.29	5.50	5.72	5.95	6.19	6.43	6.69	6.96	7.23	7.52
1.05	Electricity and Diesel Charges	0.36	0.37	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.69	0.72	0.75	0.78	0.81
1.06	TMS/HTMS/System Expenses	1.09	0.19	0.33	0.47	0.63	0.66	0.99	1.50	0.26	0.44	0.63	0.84	0.87	1.30	1.97	0.34	0.57	0.83	1.10	1.15	1.71
1.07	Office Operating Expenses	0.36	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.75	0.78	0.82
1.08	Vehicle Running Expenses	0.27	0.28	0.30	0.31	0.32	0.34	0.35	0.37	0.38	0.40	0.41	0.43	0.45	0.46	0.48	0.50	0.52	0.54	0.56	0.59	0.61
1.09	Professional Fees Expense	0.81	0.86	0.90	0.95	0.99	1.03	1.07	1.12	1.16	1.21	1.26	1.31	1.36	1.41	1.47	1.53	1.59	1.65	1.72	1.79	2.23
1.10	Community Development	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.34	0.35	0.36	0.38	0.39	0.41	0.43
1.11	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09
1.13	Insurance Expense	1.96	2.06	2.17	2.28	2.38	2.48	2.58	2.69	2.80	2.91	3.03	3.15	3.27	3.40	3.54	3.68	3.83	3.98	4.14	4.30	4.47
1.14	IE Fees	0.44	0.47	0.49	0.51	0.54	0.56	0.58	0.61	0.63	0.66	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.90	0.93	0.97	1.01
1.15	Routine Maintenance Cost	3.61	3.80	4.00	4.20	4.39	4.57	4.76	4.95	5.15	5.36	5.58	5.80	6.03	6.27	6.52	6.78	7.05	7.33	7.63	7.93	10.90
1.16	Horticulture & ROW Maintenance	2.28	2.41	2.53	2.66	2.77	2.89	3.01	3.13	3.26	3.39	3.53	3.67	3.81	3.97	4.12	4.29	4.46	4.64	4.82	5.01	5.21
1.17	Miscellaneous and Contingency	0.52	0.55	0.58	0.60	0.63	0.66	0.69	0.71	0.74	0.77	0.80	0.83	0.87	0.90	0.94	0.98	1.02	1.06	1.10	1.14	1.22
	Subtotal of O&M Cost	19.94	20.08	21.26	22.42	23.56	24.56	25.87	27.39	27.19	28.45	29.77	31.15	32.39	34.07	36.05	35.78	37.43	39.16	40.96	42.59	47.88
2	Major Maintenance Cost	-	-	-	103.25	-	-	-	-	-	-	133.30	-	-	-	-	-	-	-	-	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	9.25	-	-	-	-	-	-	12.53	-	-	-	-	-	-	16.48	-	-	-	-	-
4	Balance Works Cost	4.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**24.22**	**29.33**	**21.26**	**125.67**	**23.56**	**24.56**	**25.87**	**27.39**	**39.72**	**28.45**	**163.07**	**31.15**	**32.39**	**34.07**	**36.05**	**52.26**	**37.43**	**39.16**	**40.96**	**42.59**	**47.88**

ANNEXURE

ANNEXURE-I ROUTINE MAINTENANCE COST

Routine Maintenance Cost (Up to FY 2045)	
Ordinary Repair Cost (with GST)	**36,056,922**
(Inclusive of GST)	**= 4.51 lakhs per km**

National Highways / State Highways (Flexible Pavement)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				2,19,410	**2,85,686**	**Normal**	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	335697.00	437100.00	-	-	-	-
		Paved shoulder	1.70	372997.00	485667.00	39.27	-	14,645,727	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	438820.00	571373.00	-	-	-	-
		Paved shoulder	2.20	482702.00	628510.00	-	27.39	-	17,211,746
					TOTAL	**66.650**			**31,857,474**
National Highways / State Highways (Rigid Pavement)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				1,31,559	**1,60,912**	**Normal**	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	201286.00	246196.00	-	-	-	-
		Paved shoulder	1.70	223651.00	273551.00	13.35	-	2,985,741	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	263119.00	321825.00	-	-	-	-
		Paved shoulder	2.20	289430.00	354007.00	-	-	-	-
3	Replacement of damaged panels		0.20			-	-	1,213,707	
					Sub Total		**13.350**		**4,199,448**
					Grand Total		**80.000**		**36,056,922**

Routine Maintenance Cost (For FY 2046)	
Ordinary Repair Cost (with GST)	**47,682,978**
(Inclusive of GST)	**= 5.96 lakhs per km**

National Highways / State Highways (Flexible Pavement)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				2,19,410	**2,85,686**	**Normal**	**Urban**	**Normal**	**Urban**
1	Six lane with divided carriageway	without Paved shoulder	2.09	458567.00	597085.00	-	-	-	-
		with Paved shoulder	2.26	495867.00	645651.00	39.27	-	19,470,218	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	561690.00	731357.00	-	-	-	-
		with Paved shoulder	2.76	605572.00	788495.00	-	27.39	-	21,592,936
					TOTAL	**66.650**			**41,063,153**
National Highways / State Highways (Rigid Pavement)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				1,31,559	**1,60,912**	**Normal**	**Urban**	**Normal**	**Urban**
1	Six lane with divided carriageway	without Paved shoulder	2.09	458567.00	597085.00	-	-	-	-
		with Paved shoulder	2.26	495867.00	645651.00	13.35	-	6,619,824	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	561690.00	731357.00	-	-	-	-
		with Paved shoulder	2.76	605572.00	788495.00	-	-	-	-
					Sub Total	**13.350**			**6,619,824**
					Grand Total	**80.000**			**47,682,978**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			12449
	Cost in Rupees			31,123
	ii) Patch repair	100 % Patch less	As & when required	0.60%
	Area (sqm)			60
	Rs/m^2			498
	Cost in Rupees			29,878
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			78
	Cost in Rupees			19,464
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			57
	Cost in Rupees			8,569
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.20%
	Area (sqm)			90
	Rs/m^2			498
	Cost in Rupees			44,816
	v) Road marking	14%	Once in 7th year & @ Repaired location	22689
	SUB TOTAL			**156,539**
2	**Maintenance of earthen Shoulders:**			

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**219,410**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	36923
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**66,276**
	GRAND TOTAL (Urban)			**285,686**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.00%

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	Volume (cum)			0.00
	Rs/m^3			12449
	Cost in Rupees			0
	ii) Patch repair	100 % Patch less	As & when required	0.00%
	Area (sqm)			0
	Rs/m^2			498
	Cost in Rupees			0
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			78
	Cost in Rupees			19,464
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.50%
	Area (sqm)			187.5
	Rs/m^2			57
	Cost in Rupees			10,711
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	0.00%
	Area (sqm)			0
	Rs/m^2			498
	Cost in Rupees			0
	v) Road marking	14%	Once in 7th year & @ Repaired location	38514
	SUB TOTAL			**68,689**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**131,559**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	0
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**29,353**
	GRAND TOTAL (Urban)			**160,912**

ANNEXURE-II MAJOR MAINTENANCE COST

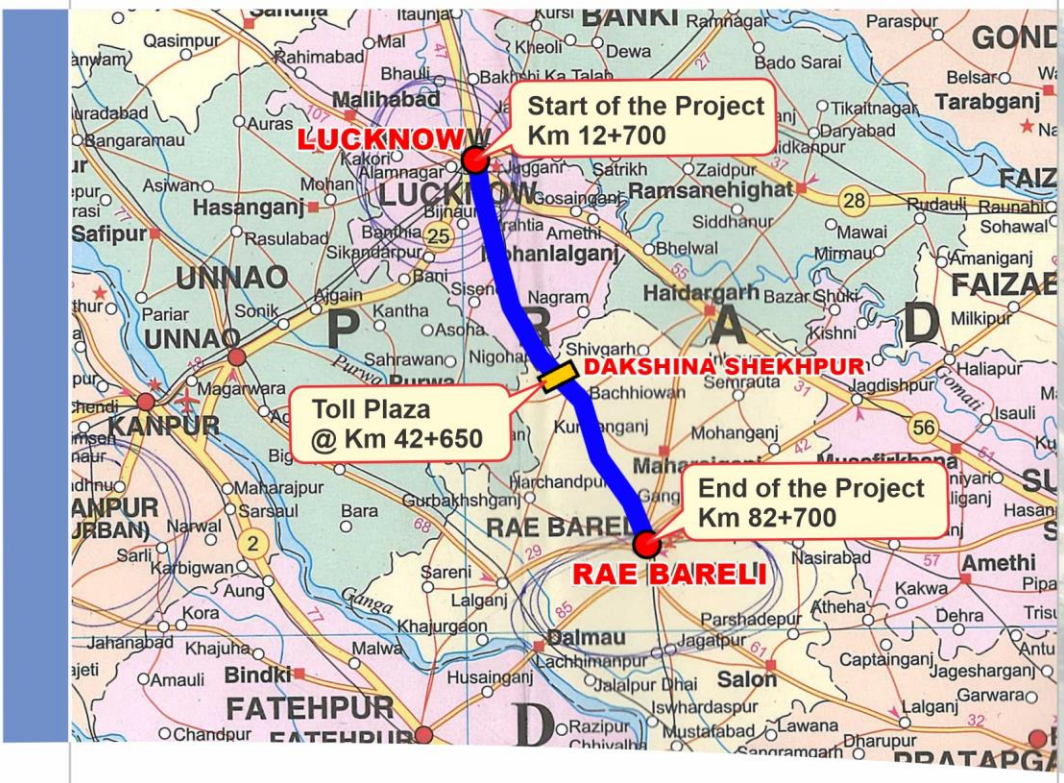
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						1,383,991	12	16,358,772
	For BC	Sqm	2	65,749	8.77		1,152,922	1,152,922		
	For DBM	Sqm	2	6,485	7.00		90,788	90,788		
	For Misc. Location	Sqm	2	8,000	8.77		140,281	140,281		
2	BC with 30 mm	Cum	2	73,749	8.77	0.03	38,796	38,796	13,185	511,525,439
3	DBM with 50 mm	Cum	2	6,485	7.00	0.05	4,539	4,539	10,336	46,918,069
4	Milling	Sqm	2	6,485	7.00		90,788	90,788	88	7,989,384
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	16,002	3.50	4.50	12,802	12,802	49	627,284
6	Dismantling of CC Panels @ 3% area	Cum	3%		252,034	0.27	2041	2041	684	1,395,346
7	Replacement of Panels - PQC @ 3% area	Cum	3%		252,034	0.27	2041	2041	8,266	16,874,993
	Service Road									
8	Tack coat	Sqm	1	32,862	5.65		185,646	185,646	12	2,194,336
9	BC with 30 mm	Cum	1	32,862	5.65	0.03	5,569	5,569	11,027	61,414,055
10	Micro Surfacing	Sqm	1	21,908	5.65		123,764	123,764	155	19,214,361
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	901	14.6		13,136	13,136	12	155,265
12	Wearing Coat BC with 30 mm	Cum	1	901	14.6	0.03	394	394	13,185	5,195,844
13	Milling of Ex. Wearing Coat	Sqm	1	901	14.6		13,136	13,136	88	1,155,947
14	Painting of Crash Barrier	Sqm	4	901		1.12	4,016	4,016	121	485,991
	Other Works									
15	Raising of Road Kerb	Rmt	-	120,519			-	-	297	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,779			19,558	19,558	290	5,671,820
	Solar Road Stud	Nos	1				-	-	1,725	-
17	Painting of Kerb	Sqm	2	79,099		0.315	49,833	49,833	145	7,225,735
18	Road Marking	Sqm								

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	On PQC						9,336	9,336	750	7,003,608
	On BC						55,763	55,763	682	38,030,419
	On Micro surfacing						6,381	6,381	620	3,958,200
	MCW-Flexible									
	a) Median & Edge line	Sqm	4	69,037	0.15		41,422			
	b) Lane line	Sqm	2	22,782	0.10		4,556			
	MCW-Rigid									
	a) Median & Edge line	Sqm	4	14,018	0.15		8,411			
	b) Lane line	Sqm	2	4,626	0.10		925			
	Service Road									
	a) Edge line	Sqm	2	54,770	0.10		10,954			
	b) Lane line	Sqm	1	18,074	0.10		1,807			
	Junction crossing	Sqm					3,404			
19	Filling of Earthen shoulder	Cum					4,931	4,931	299	1,475,303
	MCW		2	65,749	1.00	0.03	3,945			
	Service Road		1	32,862	1.00	0.03	986			
20	Median Filling	Cum	-	65,209	4.17	0.10	-	-	288	-
21	Miscellaneous	5%								37,743,509
Total Major Maintenance Cost (Rs)										**792,613,679**
Total Major Maintenance Cost with GST (Rs)										**935,284,142**
Total Major Maintenance Cost with GST (Cr)										**93.53**
Per km Cost (lakh)										**116.91**
Escalation Factor for (FY 2029										**1.15**
Total Escalated Cost for FY 2029 (Cr)										**103.25**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						1,338,597	12	15,822,212
	For BC	Sqm	2	65,749	8.77		1,152,922	1,152,922		
	For DBM	Sqm	2	3,242	7.00		45,394	45,394		
	For Misc. Location	Sqm	2	8,000	8.77		140,281	140,281		
2	BC with 30 mm	Cum	2	73,749	8.77	0.03	38,796	38,796	13,185	511,525,439
3	DBM with 50 mm	Cum	2	3,242	7.00	0.05	2,270	2,270	10,336	23,459,034
4	Milling	Sqm	2	3,242	7.00		45,394	45,394	88	3,994,692
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	16,002	3.50	4.50	12,802	12,802	49	627,284
6	Dismantling of CC Panels @ 3% area	Cum	3%		252,034	0.27	2041	2041	684	1,395,346
7	Replacement of Panels - PQC @ 3% area	Cum	3%		252,034	0.27	2041	2041	8,266	16,874,993
	Service Road									
8	Tack coat	Sqm	1	32,862	5.65		185,646	185,646	12	2,194,336
9	BC with 30 mm	Cum	1	32,862	5.65	0.03	5,569	5,569	11,027	61,414,055
10	Micro Surfacing	Sqm	1	21,908	5.65		123,764	123,764	155	19,214,361
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	901	14.6		13,136	13,136	12	155,265
12	Wearing Coat BC with 30 mm	Cum	1	901	14.6	0.03	394	394	13,185	5,195,844
13	Milling of Ex. Wearing Coat	Sqm	1	901	14.6		13,136	13,136	88	1,155,947
14	Painting of Crash Barrier	Sqm	4	901		1.12	4,016	4,016	121	485,991
	Other Works									
15	Raising of Road Kerb	Rmt	1	186,269			186,269	186,269	297	55,321,863
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,779			19,558	19,558	290	5,671,820
	Solar Road Stud	Nos	1				-	-	1,725	-
17	Painting of Kerb	Sqm	2	79,099		0.315	49,833	49,833	145	7,225,735
18	Road Marking	Sqm								
	On PQC						9,336	9,336	750	7,003,608
	On BC						55,763	55,763	682	38,030,419

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	On Micro surfacing						6,381	6,381	620	3,958,200
	MCW-Flexible									
	a) Median & Edge line	Sqm	4	69,037	0.15		41,422			
	b) Lane line	Sqm	2	22,782	0.10		4,556			
	MCW-Rigid									
	a) Median & Edge line	Sqm	4	14,018	0.15		8,411			
	b) Lane line	Sqm	2	4,626	0.10		925			
	Service Road									
	a) Edge line	Sqm	2	54,770	0.10		10,954			
	b) Lane line	Sqm	1	18,074	0.10		1,807			
	Junction crossing	Sqm					3,404			
19	Filling of Earthen shoulder	Cum					4,931	4,931	299	1,475,303
	MCW		2	65,749	1.00	0.03	3,945			
	Service Road		1	32,862	1.00	0.03	986			
20	Median Filling	Cum	1	65,209	4.17	0.10	13,596	13,596	288	3,908,899
21	Miscellaneous	5%								39,305,532
									Total Major Maintenance Cost (Rs)	**825,416,179**
									Total Major Maintenance Cost with GST (Rs)	**973,991,091**
									Total Major Maintenance Cost with GST (Cr)	**97.40**
									Per km Cost (lakh)	**121.75**
									Escalation Factor for FY 2036	**1.52**
									Total Escalated Cost for FY 2036 (Cr)	**133.30**

FP Project Management



Technical Due Diligence of Lucknow - Raebareli Section of NH-30 From km. 12+700 to km. 82+700 in the State of Uttar Pradesh on TOT Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 8
3.1 Pavement 8
3.1.1 Pavement Condition Survey 8
3.2 Service Road / Slip Road 12
3.3 Major / Minor Junctions 12
3.4 Condition Survey of Bridge 15
3.5 Condition Survey of Culverts 29
3.6 Drainage 33
3.7 Slope Protection 33
3.8 Road Furniture 35
3.9 Avenue Plantation and Median Plantation 44
3.10 Toll Plaza 46
3.11 Lane Equipment 48
3.11.1 RFID ETC Transceiver 48
3.11.2 Lane Controller with Industrial PC 49
3.11.3 Automatic Vehicle Classification (AVC) Sensors 49
3.11.4 Automatic Lane Barrier 50
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 50

3.11.6 Incident Capture Camera (AVC Camera) 51
3.11.7 License Plate Image Capture Camera (LPIC) 51
3.11.8 Over Head Lane Signal (OHLS) 52
3.11.9 Toll Booth Equipment 52
3.11.10 Medium Speed Weigh in Motion (MSWIM) 53
3.12 Plaza Equipment 53
3.12.1 TMS Server 53
3.12.2 55" LED screen for CCTV monitoring 54
3.12.3 Workstations in Control Room, POS room 54
3.13 Advanced Traffic Management System (ATMS) 55
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 55
3.13.2 Mobile Radio communication System (MRCS) 56
3.13.3 Emergency Call Boxes (ECB) 56
3.13.4 Portable Weigh in Motion (PWIM) 56
3.13.5 MET System 56
3.13.6 Variable Message Signboards (VMS) 56
3.13.7 CCTV Surveillance Cameras 57
3.13.8 Video Incident Detection System 57
3.13.9 Vehicle Actuated Speed Display (VASD) 58
3.13.10 Adequacy of Toll Collection System and ATMS 58
3.13.11 Truck Lay-bye 58
3.14 Traffic Aid Post and Medical Aid Post 59
3.15 Toilet Block 59
3.16 Bus Bays and Passenger Shelters 60
3.17 Balance Work Status 60
3.18 Operation and Maintenance 61
3.18.1 O&M Contract 61
3.18.2 Organization Chart 61
3.18.3 Operation 66
3.18.4 Routine Maintenance 66
4 Pavement Investigation and Assessment 67
4.1 General 67
4.2 Axle Load and VDF 67
4.3 Design Traffic 67
4.4 Network Survey Vehicles (NSV) Survey 68
4.5 Structural Investigations 68
4.6 Test pit and Subgrade Investigation 68

4.7 Periodic Maintenance Strategy 70
5 Cost Estimates 72
5.1 General 72
5.2 Rate Assumption 72
5.3 Balance Work Cost 73
5.4 Routine O&M Cost 74
5.5 Major Maintenance Cost 75
5.6 Periodic Replacement of TMS / ATMS System 75
5.7 Escalation Assumption 76
5.8 Summary of Cost 76
Annexures 78
Annexure I - Routine Maintenance Cost 79
Annexure II - Major Maintenance Cost 84

List of Tables

Table 2-1 Details of Scope of Work 7
Table 3-1 Details of Major Junctions 12
Table 3-2 Details of Summary for Structures 15
Table 3-3 Condition Survey of Major Structure 16
Table 3-4 Details of Lighting on Project Road 35
Table 3-5 Details of New Installation of Safety Barriers 36
Table 3-6 Details of Additional Gantry / Cantilever Sign 36
Table 3-7 Details of Summary for Road Furniture Items 37
Table 3-8 Details of Summary for Toll Plaza Items 46
Table 3-9 Details of Truck Lay-bye 58
Table 3-10 Details of Toilet Block 59
Table 4-1 Vehicle Damage Factor 67
Table 4-2 MSA Calculation 67
Table 4-3 Test Results Summary of Natural Ground Soil Samples 69
Table 4-4 Major Maintenance Cycle 70
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 72
Table 5-2 Summary of Unit Rates 73
Table 5-3 Summary of Balance Works 73
Table 5-4 Summary of Operation Cost 74
Table 5-5 Summary of Major Maintenance Cost 75
Table 5-6 Escalation 76

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road (LHS) 5
Figure 2-3 End of Project Road (RHS) 5
Figure 3-1 Photographs of Pavement Condition 9
Figure 3-2 Photographs of Service Road 12
Figure 3-3 Photographs of Major Junctions 13
Figure 3-4 Photographs of Minor Junctions 14
Figure 3-5 Photographs of Major Structures 22
Figure 3-6 Photographs of Foot Over Bridge 28
Figure 3-7 Photographs of Box Culverts 30
Figure 3-8 Photographs of Pipe Culverts 32
Figure 3-9 Photographs of Drainage 33
Figure 3-10 Photographs of Slope Protection and Chute Drain 34
Figure 3-11 Photographs of Pavement Marking 37
Figure 3-12 Photographs of Road Studs 38
Figure 3-13 Photographs of Road Signages 39
Figure 3-14 Photographs of Street Light 41
Figure 3-15 Photographs of MBCB / Crash Barrier 42
Figure 3-16 Photographs of Pedestrian Guard Rail 44
Figure 3-17 Photographs of Avenue Plantation 45
Figure 3-18 Photographs of Median Plantation 45
Figure 3-19 Photographs of Toll Plaza 47
Figure 3-20 Photographs of Truck Lay Bye 59
Figure 3-21 Photographs of Toilet block 60
Figure 3-22 Photographs of Bus Bay / Passenger Shelter 60

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Lucknow - Raibareli section of NH-30 (Old NH-24B) from km. 12+700 to km. 82+700 in the State of Uttar Pradesh (hereinafter referred as "Project Road").

Lucknow Raebareli Tollway Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance and transfer of Lucknow to Raebareli Section (from km. 12+700 to km. 82+700) of NH-30 or Project Road under TOT Bundle-3. The project was awarded to Concessionaire on 27th December 2019 with a concession period of 30 years by National Highway Authority of India (NHAI). The length of Project Road is 70.0 kms with one toll plaza at Dakshina Shekhpur at km. 42+650.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and filed investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented below.

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection.
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the Consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **06th March 2025 to 08th March 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Lucknow Raebareli Tollway Limited**, is a company promoted by Cube Highways or Special Purpose Vehicle (SPV) formed for implementing this project on 27th December 2019. The Appointed Date for the Project Road is on 14th October 2020.

Presently, there are two Concessionaires for Project Road. One is Cube Highways who maintains Toll Operation activities (TOT Concessionaire) and the other Concessionaire is Path Enterprises (Annuity Concessionaire) who maintains the project length as per their original scope of work.

The project is being developed through Annuity BOT mode under TOT (Toll Operate Transfer) Bundle-3 with concession period of 30 years from the Appointed Date while O&M will start from March 2029 as per Clause 10.2.2 of Concession Agreement.

2.2 Location

The Project Road is a part of National Highway No. 30 (old NH-24) of Lucknow - Raibareli section in the state of Uttar Pradesh. The total project length is 70.00 kms.

The Location Map of the Project Road is presented below:

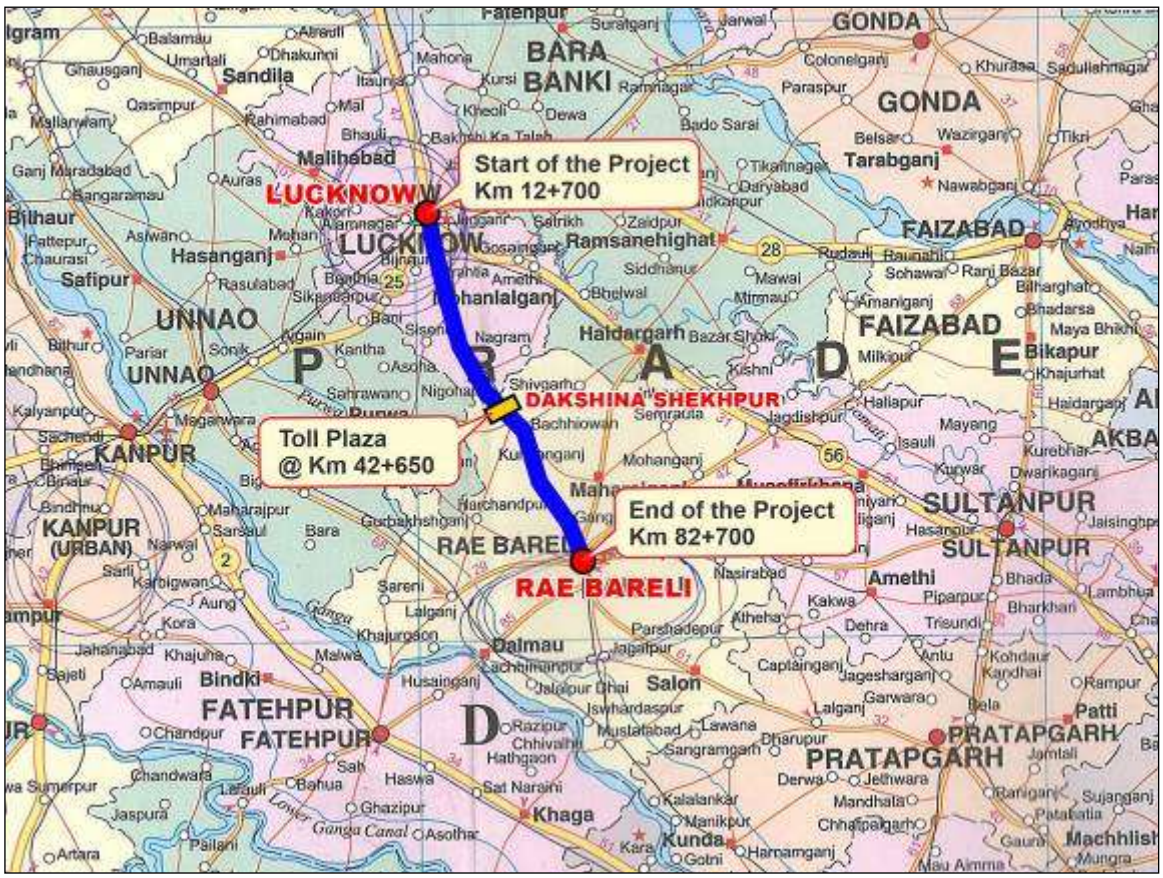


Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road (LHS)

Figure 2-3 End of Project Road (RHS)

2.3 Climate

The climate of the project area is characterized by general dryness (except in the southwest monsoon season), a hot summer and a cold winter. The year may be divided into four seasons. The period from about middle of November to February is the cold season. This is followed by the summer season from March to about the end of June. The south-west monsoon season commences late in June and continues up to about the middle of September. The period from mid-September to the middle of November constitutes the post-monsoon or transition season. The temperature ranges from a minimum of 4°C in winter to 47°C in summer. May and June are generally the hottest months and December and January are the coldest months. Relative humidity is high, averaging about 80% to 90% in February month and decrease it gradually up to 85% at the end of season due to gradual warming. The average annual rainfall in the district is 900 millimeters.

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The following are the various developments that are anticipated in the Four Laning of Lucknow Raibareli section.

- This Project Road reduces the travel time for getting access to Raibareli, Sultanpur, Prayagraj and Fatehpur which results in better industrial growth and economy.
- A lot of development is anticipated in Lucknow Raibareli Section, which transits through NH-24B / NH-30 and hence the development / maintenance of this Project Road would accelerate the development as majority of traffic would use the highway for getting access to Prayagraj Mirzapur.
- The tourism industry get a great booster as majority of people using this highway for going to places like Prayagraj etc.,
- A lot of commercial establishment along the project highway in the form of hotels, snack parlours as well as railway coach parts factory are developed.

2.6 Right of Way

The width of existing Right of Way (ROW) for the Project Road varies from 26.0 m to 45.0 m / 100 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Lucknow (km. 12+700) to Raebareli (km. 82+700) has been developed as a four-lane divided carriageway with median width of 2 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Tolling, operation, management, maintenance, and transfer of the Project Highway subject to and in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	70.00	From March 2029
2	Construction of Service Road	km.	1.60	Both Side
3	Reconstruction of Pipe Culvert	Nos.	02	
4	Reconstruction of Box Culvert	Nos.	02	
5	New Construction of Box Culvert	Nos.	01	
6	Vehicular Underpasses	Nos.	02	
7	Reinforce Cement concrete cover Drain with footpath	km.	1.60	Both Side
8	Road marking by Thermoplastic Paint	km.	3.2	
9	Rigid Concrete Barrier	km.	3.2	
10	Additional cantilever Sign Boards	Nos.	04	

Note:

1. *Above Quantities are the minimum to be provided and any addition in the above shall not be treated under change of scope.*

2. *The Concessionaire informed that earlier IE had suggested a change of scope as IE had proposed an elevated road instead of two nos. new VUP. However, later NHAI rejected the same vide their letter no. NHAI/PIU/LKO/NH-24B/TOT/2022/3287 Dated 04-10-2022 and the same has been conveyed to Concessionaire as well as to start the original scope of work vide their letter no. IE/LKO-RBL/24B/O&M/2022/470 Dated 08-10-2022.*

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **06th March 2025 to 08th March 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be **Good to Fair**.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition

km. 12+880 (LHS)

km. 15+150 (LHS)

km. 15+150 (RHS)

km. 17+600 (LHS)

km. 17+600 (RHS)

km. 19+600 (RHS)

km. 19+600 (LHS)

km. 24+480 (RHS)

km. 24+480 (LHS)

km. 29+000 (RHS)

km. 29+000 (LHS)

km. 34+500 (LHS)

km. 45+900 (RHS)

km. 53+000 (LHS)

km. 61+100 (LHS)

km. 67+780 (RHS)

km. 78+200 (LHS)

km. 78+200 (RHS)

km. 82+650 (LHS)

km. 82+650 (RHS)

Shoulder

km. 17+600 (LHS)

km. 24+650 (RHS)

km. 28+100 (RHS)

km. 29+050 (LHS)

km. 34+500 (RHS)

km. 41+900 (RHS)

km. 46+000 (LHS)

km. 53+000 (LHS)

km. 61+100 (RHS)

km. 66+200 (LHS)

3.2 Service Road / Slip Road

The service road with width 5.5 is constructed in built-up area and adjoining underpass locations. The Project Road has total service road length of 7.66 kms. The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Between km. 48+200 to km. 49+130

Between km. 80+700 to km. 82+000

3.3 Major / Minor Junctions

There are 05 nos. of major junctions and 29 nos. of minor junctions along Project Road. The junction details are presented in the table below.

Table 3-1 Details of Major Junctions

Sr. No.	Chainage (km)	Type of Junction	Name of Access Road		Surface Type of Access Road	
			LHS	RHS	LHS	RHS
1	22+970	T	Sultanpur	-	BT	-
2	39+120	X	Lalpur	-	BT	BT
3	77+300	X	Maharaj Ganj	Raebareli	BT	BT
4	81+640	X	Dih	Salon	BT	BT
5	82+400	X	Jagdishpur	Dedaur	BT	BT

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Major Junctions

km. 22+970

km. 39+120

km. 77+300

km. 81+640

km. 82+400

Figure 3-4 Photographs of Minor Junctions

km. 12+820

km. 13+750

km. 17+790

km. 28+100

km. 29+800

km. 30+400

km. 33+000

km. 43+500

km. 50+200

km. 78+800

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-2 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	2
Flyover	-
Major Bridges (MJB)	-
Minor Bridges (MNB)	7
Vehicular Underpass (VUP)	-
Light Vehicular Underpass (LVUP)	-
Pedestrian Underpass (PUP)	1
Cattle Underpass (CUP)	-
Foot over Bridge	2
Culverts:	
Pipe Culverts	23
Box Culverts	66
Slab Culverts	-
Total	**101**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-3 Condition Survey of Major Structure

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
1	41+845	Minor Bridge 3 x 3.0 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. However, weep holes and vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	
			Super Structure	RCC Box (Triple Cell) Footpath - Available Condition - Satisfactory	RCC Box (Triple Cell) Footpath - Available Condition - Satisfactory	
			Bearing	–	–	
			Slope Protection	–	–	
			Nalla Bed	–	–	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
2	44+737	Minor Bridge 2 x 6.0 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. However, weep holes and vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	
			Super Structure	RCC Box (Double Cell) Footpath - Available	RCC Box (Double Cell) Footpath - Available	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory	Condition - Satisfactory	
			Bearing	–	–	
			Slope Protection	–	–	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
3	48+625	ROB LHS- 2 X 11.0 + 12 X 24.0 + 6 X 12.0 + 1 X 32.0 m RHS- 1 x 4.0 + 1 x 3.0 + 1 x 8.0 + 15 x 24.0 + 1 x 18 + 1 x 16.0 + 1 x 43.0 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Drainage arrangement and Down take pipe not provided at approaches as well as cleaning is required in weep holes, vent & expansion joint.
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC piers Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC piers Condition - Satisfactory	
			Super Structure	21 Span PSC Girders, Steel Girders and RCC Slab Footpath- Not Available Condition – Satisfactory	21 Span PSC Girders, Steel Girders and RCC Slab Footpath – Available Condition – Satisfactory	
			Bearing	Bearing – POT/PTFE & Elastomeric	Bearing – POT/PTFE & Elastomeric	
			Slope Protection	RCC Return	RCC Return	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	-	-	
			Drainage	Water grating not clear	Water grating not clear	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
4	50+665	Minor Bridge 3 x 3.0 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Cleaning is required in weep holes and vent.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	
			Super Structure	RCC Box (Triple Cell) Footpath - Available Condition - Satisfactory	RCC Box (Triple Cell) Footpath - Available Condition - Satisfactory	
			Bearing	–	–	
			Slope Protection	–	–	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
5	54+030	PUP 1 x 5.0 m	Age	New – 3 lane	New – 3 lane	The structure is in sound condition. However, weep holes and vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC box type	Abutment - RCC box type	
			Super Structure	RCC slab	RCC slab	
			Bearing	-	-	
			Slope Protection	Earthen filled with chute drain	Earthen filled with chute drain	
			Nalla Bed	-	-	
			Parapet / Railing	Crash Barrier with MBCB	Crash Barrier with MBCB	
			Expansion Joint	Nil	Nil	
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drain spout provided- Not cleared	Drain spout provided- Not cleared	
6	60+961	Minor Bridge 2 x 10.0 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Weep holes and vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	
			Super Structure	RCC Box Girder (Double Cell) Footpath - Available Condition - Satisfactory	RCC Box Girder (Double Cell) Footpath - Available Condition - Satisfactory	
			Bearing	–	–	
			Slope Protection	–	–	
			Nalla Bed	Standing water	Standing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
7	61+726	Minor Bridge 3 x 3.0 m	Age	New - 2 Lane	New – 2 Lane	The structure is in sound condition. Weep holes and vent cleaning is required.
			Foundation	Open Foundation	Open Foundation	
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	Abutment - RCC Wall type Piers - RCC Walls Condition - Satisfactory	
			Super Structure	RCC Box (Triple Cell) Footpath - Available Condition - Satisfactory	RCC Box (Triple Cell) Footpath - Available Condition - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Bearing	–	–	
			Slope Protection	–	–	
			Nalla Bed	–	–	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Not Required	Not Required	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating clear	Water grating clear	
8	67+795	Minor Bridge LHS- 2 x 10.0+ 1x 20.0 m RHS- 1 x43.50 m	Age	Old - 2 Lane	New – 3 Lane	The structure is in sound condition. However, weep holes, vent & expansion joint cleaning is required.
			Foundation	Open Foundation	Pile Foundation	
			Sub structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Pile Cap Piers - RCC Piers Condition - Satisfactory	
			Super Structure	3 Span RCC Arch Girder + RCC Slab Footpath-Not Available Condition - Satisfactory	1 Span PSC Girder + RCC Slab Footpath - Available Condition - Satisfactory	
			Bearing	Elastomeric & POT/ PTFE	Elastomeric & POT/PTFE	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
9	75+675	Minor Bridge	Age	Old - 2 Lane	New – 3 Lane	The Structure is in

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
		LHS- 2 x 10.0+ 1x 20.0 m RHS- 1 x43.50 m	Foundation	Open Foundation	Pile Foundation	sound condition, Cleaning is required in weep holes, vent & expansion joint etc.
			Sub Structure Abutment / Pier	Abutment - RCC Wall type Piers - RCC Piers Condition - Satisfactory	Abutment - RCC Pile Cap Piers - RCC Piers Condition - Satisfactory	
			Super Structure	3 Span RCC Arch Girder + RCC Slab Footpath-Not Available Condition - Satisfactory	1 Span PSC Girder + RCC Slab Footpath - Available Condition - Satisfactory	
			Bearing	Elastomeric & POT/PTFE	Elastomeric & POT/PTFE	
			Slope Protection	Earthen Embankment	Earthen Embankment	
			Nalla Bed	Flowing water	Flowing water	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	
10	81+230	ROB LHS- 15 X 24.0 + 1 X 18.0 + 1 X 46.0 m RHS- 15 X 24.0 + 1 X 18.0 + 1 X 46.0 m	Age	New - 2 Lane	New - 2 Lane	The Structure is in sound condition, Drainage arrangement and down take pipe is not provided at approaches. As well as cleaning is required in weep holes, vent & expansion joint.
			Foundation	Pile Foundation	Pile Foundation	
			Sub Structure Abutment / Pier	Abutment-RE Panel Wall type Piers - RCC piers Condition - Satisfactory	Abutment – RE Panel Wall type Piers - RCC piers Condition - Satisfactory	
			Super Structure	17 Span PSC Girders, Steel Girders and RCC Slab Footpath – Available Condition - Satisfactory	17 Span PSC Girders, Steel Girders and RCC Slab Footpath – Available Condition - Satisfactory	

Sr. No.	Design Chainage (km)	Type of Bridge / Spans	Features and Observation			General Comments
			Component	LHS	RHS	
			Bearing	Bearing – POT/PTFE	Bearing – POT/PTFE	
			Slope Protection	RE Panel Wall	RE Panel Wall	
			Nalla Bed	Service Road	Service Road	
			Parapet / Railing	Crash Barrier - Satisfactory	Crash Barrier - Satisfactory	
			Expansion Joint	Available	Available	
			Wearing Coat/ Surface	BC - Satisfactory	BC - Satisfactory	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Water grating not clear	Water grating not clear	

Figure 3-5 Photographs of Major Structures

Side View of ROB at km. 48+625 (LHS)

Bottom View of ROB at km. 48+625 (LHS)

Bottom View of ROB at km. 48+625 (RHS)

Side View of ROB at km. 48+625 (RHS)

Wearing Coat of ROB at km. 48+625 (LHS)

Mid Portion @ A1 side of ROB at km. 48+625 (BHS)

Bottom View of ROB at km. 48+625 (BHS)

Expansion Joint of ROB at km. 48+625 (RHS)

Side View of ROB at km. 81+230 (LHS)

Bottom View of ROB at km. 81+230 (BHS)

Expansion Joint of ROB at km. 81+230 (RHS)

Side View of ROB at km. 81+230 (RHS)

Wearing Coat of ROB at km. 81+230 (LHS)

Side View @ A1 side of ROB at km. 81+230 (LHS)

Side View @ A2 side of ROB at km. 81+230 (LHS)

Wearing Coat of ROB at km. 81+230 (RHS)

Side View of MNB at km. 41+845 (LHS)

Wearing Coat of Minor Bridge at km. 41+845 (LHS)

Wearing Coat of Minor Bridge at km. 41+845 (RHS)

Side View of MNB at km. 41+845 (RHS)

Wearing Coat of MNB at km. 44+737 (LHS)

Side View of MNB at km. 44+737 (LHS)

Side View of MNB at km. 44+737 (RHS)

Wearing Coat of MNB at km. 44+737 (RHS)

Side View of MNB at km. 50+665 (LHS)

Wearing Coat of MNB at km. 50+665 (LHS)

Wearing Coat of MNB at km. 50+665 (RHS)

Side View of MNB at km. 50+665 (RHS)

Wearing Coat of MNB at km. 60+961 (LHS)

Side View of MNB at km. 60+961 (LHS)

Side View of MNB at km. 60+961 (RHS)

Wearing Coat of MNB at km. 60+961 (RHS)

Side View of MNB at km. 61+726 (LHS)

Wearing Coat of MNB at km. 61+726 (LHS)

Wearing Coat of MNB at km. 61+726 (RHS)

Side View of MNB at km. 61+726 (RHS)

Wearing Coat of MNB at km. 67+795 (LHS)

Side View of MNB at km. 67+795 (LHS)

Side View of MNB at km. 67+795 (RHS)

Wearing Coat of MNB at km. 67+795 (RHS)

Side View of MNB at km. 75+675 (LHS)

Wearing Coat of MNB at km. 75+675 (LHS)

Wearing Coat of MNB at km. 75+675 (RHS)

Side View of MNB at km. 75+675 (RHS)

Figure 3-6 Photographs of Foot Over Bridge

Front View of FOB at km. 15+100 (BHS)

Bottom View of Walkway of FOB at km. 15+100 (BHS)

Bottom View of Walkway of FOB at km. 78+225 (BHS)

Front View of FOB at km. 15+100 (BHS)

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 23 Nos. of pipe culverts, 66 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet or crash barrier has been provided at culvert locations which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Annuity Concessionaire. The Cement Concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Annuity Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching has been damaged which required to be addressed under routine repair by the Annuity Concessionaire.

Figure 3-7 Photographs of Box Culverts

BC at km. 24+990 (LHS)

BC at km. 24+990 (RHS)

BC at km. 28+100 (LHS)

BC at km. 28+100 (RHS)

BC at km. 40+845 (LHS)

BC at km. 40+845 (RHS)

BC at km. 46+100 (LHS)

BC at km. 46+100 (RHS)

BC at km. 52+975 (LHS)

BC at km. 52+975 (RHS)

BC at km. 61+500 (LHS)

BC at km. 61+500 (RHS)

BC at km. 64+500 (LHS)

BC at km. 64+500 (RHS)

BC at km. 76+250 (LHS)

BC at km. 76+250 (RHS)

Figure 3-8 Photographs of Pipe Culverts

HPC at km. 42+270 (RHS)

HPC at km. 42+270 (LHS)

HPC at km. 42+310 (RHS)

HPC at km. 42+310 (LHS)

HPC at km. 59+960 (RHS)

HPC at km. 59+960 (LHS)

HPC at km. 73+350 (RHS)

HPC at km. 73+350 (LHS)

3.6 Drainage

There are 31.48 kms of existing drain on both side of the Project Road as per Concession Agreement. However, 3.2 kms of RCC drain is additionally constructed in built-up area and locations where service roads are provided. The photographs taken during site visit is presented as below:

Figure 3-9 Photographs of Drainage

Cover Drain at km. 12+820

Cover Drain at km. 13+750

Cover Drain at km. 15+150

Median Drain at km. 17+600

Median Drain at km. 41+900

Kaccha Drain at km. 37+350

Cute Drain at km. 67+780

km. 60+000

Cover Drain at km. 37+400

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations. Few of the slope protection and chute drains are damaged which will be rectified by the Annuity Concessionaire.

Figure 3-10 Photographs of Slope Protection and Chute Drain

km. 54+030 (LHS - PUP)

km. 54+030 (RHS - PUP)

km. 67+795 (LHS - MNB)

km. 67+795 (RHS - MNB)

km. 75+675 (LHS - MNB)

km. 75+675 (RHS - MNB)

km. 67+795 (LHS - MNB)

km. 75+675 (LHS - MNB)

km. 67+750 (LHS - MNB)

km. 75+640 (RHS - MNB)

3.8 Road Furniture

The Concessionaire has to provided additional road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C / Schedule-B. The details of the items are provided below.

a) Lighting Along the Project Road

Lighting including fixing of poles and LED lights are to be provided at following locations on Project Road in accordance with Clause 12.3 of IRC:SP:84-2014.

Table 3-4 Details of Lighting on Project Road

Sr. No.	Chainage (km)		Side	Remarks	Length (m)
	From	To			
1	76+850	77+650	Both Side	For each number of light, the minimum specification shall be: street lighting with single pole and double arm fitting 45W (5050 LUMENS) - Blue tooth enabled MPPT Based Charge Controller, 9 Mts octagonal pole with all accessories, Automatic switch on / off, Duty Cycle 12 hrs. working each night	800.00
2	78+400	79+200	Both Side	For each number of light, the minimum specification shall be street lighting with single pole and double	800.00

Sr. No.	Chainage (km)		Side	Remarks	Length (m)
	From	To			
				arm fitting 45W (5050 LUMENS) - Blue tooth enabled MPPT Based Charge Controller, 9 Mts octagonal pole with all accessories, Automatic switch on / off, Duty Cycle 12 hrs. working each night	
Total Length (m)					**1600.00**

In addition to above, suitable lighting arrangements are to be provided and maintained at underside of PUP, VUP and other structures mentioned in schedule-B.

b) Transverse / Thermoplastic Bar Marking Locations

Transverse / thermoplastic bar markings on either side of carriageway on proposed service road / VUP / VUP approach locations are provided as per Section 11.2 of IRC:35-2015.

c) New Installation of Safety Barriers

Following are the details of new installation of safety barriers along the Project Road which is yet to installed.

Table 3-5 Details of New Installation of Safety Barriers

Sr. No.	Chainage (km)		Length (m)	Location	Type of Barrier
	From	To			
1	76+850	77+650	800.00	BHS	Rigid barrier
2	78+400	79+200	800.00	BHS	Rigid barrier
		Total Length	**1600.00**		

d) Additional Gantry / Cantilever Sign Board

As per schedule-B, an additional gantry / cantilever sign has to provide at the following locations:

Table 3-6 Details of Additional Gantry / Cantilever Sign

Sr. No.	Chainage (km)	Location	Type
1	76+675	VUP	Cantilever Sign Boards
2	77+925	VUP	Cantilever Sign Boards
3	78+200	VUP	Cantilever Sign Boards
4	79+300	VUP	Cantilever Sign Boards

e) Summary of Quantity for Road Furniture Items

The following details show the summary of the quantity for road furniture items to be provided on Project Road.

Table 3-7 Details of Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Solar Blinkers	Nos.	Nil
2	Streetlights	Nos.	1152
3	High Mast Lights	Nos.	Nil
4	Transverse Bar Makings / Thermoplastic Bar Markings	km.	3.2
5	New installation of Safety Barriers		
	W-Beam Safety Barriers	m	Nil
	Concrete Median Barrier	m	Nil
	Rigid Concrete Barrier	m	3200
6	Guard Posts	m	Nil
7	Pedestrian Guard Rails	m	Nil
8	Road Studs / Raised Pavement Markers		
9	Road Markings		
10	Traffic Delineators	As per Section-9 of IRC:SP:84-2014	
11	Kilometer / Hectometer / Boundary Stones		
12	Additional Sign Boards		
	Gantry Sign Boards	Nos.	Nil
	Cantilever Sign Boards	Nos.	4
	Shoulder Mounted Dual Post Sign Boards	As per Section 9 of IRC:SP:84-2014	
	Shoulder / Median Mounted Single Post Sign Boards		

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which will be rectified by the Annuity Concessionaire. Some of the photographs of road marking are presented below.

Figure 3-11 Photographs of Pavement Marking

km. 15+150

km. 24+600

km. 29+800

km. 30+400

km. 39+120

km. 52+600

Road Studs

Road studs / cat's eye for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Cat's eye has been fixed at junction and zebra crossings. However, at few locations some cat eye has damaged which will be rectified by the Annuity Concessionaire. Some of the photographs of road studs are presented below.

Figure 3-12 Photographs of Road Studs

km. 12+850 (LHS)

km. 15+150 (RHS)

km. 33+000 (RHS)

km. 39+120 (LHS)

km. 40+950 (RHS)

km. 52+600 (LHS)

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of project highway and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Annuity Concessionaire. Some of the photographs of sign boards are presented below.

Figure 3-13 Photographs of Road Signages

km. 17+600

km. 19+600

km. 25+000

km. 29+000

km. 29+000

km. 29+800

km. 29+850

km. 29+870

km. 41+600

km. 41+900

km. 44+800

km. 44+900

km. 50+000

km. 52+600

km. 57+800

km. 61+000

km. 70+600

km. 74+600

km. 77+300

km. 82+700

km. 82+700

Highway Lighting

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers. Some of the photographs of highway lighting are presented below.

Figure 3-14 Photographs of Street Light

km 12+800

km. 31+100

km. 34+500

km. 46+800

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-15 Photographs of MBCB / Crash Barrier

At km. 53+950 (LHS)

At km. 61+650 (RHS)

At km. 67+750 (LHS)

At km. 75+610 (RHS)

At km. 40+845 (RHS)

At km. 44+737 (LHS)

At km. 54+030 (LHS)

At km. 61+500 (RHS)

At km. 67+795 (LHS)

At km. 81+230 (RHS)

Delineators

The traffic delineators are provided by Concessionaire for road users in abnormal condition of weather for the Project Road. However, at few locations some delineators have damaged which will be rectified by the Annuity Concessionaire.

Pedestrian Guard Rail

The pedestrian guard rails are provided in the median. It is maintained by the Annuity Concessionaire. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-16 Photographs of Pedestrian Guard Rail

km. 22+200

km. 28+800

km. 37+400

km. 72+100

Road Land Boundary

Road land boundary pillar is not found / available on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantations are done only in forest land due to ROW issues and median plantation has been provided in the project length as per IRC specification.

Some of the photographs of plantation are presented below.

Figure 3-17 Photographs of Avenue Plantation

km. 28+100 (RHS)

km. 44+800 (RHS)

km. 53+000 (LHS)

km. 46+140 (LHS)

Figure 3-18 Photographs of Median Plantation

km. 19+550

km. 28+100

km. 33+000

km. 53+000

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at km. 42+650 near Dakshina Sekhpur with the following infrastructure.

Table 3-8 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 42+650
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for over dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel / Yes
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes (only 20 nos. near Toll plaza i.e., 10 nos. in both direction)
15	Low mast Light	No
16	User Fee Boards	3
17	Cantilever / Gantry Boards	Yes
18	Automatic boom barrier	Yes

Note:

- *Presently, Concessionaire is using Annuity Concessionaire's building as an administration building for toll plaza.*
- *The electric supply for the existing streetlights is provided by the TOT Concessionaire. The maintenance of these streetlights is in the scope of Annuity Concessionaire.*

- *Toll plaza is completed as per rehabilitation work and as per scope given in schedule-B.*

Figure 3-19 Photographs of Toll Plaza

Toll Plaza Signages

TP Street Light

Toll Plaza View

Weigh Bridge

High Mast

PTZ Camera

Arial View of TP

DG Room

Tunnel at TP

Conference Room

Admin Building Inside View

Account Room

UPS Room

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller are located within the Electronic Enclosure placed inside the tunnel below the toll booth which are connected to the common server and are capable of independent storage of data.

Lane Controller in Tunnel at TP

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at TP

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at TP

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at TP

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at TP

3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at TP

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

Server

3.12.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location (km. 42+650). As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle Actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km 15+465).

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.13.3 Emergency Call Boxes (ECB)

It is not installed at site.

3.13.4 Portable Weigh in Motion (PWIM)

Portable Weigh in Motion (PWIM) is available at site.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km. 42+650.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 14 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

km. 29+000

km. 33+000

km. 46+000

km. 64+000

3.13.7 CCTV Surveillance Cameras

Surveillance cameras are installed at 55 locations along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed.

km. 18+500

km. 30+400

3.13.8 Video Incident Detection System

62 fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at 3 locations each on LHS and RHS.

km. 19+650 (LHS)

km. 61+750 (RHS)

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy - All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.

- The Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition. Some components such as ECB and MRCS have not been installed.

3.13.11 Truck Lay-bye

The following are the truck lay-bye locations.

Table 3-9 Details of Truck Lay-bye

Sr. No.	Chainage (km)	Remarks
1	52+555	LHS
2	32+300	RHS

Figure 3-20 Photographs of Truck Lay Bye

km. 52+555 (LHS)

km. 32+300 (RHS)

3.14 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are in the scope of Annuity Concessionaire. photographs of the Traffic Aid Post and Medical Aid Post are presented below.

Traffic Aid Post and Medical Aid Post

3.15 Toilet Block

There are two nos. of toilet blocks and maintenance of the same is in Annuity Concessionaire's scope.

Table 3-10 Details of Toilet Block

Sr. No.	Chainage (km)	Side		Remarks
		LHS	RHS	
1	42+500	Yes	-	
2	42+700	-	Yes	

Figure 3-21 Photographs of Toilet block

km. 42+500 (LHS)

3.16 Bus Bays and Passenger Shelters

There are 45 Nos. of bus bays / passenger shelter along the Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-22 Photographs of Bus Bay / Passenger Shelter

km. 30+630 (LHS)

km. 47+800 (RHS)

3.17 Balance Work Status

During site visit it has been observed that construction of 2 Nos. of VUPs at km. 77+276 and at km. 78+770 along with approaches are balance due to non-availability of land. As informed the Concessionaire, the correspondence is in progress with Authority to resolve the issue. The same is referred as below.

- Concessionaire informed to TDD Consultant that earlier there was a change of scope as IE had proposed an elevated road instead of two nos. new VUP vide their letter no. IE/LKO-RBL/24B/O&M/2021/160 dated 05-07-2021 to NHAI. However, later NHAI decided to continue at site as per their original scope of work given in schedule B vide their letter no. NHAI/PIU/LKO/NH-24B/TOT/2022/3287 Dated 04-10-2022 to IE and the same has been communicated with Concessionaire to start as per the original scope of work vide their letter no. IE/LKO-RBL/24B/O&M/2022/470 Dated 08-10-2022.

3.18 Operation and Maintenance

3.18.1 O&M Contract

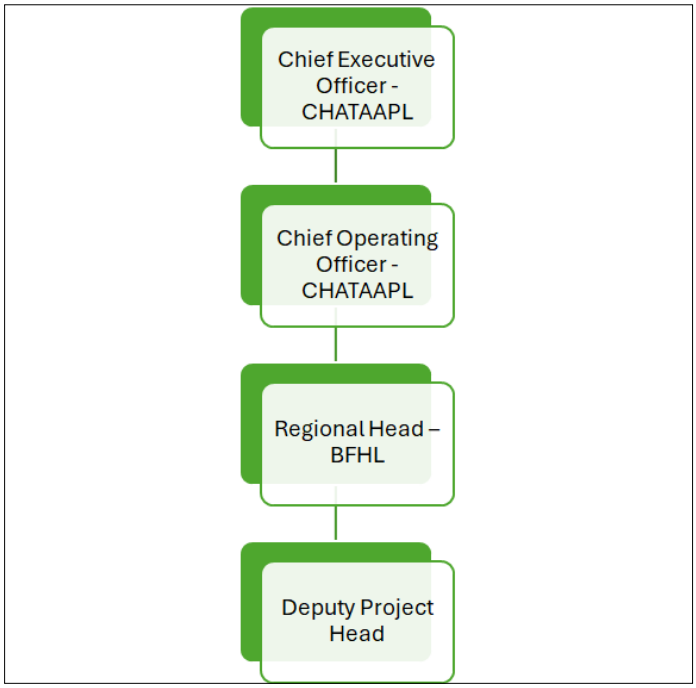
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall confirm to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

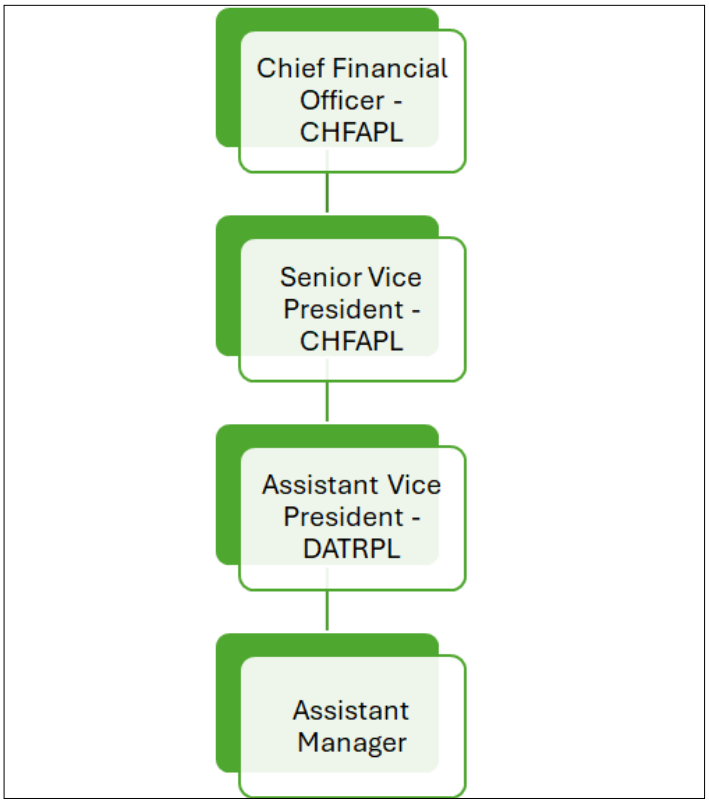
3.18.2 Organization Chart

The Concessionaire has given the Organization Chart at site for operation and maintenance. Accordingly, there is 01 Project Head, 01 CFO-CHFA, 01 Executive (F&A), 01 Assistant Manager, 01 Executive, 04 Shift Supervisor (ATMS), 01 Plaza Manager, 01 Assistant Manager, 04 Cashiers, 04 validators and 02 Executive (ATMS) to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

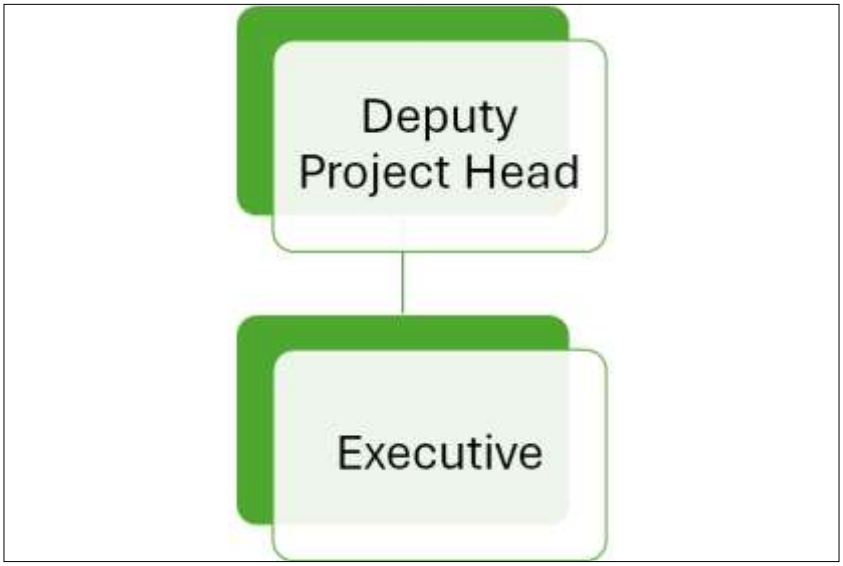
Organization Chart



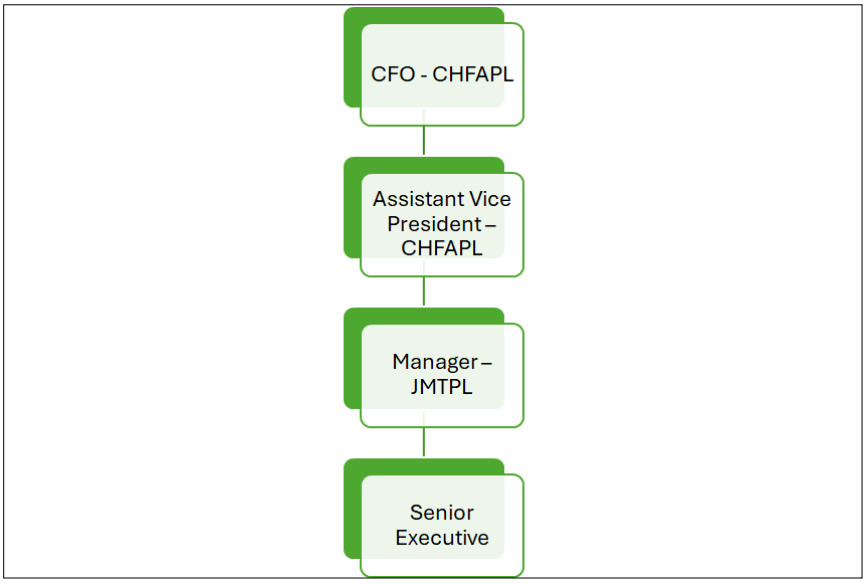
HO – Capital Structuring and Budgeting



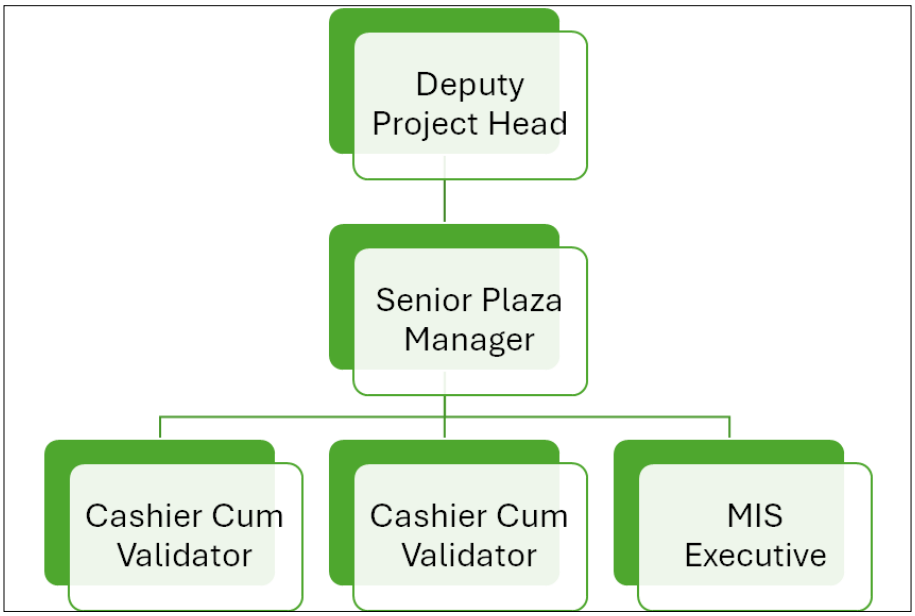
Finance & Accounts - Site



HO – Finance Controlling

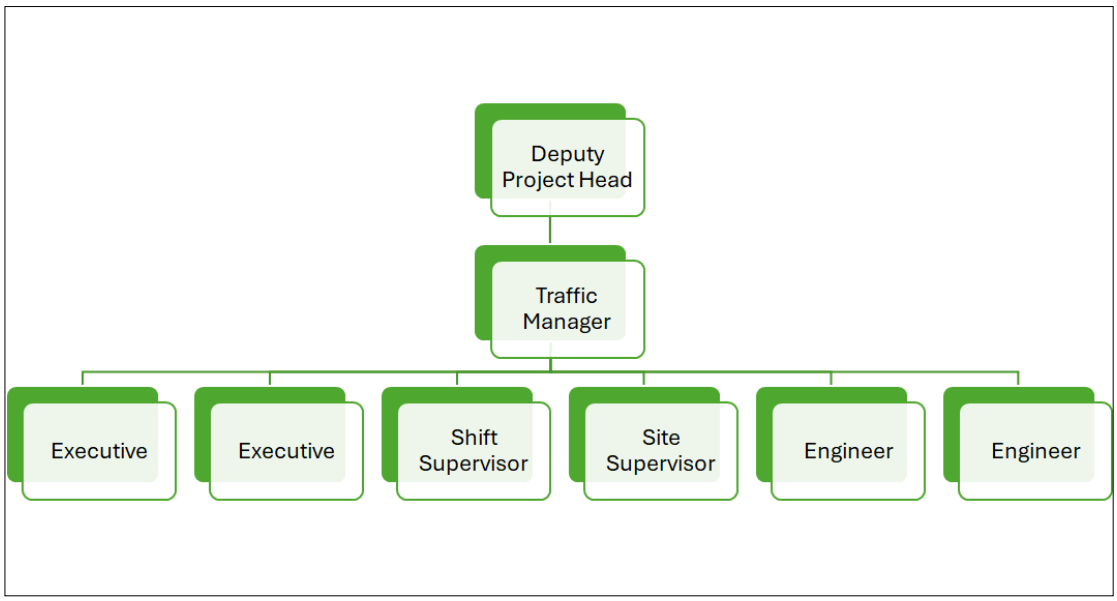


Site - Operations

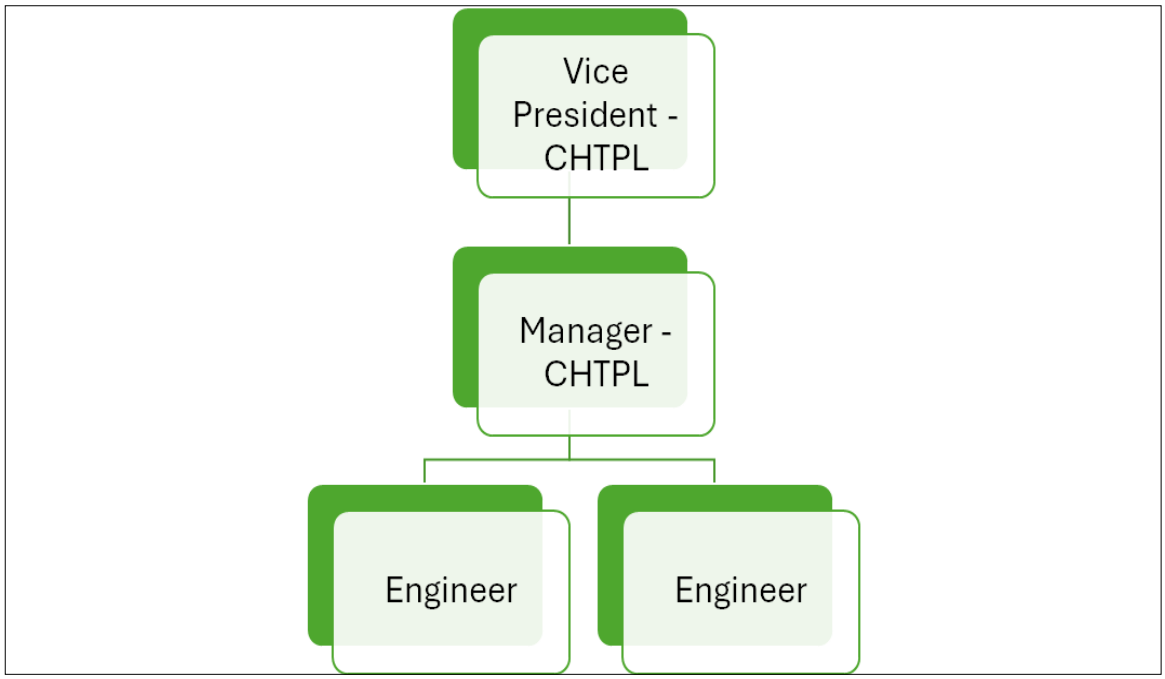


Site – Operation System

Site – ATMS Maintenance



Site – TMS Maintenance



LRTPL - Manpower Summary

S.NO.	DEPARTMENT	HEAD OFFICE	SITE	TOTAL STRENGTH
1	Capital Structure & Budgeting	1	0	1
2	Finance & Accounts	0	0	0
3	Finance Controlling	1	0	1
4	Operations	0	8	8
5	Operations System	0	1	1
6	ATMS Maintenance	0	10	10
7	TMS Maintenance	0	4	4
	TOTAL	2	23	25

3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2029. Hence, routine maintenance is considered from the year 2029 till end of concession period.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Annuity Concessionaire as per Scope of Work. The Annuity Concessionaire has received Completion Certificate on 14th April 2015.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period. The project will be handed over to TOT Concessionaire in March 2029.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 42+500 (near Toll Plaza) on 23rd July 2019 and 24th July 2019. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Sr. No.	Vehicle Category	Direction	
		Lucknow - Raebareli	Raebareli - Lucknow
1	Bus	0.82	0.76
2	LCV	1.48	0.57
3	2-Axle	3.18	3.05
4	3-Axle	5.31	8.55
5	MAV	10.56	17.09

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2024-25	-	**-**	-	**-**	
2025-26	1.51	**1.51**	2.15	**2.15**	
2026-27	1.54	**3.05**	2.21	**4.36**	
2027-28	1.59	**4.64**	2.28	**6.64**	
2028-29	1.66	**6.30**	2.37	**9.01**	Handing over from Annuity Concessionaire in Mar 2029
2029-30	1.71	**8.01**	2.45	**11.46**	
2030-31	1.77	**9.78**	2.54	**14.00**	
2031-32	1.82	**11.60**	2.62	**16.62**	1st MM Cycle
2032-33	1.88	**13.48**	2.71	**19.33**	

Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
2033-34	1.94	**15.42**	2.78	**22.11**	
2034-35	1.99	**17.41**	2.86	**24.97**	
2035-36	2.05	**19.46**	2.94	**27.91**	
2036-37	2.11	**21.57**	3.03	**30.94**	
2037-38	2.16	**23.73**	3.11	**34.05**	
2038-39	2.22	**25.95**	3.19	**37.24**	2nd MM Cycle
2039-40	2.28	**28.23**	3.28	**40.52**	
2040-41	2.34	**30.57**	3.37	**43.89**	
2041-42	2.40	**32.97**	3.46	**47.35**	
2042-43	2.47	**35.44**	3.56	**50.91**	PCU crossed 40000
2043-44	2.53	**37.97**	3.64	**54.55**	PCU crossed 40000
2044-45	2.59	**40.56**	3.74	**58.29**	PCU crossed 40000
2045-46	2.65	**43.21**	3.83	**62.12**	DPR Preparation for 6-laning
2046-47	2.72	**45.93**	3.93	**66.05**	DPR Preparation for 6-laning
2047-48	2.79	**48.72**	4.03	**70.08**	6-Laning of Project Road Construction
2048-49	2.87	**51.59**	4.13	**74.21**	6-Laning of Project Road Construction
2049-50	2.34	**53.93**	3.38	**77.59**	
2050-51	2.39	**56.32**	3.46	**81.05**	End of concession period

4.4 Network Survey Vehicles (NSV) Survey

The O&M is not under the scope of Concessionaire / Client.

4.5 Structural Investigations

The O&M is not under the scope of Concessionaire / Client.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-3 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Location (km)	Side (LHS / RHS)	Soil Classification as per IS:1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		4-Days Soaked CBR (%)	Free Swell Index (%)
				19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	77+100	LHS	CL	96.7	94.3	93.2	91.5	89.6	85.8	85.8	32	19	13	1.86	11.8	4.1	25.0
2	77+500	RHS	ML	98.9	97.5	95.9	93.7	90.9	87.9	87.9	26	NP	NP	1.83	9.5	4.5	7.1
3	78+700	RHS	ML	100.0	99.5	98.7	97.9	96.4	87.1	87.1	25	NP	NP	1.84	10.7	4.7	11.1
4	79+100	LHS	CL	99.2	96.3	91.7	87.6	81.9	67.7	67.7	29	21	8	1.93	11.6	5.4	20.0

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement in Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Currently, the Project Road is maintained by the existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2029. It is assumed that the pavement will be overlaid before handing over the project confirming the pavement parameters kept within the limits as per Table-1 (Maintenance Criteria for Pavements) of Schedule-F. Hence, the major maintenance cycles are proposed between the year 2029 and end of concession period.

As per Article 14 of CA, the Authority shall carry out capacity augmentation under EPC contract if traffic exceeds 40,000 PCU for three consecutive accounting years. As per the traffic study report submitted by the Company, it is observed that the project traffic crosses 40,000 PCU in FY 2043, FY 2044, FY 2045. Assumption has made that execution of 6-laning of project highway will start in the year 2048 or 2049. It is also assumed that during the 6-laning of Project Road, overlay of existing four lane road will be the part of the capacity augmentation. Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-4 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 to FY 2028	-	-
2	FY 2029	Handing over of Project Road from Annuity Concessionaire	
3	FY 2030 to FY 2031	-	-
4	FY 2032	Major maintenance with 30 mm BC (PMB) (50%) + Major maintenance with 40 mm BC (PMB) (50%) + Milling & 50 mm DBM (VG-40) (100%)	Major maintenance with 30 mm BC (VG-40) (50%) + Micro-surfacing (50%)
5	FY 2033 to FY 2038	-	-
6	FY 2039	Major maintenance with 40 mm BC (VG40) (100%) + Milling & 50 mm DBM (VG-40) (5%)	Major maintenance with 30 mm BC (VG-40) (50%) + Micro-surfacing (50%)
7	FY 2040 to FY 2048	-	-
8	FY 2049	Assumption of Capacity Augmentation to Six Lane Configuration	

Sr. No.	Year	Main Carriageway	Service Road
9	FY 2050	-	-
10	FY 2051	End of Concession Period	

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

    a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

    b. **Bitumen:** The Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. The same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of bitumen price are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from Market rate.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	9,604
2	Bituminous Concrete (VG-30)	Cum	10,629
3	Bituminous Concrete (VG-40)	Cum	10,932
4	Bituminous Concrete (PMB)	Cum	13,357
5	Milling	Sqm	89
6	Micro-surfacing	Sqm	155
7	Kerb re-laying	Rmt	297
8	Road Marking	Sqm	605
9	Road Studs	Nos.	179

5.3 Balance Work Cost

As discussed in previous chapters, the construction of two VUPs at km. 77+276 and at km. 78+770 has not started yet due to various reasons stated earlier. However, Concessionaire has worked out the cost of construction of these VUP which was subsequently also approved by IE. The IE has recommended the balance work amounting Rs.53,61,73,996.00 vide their letter no.SAICPL/OMT/NH-24B/LUC-REI/2022/MG/18938 Dated 18-08-2022 to NHAI. The same is presented below.

Table 5-3 Summary of Balance Works

Sr. No.	Items of Work	Balance Cost
1	Earth Work	12,035,953.00
2	Sub-base, Base (Non-Bituminous) & Shoulder	147,206,127.00
3	Bases and Surface course (Bituminous layer)	101,344,029.00
4	Box Culvert	23,061,971.00
5	Pipe Culvert	1,913,756.00
6	Structure at Underpasses	102,540,280.00
7	Drainage and protective works (RE Wall)	144,284,980.00
8	Traffic Signs, Marking & other road Appurtenances	3,786,901.00
	Total Balance Amount (Rs.)	**536,173,996.00**

Sr. No.	Items of Work	Balance Cost
	Total Balance Amount (Cr.)	**53.62**

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by existing Annuity Concessionaire. The project will be handed over to TOT Concessionaire in March 2029. Hence, the routine maintenance and horticulture maintenance is considered from year 2029 till end of concession period.

The Routine Operation Cost is presented as below.

Table 5-4 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-29)	Amount after Annuity (FY 2030-49)	Amount after Annuity & 6 lane Augmentation (FY 2050-51)
1	Salary and Welfare Expenses	10,395,000	10,395,000	10,395,000
2	Tolling Operations Services	29,511,898	29,511,898	29,511,898
3	Toll Security Services	6,738,645	6,738,645	6,738,645

Sr. No.	Particulars	Amount (FY 2026-29)	Amount after Annuity (FY 2030-49)	Amount after Annuity & 6 lane Augmentation (FY 2050-51)
4	Incident Management & Emergency Services	-	24,679,831	24,679,831
5	Electricity and Diesel Charges	3,266,762	29,512,899	29,512,899
6	TMS/HTMS/System Expenses	6,299,783	7,504,699	5,812,689
7	Office Operating Expenses	3,118,094	3,118,094	3,118,094
8	Vehicle Running Expenses	3,456,000	3,456,000	3,456,000
9	Professional Fees Expense	4,696,453	6,919,801	8,031,475
10	Community Development	998,547	998,547	998,547
11	Communication Expenses	347,156	347,156	347,156
12	Conveyance Expenses	378,716	378,716	378,716
13	Insurance Expense	2,524,773	2,524,773	2,524,773
14	IE Fees	6,362,427	6,362,427	6,362,427
15	Routine Maintenance Cost (Project Road)	-	25,818,479	34,192,403
16	Horticulture & ROW Maintenance	-	20,007,372	20,007,372
17	Miscellaneous including Contingency	3,123,770	5,297,939	5,274,726
	Total Cost (Rs.)	**81,218,024**	**183,572,277**	**191,342,651**
	Total Cost (Cr.)	**8.12**	**18.36**	**19.13**
	Per km Cost (Lakhs)	11.60	26.22	27.33

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in Annexure-II.

Table 5-5 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2026 to FY 2031	-	
2	FY 2032	186.19	
3	FY 2033 to FY 2038	-	
4	FY 2039	92.41	
5	FY 2040 to FY 2050	-	
6	FY 2051	-	End of Concession Period
	Total Cost (Cr.)	278.60	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	7.40	
2	FY 2034	7.40	

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
3	FY 2041	7.40	
4	FY 2048	7.40	
Total Cost (Cr.)		**29.60**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-6 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%	**2057**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49	FY50	FY51
1	Routine O&M Cost																										
1.01	Salary and Welfare Expense	1.04	1.10	1.15	1.21	1.26	1.32	1.37	1.43	1.49	1.55	1.61	1.67	1.74	1.81	1.88	1.95	2.03	2.11	2.20	2.29	2.38	2.47	2.57	2.67	2.78	2.89
1.02	Tolling Operations Services	2.95	3.11	3.28	3.44	3.59	3.74	3.90	4.06	4.22	4.39	4.56	4.75	4.94	5.13	5.34	5.55	5.77	6.00	6.24	6.49	6.75	7.02	7.30	7.59	7.89	8.21
1.03	Toll Security Services	0.67	0.71	0.75	0.78	0.82	0.85	0.89	0.93	0.96	1.00	1.04	1.08	1.13	1.17	1.22	1.27	1.32	1.37	1.43	1.48	1.54	1.60	1.67	1.73	1.80	1.87
1.04	Incident Management Services	-	-	-	-	3.00	3.13	3.26	3.39	3.53	3.67	3.82	3.97	4.13	4.29	4.46	4.64	4.83	5.02	5.22	5.43	5.64	5.87	6.10	6.35	6.60	6.86
1.05	Electricity and Diesel Charges	0.33	0.34	0.36	0.38	3.59	3.74	3.90	4.06	4.22	4.39	4.56	4.75	4.94	5.13	5.34	5.55	5.77	6.00	6.24	6.49	6.75	7.02	7.30	7.59	7.89	8.21
1.06	TMS/HTMS/System Expenses	1.07	0.30	0.65	0.68	0.71	0.98	1.41	1.74	0.41	0.86	0.90	0.93	1.30	1.86	2.28	0.54	1.14	1.18	1.23	1.71	2.44	3.00	0.71	1.49	1.55	1.62
1.07	Office Operating Expenses	0.31	0.33	0.35	0.36	0.38	0.40	0.41	0.43	0.45	0.46	0.48	0.50	0.52	0.54	0.56	0.59	0.61	0.63	0.66	0.69	0.71	0.74	0.77	0.80	0.83	0.87
1.08	Vehicle Running Expenses	0.35	0.36	0.38	0.40	0.42	0.44	0.46	0.47	0.49	0.51	0.53	0.56	0.58	0.60	0.62	0.65	0.68	0.70	0.73	0.76	0.79	0.82	0.85	0.89	0.92	0.96
1.09	Professional Fees Expense	0.47	0.50	0.52	0.55	0.84	0.88	0.91	0.95	0.99	1.03	1.07	1.11	1.16	1.20	1.25	1.30	1.35	1.41	1.46	1.52	1.58	1.65	1.71	2.07	2.15	2.23
1.10	Community Development	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28
1.11	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.11
1.13	Insurance Expense	0.25	0.27	0.28	0.29	0.31	0.32	0.33	0.35	0.36	0.38	0.39	0.41	0.42	0.44	0.46	0.47	0.49	0.51	0.53	0.56	0.58	0.60	0.62	0.65	0.68	0.70
1.14	IE Fees	0.64	0.67	0.71	0.74	0.77	0.81	0.84	0.87	0.91	0.95	0.98	1.02	1.06	1.11	1.15	1.20	1.24	1.29	1.35	1.40	1.45	1.51	1.57	1.64	1.70	1.77
1.15	Routine Maintenance Cost	-	-	-	-	3.14	3.27	3.41	3.55	3.69	3.84	3.99	4.15	4.32	4.49	4.67	4.86	5.05	5.25	5.46	5.68	5.90	6.14	6.38	8.79	9.14	9.51
1.16	Horticulture & ROW Maintenance	-	-	-	-	2.43	2.54	2.64	2.75	2.86	2.97	3.09	3.22	3.35	3.48	3.62	3.76	3.91	4.07	4.23	4.40	4.58	4.76	4.95	5.15	5.35	5.56
1.17	Miscellaneous and Contingency	0.31	0.33	0.35	0.36	0.64	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.17	1.21	1.26	1.31	1.36	1.41	1.47
	Subtotal of O&M Cost	8.56	8.21	8.97	9.40	22.12	23.31	24.66	25.93	25.58	27.03	28.12	29.25	30.74	32.47	34.12	33.65	35.57	36.99	38.46	40.43	42.71	44.87	44.26	49.21	51.17	53.21
2	Major Maintenance Cost	-	-	-	-	-	-	223.29	-	-	-	-	-	-	126.47	-	-	-	-	-	-	-	-	-	-	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	7.81	-	-	-	-	-	-	10.58	-	-	-	-	-	-	13.92	-	-	-	-	-	-	18.30	-	-	-
4	Balance Works Cost	56.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**64.86**	**16.02**	**8.97**	**9.40**	**22.12**	**23.31**	**247.94**	**25.93**	**36.15**	**27.03**	**28.12**	**29.25**	**30.74**	**158.95**	**34.12**	**47.57**	**35.57**	**36.99**	**38.46**	**40.43**	**42.71**	**44.87**	**62.56**	**49.21**	**51.17**	**53.21**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost (Up to FY 2048)	
Project - Lucknow Raibareli	
Ordinary Repair Cost for Flexible (with GST)	**25,818,479**
(Inclusive of GST)	**= 3.69 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7 m or 14 m or 21 m) with 1.5 m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				2,12,090	**2,45,137**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	324498.00	375059.00	-	-	-	-
		Paved shoulder	1.70	360553.00	416733.00	66.76	-	24,069,256	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	424180.00	490274.00	-	-	-	-
		Paved shoulder	2.20	466598.00	539301.00	-	3.24	-	1,749,223
					TOTAL	**70.000**		**25,818,479**	

Routine Maintenance Cost (For FY 2049 onwards)	
Project - Lucknow Raebareli	
Ordinary Repair Cost for Flexible (with GST)	**34,192,403**
(Inclusive of GST)	**= 4.88 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7 m or 14 m or 21 m) with 1.5 m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	More than 4500 CVD				
				2,12,090	**2,45,137**				
						Normal	**Urban**	**Normal**	**Urban**
1	Six lane with divided carriageway	without Paved shoulder	2.09	443268.00	512336.00	-	-	-	-
		with Paved shoulder	2.26	479323.00	554009.00	66.76	-	31,997,926	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	542950.00	627550.00	-	-	-	-
		with Paved shoulder	2.76	585368.00	676577.00	-	3.24	-	2,194,477
TOTAL						**70.000**		**34,192,403**	

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			11505
	Cost in Rupees			28,763
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			460
	Cost in Rupees			23,010
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			87
	Cost in Rupees			21,665
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			58
	Cost in Rupees			8,684
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			460
	Cost in Rupees			34,515
	v) Road marking	14%	Once in 7th year & @ Repaired location	32582
	SUB TOTAL			**149,219**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**212,090**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	3694
	ii) Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**33,047**
	GRAND TOTAL (Urban)			**245,137**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2032)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						24,37,827	12	3,04,24,083
	For BC	Sqm	2	68,526	8.75		11,99,202	11,99,202		
	For DBM	Sqm	2	68,526	7.25		9,93,625	9,93,625		
	For Misc. Location	Sqm	2	14,000	8.75		2,45,000	2,45,000		
2	BC with 30 mm	Cum	2	41,263	8.75	0.03	21,663	21,663	13,357	28,93,48,834
3	BC with 40 mm	Cum	2	41,263	8.75	0.04	28,884	28,884	13,357	38,57,98,446
4	DBM with 50 mm	Cum	2	68,526	7.25	0.05	49,681	49,681	9,604	47,71,62,488
5	Milling	Sqm	2	68,526	7.25		9,93,625	9,93,625	89	8,79,85,478
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	1,518	3.50	4.50	1,214	1,214	119	1,44,493
7	Dismantling of CC Panels @ 5% area	Cum	5%		23,905	0.30	359	359	995	3,56,784
8	Replacement of Panels - PQC @ 5% area	Cum	5%		23,905	0.30	359	359	10,148	36,38,977
9	Replacement of Panels - DLC @ 0% area	Cum	0%		23,905	0.15	0	0	5,496	-
	Service Road									
10	Tack coat	Sqm	1	3,892	5.48		21,328	21,328	12	2,66,172
11	BC with 30 mm	Cum	1	3,892	5.48	0.03	640	640	10,932	69,94,786
12	Micro Surfacing	Sqm	1	3,892	5.48		21,328	21,328	155	33,11,153
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1,089	18.7		20,356	20,356	12	2,54,044
12	Wearing Coat BC with 30 mm	Cum	1	1,089	18.7	0.03	611	611	13,357	81,56,756
13	Milling of Ex. Wearing Coat	Sqm	1	1,089	18.7		20,356	20,356	89	18,02,529
14	Painting of Crash Barrier	Sqm	4	1,089		1.20	5,228	5,228	105	5,48,982
	Other Works									
15	Raising of Road Kerb	Rmt	2	75,013			1,50,026	1,50,026	297	4,45,57,633

Major Maintenance Cost (FY 2032)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	8,557			17,114	17,114	179	30,63,406
	Solar Road Stud	Nos	1				-	-	1,894	-
17	Painting of Kerb	Sqm	2	75,013		0.375	56,260	56,260	129	72,57,493
18	Road Marking	Sqm								
	on BC						52,230	52,230	504	2,63,05,259
	on Micro-surfacing						756	756	651	4,92,253
	MCW									
	a) Median & Edge line	Sqm	4	73,500	0.15		44,100			
	b) Lane line	Sqm	2	24,255	0.10		4,851			
	Service Road									
	a) Edge line	Sqm	2	6,487	0.10		1,297			
	b) Lane line	Sqm	1	2,141	0.10		214			
	Junction crossing	Sqm					2,523			
19	Filling of Earthen shoulder	Cum					8,457	8,457	743	62,79,051
	MCW		2	68,526	1.00	0.06	8,223			
	Service Road		1	3,892	1.00	0.06	234			
20	Median Filling	Cum	1	66,225	4.17	-	-	-	390	-
21	Geogrid	Sqm						9,80,000	121	11,85,96,610
22	Miscellaneous	5%								7,51,37,285
Total Major Maintenance Cost (Rs)										**1,57,78,82,995**
Total Major Maintenance Cost with 18% GST (Rs)										**1,86,19,01,934**
Total Major Maintenance Cost with GST (Cr)										**186.19**
Per km Cost (lakh)										**265.99**
Escalation Factor for Major Maintenance Cost (FY 2032)										**1.30**
Total Escalated Cost for Major Maintenance Cost (FY 2032) (Cr)										**223.29**

Major Maintenance Cost (FY 2039)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						14,93,884	12	1,86,43,668
	For BC	Sqm	2	68,526	8.75		11,99,202	11,99,202		
	For DBM	Sqm	2	3,426	7.25		49,681	49,681		
	For Misc. Location	Sqm	2	14,000	8.75		2,45,000	2,45,000		
2	BC with 30 mm	Cum	2	-	8.75	0.03	-	-	13,357	-
3	BC with 40 mm	Cum	2	82,526	8.75	0.04	57,768	57,768	10,932	63,15,29,480
4	DBM with 50 mm	Cum	2	3,426	7.25	0.05	2,484	2,484	9,604	2,38,58,124
5	Milling	Sqm	2	3,426	7.25		49,681	49,681	89	43,99,274
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	1,518	3.50	4.50	1,214	1,214	119	1,44,493
7	Dismantling of CC Panels @ 5% area	Cum	5%		23,905	0.30	359	359	995	3,56,784
8	Replacement of Panels - PQC @ 5% area	Cum	5%		23,905	0.30	359	359	10,148	36,38,977
9	Replacement of Panels - DLC @ 0% area	Cum	0%		23,905	0.15	0	0	5,496	-
	Service Road									
10	Tack coat	Sqm	1	3,892	5.48		21,328	21,328	12	2,66,172
11	BC with 30 mm	Cum	1	3,892	5.48	0.03	640	640	10,932	69,94,786
12	Micro Surfacing	Sqm	1	3,892	5.48		21,328	21,328	155	33,11,153
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
13	Tack coat	Sqm	1	1,089	18.7		20,356	20,356	12	2,54,044
14	Wearing Coat BC with 30 mm	Cum	1	1,089	18.7	0.03	611	611	10,932	66,76,066
15	Milling of Ex. Wearing Coat	Sqm	1	1,089	18.7		20,356	20,356	89	18,02,529
16	Painting of Crash Barrier	Sqm	4	1,089		1.20	5,228	5,228	105	5,48,982
	Other Works									
17	Raising of Road Kerb	Rmt	-	75,013			-	-	297	-
18	Replacement of Road Stud									
	Normal Road Stud	Nos	2	8,557			17,114	17,114	179	30,63,406
	Solar Road Stud	Nos	1				-	-	1,894	-
19	Painting of Kerb	Sqm	2	75,013		0.375	56,260	56,260	129	72,57,493
20	Road Marking	Sqm								

Major Maintenance Cost (FY 2039)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	on BC						52,230	52,230	504	2,63,05,259
	on Micro surfacing						756	756	651	4,92,253
	MCW									
	a) Median & Edge line	Sqm	4	73,500	0.15		44,100			
	b) Lane line	Sqm	2	24,255	0.10		4,851			
	Service Road									
	a) Edge line	Sqm	2	6,487	0.10		1,297			
	b) Lane line	Sqm	1	2,141	0.10		214			
	Junction crossing	Sqm					2,523			
21	Filling of Earthen shoulder	Cum					8,457	8,457	743	62,79,051
	MCW		2	68,526	1.00	0.06	8,223			
	Service Road		1	3,892	1.00	0.06	234			
22	Median Filling	Cum	-	66,225	4.17	-	-	-	390	-
23	Geogrid	Sqm	-					-	121	-
24	Miscellaneous	5%								3,72,91,100
Total Major Maintenance Cost (Rs)										**78,31,13,093**
Total Major Maintenance Cost with 18% GST (Rs)										**92,40,73,449**
Total Major Maintenance Cost with GST (Cr)										**92.41**
Per km Cost (lakh)										**132.01**
Escalation Factor for Major Maintenance Cost (FY 2039)										**1.71**
Total Escalated Cost for Major Maintenance Cost (FY 2039) (Cr)										**126.47**

REVISION RECORD					
Document No. 255051 / HE / LIE / TDD_Final Report / R0					
Rev	**Description**	**Date**	**Originator**	**Checked**	**Approved**
R0	Final Report	27-Oct-2025	RW / NHA	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 General 7
3.2 Pavement Condition Survey 7
3.3 Bypass / Realignment 10
3.4 Service Road / Slip Road 10
3.5 At-Grade Junctions 11
3.6 Condition Survey of Bridge 13
3.7 Condition Survey of Culverts 20
3.8 Drainage 23
3.9 Slope Protection 23
3.10 Road Furniture 24
3.11 Avenue Plantation and Median Plantation 28
3.12 Toll Plaza 29
3.13 Lane Equipment 30
3.13.1 RFID ETC Transceiver 30
3.13.2 Lane Controller with Industrial PC 31
3.13.3 Automatic Vehicle Classification (AVC) Sensors 31
3.13.4 Automatic Lane Barrier 32

3.13.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 32
3.13.6 Incident Capture Camera (AVC Camera) 33
3.13.7 License Plate Image Capture Camera (LPIC) 33
3.13.8 Over Head Lane Signal (OHLS) 33
3.13.9 Toll Booth Equipment 33
3.14 Plaza Equipment 34
3.14.1 TMS Server 34
3.14.2 55" LED screen for CCTV monitoring 35
3.14.3 Workstations in Control Room, POS room 35
3.15 Truck Lay-bye 36
3.16 Administrative, Operation and Maintenance Base Camp 36
3.17 Toilet Block 37
3.18 Bus Bays and Passenger Shelters 37
3.19 Balance Work Status 38
3.20 Operation and Maintenance 38
3.20.1 O&M Contract 38
3.20.2 Organization Chart 39
3.20.3 Operation 42
3.20.4 Routine Maintenance 42
4 Pavement Investigation and Assessment 44
4.1 General 44
4.2 Axle Load and VDF 44
4.3 Design Traffic 44
4.4 Network Survey Vehicles (NSV) Survey 45
4.5 Structural Investigations 46
4.6 Test pit and Subgrade Investigation 48
4.7 Periodic Maintenance Strategy 50
5 Cost Estimates 51
5.1 General 51
5.2 Rate Assumption 51
5.3 Balance Work Cost 52
5.4 Routine O&M Cost 53
5.5 Major Maintenance Cost 54
5.6 Periodic Replacement of TMS /System 54
5.7 Escalation Assumption 54
5.8 Summary of Cost 55
Annexures 57

Annexure I - Routine Maintenance Cost 58
Annexure II - Major Maintenance Cost 62

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 13
Table 3-2 Condition Survey of Major Structure 14
Table 3-3 Details of Truck Lay-bye 36
Table 3-4 Details of Toilet Block 37
Table 4-1 Vehicle Damage Factor 44
Table 4-2 MSA Calculation 44
Table 4-3 Test Results Summary of Natural Ground Soil Samples 48
Table 4-4 Test Results Summary of Bituminous Layer Samples 49
Table 4-5 Summary of Pavement Crust Thickness 49
Table 4-6 Major Maintenance Cycle 50
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 51
Table 5-2 Summary of Unit Rates 52
Table 5-3 Summary of Operation Cost 53
Table 5-4 Escalation 54

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW-LHS) 8
Figure 3-2 Photographs of Pavement Condition (MCW-RHS) 9
Figure 3-3 Photographs of Bypass 10
Figure 3-4 Photographs of Service Road 10
Figure 3-5 Photographs of At-Grade Junctions 11
Figure 3-6 Photographs of Minor Junctions 12
Figure 3-7 Photographs of Road Over Bridge (ROB) 17
Figure 3-8 Photographs of Major Bridge 17
Figure 3-9 Photographs of Minor Bridge 18
Figure 3-10 Photographs of Grade Separator 19
Figure 3-11 Photographs of Underpasses 19
Figure 3-12 Photographs of Slab Culverts 21
Figure 3-13 Photographs of Pipe Culverts 22
Figure 3-14 Photographs of Drainage 23
Figure 3-15 Photographs of Slope Protection and Chute Drain 23
Figure 3-16 Photographs of Pavement Marking 24
Figure 3-17 Photographs of Road Studs 25
Figure 3-18 Photographs of Traffic Signages 25
Figure 3-19 Photographs of Street Light 26

Figure 3-20 Photographs of MBCB / Crash Barrier 27
Figure 3-21 Photographs of Delineators 27
Figure 3-22 Photographs of Pedestrian Guard Rail 28
Figure 3-23 Photographs of Road Land Boundary 28
Figure 3-24 Photographs of Avenue Plantation and Median Plantation 29
Figure 3-25 Photographs of Median Plantation 29
Figure 3-26 Photographs of Toll Plaza 29
Figure 3-27 Photographs of Truck Lay-bye 36
Figure 3-28 Photograph of Toilet Block 37
Figure 3-29 Photographs of Bus Bays 38

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Bharatpur - Mahua section of NH-11 from km. 63+000 to km. 120+000 in the State of Rajasthan (hereinafter referred as "Project Road").

M/s. Mahua Bharatpur Expressway Ltd. (MBEL) (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Mahua to Bharatpur Section (from km. 63+000 to km. 120+000) of NH-11 on BOT Basis. The project was awarded to Concessionaire on 07th March 2005 with a concession period of 25 years including construction Period of 3 years by National Highway Authority of India (NHAI). The length of Project Road is 57.000 kms with two toll plazas at km. 64+570 (Ludhawai) and at km. 98+500 (Amoli).

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyzing the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **16th January 2025 to 17th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, and overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement **M/s. Mahua Bharatpur Expressway Ltd. (MBEL),** is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 07th March 2005. The Appointed Date for the Project Road is 10th April 2006.

The project was developed on a BOT basis with a concession period of 25 years from the Appointed Date including construction period of 3 years. The Concessionaire received the Completion Certificate on 9th March 2015. The project is currently under operation and Maintenance phase.

2.2 Location

The Project Road is a section of National Highway No. 11 from Bharatpur to Mahua in the state of Rajasthan. The total project length is 57.000 kms.

The Location Map of the Project Road is presented below:

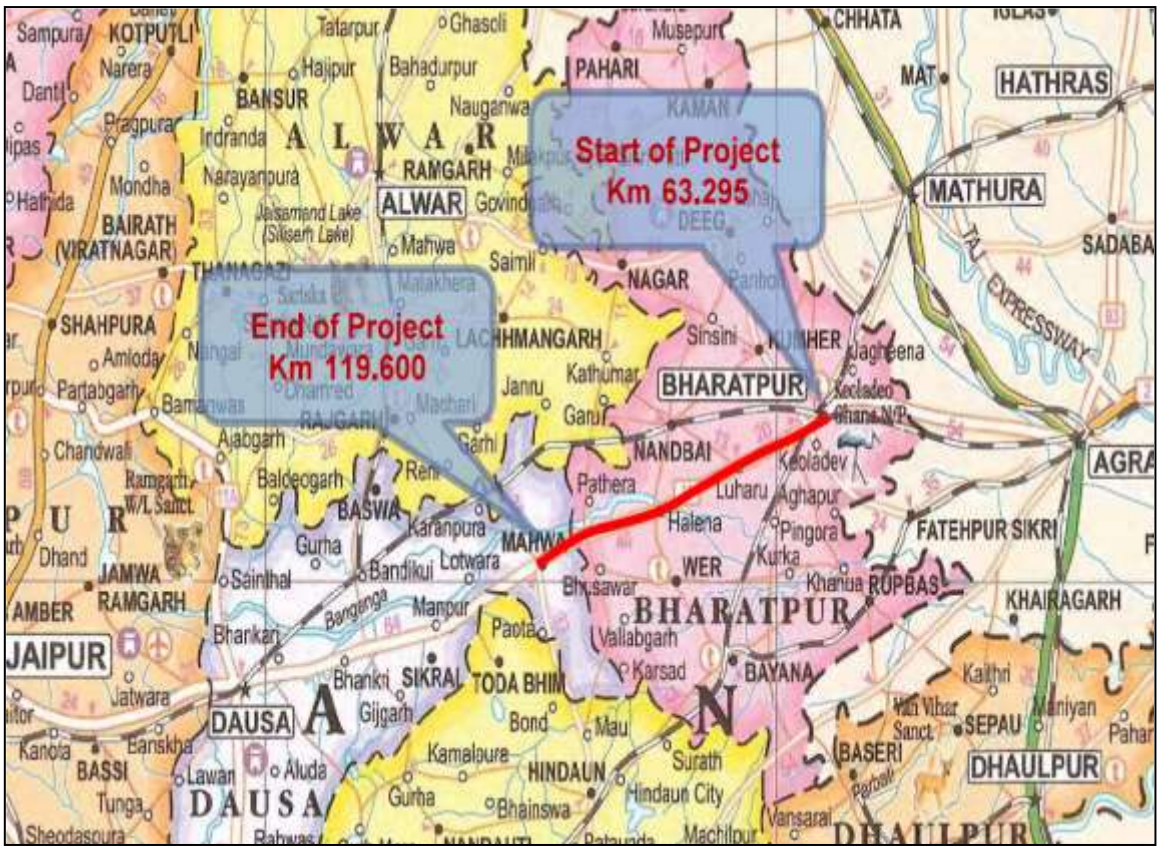


Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

Start of Project Road (LHS)

Start of Project Road (RHS)

Figure 2-3 End of Project Road

End of Project Road (LHS)

End of Project Road (RHS)

2.3 Climate

The climate features of the area covered by the Project Road are:

Summer	March - May, with maximum temperature up to 47 ^{0}C.
Monsoon	June - August, with annual rainfall of about 560-660 mm.
Retreating monsoon season	September - November, with dry weather and moderate temperature.
Winter	December - February, temperature falls up to 3 ^{0}C.

2.4 Terrain

This section of National Highway traverses through plain terrain.

2.5 Abutting Land Use

The Project Road is characterized by a mix of habituated areas and agriculture lands.

2.6 Right of Way

The width of existing Right of Way (RoW) for the Project Road varies from 13.50 m to 22.50 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services located along the Project Road were shifted to the PROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Bharatpur (km. 63+000) to Mahua (km. 120+000) has been developed as a four-lane divided carriageway with median width of 4.5 m and 2.0 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	Km.	57.000	
2	Construction of Service Road	Km.	12.980	Both Side
3	Major Bridge	Nos.	01	
4	Minor Bridge	Nos.	04	
5	Pipe Culvert	Nos.	25	
6	Slab Culvert	Nos.	12	
7	Box Culvert	Nos.	03	
8	Underpasses	Nos.	05	
9	Grade Separated Structure	Nos.	01	
10	Rail Over Bridge	Nos.	01	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 General

The Project Road is four lane divided carriageway and generally has a paved carriageway of 9.0 m with an earthen shoulder of 1.5 m on either side. The Project Road has a median width of 4.5 m and 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is rigid pavement.

3.2 Pavement Condition Survey

Pavement condition survey was carried out from **16th January 2025 to 17th January 2025** through visual inspection for the entire project length. From the visual inspection, the pavement condition of the Project Road for the entire length is generally found to be Good. In the project, Major maintenance work has been done in FY 2025. The same has been intimated to NHAI by the Concessionaire.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW-LHS)

Pavement Condition at km. 64+000

Pavement Condition at km. 65+260

Pavement Condition at km. 68+000

Pavement Condition at km. 72+000

Rigid Pavement at km. 78+000

Rigid Pavement at km. 82+000

Pavement Condition at km. 89+000

Pavement Condition at km. 98+400

Pavement Condition at km. 113+820

Pavement Condition at km. 116+380

Pavement Condition at km. 96+640

Pavement Condition at km. 90+800

Figure 3-2 Photographs of Pavement Condition (MCW-RHS)

Pavement Condition at km. 120+000 (RHS)

Pavement Condition at km. 116+100 (RHS)

Pavement Condition at km. 111+300 (RHS)

Pavement Condition at km. 110+400 (RHS)

Pavement Condition at km. 104+860 (RHS)

Pavement Condition at km. 103+640 (RHS)

Pavement Condition at km. 101+800 (RHS)

Pavement Condition at km. 91+800 (RHS)

Pavement Condition at km. 86+540 (RHS)

Pavement Condition at km. 92+780 (RHS)

Pavement Condition at km. 96+800 (RHS)

Pavement Condition at km. 84+900 (RHS)

3.3 Bypass / Realignment

There is one bypass on Project Road. The detail of the bypass is tabulated below:

Bypass:

Location of Bypass	Design Chainage (km)		Design length (km)
	From	To	
Mahwa	114+380	118+680	4.30

The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Bypass

Start of Mahua Bypass

End of Mahua Bypass

3.4 Service Road / Slip Road

The service road with a 5.5 width is constructed in built-up area and adjoining underpass locations. The Project Road has total service road length of 12.980 kms on both sides. The photographs taken during the site visit are presented below.

Figure 3-4 Photographs of Service Road

Service Road at km. 101+800 (RHS)

Service Road at km. 100+900 (LHS)

Service Road at km. 65+260 (LHS)

Service Road at km. 83+500 (LHS)

Service Road at km. 110+400 (RHS)

Service Road at km. 104+900 (RHS)

3.5 At-Grade Junctions

There are 29 Nos. of At-Grade Junctions along Project Road. The photographs taken during site visit is presented as below:

Figure 3-5 Photographs of At-Grade Junctions

Major Junction at km. 114+360 (RHS)

Major Junction at km. 118+839 (RHS)

Major Junction at km. 116+839 (RHS)

Major Junction at km. 114+350 (RHS)

Figure 3-6 Photographs of Minor Junctions

Minor Junction at km. 74+820 (LHS)

Minor Junction at km. 97+900 (LHS)

Minor Junction at km. 111+400 (RHS)

Minor Junction at km. 103+900 (RHS)

3.6 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	01
Grade Separator	01
Major Bridges (MJB)	01
Minor Bridges (MNB)	04
Underpass (UP)	05
Culverts:	
Pipe Culverts	25
Slab Culverts	12
Box Culverts	03
Total	**52**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Name of Structure	Chainage (km)	Size (m)	Width (m)	Remarks
1	Minor Bridge (SLAB)	62+800	5x6.40 M	12	**LHS-** Existing Bridge, Stone masonry is used for Abutment, Pier and Wing wall, RCC deck slab, Tar Paper bearings are used, Median and Shoulder side RCC Railing, Cracks are observed on RCC Railing at span no. 4 and 5, and slope protection are in good condition. Drainage spouts are choked, Structure is in sound condition. **RHS-** Newly constructed Bridge, Substructure RCC abutment and Pier, RCC deck slab, Tar Paper bearings are used, Footpath side RCC Railing, Median side RCC Crash Barrier with handrail. Shoulder side RCC Crash Barrier. Crash barriers are in good condition. Expansion Joints are filled with Bituminous material. A1 side Slope protection damage. Drainage spouts are choked, Structure is in sound condition.
2	ROB	63+236	LHS-1x48.65 RHS-1x14.56+1x23+1x14.56	12	**LHS-** Single span Existing Bridge, Substructure RCC abutment, PSC Girder 4 nos. are used, Elastomeric bearing are used, Footpath slab damaged. Shoulder, Median side RCC Crash Barrier, Expansion Joint, crash barrier and Slope protection are in good condition. Drainage spouts are cleaned, Structure is in sound condition. **RHS-** Newly constructed Bridge, Substructure RCC abutment, PSC Girder 5 no. are used for Railway span, RCC T Beam Girder 5 no. are used for obligatory span, Elastomeric Bearings are used, Footpath, Shoulder, and Median side RCC Crash Barrier. Expansion Joint, Crash Barrier and Slope protection are in good condition. Drainage spouts are cleaned, Structure is in sound condition. A return wall with RCC parapet is constructed. One high mass is erected at A1 side.
3	Minor Bridge	63+600	2x6.40 M	LHS-12.00 RHS-13.95	**LHS-** Existing Bridge, Stone masonry is used for Abutment, Pier and Return Wall. RCC deck slab, Tar Paper bearings are used, Median and Shoulder side RCC Railing. RCC Railing and slope protection are in good condition. Drainage spouts are choked. The structure is in sound condition.

Sr. No.	Name of Structure	Chainage (km)	Size (m)	Width (m)	Remarks
					RHS- Newly constructed Bridge, Substructure RCC abutment, Pier and Wing Wall, RCC deck slab, Tar Paper bearings are used, Footpath side RCC Railing, Shoulder side RCC Crash Barrier and Median side RCC Crash Barrier with handrail. A2 side Slope protection damaged. Crash barrier is in good condition. Drainage spouts are cleaned. The structure is in sound condition.
4	Ludhawai Underpass	66+305	1x11.16	12.25	Newly constructed, RCC Abutments, RCC Girder 4 no. for each span, Elastomeric Bearings are used, RCC Crash Barrier is in good condition. Drainage spouts are choked. The structure is in sound condition.
5	Hantra Underpass	82+050	1x11.16	12.25	Newly constructed, RCC Abutments, RCC Girder 4 no. for each span, Elastomeric Bearings are used, RCC Crash Barrier is in good condition. Drainage spouts are choked. Structure is in sound condition Cross Drain on RHS Service Road is damaged and obstructed to traffic. Water is stagnant in Underpass.
6	Minor Bridge(SLAB)	92+350 in Skew	3x10 M	13.95	**LHS-** Newly constructed Bridge, Substructure RCC abutment and Pier, RCC deck slab, Tar Paper bearings are used, Footpath side RCC Railing, Shoulder side RCC Crash Barrier, Median side RCC Crash Barrier with handrail. RCC Return wall with RCC railing. Slope protection damaged. Crash barrier is in good condition. Drainage spouts are choked. The structure is in sound condition. At slab joint cracks are seen on Main Carriageway **RHS-** Newly constructed Bridge, Substructure RCC abutment and Pier, RCC deck slab, Tar Paper bearings are used, Footpath side RCC Railing, Shoulder side RCC Crash Barrier Median side RCC Crash Barrier with handrail. RCC Return wall with RCC railing. Crash barrier and slope protection are in good condition. Drainage spouts are choked. Structure is in sound condition. At slab joint cracks are seen on Main Carriageway
7	Major Bridge	95+450	7x39.75 +1x40.25	13.95	**LHS and RHS**- Newly constructed Bridge, Substructure RCC abutment and Pier, PSC Girder 4 no., POT PTFE bearings are used, Footpath side RCC Railing, Shoulder side RCC Crash Barrier, Median side RCC Crash Barrier with handrail. Expansion Joint Cleaning work in progress on RHS side. Crash Barrier is in good

Sr. No.	Name of Structure	Chainage (km)	Size (m)	Width (m)	Remarks
					condition, Slope protection is in good condition Except A1 side LHS slope protection not done. Drainage spouts are cleaned. The structure is in sound condition.
8	Chhankarwada Underpass	100+460	1x11.16	12.25	Newly constructed, RCC Abutments, RCC Girder 4 no. for each span, Elastomeric Bearings are used, RCC Crash Barrier is in good condition. Drainage spouts are cleaned. Structure is in sound condition
9	Bachhrain Underpass	105+570	1x11.16	12.25	Newly constructed, RCC Abutments, RCC Girder 4 no. for each span, Elastomeric Bearings are used, RCC Crash Barrier is in good condition. Drainage spouts are cleaned. Structure is in sound condition
10	Minor Bridge	108+180 in Skew	2x7 M	LHS-13.95 RHS-11.00	**LHS-** Newly constructed Bridge, Substructure RCC abutment and Pier, RCC deck slab, Tar Paper bearings are used, RCC return wall, Footpath side RCC Railing, Median side RCC Crash Barrier and shoulder side RCC Crash Barrier with handrail. Crash barrier and slope protection are in good condition. The structure is in sound condition. **RHS-** Existing Bridge, Stone masonry are used for Abutment and Pier, RCC deck slab, Tar Paper bearings are used, Parapet Constructed in Brick work, Median side Partly RCC Railing and partly Parapet constructed in stone masonry, Slope protection are in good condition. The structure is in sound condition.
11	Fly Over/GS	116+839	LHS and RHS - 1x12+2x16+1x12	13.5	Newly constructed, Substructure RCC abutment and Pier, RCC Girder 5 no. for each span, Elastomeric bearings are used, Footpath side RCC Railing, Shoulder side RCC Crash Barrier, Expansion Joint and RCC wing wall are in good condition, Drainage spouts are Cleaned. The structure is in sound condition.
12	Mahwa Underpass	118+110	1x11.16	12.25	Newly constructed, RCC Abutments, RCC Girder 4 no. for each span, Elastomeric Bearings are used, Shoulder side RCC Crash Barrier and Median side RCC Crash Barrier with handrail. RCC Crash Barrier is in good condition. Drainage spouts are choked. Structure is in sound condition

Figure 3-7 Photographs of Road Over Bridge (ROB)

View of New ROB at km. 63+236 (LHS)

View of Existing ROB at km. 63+236 (RHS)

View of ROB Girder at km. 63+236 (Inner View)

Slope Protection at km. 63+236

Figure 3-8 Photographs of Major Bridge

Major Bridge at km. 95+750

Major Bridge at km. 95+750

Major Bridge at km. 95+750

Major Bridge at km. 95+750 - Expansion joint

Figure 3-9 Photographs of Minor Bridge

Minor Bridge at km. 108+180

Minor Bridge at km. 108+180

Minor Bridge at km. 63+600

Minor Bridge at km. 63+600

Minor Bridge at km. 92+350

Minor Bridge at km. 92+350

Minor Bridge at km. 62+800

Minor Bridge at km. 62+800

Figure 3-10 Photographs of Grade Separator

Grade Separator at km. 116+845

Grade Separator at km. 116+845

Grade Separator at km. 116+845

Grade Separator at km. 116+845

Figure 3-11 Photographs of Underpasses

Underpass at km. 118+110 (LHS)

Underpass at km. 118+110 (RHS)

Underpass at km. 83+050 (RHS)

Underpass at km. 83+050 (LHS)

Underpass at km. 100+460 (LHS)

Underpass at km. 100+460

Underpass at km. 105+570 (LHS)

Underpass at km. 105+570 (RHS)

Underpass at km. 66+305

Underpass at km. 82+050

Underpass at km. 82+050

Underpass at km. 66+305

3.7 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and slab culverts at various locations. There are 25 Nos. of pipe culverts, 12 Nos. of slab culverts and 03 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found sound. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching has been damaged which required to be addressed under routine repair work by the Concessionaire.

Figure 3-12 Photographs of Slab Culverts

Slab Culvert at km. 118+955

Slab Culvert at km. 109+500

Slab Culvert at km. 89+575

Slab Culvert at km. 79+771

Slab Culvert at km. 115+830

Slab Culvert at km. 72+901

Slab Culvert at km. 105+590

Slab Culvert at km. 83+326

Figure 3-13 Photographs of Pipe Culverts

Pipe Culvert at km. 68+298

Pipe Culvert at km. 70+300

Pipe Culvert at km. 76+218

Pipe Culvert at km. 81+341

Pipe Culvert at km. 115+203

Pipe Culvert at km. 118+510

Pipe Culvert at km. 64+800

Pipe Culvert at km. 86+500

3.8 Drainage

RCC drain is constructed in built-up area and locations where service roads are provided. The photographs taken during site visit is presented as below:

Figure 3-14 Photographs of Drainage

RCC Drain at km. 65+260 (LHS)

V shape Drain at km. 83+500 (LHS)

RCC Drain at km. 101+800 (RHS)

V shape at km. 104+900 (RHS)

3.9 Slope Protection

Slope protection and chute drains are found on Project Road at required locations. A few of the slope protection and chute drains are damaged which will be rectified by the Concessionaire. The photographs taken during site visit is presented as below:

Figure 3-15 Photographs of Slope Protection and Chute Drain

Chute Drain at km. 62+800 (RHS)

Slope Protection at km. 116+839 (LHS)

Slope Protection at km. 95+450 (RHS)

Chute Drain at km. 63+230 (RHS)

3.10 Road Furniture

The Concessionaire has provided road furniture along Project Road as per the standards and specifications mentioned in Schedule-C.

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Some of the photographs of road marking are presented below.

Figure 3-16 Photographs of Pavement Marking

Road Marking at km. 62+800 (RHS)

Road Marking at km. 93+670 (RHS)

Road Marking at km. 71+200 (LHS)

Road Marking at km. 79+440 (LHS)

Road Studs

Cat's eye / road studs for the Project Road are done as per the design standards indicated in section 12 of Schedule-D. Cat's eye has been fixed at junction and at pedestrian crossings locations. Some of the photographs of road studs are presented below.

Figure 3-17 Photographs of Road Studs

km. 96+880 (LHS)

km. 67+970 (RHS)

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards are properly placed.

Some of the photographs of sign boards are presented below.

Figure 3-18 Photographs of Traffic Signages

Cantilever Gantry Sign Board at km. 118+940

Directional Sign Board at km. 91+860

Kilometer Stone at km. 78+000

Informatory sign board at km. 111+280

Highway Lighting

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers. Some of the photographs of highway lighting are presented below.

Figure 3-19 Photographs of Street Light

Street Lighting at km. 90+900

Street Lighting at km. 111+250

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site. Some of the photographs of metal beam crash barriers and concrete crash barriers are presented below.

Figure 3-20 Photographs of MBCB / Crash Barrier

Crash Barrier at km. 116+1000

Crash Barrier at km. 73+920

Concrete Barrier at km. 66+280

MBCB Barrier at km. 95+450

Delineators

The traffic delineators are seen in median on curve portion and at median openings along the Project Road. Some of the photographs of delineators are presented below.

Figure 3-21 Photographs of Delineators

Delineators at km. 93+640

Delineators at km. 64+980

Pedestrian Guard Rail

The pedestrian guard rails are provided in between the main carriageway and service road. It is maintained by the Concessionaire. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-22 Photographs of Pedestrian Guard Rail

Pedestrian Guard Rail at km. 65+260

Pedestrian Guard Rail at km. 104+900

Pedestrian Guard Rail at km. 83+500

Pedestrian Guard Rail at km. 87+600

Road Land Boundary

Some of the road land boundary stones are seen along the Project Road. The photographs taken during site visit are presented below.

Figure 3-23 Photographs of Road Land Boundary

Boundary Stone at km. 72+400 (LHS)

Boundary Stone at km. 89+420 (RHS)

3.11 Avenue Plantation and Median Plantation

Avenue plantation and median plantation are done along the project length as per IRC specification except at built-up Locations.

Figure 3-24 Photographs of Avenue Plantation and Median Plantation

Avenue Plantation at km. 89+400 (RHS)

Avenue Plantation at km. 78+000

Figure 3-25 Photographs of Median Plantation

Median Plantation at km. 78+000

Median Plantation at km. 64+000

3.12 Toll Plaza

As per the Concession Agreement, there are two no. of toll plazas at km. 64+570 (Ludhawali) and at km. 98+500 (Amoli) with the following infrastructure.

Figure 3-26 Photographs of Toll Plaza

Amoli Toll Plaza at km. 98+500

Ludhawai Toll Plaza at km. 64+360

Amoli Toll Plaza at km. 98+500

Ludhawai Toll Plaza at km. 64+360

3.13 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.13.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

3.13.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data at Km 64+360 and at km 98+500 is located in Tunnel.

Lane Controller in Booth at TP

3.13.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

3.13.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. Torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at TP

3.13.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

3.13.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.13.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

3.13.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at TP

3.13.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.14 Plaza Equipment

3.14.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

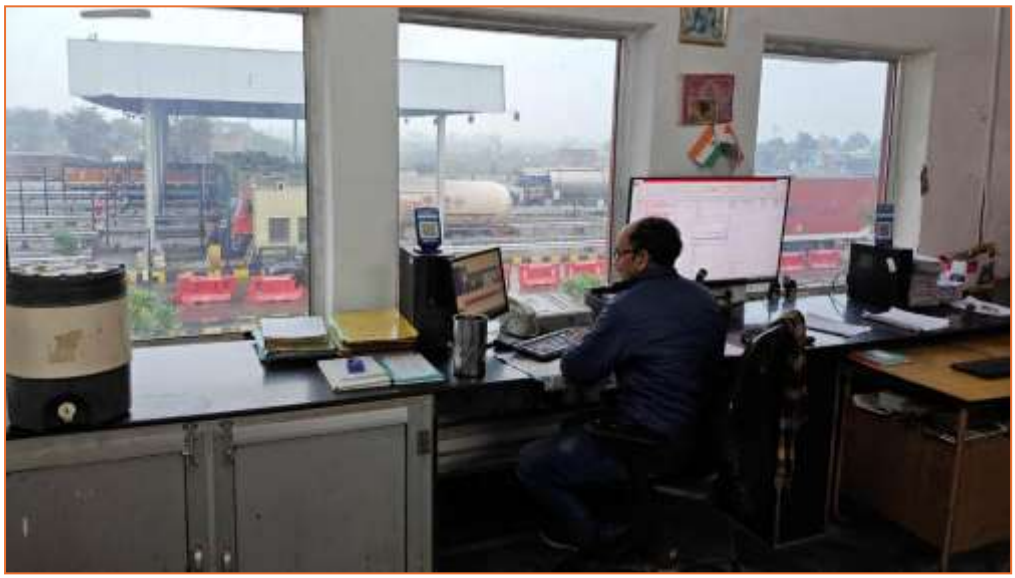
3.14.2 55" LED screen for CCTV monitoring

55" LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.14.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.



3.15 Truck Lay-bye

The Concessionaire has provided truck lay-bye at the following locations.

Table 3-3 Details of Truck Lay-bye

Sr. No.	Design Chainage (km)	Side
1	90+740	LHS
2	91+200	RHS
3	113+820	LHS
4	113+820	RHS

Some of the photographs of the truck lay-bye are presented below.

Figure 3-27 Photographs of Truck Lay-bye

Truck Lay-Bye at km. 91+500

Truck Lay-Bye at km. 113+900

3.16 Administrative, Operation and Maintenance Base Camp

Traffic Aid Post and Medical Aid Post are in the scope of Concessionaire.

Toll Plaza Administrative Building at km. 64+570

Toll Plaza Administrative Building at km. 98+500

3.17 Toilet Block

There are 04 Nos. toilet blocks at truck lay bye locations and the same is being maintained by the Concessionaire.

Table 3-4 Details of Toilet Block

Sr. No.	Design Chainage (km)	Side
1	90+740	LHS
2	91+200	RHS
3	113+820	LHS
4	113+820	RHS

Some of the photographs of the toilet block are presented below.

Figure 3-28 Photograph of Toilet Block

3.18 Bus Bays and Passenger Shelters

There are 42 Nos. of bus bays / passenger shelters along Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-29 Photographs of Bus Bays

Bus Bay at km. 71+200 (LHS)

Bus Bay at km. 118+800 (RHS)

Bus Bay at km. 96+800 (RHS)

Bus Bay at km. 115+550 (LHS)

3.19 Balance Work Status

The project has received Final Completion Certificate on 13th September 2009 by completing all the works as mentioned in the Technical Schedules of Concession Agreement. There are no balance works to be executed as per CA.

3.20 Operation and Maintenance

3.20.1 O&M Contract

As per Clause 18.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, or otherwise make improvements to the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems, More Specifically.

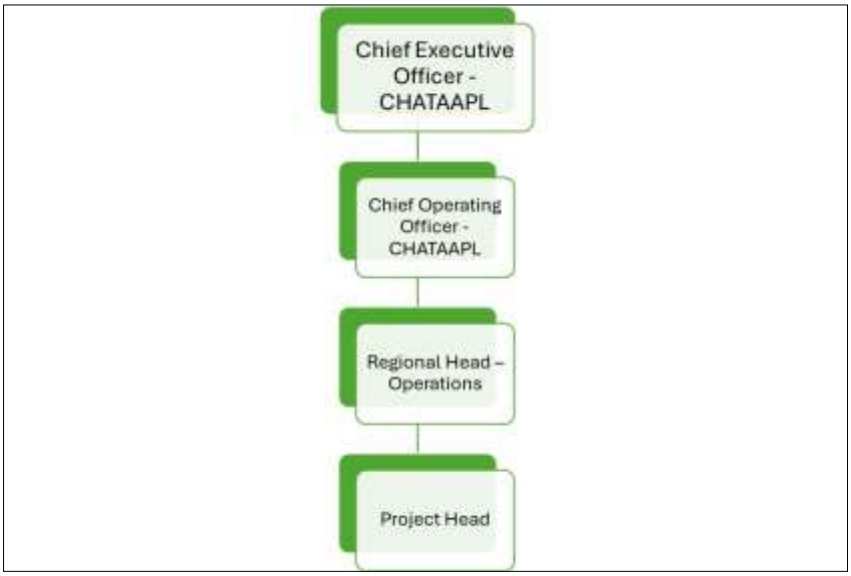
The Concessionaire has been outsourced to carry out the activities related to operation and maintenance of the Project Road including toll operation services, security services.

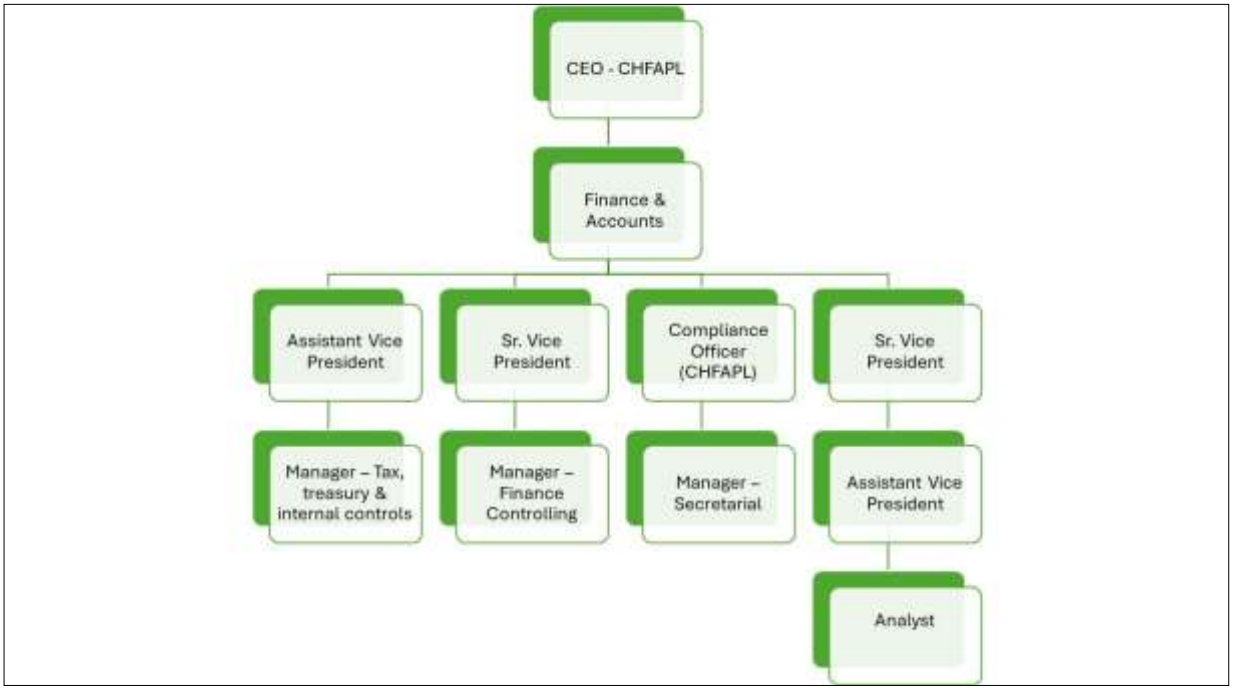
The Operation Cost is presented in the subsequent chapter.

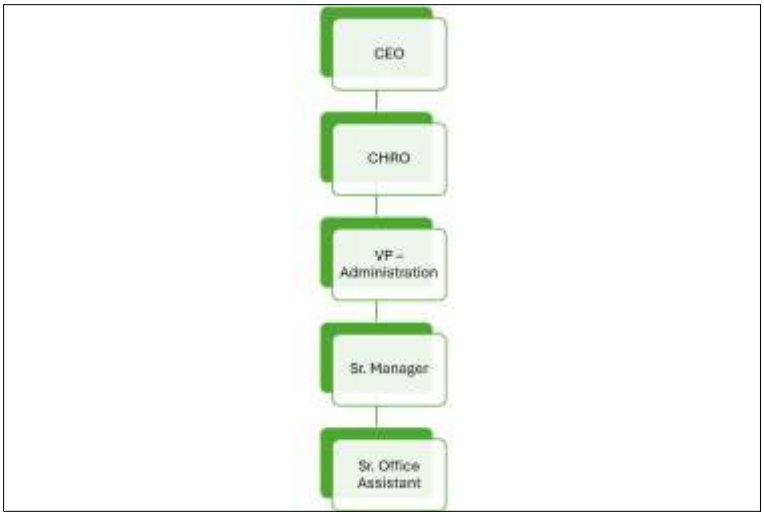
3.20.2 Organization Chart

The Concessionaire has provided the Organization Chart at site for Operation and maintenance. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

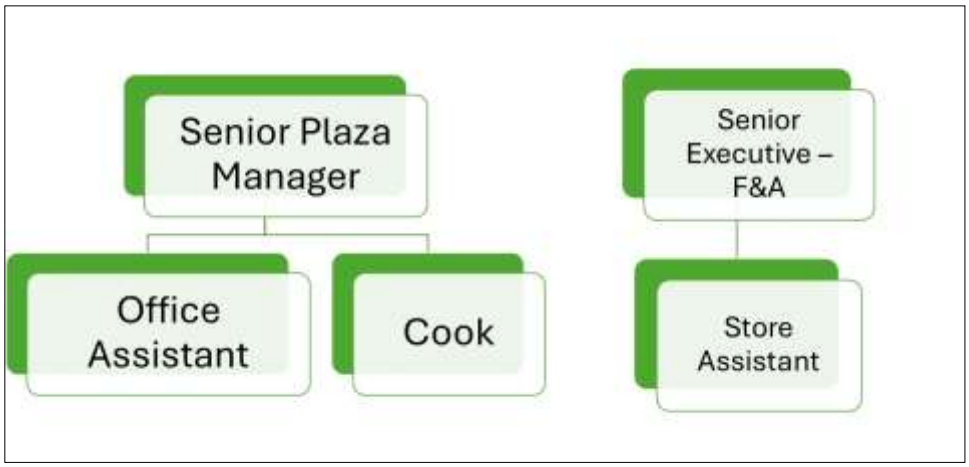
Organization Chart of Head Office Administration



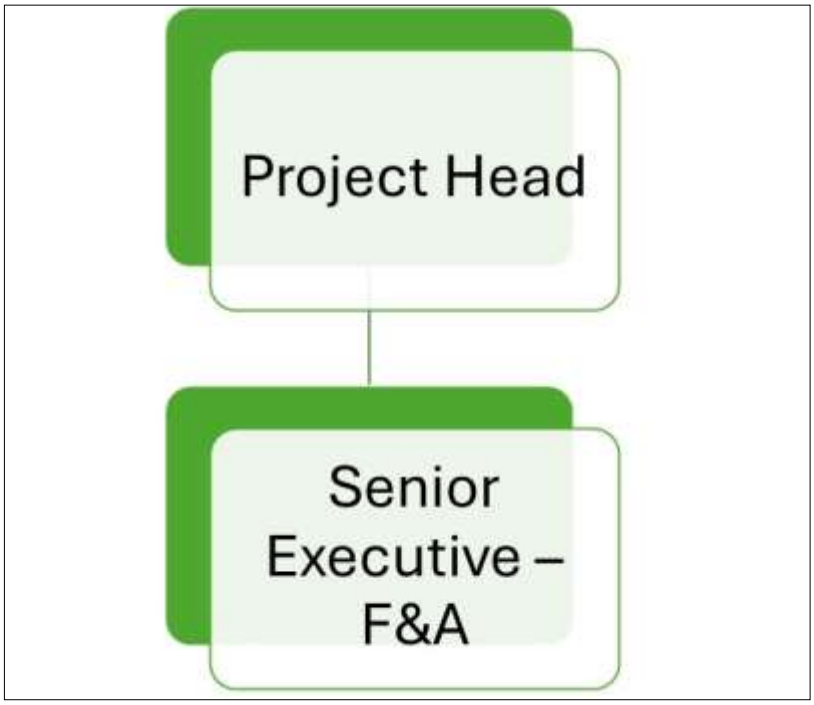




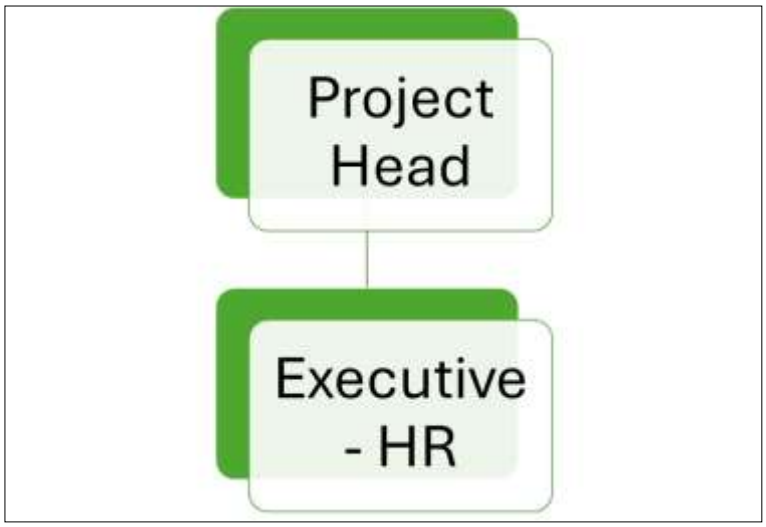
Administration-Site Office



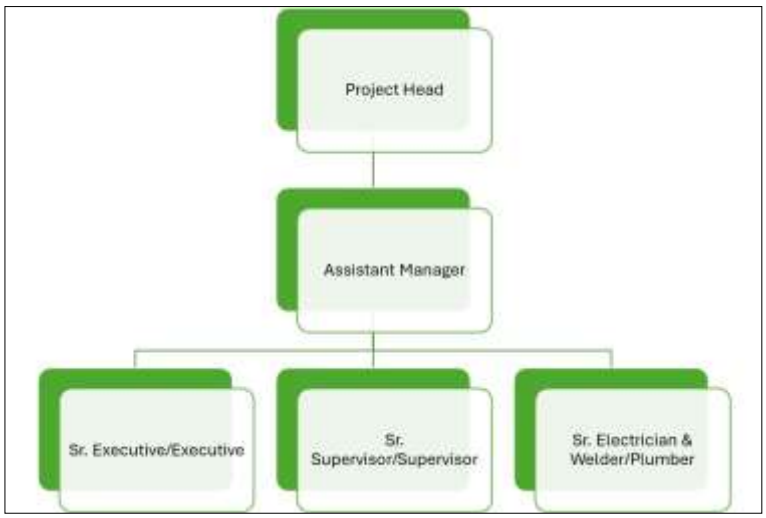
Finance & Accounts – Site office



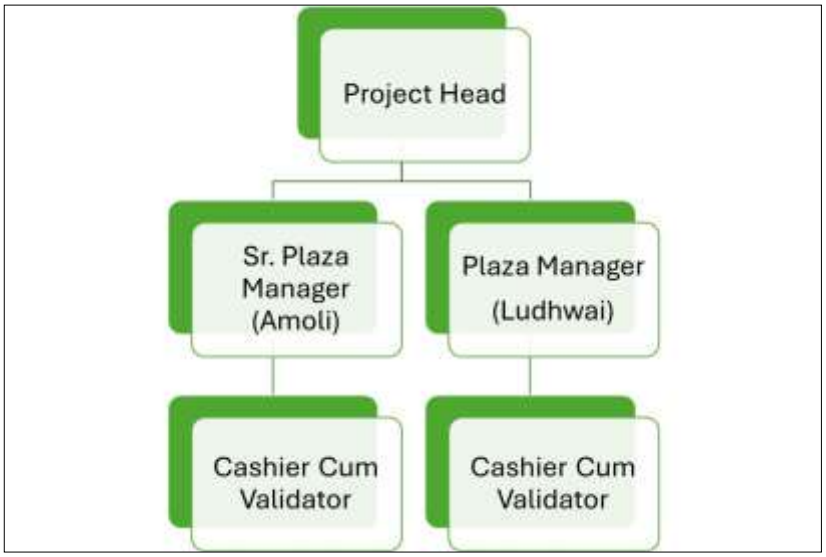
Human and Resources- Site Office



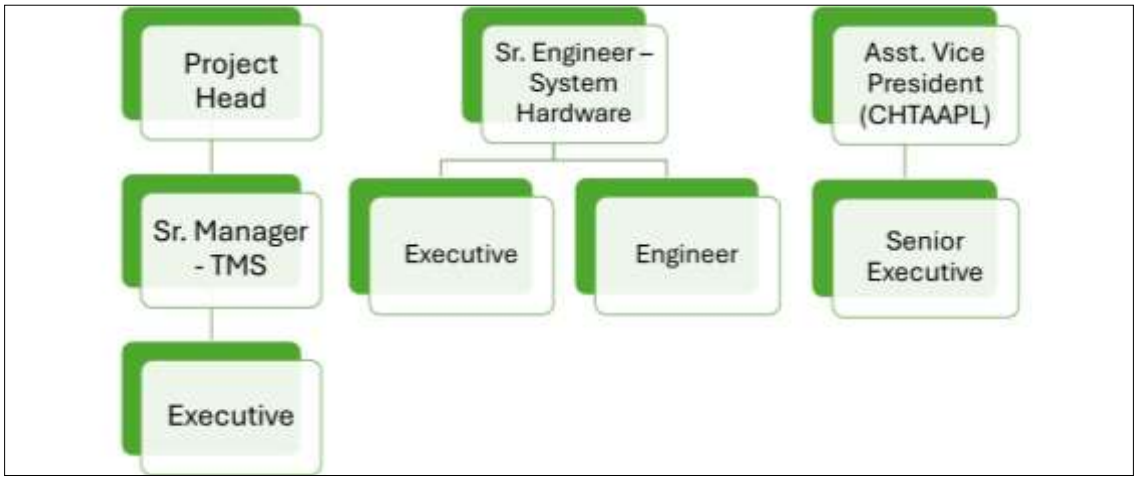
Maintenance-Site Office



Operation-Site Office



TMS Maintenance – Site Office



MBEL-Manpower Summary

S.NO.	DEPARTMENT	HEAD OFFICE	SITE	TOTAL STRENGTH
1	Administration	1	4	5
2	Finance & Accounts	0	1	1
3	Tax, Treasury & Internal Controls	2	0	2
4	Finance Controlling	1	0	1
5	Human Resource	0	1	1
6	Maintenance	0	9	9
7	Operations	0	11	11
8	TMS Maintenance	0	11	11
9	Secretarial	1	0	1
	Total	5	37	42

3.20.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses incurred towards operation expenses for past years. Necessary assumptions have been made about the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

3.20.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India

(published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the entire length of the Project Road is maintained by the Concessionaire.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire received the Completion Certificate on 9th March 2015.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 25 years from the Appointed Date including a construction period of 36 months.

4.2 Axle Load and VDF

The Concessionaire has conducted the axle load survey on Project Road at km. 64+500 (near Ludhawai Toll Plaza) and at km. 98+500 (near Amoli Toll Plaza) from 13-Nov-2022 to 15-Nov-2022 and 21-Nov-2022 to 23-Nov-2022 respectively. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Vehicle Category	Vehicle Damage Factor			
	At TP-1 (km. 64+500)		At TP-2 (km. 98+500)	
	LHS	RHS	LHS	RHS
Bus	0.941	1.138	0.977	0.994
LCV	0.412	0.716	0.887	0.706
2-Axle	2.226	2.433	2.673	3.612
3-Axle	3.604	4.641	4.021	6.287
MAV	6.249	15.758	9.247	22.362

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculation MBEL (TP-1 LHS)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY26	3.86	**3.86**	
FY27	4.19	**8.05**	
FY28	4.41	**12.46**	
FY29	4.62	**17.08**	
FY30	4.84	**21.93**	
FY31	5.07	**27.00**	**End of concession Period**

MSA Calculation MBEL (TP-1 RHS)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY26	8.93	**8.93**	
FY27	9.74	**18.67**	
FY28	10.25	**28.92**	
FY29	10.77	**39.69**	
FY30	11.30	**50.99**	
FY31	11.85	**62.84**	**End of concession Period**

MSA Calculation MBEL (TP-2 LHS)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY26	5.51	**5.51**	
FY27	6.00	**11.51**	
FY28	6.31	**17.81**	
FY29	6.62	**24.43**	
FY30	6.94	**31.38**	
FY31	7.27	**38.65**	**End of concession Period**

MSA Calculation MBEL (TP-2 RHS)			
Year	**MSA**	**Cumulative MSA**	**Remarks**
FY26	12.57	**12.57**	
FY27	13.71	**26.28**	
FY28	14.44	**40.72**	
FY29	15.17	**55.89**	
FY30	15.92	**71.82**	
FY31	16.70	**88.51**	**End of concession Period**

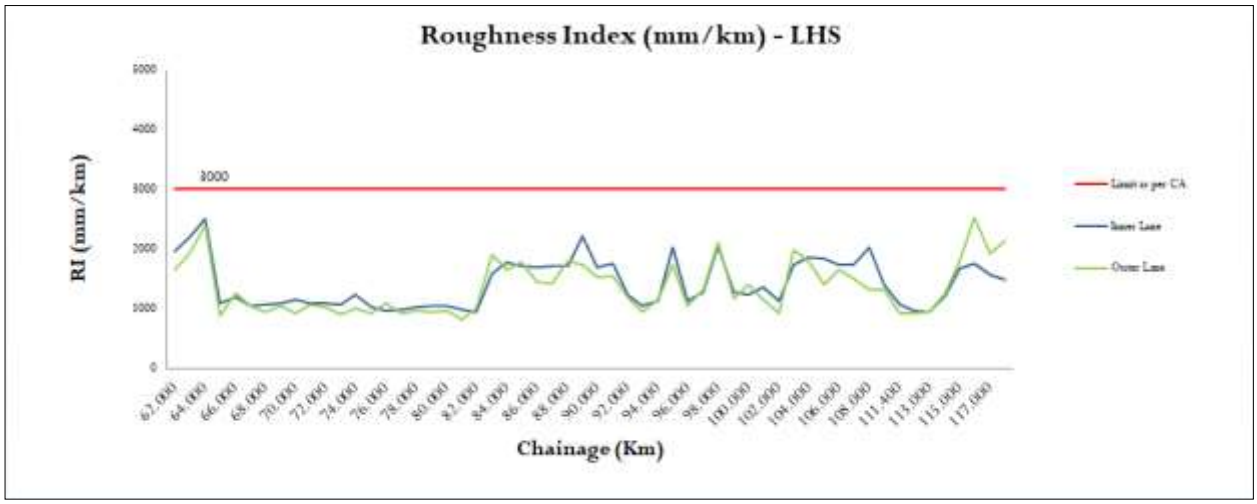
4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has provided NSV survey data conducted in the month of April 2024. The NSV data is used to assess the riding quality and pavement condition of Project Road. The summary of classification of pavement as per Schedule-L is given in the table below:

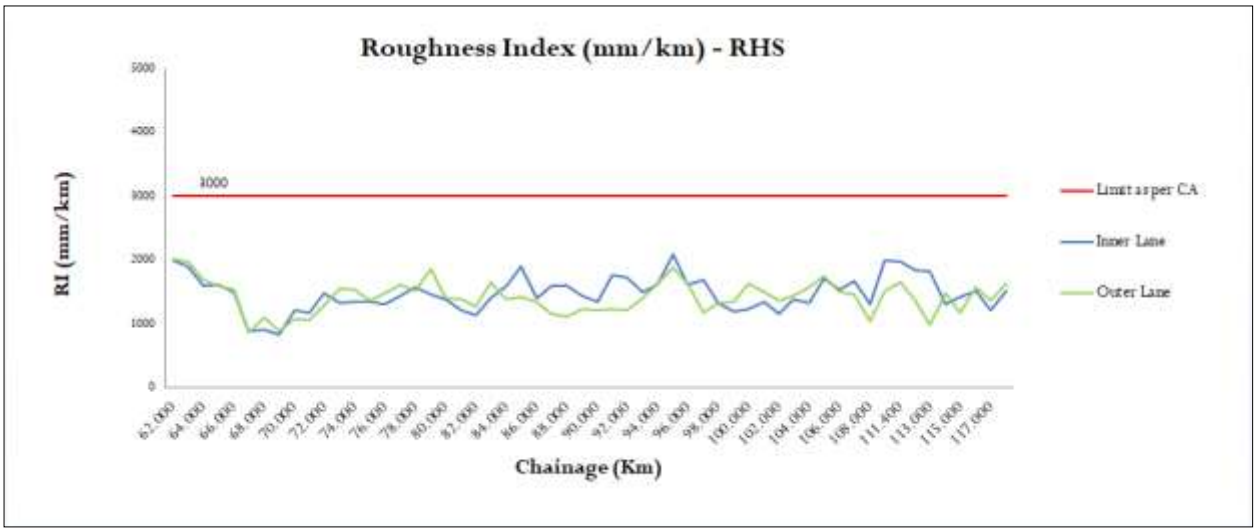
Riding Condition	**Roughness Index limit (mm/km)**	**Length (km)**			
		LHS		**RHS**	
		Inner	**Outer**	**Inner**	**Outer**
Good	<2000	51.7	53.3	54.2	54.7
Fair	2000-3000	4.00	2.40	1.50	1.00
Poor	>3000	-	-	-	-

From the above table it is observed that the overall condition of pavement is good. At a few stretches the condition is found to be fair.

LHS:



RHS:



4.5 Structural Investigations

An evaluation of existing pavements using Falling Weight Deflectometer (FWD) survey was carried out in the month of September 2024. Summary of FWD Survey report is presented in the table below:

Description	LHS (km)		RHS (km)	
	Inner Lane	Outer lane	Inner Lane	Outer lane
Less than 20 MSA	0.00	0.80	0.80	0.00
20 MSA - 100 MSA	3.20	4.06	3.99	4.78
Greater than 100 MSA	42.58	41.05	41.00	40.85

From the above table, it is concluded that the residual life of the pavement is more than the design life of the Project Road. Hence, immediate major maintenance of the pavement is not required.

The strengthening / overlay of pavement for project stretch are derived from 15th percentile of corrected E moduli of existing pavement, existing crust thickness etc. The combination of existing pavement and overlay will be analyzed as a four-layer system to ensure that fatigue and rutting criteria are satisfied for the calculated design traffic in terms of MSA. IITPAVE program is used to compute strain value at bottom of bituminous layer and top of subgrade in order to calculate design life of the proposed overlay. Poisson's ratio values used in overlay analysis from top to bottom of existing pavement layers are 0.5, 0.4 and 0.4 for existing bituminous, existing granular and existing subgrade layers respectively. Elastic modulus of 3000 MPa (VG-40) is used for the new bituminous layer.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Table 4-3 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Name of Road	Location (Km.)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	NH-21	65+000	LHS	SM	97.5	92.3	83.9	81.3	75.4	26.0	26.0	22	NP	NP	1.89	10.1	1.80	10.0	11.3	0.0	95.2
2	NH-21	70+000	RHS	SM	100.0	100.0	98.3	97.6	94.6	49.0	49.0	24	NP	NP	1.85	10.6	1.78	10.0	8.9	0.0	96.2
3	NH-21	75+000	LHS	SM	96.9	94.2	91.3	90.3	86.0	39.4	39.4	19	NP	NP	1.96	11.0	1.81	9.5	10.7	5.3	92.3
4	NH-21	80+000	RHS	SM	100.0	91.5	82.8	79.5	66.6	28.9	28.9	22	NP	NP	1.98	10.5	1.84	9.0	12.6	0.0	92.9
5	NH-21	85+000	LHS	SM	91.3	85.9	81.4	73.9	62.0	23.2	23.2	23	NP	NP	1.98	9.6	1.83	8.5	13.4	0.0	92.4
6	NH-21	90+000	RHS	ML-CL	100.0	95.4	89.0	86.4	81.1	55.9	55.9	25	19	6	1.88	10.5	1.80	9.5	8.6	11.1	95.7
7	NH-21	96+760	LHS	SM	100.0	97.5	89.6	85.7	79.1	49.9	49.9	21	NP	NP	1.91	8.9	1.82	12.0	11.3	0.0	95.5
8	NH-21	99+720	RHS	SM	79.6	70.4	64.8	62.1	53.5	26.8	26.8	22	NP	NP	2.02	9.0	1.75	10.0	15.2	0.0	86.8
9	NH-21	105+000	LHS	SM	100.0	99.1	98.8	98.6	98.3	34.8	34.8	19	NP	NP	1.97	9.5	1.86	9.0	10.1	0.0	94.4
10	NH-21	109+000	RHS	SM	100.0	93.3	85.9	82.9	70.4	31.9	31.9	22	NP	NP	1.93	8.9	1.82	10.0	12.3	5.3	94.3

Table 4-4 Test Results Summary of Bituminous Layer Samples

Sr. No.	Chainage	Side	Type of Material Tested	Source of Sample	Cumulative Percentage of Passing through IS Sieve (mm), %													Bitumen Content (%)
					45	37.5	26.5	19	13.2	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.075	
1	64+000	LHS	BC	Core	100.0	100	100.0	100.0	100.0	81.3	64.7	48.1	36.3	28.6	18.8	11.3	4.5	5.23
2	78+260	RHS	DBM	Core	100.0	100.0	100.0	99.9	86.4	62.3	43.9	26.9	16.9	11.6	7.5	5.1	3.5	4.42
3	81+800	RHS	BC	Core	100.0	100.0	100.0	100.0	97.9	77.4	61.5	47.7	31.8	21.5	12.1	6.7	3.4	5.09
4	86+000	RHS	DBM	Core	100.0	100.0	94.8	89.2	74.2	51.1	36.5	26.7	21.1	16.7	8.9	6.4	4.4	4.56
5	113+100	LHS	BC	Core	100.0	100.0	100.0	100.0	91.8	76.2	57.9	49.8	36.7	24.5	17.2	10.7	4.3	5.41
6	118+920	LHS	DBM	Core	100.0	100.0	100.0	96.1	81.0	60.1	41.7	31.7	23.7	18.3	12.5	5.5	2.1	4.81

Table 4-5 Summary of Pavement Crust Thickness

Sr. No.	Existing Road	Location (Km.)	Side (LHS/RHS)	Pavement Composition (mm)			
				Bituminous Layer	Granular Layer - I	Granular Layer- II	Total Thickness
1	NH-21	65.000	LHS	230	230	210	670
2	NH-21	75.000	LHS	250	220	190	660
3	NH-21	85.000	LHS	270	190	210	670
4	NH-21	96.000	LHS	260	230	230	720
5	NH-21	105.000	LHS	280	220	200	700
6	NH-21	70.000	RHS	270	220	200	690
7	NH-21	80.000	RHS	330	200	180	710
8	NH-21	90.000	RHS	320	250	190	760
9	NH-21	99.700	RHS	310	240	180	730
10	NH-21	109.000	RHS	280	240	190	710

4.7 Periodic Maintenance Strategy

Major Maintenance is required in order to comply requirement of Concession Agreement and to maintain performance level as defined in Schedule-L. As per schedule-L of Concession Agreement, periodic maintenance shall be carried out at least once every 5th year from COD and in the last year of concession period.

It is noted that Concessionaire has carried out 1st major / periodic maintenance in Year 2018/19. 2nd cycle of major maintenance is completed in FY 25. The table below shows the major / periodic maintenance cycle throughout the balance concession period for the Project Road. As per Concession Agreement, periodic maintenance shall be carried out in the last year of concession period. Accordingly, major maintenance is proposed in FY 2031 for the entire length. Before carrying out major maintenance, structural evaluation shall be done through surveys and investigation to determine the overlay requirement.

Table 4-6 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 - FY2028	-	-
2	FY 2029	30 mm BC (PMB) overlay in 68%, 40 mm BC (PMB) overlay in 32%, and 50 mm DBM (VG-40) overlay in 10% length.	30 mm BC (VG-30) overlay in 50% and Micro-surfacing in 50% length.
3	FY 2030	-	-
4	FY 2031	30 mm BC (VG-40) overlay for entire length, 5% DBM (VG-40) with 50 mm.	30 mm BC (VG-30) overlay in 50% and Micro-surfacing in 50% length.

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories:

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, concrete etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

a. Manpower and labour: As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

b. Bitumen: The Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years.

Rate of Polymer content and modification cost were provided by the client to work out BC rate with PMB.

Following rates of bitumen are considered:

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 28 onwards (Rs. / MT)
IOC Mathura	VG-10	32,985
IOC Mathura	VG-30	34,666
IOC Mathura	VG-40	36,712
IOC Haldia	VG-10	33,913
IOC Haldia	VG-30	34,482
IOC Haldia	VG-40	36,476

Refineries	Grade	Rate for FY 28 onwards (Rs. / MT)
IOC Barauni	VG-10	34,646
IOC Barauni	VG-30	35,215
IOC Barauni	VG-40	37,209
CPC Chennai	VG-10	34,091
CPC Chennai	VG-30	34,663
CPC Chennai	VG-40	36,667

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from SAIL.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (FY 28 onwards)
1	Dense Bituminous Macadam (PMB)	Cum	9,871
2	Dense Bituminous Macadam (VG-40)	Cum	8,081
3	Bituminous Concrete (PMB)	Cum	11,459
4	Bituminous Concrete (VG-40)	Cum	9,225
5	Bituminous Concrete (VG-30)	Cum	8,904
6	Milling	Sqm	75
7	Micro-surfacing	Sqm	150
8	Kerb Re-laying	Rmt	270
9	Road Marking-On BC Surface	Sqm	423
10	Road Marking-On Micro-Surface	Sqm	526
11	Road Studs	Nos.	170

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, the balanced work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads:

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management & Emergency Services
5. Electricity and Diesel Charges
6. TMS/HTMS/System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Routine Maintenance Cost (Project Highway)
16. Horticulture & ROW Maintenance
17. Miscellaneous including Contingency

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026)
1	Salary and Welfare Expenses	90,00,000
2	Tolling Operations Services	4,79,28,113
3	Toll Security Services	1,03,22,640
4	Incident Management & Emergency Services	2,06,95,787
5	Electricity and Diesel Charges	31,74,542
6	TMS /System Expenses	27,52,500
7	Office Operating Expenses	17,19,150

Sr. No.	Particulars	Amount (FY 2026)
8	Vehicle Running Expenses	39,60,000
9	Professional Fees Expense	25,78,725
10	Community Development	8,59,575
11	Communication Expenses	4,87,093
12	Conveyance Expenses	5,73,050
13	Insurance Expense	22,92,200
14	IE Fees	40,11,350
15	Routine Maintenance	3,04,86,378
16	Horticulture & ROW Maintenance	1,57,01,341
17	Miscellaneous including Contingency	44,14,189
	Total Cost (Rs.)	**16,09,56,632**
	Total Cost (Cr.)	**16.10**
	Per km Cost (Lakhs)	28.09

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2029	68.25	
2	FY 2031	52.31	
	Total	**120.56**	

5.6 Periodic Replacement of TMS /System

Every 5 years, replacement of cost of major TMS system is considered. The same is provided as below.

Sr. No.	Year	ATMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2030	0.58	
Total Cost (Cr.)		**0.58**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%

Year	Escalation	Year	Escalation
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31
1	Routine O&M Cost						
1.01	Salary and Welfare Expense	0.90	0.95	0.99	1.04	1.08	1.13
1.02	Tolling Operations Services	4.79	5.04	5.29	5.52	5.76	6.00
1.03	Toll Security Services	1.03	1.09	1.14	1.19	1.24	1.29
1.04	Incident Management Services	2.07	2.18	2.28	2.39	2.49	2.59
1.05	Electricity and Diesel Charges	0.32	0.33	0.35	0.37	0.38	0.40
1.06	TMS/HTMS/System Expenses	0.28	0.29	0.30	0.32	0.33	0.34
1.07	Office Operating Expenses	0.17	0.18	0.19	0.20	0.21	0.22
1.08	Vehicle Running Expenses	0.40	0.42	0.44	0.46	0.48	0.50
1.09	Professional Fees Expense	0.26	0.27	0.28	0.30	0.31	0.32
1.10	Community Development	0.09	0.09	0.09	0.10	0.10	0.11
1.11	Communication Expenses	0.05	0.05	0.05	0.06	0.06	0.06
1.12	Conveyance Expenses	0.06	0.06	0.06	0.07	0.07	0.07
1.13	Insurance Expense	0.23	0.24	0.25	0.26	0.28	0.29
1.14	IE Fees	0.40	0.42	0.44	0.46	0.48	0.50
1.15	Routine Maintenance Cost	3.05	3.21	3.36	3.51	3.66	3.81
1.16	Horticulture & ROW Maintenance	1.57	1.65	1.73	1.81	1.89	1.96
1.17	Miscellaneous and Contingency	0.44	0.46	0.49	0.51	0.53	0.55
	Subtotal of O&M Cost	16.10	16.94	17.76	18.55	19.34	20.14
2	Major Maintenance Cost				78.67		60.74
3	Periodic Cost of TMS Replacement	-	-	-	-	0.70	
	Total Cost	**16.10**	**16.94**	**17.76**	**97.22**	**20.04**	**80.87**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**3,04,86,378**
(Inclusive of GST)	**= 5.32 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				2,95,945	**3,33,151**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	452795	509720	-	-	-	-
		Paved shoulder	1.70	503106	566356	50.10	-	2,52,05,610	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	591890	666301	-	-	-	-
		Paved shoulder	2.20	651078	732931	-	7.21	-	52,80,768
					TOTAL	**57.305**		**3,04,86,378**	

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year (Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Potholes repair (50 mm deep)	100 % Pothole free	As & when required	1.0%
	Volume (cum)			5.00
	Rs/m^3			12538
	Cost in Rupees			62,688
	ii) Patch repair	100 % Patch less	As & when required	1%
	Area (sqm)			100
	Rs/m^2			502
	Cost in Rupees			50,150
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.5%
	Area (sqm)			250
	Rs/m^2			109
	Cost in Rupees			27,140
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			89
	Cost in Rupees			13,275
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.50%
	Area (sqm)			112.5
	Rs/m^2			502

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	Cost in Rupees			56,419
	v) Road marking	14%	Once in 7th year & @ Repaired location	23402
	SUB TOTAL			**2,33,074**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometre stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in	7277

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
			4-5 Years	
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**2,95,945**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Centre Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	7853
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**37,206**
	GRAND TOTAL (Urban)			**3,33,151**

ANNEXURE II - MAJOR MAINTENANCE COST

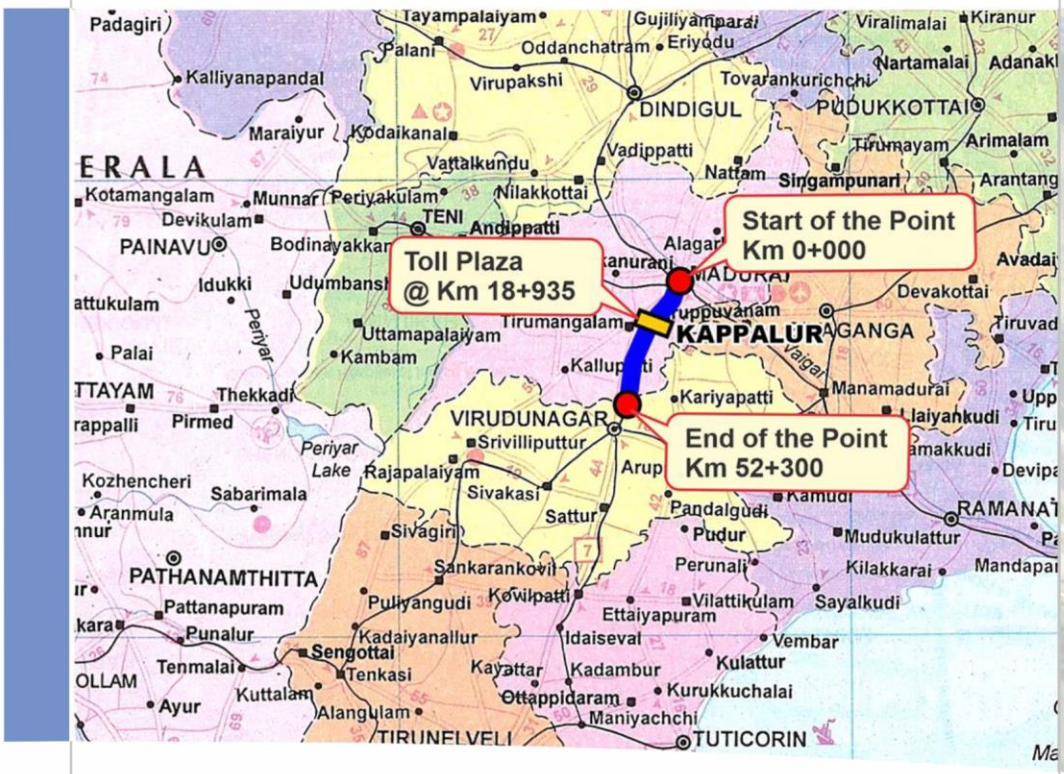
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs)**	**Amount (Rs)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						11,48,211	16	1,83,71,375
	For BC	Sqm	2	59,332	9.00		10,67,984	10,67,984		
	For DBM	Sqm	2	5,731	7.00		80,227	80,227		
	For Misc. Location	Sqm	2	5,038	9.00					
2	BC with 30 mm PMB	Cum	2	40,346	9.00	0.03	21,787	21,787	11,459	24,96,55,766
3	BC with 40 mm PMB	Cum	2	18,986	9.00	0.04	13,670	13,670	11,459	15,66,46,755
3	DBM with 50 mm	Cum	2	5,731	7.00	0.05	4,011	4,011	8,081	3,24,15,719
4	Milling	Sqm	2	5,731	7.00		80,227	96,272	75	72,20,430
5	Micro Surfacing	Sqm	2	-	9.00		-	-	150	-
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 5% length	Rmt	5%	2,841	3.50	4.50	1,137	1,137	135	1,53,434
7	Dismantling of CC Panels @ 1% area	Cum	1%		44,752	0.30	134	134	1,561	2,09,571
8	Replacement of Panels - PQC @ 1% area	Cum	1%		44,752	0.30	134	134	7,162	9,61,531
	Service Road									
8	Tack coat	Sqm	1	7,926	5.50		43,590	43,590	16	6,97,444
9	BC with 30 mm	Cum	1	7,926	5.50	0.03	1,308	1,308	9,225	1,20,63,602
10	Micro Surfacing	Sqm	1	7,926	5.50		43,590	43,590	150	65,38,538
	Structures									
11	Tack coat	Sqm	1	570	17.6		10,049	10,049	16	1,60,787
12	Wearing Coat BC with 30 mm	Cum	1	570	17.6	0.03	301	301	11,459	34,54,607
13	Milling of Ex. Wearing Coat	Sqm	1	570	17.6		10,049	10,049	75	7,53,689
14	Painting of Crash Barrier	Sqm	4	570		1.20	2,736	2,736	114	3,11,904
	Other Works									
15	Raising of Road Kerb	Rmt	2	35,192			70,384	70,384	270	1,90,03,680
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,005			14,010	14,010	170	23,81,700
	Solar Road Stud	Nos	1	-			-	-	1,647	-

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs)**	**Amount (Rs)**
17	Painting of Kerb	Sqm	2	70,384		0.375	52,788	52,788	107	56,48,316
18	Road Marking	Sqm					52,142	52,142	423	
	on BC						50,464	50,464	423	2,13,29,426
	on Micro-surfacing						1,679	1,679	526	8,82,419
	MCW									
	a) Median & Edge line	Sqm	4	60,170	0.15		36,102	36,102		
	b) Lane line	Sqm	4	19,856	0.10		7,942	7,942		
	Service Road							-		
	a) Edge line	Sqm	2	14,410	0.10		2,882	2,882		
	b) Lane line	Sqm	1	4,755	0.10		476	476		
	Junction crossing	Sqm					4,740	4,740		
19	Filling of Earthen shoulder	Cum					17,743	17,743	675	1,19,76,701
	MCW		3	55,974	2.00	0.06	16,792	16,792		
	Service Road		1	7,926	2.00	0.06	951	951		
20	Median Filling	Cum	-	54,404	4.17	0.05	-	-	675	-
21	Miscellaneous	5%								2,75,41,870
Total Major Maintenance Cost (Rs)										**57,83,79,261**
Total Major Maintenance Cost with 18% GST (Rs)										**68,24,87,528**
Total Major Maintenance Cost with GST (Cr)										**68.25**
Per km Cost (lakh)										**119.10**
Escalation Factor for Major Maintenance Cost (FY 2029)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY 2029) (Cr)										**78.67**

Major Maintenance Cost (FY 2031)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs)**	**Amount (Rs)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						11,08,097	16	1,77,29,559
	For BC	Sqm	2	55,974	9.00		10,07,532	10,07,532		
	For DBM	Sqm	2	-	3.50		40,114	40,114		
	For Misc. Location	Sqm	2	3,358	9.00		60,452	60,452		
2	BC with 30 mm	Cum	2	59,332	9.00	0.03	32,040	32,040	9,225	29,55,64,550
3	DBM with 50 mm	Cum	2	2,865	7.00	0.05	2,006	2,006	8,081	1,62,07,860
4	Milling	Sqm	2	2,865	7.00		40,114	40,114	75	30,08,513
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	2,841	3.50	4.50	2,273	2,273	135	3,06,867
6	Dismantling of CC Panels @ 5% area	Cum	5%		44,752	0.30	671	671	1,561	10,47,856
7	Replacement of Panels - PQC @ 5% area	Cum	5%		44,752	0.30	671	671	7,162	48,07,654
8	Replacement of Panels - DLC @ 1% area	Cum	1%		44,752	0.15	67	67	3,175	
	Service Road									
8	Tack coat	Sqm	1	7,926	5.50		43,590	43,590	16	6,97,444
9	BC with 30 mm	Cum	1	7,926	5.50	0.03	1,308	1,308	9,225	1,20,63,602
10	Micro Surfacing	Sqm	1	7,926	5.50		43,590	43,590	150	65,38,538
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	570	17.6		10,049	10,049	16	1,60,787
12	Wearing Coat BC with 30 mm	Cum	1	570	17.6	0.03	301	301	9,225	27,81,111
13	Milling of Ex. Wearing Coat	Sqm	1	570	17.6		10,049	10,049	75	7,53,689
14	Painting of Crash Barrier	Sqm	4	570		1.20	2,736	2,736	107	2,92,752
	Other Works									
15	Raising of Road Kerb	Rmt	2	35,192			70,384	70,384	270	1,90,03,680
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,005			14,010	14,010	170	23,81,700
	Solar Road Stud	Nos	1	-			-	-	1,647	-
17	Painting of Kerb	Sqm	2	70,384		0.375	52,788	52,788	107	56,48,316
18	Road Marking	Sqm					49,772	49,772		-

Major Maintenance Cost (FY 2031)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs)**	**Amount (Rs)**
	MCW									-
	on BC						48,093	48,093	423	2,03,27,653
	on Micro surfacing						1,679	1,679	526	8,82,419
	a) Median & Edge line	Sqm	4	60,170	0.15		36,102	36,102		
	b) Lane line	Sqm	4	19,856	0.10		7,942	7,942		
	Service Road									
	a) Edge line	Sqm	2	14,410	0.10		2,882	2,882		
	b) Lane line	Sqm	1	4,755	0.10		476	476		
	Junction crossing	Sqm					2,370	2,370		
19	Filling of Earthen shoulder	Cum					17,743	17,743	675	1,19,76,701
	MCW		3	55,974	2.00	0.06	16,792	16,792		
	Service Road		1	7,926	2.00	0.06	951			
20	Median Filling	Cum	-	55,194	4.17	0.05	-	-	675	-
21	Miscellaneous	5%								2,11,09,062
Total Major Maintenance Cost (Rs)										**44,32,90,311**
Total Major Maintenance Cost with 18% GST (Rs)										**52,30,82,567**
Total Major Maintenance Cost with GST (Cr)										**52.31**
Per km Cost (lakh)										**91.28**
Escalation Factor for Major Maintenance Cost (FY 2031)										**1.25**
Total Escalated Cost for Major Maintenance Cost (FY 2031) (Cr)										**60.74**

FP Project Management



Technical Due Diligence of Madurai - Kanyakumari (Package-1) of NH-44 from km. 0+000 to km. 52+300 in the State of Tamil Nadu

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	VKD / RMW	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 5
2.7 Existing Utilities 5
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 8
3.3 Junctions / Intersections 9
3.4 Condition Survey of Bridge 9
3.5 Condition Survey of Culverts 14
3.6 Drainage 15
3.7 Slope Protection 15
3.8 Road Furniture 15
3.8.1 Pavement Marking 15
3.8.2 Road Studs 15
3.8.3 Traffic Signage / Median Kerb painting / KM Stone 15
3.8.4 Highway Lighting 17
3.8.5 Crash Barriers 17
3.8.6 Delineators 18
3.8.7 Pedestrian Guard Rail 18
3.8.8 Road Land Boundary 18

3.9 Avenue Plantation and Median Plantation 19
3.10 Toll Plaza 19
3.11 Lane Equipment 20
3.11.1 RFID ETC Transceiver 20
3.11.2 Lane Controller with Industrial PC 21
3.11.3 Automatic Vehicle Classification (AVC) Sensors 21
3.11.4 Automatic Lane Barrier 21
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 22
3.11.6 Incident Capture Camera (AVC Camera) 22
3.11.7 License Plate Image Capture Camera (LPIC) 22
3.11.8 Over Head Lane Signal (OHLS) 23
3.11.9 Toll Booth Equipment 23
3.11.10 Medium Speed Weigh in Motion (MSWIM) 24
3.12 Plaza Equipment 25
3.12.1 TMS Server 25
3.12.2 55” LED screen for CCTV monitoring 25
3.12.3 Workstations in Control Room, POS room 25
3.13 Advanced Traffic Management System (ATMS) 26
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 26
3.13.2 Mobile Radio communication System (MRCS) 26
3.13.3 Emergency Call Boxes (ECB) 26
3.13.4 Portable Weigh in Motion (PWIM) 26
3.13.5 MET System 26
3.13.6 Variable Message Signboards (VMS) 26
3.13.7 CCTV Surveillance Cameras 27
3.13.8 Video Incident Detection System 27
3.13.9 Vehicle Actuated Speed Display (VASD) 27
3.13.10 Adequacy of Toll Collection System and ATMS 27
3.14 Traffic Aid Post and Medical Aid Post 28
3.15 Toilet Block 28
3.16 Bus Bays and Passenger Shelters 28
3.17 Balance Work Status 28
3.18 Operation and Maintenance 28
3.18.1 O&M Contract 28
3.18.2 Organization Chart 28
3.18.3 Operation 30
3.18.4 Routine Maintenance 30

4 Pavement Investigation and Assessment 31
4.1 General 31
4.2 Axle Load and VDF 31
4.3 Design Traffic 31
4.4 Network Survey Vehicles (NSV) Survey 32
4.5 Falling Weight Deflectometer (FWD) Survey 33
4.6 Test pit and Subgrade Investigation 34
4.7 Periodic Maintenance Strategy 39
5 Cost Estimates 40
5.1 General 40
5.2 Rate Assumption 40
5.3 Balance Work Cost 41
5.4 Routine O&M Cost 41
5.5 Major Maintenance Cost 43
5.6 Periodic Replacement of TMS / ATMS System 43
5.7 Escalation Assumption 43
5.8 Summary of Cost 44

Annexures 46
Annexure I - Routine Maintenance Cost 47
Annexure II - Major Maintenance Cost 52

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 9
Table 3-2 Condition Survey of Major Structure 10
Table 3-3 Details of Summary for Toll Plaza Items 19
Table 4-1 Vehicle Damage Factor 31
Table 4-2 MSA Calculation 31
Table 4-3 Summary of Roughness Index 32
Table 4-4 Test Results Summary of Natural Ground Soil Samples 36
Table 4-5 Major Maintenance Cycle 39
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 40
Table 5-2 Summary of Unit Rates 41
Table 5-3 Summary of Operation Cost 42
Table 5-4 Escalation 43

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start and end of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 7
Figure 3-2 Photographs of Service Road 8
Figure 3-3 Photographs of Junctions 9
Figure 3-4 Photographs of Major Structures 13
Figure 3-5 Photographs of Hume Pipe Culvert and Box Culvert 14
Figure 3-6 Photographs of Pavement Marking 15
Figure 3-7 Photographs of Sign Boards 16
Figure 3-8 Photographs of Highway Lighting 17
Figure 3-9 Photographs of MBCB / Crash Barrier 17
Figure 3-10 Photographs of Delineator 18
Figure 3-11 Photographs of Pedestrian Guard Rail 18
Figure 3-12 Photographs of Avenue Plantation 19
Figure 3-13 Photographs of Toll Plaza 20

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Madurai to Kanyakumari section (Package-I) km. 0+000 to km. 52+300 in the State of Tamil Nādu (hereinafter referred as "Project Road").

Madurai Kanyakumari Tollway Private Limited (MKTPL) (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Madurai to Kanyakumari Section (from km. 0+000 to km. 52+300) of NH-44. The project was awarded to Concessionaire on 20th October 2020. The length of Project Road is 52.300 kms with one toll plaza at Kappalur Village at km. 18+935.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets, mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out on **18th January 2025 and 19th January 2025.**

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Madurai Kanyakumari Tollway Private Limited,** is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 27th December 2019. The Appointed Date for the Project Road is 20th October 2020.

The project is being developed under TOT (Toll Operate Transfer) Bundle-3 with a concession period of 30 years from the Appointed Date. The end of the concession period is in the year 2046 as per the traffic report submitted by the Company.

2.2 Location

The Project Road is part of National Highway No. 44 (old NH-7) of Madurai - Kanyakumari section in the state of Tamil Nādu. The total project length is 52.300 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start and end of Project Road

Start of Project Road at km. 0+000

End of Project Road at km. 52+300

2.3 Climate

The project area being in the region south-east of the western ghats, the area is hot and dry for eight months of the year. Cold winds are experienced during February and March. The hottest months are from March to July. The project stretches experiences a moderate climate from August to October, tempered by heavy rain and thundershowers, and a slightly cooler climate from November to February. Fog and dew are rare, occurring only during the winter season. Being equidistant from mountains and the sea, it experiences similar monsoon pattern with North-east monsoon and South-west monsoon, with the former providing more rain during October to December. Temperatures during summer generally reach a maximum of 42°C and a minimum of 26.3°C, although temperatures up to 43°C are not uncommon. Winter temperatures range between 29.6°C and 18°C. The average rainfall for the project is about 857.60 mm per year, occurring almost entirely within the three months of the South-west Monsoon.

2.4 Terrain

The Project Road traverses through plain terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up area.

2.6 Right of Way

The width of the existing Right of Way (ROW) for the Project Road is 60 m throughout its length.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC cables, etc.

2.8 Development as per Schedule-B

The Project Road from Madurai (km. 0+000) to Virudhunagar (km. 52+300) has been developed as a four-lane divided carriageway with median width of 2 m, service road at some built up locations and other arrangements. The Project Road passes through rural as well as built-up sections.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	52.30	
2	Construction of Service Road	km.	1.050	
3	Widening of Pipe Culvert	Nos.	01	
4	Repair & rehabilitation of Major Bridges	Nos.	03	
5	Repair & rehabilitation of Minor Bridges	Nos.	12	
6	Repair & rehabilitation of Box Culvert	Nos.	19	
7	Repair & rehabilitation of Pipe Culvert	Nos.	59	
8	Repair & rehabilitation of ROB	Nos.	02	
9	Repair & rehabilitation Vehicular Underpass (VUP)	Nos.	09	
10	Improvement of Junctions	Nos.	09	
11	Provision of Drain	m	1.050	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried on **18th January 2025 and 19th January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

km. 0+050

km. 2+100

km. 6+100

km. 18+980

km. 49+550

km. 51+400

3.2 Service Road / Slip Road

The width of the service road varies from 5.5 m to 7.0 m. The service road is constructed in a built-up area and adjoining underpass locations. The Project Road has total service road length of 40.730 kms.

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Service Road / Slip Road at km. 0+980 (LHS)

Service Road / Slip Road at km. 24+350 (LHS)

3.3 Junctions / Intersections

There are a total of 09 nos. of junctions / intersections along Project Road.

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Junctions

Junction at km. 7+080

Junction at km. 25+600

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Road Over Bridge (ROB)	2
Major Bridges (MJB)	3
Minor Bridges (MNB)	12
Vehicular Underpass (VUP)	09
Culverts	78
Total	**104**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Major Bridges								
1	2+994	LHS	17x23.8	7.5	10	RCC	Open	The structure is sound in condition. However, expansion joints need to clean.
		RHS	17x23.8	7.5	10	RCC	Open	The structure is sound in condition. However, expansion joints need to clean.
2	33+150	LHS	7x8.8	7.5	10.25	RCC	Open	The structure is sound in condition. However, expansion joints need to clean, and vegetation need to clear.
		RHS	7x8.8	7.5	10.25	RCC	Open	The structure is sound in condition.
3	51+350	LHS	5x20	7.5	10	RCC	Open	The structure is sound in condition.
		RHS	15x6.5	7.5	11	RCC	Open	The structure is sound in condition. However, expansion joints need to clean, and vegetation need to clear.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Minor Bridges								
1	6+280	LHS	1x6	7.5	16.42	RCC	Open	The structure is sound in condition.
		RHS	1x6	7.5	16.42	RCC	Open	The structure is sound in condition.
2	7+800	LHS	1x10	10.5	13.5	RCC	Open	The structure is sound in condition.
		RHS	1x10	10.5	13.5	RCC	Open	The structure is sound in condition.
3	20+620	LHS	1x9.6	9	10.25	RCC	Open	The structure is sound in condition.
		RHS	1x9.6	9	10.25	RCC	Open	The structure is sound in condition.
4	20+960	LHS	1x9.6	9	10.25	RCC	Open	The structure is sound in condition.
		RHS	1x9.6	9	10.25	RCC	Open	The structure is sound in condition.
5	21+230	LHS	1x9.6	9	10.25	RCC	Open	The structure is sound in condition.
		RHS	1x9.6	9	10.25	RCC	Open	The structure is sound in condition.
6	23+850	LHS	4x8.8	9	10.25	RCC	Open	The structure is sound in condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
								The vegetation needs to clear.
		RHS	4x8.8	9	10.25	RCC	Open	The structure is sound in condition. The vegetation needs to clear.
7	26+370	LHS	1x10	10.5	13.8	RCC	Open	The structure is sound in condition.
		RHS	1x10	10.5	13.8	RCC	Open	The structure is sound in condition.
8	31+980	LHS	2x4.4	9.25	10.25	RCC	Open	The structure is sound in condition.
		RHS	2x4.4	9.25	10.25	RCC	Open	The structure is sound in condition.
9	37+902	LHS	2x7.1	9.25	10.25	RCC	Open	The structure is sound in condition.
		RHS	2x7.1	9.25	10.25	RCC	Open	The structure is sound in condition.
10	39+555	LHS	1x8	9.25	10.25	RCC	Open	The structure is sound in condition.
		RHS	1x8	9.25	10.25	RCC	Open	The structure is sound in condition.
11	46+000	LHS	2x6.9	9.25	10.25	RCC	Open	The structure is sound in condition.
		RHS	2x6.9	9.25	10.25	RCC	Open	The structure is sound in condition.
12	51+000	LHS	13x3.8	7.5	10.5	RCC	Open	The structure is sound in condition. The vegetation needs to clear.
		RHS	12x3.8	7	9.5	RCC	Open	The structure is sound in condition. The vegetation needs to clear.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Type of structure	Type of foundation	Deck Width (m)	Remarks
ROB									
1	0+590	LHS	2x19	38	7.5	RCC	Open	11	The structure is sound in condition.
		RHS	3x22	66	7.5	RCC / Steel	Open	10	The structure is sound in condition. corrosion is started at some places need to repair & repaint.
2	8+800	LHS	1x29.6	29.6	7.5	RCC	Open	12	The structure is sound in condition.
		RHS	1x29.6	29.6	7.5	RCC	Open	12	The structure is sound in condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
VUP									
1	0+980	LHS	2x10	20	10.5		RCC	Open	The structure is sound in condition.
		RHS	2x10	20	10.5	27.5	RCC	Open	The structure is sound in condition.
2	7+080	LHS	2x10	20	10.5	27.5	RCC	Open	The structure is sound in condition.
		RHS	2x10	20	10.5		RCC	Open	The structure is sound in condition.
3	8+900	LHS	1x14.5	14.5	7.5	31	RCC	Open	The structure is sound in condition. The vegetation needs to clear.
		RHS	1x14.5	14.5	7.5		RCC	Open	The structure is sound in condition.
4	14+630	LHS	1x10	10	10.75		RCC	Open	The structure is sound in condition.
		RHS	1x10	10	10.75	27.5	RCC	Open	The structure is sound in condition.
5	20+370	LHS	1x10	10	10.75		RCC	Open	The structure is sound in condition.
		RHS	1x10	10	10.75	27.5	RCC	Open	The structure is sound in condition.
6	22+754	LHS	1x10	10	10.75		RCC	Open	The structure is sound in condition.
		RHS	1x10	10	10.75	27.5	RCC	Open	The structure is sound in condition.
7	25+625	LHS	2x10	20	10.5		RCC	Open	The structure is sound in condition.
		RHS	2x10	20	10.5	27.5	RCC	Open	The structure is sound in condition.
8	26+645	LHS	1x10	10	10.75		RCC	Open	The structure is sound in condition.
		RHS	1x10	10	10.75	27.5	RCC	Open	The structure is sound in condition.
9	49+850	LHS	2x10	20	10.5		RCC	Open	The structure is sound in condition.
		RHS	2x10	20	10.5	24.7	RCC	Open	The structure is sound in condition.

Figure 3-4 Photographs of Major Structures

View of New ROB at km. 0+590

View of Old ROB at km. 0+590

View of Major Bridge at km. 2+994

View of Major Bridge at km. 2+994

View of VUP at km. 7+080

View of ROB at km. 8+800

View of ROB at km. 8+800

View of VUP at km. 49+850

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There is total 78 Nos. of culverts along the Project Road. The height of the culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involved strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, metal beam crash barrier or RCC railing has been provided at culvert locations wherever required which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area, it is found blocked due to debris, drainage water or bushes, tree growth, which has to be removed and cleaned before monsoon to clear waterway. The stone pitching has been provided for slope protection.

The photographs taken during the site visit are presented below.

Figure 3-5 Photographs of Hume Pipe Culvert and Box Culvert

Box culvert at km. 19+252

Box culvert at km. 29+713

Hume pipe culvert at km. 23+105

Hume pipe culvert at km. 32+650

3.6 Drainage

There is 5.506 kms of existing drain (which includes drain on both sides) along the Project Road as per Concession Agreement. However, 0.950 kms of RCC drain is additionally constructed in locations where service roads are provided.

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations.

3.8 Road Furniture

The Concessionaire has provided additional road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. Details of the items are provided below.

3.8.1 Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. The pavement marking is found to be Good throughout the Project Road.

Some of the photographs of road marking are presented below.

Figure 3-6 Photographs of Pavement Marking

Pedestrian marking at km. 4+950(LHS)

Road marking at km. 2+140 (LHS) near Junction

3.8.2 Road Studs

Road studs/ cat's eye for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / cat's eye has been fixed at junction and zebra crossings.

3.8.3 Traffic Signage / Median Kerb painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in Schedule-D.

The height, lateral clearance, location, and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements. Roadside signs, overhead signs, kerb mounted signs, vertical post of sign boards, chevron boards and median kerb paint are all in good condition. Some of the photographs of sign boards are presented below.

Figure 3-7 Photographs of Sign Boards

Kilometre Stone

Flag Type Direction Sign Board

Pedestrian Crossing Sig Board

Hazard Marker & Median Sign Board

Sign Board indicating Curve

Emergency Assistance Number Sign Board

3.8.4 Highway Lighting

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

Some of the photographs of highway lighting are presented below.

Figure 3-8 Photographs of Highway Lighting

Highway Lighting at Toll Plaza

Highway Lighting at km. 19+300

3.8.5 Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of metal beam crash barriers are presented below:

Figure 3-9 Photographs of MBCB / Crash Barrier

Metal beam crash barrier at km. 0+650

Metal beam crash barrier at km. 20+600 (LHS)

3.8.6 Delineators

The traffic delineators are provided by the Concessionaire for road users in abnormal condition of weather for the Project Road. The same is maintained by the Concessionaire. Some of the photographs of delineators are presented below.

Figure 3-10 Photographs of Delineator

Road Delineator at km. 0+200

Road Delineator at km. 1+200

3.8.7 Pedestrian Guard Rail

The pedestrian guard rails are provided in the median. It is maintained by the Concessionaire. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-11 Photographs of Pedestrian Guard Rail

At km. 39+300 - Between MCW and SR

At km. 49+300 - Between MCW and SR

3.8.8 Road Land Boundary

Road land boundary pillars have been found on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantation is provided in open country locations and median plantation has been provided in the project length as per IRC specification. Some of the photographs of avenue plantation and median plantation are presented below.

Figure 3-12 Photographs of Avenue Plantation

Avenue Plantation

Median Plantation

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at Kappalur Village at km. 18+935 with the following infrastructure.

Table 3-3 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 18+935
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for over-dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel/no
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes (only 20 nos. near Toll Plaza. 10 nos. in both direction)
15	Low mast Light	No
16	User Fee Boards	4
17	Cantilever/Gantry Boards	Yes

Sr. No.	Particulars	Details
18	Automatic boom barrier	Yes

Note:

- *Toll Operation is carrying through containers temporarily.*

Figure 3-13 Photographs of Toll Plaza

Toll Plaza at km. 18+935

Toll Plaza at km. 18+935

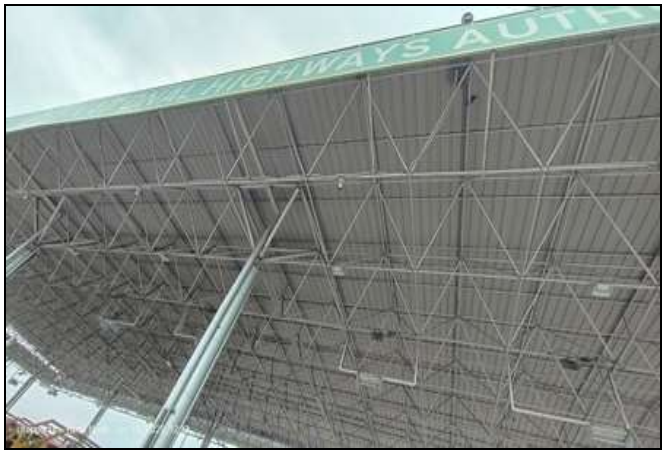
3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.



RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of camera based, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on the island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC at Toll Plaza

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza

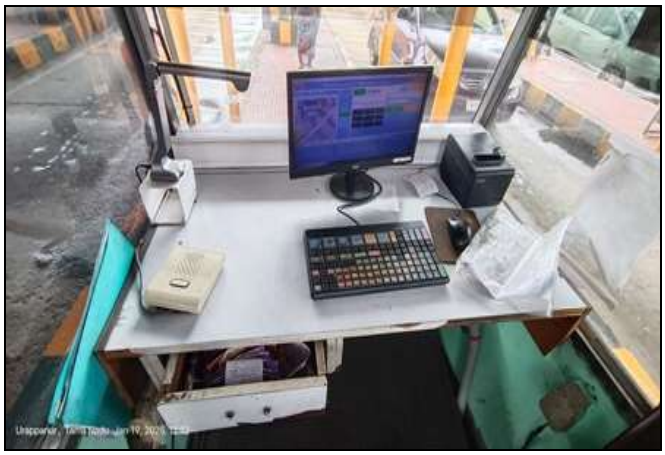
3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.



Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at Toll Plaza

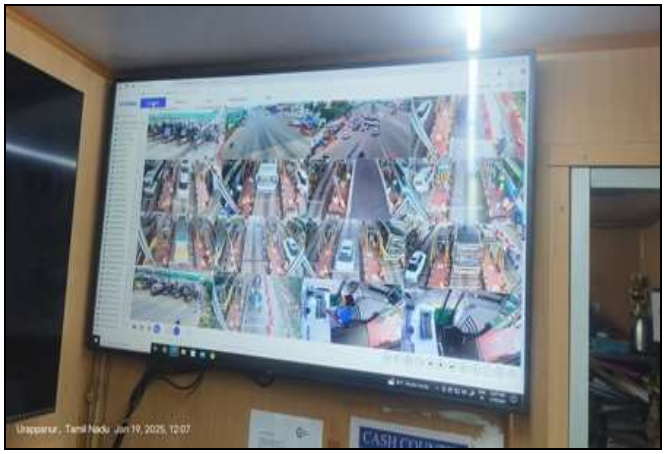
3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

3.12.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).



The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location (km. 18+935). As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

Automatic Traffic Counter cum Classifier (ATCC)

- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km 18+935).

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.13.3 Emergency Call Boxes (ECB)

ECB's are not installed at site.

3.13.4 Portable Weigh in Motion (PWIM)

PWIM is provided at site and is not functioning.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km 18+935.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 11 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system

3.13.7 CCTV Surveillance Cameras

There are 29 nos. PTZ cameras and 186 VIDS cameras are installed along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed. At toll plaza 4 PTZ and 10 lane cover cameras are installed.

3.13.8 Video Incident Detection System

186 fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at 10 locations each on LHS and RHS.

Actuated Speed Display

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy-All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.

- The Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.14 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Posts are under construction at Toll Plaza location.

3.15 Toilet Block

There is one no. of temporary toilet block at toll plaza. The same is maintained by the Concessionaire.

3.16 Bus Bays and Passenger Shelters

There are 27 Nos. of bus bays / passenger shelters along the Project Road.

3.17 Balance Work Status

There is no balance work to be executed as per the Concession Agreement.

3.18 Operation and Maintenance

3.18.1 O&M Contract

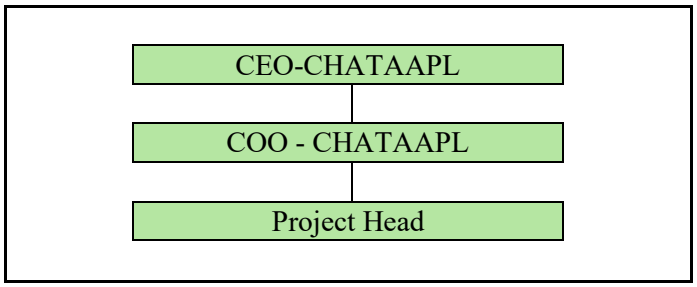
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

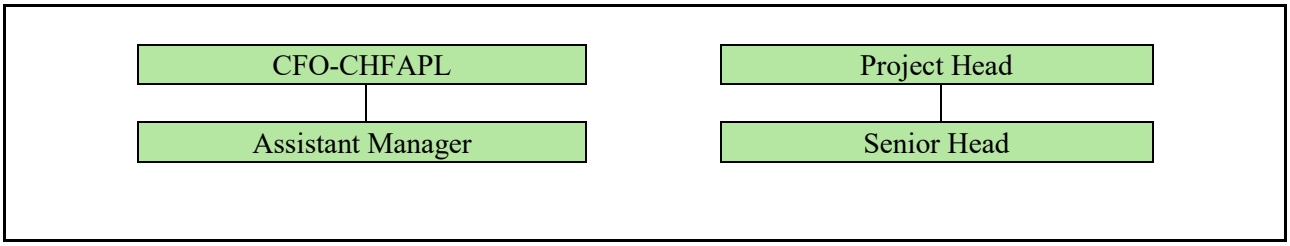
3.18.2 Organization Chart

The Concessionaire has shared the Organization Chart at site for Operation and maintenance. Accordingly, there are 01 Project Head, 01 Senior Executive (HR), 01 Manager (TMS / IT), 01 Executive (TMS / IT), 01 Senior Supervisor, 01 Electrician, 01 Supervisor, 01 Plaza Manager, 01 Assistant Plaza Manager, 01 Document Controller, 03 Cashiers and 03 Validators, 01 Traffic and Road Safety Manager to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

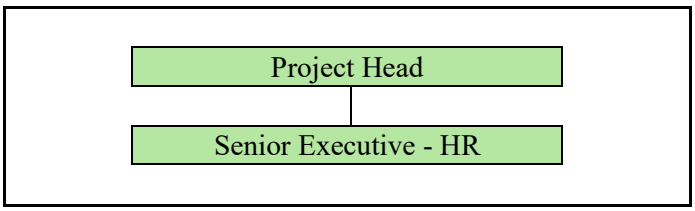
Organization Chart

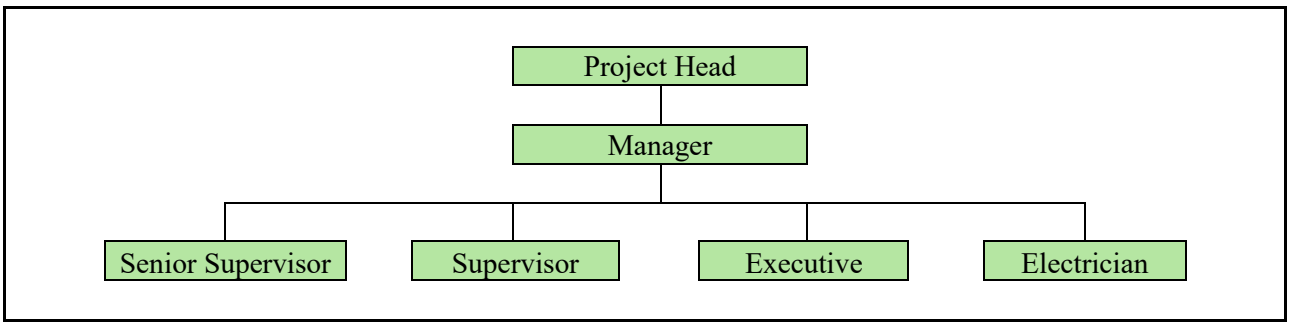


Finance & Accounts

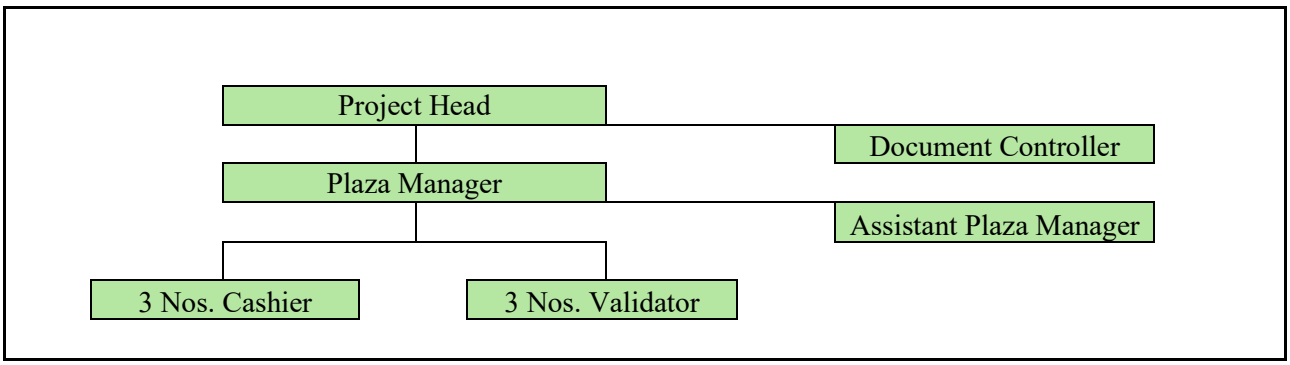


Human Resource Maintenance

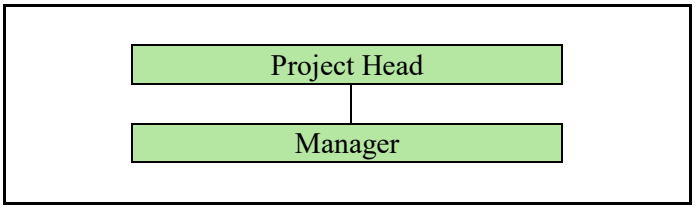




Operations



Traffic & Road Safety



3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the entire length of the Project Road is maintained by Concessionaire.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Article 15 and Schedule-F of the Concession Agreement define the Operation and Maintenance requirement during the concession period.

The project is currently under the Operation and Maintenance stage. The Concession Period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 18+975 (near Toll Plaza) on 12th March 2020 and 14h March 2020. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Weighted Average VDF Values			
Sr. No.	Vehicle Type	Direction	
		Madurai - Kanyakumari	Kanyakumari - Madurai
1	BUS	1.012	0.848
2	LCV	0.655	0.682
3	2-Axle	2.201	3.238
4	3-Axle	5.018	5.994
5	MAV	11.958	7.918

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculation					
Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
FY25	2.97	**2.97**	2.63	**2.63**	PCU crossed 40,000
FY26	3.09	**3.09**	2.73	**2.73**	PCU crossed 40,000
FY27	3.22	**6.31**	2.84	**5.57**	PCU crossed 40,000
FY28	3.36	**9.67**	2.95	**8.52**	DPR Preparation
FY29	3.49	**13.16**	3.07	**11.59**	DPR Preparation & 1st MM Cycle
FY30	3.62	**16.78**	3.18	**14.77**	6-Lane Construction & 1st MM Cycle
FY31	3.76	**20.54**	3.29	**18.06**	6-Lane Construction
FY32	3.12	**23.66**	2.72	**20.78**	6-Lane Construction
FY33	3.26	**26.92**	2.84	**23.62**	
FY34	3.38	**30.30**	2.94	**26.56**	

MSA Calculation					
Year	**MSA**	**Cumulative**	**MSA**	**Cumulative**	**Remarks**
FY35	3.50	**33.80**	3.05	**29.61**	
FY36	3.63	**37.43**	3.15	**32.76**	
FY37	3.76	**41.19**	3.26	**36.02**	2nd MM Cycle
FY38	3.89	**45.08**	3.37	**39.39**	2nd MM Cycle
FY39	4.03	**49.11**	3.48	**42.87**	
FY40	4.16	**53.27**	3.60	**46.47**	
FY41	4.31	**57.58**	3.72	**50.19**	
FY42	4.45	**62.03**	3.84	**54.03**	
FY43	4.60	**66.63**	3.96	**57.99**	
FY44	4.75	**71.38**	4.09	**62.08**	3rd MM Cycle
FY45	4.91	**76.29**	4.22	**66.30**	3rd MM Cycle
FY46*	5.07	**81.36**	4.35	**70.65**	End of concession period as per Appointed Date & CA

**Actual end of concession period as per Concession Agreement is October 2050. As per recent traffic study conducted by Concessionaire, the revised concession period is upto FY 2046.*

4.4 Network Survey Vehicles (NSV) Survey

Roughness Index

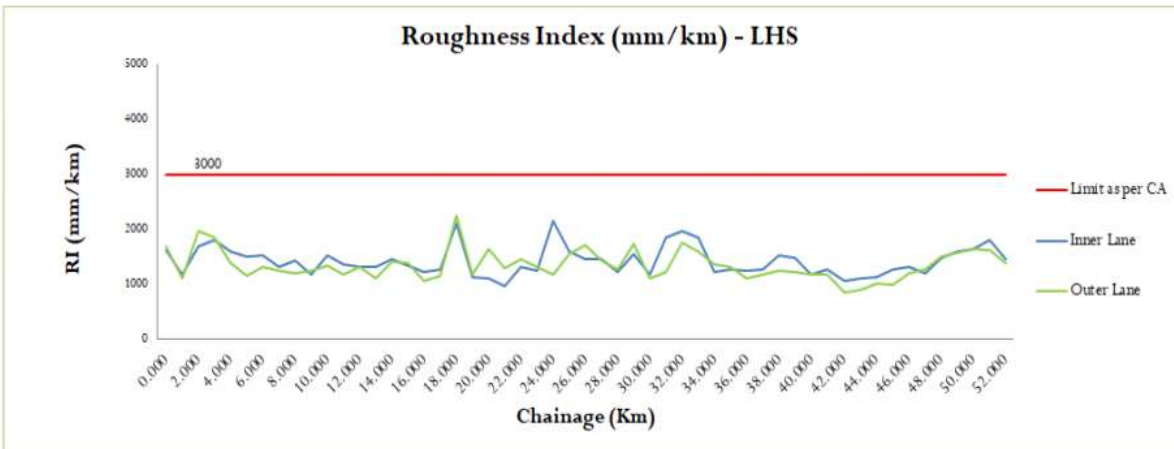
The Concessionaire has conducted pavement condition survey on each lane of carriageway through NSV. The NSV survey was conducted on the Project Road from 5th January 2025 to 18th January 2025. The summary of the same is presented below.

Table 4-3 Summary of Roughness Index

Table 2-1: Summary of RI Limit as per Schedule F of CA

Roughness Summary % as per Schedule F of CA (mm/km)					
Condition	Limit as per Schedule F of CA (mm/km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<3000	100.00%	100.00%	100.00%	100.00%
Poor	>3000	0.00%	0.00%	0.00%	0.00%

Figure 2-3: Roughness Summary for MKTPL as per Schedule F of CA



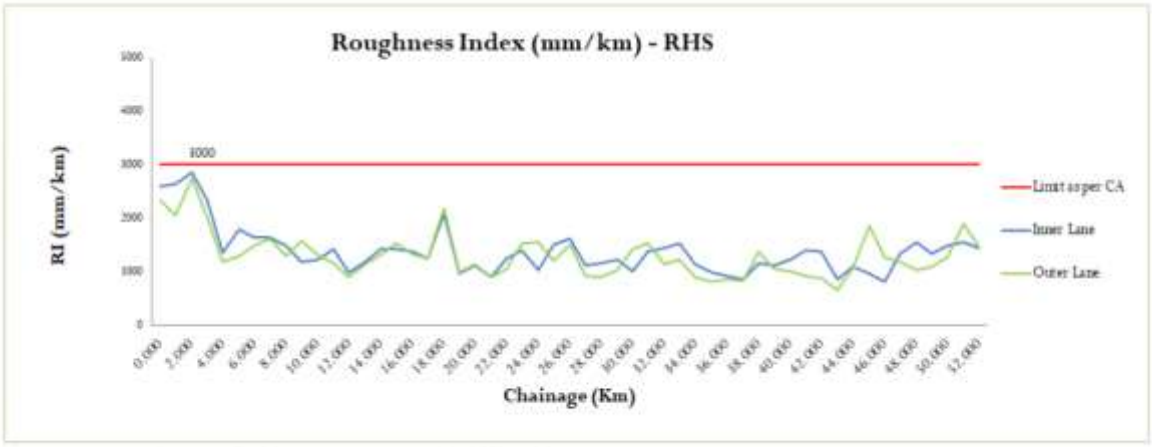
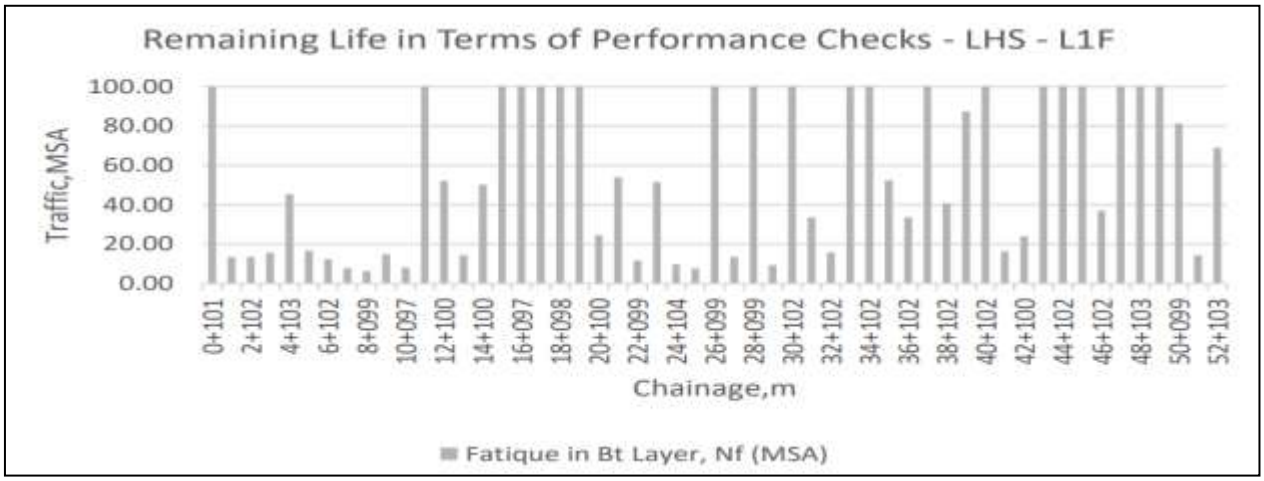


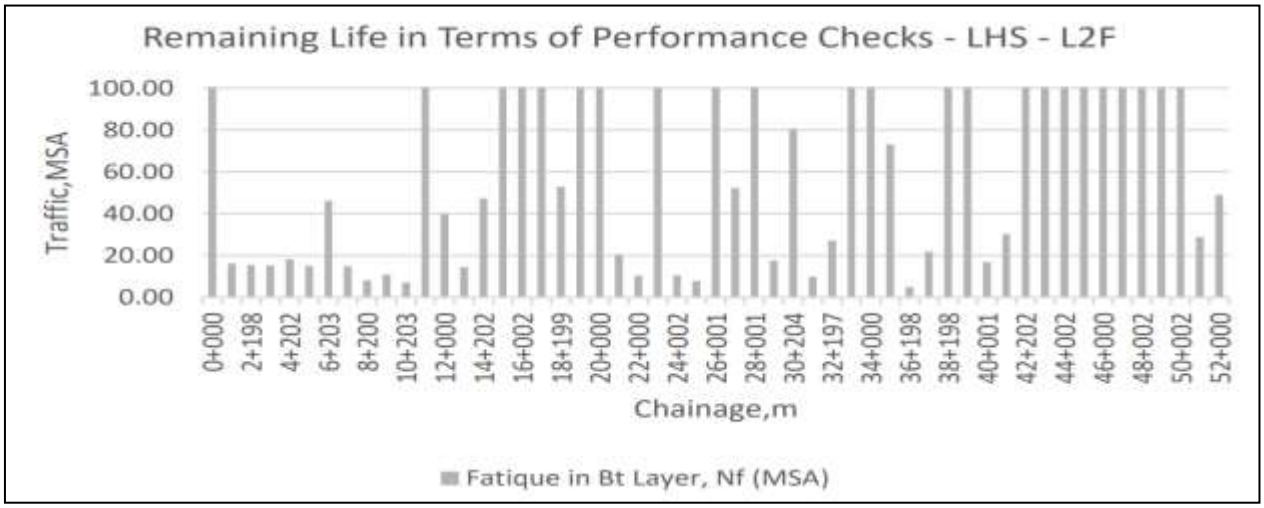
Figure 2-4: Roughness Index for MKTPL as per Schedule F of CA

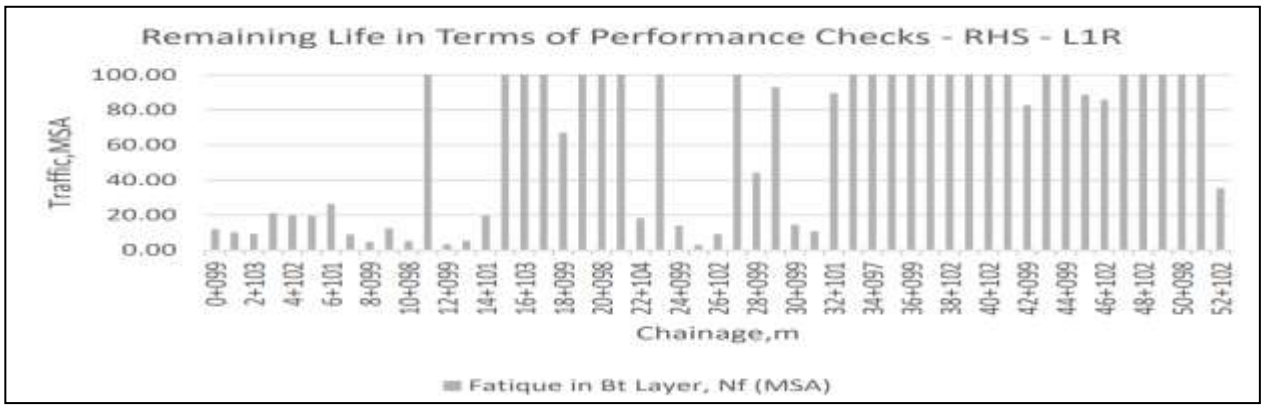
4.5 Falling Weight Deflectometer (FWD) Survey

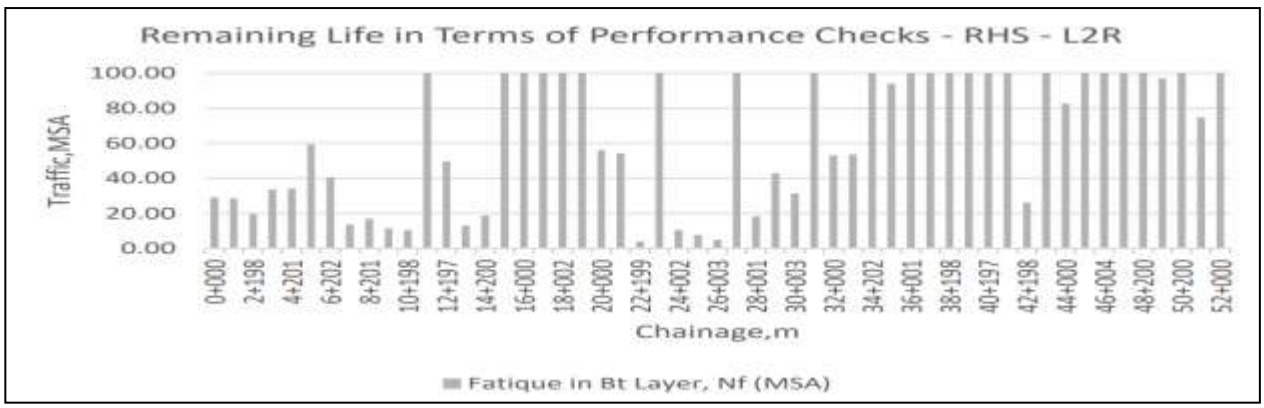
The structural evaluation and analysis of the remaining life of project was carried out in conformity with IRC:115-2014 “Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique”.

The FWD survey was conducted on the Project Road on 24th January 2025 to 27th January 2025. The summary of the same is presented below.









However, the maintenance can be carried out on as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. However, improvement in Riding Quality is expected if the roughness value exceeds 3000 mm/km.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

CBR Analysis

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
1	NH-7	0+000	LHS	24.7
2	NH-7	2+300	RHS	13.8
3	NH-7	5+050	LHS	11.4
4	NH-7	7+500	RHS	10.3
5	NH-7	10+000	LHS	11.8
6	NH-7	12+500	RHS	14.4
7	NH-7	17+500	RHS	12.2
8	NH-7	20+500	LHS	12.6
9	NH-7	22+500	RHS	14.4
10	NH-7	25+200	LHS	17.7
11	NH-7	27+600	RHS	18.5
12	NH-7	30+000	LHS	17.4
13	NH-7	32+500	RHS	14.5
14	NH-7	35+000	LHS	17.9
15	NH-7	37+500	RHS	18.2

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
16	NH-7	40+000	LHS	11.6
17	NH-7	42+500	RHS	10.9
18	NH-7	45+000	LHS	13.7
19	NH-7	46+800	RHS	17.5
20	NH-7	49+000	LHS	17.1
21	NH-7	49+950	LHS	17.4
22	NH-7	51+600	RHS	14.6
Average DCP - Equivalent CBR				**15.1**

Table 4-4 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Location (km)	Side (LHS / RHS)	Carriageway Type	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 micron	75 micron		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	0+000	LHS	MCW	SM	96.9	90.3	76.1	67.5	37.9	14.7	14.7	22	NP	NP	2.12	8.4	1.93	8.0	20.3	0.0	91.0
2	2+300	RHS	MCW	SM	100.0	100.0	90.0	75.6	54.0	26.8	26.8	25	NP	NP	2.11	8.0	1.93	9.0	11.7	9.3	91.5
3	5+050	LHS	MCW	SM-SC	98.9	91.4	81.2	63.6	44.9	24.3	24.3	29	22	7	2.07	9.3	1.97	9.0	11.3	12.5	95.2
4	7+500	RHS	MCW	SC	98.7	96.5	89.5	68.7	49.6	25.1	25.1	32	23	9	2.05	9.4	1.92	8.0	10.7	20.0	93.7
5	10+000	LHS	MCW	SM-SC	100.0	96.6	87.3	66.1	40.7	27.2	27.2	28	21	7	2.10	9.0	1.96	10.0	9.8	11.1	93.3
6	12+500	RHS	MCW	SM-SC	100.0	97.6	86.1	73.0	47.9	25.3	25.3	27	22	5	2.08	9.1	1.92	9.0	10.9	10.0	92.3
7	17+500	RHS	Service Road	SM	100.0	98.8	91.7	87.3	67.6	35.0	35.0	22	NP	NP	1.99	8.7	1.82	8.0	11.2	0.0	91.5
8	20+500	LHS	MCW	SM	98.1	94.2	83.4	68.7	47.5	22.1	22.1	25	NP	NP	2.08	8.6	1.93	8.0	14.3	0.0	92.8
9	22+500	RHS	MCW	SC	91.5	83.7	73.5	68.8	46.2	26.3	26.3	35	22	13	2.04	11.3	1.96	8.0	13.5	30.0	96.1
10	25+200	LHS	MCW	SM	92.0	76.9	71.5	61.6	39.2	16.1	16.1	25	NP	NP	2.14	8.2	1.94	10.0	16.5	0.0	90.7
11	27+600	RHS	Service Road	SM	97.8	88.5	80.3	67.5	36.8	12.2	12.2	24	NP	NP	2.16	7.8	1.93	6.0	20.2	0.0	89.4
12	30+000	LHS	MCW	SM	94.5	90.7	81.2	58.6	43.1	15.8	15.8	24	NP	NP	2.12	8.3	1.91	7.0	16.1	0.0	90.1
13	32+500	RHS	MCW	SM	98.6	91.9	85.3	73.2	48.7	26.7	26.7	26	NP	NP	2.08	8.1	1.94	9.0	13.6	0.0	93.3
14	35+000	LHS	MCW	SM	93.0	85.9	74.9	62.3	43.7	23.2	23.2	26	NP	NP	2.09	8.2	1.94	9.0	15.0	0.0	92.8
15	37+500	RHS	MCW	SM	90.5	74.8	59.6	53.9	27.3	12.9	12.9	26	NP	NP	2.13	7.9	1.90	12.0	18.9	0.0	89.2
16	40+000	LHS	MCW	SM	100.0	99.0	95.2	87.2	69.8	36.6	36.6	21	NP	NP	2.04	8.6	1.95	10.0	10.1	9.3	95.6
17	42+500	RHS	MCW	SM	98.8	87.2	76.0	60.4	56.1	34.5	34.5	24	NP	NP	2.02	9.2	1.92	12.0	10.8	0.0	95.0
18	45+000	LHS	MCW	SM-SC	82.6	75.0	62.0	45.4	30.0	16.6	16.6	28	21	7	2.13	8.8	1.94	8.0	14.3	12.5	91.1
19	46+800	RHS	MCW	SM	94.5	87.4	74.9	53.3	31.0	15.7	15.7	22	NP	NP	2.11	8.3	1.93	8.0	18.7	9.3	91.5
20	49+000	LHS	MCW	SM	94.6	90.7	80.1	62.8	33.0	14.2	14.2	26	NP	NP	2.15	8.0	1.97	7.0	20.2	0.0	91.6
21	49+950	LHS	MCW	SM	96.3	91.2	78.7	58.4	45.1	25.2	25.2	24	NP	NP	2.06	8.7	1.93	9.0	13.3	0.0	93.7
22	51+600	RHS	MCW	SM	100.0	97.5	89.5	73.0	46.0	22.5	22.5	27	NP	NP	2.09	9.1	1.92	6.0	13.6	0.0	91.9

Granular layer investigation

Sr. No.	Chainage (km)	Side (LHS /RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
1	0+000	LHS	GSB	100.0	91.9	69.1	31.1	30.4	26.1	26.7	19.3	17.4	12.3	10.2	0.2	53 mm, 26.5mm IS Sieve Material is Slightly Coarser Side in GSB-III & IV	53 mm, 26.5mm IS Sieve Material is Slightly Coarser Side in GSB-IV& V	25	NP	NP	2.83	0.34	31.56
2	2+300	RHS	GSB	100.0	80.8	79.0	50.0	46.7	27.7	22.0	16.6	12.2	6.2	4.3	0.2	53mm IS Sieve Material is Slightly Coarser side in GSB-IV	53mm IS Sieve Material is Slightly Coarser side in GSB-V	22	NP	NP	2.82	0.43	32.32
3	5+050	LHS	WMM	100.0	100.0	100.0	58.3	51.2	37.5	32.2	26.3	21.6	9.5	6.9	1.0	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	24	NP	NP	2.79	0.44	28.97
4	7+500	RHS	WMM	100.0	100.0	100.0	50.2	40.3	29.8	29.0	27.6	23.3	16.3	13.0	1.7	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.82	0.34	30.38
5	10+000	LHS	GSB	100.0	100.0	92.6	61.6	52.4	34.8	30.4	24.9	21.9	10.7	8.1	0.9	Confirming to GSB-III & IV	Confirming to GSB-IV & V	23	18	5	2.80	0.45	33.23
6	12+500	RHS	GSB	100.0	98.3	86.4	76.5	64.3	48.6	26.4	13.2	9.5	6.0	4.2	1.3	53mm,4.75mm IS Sieve Material is Slightly Coarser Side in GSB-IV	53mm,4.75mm IS Sieve Material is Slightly Coarser Side in GSB-V	22	NP	NP	2.81	0.24	35.18
7	17+500	RHS	WMM	100.0	100.0	100.0	65.5	55.6	43.5	30.5	28.8	19.2	13.8	7.9	0.7	22.4mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.80	0.29	31.25
8	20+500	LHS	GSB	100.0	90.7	72.2	37.3	29.2	13.9	10.2	6.8	5.4	2.3	1.8	0.2	Not Conforming to Any Gradation	Not Conforming to Any Gradation	22	NP	NP	2.82	0.32	32.19
9	22+500	RHS	GSB	100.0	100.0	72.3	62.3	29.2	20.3	17.6	9.8	8.2	6.4	2.3	1.2	4.75mm IS Sieve Material Slightly Coarser side in GSB-III & IV	4.75mm IS Sieve Material Slightly Coarser side in GSB-IV & V	21	NP	NP	2.80	0.31	34.23
10	25+200	LHS	WMM	100.0	100.0	100.0	98.8	52.0	45.2	21.1	22.2	19.0	13.2	10.8	3.4	22.4mm, 4.75mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm, 4.75mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22	NP	NP	2.83	0.61	35.47
11	27+600	RHS	WMM	100.0	100.0	98.6	66.6	58.7	35.2	29.6	24.5	19.5	11.6	8.8	0.5	22.4mm,11.2mm 4.75mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm 4.75mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	23	NP	NP	2.82	0.40	28.19
12	30+000	LHS	GSB	100.0	89.2	89.9	58.6	53.0	38.1	33.1	26.0	19.6	6.6	4.0	0.3	53 mm, IS Sieve Material is Slightly Coarser Side in GSB-IV	Conforming to GSB-IV & V	22	NP	NP	2.82	0.23	34.43
13	32+500	RHS	GSB	100.0	100.0	86.5	58.1	45.2	41.1	37.1	34.0	28.1	22.1	10.2	4.1	Confirming to GSB-IV	Confirming to GSB-V	22	19	3	2.80	0.34	29.45

Sr. No.	Chainage (km)	Side (LHS /RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
14	35+000	LHS	WMM	100.0	100.0	100.0	74.2	66.8	45.5	39.0	30.6	26.9	14.6	10.3	0.9	Conforming to WMM Gradation	Conforming to WMM Gradation	23	NP	NP	2.81	0.37	33.24
15	37+500	RHS	WMM	100.0	100.0	100.0	79.8	72.8	44.8	34.6	25.8	22.7	13.5	10.7	1.3	Conforming to WMM Gradation	Conforming to WMM Gradation	20	NP	NP	2.79	0.39	31.24
16	40+000	LHS	GSB	95.3	95.3	85.4	55.6	52.2	39.4	36.4	31.6	26.6	15.6	11.4	0.6	53 mm, IS Sieve Material is Slightly Coarser Side in GSB-IV	53 mm, IS Sieve Material is Slightly Coarser Side in GSB-V	24	NP	NP	2.81	0.40	30.12
17	42+500	RHS	GSB	100.0	100.0	94.4	57.3	51.2	37.8	32.3	26.0	21.0	11.2	8.0	0.3	Conforming to GSB-III & IV	Conforming to GSB-IV & V	22	NP	NP	2.82	0.42	32.16
18	45+000	LHS	WMM	100.0	100.0	100.0	59.6	52.3	38.1	32.5	28.3	22.8	12.3	8.2	1.2	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	20	NP	NP	2.84	0.37	34.32
19	46+800	RHS	WMM	100.0	100.0	100.0	92.3	76.5	45.6	34.2	29.1	19.2	14.3	8.5	1.6	Confirming to WMM Gradation	Confirming to WMM Gradation	24	NP	NP	2.81	0.37	35.82
20	49+000	LHS	WMM	100.0	100.0	100.0	47.6	41.8	32.8	28.4	25.6	21.5	18.2	15.2	1.1	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.79	0.42	29.85
21	49+950	LHS	GSB	100.0	100.0	100.0	79.4	71.5	39.2	30.1	21.3	15.4	6.7	4.7	0.7	Conforming to GSB-IV	Conforming to GSB-V	22	NP	NP	2.80	0.38	35.23
22	51+600	RHS	GSB	100.0	100.0	100.0	73.5	26.3	22.4	20.1	18.5	15.6	10.4	8.4	0.7	Conforming to GSB-III & IV	Conforming to GSB-IV & V	23	NP	NP	2.83	0.23	33.28

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Overlay laying work on LHS and RHS is completed at site in the month of October 2021. Means Financial year FY 2022, so that as per our experience next overlay cycle has come in the FY 2029.

As per Article 14 of CA, Authority shall carry out capacity augmentation under EPC contract if traffic exceeds 40,000 PCU for three consecutive accounting years. Recent traffic study reveals that, the project traffic crosses 40,000 PCU in FY 2025, FY 2026, FY 2027. Assumption has made that execution of 6-laning of Project Road will start in the year FY 2030 or FY 2031. It is also assumed that during 6-laning of Project Road, overlay of existing four lane road will be the part of the capacity augmentation. Hence, the major maintenance cycle is adjusted accordingly. The summary of the major maintenance planned up to end of concession period is presented in the below table.

Table 4-5 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2024 to FY 2028	-	
2	FY 2029	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (9%)	Major maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
3	FY 2030 to FY 2032	Assumption of Capacity Augmentation to Six Lane Configuration	
4	FY 2033 to FY 2036	-	
5	FY 2037	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (10%)	Major maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
6	FY 2038 to FY 2043	-	
7	FY 2044	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (10%)	Major maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
8	FY 2045	-	
9	FY 2046*	End of concession period	

**Actual end of concession period as per Concession Agreement is October 2050. As per recent traffic study conducted by Concessionaire, the revised concession period is upto FY 2046.*

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

d. **Cement:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

e. **Steel :** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable NHAI Standard data book.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro-surfacing, milling, median filling rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam	Cum	8,416
2	Bituminous Concrete (VG40)	Cum	9,628
3	Bituminous Concrete (PMB)	Cum	11,396
4	Milling	Sqm	86
5	Micro-surfacing	Sqm	155
6	Kerb Re-laying	Rmt	316
7	Road Marking on BC surface	Sqm	571
8	Road Marking on micro surface	Sqm	682
9	Road Studs	Nos.	193

5.3 Balance Work Cost

As discussed in the previous chapter, the balance works cost for the Project Road is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the

operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management & Emergency Services
5. Electricity and Diesel Charges
6. TMS/HTMS/System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Routine Maintenance Cost (Project Road)
16. Horticulture & ROW Maintenance
17. Miscellaneous including Contingency

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2025 to 32)	Amount FY 2033 onwards
1	Salary and Welfare Expenses	1,08,90,000	1,08,90,000
2	Tolling Operations Services	2,80,93,242	2,80,93,242
3	Toll Security Services	58,16,999	58,16,999
4	Incident Management & Emergency Services	2,12,41,356	2,12,41,356
5	Electricity and Diesel Charges	37,63,822	37,63,822
6	TMS/HTMS/System Expenses	70,92,277	73,85,153
7	Office Operating Expenses	35,60,049	35,60,049
8	Vehicle Running Expenses	29,17,200	29,17,200
9	Professional Fees Expense	50,86,346	85,66,369
10	Community Development	12,62,386	12,62,386
11	Communication Expenses	3,47,156	3,47,156
12	Conveyance Expenses	12,62,386	12,62,386
13	Insurance Expense	57,17,863	57,17,863
14	IE Fees	24,33,432	24,33,432

Sr. No.	Particulars	Amount (FY 2025 to 32)	Amount FY 2033 onwards
15	Routine Maintenance Cost (Project Road)	2,52,37,536	3,26,08,163
16	Horticulture & ROW Maintenance	1,71,07,121	1,71,07,121
17	Miscellaneous including Contingency	39,79,381	41,30,296
	Total Cost (Rs.)	**14,58,08,551**	**15,71,02,992**
	Total Cost (Cr.)	**14.58**	**15.71**
	Per km Cost (Lakhs)	27.88	30.04

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2024 to FY 2028	-	
2	FY 2029	61.98	1st MM cycle
3	FY 2030 to FY 2036	-	
4	FY 2037	95.27	2nd MM cycle
5	FY 2038 to FY 2043	-	
6	FY 2044	77.97	3rd MM cycle
	Total	**235.22**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below:

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	6.25	
2	FY 2034	6.25	
3	FY 2041	6.25	
Total Cost (Cr.)		**18.75**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	3.99%
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%

Year	Escalation	Year	Escalation
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46
1	Routine O&M Cost																					
1.01	Salary and Welfare Expense	1.09	1.15	1.20	1.26	1.31	1.36	1.42	1.47	1.53	1.60	1.66	1.73	1.79	1.87	1.94	2.02	2.10	2.18	2.27	2.36	2.45
1.02	Tolling Operations Services	2.81	2.96	3.10	3.24	3.38	3.51	3.66	3.80	3.96	4.12	4.28	4.45	4.63	4.81	5.01	5.21	5.41	5.63	5.85	6.09	6.33
1.03	Toll Security Services	0.58	0.61	0.64	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.17	1.21	1.26	1.31
1.04	Incident Management Services	2.12	2.24	2.34	2.45	2.55	2.66	2.77	2.88	2.99	3.11	3.24	3.37	3.50	3.64	3.79	3.94	4.09	4.26	4.43	4.60	4.79
1.05	Electricity and Diesel Charges	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.75	0.78	0.82	0.85
1.06	TMS/HTMS/System Expenses	1.06	0.54	0.65	0.75	0.87	0.90	1.11	1.43	0.73	0.86	1.00	1.14	1.19	1.47	1.89	0.96	1.13	1.31	1.50	1.56	1.93
1.07	Office Operating Expenses	0.36	0.37	0.39	0.41	0.43	0.45	0.46	0.48	0.50	0.52	0.54	0.56	0.59	0.61	0.63	0.66	0.69	0.71	0.74	0.77	0.80
1.08	Vehicle Running Expenses	0.29	0.31	0.32	0.34	0.35	0.36	0.38	0.40	0.41	0.43	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.61	0.63	0.66
1.09	Professional Fees Expense	0.51	0.54	0.56	0.59	0.61	0.64	0.66	1.16	1.21	1.26	1.31	1.36	1.41	1.47	1.53	1.59	1.65	1.72	1.79	1.86	1.93
1.10	Community Development	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.27	0.28
1.11	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08
1.12	Conveyance Expenses	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.27	0.28
1.13	Insurance Expense	0.57	0.60	0.63	0.66	0.69	0.72	0.74	0.77	0.81	0.84	0.87	0.91	0.94	0.98	1.02	1.06	1.10	1.15	1.19	1.24	1.29
1.14	IE Fees	0.24	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55
1.15	Routine Maintenance Cost	2.52	2.66	2.79	2.91	3.03	3.16	3.29	4.42	4.59	4.78	4.97	5.17	5.37	5.59	5.81	6.04	6.28	6.53	6.80	7.07	7.35
1.16	Horticulture & ROW Maintenance	1.71	1.80	1.89	1.97	2.06	2.14	2.23	2.32	2.41	2.51	2.61	2.71	2.82	2.93	3.05	3.17	3.30	3.43	3.57	3.71	3.86
1.17	Miscellaneous and Contingency	0.40	0.42	0.44	0.46	0.48	0.50	0.52	0.56	0.58	0.61	0.63	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.90	0.93
	Subtotal of O&M Cost	14.93	15.14	15.96	16.74	17.53	18.26	19.18	21.71	21.82	22.80	23.81	24.87	25.86	27.12	28.57	28.71	29.98	31.31	32.70	34.01	35.67
2	Major Maintenance Cost	-	-	-	68.42	-	-	-	-	-	-	-	133.89	-	-	-	-	-	-	130.78	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	6.57	-	-	-	-	-	-	8.80	-	-	-	-	-	-	11.58	-	-	-	-	-
4	Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**14.93**	**21.72**	**15.96**	**85.16**	**17.53**	**18.26**	**19.18**	**21.71**	**30.62**	**22.80**	**23.81**	**158.76**	**25.86**	**27.12**	**28.57**	**40.28**	**29.98**	**31.31**	**163.48**	**34.01**	**35.67**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost (4-lane)	
Ordinary Repair Cost for Flexible (with GST)	**2,52,37,536**
(inclusive of GST)	**= 4.83 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				2,32,878	**2,81,113**				
						Normal	**Urban**	**Normal**	**Urban**
5	Four-lane with divided carriageway	Without paved shoulder	1.53	356304.00	430102.00	-	-	-	-
		Paved shoulder	1.70	395893.00	477892.00	31.94	-	1,26,42,843	-
6	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	465756.00	562225.00	-	-	-	-
		Paved shoulder	2.20	512332.00	618448.00	-	20.37	-	1,25,94,693
TOTAL							**52.300**		**2,52,37,536**

Routine Maintenance Cost (6-Lane)	
Ordinary Repair Cost for Flexible (with GST)	**3,26,08,163**
(inclusive of GST)	**= 6.23 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	More than 4500 CVD				
				2,32,878	**2,81,113**				
						Normal	**Urban**	**Normal**	**Urban**
1	Six lane with divided carriageway	without Paved shoulder	2.09	486715.00	587526.00	-	-	-	-
		with Paved shoulder	2.26	526305.00	635315.00	31.94	-	1,68,07,550	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	596168.00	719649.00	-	-	-	-
		with Paved shoulder	2.76	642744.00	775871.00	-	20.37	-	1,58,00,613
TOTAL							**52.300**		**3,26,08,163**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year (Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			10355
	Cost in Rupees			51,773
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			414
	Cost in Rupees			41,418
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.00%
	Area (sqm)			200
	Rs/m^2			74
	Cost in Rupees			14,802
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			49
	Cost in Rupees			7,407
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			414
	Cost in Rupees			31,064
	v) Road marking	14%	Once in 7th year & @	12689

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
			Repaired location	
	SUB TOTAL			**1,59,153**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Jungle Clearance	100%	Twice in a Year	2038
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**9,340**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	2751
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**9,803**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2426
	ii) Maintenance of gang hut store, sheds, animal & debries		Once in a Year	3639

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	removal			
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**18,194**
	GRAND TOTAL (Normal)			**2,32,878**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	18881
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**48,234**
	GRAND TOTAL (Urban)			**2,81,113**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						10,18,776	18	1,80,52,702
	For BC	Sqm	1	1	9,09,302.20		9,09,302	9,09,302		
	For DBM	Sqm	1	1	64,008.20		64,008	64,008		
	For Misc. Location	Sqm	1	1	45,465.11		45,465	45,465		
2	BC with 30 mm	Cum	1	1	9,54,767.31	0.03	28,643	28,643	11,397	32,64,39,908
3	DBM with 50 mm	Cum	1	1	64,008.20	0.05	3,200	3,200	8,416	2,69,34,234
4	Milling	Sqm	1	1	64,008.20		64,008	64,008	86	55,20,707
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	935	1,23,844
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,188	12,16,980
	Service Road									
8	Tack coat	Sqm	1	20,365	7.00		1,42,555	1,49,683	18	26,52,378
9	BC with 30 mm	Cum	1	20,365	7.00	0.03	4,277	4,490	9,628	4,32,33,647
10	Micro Surfacing	Sqm	1	20,365	7.00		1,42,555	1,49,683	155	2,32,38,247
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	963	18.7		17,965	17,965	18	3,18,332
12	Wearing Coat BC with 30 mm	Cum	1	963	18.7	0.03	539	539	11,397	61,42,183
13	Milling of Ex. Wearing Coat	Sqm	1	963	18.7		17,965	17,965	86	15,49,445
14	Painting of Crash Barrier	Sqm	4	963		1.12	4,296	4,296	107	4,59,658
	Other Works									
15	Raising of Road Kerb	Rmt		91,721			-	-	316	-
16	Replacement of Road Stud									

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Normal Road Stud	Nos	2	6,393			12,786	12,786	193	24,70,255
17	Painting of Kerb	Sqm	2	91,721		0.375	68,791	68,791	107	73,60,594
18	Road Marking	Sqm					48,865	48,865	571	
	Road Marking on BC						43,883	43,883	571	2,50,56,957
	Road Marking on Micro surfacing						4,982	4,982	682	33,97,927
	MCW									
	a) Median & Edge line	Sqm	4	54,915	0.15		32,949			
	b) Lane line	Sqm	2	18,122	0.10		3,624			
	Service Road									
	a) Edge line	Sqm	2	42,767	0.10		8,553			
	b) Lane line	Sqm	1	14,113	0.10		1,411			
	Junction crossing	Sqm					2,327			
19	Filling of Earthen shoulder	Cum					14,682	14,682	412	60,42,943
	MCW		2	50,991	2.00	0.06	12,238			
	Service Road		1	20,365	2.00	0.06	2,444			
20	Miscellaneous	5%								2,50,13,939
Total Major Maintenance Cost (Rs.)										**52,52,92,719**
Total Major Maintenance Cost with GST (Rs.)										**61,98,45,409**
Total Major Maintenance Cost with GST (Cr.)										**61.98**
Per km Cost (lakh)										**118.52**
Escalation Factor for Major Maintenance Cost (FY 2029)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY 2029) (Cr.)										**68.42**

Major Maintenance Cost (FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						15,57,187	18	2,75,93,347
	For BC	Sqm	2	50,991	13.50		13,76,752	13,76,752		
	For DBM	Sqm	2	5,230	10.50		1,09,830	1,09,830		
	For Misc. Location	Sqm	2	2,615	13.50		70,605	70,605		
2	BC with 30 mm	Cum	2	53,606	13.50	0.03	43,421	43,421	11,397	49,48,58,748
3	DBM with 50 mm	Cum	2	5,230	10.50	0.05	5,492	5,492	8,416	4,62,15,750
4	Milling	Sqm	2	5,230	10.50		1,09,830	1,09,830	86	94,72,838
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	935	1,23,844
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,188	12,16,980
	Service Road									
8	Tack coat	Sqm	1	20,365	7.00		1,42,555	1,56,811	18	27,78,682
9	BC with 30 mm	Cum	1	20,365	7.00	0.03	4,277	4,704	9,628	4,52,92,392
10	Micro Surfacing	Sqm	1	20,365	7.00		1,42,555	1,56,811	155	2,43,44,830
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	963	28.0		26,970	26,970	18	4,77,901
12	Wearing Coat BC with 30 mm	Cum	1	963	28.0	0.03	809	809	11,397	92,21,046
13	Milling of Ex. Wearing Coat	Sqm	1	963	28.0		26,970	26,970	86	23,26,128
14	Painting of Crash Barrier	Sqm	4	963		1.12	4,296	4,296	107	4,59,658
	Other Works									
15	Raising of Road Kerb	Rmt	2	91,721			1,83,442	1,83,442	316	5,80,13,406
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,393			12,786	12,786	193	24,70,255
17	Painting of Kerb	Sqm	2	91,721		0.375	68,791	68,791	107	73,60,594
18	Road Marking	Sqm					52,670	52,670	571	
	Road Marking on BC	Sqm					47,688	47,688	571	2,72,29,960
	Road Marking on Micro surfacing	Sqm					4,982	4,982	682	33,97,927
	MCW									

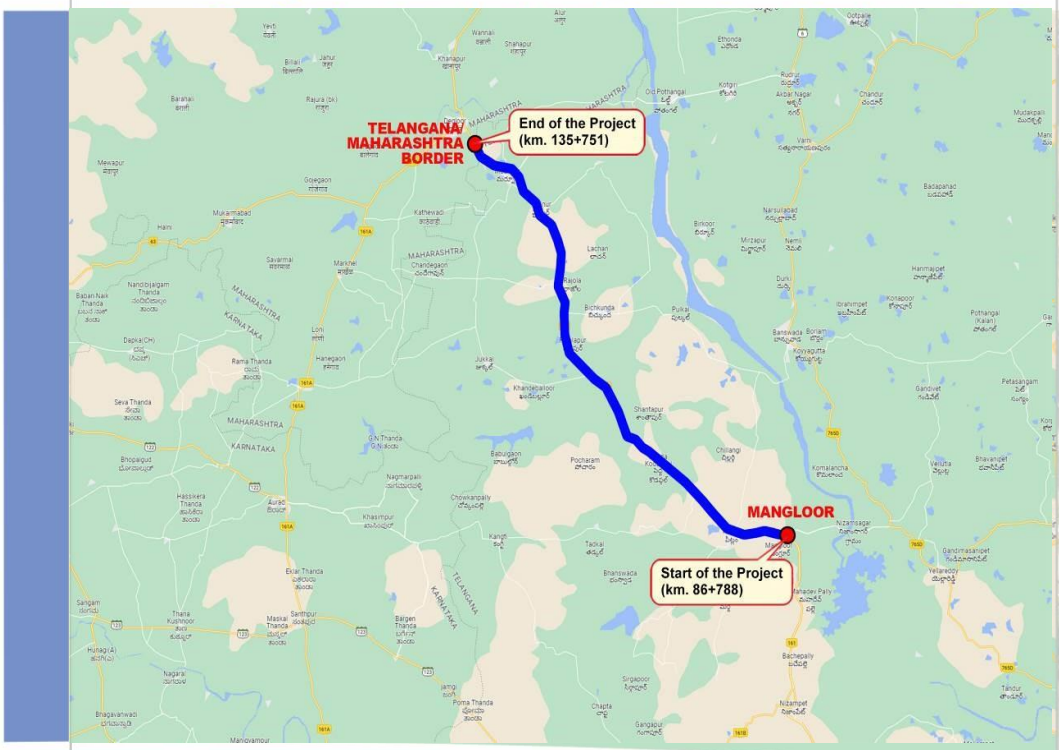
Major Maintenance Cost (FY 2037)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	a) Median & Edge line	Sqm	4	54,915	0.15		32,949			
	b) Lane line	Sqm	4	18,122	0.10		7,249			
	Service Road									
	a) Edge line	Sqm	2	42,767	0.10		8,553			
	b) Lane line	Sqm	1	14,113	0.10		1,411			
	Junction crossing	Sqm					2,508			
19	Filling of Earthen shoulder	Cum					14,682	14,682	412	60,42,943
	MCW		2	50,991	2.00	0.06	12,238			
	Service Road		1	20,365	2.00	0.06	2,444			
20	Median Filling	Cum	1	50,559	4.17	0.10	21,083			
20	Miscellaneous	5%								3,84,48,253
Total Major Maintenance Cost (Rs.)										**80,74,13,322**
Total Major Maintenance Cost with GST (Rs.)										**95,27,47,719**
Total Major Maintenance Cost with GST (Cr.)										**95.27**
Per km Cost (lakh)										**182.17**
Escalation Factor for Major Maintenance Cost (FY 2037)										**1.58**
Total Escalated Cost for Major Maintenance Cost (FY 2037) (Cr.)										**133.89**

Major Maintenance Cost (FY 2044)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						15,57,187	18	2,75,93,347
	For BC	Sqm	2	50,991	13.50		13,76,752	13,76,752		
	For DBM	Sqm	2	5,230	10.50		1,09,830	1,09,830		
	For Misc. Location	Sqm	2	2,615	13.50		70,605	70,605		
2	BC with 30 mm	Cum	2	53,606	13.50	0.03	43,421	43,421	9,628	41,80,47,533
3	DBM with 50 mm	Cum	2	5,230	10.50	0.05	5,492	5,492	8,416	4,62,15,750
4	Milling	Sqm	2	5,230	10.50		1,09,830	1,09,830	86	94,72,838
	Main Carriageway - Rigid Pavement									

Major Maintenance Cost (FY 2044)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	935	1,23,844
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,188	12,16,980
	Service Road									
8	Tack coat	Sqm	1	20,365	7.00		1,42,555	1,56,811	18	27,78,682
9	BC with 30 mm	Cum	1	20,365	7.00	0.03	4,277	4,704	9,628	4,52,92,392
10	Micro Surfacing	Sqm	1	20,365	7.00		1,42,555	1,56,811	155	2,43,44,830
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	963	28.0		26,970	26,970	18	4,77,901
12	Wearing Coat BC with 30 mm	Cum	1	963	28.0	0.03	809	809	9,628	77,89,770
13	Milling of Ex. Wearing Coat	Sqm	1	963	28.0		26,970	26,970	86	23,26,128
14	Painting of Crash Barrier	Sqm	4	963		1.12	4,296	4,296	107	4,59,658
	Other Works									
15	Raising of Road Kerb	Rmt		91,721			-	-	316	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,393			12,786	12,786	193	24,70,255
17	Painting of Kerb	Sqm	2	91,721		0.375	68,791	68,791	107	73,60,594
18	Road Marking	Sqm					52,670	52,670	499	
	Road Marking on BC	Sqm					47,688	47,688	499	2,37,84,488
	Road Marking on Micro surfacing	Sqm					4,982	4,982	682	33,97,927
	MCW									
	a) Median & Edge line	Sqm	4	54,915	0.15		32,949			
	b) Lane line	Sqm	4	18,122	0.10		7,249			
	Service Road									
	a) Edge line	Sqm	2	42,767	0.10		8,553			
	b) Lane line	Sqm	1	14,113	0.10		1,411			
	Junction crossing	Sqm					2,508			
19	Filling of Earthen shoulder	Cum					14,682	14,682	412	60,42,943
	MCW		2	50,991	2.00	0.06	12,238			
	Service Road		1	20,365	2.00	0.06	2,444			

Major Maintenance Cost (FY 2044)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
20	Miscellaneous	5%								3,14,63,185
									Total Major Maintenance Cost (Rs.)	**66,07,26,883**
									Total Major Maintenance Cost with GST (Rs.)	**77,96,57,723**
									Total Major Maintenance Cost with GST (Cr.)	**77.97**
									Per km Cost (lakh)	**149.07**
									Escalation Factor for Major Maintenance Cost (FY 2044)	**2.08**
									Total Escalated Cost for Major Maintenance Cost (FY 2044) (Cr.)	**130.78**

FP Project Management



Technical Due Diligence of Mangloor to Telangana / Maharashtra border section of NH-161 from km. 86+788 to km. 135+751 in the State of Telangana on Hybrid Annuity Mode (HAM)

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	SG / MHP / VMK	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
2.9 Bypass and Realignment 6
3 Condition Assessment of Project Road 9
3.1 Pavement 9
3.1.1 Pavement Condition Survey 9
3.2 Service Road 16
3.3 Major / Minor Junction 20
3.4 Condition Survey of Structure 22
3.5 Condition Survey of Culverts 32
3.6 Drainage 34
3.7 Slope Protection 34
3.8 Road Furniture 36
3.9 Pavement Marking 36
3.10 Road Studs 38
3.11 Highway Lighting / Solar Blinker 44
3.12 Crash Barriers 45
3.13 Delineators 47
3.14 Pedestrian Guard Rail 48
3.15 Road Land Boundary / Chain Link Fencing 49

3.16 Avenue Plantation 51
3.17 Noise Barrier 53
3.18 Protection Wall 53
3.19 Toll Plaza 53
3.20 Advance Traffic Management System (ATMS) 55
3.20.1 Automatic Traffic Counter cum classifier (ATCC) 56
3.20.2 Emergency Call Boxes (ECB) 56
3.20.3 MET System 56
3.20.4 Variable Message Signboards (VMS) 57
3.20.5 CCTV Surveillance Cameras 57
3.20.6 Vehicle Actuated Speed Display (VASD) 58
3.20.7 Adequacy of Toll Collection System and ATMS 58
3.21 Truck Lay bye 59
3.22 Traffic Aid Post and Medical Aid Post 59
3.23 Toilet Block 61
3.24 Bus Bays and Passenger Shelters 61
3.25 Wayside Amenities 62
3.26 Balance Work Status 63
3.27 Organization Chart 64
3.28 Operation 65
3.29 Routine Maintenance 65
4 Pavement Investigation and Assessment 66
4.1 General 66
4.2 Axle Load and VDF 66
4.3 Design Traffic 66
4.4 Network Survey Vehicles (NSV) Survey 67
4.5 Structural Investigation 68
4.6 Test pit and Subgrade Investigation 68
4.7 Periodic Maintenance Strategy 69
5 Cost Estimate 70
5.1 General 70
5.2 Rate Assumption 70
5.3 Balance Works Cost (CAPEX) 71
5.4 Balance Repair / Rectification Works 71
5.5 Routine O&M Cost 72
5.6 Major Maintenance Cost 73
5.7 Periodic Replacement of TMS / ATMS System 74

5.8 Escalation Assumption 74
5.9 Summary of Cost.....74
ANNEXURE.....76
ANNEXURE-I ROUTINE MAINTENANCE COST 77
ANNEXURE-II MAJOR MAINTENANCE COST 81

LIST OF TABLES

Table 2-1 Details of Bypass 7
Table 2-2 Details of Realignment 7
Table 3-1 Details of Service Road 16
Table 3-2 Details of Slip Road 16
Table 3-3 Summary of Structures 22
Table 3-4 Condition Survey of Major Structure 23
Table 3-5 Summary for Road Furniture Items 36
Table 3-6 Details of Truck lay bye 59
Table 3-7 Details of Toilet Block 61
Table 3-8 Details of wayside Amenities 62
Table 4-1 Vehicle Damage Factor 66
Table 4-2 MSA Calculation 66
Table 4-3 Roughness Index Summary 67
Table 4-4 FWD Summary 68
Table 4-5 Major Maintenance Cycle 69
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST. 70
Table 5-2 Summary of Unit Rates 71
Table 5-3 Total cost of Repairs and Rectification Works 72
Table 5-4 Summary of Operation Cost 73
Table 5-5 Summary of Major Maintenance Cost 73
Table 5-6 Escalation 74

LIST OF FIGURES

Figure 2-1 Location Map 4
Figure 2-2 Start / End of the Project Road (LHS) 5
Figure 2-3 Start / End of Project Road (RHS) 5
Figure 2-4 Photograph of Bypass (LHS) 7
Figure 3-1 Photographs of Pavement Condition (LHS) 10
Figure 3-2 Photographs of Pavement Condition (RHS) 13
Figure 3-3 Photographs of Service Road (LHS) 17
Figure 3-4 Photographs of Service Road (RHS) 18
Figure 3-5 Photographs of Major Junctions 20
Figure 3-6 Photographs of Minor Junctions 21
Figure 3-7 Photographs of Major Structures 26
Figure 3-8 Photographs of Box Culvert / Pipe Culvert 33
Figure 3-9 Photographs of Existing Drains 34
Figure 3-10 Photographs of Slope Protection 35
Figure 3-11 Photographs of Pavement Marking 37
Figure 3-12 Photographs of Road Studs 38
Figure 3-13 Photographs of Road Signages (LHS) 39
Figure 3-14 Photographs of Road Signages (RHS) 41
Figure 3-15 Photographs of Street Light / Solar Blinker 44
Figure 3-16 Photographs of Guard Post / Crash Barrier 45
Figure 3-17 Photographs of Delineator 47
Figure 3-18 Photographs of Pedestrian Guard Rail 48
Figure 3-19 Photographs of Chain Link fencing / Road Land Boundary 50
Figure 3-20 Photographs of Avenue Plantation 52
Figure 3-21 Photographs of Noise Barrier 53
Figure 3-22 Photograph of Truck Lay-bye 59
Figure 3-23 Photograph of Traffic / Medical Aid Post 60
Figure 3-24 Photograph of Incident Management 60
Figure 3-25 Photographs of Toilet Blocks 61
Figure 3-26 Photographs of Bus Bay / Passenger Shelter 61
Figure 3-27 Photograph of Wayside Amenities 63

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Mangloor - Telangana / Maharashtra border section of NH-161 from km. 86+788 to km. 135+751 in the State of Telangana (hereinafter referred as "Project Road").

M/s. DBL Mangloor Highways Pvt. Limited (hereafter known as M/s. Mangloor Highways Pvt. Ltd.) vide COI dated 02.12.2022 (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for operation, maintenance, and transfer of Mangloor to Telangana / Maharashtra border section (Design Chainage from km. 86+788 to km. 135+751) of NH-161 or Project Road under Hybrid Annuity basis. The project was awarded to Concessionaire **M/s**. **DBL Mangloor Highways Pvt. Limited**., a company promoted and incorporated by M/s. Dilip Buildcon Ltd. on 09.05.2018 (Including construction period) by National Highway Authority of India (NHAI). Cube Highway group is a shareholder in the Concessionaire company. The length of project as per CA is 48.963 kms with one toll plaza at Dharmaram at km. 96+073.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.,
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.,
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / ATMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our proposed team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader will coordinate the activities between all the key staff who will work closely together. The key is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader will act as the point of contact for Client Technical Study.

The technical study include review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings.
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority.
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **24th February 2025** to **25th February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**

Chapter 2 **Project Description:** The chapter describes existing project features, and an overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**

Chapter 4 **Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** This chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/s. DBL Mangloor Highways Pvt. Limited** (hereafter known as M/s. Mangloor Highways Pvt. Ltd.) is a company promoted by Cube Highway group. The Appointment Date of the project was 12th April 2019. The concession period of the project is 17 years including construction period. The project has received PCOD on 15th December 2021 for the length 47.412 kms out of 48.963 kms. However, presently all work has been completed, and IE has drafted work completion letter to NHAI vide their letter no. MSV/IE(O&M)/PKG II&III/2025/GJW/PIU/504 Dated 05.02.2025 which is under review at NHAI end. Cube Highway group is a shareholder in the Concessionaire company.

2.2 Location

The Project Road is part of National Highway No. 161, of Mangloor - Telangana / Maharashtra border section in the state of Telangana. The total project length is 48.963 kms as per CA.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

Figure 2-2 Start / End of the Project Road (LHS)

Start of the Project Road

End of the Project Road

Figure 2-3 Start / End of Project Road (RHS)

Start of the Project Road

End of the Project Road

2.3 Climate

The climate of the region is marked by heavy rainfall with high humidity in the hot season. The Indian Meteorological Department (IMD) has identified the following four seasons in the region.

Sr. No.	Weather	Month
1	Summer	February to May
2	Monsoon	June to September
3	Post Monsoon	October
4	Winter	November to February
5	Maximum Temperature	38 ^{0}C
6	Minimum Temperature	18 ^{0}C
7	Average annual rainfall	910 mm

2.4 Terrain

The Project Road passes through plain to rolling terrain.

2.5 Abutting Land Use

The following are the various developments that are anticipated in the Four Lanning of Mangloor Telangana / Maharashtra border Section.

- Agriculture is the predominant land use along the Project Road.
- This road reduces the travel time for getting access to Hyderabad, Nanded Sahib, Akola, Nagpur and Shegaon which results in better industrial growth and economy.
- The tourism industry gets a great booster as majority of people using this road, for going to places like Nanded Sahib & Shegaon, a group of temples & Gurudwara etc.,

A lot of commercial establishments along the Project Road in the form of hotels and Snack Parlors may be developed in the coming future.

2.6 Right of Way

The width of the existing Right of Way (ROW) for the Project Road varies from 30.0 m to 60 / 180.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW and presently no utility shifting is balance at site. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Mangloor to Telangana / Maharashtra border (km. 86+788 to km. 135+751) has been developed as a four-lane divided carriageway with median width varies from 4.0 m to 12.0 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Operation and maintenance of the Project in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all the obligations of the Concessionaire under this Agreement.

2.9 Bypass and Realignment

There are four Bypass on Project Road. The total length of Bypass is 10.63 kms. Apart from these bypasses, there are four realignments in the Project Road. The bypass constructed along the Project Road as well as realignment is as tabulated below.

Table 2-1 Details of Bypass

Sr. No.	Name of Bypass	Design Chainage (km)		Length (km)
		From	To	
1	Pitlam	89+00	91+300	2.30
2	Pedda Kodapgal	99+350	101+640	2.29
3	Mainur	125+150	126+600	1.45
4	Madnoor	128+710	133+300	4.59
			Total	**10.63**

Table 2-2 Details of Realignment

Sr. No.	Existing Chainage (km)		Design Chainage (km)		Length (km)
	From	To	From	To	
1	108.440	108.900	103.200	103.600	0.400
2	109.750	111.380	104.450	105.700	1.250
3	111.680	112.280	106.000	106.570	0.570
4	122.390	123.390	116.650	117.600	0.950
				Total	**3.170**

Figure 2-4 Photograph of Bypass (LHS)

km. 89+000

km. 91+300

km. 99+350

km. 101+640

km. 125+150

km. 126+600

km. 128+710

km. 133+300

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.5 m with earthen shoulder of 1.75 to 2.00 meter on either side. The Project Road has median width varies from 4.0 m to 12.0 m.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **24th February 2025 to 25th February 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is Good. The summary of pavement condition survey is presented as below.

Rating	Main carriageway	
	LHS	RHS
Good	73.45 %	57.11 %
Fair	6.13%	10.21 %
Good / Fair	20.42 %	32.68 %
Fair / Poor	-	-
Poor	-	-
Total	**100.00 %**	**100.00 %**

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (LHS)

km. 87+600

km. 89+600

km. 90+000

km. 92+200

km. 96+900

km. 97+800

km. 101+800

km. 103+600

km. 104+600

km. 106+400

km. 108+000

km. 109+000

km. 110+400

km. 110+900 (Milling in progress)

km. 112+300

km. 114+300

km. 117+200 (Milling in progress)

km. 120+200 (Road settled)

km. 122+400

km. 122+400 (Milling in progress)

km. 124+200

km. 125+000

km. 127+600

km. 134+450

Road Shoulder (LHS)

km. 87+600

km. 92+200

km. 96+900

km. 97+800

km. 104+600

km. 106+400

km. 108+000

km. 109+000

km. 110+900

km. 117+200

km. 120+200

km. 122+400

Figure 3-2 Photographs of Pavement Condition (RHS)

km. 133+600 (Micro-surfacing in progress)

km. 129+600

km. 127+850 (Milling in progress)

km. 127+850

km. 126+650

km. 123+850 (Milling in progress)

km. 123+200

km. 121+650 (Milling in progress)

km. 121+150

km. 118+200

km. 115+200 (Milling in progress)

km. 112+600

km. 111+000

km. 109+650

km. 109+00 (Micro-surfacing in progress)

km. 106+400 (Milling in progress)

km. 106+400 (Micro-surfacing in progress)

km. 99+300

km. 98+200

km. 93+200

km. 89+400

km. 88+000

km. 87+200

Road Shoulder (RHS)

km. 127+850

km. 123+200

km. 118+200

km. 115+200

km. 112+600

km. 111+000

km. 106+400

km. 105+800

km. 98+200

km. 93+200

km. 88+000

km. 87+200

3.2 Service Road

a) Existing Service Road

The width of service road is found to be 7.0 m and it is constructed in built-up area and adjoining underpasses and flyover locations. The scope of service road as per CA is 9.90 kms as well as slip road is 27.010 kms. However, 1.55 kms of service road has de-scoped by NHAI due to non-availability of ROW. The details of service road are presented as below.

Table 3-1 Details of Service Road

Sr. No.	Design Chainage (km)		Length (km)		Width (m)	Side	Remarks
	From	To	LHS	RHS			
1	89+010	89+450	0.440	0.440	7.0	Both	Bypass
2	100+320	100+720	0.400	0.400	7.0	Both	Bypass
3	125+620	126+600	0.980	0.980	7.0	Both	Bypass
4	129+080	132+000	2.920	2.920	7.0	Both	Bypass
5	133+090	133+300	0.210	0.210	7.0	Both	Bypass
	Sub Total on each side		**4.950**	**4.950**			
	Total		**9.900**				

Table 3-2 Details of Slip Road

Sr. No.	Design Chainage (km)		Length (km)		Width (m)	Side	Remarks
	From	To	LHS	RHS			
1	89+450	91+300	1.850	1.850	7.0	Both	
2	91+300	91+800	0.500	0.500	7.0	Both	
3	94+740	95+250	0.510	0.510	7.0	Both	
4	98+700	99+275	0.575	0.575	7.0	Both	
5	99+275	100+320	1.045	1.045	7.0	Both	
6	100+720	101+880	1.160	1.160	7.0	Both	
7	116+150	117+190	1.040	1.040	7.0	Both	
8	120+460	121+350	0.890	0.890	7.0	Both	
9	124+535	125+150	0.615	0.615	7.0	Both	
10	125+150	125+620	0.470	0.470	7.0	Both	
11	128+160	129+080	0.920	0.920	7.0	Both	
12	132+000	133+090	1.090	1.090	7.0	Both	
13	133+300	134+150	0.850	0.850	7.0	Both	
14	134+150	134+700	0.550	0.550	7.0	Both	
15	134+150	135+250	1.100	1.100	7.0	Both	
16	94+400	94+740	0.340	0.340	7.0	Both	
	Length on each side		13.505	13.505			
	Total Length (km)		**27.010**				

The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Service Road (LHS)

km. 89+400

km. 91+300

km. 94+943

km. 100+600

km. 102+100

km. 114+200

km. 116+609

km. 121+050

km. 125+200

km. 125+850

km. 128+710

km. 129+600

km. 130+500

km. 132+500

Figure 3-4 Photographs of Service Road (RHS)

km. 134+200

km. 133+100

km. 131+800

km. 129+700

km. 126+400

km. 125+500

km. 117+000

km. 114+900

km. 101+600

km. 100+400

km. 95+400

km. 91+400

km. 90+115

3.3 Major / Minor Junction

As per the Concession Agreement there are 4 nos. of existing major junctions although including COS there are 5 nos. of major junctions as well as 20 nos. of minor junctions.

The photographs taken during the site visit are presented below.

Figure 3-5 Photographs of Major Junctions

km. 90+113

km. 114+366

km. 116+609

Figure 3-6 Photographs of Minor Junctions

km. 102+464

km. 106+900

km. 109+380

km. 110+366

km. 112+470

km. 114+056

km. 119+000

km. 121+255

3.4 Condition Survey of Structure

The inventory of structures including Major Bridges, Minor Bridges, ROB's, Underpasses and Culverts is presented in table as below:

Table 3-3 Summary of Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	-
Flyover	-
Major Bridges (MJB)	01
Minor Bridges (MNB)	09 + 01 (COS)
Vehicular Underpass (VUP)	08 + 01 (COS)
Pedestrian Underpass (PUP/LVUP)	04
Culverts:	
Reconstruction of Box / Slab Culverts	11
Reconstruction of Pipe to Box Culvert	32
New Construction of Box Culvert	45 + 6 (COS)

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-4 Condition Survey of Major Structure

Major Bridge

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway Width (m)	Type of Sub-structure	Type of Super-structure	Type of foundation	Remarks
1	108+762	LHS	4 span - 81.88 M length	1 x 16	RCC	RCC Voided Slab	-	Re-Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition.
		RHS	4 span - 81.88 M length	1 x 16	RCC	Solid slab	-	Re-Construction - Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition.

Minor Bridge

Sr. No.	Design Chainage (km)	Structural Configuration	Structure Type	Span Arrangement (No. x Length)	Total Structure Width (m)	Remarks
1	100+034	New 4-Lane bridge on LHS and RHS	Precast PSC Girder	One Span - Length-38.70m	LHS-14.5m RHS-14.5m	New Bridge - RCC Substructure with Precast PSC Girder Super Structure and Structure is in sound condition. In Bridge opening soil needs to be cleared which is under the Bridge.
2	111+104	New 6-Lane bridge	Box type	Two Span -Total Length-14.23m	LHS-16.0m RHS-16.0m	Re-Construction - RCC box type - Structure is in sound condition. As informed, vegetation is being cleaned on regular basis.
3	117+441	New 6-Lane bridge	Box type	Four Span -Total Length-34.04 m	LHS-16.0m RHS-16.0m	Re-Construction - RCC box type - Structure is in sound condition. As informed, vegetation is being cleaned on regular basis.
4	117+664	New 6-Lane bridge	Box type	Four Span -Total Length-47.20 m	LHS-16.0m RHS-16.0m	Re-Construction - RCC box type - Structure is in sound condition. As informed, vegetation is being cleaned on regular basis.
5	119+950	New 6-Lane bridge	Box type	Four Span -Total Length-34.04 m	LHS-16.0m RHS-16.0m	Re-Construction - RCC box type - Structure is in sound condition. Slope protection is in good condition.

Sr. No.	Design Chainage (km)	Structural Configuration	Structure Type	Span Arrangement (No. x Length)	Total Structure Width (m)	Remarks
6	120+191	New 6-Lane bridge	Box type	Two Span -Total Length-18.28 m	LHS-16.0m RHS-16.0m	New Construction - RCC box type - Structure is in sound condition. Slope protection is in good condition.
7	127+030	New 6-Lane bridge	Box type	Two Span -Total Length-14.23 m	LHS-16.0m RHS-16.0m	New Construction - RCC box type - Structure is in sound condition. Slope protection is in good condition.
8	127+256	New 6-Lane bridge	Box type	Five Span -Total Length-20.80 m	LHS-16.0m RHS-16.0m	New Construction - RCC box type - Structure is in sound condition. Slope protection is in good condition.
9	131+926	New 6-Lane bridge	Box type	Four Span -Total Length-37.04 m	LHS-14.5 m RHS-14.5 m LHS Service Road-11 m RHS Service Road-11 m	New Construction - RCC box type - Structure is in sound condition. As informed, vegetation is being cleaned on regular basis.
10	132+935	New 6-Lane bridge	Box type	Single Span - Total Length----- m	LHS-14.5 m RHS-14.5 m LHS Service Road-11 m RHS Service Road-11 m	New Construction - RCC box type - Structure is in sound condition. As informed, vegetation is being cleaned on regular basis.

VUP and PUP

Sr. No.	Chainage (km)	Side	Type	Span Arrangement (m)	Width (m)	Vertical Clearance (m)	Type of structure	Remarks
1	90+117	LHS	VUP	1 x 15.0	1 x 14.5	5.5	Box	Box Type - Structure is in sound condition
		RHS		1 x 15.0	1 x 14.5	5.5	Box	Box Type - Structure is in sound condition
2	91+150	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
3	94+942	LHS	LVUP	1 x 12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition

Sr. No.	Chainage (km)	Side	Type	Span Arrangement (m)	Width (m)	Vertical Clearance (m)	Type of structure	Remarks
		RHS		1 x 12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
4	99+150	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
5	101+320	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
6	114+353	LHS	LVUP	1 x 12	1 x 14.5	4.0	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		1 x 12	1 x 14.5	4.0	RCC Girder	RCC Girder - Structure is in sound condition
7	116+573	LHS	VUP	1 x 15	1 x 14.5	5.5	Box	Box Type - Structure is in sound condition
		RHS		1 x 15	1 x 14.5	5.5	Box	Box Type - Structure is in sound condition
8	121+060	LHS	LVUP	1 x 12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1 x 12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
9	125+310	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
10	128+910	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
11	130+608	LHS	VUP	1 x 14.5	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		1 x 14.5	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
12	132+620	LHS	VUP	2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
		RHS		2 x 30	1 x 14.5	5.5	RCC Girder	RCC Girder - Structure is in sound condition
13	133+896	LHS	LVUP	1 x 12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition
		RHS		1 x 12	1 x 14.5	4.0	Box	Box Type - Structure is in sound condition

Figure 3-7 Photographs of Major Structures

Major Bridge

Top View at km. 108+762 (LHS)

Side View at km. 108+762 (LHS)

Expansion Joint at km. 108+762 (RHS)

Side View at km. 108+762 (RHS)

Minor Bridge

Structure View at km. 100+034 (LHS)

Bottom View at km. 100+034 (BHS)

Structure View at km. 100+034 (RHS)

Top View at km. 111+104 (LHS)

Sub-structure and Super-structure at km. 111+104 (LHS)

Structure View at km.117+441 (LHS

Sub-structure and Super-structure at km. 117+441 (RHS)

Structure View at km. 117+664 (LHS)

Sub-structure and Super-structure at km. 117+664 (RHS

Structure View at km. 119+950 (LHS)

Structure View at km. 119+950 (RHS)

Sub-structure and Super-structure at km. 120+191 (LHS)

Sub-structure and Super-structure at km. 120+191 (RHS)

Structure View at km. 127+030 (LHS)

Structure View at km. 127+030 (RHS)

Sub-structure and Super-structure at km. 127+256 (LHS)

Top View at km. 127+256 (RHS)

Sub-structure and Super-structure at km. 127+256 (RHS)

Top View at km. 131+926 (LHS) (SR+MCW)

Structure View at km. 131+926 (LHS)

Structure View at km. 131+926 (RHS)

Top View at km. 131+926 (RHS) (SR+MCW)

Structure View at km. 132+935 (LHS)

Structure View at km. 132+935 (RHS)

VUP / PUP

VUP at km. 90+117 (LHS)

VUP at km. 90+117 (RHS)

VUP at km. 91+150 (LHS)

VUP at km. 91+150 (RHS)

LVUP at km. 94+942 (LHS)

LVUP at km. 94+942 (BHS)

VUP at km. 99+150 (LHS)

VUP at km. 99+150 (BHS)

VUP at km. 101+320 (LHS)

VUP at km. 101+320 (RHS)

LVUP at km. 114+353 (LHS)

LVUP at km. 114+353 (RHS)

VUP at km. 116+573 (LHS)

VUP at km. 116+573 (RHS)

LVUP at km. 121+060 (LHS)

LVUP at km. 121+060 (RHS)

VUP at km. 125+310 (LHS)

VUP at km. 125+310 (RHS)

VUP at km. 128+910 (LHS)

VUP at km. 128+910 (BHS)

VUP at km. 130+608 (LHS)

VUP at km. 130+608 (RHS)

VUP at km. 132+620 (BHS)

VUP at km. 132+620 (RHS)

LVUP at km. 133+896 (LHS)

LVUP at km. 133+896 (BHS)

LVUP at km. 133+896 (RHS)

LVUP at km. 133+896 (RHS)

3.5 Condition Survey of Culverts

The cross-drainage structures include reconstruction and new construction of box culverts at various locations. There are total 94 Nos. of culverts in which 11 Nos. of reconstruction of box culverts, 32 Nos. of reconstruction of pipe to box culverts, 45 Nos. of new construction of box culverts, and 06 Nos. box culverts (constructed under Change of Scope) along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway with service road on both side and construction of new four lane carriageway at proposed bypass location. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts and slab culverts is found to be satisfactory. The RCC parapet, metal beam crash barrier or RCC railing has been provided at culvert locations which is maintained properly.

Vegetation growth and accumulation of debris at waterway is being removed and cleaned by the Concessionaire on regular basis.

Figure 3-8 Photographs of Box Culvert / Pipe Culvert

Box Culvert at km. 86+812 (LHS)

Box Culvert at km. 86+810 (RHS)

Box Culvert at km. 96+100 (RHS)

Box Culvert at km. 96+100 (LHS)

Box Culvert at km. 106+420 (LHS)

Box Culvert at km. 106+420 (RHS)

Box Culvert at km. 114+960 (RHS)

Box Culvert at km. 114+960 (LHS)

Box Culvert at km. 125+275 (LHS)

Box Culvert at km. 125+275 (RHS)

Box Culvert at km. 135+650 (RHS)

Box Culvert at km. 135+650 (LHS)

3.6 Drainage

a) Existing Drains

There are lined and unlined drains including median drain along the Project Road.

Some photographs taken during the site visit are presented below.

Figure 3-9 Photographs of Existing Drains

km. 91+300 (LHS)

Km. 93+000 (Median)

km. 94+943 (Median)

km. 114+200 (LHS)

Km. 115+000 (Median)

km. 114+900 (RHS)

3.7 Slope Protection

The slope protection and chute drain constructed along Project Road are found to be in satisfactory condition.

Some of the photographs taken during the site visit are presented below.

Figure 3-10 Photographs of Slope Protection

km. 108+850 (RHS)

km. 117+460 (LHS)

km. 117+725 (LHS)

km. 117+725 (RHS)

km. 119+960 (LHS)

km. 120+212 (RHS)

km. 127+100 (LHS)

km. 106+300 (RHS)

3.8 Road Furniture

The Concessionaire shall maintain the road furniture as per Schedule-C.

a) Summary of Quantity for Road Furniture Items

The following details show the summary of quantity for road furniture's items.

Table 3-5 Summary for Road Furniture Items

Sr. No.	Description	Unit	Quantity
1	Traffic Solar Blinkers	No.	96
2	W-beam Crash Barriers in both direction	kms	15.439
3	Delineator	Nos.	675
4	km Stone	Nos.	98
5	Informatory Signs	Nos.	250
6	Mandatory Signs	Nos.	130
7	Cautionary Signs	Nos.	946
8	Pedestrian Guard Rail	m	256
9	Highway Patrol Vehicles	Nos.	1
10	Ambulances	Nos.	1
11	Cranes	Nos.	1
12	Way side Amenities	Nos.	2

3.9 Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in Schedule-D. Pavement marking is maintained by the Concessionaire.

Some of the photographs of road marking are presented below:

Figure 3-11 Photographs of Pavement Marking

LHS

km. 90+000

km. 97+800

km. 101+800

km. 108+300

km. 114+300

km. 117+200

RHS

km. 123+200

km. 112+600

km. 99+300

km. 98+800

km. 93+200

3.10 Road Studs

Road studs / cat's eye for the Project Road is done as per the design standards indicated in Schedule-D. Road studs / cat's eye has been fixed at junction, edge of paved shoulder and zebra crossing. Damaged cat's eye can be replaced wherever required under O&M.

Some of the photographs of road studs are presented below.

Figure 3-12 Photographs of Road Studs

km. 97+800 (LHS)

km. 98+150 (LHS)

km. 108+300 (LHS)

km. 121+150 (RHS)

km. 112+600 (RHS)

km. 101+400 (RHS)

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road & Kilometre stone etc, the design for the traffic signs along the Project Road is done as per the design standards indicated in Schedule-D.

The height, lateral clearance, location, and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards & Median kerb paint are generally in good condition except few locations.

Some of the photographs of sign boards are presented below.

Figure 3-13 Photographs of Road Signages (LHS)

km. 87+000

km. 87+200

km. 87+800

km. 88+250

km. 88+600

km. 90+113

km. 91+300

km. 93+000

km. 93+000

km. 94+200

km. 92+250

km. 94+400

km. 97+800

km. 97+800

km. 98+400

km. 102+100

km. 102+600

km. 107+100

km. 110+000

km. 112+200

km. 112+750

km. 113+800

km. 116+050

km. 116+050

km. 125+300

km. 127+000

km. 135+751

Figure 3-14 Photographs of Road Signages (RHS)

km. 135+751

km. 135+150

km. 135+000

km. 135+000

Km 134+400

km. 131+100

km. 131+800

km. 108+200

km. 128+000

km. 127+100

km. 127+100

km. 126+900

km. 125+500

km. 123+950

km. 121+800

km. 121+800

km. 117+400

km. 116+500

km. 115+200

km. 111+000

km. 110+600

km. 107+350

km. 94+400

km. 91+400

km. 88+600

3.11 Highway Lighting / Solar Blinker

Highway Lighting is provided at underpasses, flyovers, toll plaza, truck lay byes, passenger shelters, major and minor junctions, and built-up locations. High mast lighting is provided at toll plaza.

At underpass and flyover locations, highway lighting is provided at the structure locations and at its approaches.

Solar amber blinker signals are provided at median opening and service road, junctions and bus stop locations. These lights are properly maintained and are in good working condition. Some of the photographs of highway lightings are presented below.

Figure 3-15 Photographs of Street Light / Solar Blinker

km. 88+250

km. 90+113

km. 91+300

km. 93+900

km. 94+400

km. 97+800

km. 102+464

km. 106+900

km. 115+000

km. 116+050

3.12 Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided and maintained by the Concessionaire.

Some of the photographs of metal beam crash barriers are presented below.

Figure 3-16 Photographs of Guard Post / Crash Barrier

LHS

km. 86+900

km. 101+350

km. 108+850

Km. 117+460

km. 127+025

km. 117+650

Km. 120+000

km. 121+050

km. 128+850

RHS

Km. 90+100

km. 116+570

km. 125+300

Km. 128+900

km. 108+800

km. 87+500

Km. 105+800

km. 117+400

km. 120+100

3.13 Delineators

The traffic delineators are provided and maintained by the Concessionaire for road users in abnormal condition of weather in the Project Road. Some of the photographs of delineators are presented below.

Figure 3-17 Photographs of Delineator

LHS

km. 87+200

km. 93+200

km. 102+100

km. 102+250

km. 115+000

RHS

km. 135+000

km. 123+950

km. 118+000

km. 115+040

km. 92+600

3.14 Pedestrian Guard Rail

The pedestrian guard rails are provided in the median between service road and main carriageway, passenger shelters, truck lay bye and underpass locations. It is maintained by the Concessionaire. However, at few locations rectification is needed.

Some of the photographs of pedestrian guard rails are presented below.

Figure 3-18 Photographs of Pedestrian Guard Rail

km. 88+250

km. 91+400

km. 94+943

km. 102+100 (LHS)

km. 110+500

km. 114+366

km. 121+050

km. 129+600 (LHS)

km. 133+100 (RHS)

km. 129+700 (RHS)

3.15 Road Land Boundary / Chain Link Fencing

For the Project Road, the Concessionaire has done the chain link fencing at ROW to avoid any kind of encroachments. The Concessionaire needs to rectify wherever required. The photographs are presented as above.

Figure 3-19 Photographs of Chain Link fencing / Road Land Boundary

LHS

km. 87+200

km. 88+250

km. 89+400

km. 93+100

km. 94+200

km. 106+900

km. 116+050

km. 125+850

km. 130+500

RHS

km. 131+100

km. 131+800

km. 125+500

km. 121+400

km. 118+500

km. 117+000

km. 92+600

3.16 Avenue Plantation

Avenue plantations is done along the project length except at built-up locations as per IRC specification. Avenue plantation work is provided at required locations.

Some of the photographs taken during site visit are presented below.

Figure 3-20 Photographs of Avenue Plantation

LHS

km. 87+000

km. 88+250

km. 93+000

km. 94+200

km. 102+100

km. 109+380

RHS

km. 131+800

km. 128+000

km. 127+550

km. 123+950

km. 101+600

km. 92+600

3.17 Noise Barrier

Noise barriers are provided in built-up sections and are properly maintained by the concessionaire. Some of the photographs of noise barrier are presented below.

Figure 3-21 Photographs of Noise Barrier

LHS

km. 94+430

km. 114+700

km. 116+090

RHS

km. 94+550

km. 114+900

Km. 116+200

3.18 Protection Wall

The protection wall is provided wherever required in the project. It is maintained by the Concessionaire.

3.19 Toll Plaza

There is one toll plaza at km. 96+035 near Dharmaram village. As it is a HAM project, it is being operated by NHAI through their external vendor namely Indrajeet Construction. The toll operation is not in the scope of the Concessionaire.

View of Toll Plaza

Toll Fees Sign Boards

Ariel view of Toll Plaza

Toll Plaza Admin & O&M Building

UPS Room

DG Shed

Tunnel view at Toll Plaza

Electric Pannel Room

Weigh Bridge

High Mast

3.20 Advance Traffic Management System (ATMS)

Advance Traffic Management System (ATMS) installed for the project road is controlled by the ATMS center near the toll plaza location (km. 96+035). As per Concession agreement ATMS shall conform to ATMS Policy Guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Meteorological Data system
- Variable Message Signboards (VMS)

- CCTV system
- Video Incident Detection System (VIDS)

Status of these systems at site are described below:

3.20.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at km. 95+930.

ATCC (LHS)

ATCC (RHS)

3.20.2 Emergency Call Boxes (ECB)

Emergency Call Boxes are installed along the project length, and all are functional. The same are maintained by the Concessionaire.

km. 102+100 (LHS)

km. 120+200 (LHS)

km. 128+000

3.20.3 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at km. 96+035 at Toll Plaza office building in Dharmaram village.

MET

3.20.4 Variable Message Signboards (VMS)

Variable message sign boards are installed in the Project Road. These display specific messages to the users based on the prevailing conditions on the Project Road. The message can be changed at any point of time from the ATMS centre. About 250 customised messages can be stored on the system.

km. 88+250 (LHS)

km. 128+000 (RHS)

3.20.5 CCTV Surveillance Cameras

Surveillance Cameras are installed along the Project Road which are monitored through the ATMS control room.

Control Room for ATMS at TP

km. 86+788

km. 110+366

km. 117+600

3.20.6 Vehicle Actuated Speed Display (VASD)

VASD / speedometers are installed along the Project Road which are monitored through the ATMS control room. The same are in working condition.

km. 93+200 (LHS)

km. 127+550 (RHS)

3.20.7 Adequacy of Toll Collection System and ATMS

The Advance Traffic Management System (ATMS) installed is as per specifications required by the Authority and the same is in working condition.

3.21 Truck Lay bye

The following are the Truck Lay-Bye cum Rest Room locations.

Table 3-6 Details of Truck lay bye

Sr. No.	Chainage as per Site (km)	Side
1	93+900	BHS
2	118+500	BHS
3	135+225	BHS

Figure 3-22 Photograph of Truck Lay-bye

km. 93+900 (LHS)

km. 118+600 (LHS)

km. 135+400 (LHS)

km. 135+500 (RHS)

km. 118+500 (RHS)

km. 93+800 (RHS)

3.22 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are in the scope of Concessionaire.

Figure 3-23 Photograph of Traffic / Medical Aid Post

Traffic and Medical Aid Post

Figure 3-24 Photograph of Incident Management

Patrolling Vehicle

Ambulance

Crane at TP

Patrolling Vehicle

3.23 Toilet Block

Apart from toll plaza, there are 30 nos. of toilet blocks along the Project Road i.e., at Toll Plaza, Truck Lay Bye, Rest Area, Passenger Shelters etc., which is in Concessionaire's scope. The detailed photographs can be seen in the section of passenger shelters.

Table 3-7 Details of Toilet Block

Sr. No.	Chainage (km)	Side		Remarks
		LHS	RHS	
1	96+073	Yes	Yes	

Figure 3-25 Photographs of Toilet Blocks

Toilet Block at TP (LHS)

Toilet Block at TP (RHS)

3.24 Bus Bays and Passenger Shelters

There are 22 nos. bus bays / passenger shelters along the Project Road. All are in operational condition. Some of the photographs are presented below.

Figure 3-26 Photographs of Bus Bay / Passenger Shelter

LHS

Km. 88+250

km. 93+000

km. 106+500

km. 110+500

km. 121+255

RHS

km. 126+400

km.121+400

km. 112+200

km. 107+200

3.25 Wayside Amenities

There are two no. of Wayside Amenities (BHS) along the Project Road. Presently, all the which was in the scope of Concessionaire has been completed. The operation of the same is being done by NHAI through external vendors. Some of the photographs are presented below.

Table 3-8 Details of wayside Amenities

Sr. No.	Description	Quantity (Nos.)	Chainage (km)	Side
1	Wayside Amenities	02	113+207	BHS

Figure 3-27 Photograph of Wayside Amenities

RHS

LHS

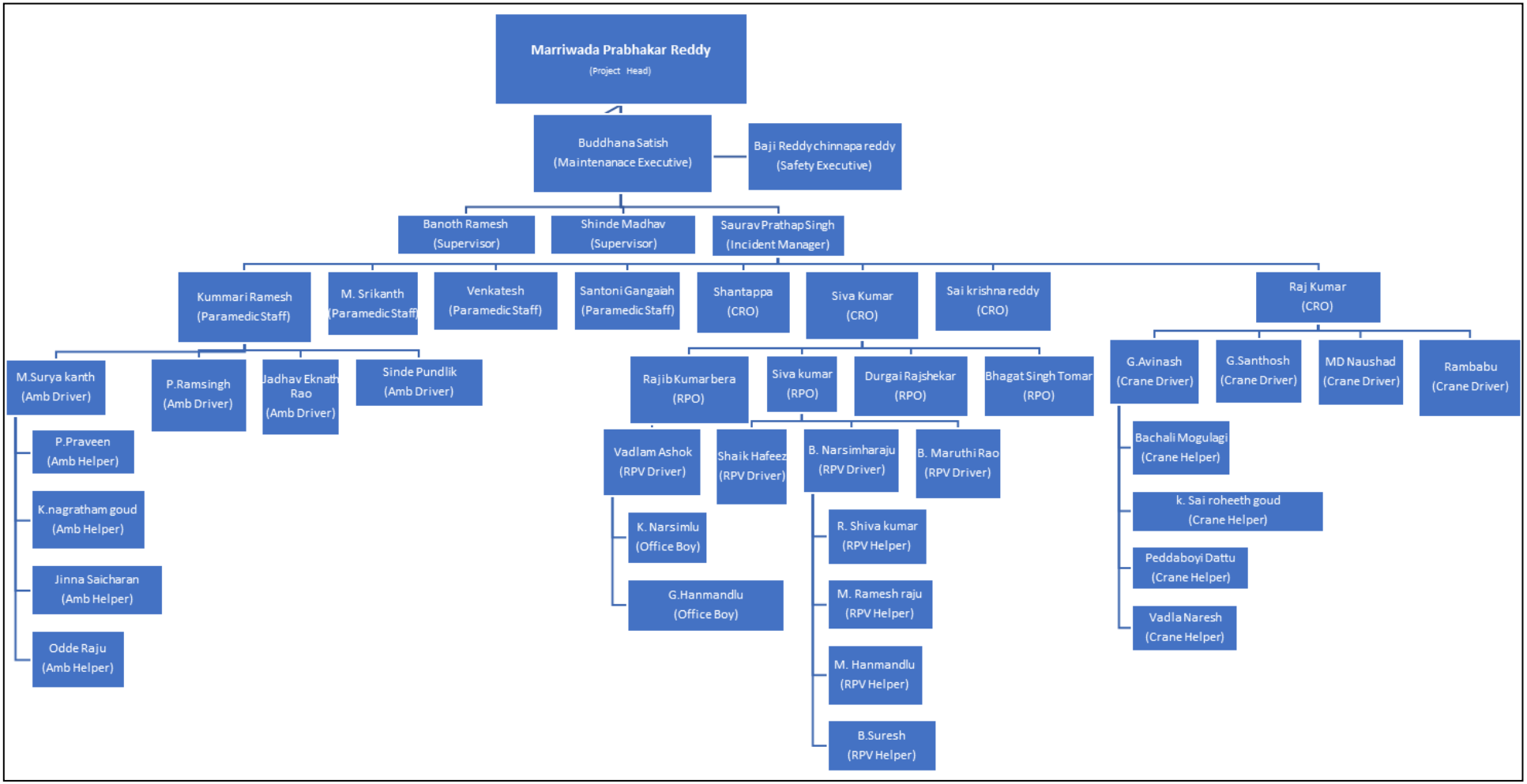
3.26 Balance Work Status

Presently, all work has been completed and there is no balance work at site. Further, IE has communicated the completion of work through letter no. MSV/IE(O&M)/PKG II&III/2025/GJW/PIU/504 Dated 05.02.2025, which is being reviewed by NHAI.

3.27 Organization Chart

The Concessionaire has prepared the Organization Chart to maintain the site during Operation and maintenance. The same is presented below.

Organization Chart



3.28 Operation

Operation cost is comprised of manpower cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. As the Project is in Annuity mode, the Toll Operation is not in the Scope of Concessionaire. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.29 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

The project is currently under the Operation and Maintenance stage. The concession period of the project is 17 years from the Appointed / Commencement Date (i.e., 12th April 2019) including construction period of 2 years (730 days).

The project has received PCOD on 15th December 2021 for the length 47.412 kms out of 48.963 kms.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 96+050 from 21st July 2021 to 22nd July 2021. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Sr. No.	Vehicle Type	Direction	
		LHS (Mangloor - MH border)	RHS (MH border - Mangloor)
1	BUS	0.861	0.951
2	LCV	0.714	0.929
3	2-Axle	3.253	2.968
4	3-Axle	6.127	7.464
5	MAV	9.204	10.958

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculations MHPL Project									
Year	4 Lane				6 Lane				Remarks
	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	
2024-25	-	**-**	-	**-**	-	**-**	-	**-**	
2025-26	1.42	**1.42**	1.67	**1.67**	1.14	**1.14**	1.34	**1.34**	
2026-27	1.49	**2.91**	1.76	**3.43**	1.20	**2.34**	1.41	**2.75**	
2027-28	1.57	**4.48**	1.85	**5.28**	1.25	**3.59**	1.48	**4.23**	
2028-29	1.65	**6.13**	1.94	**7.22**	1.32	**4.91**	1.55	**5.78**	1st MM cycle
2029-30	1.73	**7.86**	2.04	**9.26**	1.38	**6.29**	1.63	**7.41**	

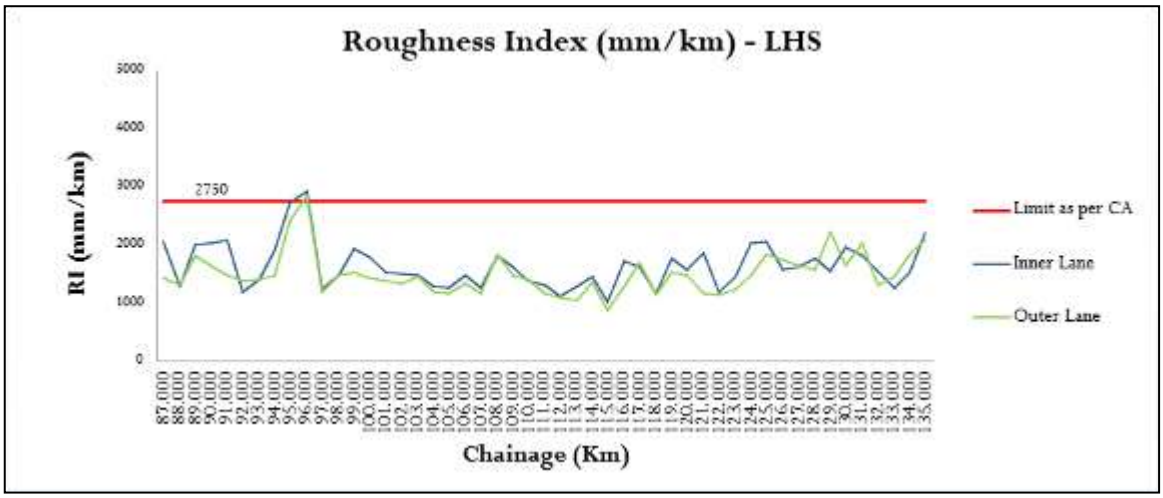
MSA Calculations MHPL Project									
Year	4 Lane				6 Lane				Remarks
	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	
2030-31	1.81	**9.67**	2.14	**11.40**	1.45	**7.74**	1.71	**9.12**	
2031-32	1.91	**11.58**	2.24	**13.64**	1.52	**9.26**	1.80	**10.92**	
2032-33	2.00	**13.58**	2.36	**16.00**	1.60	**10.86**	1.89	**12.81**	
2033-34	2.10	**15.68**	2.47	**18.47**	1.68	**12.54**	1.98	**14.79**	
2034-35	2.21	**17.89**	2.60	**21.07**	1.76	**14.30**	2.08	**16.87**	
2035-36	2.32	**20.21**	2.73	**23.80**	1.85	**16.15**	2.18	**19.05**	2nd MM cycle
2036-37	2.43	**22.64**	2.87	**26.67**	1.95	**18.10**	2.29	**21.34**	

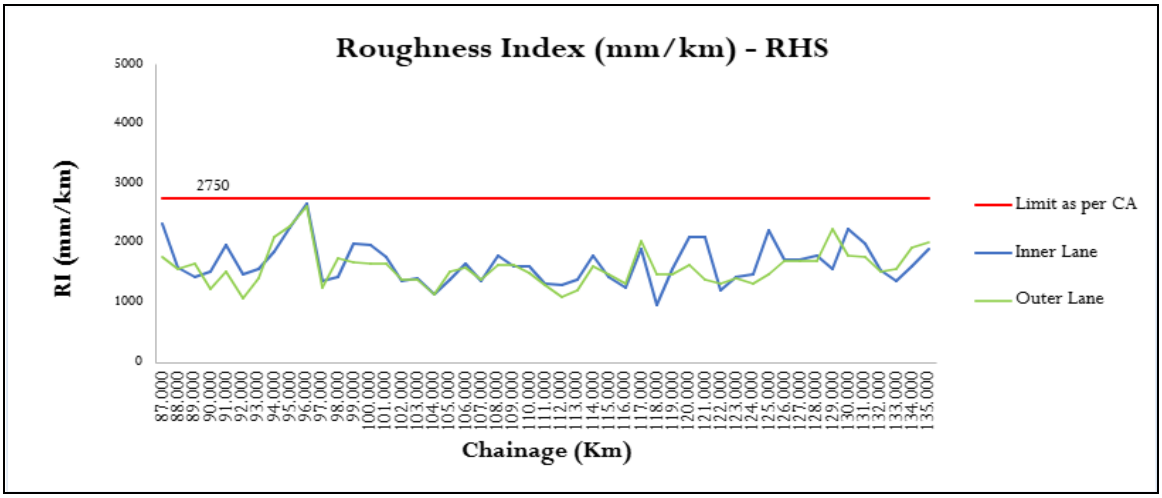
4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has provided NSV survey data conducted in May 2024. The NSV data is used to assess the riding quality and pavement condition of project road. The summary of Roughness Index is given in table below:

Table 4-3 Roughness Index Summary

Sr. No.	Rating	Roughness Value as per CA limit	Length (km)			
			LHS		RHS	
			Inner Lane	Outer Lane	Inner Lane	Outer Lane
1	Good - Fair	<2750	47.70	47.70	48.70	48.70
2	Poor	>2750	1.00	1.00	-	-





The summary of Rutting of the Project is given in the table below:

Rut Depth (mm)	Length of the Road Effected with Rutting (km)			
	LHS		RHS	
	Inner Lane	Outer Lane	Inner Lane	Outer Lane
<5	25.75	12.75	43.21	32.21
5-10	22.97	33.99	5.75	16.75
>10	0.00	1.00	0.00	0.00
Total Length	48.72	47.74	48.96	48.96

4.5 Structural Investigation

Falling Weight Deflectometer survey was conducted for flexible pavement by the Concessionaire in November 2022. The summary of the FWD survey report is presented in the table below.

Table 4-4 FWD Summary

Remaining life (MSA)	Length (km)				Remark
	LHS		RHS		
	Inner Edge	Outer Edge	Inner Edge	Outer Edge	
<20	-	-	-	-	
20-30	-	-	-	-	
>30	38.526	38.730	38.663	38.532	
Total Length	**38.526**	**38.730**	**38.663**	**38.532**	

From the above table, it is observed that residual life of the pavement is more than the cumulative design MSA up to FY 2037 i.e., up to end of concession period except 6 kms on BHS. The periodic maintenance of the Project Road is proposed considering the above results.

4.6 Test pit and Subgrade Investigation

The required data / details are yet to be received from the Concessionaire / Client. The same will be updated after receiving the data from Concessionaire / Client.

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-k of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. Only improvement in Riding Quality is expected if the roughness value exceeds 2750 mm / km.

The project has received PCOD on 15th December 2021 for the length 47.412 kms out of 48.963 kms. Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-5 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 to FY 2028	-	-
2	FY 2029	Major maintenance with 35 mm BC (VG-40) (60%) + Micro-surfacing (40%) + Milling & 50 mm DBM (2.5%)	Major Maintenance with Micro-surfacing (100%)
3	FY 2030 to FY 2035	-	-
4	FY 2036	Major maintenance with 35 mm BC (VG-40) (40%) + Micro-surfacing (60%) + Milling & 50 mm DBM (2.5%)	Major Maintenance with Micro-surfacing (100%)

**End of concession period as per Concession Agreement is FY 2037.*

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATE

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost (CAPEX)
II. Balance Repair / Rectification Works
III. Routine O&M Cost
IV. Major Maintenance Cost
V. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per Government of Telangana Common SoR (Road & Bridge Works) 2024-25. The input rates for SoR were adopted as below:

    a. **Manpower and labour:** As per applicable minimum wages published by Sschedule of Rates, Government of Telangana.

    b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

    Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST.

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from Market rate.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book / rate as per work order adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	8,354
2	Bituminous Concrete (VG-40)	Cum	9,549
3	Bituminous Concrete (VG-30)	Cum	9,048
4	Milling	Sqm	88
5	Micro-surfacing	Sqm	149
6	Kerb Re-laying	Rmt	303
7	Road Marking	Sqm	501
8	Road Studs	Nos.	179

5.3 Balance Works Cost (CAPEX)

As discussed in the previous chapter, the cost of balance works as per CA is found to be **NIL**.

5.4 Balance Repair / Rectification Works

As discussed in the previous chapter, the cost of balance work related to repair / rectification at site is presented below.

Table 5-3 Total cost of Repairs and Rectification Works

Sr. No.	Item Description	Amount (Cr.)
1	Stone Pitching / Slope Protection Works-Box Culverts	0.30
2	Flexible Apron, repairs of MBCB, CC M20, Filter Media, Excavation, PCC, Replacement of Bearings, additional reinforcement, drain spouts, crack sealing, Micro concrete, cleaning, shoulder repairs, survey, Curtain wall, Rigid and flexible apron - Major Bridges, Minor Bridges, VUP, LVUPs etc.	2.22
3	Bituminous concrete works (includes junction improvement, rest area works, connecting road and rutting rectification works)	14.07
4	Balance Works at Rest Area for COD includes: Earth-filling, PCC Laying, Construction of Separator, Kerb, Boundary wall, Earthen Drain.	0.28
5	Soil Filling	0.07
6	Building Painting	0.14
7	Construction of Drain	0.24
8	Rest Area - Truck Parking area paver blocks	0.78
9	Plantation	0.08
10	Electrical Issues and Pole Foundation for Rest Area	0.20
11	Balance Highway Lighting Works	0.70
12	HTMS / ATMS Works	3.05
13	Balance Paved Shoulder	0.91
14	Median Pipe at Junction	0.45
15	Shoulder at all Crossroads	0.27
16	Construction of Wall at VUP Median Opening Locations	0.15
17	**Total Cost of Repairs and Rectification work**	**23.92**

The Total cost of repairs and rectification is worked out to be **Rs. 23.92 Cr.**

5.5 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services (Not in Scope)
3. Incident Management Services
4. Electricity and Diesel Charges
5. HTMS Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-4 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-37)	Remarks
1	Salary and Welfare Expenses	4,290,000	
2	Tolling Operations Services	-	
3	Toll Security Services	1,190,460	
4	Incident Management & Emergency Services	31,244,454	
5	Electricity and Diesel Charges	9,152,273	
6	HTMS Expenses	8,400,421	
7	Office Operating Expenses	2,262,091	
8	Vehicle Running Expenses	4,680,000	
9	Professional Fees Expense	9,156,081	
10	Community Development	1,508,060	
11	Communication Expenses	134,648	
12	Conveyance Expenses	269,297	
13	Insurance Expense	10,780,000	
14	IE Fees	2,235,161	
15	Routine Maintenance Cost (Project Road)	16,133,589	
16	Horticulture & ROW Maintenance	16,778,249	
17	Miscellaneous including Contingency	3,412,118	
	Total Cost (Rs.)	**121,626,900**	
	Total Cost (Cr.)	**12.16**	
	Per km Cost (Lakhs)	24.84	

5.6 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Table 5-5 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr)	Remarks
1	FY 2026 - FY 2028	-	
2	FY 2029	49.54	
3	FY 2030 -FY 2035	-	
4	FY 2036	43.31	
5	FY 2037	-	
Total Cost (Cr.)		**92.85**	

5.7 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr)	Remarks
1	FY 2026 - FY 2028	-	
2	FY 2029	3.94	
3	FY 2030 -FY 2035	-	
4	FY 2036	3.94	
5	FY 2037		
Total Cost (Cr.)		**7.88**	

5.8 Escalation Assumption

The following escalation is considered basis discussions with Client and our internal estimates.

Table 5-6 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%	**2057**	3.99%

5.9 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in above clause.

Escalated O&M Cost (in INR Cr.)

Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37
Routine O&M Cost												
Salary and Welfare Expense	0.43	0.45	0.47	0.50	0.52	0.55	0.57	0.59	0.62	0.64	0.67	0.69
Tolling Operations Services	-	-	-	-	-	-	-	-	-	-	-	-
Toll Security Services	0.12	0.13	0.13	0.14	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.19
Incident Management Services	3.12	3.28	3.44	3.62	3.80	3.98	4.15	4.32	4.50	4.68	4.86	5.06
Electricity and Diesel Charges	0.92	0.96	1.01	1.06	1.11	1.16	1.22	1.27	1.32	1.37	1.43	1.48
TMS/HTMS/System Expenses	0.17	0.30	0.50	-	0.07	0.14	0.22	0.23	0.41	0.67	-	0.09
Office Operating Expenses	0.23	0.24	0.25	0.26	0.28	0.29	0.30	0.31	0.33	0.34	0.35	0.37
Vehicle Running Expenses	0.47	0.49	0.52	0.54	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.76
Professional Fees Expense	0.92	0.96	1.01	1.06	1.11	1.17	1.22	1.27	1.32	1.37	1.43	1.48
Community Development	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.23	0.24
Communication Expenses	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Conveyance Expenses	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
Insurance Expense	1.08	1.13	1.19	1.25	1.31	1.37	1.43	1.49	1.55	1.61	1.68	1.75
IE Fees	0.22	0.23	0.25	0.26	0.27	0.28	0.30	0.31	0.32	0.33	0.35	0.36
Routine Maintenance Cost	1.61	1.69	1.78	1.87	1.96	2.05	2.14	2.23	2.32	2.42	2.51	2.61
Horticulture & ROW Maintenance	1.68	1.76	1.85	1.94	2.04	2.14	2.23	2.32	2.41	2.51	2.61	2.72
Miscellaneous and Contingency	0.34	0.36	0.38	0.40	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.55
Subtotal of O&M Cost	11.49	12.19	12.97	13.12	13.84	14.55	15.26	15.89	16.69	17.63	17.63	18.43
Major Maintenance Cost	-	-	-	55.33	-	-	-	-	-	-	61.84	-
Periodic Cost of TMS/HTMS Replacement	-	-	-	4.57	-	-	-	-	-	-	6.14	-
Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-
Total Cost	**11.49**	**12.19**	**12.97**	**73.02**	**13.84**	**14.55**	**15.26**	**15.89**	**16.69**	**17.63**	**85.61**	**18.43**

ANNEXURE

ANNEXURE-I ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**16,133,589**
(Inclusive of GST)	**= 3.3 lakhs per km**

National Highways / State Highways (Flexible Pavement)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	More than 4500 CVD				
				1,62,176	**1,93,834**	**Normal**	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	248129	296566	-	-	-	-
		Paved shoulder	1.70	275699	329518	31.07	0.35	8,567,071	115,331
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	324351	387668	-	-	-	-
		Paved shoulder	2.20	356786	426435	4.91	-	1,752,533	-
1	Six lane with divided carriageway	without Paved shoulder	2.09	338947	405113	-	-	-	-
		with Paved shoulder	2.26	366517	438065	0.89	-	325,834	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	415170	496216	-	-	-	-
		with Paved shoulder	2.76	447605	534982	10.38	1.36	4,645,245	727,576
					TOTAL		**48.963**		**16,133,589**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.25%
	Volume (cum)			1.25
	Rs/m^3			10296
	Cost in Rupees			12,869
	ii) Patch repair	100 % Patch less	As & when required	0.25%
	Area (sqm)			25
	Rs/m^2			412
	Cost in Rupees			10,296
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			75
	Cost in Rupees			18,694
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			50
	Cost in Rupees			7,446
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			412
	Cost in Rupees			30,887
	v) Road marking	10%	Once in 10th year & @ Repaired location	19113
	SUB TOTAL			**99,305**
2	**Maintenance of earthen Shoulders:**			

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	GRAND TOTAL (Normal)			**162,176**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	2306
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**31,659**
	GRAND TOTAL (Urban)			**193,834**

ANNEXURE-II MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						659,821	17	11,447,894
	4 lane section									
	For BC	Sqm	2	21,428	9.17		392,894	392,894		
	For DBM	Sqm	2	893	7.00		12,500	12,500		
	For Misc. Location	Sqm	2	2,143	9.17		39,289	39,289		
	6 lane section									
	For BC	Sqm	2	7,043	13.50		190,156	190,156		
	For DBM	Sqm	2	271	11.00		5,967	5,967		
	For Misc. Location	Sqm	2	704	13.50		19,016	19,016		
2	BC with 35 mm						22,447	22,447	9,549	214,339,403
	4 lane section	Cum	2	23,571	9.17	0.04	15,126			
	6 lane section	Cum	2	7,747	13.50	0.04	7,321			
3	DBM with 50 mm						923	923	8,354	7,713,816
	4 lane section	Cum	2	893	7.00	0.05	625			
	6 lane section	Cum	2	271	11.00	0.05	298			
4	Milling for DBM						18,467	18,467	88	1,625,083
	4 lane section	Sqm	2	893	7.00		12,500			
	6 lane section	Sqm	2	271	11.00		5,967			
5	Micro surfacing									
	4 lane section	Sqm	2	14,286	9.17		261,929	261,929	149	38,896,469
	6 lane section	Sqm	2	4,695	13.50		126,770	126,770	149	18,825,404
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	3,648	3.50	4.50	2,919	2,919	57	166,367
7	Dismantling of CC Panels @ 5% area	Cum	5%		57,462	0.30	862	862	990	853,661
8	Replacement of Panels - PQC @ 5% area	Cum	5%		57,462	0.30	862	862	7,208	6,212,757
	Service Road									
9	Tack coat	Sqm	1	-	7.5		-	-	17	-
10	BC with 30 mm	Cum	1	-	7.5	0.03	-	-	9,048	-

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
11	Micro Surfacing	Sqm	1	40,601	7.5		304,508	304,508	149	45,219,364
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
12	Tack coat	Sqm	1	445	27.1		12,058	12,058	17	209,198
13	Wearing Coat BC with 35 mm	Cum	1	445	27.1	0.04	422	422	9,549	4,029,595
14	Milling of Ex. Wearing Coat	Sqm	1	445	27.1		12,058	12,058	88	1,061,060
15	Micro surfacing	Sqm	1	445	27.1		12,058	12,058	149	1,790,539
16	Painting of Crash Barrier	Sqm	1	29,223		1.12	32,584	32,584	114	3,714,536
	Other Works									
17	Raising of Road Kerb	Rmt	1	39,677			39,677	39,677	303	12,002,232
18	Replacement of Road Stud									
	Normal Road Stud	Nos	2	5,985			11,970	11,970	179	2,142,630
	Solar Road Stud	Nos	1	-			-	-	1,839	-
19	Painting of Kerb	Sqm	1	66,128		0.315	20,830	20,830	132	2,749,602
20	Road Marking	Sqm					46,448	46,448	501	23,270,390
	4 Lane MCW Section									
	a) Median & Edge line	Sqm	4	37,500	0.15		22,500			
	b) Lane line	Sqm	2	12,375	0.10		2,475			
	6 Lane MCW Section									
	a) Median & Edge line	Sqm	4	14,565	0.15		8,739			
	b) Lane line	Sqm	4	4,806	0.10		1,923			
	Service Road									
	a) Edge line	Sqm	2	36,910	0.10		7,382			
	b) Lane line	Sqm	1	12,180	0.10		1,218			
	Junction crossing	Sqm					2,212			
21	Filling of Earthen shoulder	Cum					6,804	6,804	526	3,577,746
	MCW		2		97,206	0.04	6,804			
22	Miscellaneous	5%								19,992,387
Total Major Maintenance Cost (Rs)										**419,840,134**
Total Major Maintenance Cost with GST (Rs)										**495,411,358**
Total Major Maintenance Cost with GST (Cr)										**49.54**

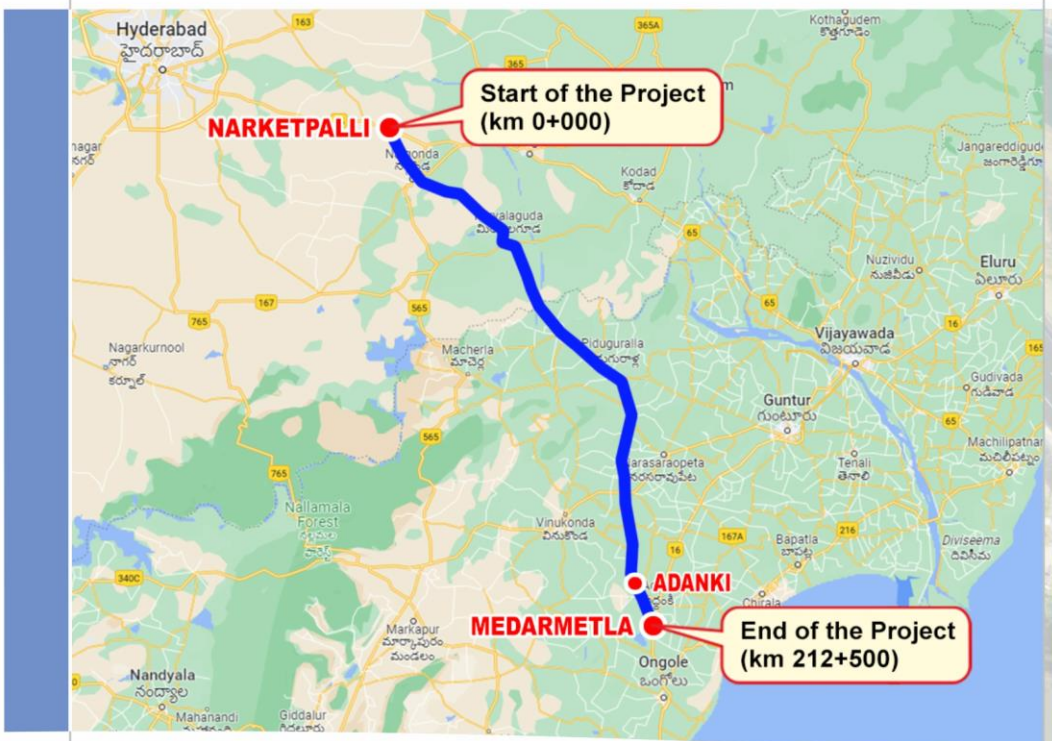
Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
								Per km Cost (lakh)		**101.18**
								Escalation Factor (FY 2029)		**1.15**
								Total Escalated Cost (FY 2029) (Cr)		**55.33**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						446,036	17	7,738,730
	4 lane section									
	For BC	Sqm	2	14,286	9.17		261,929	261,929		
	For DBM	Sqm	2	893	7.00		12,500	12,500		
	For Misc. Location	Sqm	2	1,429	9.17		26,193	26,193		
	6 lane section									
	For BC	Sqm	2	4,695	13.50		126,770	126,770		
	For DBM	Sqm	2	271	11.00		5,967	5,967		
	For Misc. Location	Sqm	2	470	13.50		12,677	12,677		
2	BC with 35 mm						14,965	14,965	9,549	142,892,936
	4 lane section	Cum	2	15,714	9.17	0.04	10,084			
	6 lane section	Cum	2	5,165	13.50	0.04	4,881			
3	DBM with 50 mm						923	923	8,354	7,713,816
	4 lane section	Cum	2	893	7.00	0.05	625			
	6 lane section	Cum	2	271	11.00	0.05	298			
4	Milling for DBM						18,467	18,467	88	1,625,083
	4 lane section	Sqm	2	893	7.00		12,500			
	6 lane section	Sqm	2	271	11.00		5,967			
5	Micro surfacing									
	4 lane section	Sqm	2	21,428	9.17		392,894	392,894	149	58,344,704
	6 lane section	Sqm	2	7,043	13.50		190,156	190,156	149	28,238,107
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	3,648	3.50	4.50	2,919	2,919	57	166,367

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
7	Dismantling of CC Panels @ 5% area	Cum	5%		57,462	0.30	862	862	990	853,661
8	Replacement of Panels - PQC @ 5% area	Cum	5%		57,462	0.30	862	862	7,208	6,212,757
	Service Road									
9	Tack coat	Sqm	1	-	7.5		-	-	17	-
10	BC with 30 mm	Cum	1	-	7.5	0.03	-	-	9,048	-
11	Micro Surfacing	Sqm	1	40,601	7.5		304,508	304,508	149	45,219,364
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
12	Tack coat	Sqm	1	445	27.1		12,058	12,058	17	209,198
13	Wearing Coat BC with 35 mm	Cum	1	445	27.1	0.04	422	422	9,549	4,029,595
14	Milling of Ex. Wearing Coat	Sqm	1	445	27.1		12,058	12,058	88	1,061,060
15	Micro surfacing	Sqm	1	445	27.1		12,058	12,058	149	1,790,539
16	Painting of Crash Barrier	Sqm	1	29,223		1.12	32,584	32,584	114	3,714,536
	Other Works									
17	Raising of Road Kerb	Rmt	1	26,451			26,451	26,451	303	8,001,488
18	Replacement of Road Stud									
	Normal Road Stud	Nos	2	5,985			11,970	11,970	179	2,142,630
	Solar Road Stud	Nos	1	-			-	-	1,839	-
19	Painting of Kerb	Sqm	1	66,128		0.315	20,830	20,830	132	2,749,602
20	Road Marking	Sqm					46,448	46,448	501	23,270,390
	4 Lane MCW Section									
	a) Median & Edge line	Sqm	4	37,500	0.15		22,500			
	b) Lane line	Sqm	2	12,375	0.10		2,475			
	6 Lane MCW Section									
	a) Median & Edge line	Sqm	4	14,565	0.15		8,739			
	b) Lane line	Sqm	4	4,806	0.10		1,923			
	Service Road									
	a) Edge line	Sqm	2	36,910	0.10		7,382			
	b) Lane line	Sqm	1	12,180	0.10		1,218			
	Junction crossing	Sqm					2,212			
21	Filling of Earthen shoulder	Cum					6,804	6,804	526	3,577,746

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW		2		97,206	0.04	6,804			
22	Miscellaneous	5%								17,477,615
									Total Major Maintenance Cost (Rs)	**367,029,922**
									Total Major Maintenance Cost with GST (Rs)	**433,095,308**
									Total Major Maintenance Cost with GST (Cr)	**43.31**
									Per km Cost (lakh)	**88.45**
									Escalation Factor (FY 2036)	**1.52**
									Total Escalated Cost (FY 2036) (Cr)	**61.84**

FP Project Management



Technical Due Diligence of Narketpally - Addanki - Medarametla (NAMEL) Section (from km. 0+000 to km. 212+500) of SH-2 in the State of Andhra Pradesh and Telangana on DFBOT mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	VMK / VKD	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location of the Project Road 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.2 Pavement Condition Survey 7
3.3 Service Road / Slip Road 8
3.4 Major / Minor Intersection 9
3.5 Condition Survey of Bridge 11
3.5.1 Major Bridge (length > 60 m) 14
3.5.2 Underpasses 16
3.5.3 ROB 17
3.6 Condition Survey of Culvert 18
3.7 Drainage 20
3.8 Slope Protection 20
3.9 Road Furniture 21
3.10 Avenue Plantation and Median Plantation 27
3.11 Toll Plaza 28
3.12 Lane Equipment 30
3.12.1 RFID ETC Transceiver 31
3.12.2 Lane Controller with Industrial PC 31

3.12.3 Automatic Vehicle Classification (AVC) Sensors 32
3.12.4 Automatic Lane Barrier 32
3.12.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 32
3.12.6 Incident Capture Camera (AVC Camera) 32
3.12.7 License Plate Image Capture Camera (LPIC) 33
3.12.8 Over Head Lane Signal (OHLS) 33
3.12.9 Toll Booth Equipment 33
3.12.10 Weigh in Motion (MSWIM) 34
3.13 Plaza Equipment 34
3.13.1 TMS Server 34
3.13.2 55" LED screen for CCTV monitoring 35
3.13.3 Workstations in Control Room, POS room 35
3.14 Advanced Traffic Management System (ATMS) 36
3.14.1 Automatic Traffic Counter cum classifier (ATCC) 36
3.14.2 Mobile Radio communication System (MRCS) 36
3.14.3 Emergency Call Boxes (ECB) 36
3.14.4 MET System 37
3.14.5 Variable Message Signboards (VMS) 37
3.14.6 CCTV Surveillance Cameras 37
3.14.7 Video Incident Detection System 38
3.14.8 Adequacy of Toll Collection System and ATMS 38
3.15 Truck Lay-bye 38
3.16 Bus Bays and Passenger Shelters 39
3.17 Balance Work Status 40
3.18 Operation and Maintenance 40
4 Pavement Investigation and Assessment 44
4.1 General 44
4.2 Surveys and Investigation 44
4.3 Axle Load and VDF 44
4.4 Design Traffic 45
4.5 Network Survey Vehicles (NSV) Survey 46
4.6 FWD Survey 47
4.7 Periodic Maintenance Strategy 48
5 Cost Estimates 50
5.1 General 50
5.2 Rate Assumption 50
5.3 Balance Work Cost (CAPEX) 51

5.4 Routine O&M Cost....51
5.5 Major Maintenance Cost....53
5.6 Periodic Replacement of TMS /System....53
5.7 Escalation Assumption....53
5.8 Summary of Cost....54
Annexure....56
Annexure-I Routine Maintenance Cost....57
Annexure-II Major Maintenance Cost....61

List of Tables

Table 3-1 Details of Summary for Structures 11
Table 3-2 Details of New Minor Bridges 12
Table 3-3 Details of Major Bridges 14
Table 3-4 Details of Public Underpasses 16
Table 3-5 Details of ROB 17
Table 3-6 Details of Summary for Toll Plaza Items 28
Table 4-1 Vehicle Damage Factor 44
Table 4-2 MSA Calculation 45
Table 4-3 Result of Roughness Survey 46
Table 4-4 Major Maintenance Cycle 49
Table 4-5 Major Maintenance Strategy 49
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 50
Table 5-2 Summary of Unit Rates 51
Table 5-3 Summary of Operation Cost 52
Table 5-4 Escalation 53

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of the Project Road 5
Figure 2-3 End of the Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 7
Figure 3-2 Photographs of Service Road / Slip Road 9
Figure 3-3 Photographs of Major Junctions 10
Figure 3-4 Photographs of Minor Junctions 10
Figure 3-5 Photographs of Minor Bridges 13
Figure 3-6 Photographs of Major Bridges 14
Figure 3-7 Photographs of Public Underpass 16
Figure 3-8 Photographs of ROB 17
Figure 3-9 Photographs of Box Culverts / Hume Pipe Culverts 19
Figure 3-10 Photographs of Drainage 20
Figure 3-11 Photographs of Slope Protection 21

Figure 3-12 Photographs of Pavement Marking 21
Figure 3-13 Photographs of Road Studs 22
Figure 3-14 Photographs of Traffic Signages 23
Figure 3-15 Photographs of Highway Lighting 25
Figure 3-16 Photographs of Crash Barrier 26
Figure 3-17 Photographs of Delineator 27
Figure 3-18 Photographs of Pedestrian Guard Rail 27
Figure 3-19 Photographs of Avenue Plantation and Median Plantation 28
Figure 3-20 Photographs of Toll Plaza 29
Figure 3-21 Photographs of ECB 37
Figure 3-22 Photographs of CCTV Surveillance Camera 37
Figure 3-23 Photographs of CCTV Surveillance Camera 38
Figure 3-24 Photographs of Truck Lay-bye 39
Figure 3-25 Photograph of Bus Bay / Passenger Shelter 39

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed M/s. **FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Narketpally - Addanki - Medarametla (NAMEL) section of SH-2 from km. 0+000 to km. 212+500 in the State of Andhra Pradesh and Telangana under Public Private Partnership on DBFOT (Toll) basis (hereinafter referred as "Project Road").

N.A.M. Expressway Limited Hyderabad, (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Narketpally - Addanki - Medarametla (NAMEL) section of SH-2 from km. 0.000 to km. 212.500 or Project Road under DBFOT mode. The project was awarded to Concessionaire on 23rd July 2010 with a concession period of 24 years (from Appointed Date including 30 months construction period) by National Highway Authority of India (NHAI). The length of Project Road is 212.860 kms with three Nos. of toll plaza at km. 41+200, km. 110+000 and km. 168+000.

Accordingly, the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting technical due diligence of Project Road is presented below.

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, Punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle Load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Annual Routine Maintenance and Major Maintenance forecast for all projects till the end of concession period (considering the traffic projections presented in the traffic study reports).
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period.
- Review of balance work cost for Project Road including estimation of quantities and item rates.

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our proposed team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client Technical Study.

The technical study shall include review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement survey conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project as per the contract and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams are expected to carry out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection.
- The information like material sources and the probable cost is collected for the purpose of cost estimates.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity are gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the Consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

The site visit and inspection for the reconnaissance, road inventory and condition survey were carried from **03rd March 2025** to **06th March 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**

Chapter 2 **Project Description:** The chapter describes existing project features, and overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**

Chapter 4 **Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance

Chapter 5 **Cost Estimates**: This chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India had signed the Concession Agreement with **N.A.M. Expressway Limited**, is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this Project on 23rd July 2010. The Appointed Date for the Project Road is 18th January 2011. The Supplementary Agreement was also executed on 27th January 2016.

The Project Road is being developed through PPP mode on DBFOT (Design, Built, Finance, Operate and Transfer) with concession period of 24 years from the Appointed Date.

2.2 Location of the Project Road

The Project Road is a State Highway No. 2 of Narketpally - Addanki - Medarametla section in the state of Andhra Pradesh and Telangana. The total length of Project Road is 212.860 kms.

The Location Map of the Project Road is presented below:

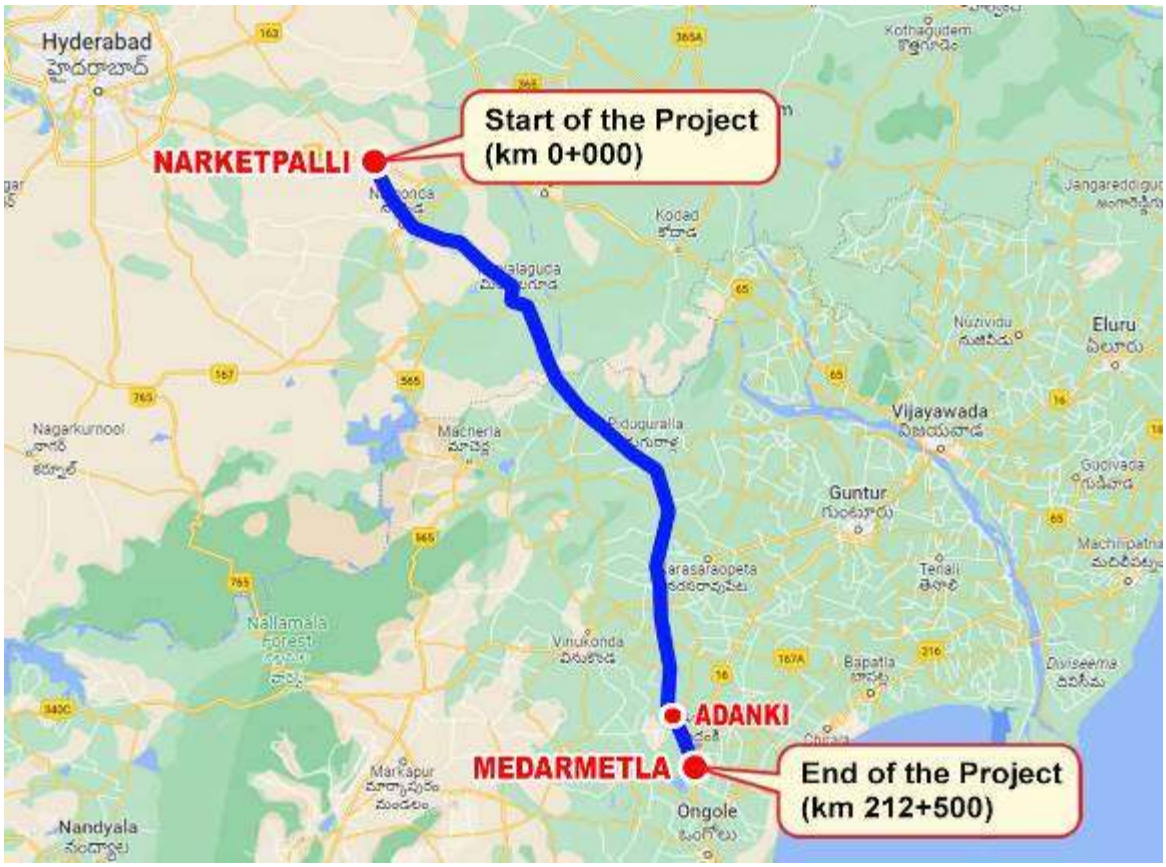


Figure 2-1 Location Map

The Photographs taken during the site visit are presented as below.

Figure 2-2 Start of the Project Road

Figure 2-3 End of the Project Road

2.3 Climate

Summer temperature of project area reaches as high as 44 °C (111 °F) (March - May) has the highest temperatures but these are usually followed by monsoon rains and the annual average rainfall 794.5 mm receiving both northeast and southwest monsoons. The winter season (from November / to February) is the most enjoyable with a pleasant climate. Winter months are usually dry, with little to no rainfall. The average annual temperature is 24.5 °C. Cyclones may occur at any time of the year, but occur more commonly in the period from October to December.

2.4 Terrain

This section of State Highway traverses through plain / rolling terrain.

2.5 Abutting Land Use

The land used along Project Road is predominantly agriculture with intermittent built-up settlements.

2.6 Right of Way

The width of the existing Right of Way (Row) for the Project Road varies from 30.0 m to 35.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services located along the Project Road were shifted to the PROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Narketpally (km. 0+000) to Medarametla (km. 212+500) has been developed as a four-lane divided carriageway with other facilities such as service road, toll plaza, truck lay-bye, bus bays and other arrangements. The Project Road passes through rural as well as built up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement; and

b) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule B of the Concession Agreement.

Sr. No.	Description	Unit	Scope	Remarks
1	Construction of Main Carriageway	km	212.860	
2	Construction of Service Road	km	25.5	
3	Construction of Major Bridges	Nos.	7	
4	Construction of ROB	Nos.	2	
5	Construction of Minor Bridges	Nos.	46	
6	Improvement of Major Junction	Nos.	5	
7	Improvement of Minor Junction	Nos.	34	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.75 m with an earthen shoulder of 1.0 m to 1.5 m on either side. The Project Road has a median width of 1.5 m to 4.5 m throughout its length. The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the toll plaza including taper is of rigid pavement.

3.2 Pavement Condition Survey

The pavement condition survey was carried out from **03rd March 2025 to 06th March 2025** through visual inspection for the entire project length. From the visual inspection, the pavement condition of the entire project road is found to be Good to fair. During the site visit, some cracks and rutting were observed at few locations. The Concessionaire is carrying out major maintenance and routine maintenance for Project Road which is witnessed during the site visit.

The photographs taken during the site visit are presented below.

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

Pavement Condition at km. 168+690 (LHS)

Pavement Condition at km. 163+150 (LHS)

Pavement Condition at km. 30+850 (RHS)

Pavement Condition at km. 67+350 (RHS)

Pavement Condition at km. 110+185 (LHS)

Pavement Condition at km. 199+550 (RHS)

Pavement Condition at km. 212+000 (RHS)

Pavement Condition at km. 212+700 (LHS)

3.3 Service Road / Slip Road

The service road / slip road of width 3.75 / 5.50 m is constructed at built-up locations and at adjoining underpass locations. The service road / slip road is provided for total length of 25.50 kms as per Concession Agreement.

The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road / Slip Road

Pavement Condition at km. 25+800 (RHS)

Pavement Condition at km. 61+000 (RHS)

Pavement Condition at km. 12+700 (RHS)

Pavement Condition at km. 73+600 (RHS)

Pavement Condition at km. 206+100 (LHS)

Pavement Condition at km. 205+400 km (RHS)

3.4 Major / Minor Intersection

There are 05 nos. of major junctions and 35 nos. of minor junctions along Project Road. The photographs taken during the site visit are presented below.

Figure 3-3 Photographs of Major Junctions

Major Junction at km. 61+000

Major Junction at km. 0+900

Major Junction at km. 140+000

Major Junction at km. 25+580

Figure 3-4 Photographs of Minor Junctions

Minor Junction at km. 120+950

Minor Junction at km. 113+650

Minor Junction at km. 141+800

Minor Junction at km. 58+800

3.5 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, underpass and culverts is presented in table below:

Table 3-1 Details of Summary for Structures

Sr. No.	Particulars	Unit	Total Number of Structures as per site
1	Road Over Bridge (ROB)	Nos.	02
2	Road Under Bridge (RUB)	Nos.	02 (Not in the scope of Concessionaire)
3	Flyover	Nos.	02 (Not in the scope of Concessionaire)
4	Major Bridge	Nos.	05
5	Minor Bridge	Nos.	53
6	Vehicular Underpass (PUP)	Nos.	10
7	Light Vehicular Underpass	Nos.	-
8	Slab Culverts	Nos.	58
9	Box Culverts	Nos.	49
10	Hume Pipe Culverts	Nos.	323

All major structures and CD works were visually inspected. The structures are generally sufficient for storm water drainage. The waterway needs regular cleaning. All the old bridges are 2-lane and widened to 2 additional lanes. Generally, the structures have open foundation. At few bridges, approach settlement and pavement cracks were observed. New bridges are constructed with 2-lane with footpath keeping a provision of converting into 3-lane configuration in future. The wearing course and expansion joints are found satisfactory. The crash barriers are of RCC type and are in sound condition. The return walls are of RCC type and pitching has been provided in all bridges.

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Details of New Minor Bridges

Sr. No.	Type of Structure	Chainage (km)	Size	Length of structure (m)	Type of Construction	FPPM Comments
1	Minor Bridge	05+955	6 x 2.10	12.60	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
2	Minor Bridge	06+029	12 x 2.12	25.44	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
3	Minor Bridge	09+275	2 x 6.40	12.80	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
4	Minor Bridge	11+592	2 x 7.40	14.80	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
5	Minor Bridge	16+721	3 x 7.85	23.55	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
6	Minor Bridge	16+978	3 x 3.50	10.50	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
7	Minor Bridge	17+372	2 x 7.85	15.70	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
8	Minor Bridge	30+844	2 x 4.40	8.80	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
9	Minor Bridge	34+345	3 x 6.35	19.05	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
10	Minor Bridge	35+210	3 x 7.00	21.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
11	Minor Bridge	41+710		13.50	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
12	Minor Bridge	48+231	3 x 4.40	13.20	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
13	Minor Bridge	50+919	5 x 8.75 + 2 x 9.70	63.15	Concentric widening	Overall structure, pavement, railing is in good condition on LHS new structure & RHS is Old Structure.
14	Minor Bridge	56+325	2 x 5.40	10.80	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
15	Minor Bridge	58+774	4 x 3.50	14.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
16	Minor Bridge	67+331	5 x 7.75	38.75	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
17	Minor Bridge	68+206	3 x 9.40	28.20	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
18	Minor Bridge	70+290	3 x 7.30	21.90	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
19	Minor Bridge	73+474	10 x 3.50	35.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
20	Minor Bridge	77+924	3 x 3.80	11.40	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
21	Minor Bridge	82+752	3 x 7.35	22.05	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
22	Minor Bridge	89+524	3 x 3.00	9.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
23	Minor Bridge	93+359	8 x 3.00	24.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
24	Minor Bridge	96+370	4 x 3.80	15.20	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
25	Minor Bridge	97+047	3 x 3.00	9.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
26	Minor Bridge	98+164	4 x 3.80	15.20	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
27	Minor Bridge	99+610	7 x 5.30	37.10	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
28	Minor Bridge	106+290	3 x 4.20	12.60	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
29	Minor Bridge	108+517	5 x 8.76	43.80	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
30	Minor Bridge	111+815	3 x 4.00	12.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
31	Minor Bridge	114+370	1 x 10.00	10.00	New Construction	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
32	Minor Bridge	117+800	1 x 7.90	7.90	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
33	Minor Bridge	121+950	ACOD (Bypass)	7.00	New Construction	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
34	Minor Bridge	123+245	ACOD (Bypass)	40.00	New Construction	Overall structure, pavement, railing is in good condition on both sides.
35	Minor Bridge	123+630	ACOD (Bypass)	40.00	New Construction	Overall structure, pavement, railing is in good condition on both sides.
36	Minor Bridge	124+284	ACOD (Bypass)	40.00	New Construction	Overall structure, pavement, railing is in good condition on both sides.
37	Minor Bridge	124+760	ACOD (Bypass)	40.00	New Construction	Overall structure, pavement, railing is in good condition on both sides.
38	Minor Bridge	129+345	2 x 6.70	13.40	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
39	Minor Bridge	129+418	4 x 6.70	26.80	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
40	Minor Bridge	135+156	2 x 8.00	16.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
41	Minor Bridge	141+745	6 x 8.85	53.10	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
42	Minor Bridge	141+805	5 x 6.50	32.50	Concentric widening	Overall structure, pavement, railing is in good condition on RHS. Old structure on LHS needs to be maintained
43	Minor Bridge	146+672	7 x 5.00	35.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
44	Minor Bridge	146+834	3 x 3.80	11.40	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
45	Minor Bridge	152+004	3 x 7.35	22.05	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
46	Minor Bridge	154+490	5 x 9.758	48.79	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
47	Minor Bridge	156+844	4 x 8.80	35.20	New Construction	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.
48	Minor Bridge	163+200	5 x 8.75	43.75	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
49	Minor Bridge	166+666	13 x 3.00	39.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.

Sr. No.	Type of Structure	Chainage (km)	Size	Length of structure (m)	Type of Construction	FPPM Comments
50	Minor Bridge	172+390	8 x 3.80	30.40	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
51	Minor Bridge	178+460	2 x 4.50	9.00	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
52	Minor Bridge	185+295	3 x 4.40	13.20	Concentric widening	Overall structure, pavement, railing is in good condition on both sides.
53	Minor Bridge	210+440	1 x 7.50	7.50	Concentric widening	Overall structure, pavement, railing is in good condition on both sides. Waterway cleaning is required.

The photographs taken during the site visit are presented below.

Figure 3-5 Photographs of Minor Bridges

MNB at km. 5+955

MNB at km. 6+029

MNB at km. 16+271

MNB at km. 16+978

MNB at km. 48+230

MNB at km. 73+474

MNB at km. 93+359

MNB at km. 166+666

3.5.1 Major Bridge (length > 60 m)

There are 06 Nos. of major bridges on Project Road. All major bridges are visually inspected. The structures are generally sufficient for the crossing of river water. The waterway needs regular cleaning. Old structures are present on the right side of Project Road. The old bridges have 2-lane configurations and have RCC railing. The sub-structures are constructed with RCC piers. The expansion joints of the bridges need to be cleaned. New bridges are constructed with 2-lane + footpath. Old bridges on RHS have RCC pier and T-beam girders. The wearing course and expansion joints were found to be in good condition. W-beam and RCC type crash barriers are in sound condition. Drainage spouts need to be cleaned on a regular basis. Further, vegetation and silt need to be removed from the waterway for smooth flow of water.

Table 3-3 Details of Major Bridges

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Type of Bridge	Existing Structure Span Details (m)	Type of Widening	Length of the Bridge (m)	FPPM Comments
1	29+989	29+972	RCC Slab	12x9.75	Eccentric	120.00	The structure is in good condition. Old structure is present on LHS and New structure is on RHS. Expansion joints condition is good. Railing is in good condition. Waterway needs to be cleaned.
2	53+497	52+435	RCC Solid Slab	6x10.90	Eccentric	66.00	New Structure is on LHS side, while old structure is in RHS side. Overall structure is in good condition on both sides. Vegetation is seen in the waterway, which needs to be cleaned for proper water flow. Pavement, expansion joint, railing is in good condition.
3	87+400	87+290	RCC Deck with Girders	13x35.40	Eccentric	500.00	New Structure is present on LHS and old structure is on RHS. Both the structures are in sound condition. Footpath with railing is provided on LHS. Expansion joint condition is good. Pavement condition is good on LHS and needs to be repaired on RHS.
4	101+000	100+895	RCC Solid Slab	16x12.50	Eccentric	200.00	Overall structural condition is found good. Pavement, Expansion Joints, footpath and railing is in good condition. Cleaning is necessary for the flow of water.
5	196+600	197+560	RCC Solid Slab	22x8.90	Eccentric	200.00	New Structure is on RHS and Old structure is on LHS. Overall structural condition is good. Expansion joints, Pavement, railing and footpath on RHS is in good condition.
6	206+400	207+260	RCC Deck with Girders	4x18.30	Eccentric	74.00	New structure on LHS is in good condition. Footpath, railing, expansion joint and pavement is in very good condition. Old structure on RHS is in good condition. Repairing of expansion joint is required at some places on RHS & LHS. Waterway cleaning is required for the smooth flow of water.

The photographs taken during the site visit are presented below.

Figure 3-6 Photographs of Major Bridges

MJB at km. 29+989 (LHS) - Old Structure

MJB at km. 29+989 (LHS) - Old Structure

MJB at km. 29+989 (RHS) - New Structure

MJB at km. 29+989 (BHS)

MJB at km. 53+497 (RHS) - Old structure

MJB at km. 53+497 (LHS) - New structure

MJB at km. 53+497 (LHS) - New structure

MJB at km. 53+497 (BHS)

Major Bridge at km. 87+400 (LHS) - New Structure

Major Bridge at km. 87+400 (BHS)

Major Bridge at km. 100+906 (LHS)

Major Bridge at km. 100+906 (LHS)

Major Bridge at km. 197+560 (LHS)

Major Bridge at km. 197+560 (RHS)

Major Bridge at km. 207+260 (LHS)

Major Bridge at km. 207+260 (RHS)

3.5.2 Underpasses

Table 3-4 Details of Public Underpasses

Sr. No.	Type of Structure	Chainage (km)	Size	Type of structure	No. of Lane	Construction Scheme	Remarks
1	Underpass	04+800	1 x 4.00 x 2.50	PUP	4	New construction	The overall structure condition of all PUP is found to be good. RCC Retaining Wall, RCC crash barriers, W-beam crash barriers, wearing coat, lighting arrangement is found to be good.
2	Underpass	12+700	1 x 4.00 x 2.50	PUP	4	New construction	
3	Underpass	25+850	1 x 4.00 x 2.50	PUP	4	New construction	
4	Underpass	74+100	1 x 4.00 x 2.50	PUP	4	New construction	
5	Underpass	77+700	1 x 4.00 x 2.50	PUP	4	New construction	
6	Underpass	97+700	1 x 4.00 x 2.50	PUP	4	New construction	
7	Underpass	100+120	1 x 4.00 x 2.50	PUP	4	New construction	
8	Underpass	101+630	1 x 4.00 x 2.50	PUP	4	New construction	
9	PUP (COS)	113+954	-	PUP	4	New construction	
10	Underpass	137+830	1 x 4.00 x 2.50	PUP	4	New construction	

The photographs taken during the site visit are presented below.

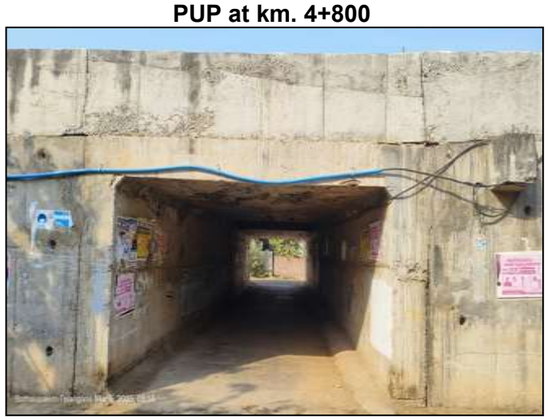
Figure 3-7 Photographs of Public Underpass

PUP at km. 4+800

PUP at km. 11+592

PUP at km. 25+850

PUP at km. 74+100



PUP at km. 77+700

PUP at km. 97+700

PUP at km. 101+630

PUP at km. 113+954

3.5.3 ROB

There are 02 Nos. of ROBs on Project Road. Details of ROBs are as presented below.

Table 3-5 Details of ROB

Sr. No.	Type of Structure	Chainage (km)	Size (m)	Length of structure (m)	Width of structure (m)	Remarks
1	ROB	125+262	1 x 16.62 1 x 28.78	51.00	27.50	Overall structure, pavement, railing is in good condition on both sides.
2	ROB	163+830	1 x 30.00	30.00	11.50	The structure condition of old structure on LHS is sound. ROB Work on RHS is incomplete. Approach work on RHS is completed. Traffic is moving on LHS side for both the directions.

The photographs taken during the site visit are presented below.

Figure 3-8 Photographs of ROB

ROB at km. 125+262

Side View of ROB at km. 125+262

Bottom View of ROB at km. 125+262

ROB at km. 125+262 - RCC Retaining Wall

ROB at km. 163+830 - Work is incomplete on RHS

ROB at km. 163+830 (LHS) - Existing ROB (old)

ROB at km. 163+830 (LHS) - Pavement Condition

Bottom View of ROB at km. 163+830 LHS

3.6 Condition Survey of Culvert

The cross-drainage structure includes hume pipe culverts, box culverts and slab culverts at various locations. There are 323 Nos. of pipe culverts, 58 Nos. of slab culverts and 49 Nos. of box culverts along the Project Road. The height of the culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on a sample basis.

The Project Road involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath the existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts and slab culverts is found satisfactory. The RCC railing has been provided at culvert locations which is maintained properly.

At some culverts, the waterway needs to be cleaned. It is observed that waterways are blocked due to debris near urban areas. It is also found that bushes and tree growth are observed which must be removed and cleaned before monsoon. The wing wall has been provided for slope protection.

The culverts are maintained by the Concessionaire during the O&M period. However, damaged wing walls were observed at few culverts, which need to be addressed under routine repair work.

The photographs taken during the site visit are presented below.

Figure 3-9 Photographs of Box Culverts / Hume Pipe Culverts

HPC at km. 19+100

HPC at km. 20+200

Box Culvert at km. 44+250

HPC at km. 54+200

Box Culvert & HPC at km. 57+273 & km. 57+280

Box Culvert at km. 78+200

Box Culvert at km. 86+489

HPC at km. 145+080

Box Culvert at km. 152+600

HPC at km. 152+660

HPC & Box Culvert at km. 179+800

HPC at km. 209+600

3.7 Drainage

The drains are to be constructed on the Project Road to have good drainage for surface water. Covered lined drains are provided along the service / slip roads. Median cut drains are provided at superelevation locations. Chute drains are also constructed at high embankment portion of the Project Road. The drainage condition of Project Road is found to be satisfactory. Silt deposits need to be removed during routine maintenance. Earther drains are also provided in rural areas. The condition of the same is good to fair.

The photographs taken during site visit is presented as below:

Figure 3-10 Photographs of Drainage

RCC Drain at km. 87+100 (RHS)

RCC Covered Drain at km. 12+650

RCC Covered Drain at km. 25+800

RCC Drain at km. 73+600 (LHS)

3.8 Slope Protection

Slope protection for high embankment areas has been done by providing revetment, chute drain and pitching at some locations. The same has been found as per the standards of O&M contracts.

The photographs taken during the site visit are presented below.

Figure 3-11 Photographs of Slope Protection

Slope Protection at km. 121+960

Slope Protection at km. 125+262

3.9 Road Furniture

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which needs rectification.

The photographs taken during the site visit are presented below.

Figure 3-12 Photographs of Pavement Marking

km. 134+990

km. 125+260

km. 35+210

km. 199+500 (LHS)

Road Studs

The Concessionaire has provided road studs on the curves, road junctions, pedestrian crossings, municipal area, village settlements and ramps to provide the proper visibility to the road users. These are provided as per standards. The Concessionaire has replaced all the road studs on the Project Road.

The photographs taken during the site visit are presented below.

Figure 3-13 Photographs of Road Studs

km. 120+950

km. 126+600.

Traffic signage / Median kerb painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Painting at median kerb is found faded at few locations which needs to be rectified by the Concessionaire.

The photographs taken during the site visit are presented below.

Figure 3-14 Photographs of Traffic Signages

Hectometre stone at km.212+800

Cantilever sign Board at km. 41+700

Kilometre stone at km. 20+000

Pedestrian crossing Signage at km. 16+660

Gantry Board at km. 9+900

Junction Ahead Sign Board at km. 9+700

Hazard marker Sign Board at km.73+400

Speed limit Sign Board at km. 96+990

Informatory Sign Board at km. 120+950

Name board with direction at km. 141+800

Highway Lighting

Highway Lighting is provided at urban and semi-urban areas of the Project Road. Lighting is provided at the locations of truck lay-bye, bus bay, toll plazas, underpasses, service road and at intersections. IS:1944 (Part-I and Part-II) is followed for installation of lighting. High mast lighting systems are provided at toll plaza locations.

The photographs taken during the site visit are presented below.

Figure 3-15 Photographs of Highway Lighting

Highway Lighting at km. 50+800

Highway Lighting at km. 25+580

Highway Lighting at km. 167+450

Highway Lighting at km. 41+700

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are properly maintained at site.

The photographs taken during the site visit are presented below.

Figure 3-16 Photographs of Crash Barrier

Crash Barrier at km. 58+770

Crash Barrier at km. 53+497

Crash Barrier at km. 30+010

Crash Barrier at km. 121+960

Delineators

The traffic delineators are provided by Concessionaire for road users on the Project Road. The same are maintained by the Concessionaire.

The photographs taken during the site visit are presented below.

Figure 3-17 Photographs of Delineator

Delineator at km. 113+650

Delineator at km. 35+210

Pedestrian Guard Rail

The pedestrian guard rails are provided in the median between service road and main carriageway at built-up locations.

The photographs taken during the site visit are presented below.

Figure 3-18 Photographs of Pedestrian Guard Rail

Pedestrian Guard Rail at km. 205+400 (RHS)

Pedestrian Guard Rail at km. 70+150 (RHS)

3.10 Avenue Plantation and Median Plantation

Avenue plantations and median plantations are done along the project length as per IRC specification except at built-up locations. Median plantation needs regular maintenance. Avenue plantation work is in progress at required location as per CA.

The photographs taken during the site visit are presented below.

Figure 3-19 Photographs of Avenue Plantation and Median Plantation

Avenue Plantation at km. 44+540

Median Plantation at km. 56+120

Median Plantation at km. 53+497

Median Plantation at km. 58+770

3.11 Toll Plaza

The Concessionaire has constructed 03 nos. of Toll Plaza at km. 41+200, km. 110+000 and km. 168+000. The details of the Toll Plaza are tabulated below.

Table 3-6 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details		Remarks
		LHS	RHS	
1	Number of Tolling Lanes	4	4	
2	Weigh-in-Motion Facility (Number of Lanes)	4	4	
3	No. of ETC lanes	4	4	
4	No of Toll booths	8		
5	Canopy	Present		
6	Administrative building	Temporary arrangement is made		
7	Parking cum toilet box	Present		
8	Availability of tunnel or elevated walkaway for	Tunnel / Yes		

Sr. No.	Particulars	Details		Remarks
		LHS	RHS	
	movement between toll lanes and administrative building			
9	Availability of static weigh bridge	No		Installation is pending
10	Availability of loading / unloading facility for overloading vehicles	No		
11	Storage facility for overloaded material	No		
12	High mast light	Yes		
13	Street light	Yes		
14	Low mast light	No		
15	User fee boards	Yes		
16	Cantilever / gantry boards	Yes		
17	Automatic boom barrier	Yes		

The photographs taken during the site visit are presented below.

Figure 3-20 Photographs of Toll Plaza

Toll Plaza at km. 41+200

New Admin Building at Toll Plaza at km. 41+200

Toll Plaza-2 at km. 110+000

Ambulance at km. 110+000 Toll Plaza

Inside view of Control Room at Toll Plaza-2

Patrolling Vehicle at Toll Plaza-2

Fare board at Toll Plaza-3

Toll Plaza-3 at km. 168+000

Server at Toll Plaza-3 at km. 168+000

Ambulance at Toll Plaza-3 at km. 168+000

3.12 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC

3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.12.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID at Toll Plaza

3.12.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which is connected to the common server and are capable of independent storage of data.

Inside View of Toll Booth

3.12.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

3.12.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

Automatic Lane Barrier at Toll Plaza

3.12.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

3.12.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

3.12.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3m pole facing incoming vehicle to capture the image of the vehicle number plate.

3.12.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

Over Head Lane Signal at Toll Plaza

3.12.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.
Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.12.10 Weigh in Motion (MSWIM)

Weigh in Motion (WIM) is installed on entry lanes of Toll Plaza.

MSWIM at Toll Plaza

3.13 Plaza Equipment

3.13.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

TMS server at Toll Plaza

3.13.2 55” LED screen for CCTV monitoring

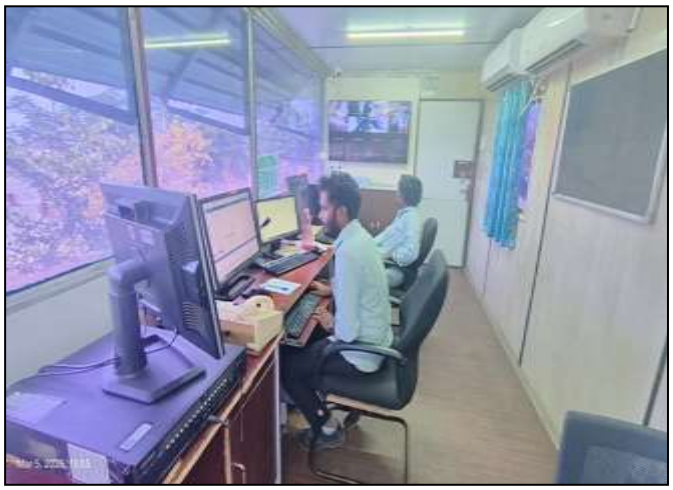
55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

LED screen at Toll Plaza

The toll plaza manager can observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager can comprehend the situation at the lane by a zoomed view of the particular lane.

3.13.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.



Control room at Toll Plaza

POS room at Toll Plaza

3.14 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the project road is controlled by the ATMS center at the toll plaza location (km 467.700). As per Concession agreement ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio Communication System (MRCS)
- Emergency Call Box (ECB)
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.14.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is not installed at Toll Plazas.

3.14.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed.

3.14.3 Emergency Call Boxes (ECB)

Emergency Call Box (ECB) are missing at many locations on the Project Road. The Concessionaire has already purchased the required material for installation. It is informed that the work of installation will commence soon.

The photographs taken during the site visit are presented below.

Figure 3-21 Photographs of ECB

ECB is not working on the project site

3.14.4 MET System

MET system is not yet installed.

3.14.5 Variable Message Signboards (VMS)

VMS is not installed on the Project Road due to land issues. It is informed that the installation work of VMS will start soon.

3.14.6 CCTV Surveillance Cameras

Surveillance cameras are installed as per CA requirement along the Project Road. The HTMS control room has video wall to monitor these locations through the cameras installed.

The photographs taken during the site visit are presented below.

Figure 3-22 Photographs of CCTV Surveillance Camera

CCTV at Toll Plaza-2

CCTV at Toll Plaza-3

3.14.7 Video Incident Detection System

CCTV cameras are installed as part of Video incident detection system.

Figure 3-23 Photographs of CCTV Surveillance Camera

Surveillance Camera at km. 156+600

Surveillance Camera at km. 110+185

3.14.8 Adequacy of Toll Collection System and ATMS

- Adequacy - All lanes are hybrid ETC system as stipulated by NHAI in technical specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.
- Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition. Some components such as ATCC, ECB, MET system and MRCS have not been installed.

3.15 Truck Lay-bye

There are 05 Nos. of truck lay-bye without facilities such as Toilet Blocks on Project Road.

The photographs taken during the site visit are presented below.

Figure 3-24 Photographs of Truck Lay-bye

Truck lay bye at km. 84+400 (LHS)

Truck lay bye at km. 127+650 (RHS)

3.16 Bus Bays and Passenger Shelters

The Concessionaire has constructed 23 Nos. of bus bays and passenger shelters along Project Road.

The photographs taken during the site visit are presented below.

Figure 3-25 Photograph of Bus Bay / Passenger Shelter

Bus Bay and Shelter at km. 4+390

Bus Bay and Shelter at km. 145+800

Bus Bay and Shelter at km. 107+500

Bus Bay and Shelter at km. 101+950

3.17 Balance Work Status

For the execution of balance works as per Concession Agreement, the Concessionaire has executed an 'AMENDMENT AGREEMENT' with M/s Ramky Infrastructure Limited on 11th August 2020. This agreement is an amendment to the Engineering Procurement & Construction Agreement dated 30-Nov-2008.

M/s Ramky Infrastructure Limited, being the earlier promoter for this Project, the scope of the work is defined through a fixed Bill of Quantities and Rates. The Agreement value was fixed on a lump sum basis. The details of the Contract value are as follows.

1. Part-A - Rs. 74.12 Crores (work to be executed by M/s Ramky)
2. Part-B - Rs. 24.13 Crores (work to be de-scoped at own cost of M/s Ramky)
3. **Total - Rs. 98.25 Crores**

As per the details provided by the Concessionaire, the work executed as per the Amendment Agreement till end of 28th February 2025 is Rs. 46.07 Crores.

Thus, the balance work as on 28th February 2025 is worked out be 52.18 Crores.

3.18 Operation and Maintenance

a) O&M Contract

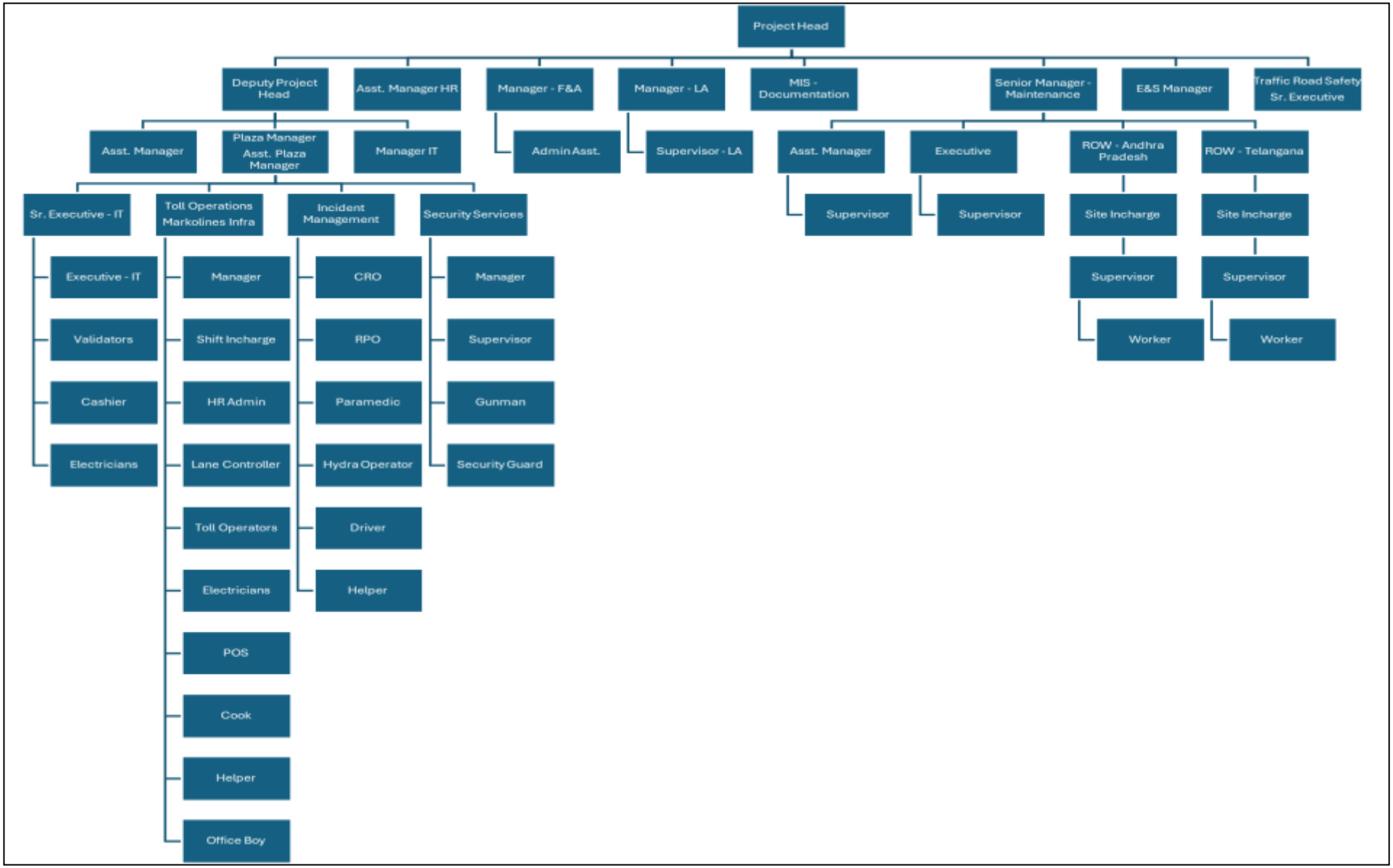
As per Article 17 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall meet all the requirements laid down in the Concession Agreement.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, Incident management service.

b) Organization Chart

The Concessionaire has provided the Organization Chart for Operation and maintenance. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

Organization Chart



c) Operation

The Operation Cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expense of similar types of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

d) Routine Maintenance

The Routine Maintenance Cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire has received a Provisional Completion Certificate on 06th March 2014 for the length of 190.38 kms out of 212.860 kms.

The Project Road is currently in the Operation and Maintenance stage. The concession period of the project is 24 years from the Appointed Date (18th January 2011) including construction period of 2.5 years. The end of scheduled concession period is 17th October 2035. As informed by the Concessionaire, the concession period of the Project Road is likely to extend up to March 2040 on the basis of the traffic data.

4.2 Surveys and Investigation

Pavement Condition Survey

The pavement condition survey was carried out by the Technical Consultant during the period from **04th March 2025 to 06th March 2025** through visual inspection of the total Project Road.

From the visual inspection, the pavement condition of the entire project road is found to be Good to Fair. During the site visit, some rutting and cracks were observed at few of the locations. The Concessionaire is carrying out routine maintenance for Project Road which is witnessed during the site visit.

4.3 Axle Load and VDF

In order to estimate vehicle-loading pattern in the project area, and to determine vehicle damage factor for the commercial vehicles, axle load survey of the vehicles plying on the project road stretch was carried out at three different locations of project stretch.

The Axle load survey was conducted by the Concessionaire at three toll plaza locations. i.e., at km. 41+200, at km. 110+000 and at km. 168+000 in the month of August 2021. The survey was carried out for both directions (LHS and RHS) simultaneously and for 24 hours using standard weigh pads. The survey was carried out using random sample method for goods vehicles i.e., for LCV, bus, trucks and multi-axle vehicles with special axle configuration count. The vehicle damage factors for various categories of vehicles were provided.

The Summary of VDF is presented as below.

Table 4-1 Vehicle Damage Factor

Sr. No.	Vehicle Type	TP at km. 41+200		TP at km. 110+000		TP at km. 168+000	
		Direction		Direction		Direction	
		Narketpalli-Addanki	Addanki-Narketpalli	Narketpalli-Addanki	Addanki-Narketpalli	Narketpalli-Addanki	Addanki-Narketpalli
1	BUS	0.984	1.006	0.787	1.004	0.805	0.751
2	LCV	0.972	0.753	1.739	1.109	1.050	1.303
3	2-Axle	2.611	3.271	3.610	3.465	3.136	3.775
4	3-Axle	4.618	6.126	5.861	5.611	5.769	5.781
5	MAV	6.131	12.495	11.338	11.447	10.64	11.837

4.4 Design Traffic

The Traffic in Million Standard Axles (MSA) for the homogeneous section based on the traffic data as provided by the Concessionaire has been used for future projections. The estimated design MSA is computed and presented in the subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculations - Madgullapally					
Year	**MSA (LHS)**	**Cumulative MSA (LHS)**	**MSA (RHS)**	**Cumulative MSA (RHS)**	**Remarks**
2025-26	2.65	**2.65**	4.53	**4.53**	
2026-27	2.79	**5.44**	4.78	**9.31**	
2027-28	2.92	**8.36**	5.03	**14.34**	
2028-29	3.06	**11.42**	5.27	**19.61**	
2029-30	3.19	**14.61**	5.52	**25.13**	
2030-31	3.34	**17.95**	5.78	**30.91**	
2031-32	3.48	**21.43**	6.05	**36.96**	
2032-33	3.65	**25.08**	6.35	**43.31**	
2033-34	3.81	**28.89**	6.66	**49.97**	
2034-35	3.99	**32.88**	6.98	**56.95**	End of concession period as per CA
2035-36	4.17	**37.05**	7.32	**64.27**	
2036-37	4.36	**41.41**	7.67	**71.94**	
2037-38	4.56	**45.97**	8.03	**79.97**	
2038-39	4.76	**50.73**	8.41	**88.38**	
2039-40	4.98	**55.71**	8.80	**97.18**	Extended End of concession period

MSA Calculations - Tummalacheruvu					
Year	**MSA (LHS)**	**Cumulative MSA (LHS)**	**MSA (RHS)**	**Cumulative MSA (RHS)**	**Remarks**
2025-26	5.65	**5.65**	5.61	**5.61**	
2026-27	5.96	**11.61**	5.93	**11.54**	
2027-28	6.16	**17.77**	6.12	**17.66**	
2028-29	6.34	**24.11**	6.31	**23.97**	
2029-30	6.33	**30.44**	6.30	**30.27**	
2030-31	6.70	**37.14**	6.67	**36.94**	
2031-32	7.09	**44.23**	7.06	**44.00**	
2032-33	7.23	**51.46**	7.20	**51.20**	
2033-34	7.59	**59.05**	7.56	**58.76**	
2034-35	7.96	**67.01**	7.94	**66.70**	End of concession period as per CA
2035-36	8.35	**75.36**	8.33	**75.03**	
2036-37	8.76	**84.12**	8.74	**83.77**	
2037-38	9.18	**93.30**	9.16	**92.93**	
2038-39	9.62	**102.92**	9.60	**102.53**	
2039-40	10.08	**113.00**	10.06	**112.59**	Extended end of concession period

MSA Calculations - Elchuru					
Year	**MSA (LHS)**	**Cumulative MSA (LHS)**	**MSA (RHS)**	**Cumulative MSA (RHS)**	**Remarks**
2025-26	3.94	**3.94**	4.37	**4.37**	
2026-27	4.15	**8.09**	4.61	**8.98**	
2027-28	4.26	**12.35**	4.73	**13.71**	
2028-29	4.32	**16.67**	4.80	**18.51**	
2029-30	4.18	**20.85**	4.64	**23.15**	
2030-31	4.44	**25.29**	4.93	**28.08**	
2031-32	4.68	**29.97**	5.21	**33.29**	
2032-33	4.92	**34.89**	5.47	**38.76**	
2033-34	5.16	**40.05**	5.74	**44.50**	
2034-35	5.42	**45.47**	6.03	**50.53**	End of concession period as per CA
2035-36	5.68	**51.15**	6.32	**56.85**	
2036-37	5.96	**57.11**	6.63	**63.48**	
2037-38	6.24	**63.35**	6.95	**70.43**	
2038-39	6.54	**69.89**	7.29	**77.72**	
2039-40	6.86	**76.75**	7.64	**85.36**	Extended end of concession period

4.5 Network Survey Vehicles (NSV) Survey

The Concessionaire has provided NSV survey data conducted. The NSV data is used to assess the riding quality and pavement condition of Project Road. The test is carried out on 13th December 2024. The summary of classification of pavement as per CA is given in below table.

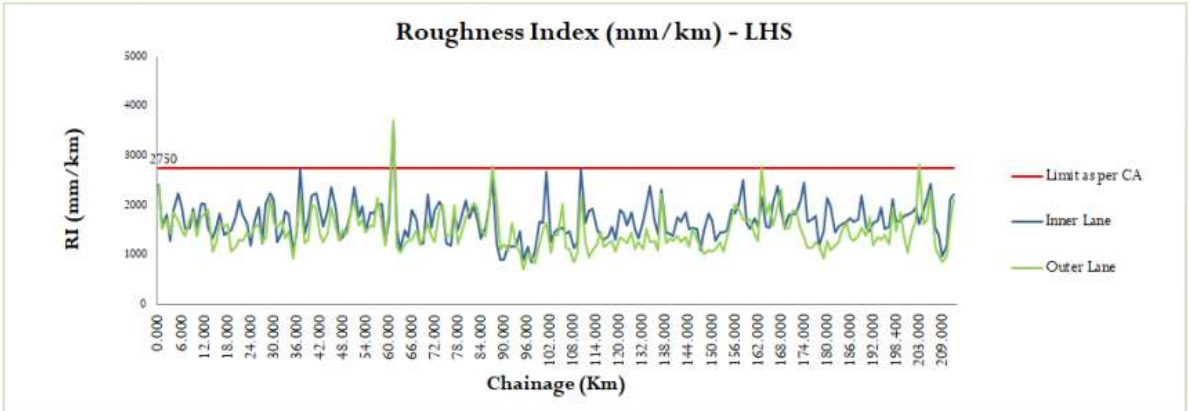
Table 4-3 Result of Roughness Survey

Table 2-2: Summary of RI Limit as per Schedule K of CA

Roughness Summary % as per Schedule K of CA (mm/km)					
Condition	Limit as per Schedule K of CA (mm/km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<2750	99.51%	98.17%	98.32%	99.31%
Poor	>2750	0.49%	1.83%	1.68%	0.69%

Note: Higher Roughness values are observed due to Hanumanpeta Flyover at from km 61.000 to km 61.300 BHS, Toll Plaza at from km 110.100 to km 110.200 BHS, Speed breakers from km 198.800 to km 198.900 RHS, km 202.500 to 202.600 BHS and km 203.200 to 203.800 LHS.

Figure 2-3: Roughness Summary for NAMEL as per Schedule K of CA



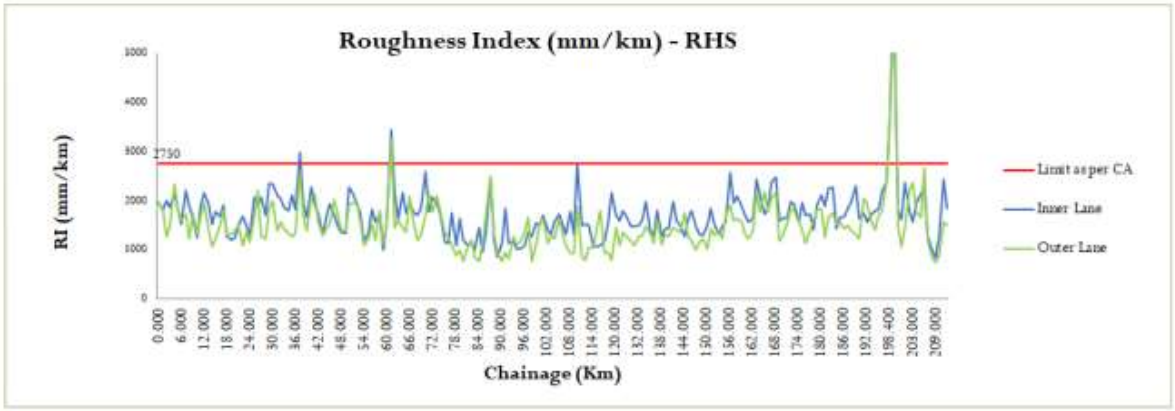


Figure 2-4: Roughness Index for NAMEL as per Schedule K of CA

Observation and Conclusion:

As per the NSV test carried out in the month of 13th December 2024 and the related Roughness results provided by the Concessionaire, it was observed that the overall pavement condition for the Project Road is found to be Good for 98.83% length (210.36 kms) and Poor for 1.170% length (2.49 kms). Poor road surface condition is maintained as part of routine maintenance; hence no additional expense is necessary to be considered when calculating major maintenance costs.

4.6 FWD Survey

The structural evaluation and analysis of the remaining life of project was carried out in conformity with IRC:115-2014 “Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique”.

The FWD survey was conducted on the Project Road on 12th September 2024 to 21st September 2024. The summary of the same is presented below.

Figure 1-2: Existing Pavement Layers 15th Percentile E Values on LHS Inner Lane

Figure 1-3: Existing Pavement Layers 15th Percentile E Values on LHS Outer Lane

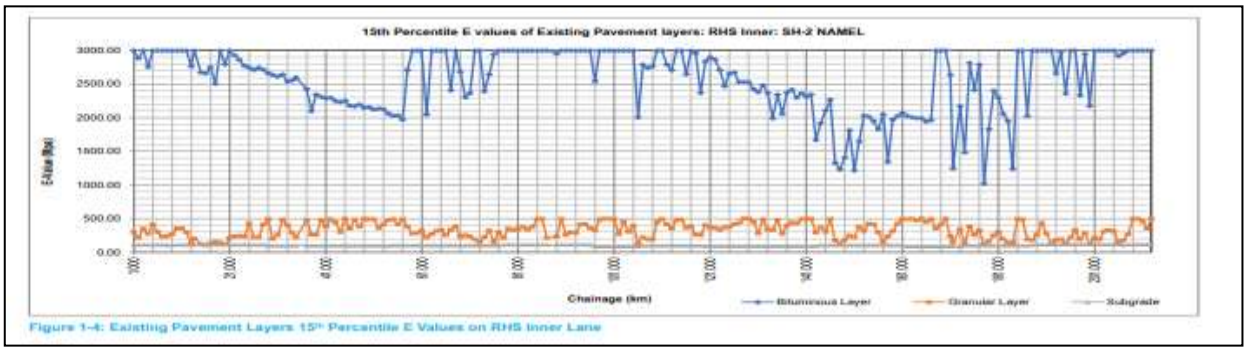


Figure 1-4: Existing Pavement Layers 15th Percentile E Values on RHS Inner Lane

Figure 1-5: Existing Pavement Layers 15th Percentile E Values on RHS Outer Lane

However, the maintenance can be carried out on as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. However, improvement in Riding Quality is expected if the roughness value exceeds 2500 mm/km.

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-K of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. Only improvement in Riding Quality is expected if the roughness value exceeds 2750 mm/km.

The Provisional Completion Certificate for the project was achieved on 06th March 2014. Hence, the major maintenance cycle is projected accordingly.

Currently Major Maintenance (Cycle-1) work for Section-3 from Km. 155+000 to Km. 212+500 is in progress. For the entire length of the Phase-3, 40 mm BC overlay with PMB-70 will be done and wherever the distresses are observed, those stretches (around 7% of the total Project length) will be rectified with milling & 50 mm DBM (with 35% RAP). Also, there are some stretches in Section-1, where distresses are observed and will be rectified with 35 mm BC (VG-40). Thin White Topping (TWT) of thickness 150 mm will be adopted for Toll Plaza 2 at Km. 110+200, Toll Plaza 3 at Km. 168+200 and Major Junction location at Km. 167+450. As the Service road is in good to fair condition, 30 mm BC Overlay will be done only at distressed locations on the Service road.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-4 Major Maintenance Cycle

Sr. No.	Chainage (km)		Length (km)	Length (%)	MM Cycle-1		MM Cycle-2	MM Cycle-3
	From	To			LHS	RHS	BHS	BHS
Sec-1	0	77	77	36.24%	MM completed in FY 2024		FY 2028	FY 2036
	77	87	10	4.71%	MM completed in FY 2024	MM completed in FY 2021	FY 2029	
Sec-2	87	120	33	15.53%	MM completed in FY21			
	120	127	7	3.29%	COS		FY 2031	FY 2038
Sec-3	127	155	28	13.18%	MM completed in FY 2024			
	155	212.5	57.5	27.06%	FY 2026		FY 2033	

Table 4-5 Major Maintenance Strategy

Cycle	Year	BC Overlay	Micro-surfacing	DBM Rehabilitation	Overlay	Rehabilitation	Service road
Cycle 1 Section 3	FY 26	27.00%	-	7.00%	27% 40 mm BC Overlay	7% 50 mm DBM Rehabilitation	BC 30 mm Overlay on 1.68 Km
Cycle 2	FY 28	36.24%	-	-	100% 40 mm BC Overlay	-	50% Micro-surfacing + 50% BC 30 mm Overlay
	FY 29	20.24%	-	-			
	FY 31	16.47%	-	-			
	FY 33	27.06%	-	-			
Cycle 3	FY 36	56.47%	-	-	73% 30 mm BC Overlay 27% Micro-surfacing	5% 50 mm DBM Rehabilitation	50% Micro-surfacing + 50% BC 30 mm Overlay
	FY 38	16.47%	27%	3%			

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost (CAPEX)
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1 Unit rates of different items (BC, DBM, Concrete, etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

a) **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

b) **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c) **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d) **Cement:** Market rates are considered from the nearest local market.

e) **Steel :** Rate of steel is taken from SAIL.

f) **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g) **Rates of items as per Work Order:** The rates of items such as kerb raising, micro-surfacing, milling, road stud etc. are based on the actual rates at which the work to be executed and thus are considered as per the Work Orders shared by the Client which is issued to the Contractors executing these works at the site.

2 Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (FY 2026 to FY 2027)	Rates (FY 2028 onwards)
1	PMB 70-10V	Cum	13,949	11,699
2	Dense Bituminous Macadam (With 35% RAP)	Cum	8,554	8,807
3	Bituminous Concrete	Cum	12,244	9,867
4	Milling	Sqm	99	99
5	Micro-surfacing	Sqm	160	160
6	Kerb Re-laying	Rmt	256	256
7	Road Marking	Sqm	515	515
8	Road Studs	Nos.	246	246

5.3 Balance Work Cost (CAPEX)

As discussed in the earlier chapter, the cost of Balance Work is **Rs. 52.18 Crores**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The

estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads:

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management Services
5. Electricity and Diesel Charges
6. TMS / HTMS / System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Horticulture & ROW Maintenance
16. Routine Maintenance Cost
17. Contingency

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-40)
1	Salary and Welfare Expenses	39,758,400
2	Tolling Operations Services	40,013,880
3	Toll Security Services	12,327,455
4	Incident Management & Emergency Services	47,291,134
5	Electricity and Diesel Charges	13,157,012
6	TMS/HTMS/System Expenses	9,956,333
7	Office Operating Expenses	11,379,375
8	Vehicle Running Expenses	6,624,000
9	Professional Fees Expense	33,468,750
10	Community Development	5,578,125
11	Communication Expenses	1,338,750
12	Conveyance Expenses	1,450,313
13	Insurance Expense	29,006,250
14	IE Fees	18,921,000

Sr. No.	Particulars	Amount (FY 2026-40)
15	Routine Maintenance Cost (Project Road)	87,703,541
16	Horticulture & ROW Maintenance	56,353,033
17	Miscellaneous including Contingency	13,513,539
	Total Cost (Rs.)	**427,840,889**
	Total Cost (Cr.)	**42.78**
	Per km Cost (Lakhs)	20.13

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2026	101.68	
2	FY 2028	95.14	
3	FY 2029	52.86	
4	FY 2031	43.55	
5	FY 2033	70.40	
6	FY 2036	101.52	
7	FY 2038	56.38	
Total Cost (Cr.)		**521.54**	

5.6 Periodic Replacement of TMS /System

Every 7 years, replacement of cost of major TMS system is considered. The same is provided as below.

Sr. No.	Year	TMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	1.83	
2	FY 2034	1.83	
Total Cost (Cr.)		**3.66**	

5.7 Escalation Assumption

The following escalation is considered basis discussions with Client and our internal estimates.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	4.00%
2026	4.87%	**2042**	3.99%
2027	5.23%	**2043**	3.99%
2028	4.92%	**2044**	3.99%
2029	4.63%	**2045**	3.98%
2030	4.33%	**2046**	3.98%
2031	4.12%	**2047**	3.96%
2032	4.07%	**2048**	3.96%
2033	4.06%	**2049**	3.95%
2034	4.00%	**2050**	3.95%
2035	4.01%	**2051**	3.95%

Year	Escalation	Year	Escalation
2036	3.99%	**2052**	3.95%
2037	4.00%	**2053**	3.95%
2038	4.02%	**2054**	3.95%
2039	4.00%	**2055**	3.95%
2040	3.98%	**2056**	3.95%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40
1	Routine O&M Cost															
1.01	Salary and Welfare Expense	3.98	4.18	4.38	4.61	4.84	5.06	5.28	5.50	5.72	5.95	6.19	6.44	6.70	6.96	7.24
1.02	Tolling Operations Services	4.00	4.20	4.41	4.64	4.87	5.09	5.31	5.53	5.76	5.99	6.23	6.48	6.74	7.01	7.29
1.03	Toll Security Services	1.23	1.29	1.36	1.43	1.50	1.57	1.64	1.70	1.77	1.85	1.92	2.00	2.08	2.16	2.25
1.04	Incident Management Services	4.73	4.97	5.21	5.48	5.75	6.02	6.28	6.54	6.80	7.08	7.36	7.66	7.96	8.28	8.62
1.05	Electricity and Diesel Charges	1.32	1.38	1.45	1.53	1.60	1.67	1.75	1.82	1.89	1.97	2.05	2.13	2.22	2.30	2.40
1.06	TMS/HTMS/System Expenses	0.87	-	0.96	1.01	1.05	1.10	1.15	1.20	-	1.30	1.35	1.40	1.46	1.52	1.58
1.07	Office Operating Expenses	1.14	1.20	1.25	1.32	1.38	1.45	1.51	1.57	1.64	1.70	1.77	1.84	1.92	1.99	2.07
1.08	Vehicle Running Expenses	0.66	0.70	0.73	0.77	0.81	0.84	0.88	0.92	0.95	0.99	1.03	1.07	1.12	1.16	1.21
1.09	Professional Fees Expense	3.35	3.52	3.69	3.88	4.07	4.26	4.44	4.63	4.82	5.01	5.21	5.42	5.64	5.86	6.10
1.10	Community Development	0.56	0.59	0.61	0.65	0.68	0.71	0.74	0.77	0.80	0.84	0.87	0.90	0.94	0.98	1.02
1.11	Communication Expenses	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.23	0.24
1.12	Conveyance Expenses	0.15	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.23	0.23	0.24	0.25	0.26
1.13	Insurance Expense	2.90	3.05	3.20	3.36	3.53	3.69	3.85	4.01	4.17	4.34	4.52	4.70	4.88	5.08	5.28
1.14	IE Fees	1.89	1.99	2.08	2.19	2.30	2.41	2.51	2.62	2.72	2.83	2.95	3.06	3.19	3.31	3.45
1.15	Routine Maintenance Cost	8.77	9.21	9.66	10.17	10.67	11.16	11.64	12.12	12.62	13.13	13.66	14.20	14.77	15.36	15.98
1.16	Horticulture & ROW Maintenance	5.64	5.92	6.21	6.53	6.85	7.17	7.48	7.79	8.11	8.44	8.77	9.13	9.49	9.87	10.27
1.17	Miscellaneous and Contingency	1.34	1.37	1.48	1.56	1.64	1.71	1.79	1.86	1.87	2.01	2.09	2.18	2.26	2.36	2.45
	Subtotal of O&M Cost	42.65	43.84	46.98	49.44	51.87	54.27	56.62	58.96	60.05	63.85	66.41	69.07	71.82	74.69	77.70
2	Major Maintenance Cost	101.68	-	102.35	58.73	-	51.52	-	88.54	-	-	137.09	-	86.34	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	1.92	-	-	-	-	-	-	2.63	-	-	-	-	-	-
4	Balance Works Cost	15.65	38.37	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**159.98**	**84.14**	**149.33**	**108.17**	**51.87**	**105.80**	**56.62**	**147.50**	**62.68**	**63.85**	**203.49**	**69.07**	**158.16**	**74.69**	**77.70**

ANNEXURE

ANNEXURE-I ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Project -Narketpally to Medarametla	
Ordinary Repair Cost for Flexible (with GST)	**87,703,541**
(inclusive of GST)	**= 4.12 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				230,866	**267,049**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	353225.00	408585.00	-	-	-	-
		Paved shoulder	1.70	392472.00	453983.00	191.44	-	7,51,19,141	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	461732.00	534098.00	-	-	-	-
		Paved shoulder	2.20	507905.00	587507.00	-	21.42	-	1,25,84,400
					TOTAL		**212.860**		**8,77,03,541**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			10443
	Cost in Rupees			52,215
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			418
	Cost in Rupees			20,886
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			80
	Cost in Rupees			19,883
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			52
	Cost in Rupees			7,875
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.25%
	Area (sqm)			93.75
	Rs/m^2			418
	Cost in Rupees			39,161
	v) Road marking	14%	Once in 7th year & @ Repaired location	26156
	SUB TOTAL			**166,176**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	25%	Covering Total Network in 4-5 Years	9097
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**13,949**
	GRAND TOTAL (Normal)			**230,866**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	6830
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**36,183**
	GRAND TOTAL (Urban)			**267,049**

ANNEXURE-II MAJOR MAINTENANCE COST

Major Maintenance Cost (FY - 2026) (From Ch. 155+000 to Ch. 212+500)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,57,570	10	1,19,84,643
	For BC	Sqm	2	57,349	8.75		10,03,601	10,03,601		
	For DBM	Sqm	2	14,556	7.00		2,03,790	2,03,790		
	For Misc. Location	Sqm	2	2,867	8.75		50,180	50,180		
2	PMB 70-10V with 40 mm	Cum	2	60,216	8.75	0.04	42,151	42,151	13,949	58,79,76,655
3	BC with 30/40 mm	Cum	1	1,901	7.50	0.04	499	499	12,244	61,08,237
4	DBM with 50 mm	Cum	2	14,556	7.00	0.05	10,189	10,189	8,554	8,71,64,480
5	Milling	Sqm	2	14,556	7.00		2,03,790	2,03,790	99	2,01,75,170
5	Earthen Shoulder	Cum	2	59,429	2.00	0.075	17,829	17,829	508	90,51,570
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 0% length	Rmt	0%	3,955	3.50	4.50	-	-	56	-
7	Dismantling of CC Panels @ 0% area	Cum	0%		62,296	0.30	0	0	788	-
8	Thin White Topping (150 mm)	Cum	1		16,800	0.15	2520	2520	9,974	2,51,33,270
9	Milling for more than 50 mm	Sqm	1		16,800		16800	16800	120	20,16,000
10	Joint Sealant	Rmt	1		33,600		33600	33600	56	18,81,600
	Service Road									
11	Tack coat	Sqm	2	1,680	5.5		18,480.00	18,480.00	10	1,76,114
12	BC with 30 mm	Cum	2	1,680	5.5	0.03	554.40	554.40	12,244	67,88,002
13	Micro Surfacing	Sqm	2	-	5.5		-	-	160	-
14	Milling	Sqm	2	1,680	5.50		18,480	18,480.00	120	22,17,600
	Other Works									
14	Raising of Road Kerb	Rmt	2	56,216			1,12,432	1,12,432	256	2,88,22,713
15	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,264			14,528	14,528	246	35,73,888
16	Painting of Kerb	Sqm	2	56,216		0.375	42,162	42,162	106	44,69,188
17	Road Marking	Sqm					44,087	44,087	515	2,27,04,623
	MCW									
	a) Median & Edge line	Sqm	4	62,400	0.15		37,440			

Major Maintenance Cost (FY - 2026) (From Ch. 155+000 to Ch. 212+500)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	20,592	0.10		4,118			
	Road Marking on Rigid Pavement						786	786	550	4,32,234
	a) Median & Edge line	Sqm	4	1,180	0.15		708			
	b) Lane line	Sqm	2	389	0.10		78			
	Service Road									
	a) Edge line	Sqm	2	1,680	0.10		336			
	b) Lane line	Sqm	1	554	0.10		55			
	Junction crossing	Sqm					2,137			
18	Miscellaneous	5%								4,10,33,799
Total Major Maintenance Cost (Rs.)										**86,17,09,788**
Total Major Maintenance Cost with 18% GST (Rs.)										**1,01,68,17,549**
Total Major Maintenance Cost with GST (Cr.)										**101.68**
Per km Cost (lakhs)										**47.77**
Escalation Factor for Major Maintenance Cost (FY - 2026) (From Ch. 155+000 to Ch. 212+500)										**1.00**
Total Escalated Cost for Major Maintenance Cost (FY - 2026) (From Ch. 155+000 to Ch. 212+500) (Cr.)										**101.68**

Major Maintenance Cost (FY 2028) (From Ch. 0+000 to Ch. 77+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						1,448,257	10	13,801,890
	For BC	Sqm	2	77,055	8.75		1,348,470	1,348,470		
	For DBM	Sqm	2	2,312	7.00		32,363	32,363		
	For Misc. Location	Sqm	2	3,853	8.75		67,424	67,424		
2	PMB 70-10V with 40 mm	Cum	2	80,908	8.75	0.04	56,636	56,636	11,699	662,572,053
3	DBM with 50 mm	Cum	2	2,312	7.00	0.05	1,618	1,618	8,807	14,251,805
4	Milling	Sqm	2	2,312	7.00		32,363	32,363	99	3,203,965
5	Earthen Shoulder	Cum	2	77,055	1.50	0.060	13,870	13,870	508	7,041,789
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	-	3.50	4.50	-	-	56	-
6	Dismantling of CC Panels @ 5% area	Cum	5%		-	0.30	0	0	788	-
7	Replacement of Panels - PQC @ 5% area	Cum	5%		-	0.30	0	0	9,974	-
	Service Road									
8	Tack coat	Sqm	1	3,228	5.0		16,201	16,201	10	154,393
9	BC with 30 mm	Cum	1	3,228	5.0	0.03	486	486	9,867	4,795,769
10	Micro Surfacing	Sqm	1	3,228	5.0		16,201	16,201	160	2,584,025
	Other Works									
11	Raising of Road Kerb	Rmt	2	38,528			77,055	77,055	256	19,753,621
12	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,419			18,838	18,838	246	4,634,148
13	Painting of Kerb	Sqm	2	77,055		0.315	48,545	48,545	106	5,145,763
14	Road Marking	Sqm					58,158	58,158	515	29,951,542
	MCW									
	a) Median & Edge line	Sqm	4	80,908	0.15		48,545			
	b) Lane line	Sqm	2	26,700	0.10		5,340			

Major Maintenance Cost (FY 2028) (From Ch. 0+000 to Ch. 77+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Service Road									
	a) Edge line	Sqm	2	6,455	0.10		1,291			
	b) Lane line	Sqm	1	2,130	0.10		213			
	Junction crossing	Sqm					2,769			
15	Miscellaneous	5%								38,394,538
Total Major Maintenance Cost (Rs.)										**806,285,302**
Total Major Maintenance Cost with 18% GST (Rs.)										**951,416,657**
Total Major Maintenance Cost with GST (Cr.)										**95.14**
Per km Cost (lakhs)										**44.70**
Escalation Factor for Major Maintenance Cost (FY 2028) (From Ch. 0+000 to Ch. 77+000)										**1.10**
Total Escalated Cost for Major Maintenance Cost (FY 2028) (From Ch. 0+000 to Ch. 77+000) (Cr)										**102.35**

Major Maintenance Cost (FY 2029) (From Ch. 77+000 to Ch. 120+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						808,145	10	7,701,617
	For BC	Sqm	2	42,998	8.75		752,462	752,462		
	For DBM	Sqm	2	1,290	7.00		18,059	18,059		
	For Misc. Location	Sqm	2	2,150	8.75		37,623	37,623		
2	PMB 70-10V with 40 mm	Cum	2	45,148	8.75	0.04	31,603	31,603	11,699	369,723,010
3	DBM with 50 mm	Cum	2	1,290	7.00	0.05	903	903	8,807	7,952,675
4	Milling	Sqm	2	1,290	7.00		18,059	18,059	99	1,787,850
5	Earthen Shoulder	Cum	2	42,998	1.50	0.060	7,740	7,740	508	3,929,401
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	-	3.50	4.50	-	-	56	-

Major Maintenance Cost (FY 2029) (From Ch. 77+000 to Ch. 120+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
6	Dismantling of CC Panels @ 5% area	Cum	5%		-	0.30	0	0	788	-
7	Replacement of Panels - PQC @ 5% area	Cum	5%		-	0.30	0	0	9,974	-
	Service Road									
8	Tack coat	Sqm	1	3,228	5.0		16,201	16,201	10	154,393
9	BC with 30 mm	Cum	1	3,228	5.0	0.03	486	486	9,867	4,795,769
10	Micro Surfacing	Sqm	1	3,228	5.0		16,201	16,201	160	2,584,025
	Other Works									
11	Raising of Road Kerb	Rmt	1	21,499			21,499	21,499	256	5,511,377
12	Replacement of Road Stud									
	Normal Road Stud	Nos	2	5,256			10,512	10,512	246	2,585,952
13	Painting of Kerb	Sqm	2	42,998		0.315	27,089	27,089	106	2,871,396
14	Road Marking	Sqm					33,151	33,151	515	17,072,780
	MCW									
	a) Median & Edge line	Sqm	4	45,148	0.15		27,089			
	b) Lane line	Sqm	2	14,899	0.10		2,980			
	Service Road									
	a) Edge line	Sqm	2	6,455	0.10		1,291			
	b) Lane line	Sqm	1	2,130	0.10		213			
	Junction crossing	Sqm					1,579			
15	Miscellaneous	5%								21,333,512
Total Major Maintenance Cost (Rs.)										**448,003,759**
Total Major Maintenance Cost with 18% GST (Rs.)										**528,644,436**
Total Major Maintenance Cost with GST (Cr.)										**52.86**
Per km Cost (lakhs)										**24.84**
Escalation Factor for Major Maintenance Cost (FY 2029) (From Ch. 77+000 to Ch. 120+000)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY 2029) (From Ch. 77+000 to Ch. 120+000) (Cr)										**58.73**

Major Maintenance Cost (FY 2031) (From Ch. 120+000 to Ch. 155+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						658,939	10	6,279,693
	For BC	Sqm	2	35,059	8.75		613,538	613,538		
	For DBM	Sqm	2	1,052	7.00		14,725	14,725		
	For Misc. Location	Sqm	2	1,753	8.75		30,677	30,677		
2	PMB 70-10V with 40 mm	Cum	2	36,812	8.75	0.04	25,769	25,769	11,699	301,462,251
3	DBM with 50 mm	Cum	2	1,052	7.00	0.05	736	736	8,807	6,484,398
4	Milling	Sqm	2	1,052	7.00		14,725	14,725	99	1,457,765
5	Earthen Shoulder	Cum	2	35,059	1.50	0.060	6,311	6,311	508	3,203,929
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	794	3.50	4.50	635	635	56	35,584
6	Dismantling of CC Panels @ 5% area	Cum	5%		12,510	0.30	188	188	788	147,812
7	Replacement of Panels - PQC @ 5% area	Cum	5%		12,510	0.30	188	188	9,974	1,871,531
	Service Road									
8	Tack coat	Sqm	1	3,228	5.0		16,201	16,201	10	154,393
9	BC with 30 mm	Cum	1	3,228	5.0	0.03	486	486	9,867	4,795,769
10	Micro Surfacing	Sqm	1	3,228	5.0		16,201	16,201	160	2,584,025
	Other Works									
11	Raising of Road Kerb	Rmt	1	17,530			17,530	17,530	256	4,493,829
12	Replacement of Road Stud									
	Normal Road Stud	Nos	2	4,286			8,572	8,572	246	2,108,712
13	Painting of Kerb	Sqm	2	35,059		0.315	22,087	22,087	106	2,341,260
14	Road Marking	Sqm					27,322	27,322	515	14,070,845
	MCW									
	a) Median & Edge line	Sqm	4	36,812	0.15		22,087			

Major Maintenance Cost (FY 2031) (From Ch. 120+000 to Ch. 155+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	12,148	0.10		2,430			
	Service Road									
	a) Edge line	Sqm	2	6,455	0.10		1,291			
	b) Lane line	Sqm	1	2,130	0.10		213			
	Junction crossing	Sqm					1,301			
15	Miscellaneous	5%								17,574,590
Total Major Maintenance Cost (Rs.)										**369,066,386**
Total Major Maintenance Cost with 18% GST (Rs.)										**435,498,335**
Total Major Maintenance Cost with GST (Cr.)										**43.55**
Per km Cost (lakhs)										**20.46**
Escalation Factor for Major Maintenance Cost (FY 2031) (From Ch. 120+000 to Ch. 155+000)										**1.25**
Total Escalated Cost for Major Maintenance Cost (FY 2031) (From Ch. 120+000 to Ch. 155+000) (Cr)										**51.52**

Major Maintenance Cost (FY 2033) (From Ch. 155+000 to Ch. 212+500)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						1,081,134	10	10,303,204
	For BC	Sqm	2	57,522	8.75		1,006,642	1,006,642		
	For DBM	Sqm	2	1,726	7.00		24,159	24,159		
	For Misc. Location	Sqm	2	2,876	8.75		50,332	50,332		
2	PMB 70-10V with 40 mm	Cum	2	60,399	8.75	0.04	42,279	42,279	11,699	494,614,514
3	DBM with 50 mm	Cum	2	1,726	7.00	0.05	1,208	1,208	8,807	10,639,069
4	Milling	Sqm	2	1,726	7.00		24,159	24,159	99	2,391,782
5	Earthen Shoulder	Cum	2	57,522	1.50	0.060	10,354	10,354	508	5,256,743
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	-	3.50	4.50	-	-	56	-
6	Dismantling of CC Panels @ 5% area	Cum	5%		-	0.30	0	0	788	-
7	Replacement of Panels - PQC @ 5% area	Cum	5%		-	0.30	0	0	9,974	-
	Service Road									
8	Tack coat	Sqm	1	3,228	5.0		16,201	16,201	10	154,393
9	BC with 30 mm	Cum	1	3,228	5.0	0.03	486	486	9,867	4,795,769
10	Micro Surfacing	Sqm	1	3,228	5.0		16,201	16,201	160	2,584,025
	Other Works									
11	Raising of Road Kerb	Rmt	1	28,761			28,761	28,761	256	7,373,106
12	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,032			14,064	14,064	246	3,459,744
13	Painting of Kerb	Sqm	2	60,750		0.315	38,272	38,272	106	4,056,879
14	Road Marking	Sqm					43,816	43,816	515	22,565,193
	MCW									
	a) Median & Edge line	Sqm	4	60,399	0.15		36,239			
	b) Lane line	Sqm	2	19,932	0.10		3,986			

Major Maintenance Cost (FY 2033) (From Ch. 155+000 to Ch. 212+500)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Service Road									
	a) Edge line	Sqm	2	6,455	0.10		1,291			
	b) Lane line	Sqm	1	2,130	0.10		213			
	Junction crossing	Sqm					2,086			
15	Miscellaneous	5%								28,409,721
Total Major Maintenance Cost (Rs.)										**596,604,143**
Total Major Maintenance Cost with 18% GST (Rs.)										**703,992,888**
Total Major Maintenance Cost with GST (Cr.)										**70.40**
Per km Cost (lakhs)										**33.07**
Escalation Factor for Major Maintenance Cost (FY 2033) (From Ch. 155+000 to Ch. 212+500)										**1.35**
Total Escalated Cost for Major Maintenance Cost (FY 2033) (From Ch. 155+000 to Ch. 212+500) (Cr)										**88.54**

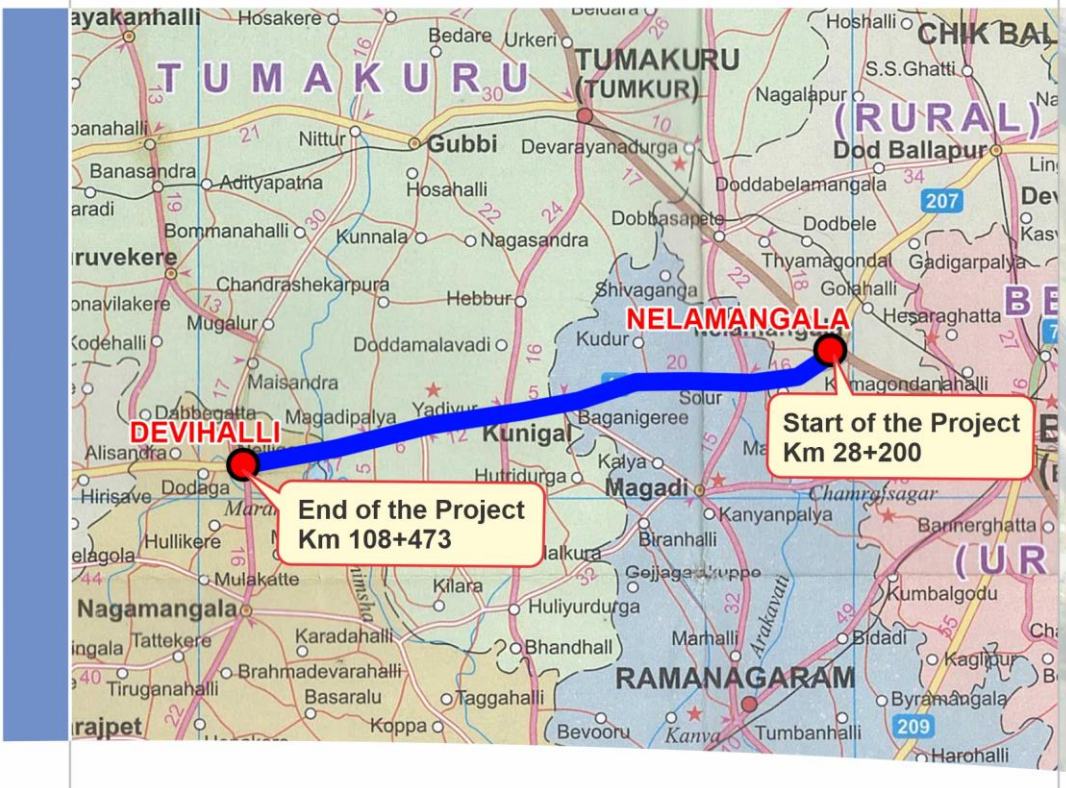
Major Maintenance Cost (FY 2036) (From Ch. 0+000 to Ch. 120+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						2,256,402	10	21,503,508
	For BC	Sqm	2	120,053	8.75		2,100,933	2,100,933		
	For DBM	Sqm	2	3,602	7.00		50,422	50,422		
	For Misc. Location	Sqm	2	6,003	8.75		105,047	105,047		
2	BC with 30 mm	Cum	2	126,056	8.75	0.03	66,179	66,179	9,867	653,015,751
3	DBM with 50 mm	Cum	2	3,602	7.00	0.05	2,521	2,521	8,807	22,204,480
4	Milling	Sqm	2	3,602	7.00		50,422	50,422	99	4,991,816
5	Earthen Shoulder	Cum	2	120,053	1.50	0.060	21,610	21,610	508	10,971,190
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	794	3.50	4.50	635	635	56	35,584
6	Dismantling of CC Panels @ 5% area	Cum	5%		12,510	0.30	188	188	788	147,812
7	Replacement of Panels - PQC @ 5% area	Cum	5%		12,510	0.30	188	188	9,974	1,871,531
	Service Road									
8	Tack coat	Sqm	1	6,455	5.0		32,402	32,402	10	308,787
9	BC with 30 mm	Cum	1	6,455	5.0	0.03	972	972	9,867	9,591,538
10	Micro Surfacing	Sqm	1	6,455	5.0		32,402	32,402	160	5,168,050
	Other Works									
11	Raising of Road Kerb	Rmt	2	53,215			106,430	106,430	256	27,283,962
12	Replacement of Road Stud									
	Normal Road Stud	Nos	2	14,674			29,348	29,348	246	7,219,608
13	Painting of Kerb	Sqm	2	120,053		0.315	75,634	75,634	106	8,017,159
14	Road Marking	Sqm					91,309	91,309	515	47,024,322
	MCW									
	a) Median & Edge line	Sqm	4	126,056	0.15		75,634			
	b) Lane line	Sqm	2	41,598	0.10		8,320			

Major Maintenance Cost (FY 2036) (From Ch. 0+000 to Ch. 120+000)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Service Road									
	a) Edge line	Sqm	2	12,910	0.10		2,582			
	b) Lane line	Sqm	1	4,260	0.10		426			
	Junction crossing	Sqm					4,348			
15	Miscellaneous	5%								40,967,755
Total Major Maintenance Cost (Rs.)										**860,322,853**
Total Major Maintenance Cost with 18% GST (Rs.)										**1,015,180,967**
Total Major Maintenance Cost with GST (Cr.)										**101.52**
Per km Cost (lakhs)										**47.69**
Escalation Factor for Major Maintenance Cost (FY 2036) (From Ch. 0+000 to Ch. 120+000)										**1.52**
Total Escalated Cost for Major Maintenance Cost (FY 2036) (From Ch. 0+000 to Ch. 120+000) (Cr)										**137.09**

Major Maintenance Cost (FY 2038) (From Ch. 120+000 to Ch. 212+500)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						657,530	10	6,266,259
	For BC	Sqm	2	34,984	8.75		612,225	612,225		
	For DBM	Sqm	2	1,050	7.00		14,693	14,693		
	For Misc. Location	Sqm	2	1,749	8.75		30,611	30,611		
2	BC with 30 mm	Cum	2	36,734	8.75	0.03	19,285	19,285	9,867	190,292,947
3	DBM with 50 mm	Cum	2	1,050	7.00	0.05	735	735	8,807	6,470,527
4	Micro Surfacing	Sqm	2	57,254	8.75		1,001,938	1,001,938	160	159,809,144
5	Milling	Sqm	2	1,050	7.00		14,693	14,693	99	1,454,647
6	Earthen Shoulder	Cum	2	34,984	1.50	0.060	6,297	6,297	508	3,197,075
	Main Carriageway - Rigid Pavement									
7	Joint Sealant Replacement @ 10% length	Rmt	10%	-	3.50	4.50	-	-	56	-
8	Dismantling of CC Panels @ 5% area	Cum	5%		-	0.30	0	0	788	-
9	Replacement of Panels - PQC @ 5% area	Cum	5%		-	0.30	0	0	9,974	-
	Service Road									
10	Tack coat	Sqm	1	6,455	5.0		32,402	32,402	10	308,787
11	BC with 30 mm	Cum	1	6,455	5.0	0.03	972	972	9,867	9,591,538
12	Micro Surfacing	Sqm	1	6,455	5.0		32,402	32,402	160	5,168,050
	Other Works									
13	Raising of Road Kerb	Rmt	2	53,215			106,430	106,430	256	27,283,962
14	Replacement of Road Stud									
	Normal Road Stud	Nos	2	4,277			8,554	8,554	246	2,104,284
15	Painting of Kerb	Sqm	2	98,693		0.315	62,177	62,177	106	6,590,712
16	Road Marking	Sqm					70,885	70,885	515	36,506,031
	MCW									
	a) Median & Edge line	Sqm	4	96,850	0.15		58,110			

Major Maintenance Cost (FY 2038) (From Ch. 120+000 to Ch. 212+500)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	31,960	0.10		6,392			
	Service Road									
	a) Edge line	Sqm	2	12,910	0.10		2,582			
	b) Lane line	Sqm	1	4,260	0.10		426			
	Junction crossing	Sqm					3,375			
17	Miscellaneous	5%								22,752,198
Total Major Maintenance Cost (Rs.)										**477,796,161**
Total Major Maintenance Cost with 18% GST (Rs.)										**563,799,470**
Total Major Maintenance Cost with GST (Cr.)										**56.38**
Per km Cost (lakhs)										**26.49**
Escalation Factor for Major Maintenance Cost (FY 2038 (From Ch. 120+000 to Ch. 212+500)										**1.65**
Total Escalated Cost for Major Maintenance Cost (FY 2038) (From Ch. 120+000 to Ch. 212+500) (Cr)										**86.34**

FP Project Management



Technical Due Diligence Study of Nelamangala - Devihalli Section of NH-75 from km. 28+200 to km. 108+473 in the State of Karnataka under NHDP Phase-IIIA on Design, Build, Operate and Transfer (BOT) Basis

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 9
3.3 Major / Minor Junctions 10
3.4 Condition Survey of Bridge 10
3.5 Condition Survey of Culverts 41
3.6 Drainage 42
3.7 Slope Protection 42
3.8 Road Furniture 42
3.9 Avenue Plantation and Median Plantation 47
3.10 Toll Plaza 48
3.11 Bus Bays and Passenger Shelters 60
3.12 Truck Lay-bye 60
3.13 Toilet Block 61
3.14 Balance Work Status 61
3.15 Operation and Maintenance 61
3.15.1 O&M Contract 61

3.15.2 Organization Chart 62
3.15.3 Operation 65
3.15.4 Routine Maintenance 65
4 Pavement Investigation and Assessment 66
4.1 General 66
4.2 Axle Load and VDF 66
4.3 Design Traffic 66
4.4 Network Survey Vehicles (NSV) Survey 67
4.5 Structural Investigations 68
4.6 Test pit and Subgrade Investigation 69
4.7 Periodic Maintenance Strategy 73
5 Cost Estimates 75
5.1 General 75
5.2 Rate Assumption 75
5.3 Balance Work Cost 76
5.4 Routine O&M Cost 76
5.5 Major Maintenance Cost 78
5.6 Periodic Replacement of TMS / System 78
5.7 Escalation Assumption 78
5.8 Summary of Cost 78
Annexures 80
Annexure I - Routine Maintenance Cost 81
Annexure II - Major Maintenance Cost 85

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 10
Table 3-2 Condition Survey of Major Structure 12
Table 3-3 Details of Lighting on Project Road 42
Table 3-4 Details of Summary for Toll Plaza Items 48
Table 3-5 Details of Summary for Toll Plaza Items 54
Table 3-6 Details of Truck Lay-bye 60
Table 4-1 Vehicle Damage Factor (VDF) 66
Table 4-2 MSA Calculation 66
Table 4-3 Summary of NSV Survey 67
Table 4-4 Summary of FWD Survey 68
Table 4-5 Test Results Summary of Natural Ground Soil Samples 69
Table 4-6 Test Results Summary of Granular Layer Samples 71
Table 4-7 Summary of Pavement Crust Thickness 73
Table 4-8 Major Maintenance Cycle 74
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 75
Table 5-2 Summary of Unit Rates 76
Table 5-3 Summary of Operation Cost 77
Table 5-4 Escalation 78

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 8
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photographs of Major Junctions 10
Figure 3-4 Photographs of Minor Junctions 10
Figure 3-5 Photographs of Major Structures 39
Figure 3-6 Photographs of Culverts 41
Figure 3-7 Photographs of Drainage 42
Figure 3-8 Photographs of Pavement Marking 43
Figure 3-9 Photographs of Road Studs 44
Figure 3-10 Photographs of Sign Boards 44
Figure 3-11 Photographs of Street Light 45
Figure 3-12 Photographs of MBCB / Crash Barrier 46
Figure 3-13 Photographs of Pedestrian Guard Rail 47
Figure 3-14 Photographs of Median Plantation 47
Figure 3-15 Photographs of Toll Plaza-1 49
Figure 3-16 Photographs of Toll Plaza-2 54
Figure 3-17 Photographs of Passenger Shelters 60
Figure 3-18 Photographs of Truck Lay Bye 61

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Nelamangala - Devihalli Section of NH-75 from km. 28+200 to km. 110+000 in the State of Karnataka (hereinafter referred as "Project Road").

Nelamangala - Devihalli Expressway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for widening of Nelamangala - Devihalli Section (from km. 28+200 to km. 110+000) of NH-75 from 2-lane to 4-lane and its Improvement, Operation and Maintenance through a concession on Build, Operate and Transfer (BOT) basis. The project has been taken over by the Client on 11th January 2021 from M/s Lanco Devihalli Highways Private Limited (LDHPL), with a total concession period of 25 years (commencement of concession period is from 5th January 2008) in concurrence with National Highway Authority of India (NHAI). The length of Project Road is 80.262 kms with first toll plaza at Doddakarenahalli at km. 32+600 and second toll plaza at Karabylu at km. 100+850.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and filed investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance sstrategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted.
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyzing the same as per the best engineering / industry practices.

The site visit and inspection are carried out from **15th January 2025** to **17th January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Nelamangala Devihalli Expressway Private Limited**, is a company promoted by M/s Lanco Devihalli Highways Private Limited (LDHPL) or a Special Purpose Vehicle (SPV) formed for implementing this project on 9th July 2007. The Appointed Date for the Project Road is 5th January 2008. The project has been taken over by the Client on 11th January 2021 from M/s. Lanco Devihalli Highways Private Limited (LDHPL).

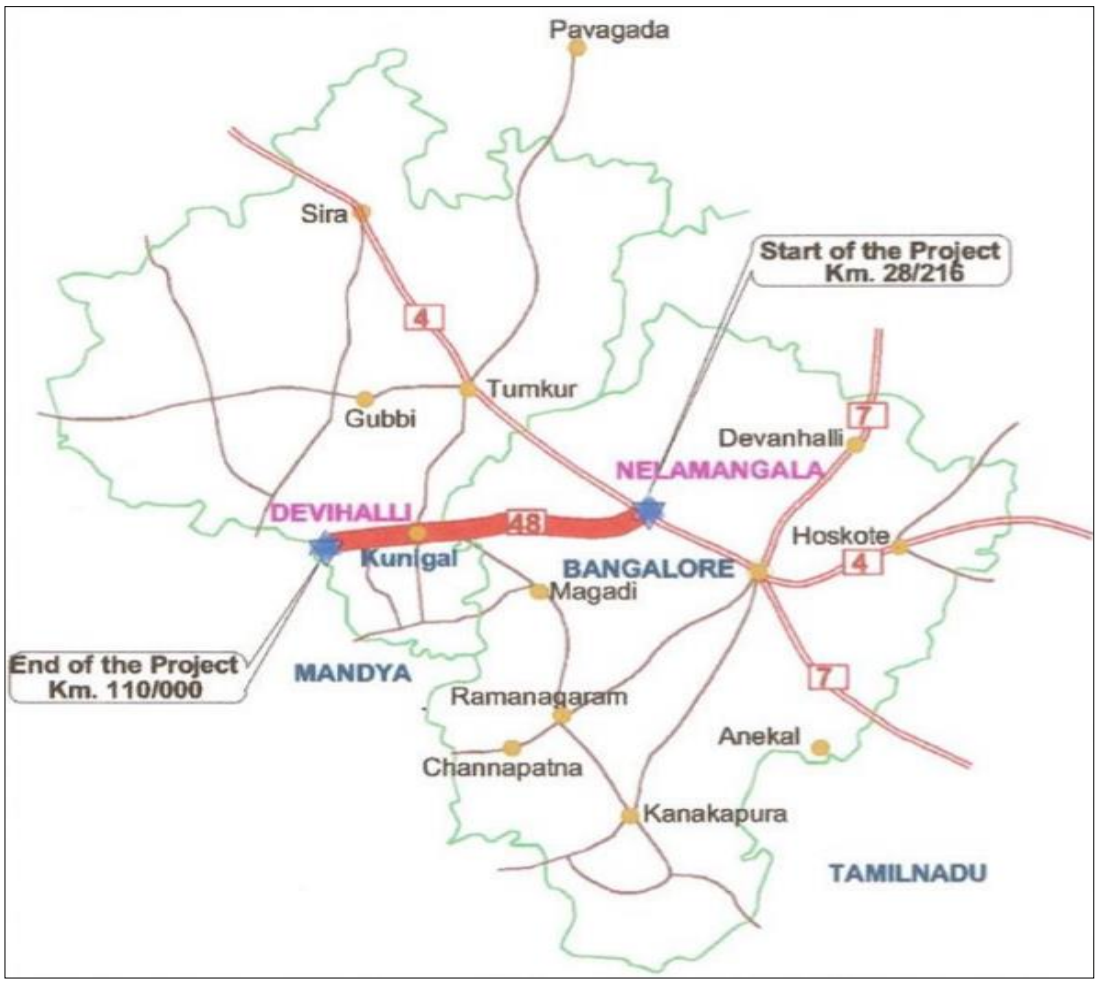
The project has been developed on Build, Operate and Transfer (BOT) basis with concession period of 25 years from the Appointed Date while O&M has started from 23rd June 2012, as PCOD for the project is granted on 23rd June 2012.

2.2 Location

The Project Road is part of National Highway No. 75 of Nelamangala - Devihalli section in the state of Karnataka. The total project length is 80.262 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map



The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

Figure 2-3 End of Project Road

2.3 Climate

The climate of the project area is generally dry except during the South-West monsoon season between June and September / October. The average annual rainfall in the area is around 600 mm. The driest month is January. Most precipitation falls in October. The average annual temperature of the project area is 28.00 C, April being the warmest month.

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The land use along the highway is predominantly agriculture or barren and rocky.

2.6 Right of Way

The width of the existing Right of Way (RoW) throughout the project stretch is 60.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Nelamangala (km. 28+200) to Devihalli (km. 110+000) has been developed as a four-lane divided carriageway with a median width of 2 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	80.262	From June 2012
2	Construction of Service Road	km.	44.174	Both Side
3	Major Bridges	Nos.	02	
4	Minor Bridges - 03 lane	Nos.	17	
5	Minor Bridges - 06 lane	Nos.	06	
6	Repair & extending of Box Culvert	Nos.	09	
7	Repair & extending of Pipe Culvert	Nos.	73	
8	New Pipe Culvert construction	Nos.	17	
9	Repair of Pipe Culvert	Nos.	04	
10	Pedestrian Underpass	Nos.	06	
11	Vehicular Underpass	Nos.	09	
12	Cattle Underpass	Nos.	08	
13	ROB	No.	01	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has a paved carriageway of 9.0 m with an earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **15th January 2025** to **17th January 2025,** through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Fair to Good.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

km. 28+350

km. 28+250

km. 31+500 - Patch work (LHS)

km. 31+900 - Patch work (RHS)

km. 33+000 - Patch work (LHS)

km. 35+600

km. 44+100 - Patch work (RHS)

km. 46+300 - Patch work (RHS)

km. 64+400

km. 68+000

km. 89+600 - Patch work (RHS)

km. 103+700

3.2 Service Road / Slip Road

The service road with width of 5.5 m is constructed in built-up areas and adjoining underpass locations. The Project Road has total service road length of 48.127 kms and cart track length of 30.580 kms. The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

km. 28+300 to km. 28+400 (LHS)

km. 28+320 to km. 28+500 (RHS)

km. 34+350 to km. 34+750 (LHS)

km. 37+150 to km. 37+500 (LHS)

km. 42+950 to km. 43+500 (LHS)

km. 85+530 to km. 96+400 (LHS)

3.3 Major / Minor Junctions

There are 09 nos. of major junctions and 29 nos. of minor junctions on Project Road.

The photographs taken during site visit are presented below.

Figure 3-3 Photographs of Major Junctions

km. 65+400

km. 72+540

Figure 3-4 Photographs of Minor Junctions

Junction at km. 39+630

Junction at km. 43+180

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Number of Structures
Major Structures:	
Road Over Bridge (ROB)	1
Overpasses	Nil
Flyover	Nil
Vehicular Underpass (VUP)	9

Type of Structure	Number of Structures
Pedestrian Underpass (PUP)	3
Cattle Underpass (CUP)	12
Major Bridges (MJB)	2
Minor Bridges (MNB)	24
Culverts:	
Pipe Culverts	114
Box Culverts	14
Total	**179**

The detailed condition survey of structures was carried out by visual inspection. The detailed condition survey of structures was carried out from **16th January 2025 to 17th January 2025**. The observations and findings are presented in table below.

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
1	28.250	PUP 7.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition. Not in use.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab	RCC slab	
			Bearing	-	-	
			Slope Protection	-	-	
			Nalla Bed	-	-	
			Parapet / Railing	-	-	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	-	-	
			Approach Slope	-	-	
			Drainage	No problem	No problem	
2	34.425	CUP 7.5 m x 3.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box type, Median covered	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Low level Drain provided	Low level Drain provided	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC - No problem	BC - No problem	
			Approach Slope	Turfing is provided and Stable in condition	Turfing is provided and Stable in condition	
			Drainage	No problem	No problem	
3	35.840	Minor Bridge	Age	Old - Low level	New - Low level	The structure is in

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
		15.1 m x 6.5 m	Foundation	RCC footing	RCC footing	sound condition. The nalla bed is to be cleared. Bushes to be removed.
			Sub Structure Abutment / Pier	RCC wall Wall type pier	RCC wall Circular pier	
			Super Structure	RCC solid slab	RCC girder and slab	
			Bearing		4 Nos. - No problem PTFE	
			Slope Protection	RCC wing wall pitching. Tree growth		
			Nalla Bed	Debris – not clear	Clear	
			Parapet / Railing	RCC railing	RCC parapet	
			Expansion Joint	Need to clean	Need to clean	
			Wearing Coat/ Surface	BC is in good condition	Potholes noticed	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Not seen Proper drainage system is provided	Not seen Grating Provided	
4	37.150	CUP 9.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition. Down take water pipe is missing
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab Box Type Median Covered	RCC slab Box Type	
			Bearing			
			Slope Protection	RCC return & pitching Toe wall	RCC return & pitching Toe wall	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Pitching & turfing is provided, and condition is stable	Pitching & turfing is provided, and condition is stable	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
			Drainage	No problem	No problem	
5	43.180	VUP 10.5 m x 5.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment RCC wall	Abutment RCC wall	
			Super Structure	RCC slab Box type	RCC slab Box type	
			Bearing			
			Slope Protection	RCC return & wing wall - full	RCC return & wing wall - full	
			Nalla Bed	Road Service Road	Road Service Road	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC - No problem	BC - No problem	
			Approach Slope	Stable	Stable	
			Drainage	Drain pipe provided	Drain pipe provided	
6	43.743	Minor Bridge 8.0 m x 2.2 m	Age	Old - 2 lane Low level	New - 2 lane	The old and new structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC solid slab	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC wing wall is provided for Slope protection	RCC Return Pitching is not in proper condition	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC railing on one side. RCC parapet on other side	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable in condition	Stable in condition	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
			Drainage	No problem	No problem	
7	46.000	PUP (Subway for Village with staircase)	Age	New - 2 lane	New - 2 lane	Sound in condition. Not in use
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab	RCC slab	
			Bearing	-	-	
			Slope Protection	-	-	
			Nalla Bed	-	-	
			Parapet / Railing	-	-	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	-	-	
			Approach Slope	-	-	
			Drainage	-	-	
8	49.526	Minor Bridge Skew 8.0 m x 3.5 m	Age	Old - 2 lane Low level	New - 2 lane	The old and new structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC solid slab	RCC slab	
			Bearing			
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC railing Damaged	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Not seen Provided drainage arrangement	Not seen Provided drainage arrangement	
9	53.300	Minor Bridge 10.0 m x 4.60 m	Age	Old - 2 lane Low level	New - 2 lane Low level	
			Foundation	RCC footing	RCC footing	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Sub Structure Abutment / Pier	RCC retaining wall. Bottom crack	Abutment RCC wall	The old and new structure is in sound condition.
			Super Structure	RCC girder	RCC solid slab Box type	
			Bearing	PTFE type		
			Slope Protection	RCC return, Tree growth		
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC railing	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC - No problem	BC - No problem	
			Approach Slope			
			Drainage	Not seen Provided drainage arrangement	Not seen Provided drainage arrangement	
10	54.120	PUP 7.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	Structure is in sound condition
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab	RCC slab	
			Bearing	-	-	
			Slope Protection	-	-	
			Nalla Bed	-	-	
			Parapet / Railing	-	-	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	-	-	
			Approach Slope	-	-	
			Drainage	-	-	
11	54.610	Minor Bridge 6.0 m x 3.3 m	Age	Old - 2 lane Low level	New - 2 lane Low level	
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Super Structure	Solid slab Minor Honey combing is observed	Solid slab Minor Honey combing is observed	The old and new structure is in sound condition.
			Bearing	-	-	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Right stone parapet Left RCC parapet	RCC parapet	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	BC not done	BC is in good condition.	
			Approach Slope	Stable	Stable	
			Drainage	Not seen	Provided	
12	58.735	Minor Bridge RHS - New 8.6 m x 2.10 m	Age	Old - Low level 2 lane	New - 2 lane	The old and New structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall RCC wall type pier	Abutment RCC wall RCC wall type pier	
			Super Structure	RCC solid slab	RCC solid slab	
			Bearing	-	-	
			Slope Protection	RCC return & pitching Not proper in condition	RCC return & pitching Not proper in condition	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC railing	RCC railing	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	BC - Rough damaged	BC - Rough damaged	
			Approach Slope	Stable	Stable	
			Drainage	Grating provided	Grating provided	
13	61.930	Minor Bridge Skew 7.50 m x 4.0 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab	RCC slab	
			Bearing			

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC – parapet	RCC - parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC is good in condition	BC is good in condition	
			Approach Slope			
			Drainage	Grating provided	Grating need to be provide	
14	62.350	Minor Bridge 8.0 m x 2.6 m	Age	New - 2 lane	widening - 2 lane	Structure is in sound condition, need to be Repair wearing course.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab	RCC slab	
			Bearing			
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC is good in condition	BC is good in condition	
			Approach Slope	Stable	Stable	
			Drainage	Drain to be provided	Drain to be provided	
15	65.400	VUP Super-elevation 9.3 m x 5.5 m	Age	New Two Lane	New Two Lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment RCC wall Concrete RCC	Abutment RCC wall Concrete RCC	
			Super Structure	RCC slab Median covered Box type	RCC slab Median covered Box type	
			Bearing			
			Slope Protection	Return & pitching. Return tilted at top (RHS)	Return & pitching. Return tilted at top.	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
					Quality not satisfactory	
			Nalla Bed	Road Service Road	Road Service Road	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC good in condition	BC good in condition	
			Approach Slope	Slope - Stable Pitching Toe wall	Slope - Stable Pitching Toe wall	
			Drainage	No problem	No problem	
16	66.980	CUP 7.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment - RCC wall	RCC	
			Super Structure	RCC slab and Box Type Median Covered	RCC slab and Box type Median Covered	
			Bearing			
			Slope Protection	RCC return & pitching. No problem	RCC return & pitching. No problem	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC - No problem	BC - No problem	
			Approach Slope	Stable	Stable	
			Drainage	Not seen Provided drain	Not seen Provided drain	
17	67.330	Minor Bridge Canal 12.0 m x 4.10 m	Age	New – Lane	New - Lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment RCC Wall	Abutment RCC Wall	
			Super Structure	RCC slab	RCC slab	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
				Box type	Box type	
			Bearing			
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Canal water Both side Service Road	Canal water Both side Service Road	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	No problem	No problem	
18	67.950	Minor Bridge 6.0 m x 3.60 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC Footing	RCC Footing	
			Sub Structure Abutment / Pier	Abutment - CC wall	Abutment - CC wall	
			Super Structure	RCC slab and Box type	RCC slab and Box type	
			Bearing			
			Slope Protection	Return & pitching	Return & pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint	No problem	No problem	
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable	Stable	
			Drainage	Grating provided Clean	Grating provided Clean	
19	68.913	Minor Bridge (PUP) + Minor Bridge)	Age	New - 2 lane	New - 2 lane	
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment - RCC wall RCC	Abutment - RCC Wall	
			Super Structure	RCC slab and Box Type	RCC slab and Box Type	
			Bearing			
			Slope Protection	RCC return & Pitching	RCC return & Pitching	
			Nalla Bed	Clear	Clear	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope			
			Drainage	Grating provided	Grating provided	
20	69.513	VUP 10.50 m x 5.5 m	Age	New	New	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC Abutment	RCC Abutment	
			Super Structure	RCC slab and Box type Median Covered	RCC slab and Box type Median Covered	
			Bearing			
			Slope Protection	RCC Return Minor Honey is combing observed.	RCC Return Minor Honey combing is observed.	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC perfect No problem	RCC perfect No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Pitching - Turfing Chute provided. Stable in condition	Pitching - Turfing Chute provided. Stable in condition	
			Drainage	Grating Provided		
21	70.063	Minor Bridge 1 Box 7.5 m x 8.90 m Skew	Age	New - 2 lane	New - 2 lane	The structure is in sound condition. No major damages observed.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box type	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC Return & pitching	RCC Return & pitching	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition. No joint	BC is in good condition. No joint	
			Approach Slope	Stable Pitching & chute provided	Stable Pitching & chute provided	
			Drainage	Grating provided	Grating provided	
22	72+052	CUP 7.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment - RCC wall	RCC	
			Super Structure	RCC slab and Box Type Median Covered	RCC slab and Box type Median Covered	
			Bearing			
			Slope Protection	RCC return & pitching. No problem	RCC return & pitching. No problem	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC - No problem	BC - No problem	
			Approach Slope	Stable	Stable	
			Drainage	Not seen Provided drain	Not seen Provided drain	
23	72.533	VUP 2 Boxes 9.60 m x 5.50 m Super-elevation	Age	New - 2 lane	New - 2 lane	The structure is sound in condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box Type Median Covered	RCC slab and Box Type Median Covered	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Bearing			
			Slope Protection	RCC return + wing wall Honey combing observed. bushes growth observed at joint	RCC return + wing wall.	
			Nalla Bed	Road BC surface	Road BC surface	
			Parapet / Railing			
			Expansion Joint			
			Wearing Coat/ Surface			
			Approach Slope	Pitching & chute Provided - Toe wall. Stable in condition	Pitching & chute Provided - Toe wall. Stable in condition	
			Drainage			
24	73.603	VUP 1 Box 10.5 m x 5.5 m Super-elevation	Age	New	New	The structure is sound in condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box type Median covered	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC return and pitching. Bushes growth observed. Joint of abutment and return open	RCC return and pitching. Joint Abutment and return - Big Crack observed	
			Nalla Bed	Road - BC Low level, Drain provided	Road - BC	
			Parapet / Railing	RCC parapet	RCC parapet Parapet joint cavity	
			Expansion Joint			
			Wearing Coat/ Surface	BC - repaired. Joint crack	BC is in good condition. Joint crack	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Approach Slope	Stable Pitching and chute drain	Stable Pitching and chute drain	
			Drainage	Grating - provided		
25	74.413	CUP 7.0 m x 3.5 m 1 Box	Age	New	New	The structure is sound in condition. No major damages observed.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box type Median covered	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC return and pitching	RCC return and pitching	
			Nalla Bed	Road BT surface	Road BT surface	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC rough		
			Approach Slope	Stable in condition Turfing is provided	Stable in condition Turfing is provided	
			Drainage	Grating – clean	Grating - clean	
26	75.688	Minor Bridge 5.5 m x 2.7 m 2 Boxes	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment - RCC Wall	Abutment - RCC Wall	
			Super Structure	RCC slab Box type	RCC slab Box type	
			Bearing			
			Slope Protection	RCC return and pitching	RCC return and pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
			Wearing Coat/ Surface	BC - No problem	BC - No problem	
			Approach Slope	Stable in condition Pitching & chute is provided	Stable in condition Pitching & chute in provided	
			Drainage	Grating provided	Grating provided	
27	76.033	Minor Bridge 8.75 m x 7.30 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment RCC wall Centre RCC wall Minor Honey combing is observed	Abutment RCC wall Centre RCC wall Honey combing is observed	
			Super Structure	RCC slab and Box type 4 boxes	RCC slab and Box type 4 boxes	
			Bearing			
			Slope Protection	RCC return - Toe wall. Pitching is provided	RCC return - Toe wall Pitching is provided	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet Minor Honey combing	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition. No joint	BC is in good condition. No joint	
			Approach Slope	Stable in condition Pitching and chute is provided	Stable in condition Pitching and chute is provided	
			Drainage	Grating provided Clean	Grating provided Clean	
28	76.473	CUP 2 box opening 5.5 m x 5.0 m x 5.9 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall Minor Honey combing is observed	RCC wall	
			Super Structure	RCC slab and Box type	RCC slab and Box type	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Bearing			
			Slope Protection	RCC return, Pitching is provided	RCC return, Pitching is provided	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	Rutting is observed on BC	BC is in good condition	
			Approach Slope			
			Drainage	Grating provided No problem	Grating provided No problem	
29	76.957	CUP Skew 1 Box 7.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box Type	RCC slab and Box Type	
			Bearing			
			Slope Protection	RCC return, Pitching is provided	RCC return, Pitching is provided	
			Nalla Bed	Road Service road both sides		
			Parapet / Railing	RCC Parapet No problem	RCC Parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface			
			Approach Slope	Stable Pitching and chute	Stable Pitching and chute	
			Drainage	Grating provided	Grating - Not seen	
30	77.955	CUP 1 Box 7.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Super Structure	RCC slab and Box type	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC return and pitching	RCC return and pitching	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC rough Approach crack	Approach crack is observed	
			Approach Slope	Stable in condition Pitching - chute drain	Stable in condition Pitching - chute drain	
			Drainage	Blocked Need to be cleaned	Blocked Need to be cleaned	
31	78.250	PUP 1 opening & 1 opening for pipe culvert	Age	New	New	The structure is in sound condition. Repair to approach settlement is required.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box type	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC return and pitching. Toe wall	RCC return and pitching. Toe wall	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable in condition Pitching and chute is provided	Stable in condition Pitching and chute	
			Drainage	Blocked	Grating - Not seen	
32	78.707	Minor Bridge	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment RCC wall Centre RCC wall	Abutment RCC wall Centre RCC wall	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
				Minor Honey combing is observed	Honey combing is observed	
			Super Structure	RCC slab and Box type 4 boxes	RCC slab and Box type 4 boxes	
			Bearing			
			Slope Protection	RCC return - Toe wall. Pitching is provided	RCC return - Toe wall Pitching is provided	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition. No joint	BC is in good condition. No joint	
			Approach Slope	Stable in condition Pitching and chute is provided	Stable in condition Pitching and chute is provided	
			Drainage	Grating provided & Clean	Grating provided & Clean	
33	78.784	CUP Skew	Age	New	New	The structure is in sound condition. The RCC return wall on Left shall require repair
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment RCC wall	Abutment RCC wall	
			Super Structure	RCC slab and Box type	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC return and Pitching is provided	RCC return and Pitching is provided	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joint			
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	No problem	No problem	
34	79.313	CUP	Age	New - 2 lane	New - 2 lane	The structure is in

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
		7.0 m x 3.5 m	Foundation	RCC footing		sound condition.
			Sub Structure Abutment / Pier	RCC slab Damaged due to collision of vehicle	RCC slab Damaged due to collision of vehicle	
			Super Structure	RCC slab	RCC slab	
			Bearing			
			Slope Protection	Return and pitching is provided. Minor Honey combing is observed	Return and pitching is provided	
			Nalla Bed	SR on both side	SR on both side	
			Parapet / Railing	RCC - No problem	RCC - No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC - No problem	BC - No problem	
			Approach Slope	Stable in condition Pitching and chute drain is provided	Stable in condition Pitching and chute drain is provided	
			Drainage	Drain pipe need to be provide	Drain pipe need to be provide	
35	79.703	ROB - Skew 2 Span, 1 span, Railway Track 24 m x 2 m & 1 m x 14 m	Age	New	New 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	Abutment - RCC wall Centre - RCC pier 4 Nos.	Abutment - RCC wall Centre - RCC pier 4 Nos.	
			Super Structure	RCC girder - 4 Nos. RCC slab	RCC girder - 4 Nos. RCC slab	
			Bearing	PTFE Type	PTFE Type	
			Slope Protection	RCC return & pitching	RCC return & pitching	
			Nalla Bed	Rail Track	Rail Track	
			Parapet / Railing	RCC No problem	RCC No problem	
			Expansion Joint	4 Nos. good in condition	4 Nos. good in condition	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
			Wearing Coat/ Surface	BC damaged Approach settlement repaired	BC surface Rough	
			Approach Slope	Stable	Stable	
			Drainage	No problem	No problem	
36	80.138	VUP 9.60 m x 5.50 m	Age	New	New	The structure is in sound condition. No major damaged observed.
			Foundation	RCC footing.	RCC footing	
			Sub Structure Abutment / Pier	Abutment RCC wall	Abutment RCC wall	
			Super Structure	RCC Slab wall Bushes growth is observed. Super-elevation Median covered	RCC slab	
			Bearing	-	-	
			Slope Protection	RCC Return wall. Pitching Road	RCC wing wall – sloping top Pitching	
			Nalla Bed	Low level Box Drain provided	Road low level Box Drain provided	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	BC damaged	BC No Problem	
			Approach Slope	Common with Adjoining Minor Bridge Stable		
			Drainage	No Problem	No Problem	
37	80.494	Minor Bridge 6.0 m x 9.8 m	Age	New	New	The structure is in sound condition. No major problem observed.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall 1 span	RCC wall 1 span	
			Super Structure	RCC slab and Box type	RCC slab and Box type	
			Bearing			

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Slope Protection	RCC Return Pitching - Toe Wall	RCC Return Pitching - Toe wall	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC Parapet No problem	RCC Parapet No problem	
			Expansion Joint	Nil	Nil	
			Wearing Coat/ Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable in condition Pitching, turfing and Chute Drain is provided	Stable in condition Pitching, turfing and Chute Drain is provided	
			Drainage	No problem	No problem	
38	85.777	Minor Bridge (8.80 x 4.70)	Age	Old - 2 Lane Low Level	New - 2 Lane	The structure is in sound condition.
			Foundation	RCC Footing	RCC Footing	
			Sub Structure Abutment / Pier	Abutment RCC Wall	Abutment RCC Wall RCC pier	
			Super Structure	Solid Slab Repaired with guniting - Bushes growth observed	RCC Slab and Box Type - 3 Span	
			Bearing	-	-	
			Slope Protection	RCC return - Pitching	RCC return - Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC Parapet		
			Expansion Joint	Nil	Nil	
			Wearing Coat/ Surface	BC - No Problem	BC - No Problem	
			Approach Slope	Stable	Stable	
			Drainage	Grating - Clean	Grating - Clean	
39	90.202	Minor Bridge Skew 6.4 m x 3.2 m	Age	New 2 Lane – Span	Old (Low level) 2 Lane (2 Span)	The structure is in sound condition.
			Foundation	RCC Footing	RCC Footing	
			Sub Structure Abutment / Pier	Abutment - RCC Wall Centre Wall Type pier	Abutment - RCC Wall Centre RCC Pier	
			Super Structure	RCC Slab and Box Type	Solid Slab - Fine crack	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
				Minor Honey Combing observed on toe	observed	
			Bearing	No bearing	No bearing	
			Slope Protection	RCC return. Pitching	RCC return. No Pitching	
			Nalla Bed	Not Clean	Not Clean, Debris	
			Parapet / Railing	RCC Parapet	RCC Railing	
			Expansion Joint	Nil	Nil	
			Wearing Coat/ Surface	BC is in good condition	BC - Damaged	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	To be provided	To be provided	
40	90.557	Vehicular Underpass 9.3 m x 5.5 m	Age	New	New	The structure is in sound condition.
			Foundation	RCC Footing	RCC Footing	
			Sub structure Abutment / Pier	RCC Wall & honey combing	RCC Wall	
			Super Structure	RCC Slab median covered	RCC Slab	
			Bearing	Nil	Nil	
			Slope Protection	Wing wall - Joint crack pitching	Wing wall - Joint crack pitching	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC Parapet	RCC Parapet	
			Expansion Joint	-	-	
			Wearing Coat/ Surface	BC is in good condition. Approach Joint Crack	BC is in good condition	
			Approach Slope	Pitching and Turfing is provided Retaining wall	Pitching and Turfing is provided Retaining wall	
			Drainage			
41	91.892	Major Bridge (River) 16.3 m x 5 m	Age	Old - 2 Lane	New (Height - 3m)	The structure is in sound condition.
			Foundation	RCC Footing	RCC Footing	
			Sub structure Abutment / Pier	Abutment - RCC Wall Wall Type RCC piers	RCC wall Piers	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
				Condition - Satisfactory		
			Super Structure	5 Span Solid Slab Honey Combing noticed	4 girders and slab Footpath both side Condition No problem	
			Bearing	Elastomeric Bearing		
			Slope Protection	RCC Return and Pitching	Slope wall and pitching	
			Nalla Bed	Standing water Not accessible	Standing water Not accessible	
			Parapet / Railing	RCC - Parapet No Problem	RCC - Parapet No Problem	
			Expansion Joint	Need to clean	Need to clean	
			Wearing Coat/ Surface	BC - Approach Settlement Cracks	BC - No problem	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Not seen To be provided	Water grating clear	
42	92.557	Vehicular Underpass 10.5 m x 5.5 m	Age	Not constructed	New (2 Lane)	The structure is in sound condition.
			Foundation	-	RCC Footing	
			Sub Structure Abutment / Pier	-	RCC Wall Box Type	
			Super Structure	-	RCC Slab Box Type Tilting observed crack	
			Bearing	-	Nil	
			Slope Protection	-	Wing Wall	
			Nalla Bed	-	Road	
			Parapet / Railing	-	RCC Parapet	
			Expansion Joint	-	Joint Crack	
			Wearing Coat/ Surface	-	BC - Approach slab joint crack	
			Approach Slope		Pitching - Toe wall stable	
			Drainage		Gratings provided	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
43	95.487	Minor Bridge 1 x 9.0 m x 3.0 m	Age	Old - (Low Level) 2 Lane	New - 2 Lane	The structure is in sound condition.
			Foundation	RCC Footing	RCC Footing	
			Sub structure / Abutment / Pier	Abutment RCC Wall	Abutment RCC Wall	
			Super Structure	RCC Solid Slab	Slab - Box Type	
			Bearing	No bearing	No bearing	
			Slope Protection	RCC return - Pitching	RCC return - Pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC Parapet/ Railing Damaged	RCC Parapet	
			Expansion Joints	No Joint		
			Wearing Coat Surface	BC is in good condition	BC - Settlement Potholes	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Not seen to be provided		
44	96.859	Minor Bridge 2 x 2.5 x 2.0	Age	Old (Low level) - 2 lane	New - 2 lane	The structural condition is sound.
			Foundation	RCC footing	RCC footing	
			Sub structure/ Abutment / Pier	Abutment - RCC wall RCC Pier	RCC wall - RCC and Pier Solid Slab	
			Super Structure	RCC Solid Slab	RCC Solid Slab	
			Bearing	No bearing	No bearing	
			Slope Protection	RCC return and pitching. No problem	RCC return and pitching. No problem	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	Railing	RCC Parapet	
			Expansion Joints	No Expansion joint	No Expansion joint	
			Wearing Coat Surface	BC is in good condition	BC is in good condition	
			Approach Slope	No Problem	No Problem	
			Drainage	No Problem	No Problem	
45	100.121	Minor Bridge Approx. 1x 20’ x 15’	Age	New - 2 lane	New - 2 lane	The structural condition is sound.
			Foundation	RCC footing	RCC footing	
			Sub structure/ Abutment / Pier	RCC wall	RCC wall	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	**LHS**	**RHS**	
			Super Structure	Solid Slab	Solid slab	
			Bearing			
			Slope Protection	RCC Return & pitching	RCC Return & pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet	RCC parapet	
			Expansion Joints	Nil	Nil	
			Wearing Coat Surface	BC - Damaged Approach settlement observed	BC - Damaged Approach settlement observed	
			Approach Slope	No	No	
			Drainage	No problem	No problem	
46	101.300	Minor Bridge 1 x 7.0 m x 2.0 m	Age	Old (Low Level) - 2 lane	New - 2 lane	The structural condition is sound. The pitching is to be provided on LHS.
			Foundation	RCC footing	RCC footing	
			Sub structure/ Abutment / Pier	Abutment RCC Wall	Box Type	
			Super Structure	RCC Solid slab	RCC slab	
			Bearing			
			Slope Protection	RCC return. No pitching Tube provided	RCC return. No pitching No problem	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC parapet No problem	RCC parapet - 2' No problem	
			Expansion Joints	No joint	No joint	
			Wearing Coat Surface	BC No problem	BC No problem	
			Approach Slope	Stable	Stable	
			Drainage			
47	102.222	Minor Bridge RHS - 2 x 3.0 x 2.5 m	Age	Old - 2 lane	New - 2 lane	The structure is in sound condition. No major problem noticed.
			Foundation	RCC footing	RCC footing	
			Sub structure/ Abutment / Pier	Abutment RCC wall	RCC Box type - 2 Nos.	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
				RCC pier		
			Super Structure	Footpath	Box type - 2 Nos. RCC Slab	
			Bearing	No bearing	No bearing	
			Slope Protection	RCC return - pitching. No problem	RCC return - pitching. No problem	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC Railing	RCC parapet	
			Expansion Joints	Nil	Nil	
			Wearing Coat Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	No problem	No problem	
48	103.577	Major Bridge LHS - 4 x 16.3 m (Super-elevation)	Age	Old (Low level) - 2 span	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub structure / Abutment / Pier	Abutment - RCC wall RCC pier wall type	Abutment - RCC wall RCC circular pier Cantilever cap	
			Super Structure	Super-elevation RCC girders (3 nos.) & slab Tree growth	4 RCC girders RCC slab	
			Bearing	Elastomeric Type	Elastomeric Type	
			Slope Protection	RCC return and pitching	RCC return and pitching. No problem	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC railing	RCC parapet	
			Expansion Joints	Good	Good	
			Wearing Coat Surface			
			Approach Slope	Pitching and Turfing are provided. Stable in condition	Pitching and Turfing are provided. Stable in condition	
			Drainage	Provided	Provided	
49	104.077	Vehicular	Age	New	New	The structure is in

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
		Underpass (2 x 5.0 m x 4.5 m)		Service Road - Both side	Service Road - Both side	sound condition.
			Foundation	RCC footing	RCC footing	
			Sub structure / Abutment / Pier	Abutment - RCC Wall Centre - RCC Wall	Abutment - RCC Wall Centre - RCC Wall	Minor honeycomb seen on the wall surface need to repaired
			Super Structure	RCC slab Median open	RCC slab Median open	
			Bearing			
			Slope Protection	RCC wing wall	RCC wing wall	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC Parapet	RCC Parapet	
			Expansion Joints	Nil	Nil	
			Wearing Coat Surface	BC is in good condition	BC is in good condition	
			Approach Slope	Pitching and Turfing are provided. Toe wall Stable in condition	Pitching and Turfing is provided. Toe wall - fitting Stable in condition	
			Drainage	Grating provided No defects are seen.	Grating provided No problem observed	
50	106.067	CUP 1 Box 7.0 m x 3.5 m	Age	New - 2 lane	New - 2 lane	The structure is in sound condition.
			Foundation	RCC footing	RCC footing	
			Sub Structure Abutment / Pier	RCC wall	RCC wall	
			Super Structure	RCC slab and Box type	RCC slab and Box type	
			Bearing			
			Slope Protection	RCC return and pitching	RCC return and pitching	
			Nalla Bed	Road	Road	
			Parapet / Railing	RCC parapet No problem	RCC parapet No problem	
			Expansion Joint			
			Wearing Coat/ Surface	BC rough Approach crack	Approach crack is observed	
			Approach Slope	Stable in condition	Stable in condition	

Sr. No.	Chainage (km)	Type of Bridge / Spans	Features and Observations			General Comments
			Component	LHS	RHS	
				Pitching - chute drain	Pitching - chute drain	
			Drainage			
51	108.133	Minor Bridge 1 x 10.0 m x 3.0 m	Age	New - 2 Lane	Old - (Low Level) 2 Lane	The structure is in sound condition.
			Foundation	RCC Footing	RCC Footing	
			Sub structure / Abutment / Pier	RCC retaining wall	RCC retaining wall	
			Super Structure	RCC Solid Slab	RCC Solid Slab Bushes growth observed	
			Bearing	No bearing	No bearing	
			Slope Protection	RCC return and pitching	RCC return and pitching	
			Nalla Bed	Clear	Clear	
			Parapet / Railing	RCC Parapet Honey Combing is observed	RCC railing damaged	
			Expansion Joints	Nil	Nil	
			Wearing Coat Surface	BC is in good condition. Approach Joint Crack observed	BC - No Problem	
			Approach Slope	Stable in condition	Stable in condition	
			Drainage	Drain provided	Drain provided	

Figure 3-5 Photographs of Major Structures

View of PUP at km. 28+250

View of PUP at km. 37+170

View of VUP at km. 43+180

Side View of MNB at km. 53+300

View of MNB at km. 61+930

View of VUP at km. 65+400

MNB Cum PUP at km. 68+913

View of ROB at km. 79+703

Expansion joint condition at Major Bridge at km. 91+892

View of MJB at km. 91+892

View of MJB at km. 103+577

View of CUP at km. 106+067

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 23 Nos. of pipe culverts, 66 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of some culverts, cement concrete pitching has been damaged which required to be addressed under routine repair work by the Concessionaire.

Figure 3-6 Photographs of Culverts

Pipe culvert at km. 55+482

Box culvert at km. 51+800

3.6 Drainage

There are RCC box drains at the built-up areas and earthen drain at rural areas provided for the Project Road. Lined median longitudinal drain is provided at super-elevated sections. Some of the photographs of the drains provided are presented as below.

Figure 3-7 Photographs of Drainage

km. 55+500 (RHS)

km. 49+650 (RHS)

km. 67+700 (LHS)

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations.

3.8 Road Furniture

The Concessionaire has provided additional road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. Details of the items are provided below.

a) Lighting Along the Project Road

Lighting including fixing of poles and LED lights are provided at following locations on the Project Road in accordance with Clause 12.3 of IRC:SP:84-2014.

Table 3-3 Details of Lighting on Project Road

Sr. No.	Side	Installed/fitted at	No. of (LED) lights
1	Both Side	Highway lighting at 18 no. of locations	540
2	Both Side	Toll Plaza - 02 nos.	163
3	Both Side	Underpasses-12 nos.	72
		Total in (Nos.)	**775**

b) Transverse / Thermoplastic Bar Marking Locations

Transverse / thermoplastic bar markings on either side of carriageway on proposed service road / VUP / VUP approach locations are provided as per Section 11.2 of IRC:35-2015.

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D.

Some of the photographs of the pavement marking provided are presented as below.

Figure 3-8 Photographs of Pavement Marking

km. 30+450 (LHS)

km. 37+600 (RHS)

km. 39+600 (LHS)

km. 43+700 (LHS)

Road Studs

Road studs / Cat's eye for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / Cat's eye has been fixed at junction and zebra crossings.

Some of the photographs of the road studs provided are presented as below.

Figure 3-9 Photographs of Road Studs

km. 39+930

km. 82+180

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Some of the photographs of sign boards are presented below.

Figure 3-10 Photographs of Sign Boards

km. 95+000

km. 30+400

km. 59+950

km. 35+800

km. 53+400

km. 82+180

Median Kerb Painting

km. 64+400

km. 32+100

km.43+700

Highway Lighting

Highway lighting is provided at underpasses, toll plaza, and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpasses.

Some of the photographs of highway lighting are presented below.

Figure 3-11 Photographs of Street Light

km.46+100

km. 39+930

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of metal beam crash barriers are presented below.

Figure 3-12 Photographs of MBCB / Crash Barrier

km. 31+000 (LHS)

km.32+100(LHS)

km. 91+915 (LHS)

km. 35+840 (RHS)

Delineators

816 No. of traffic delineators are provided by Concessionaire for the safety of road users along the Project Road.

Pedestrian Guard Rail

The pedestrian guard rails are provided between service road and main carriageway.

Some of the photographs of pedestrian guard rails are presented below.

Figure 3-13 Photographs of Pedestrian Guard Rail

km. 46+230 - Besides Service Road (LHS)

km. 54+150 - Besides Service Road (LHS)

Road Land Boundary

Road land boundary pillar is not found / available on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantations is observed at some locations. Median plantation has been provided in the project length as per IRC specification.

The photographs taken during the site visit are presented below.

Figure 3-14 Photographs of Median Plantation

Median Plantation at km. 28+450

Median Plantation at km. 61+900

Median Plantation at km. 62+390

Median Plantation at km. 56+900

Median Plantation at km. 65+600

Median Plantation at km. 40+150

3.10 Toll Plaza

I. Toll Plaza-1 at km. 32+600

The construction of toll plaza is completed and is in operation. 10 (5+5) Nos. of lanes has been constructed and all are under operation. The Concessionaire has constructed administration, operation and maintenance facility at base camp. All required facilities are available at the toll plaza. Some of the photographs of toll plaza-1 are presented below.

Table 3-4 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 32+600
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for over dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for	Tunnel / no

Sr. No.	Particulars	Details
	Movement between Toll Lanes and Administrative Building	
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	6
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-15 Photographs of Toll Plaza-1

Toll Plaza-1 at km. 32+600

Toll Plaza-1 at km. 32+600

Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which is connected to the common server and are capable of independent storage of data.

Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of camera based, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at TP

Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

Over Head Lane Signal (OHLS)

The Overhead Lane Signal (OHLS) for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

Toll Booth Equipment

- Toll Booth Hardware / Equipment provided are:
- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

The violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

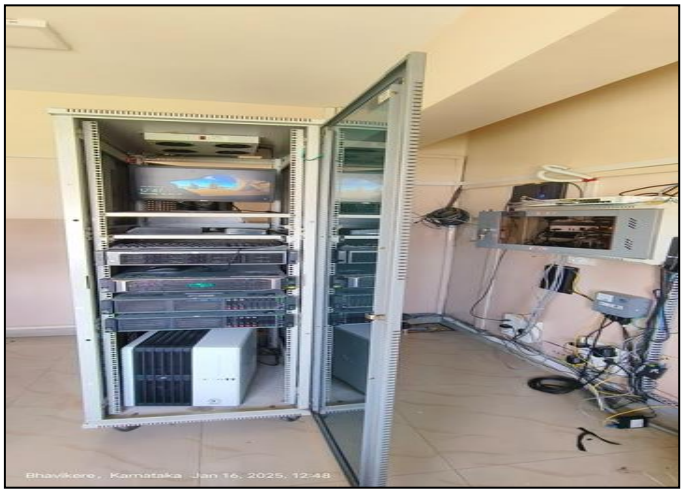
Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

Plaza Equipment

TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewalls with Sophos antivirus is provided.



55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides a view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

Workstations in Control Room, POS room

Workstations are available in the control room (lane monitoring, administration, and audit), cash room and PoS.

II. **Toll Plaza-2 at km. 101+250**

The construction of toll plaza is completed and is in operation. 10 (5+5) Nos. of lanes has been constructed and all are under operation. Concessionaire has constructed administration, operation and maintenance facility at base camp. All required facilities are available at the toll plaza. Some of the photographs of toll plaza - 2 are presented below.

Table 3-5 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 101+250
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for over dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel/no
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	6
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-16 Photographs of Toll Plaza-2

Lane Equipment

The following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of camera based, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to

pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

Lane Traffic Light (LTL) and User Fare Display (UFD)

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The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC at Toll Plaza

Over Head Lane Signal (OHLS)

The Overhead Lane Signal (OHLS) for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza

Toll Booth Equipment

- Toll Booth Hardware / Equipment provided are:
- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm

- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

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Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

Medium Speed Weigh in Motion (MSWIM)

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Plaza Equipment

TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

Workstations in Control Room, POS room

Workstations are available in the control room (lane monitoring, administration, and audit), cash room and PoS.

3.11 Bus Bays and Passenger Shelters

There are 64 Nos. of bus bays / shelter along Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-17 Photographs of Passenger Shelters

km. 56+900

km. 29+400

3.12 Truck Lay-bye

The truck lay-bye are provided at the following locations on Project Road.

Table 3-6 Details of Truck Lay-bye

Sr. No.	Chainage (km)	Remarks
1	32+150 (LHS)	Good condition. No toilet block.
2	32+500 (RHS)	Good condition. No toilet block.
3	64+500 (LHS)	
4	64+600 (RHS)	
5	88+240 (LHS)	
6	88+540 (RHS)	

Some of the photographs of the truck lay bye are presented below.

Figure 3-18 Photographs of Truck Lay Bye

km. 32+150

km. 88+900

3.13 Toilet Block

Toilet blocks are provided at the Toll Plaza locations on the Project Road.

Toilet block at Toll Plaza

3.14 Balance Work Status

The Project Road has received Final Completion Certificate on 23rd June 2012 by completing all the works as mentioned in the Technical Schedules of Concession Agreement. There are no balance works to be executed as per Concession Agreement.

3.15 Operation and Maintenance

3.15.1 O&M Contract

As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable

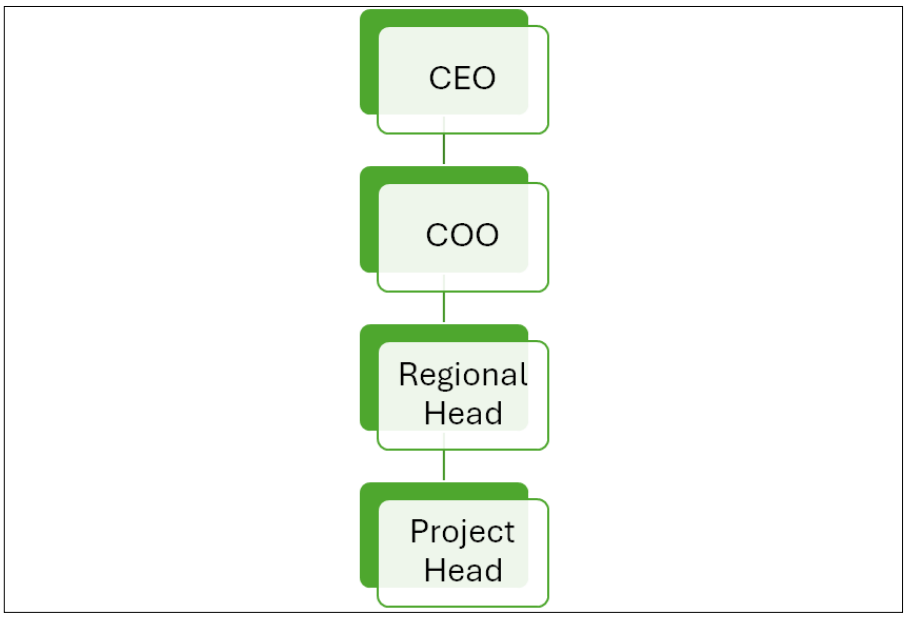
Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

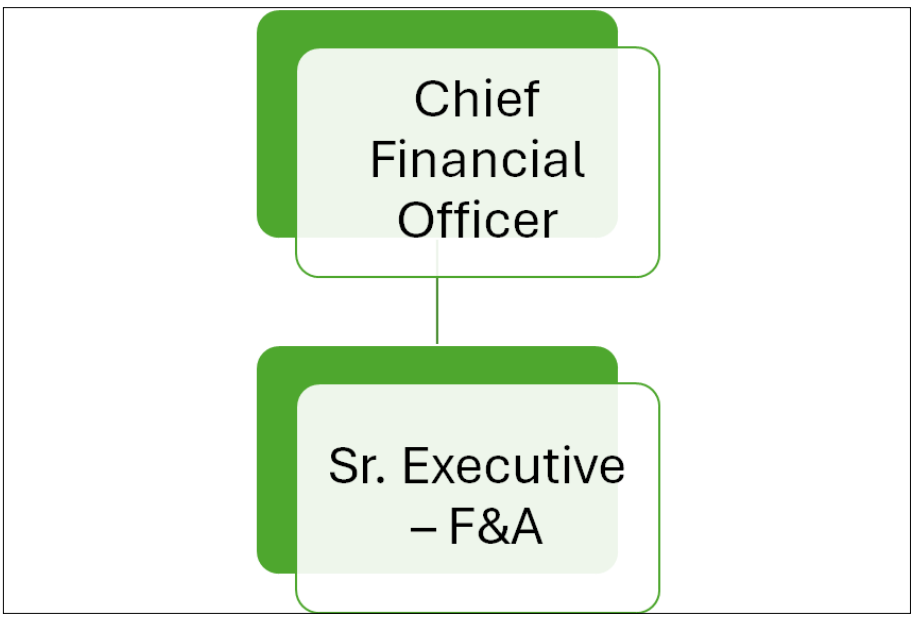
3.15.2 Organization Chart

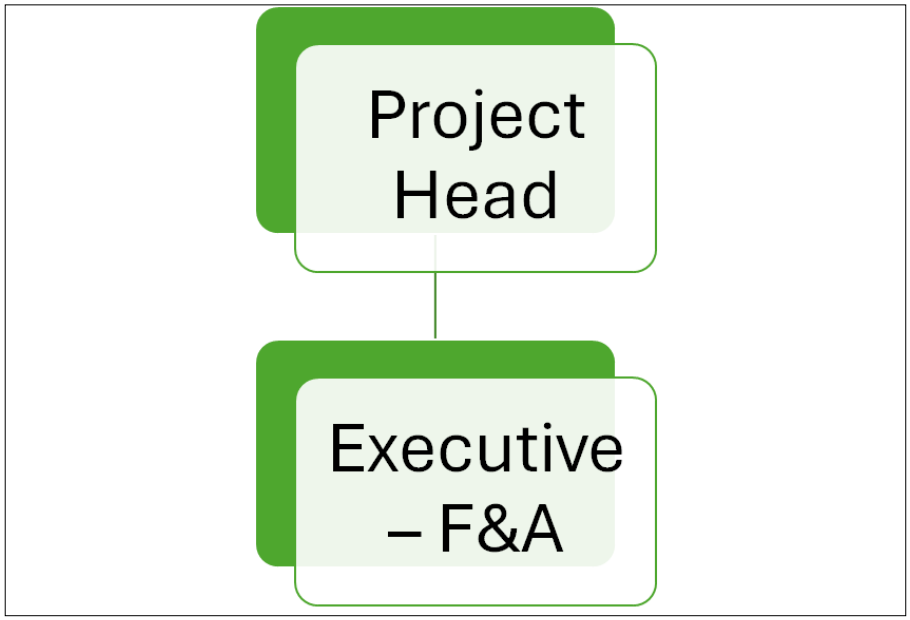
The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (HR), 01 Assistant Manager (TMS / IT), 01 Executive (TMS / IT), 01 Plaza Manager, 01 Assistant Plaza Manager, 04 Cashiers and 04 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart

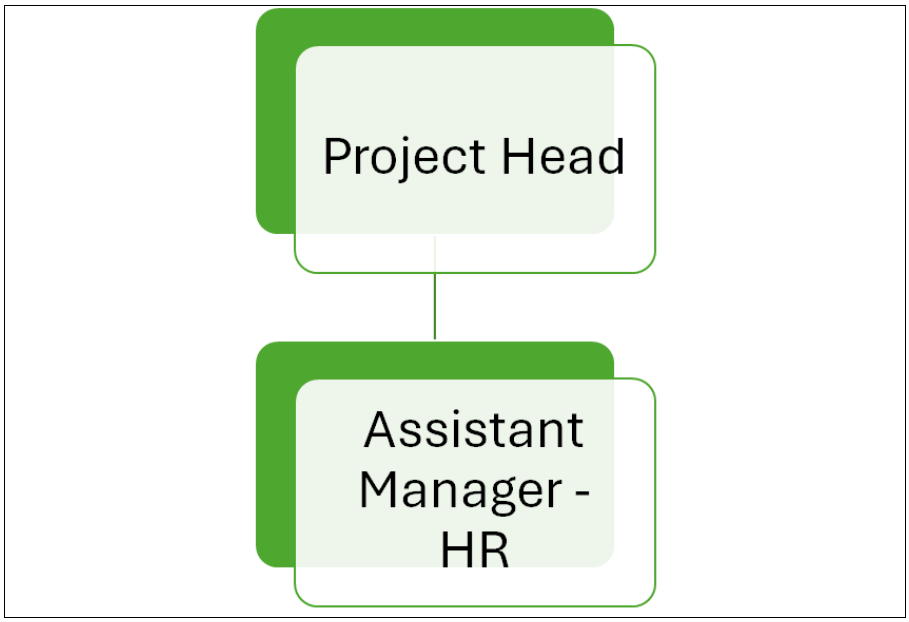


Finance & Accounts

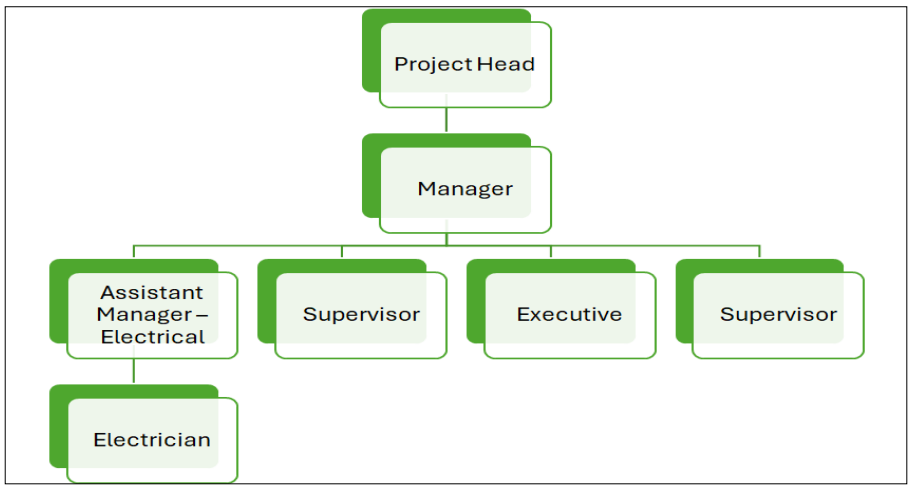




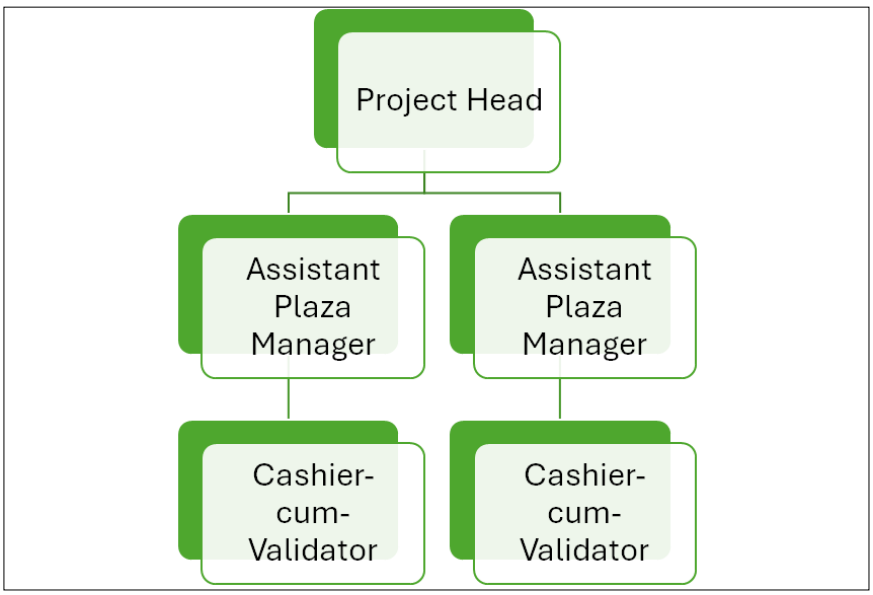
Human Resource



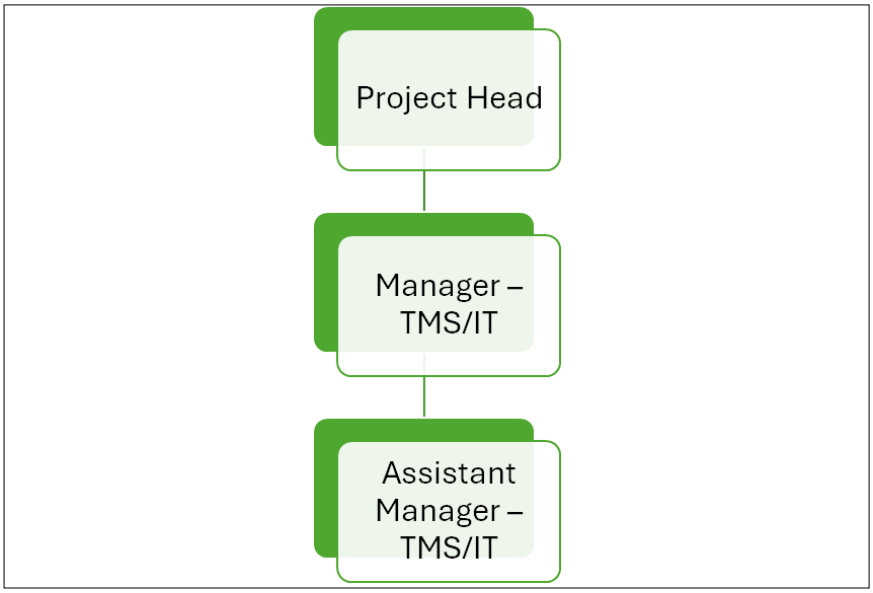
Maintenance



Operations



Operation Systems



Traffic & Road study

3.15.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.15.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire received the Completion Certificate on 23rd June 2012.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 25 years from the Appointed Date including construction period of 30 months.

4.2 Axle Load and VDF

The Concessionaire has conducted the axle load survey on Project Road at km. 32+500 (near Doddakarenahalli Toll Plaza) and at km. 100+950 (near Karabylu Toll Plaza) from 29-Mar-2021 to 02-Apr-2021. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor (VDF)

Vehicle Category	Vehicle Damage Factor			
	At TP-1 (km. 32+500)		At TP-2 (km. 100+950)	
	LHS	RHS	LHS	RHS
Bus	1.049	1.036	1.034	1.051
LCV	0.738	1.238	0.874	1.231
2-Axle	2.533	4.52	3.281	3.133
3-Axle	4.932	15.218	7.076	8.977
MAV	7.471	11.848	15.92	18.081

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculation at TP-01					
Year	LHS		RHS		Remarks
	MSA	Cumulative MSA	MSA	Cumulative MSA	
FY25	-	**-**	-	**-**	
FY26	1.83	**1.83**	3.32	**3.32**	
FY27	1.83	**3.67**	3.29	**6.61**	
FY28	1.94	**5.61**	3.49	**10.11**	
FY29	1.94	**7.55**	3.48	**13.59**	
FY30	2.08	**9.63**	3.74	**17.33**	
FY31	2.08	**11.71**	3.72	**21.04**	

MSA Calculation at TP-01					
Year	**LHS**		**RHS**		**Remarks**
	MSA	**Cumulative MSA**	**MSA**	**Cumulative MSA**	
FY32	2.23	**13.94**	3.99	**25.03**	
FY33	2.23	**16.17**	3.97	**29.01**	End of concession period

MSA Calculation at TP-02					
Year	**LHS**		**RHS**		**Remarks**
	MSA	**Cumulative MSA**	**MSA**	**Cumulative MSA**	
FY25	-	**-**	-	**-**	
FY26	2.76	**2.76**	3.13	**3.13**	
FY27	2.78	**5.54**	3.16	**6.29**	
FY28	3.01	**8.55**	3.42	**9.71**	
FY29	3.02	**11.57**	3.43	**13.14**	
FY30	3.26	**14.83**	3.69	**16.83**	
FY31	3.26	**18.09**	3.70	**20.53**	
FY32	3.51	**21.60**	3.98	**24.51**	
FY33	3.52	**25.12**	3.99	**28.51**	End of concession period

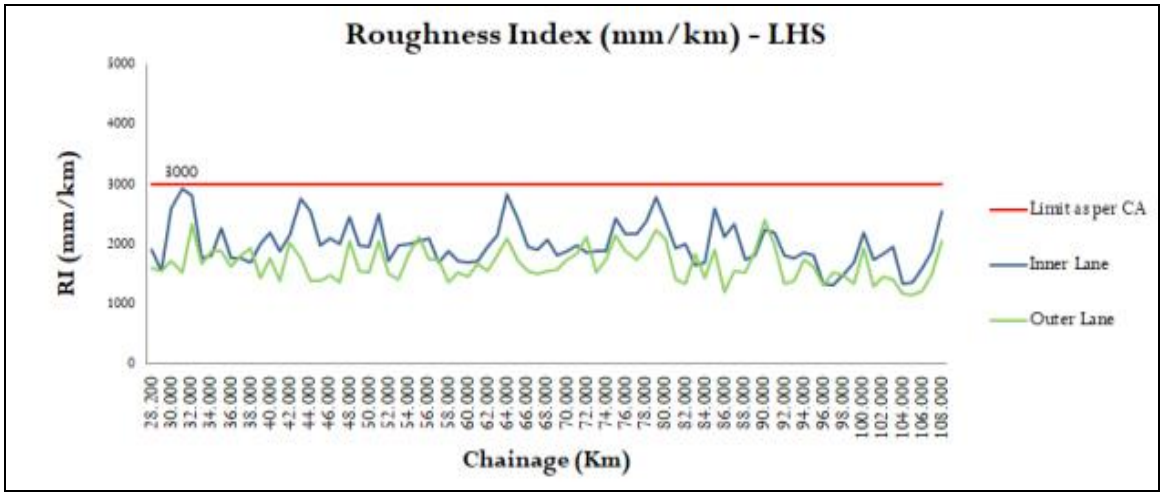
4.4 Network Survey Vehicles (NSV) Survey

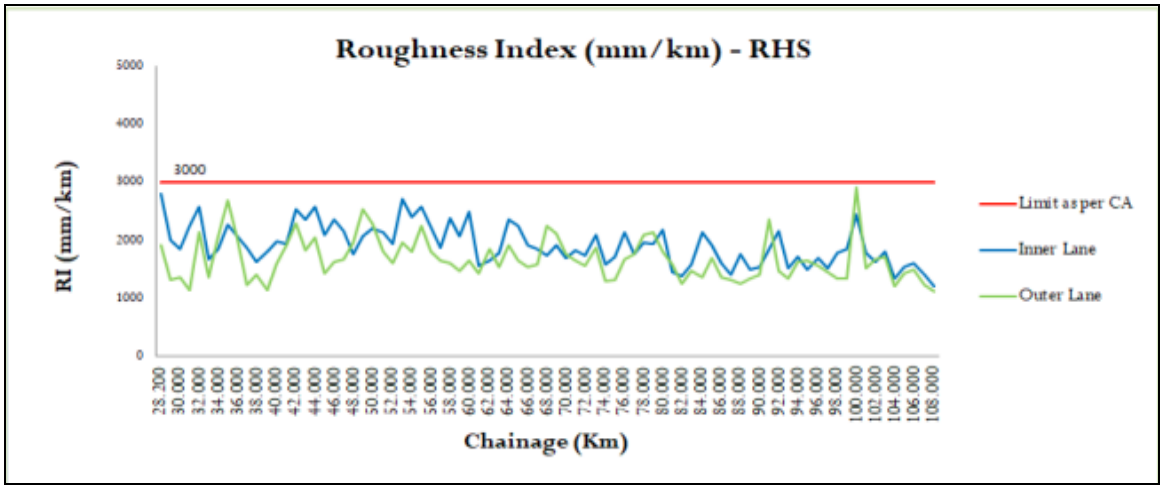
The Concessionaire has provided NSV survey data conducted in November 2024. The NSV data is used to assess the riding quality and pavement condition of Project Road. The summary of classification of pavement as per Schedule-L is given in the table below:

Table 4-3 Summary of NSV Survey

Riding Condition	Roughness Index (mm/km)	Length (km)			
		LHS		RHS	
		Inner	Outer	Inner	Outer
Good	<2000	46.80	68.80	50.40	65.20
Fair	2000-3000	33.40	11.40	29.80	15.00
Poor	>3000	0.00	0.00	0.00	0.00

From the above table it is observed that the overall condition of pavement is Good to Fair.





4.5 Structural Investigations

An evaluation of existing pavement using Falling Weight Deflectometer (FWD) survey was carried out from 10-Oct-2024 to 13-Oct-2024. Summary of FWD Survey report is presented in the table below:

Table 4-4 Summary of FWD Survey

Description	Length (km)			
	LHS		RHS	
	Inner Lane	Outer Lane	Inner Lane	Outer Lane
Less than 10 MSA	-	-	-	-
10-50 MSA	20.00	24.00	35.00	35.85
Above 50 MSA	61.47	57.47	46.47	48.62
Total Length Tested	**81.47**	**81.47**	**81.47**	**81.47**

From the above table, it is concluded that the residual life of the pavement is more than the design life of the Project Road. Hence, immediate major maintenance of the pavement is not required.

The strengthening/ overlay of pavement for Project Road are derived from 15th percentile of corrected E moduli of existing pavement, existing crust thickness etc. The combination of existing pavement and overlay will be analyzed as a four-layer system to ensure that fatigue and rutting criteria are satisfied for the calculated design traffic in terms of MSA. IITPAVE program is used to compute strain value at bottom of bituminous layer and top of subgrade in order to calculate design life of the proposed overlay. Poisson's ratio values used in overlay analysis from top to bottom of existing pavement layers are 0.5, 0.4 and 0.4 for existing bituminous, existing granular and existing subgrade layers respectively. Elastic modulus of 3000 MPa (VG-40) is used for the new bituminous layer.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below:

Table 4-5 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Existing Road	Location (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 micron	75 micron		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	NH-75	28+600	RHS	SM-SC	100.0	98.3	93.6	80.4	59.7	41.8	41.8	26	20	6	1.93	10.3	1.86	9.0	10.3	10.0	96.4
2	NH-75	31+000	LHS	SM	100.0	99.4	95.7	87.8	64.8	35.7	35.7	24	NP	NP	2.04	8.3	1.89	8.0	12.8	0.0	92.6
3	NH-75	33+400	RHS	SC	93.4	91.5	84.4	70.2	58.2	43.2	43.2	31	20	11	1.94	10.8	1.88	12.0	9.7	20.0	96.9
4	NH-75	36+000	LHS	SM-SC	99.3	98.3	94.2	78.0	49.5	29.3	29.3	25	19	6	2.06	8.4	1.88	10.0	11.9	11.1	91.3
5	NH-75	38+450	RHS	SM	97.1	96.1	92.0	74.4	40.8	23.3	23.3	26	NP	NP	2.04	8.3	1.82	8.0	15.3	12.5	89.2
6	NH-75	41+030	LHS	SM	100.0	100.0	96.5	80.8	50.1	26.1	26.1	24	NP	NP	1.99	9.2	1.81	10.0	14.5	0.0	91.0
7	NH-75	42+500	RHS	SM-SC	100.0	98.1	94.3	79.0	51.3	32.8	32.8	28	21	7	1.97	9.7	1.84	9.0	13.2	11.1	93.4
8	NH-75	46+050	LHS	SC	100.0	95.3	92.9	81.6	54.9	38.5	38.5	28	20	8	1.96	9.5	1.89	11.0	9.2	22.2	96.4
9	NH-75	48+300	RHS	SM	98.4	96.5	87.4	68.0	40.6	24.5	24.5	19	NP	NP	2.05	7.9	1.93	10.0	18.1	0.0	94.1
10	NH-75	51+000	LHS	SM	100.0	96.4	92.9	77.7	53.2	38.5	38.5	25	NP	NP	2.01	8.3	1.93	9.0	10.4	7.3	96.0
11	NH-75	53+550	RHS	GM	82.6	71.4	63.5	55.7	46.9	29.3	29.3	26	NP	NP	2.13	8.8	1.95	13.0	9.2	11.1	91.5
12	NH-75	56+000	LHS	SM	94.4	91.6	86.4	78.7	50.9	30.0	30.0	25	NP	NP	2.02	9.1	1.96	12.0	9.6	0.0	97.0
13	NH-75	58+360	RHS	SC	100.0	100.0	99.5	96.0	68.4	42.7	42.7	33	21	12	1.97	9.8	1.80	9.0	7.3	22.2	91.4
14	NH-75	61+100	LHS	SM	100.0	99.0	95.4	87.3	70.9	40.9	40.9	27	NP	NP	2.02	8.8	1.87	12.0	8.8	7.3	92.6
15	NH-75	63+35	RHS	SC	100.0	98.9	96.6	93.0	74.6	47.3	47.3	33	20	13	2.01	11.3	1.96	8.0	7.6	20.0	97.5

Sr. No.	Existing Road	Location (km)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 micron	75 micron		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
16	NH-75	66+08	LHS	SM	98.3	98.1	96.2	94.4	49.3	24.7	24.7	21	NP	NP	2.06	8.5	1.90	8.0	18.1	0.0	92.2
17	NH-75	68+23	RHS	SM	100.0	99.1	97.8	96.3	63.3	27.5	27.5	21	NP	NP	2.11	9.0	1.86	6.0	14.5	0.0	88.2
18	NH-75	71+000	LHS	SM	99.1	95.2	90.0	86.6	55.3	34.4	34.4	24	NP	NP	1.99	9.2	1.83	10.0	13.7	0.0	92.0
19	NH-75	73+200	RHS	SM	100.0	91.9	81.3	74.8	50.3	36.7	36.7	24	NP	NP	1.95	8.7	1.89	10.0	13.8	0.0	96.9
20	NH-75	76+500	LHS	SM-SC	89.1	86.4	82.6	80.4	61.1	40.8	40.8	24	18	6	2.05	9.3	1.88	12.0	9.5	5.3	91.7
21	NH-75	78+850	RHS	SM	100.0	97.9	95.5	93.7	71.9	38.3	38.3	24	NP	NP	2.04	8.6	1.90	11	9.8	0.0	93.1
22	NH-75	81+370	LHS	SM	100.0	92.6	84.7	79.4	51.1	25.3	25.3	19	NP	NP	2.14	8.1	1.94	13.0	14.3	0.0	90.7
23	NH-75	83+500	RHS	SM	96.1	96.1	93.9	92.0	72.1	39.6	39.6	23	NP	NP	2.03	8.5	1.93	8.0	14.7	0.0	95.1
24	NH-75	86+000	LHS	SM-SC	100.0	98.9	89.6	83.1	62.3	48.8	48.8	25	19	6	1.92	10.5	1.92	10.0	10.3	11.1	100.0
25	NH-75	88+500	RHS	ML	100.0	97.2	92.7	90.5	66.0	51.9	51.9	23	NP	NP	1.91	9.6	1.84	11.0	8.1	0.0	96.3
26	NH-75	91+075	LHS	SM	100.0	93.2	89.5	87.8	65.8	35.0	35.0	24	NP	NP	1.96	8.3	1.88	8.0	10.6	0.0	95.9
27	NH-75	93+530	RHS	SM-SC	96.6	87.0	77.9	71.9	46.9	30.3	30.3	25	18	7	2.10	8.7	1.91	7.0	12.4	11.1	91.0
28	NH-75	96+030	LHS	SM	100.0	92.2	74.6	64.7	45.1	21.7	21.7	20	NP	NP	2.17	7.7	1.97	8.0	17.6	0.0	90.8
29	NH-75	98+500	RHS	SM	100.0	94.4	88.4	83.9	61.3	35.9	35.9	26	NP	NP	2.01	10.0	1.96	8.0	10.4	0.0	97.5
30	NH-75	101+400	LHS	SM	100.0	95.5	87.2	82.9	49.1	25.5	25.5	24	NP	NP	2.07	7.6	1.91	11.0	12.4	0.0	92.3
31	NH-75	103+400	RHS	SM	97.3	85.6	72.8	67.6	46.7	25.5	25.5	21	NP	NP	2.15	7.9	1.93	12.0	14.9	0.0	89.8
32	NH-75	106+000	LHS	SM	96.3	91.8	83.1	79.0	44.6	25.7	25.7	25	NP	NP	2.06	8.0	1.84	9.0	16.3	0.0	89.3
33	NH-75	108+550	RHS	SM	100.0	99.3	98.5	98.0	83.2	40.7	40.7	24	NP	NP	1.99	9.8	1.92	10.0	10.1	0.0	96.5

Table 4-6 Test Results Summary of Granular Layer Samples

Sr. No.	Location (km)	Side (LHS/ RHS)	Type of Material	Gradation Conforming to Specifications (as per MORTH 5th Revision)	Atterberg Limits			Specific Gravity	Water Absorption (%)	Aggregate Impact Value (%)
					Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
1	28+600	RHS	WMM	Confirming to WMM Gradation	20	NP	NP	2.68	0.25	37.51
2	31+000	LHS	WMM	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	23	NP	NP	2.67	0.20	36.01
3	33+400	RHS	GSB	Not Confirming to any Gradation	20	NP	NP	2.67	0.47	32.52
4	36+000	LHS	GSB	4.75mm IS Sieve Material Slightly Coarser side in GSB-IV	22	NP	NP	2.70	0.41	27.96
5	38+450	RHS	WMM	4.75mm,2.36mm,600µ IS Sieve Material Slightly Finer side in WMM Gradation	20	NP	NP	2.67	0.20	34.68
6	41+030	LHS	WMM	Confirming to WMM Gradation	21	NP	NP	2.67	0.26	37.47
7	42+500	RHS	GSB	26.5mm,4.75mm IS Sieve Material Slightly Finer side in GSB-III, IV	23	NP	NP	2.68	0.32	38.86
8	46+050	LHS	GSB	53mm IS Sieve Material Slightly Coarser side in GSB-IV	22	NP	NP	2.69	0.49	29.96
9	48+300	RHS	WMM	Confirming to WMM Gradation	19	NP	NP	2.69	0.37	34.24
10	51+000	LHS	WMM	Confirming to WMM Gradation	20	NP	NP	2.68	0.32	36.21
11	53+550	RHS	GSB	Confirming to GSB-III&IV	22	NP	NP	2.73	0.36	35.51
12	56+000	LHS	GSB	26.5mm IS Sieve Material Slightly Finer side in GSB-III &IV	21	NP	NP	2.71	0.32	32.16
13	58+360	RHS	WMM	22.4mm,11.2mm,4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	22	NP	NP	2.66	0.38	33.39
14	61+100	LHS	WMM	Not Confirming to any Gradation	20	NP	NP	2.68	0.32	35.09
15	63+350	RHS	GSB	26.5mm IS Sieve Material Slightly Finer side in GSB-IV	19	NP	NP	2.68	0.38	34.32
16	66+080	LHS	GSB	Confirming to GSB-III&IV	21	NP	NP	2.68	0.49	32.56
17	68+230	RHS	WMM	4.75mm,2.36mm IS Sieve Material Slightly Coarser side in WMM	22	NP	NP	2.66	0.26	32.98

Sr. No.	Location (km)	Side (LHS/ RHS)	Type of Material	Gradation Conforming to Specifications (as per MORTH 5th Revision)	Atterberg Limits			Specific Gravity	Water Absorption (%)	Aggregate Impact Value (%)
					Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
				Gradation						
18	71+000	LHS	WMM	22.4mm,11.2mm,4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	19	NP	NP	2.65	0.31	36.70
19	73+200	RHS	GSB	26.5mm,4.75mm IS Sieve Material Slightly Finer side in GSB-III,IV	23	NP	NP	2.65	0.27	32.18
20	76+500	LHS	GSB	53mm,26.5mm IS Sieve Material Slightly Coarser side in GSB-III&IV	22	NP	NP	2.65	0.21	33.15
21	78+850	RHS	WMM	Not Confirming to any Gradation	20	NP	NP	2.67	0.37	32.67
22	81+370	LHS	WMM	11.2mm,4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	20	NP	NP	2.63	0.31	34.19
23	83+500	RHS	GSB	53mm IS Sieve Material Slightly Coarser side in GSB-IV	20	NP	NP	2.67	0.34	35.78
24	86+000	LHS	GSB	Confirming to GSB-III&IV	19	NP	NP	2.66	0.49	33.41
25	88+500	RHS	WMM	4.75mm,2.36mm IS Sieve Material Slightly Coarser side in WMM Gradation	19	NP	NP	2.67	0.26	32.31
26	91+075	LHS	WMM	Confirming to WMM Gradation	20	NP	NP	2.68	0.42	34.21
27	93+530	RHS	GSB	53mm IS Sieve Material Slightly Coarser side in GSB-IV	23	NP	NP	2.63	0.32	36.61
28	96+030	LHS	GSB	53mm IS Sieve Material Slightly Coarser side in GSB-IV	21	NP	NP	2.67	0.45	36.41
29	98+500	RHS	WMM	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	18	NP	NP	2.69	0.35	33.20
30	101+400	LHS	WMM	Confirming to WMM Gradation	24	NP	NP	2.62	0.24	34.93
31	103+400	RHS	GSB	Confirming to GSB-III&IV	22	NP	NP	2.64	0.24	35.06
32	106+000	LHS	GSB	53mm IS Sieve Material Slightly Coarser side in GSB-III	22	NP	NP	2.65	0.30	33.64
33	108+550	RHS	WMM	Confirming to WMM Gradation	22	NP	NP	2.71	0.43	32.45

Table 4-7 Summary of Pavement Crust Thickness

Sr. No.	Location (km)	Side (RHS / LHS)	Pavement Composition (mm)		
			Bituminous Layer (mm)	Granular Layer(mm)	Total Thickness (mm)
1	28+600	RHS	210	440	650
2	31+000	LHS	200	440	640
3	33+400	RHS	200	460	660
4	36+000	LHS	220	410	630
5	38+450	RHS	260	400	660
6	41+030	LHS	190	420	610
7	42+500	RHS	230	440	670
8	46+050	LHS	210	430	640
9	48+300	RHS	250	470	720
10	51+000	LHS	175	470	645
11	53+550	RHS	200	460	660
12	56+000	LHS	225	390	615
13	58+360	RHS	220	420	640
14	61+100	LHS	170	430	600
15	63+350	RHS	200	400	600
16	66+080	LHS	215	410	625
17	68+230	RHS	230	400	630
18	71+000	LHS	200	390	590
19	73+200	RHS	240	450	690
20	76+500	LHS	280	440	720
21	78+850	RHS	290	420	710
22	81+370	LHS	230	610	840
23	83+500	RHS	200	460	660
24	86+000	LHS	250	420	670
25	88+500	RHS	230	380	610
26	91+075	LHS	250	420	670
27	93+530	RHS	260	480	740
28	96+030	LHS	230	540	770
29	98+500	RHS	220	410	630
30	101+400	LHS	240	410	650
31	103+400	RHS	210	390	600
32	106+000	LHS	240	380	620
33	108+550	RHS	135	450	585

4.7 Periodic Maintenance Strategy

Major Maintenance is required in order to comply requirement of Concession Agreement and to maintain performance level as defined in Schedule-L. As per schedule-L of Concession Agreement, periodic maintenance shall be carried out at least once every 5th year from COD and in the last year of concession period.

It is noted that Concessionaire has carried major maintenance in Year 2022-23. The table below shows the major / periodic maintenance cycle throughout the balance concession period for the Project Road. As per Concession Agreement, periodic maintenance shall be carried out in the last year of concession period. Hence, major maintenance is proposed in FY 2033 for the entire length. Before carrying out major maintenance, structural evaluation shall be done through surveys and investigation to determine the overlay requirement.

Table 4-8 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road	Cart Track
1	FY 2026 to FY 2027	-	-	-
2	FY 2028	30 mm BC (PMB) overlay in 50%, 50 mm DBM (VG-40) in 5% and Micro-surfacing in 50% length	30 mm BC overlay in 50% and Micro-surfacing in 50% length	30 mm BC overlay in 50% and Micro-surfacing in 50% length
3	FY 2029 to FY 2032	-	-	-
3	FY 2033	30mm BC (VG-40) overlay in 100% length, 50 mm DBM (VG-40) in 5%	30 mm BC overlay in 50% and Micro-surfacing in 50% length	30 mm BC overlay in 50% and Micro-surfacing in 50% length

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Work Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years.

   Rate of polymer and modification cost were provided by the Client to workout BC rate with PMB.

   Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from market rate.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.) (FY 26 onwards)
1	Dense Bituminous Macadam (VG-40)	Cum	9,365
2	Bituminous Concrete (PMB)	Cum	12,361
3	Bituminous Concrete (VG-40)	Cum	10,624
4	Bituminous Concrete (VG-30)	Cum	10,336
5	Milling	Sqm	110
6	Micro-surfacing	Sqm	176
7	Kerb Re-laying	Rmt	297
8	Road Marking-BC Surface	Sqm	423
9	Road Marking-Micro Surface	Sqm	603
10	Road Studs	Nos.	185

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, balance work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other

miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads:

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount
1	Salary and Welfare Expenses	1,98,00,000
2	Tolling Operations Services Outsourced	4,76,43,509
3	Toll Security Services Outsourced	91,44,273
4	Incident Management & Emergency Services	2,87,32,922
5	Electricity and Diesel Charges	84,49,247
6	TMS/System Expenses	36,10,800
7	Office Operating Expenses	22,12,525
8	Vehicle Running Expenses	43,20,000
9	Professional Fees Expenses	80,09,339
10	Community Development	12,39,014
11	Communication Expenses	7,08,008
12	Conveyance Expenses	3,98,254
13	Insurance Expenses	88,34,783
14	IE Fees	88,50,098
15	Routine Maintenance Cost (Project Road)	4,39,82,538
16	Horticulture & ROW Maintenance	3,36,39,742
17	Miscellaneous including Contingency	45,58,583
	Total Cost (Rs.)	**23,41,33,635**
	Total Cost (Cr.)	**23.41**
	Per km Cost (Lakhs)	29.17

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2028	86.18	
2	FY 2033	95.56	
Total Cost (Cr.)		**181.74**	

5.6 Periodic Replacement of TMS / System

Every 7 years, replacement of cost of major TMS / system is considered. The same is provided as below.

Sr. No.	Year	TMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2030	1.29	
Total Cost (Cr.)		**1.29**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%	**2057**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr)

Sr. No.	Year of expense	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33
1	Routine O&M Cost								
1.01	Salary and Welfare Expense	1.98	2.09	2.20	2.31	2.41	2.51	2.61	2.72
1.02	Tolling Operations Services	4.76	5.03	5.29	5.55	5.79	6.04	6.29	6.55
1.03	Toll Security Services	0.91	0.96	1.02	1.06	1.11	1.16	1.21	1.26
1.04	Incident Management Services	2.87	3.03	3.19	3.35	3.49	3.64	3.79	3.95
1.05	Electricity and Diesel Charges	0.84	0.89	0.94	0.98	1.03	1.07	1.12	1.16
1.06	TMS/System Expenses	0.36	0.38	0.40	0.42	0.44	0.46	0.48	0.50
1.07	Office Operating Expenses	0.22	0.23	0.25	0.26	0.27	0.28	0.29	0.30
1.08	Vehicle Running Expenses	0.43	0.46	0.48	0.50	0.53	0.55	0.57	0.59
1.09	Professional Fees Expense	0.80	0.85	0.89	0.93	0.97	1.02	1.06	1.10
1.10	Community Development	0.12	0.13	0.14	0.14	0.15	0.16	0.16	0.17
1.11	Communication Expenses	0.07	0.07	0.08	0.08	0.09	0.09	0.09	0.10
1.12	Conveyance Expenses	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
1.13	Insurance Expense	0.88	0.93	0.98	1.03	1.07	1.12	1.17	1.21
1.14	IE Fees	0.89	0.93	0.98	1.03	1.08	1.12	1.17	1.22
1.15	Routine Maintenance Cost	4.40	4.64	4.88	5.12	5.35	5.58	5.81	6.04
1.16	Horticulture & ROW Maintenance	3.36	3.55	3.74	3.92	4.09	4.27	4.44	4.62
1.17	Miscellaneous and Contingency	0.46	0.48	0.51	0.53	0.55	0.58	0.60	0.63
	Subtotal of O&M Cost	23.41	24.71	26.00	27.27	28.48	29.68	30.91	32.17
2	Major Maintenance Cost			93.48					120.08
3	Periodic Cost of TMS/HTMS Replacement	-	-	-	-	1.57	-	-	-
4	Balance Works Cost	-	-	-	-	-	-	-	-
	Total Cost	**23.41**	**24.71**	**119.49**	**27.27**	**30.04**	**29.68**	**30.91**	**152.25**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**4,39,82,538**
(Inclusive of GST)	**= 5.48 lakhs per km**

Sr. No.	Description for Flexible Pavement		Factor	Normal	Urban	Hilly	Project Length (km)		Per Year Project Maintenance Cost	
				More than 4500 CVD	More than 4500 CVD	More than 4500 CVD				
				2,85,788	**3,24,369**	**3,29,210**				
							Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	437255.00	496285.00	503691.00	-	-	-	-
		Paved shoulder	1.70	485839.00	551428.00	559657.00	58.40	-	2,83,71,540	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	571576.00	648739.00	658420.00	-	-	-	-
		Paved shoulder	2.20	628733.00	713613.00	724262.00	-	21.88	-	1,56,10,998
						TOTAL	**80.273**		**4,39,82,538**	

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Potholes repair (50 mm deep)	100 % Pothole free	As & when required	0.75%
	Volume (cum)			3.75
	Rs/m^3			10915
	Cost in Rupees			40,931
	ii) Patch repair	100 % Patch less	As & when required	1.50%
	Area (sqm)			150
	Rs/m^2			437
	Cost in Rupees			65,490
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	3.00%
	Area (sqm)			300
	Rs/m^2			70
	Cost in Rupees			20,886
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.50%
	Area (sqm)			187.5
	Rs/m^2			46
	Cost in Rupees			8,708
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			437
	Cost in Rupees			65,490

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	v) Road marking	14%	Once in 7th year & @ Repaired location	10558
	SUB TOTAL			**2,12,063**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Jungle Clearance	100%	Twice in a Year	2038
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**9,340**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	2751
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**9,803**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2426

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	ii) Maintenance of gang hut store, sheds, animal & debris removal		Once in a Year	3639
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometre stone etc.		Once in a Year	3639
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**18,194**
	GRAND TOTAL (Normal)			**2,85,788**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Centre Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	9229
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**38,582**

ANNEXURE II - MAJOR MAINTENANCE COST

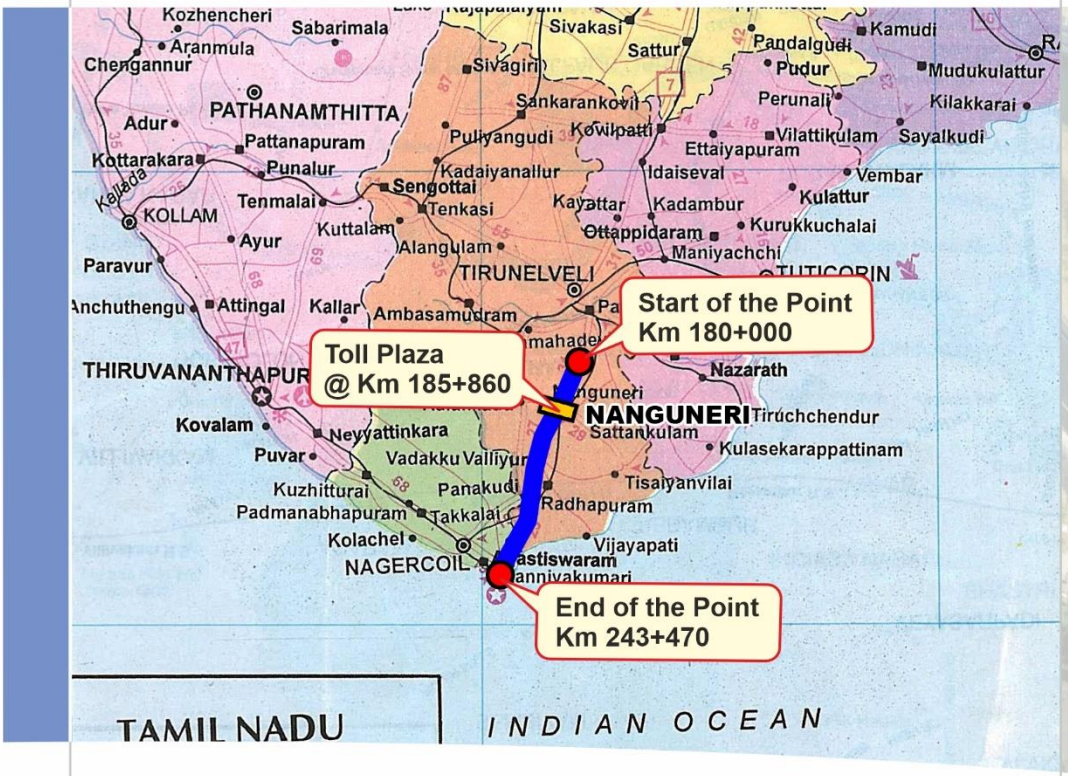
Major Maintenance Cost (FY 2028)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						7,77,956	13	99,65,612
	For BC	Sqm	2	39,280	8.75		6,87,402	6,87,402		
	For DBM	Sqm	2	4,013	7.00		56,183	56,183		
	For Misc. Location	Sqm	2	1,964	8.75		34,370	34,370		
2	BC with PMB-70	Cum	2	39,280	8.75	0.03	20,622	21,653	12,361	26,76,62,183
3	Micro Surfacing	Sqm	2	39,280	8.75		6,87,402	7,21,772	176	12,70,31,924
4	DBM with VG-40	Cum	2	4,013	7.00	0.05	2,809	2,809	9,365	2,63,07,765
5	Milling	Sqm	2	4,013	7.00		56,183	56,183	110	61,80,174
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	3,338	3.50	4.50	2,670	2,670	121	3,23,080
7	Dismantling of CC Panels @ 5% area	Cum	5%		52,567	0.30	789	789	1,065	8,39,603
8	Replacement of Panels - PQC @ 5% area	Cum	5%		52,567	0.30	789	789	10,295	81,17,367
	Service Road									
9	Tack coat	Sqm	1	24,064	7.00		1,68,445	1,85,290	13	23,73,561
10	BC with 30 mm	Cum	1	24,064	7.00	0.03	5,053	5,559	10,624	5,90,52,871
11	Micro Surfacing	Sqm	1	24,064	7.00		1,68,445	1,68,445	176	2,96,46,355
	Cart Track									
12	Tack coat	Sqm	1	15,290	5.50		84,095	84,095	13	10,77,257
13	BC with 30 mm	Cum	1	15,290	5.50	0.03	2,523	2,523	10,624	2,68,01,547
14	Micro Surfacing	Sqm	1	15,290	5.50		84,095	84,095	176	1,48,00,720
	Structures									
15	Tack coat	Sqm	1	850	20.5		17,462	17,462	13	2,23,683
16	Wearing coat PMB-70	Cum	1	850	20.5	0.03	524	524	12,361	64,75,448
17	Milling of Ex. Wearing Coat	Sqm	1	850	20.5		17,462	17,462	110	19,20,772
18	Painting of Crash Barrier	Sqm	4	850		1.12	3,790	3,790	129	4,88,895
	Other Works									
19	Raising of Road Kerb	Rmt	2	63,344			1,26,687	1,26,687	297	3,76,26,173
20	Replacement of Road Stud									

Major Maintenance Cost (FY 2028)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Normal Road Stud	Nos	2	9,811			19,622	19,622	185	36,26,146
	Solar Road Stud	Nos	1	-			-	-	1,815	-
21	Painting of Kerb	Sqm	2	1,26,739		0.375	95,055	95,055	129	1,22,62,042
22	Road Marking	Sqm					71,767	71,767	603	
	on BC							35,884	423	1,51,66,965
	on Micro							35,884	526	1,88,61,775
	MCW									
	a) Median & Edge line	Sqm	4	84,275	0.15		50,565			
	b) Lane line	Sqm	2	27,811	0.10		5,562			
	Service Road									
	a) Edge line	Sqm	2	48,127	0.10		9,625			
	b) Lane line	Sqm	1	25,973	0.10		2,597			
	Junction crossing	Sqm					3,417			
23	Filling of Earthen shoulder	Cum					25,012	25,012	747	1,86,88,885
	MCW		2	78,560	2.50	0.06	23,568			
	Service Road		1	24,064	1.00	0.06	1,444			
24	Median Filling	Cum	1	77,760	4.17	-	-	-	292	-
25	Miscellaneous	5%								3,47,76,040
Total Major Maintenance Cost (Rs)										**73,02,96,843**
Total Major Maintenance Cost with GST (Rs)										**86,17,50,274**
Total Major Maintenance Cost with GST (Cr)										**86.18**
Per km Cost (lakh)										**107.37**
Escalation Factor for FY 2028)										**1.10**
Total Escalated Cost for FY 2028 (Cr)										**93.48**

Major Maintenance Cost (FY 2033)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						14,99,728	13	1,92,11,516
	For BC	Sqm	2	78,560	8.75		13,74,804	13,74,804		
	For DBM	Sqm	2	4,013	7.00		56,183	56,183		
	For Misc. Location	Sqm	2	3,928	8.75		68,740	68,740		
2	BC with 30 mm	Cum	2	82,488	8.75	0.03	43,306	43,306	10,624	46,00,65,746
3	Micro Surfacing	Sqm	2	-	8.75		-	-	176	-
4	DBM with 50 mm	Cum	2	4,013	7.00	0.05	2,809	2,809	9,365	2,63,07,765
5	Milling	Sqm	2	4,013	7.00		56,183	56,183	110	61,80,174
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 10% length	Rmt	10%	3,338	3.50	4.50	2,670	2,670	121	3,23,080
7	Dismantling of CC Panels @ 5% area	Cum	5%		52,567	0.30	789	789	1,065	8,39,603
8	Replacement of Panels - PQC @ 5% area	Cum	5%		52,567	0.30	789	789	10,295	81,17,367
	Service Road									
9	Tack coat	Sqm	1	24,064	7.00		1,85,290	1,85,290	13	23,73,561
10	BC with 30 mm	Cum	1	24,064	7.00	0.03	5,559	5,559	10,624	5,90,52,871
11	Micro Surfacing	Sqm	1	24,064	7.00		1,85,290	1,85,290	176	3,26,10,991
	Cart Track									
12	Tack coat	Sqm	1	15,290	5.50		88,300	88,300	13	11,31,120
13	BC with 30 mm	Cum	1	15,290	5.50	0.03	2,649	2,649	10,624	2,81,41,625
14	Micro Surfacing	Sqm	1	15,290	5.50		88,300	88,300	176	1,55,40,756
	Structures									
15	Tack coat	Sqm	1	850	20.5		17,462	17,462	13	2,23,683
16	Wearing Coat BC with 30 mm	Cum	1	850	20.5	0.03	524	524	10,624	55,65,097
17	Milling of Ex. Wearing Coat	Sqm	1	850	20.5		17,462	17,462	110	19,20,772
18	Painting of Crash Barrier	Sqm	4	850		1.12	3,790	3,790	129	4,88,895
	Other Works									
19	Raising of Road Kerb	Rmt	2	63,344			1,26,687	1,26,687	297	3,76,26,173
20	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,811			19,622	19,622	185	36,26,146
	Solar Road Stud	Nos	1	-			-	-	1,815	-

Major Maintenance Cost (FY 2033)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
21	Painting of Kerb	Sqm	2	1,26,739		0.375	95,055	95,055	129	1,22,62,042
22	Road Marking	Sqm					71,767	71,767		
	ON BC						65,656	65,656	423	2,77,50,833
	ON MICRO						6,111	6,111	526	32,12,363
	MCW									
	a) Median & Edge line	Sqm	4	84,275	0.15		50,565			
	b) Lane line	Sqm	2	27,811	0.10		5,562			
	Service Road									
	a) Edge line	Sqm	2	48,127	0.10		9,625			
	b) Lane line	Sqm	1	25,973	0.10		2,597			
	Junction crossing	Sqm					3,417			
23	Filling of Earthen shoulder	Cum					25,012	25,012	747	1,86,88,885
	MCW		2	78,560	2.50	0.06	23,568			
	Service Road		1	24,064	1.00	0.06	1,444			
24	Median Filling	Cum	-	77,760	4.17	0.10	-	-	292	-
25	Miscellaneous	5%								3,85,63,053
Total Major Maintenance Cost (Rs)										**80,98,24,114**
Total Major Maintenance Cost with GST (Rs)										**95,55,92,455**
Total Major Maintenance Cost with GST (Cr)										**95.56**
Per km Cost (lakh)										**119.06**
Escalation Factor for FY 2033										**1.35**
Total Escalated Cost for FY 2033 (Cr)										**120.08**

FP Project Management



Technical Due Diligence of Madurai - Kanyakumari (Package 4) of NH-44 from km. 180+000 to km. 243+470 in the state of Tamil Nadu

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	RMW / VKD	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 5
2.7 Existing Utilities 5
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 8
3.3 Major / Minor Junctions 9
3.4 Condition Survey of Bridge 9
3.5 Condition Survey of Culverts 14
3.6 Drainage 14
3.7 Slope Protection 15
3.8 Road Furniture 15
3.9 Avenue Plantation and Median Plantation 19
3.10 Toll Plaza 20
3.11 Lane Equipment 21
3.11.1 RFID ETC Transceiver 21
3.11.2 Lane Controller with Industrial PC 21
3.11.3 Automatic Vehicle Classification (AVC) Sensors 21
3.11.4 Automatic Lane Barrier 21
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 22

3.11.6 Incident Capture Camera (AVC Camera) 22
3.11.7 License Plate Image Capture Camera (LPIC) 22
3.11.8 Over Head Lane Signal (OHLS) 23
3.11.9 Toll Booth Equipment 23
3.11.10 Medium Speed Weigh in Motion (MSWIM) 24
3.12 Plaza Equipment 25
3.12.1 TMS Server 25
3.12.2 55" LED screen for CCTV monitoring 25
3.12.3 Workstations in Control Room, POS room 25
3.13 Advanced Traffic Management System (ATMS) 26
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 26
3.13.2 Mobile Radio communication System (MRCS) 26
3.13.3 Emergency Call Boxes (ECB) 26
3.13.4 Portable Weigh in Motion (PWIM) 26
3.13.5 MET System 26
3.13.6 Variable Message Signboards (VMS) 27
3.13.7 CCTV Surveillance Cameras 27
3.13.8 Video Incident Detection System 27
3.13.9 Vehicle Actuated Speed Display (VASD) 27
3.13.10 Adequacy of Toll Collection System and ATMS 28
3.14 Traffic Aid Post and Medical Aid Post 28
3.15 Toilet Block 28
3.16 Bus Bays and Passenger Shelters 29
3.17 Balance Work Status 29
3.18 Operation and Maintenance 29
3.18.1 O&M Contract 29
3.18.2 Organization Chart 29
3.18.3 Operation 31
3.18.4 Routine Maintenance 31
4 Pavement Investigation and Assessment 32
4.1 General 32
4.2 Axle Load and VDF 32
4.3 Design Traffic 32
4.4 Network Survey Vehicles (NSV) Survey 33
4.5 FWD Survey 34
4.6 Test pit and Subgrade Investigation 35
4.7 Periodic Maintenance Strategy 40

5 Cost Estimates 41
5.1 General 41
5.2 Rate Assumption 41
5.3 Balance Work Cost 42
5.4 Routine O&M Cost 43
5.5 Major Maintenance Cost 44
5.6 Periodic Replacement of TMS / ATMS System 44
5.7 Escalation Assumption 45
5.8 Summary of Cost 45
Annexures 47
Annexure I - Routine Maintenance Cost 48
Annexure II - Major Maintenance Cost 53

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 9
Table 3-2 Condition Survey of Major Structure 10
Table 3-3 Details of Summary for Toll Plaza Items 20
Table 3-4 Details of Toilet Block 28
Table 4-1 Vehicle Damage Factor (VDF) 32
Table 4-2 MSA Calculation 32
Table 4-3 Summary of Roughness Index 33
Table 4-4 Test Results Summary of Natural Ground Soil Samples 37
Table 4-5 Granular Layer's Test Results Summary 37
Table 4-6 Major Maintenance Cycle 40
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 41
Table 5-2 Summary of Unit Rates 42
Table 5-3 Summary of Operation Cost 44
Table 5-4 Escalation 45

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start and End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 7
Figure 3-2 Photographs of Service Road 8
Figure 3-3 Photographs of Junctions 9
Figure 3-4 Photographs of Major Structures 13
Figure 3-5 Photographs of Culverts 14
Figure 3-6 Photograph of RCC Drain 15
Figure 3-7 Photographs of Pavement Marking 15
Figure 3-8 Photographs of Road Studs 16
Figure 3-9 Photographs of Road Signages 17
Figure 3-10 Photograph of Street Light 17
Figure 3-11 Photographs of MBCB / Crash Barrier 18
Figure 3-12 Photograph of Delineator 18
Figure 3-13 Photographs of Pedestrian Guard Rail 19
Figure 3-14 Photographs of Median and Avenue Plantation 19
Figure 3-15 Photographs of Toll Plaza 20
Figure 3-16 Photographs of Bus Bay / Passenger Shelter 29
Figure 5-1 Photographs of VUP (Work in progress) 43

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Nanguneri to Kanyakumari Section of NH-44 from km. 180+000 to km. 243+470 in the State of Tamil Nadu (hereinafter referred as "Project Road").

Nanguneri Kanyakumari Tollway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Nanguneri to Kanyakumari Section (km. 180+000 to km. 243+470) of NH-44 or Project Road under TOT Bundle-3. The project was awarded to Concessionaire on 20th October 2020. The length of Project Road is 63.47 kms with one toll plaza at Nanguneri Village at km. 185+860.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and filed investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, aaxle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out from **22nd January 2025 to 23rd January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates**: The chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Nanguneri Kanyakumari Tollway Private Limited**, is a company promoted by Cube Highways or a Special Purpose Vehicle (SPV) formed for implementing this project on 27th December 2019. The Appointed Date for the Project Road is 20th October 2020.

The project is being developed under TOT (Toll Operate Transfer) Bundle-3 with concession period of 30 years from the Appointed Date. The end of the concession period is in the year 2050.

2.2 Location

The Project Road is part of National Highway No. 44 (old NH-7) of Madurai-Kanyakumari section in the State of Tamil Nadu. The total project length is 63.47 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start and End of Project Road

Start of the Project Road

End of the Project Road

2.3 Climate

The project being in the region southeast of the western ghats, the area is hot and dry. Temperatures range between a maximum of 37 °C and a minimum of 22 °C. April to June are the hottest months and December and January are the coldest with temperatures rising towards the end of February. Rainfall occurs mostly during the north-east monsoon in the months of October to December. However, the project stretch receives little rainfall, averaging 840 mm. Annual rainfall has ranged from 964 mm to 228 mm during past decades.

2.4 Terrain

This section of National Highway traverses through plain terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up area.

2.6 Right of Way

The width of existing Right of Way (RoW) throughout the project stretch is 60.0 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Nanguneri village (km. 180+000) to Kanyakumari (km. 243+470) has been developed as a four-lane divided carriageway with a median width of 2 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	Km.	63.47	
2	Construction of Service Road	Km.	2.74	(LHS+RHS)
3	Reconstruction of Pipe Culvert	Nos.	03	
4	Widening of existing Pipe Culvert	Nos.	02	
5	Widening of existing Slab Culvert	Nos.	01	
6	Repair & rehabilitation of Major Bridges	Nos.	02	
7	Repair & rehabilitation of Minor Bridges	Nos.	31	
8	Repair & rehabilitation of Box Culvert	Nos.	44	
9	Repair & rehabilitation of Pipe Culvert	Nos.	104	
10	Repair & rehabilitation of ROB	Nos.	02	
11	Repair & rehabilitation Vehicular Underpass (VUP)	Nos.	06	
12	Improvement of Major Junction	Nos.	05	
13	Improvement of Minor Junction	Nos.	15	
14	Provision of Drain	Km	2.74	(LHS+RHS)

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

The pavement condition survey was carried out from **22nd January 2025 to 23rd January 2025** through visual inspection for the entire project length. From the visual inspection, it is found that the pavement condition of the Project Road is found to be Good.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

km. 181+200

km. 208+880

km. 221+800

km. 237+900

km. 239+600

km. 243+400

3.2 Service Road / Slip Road

The service road with width varies from 5.5 m to 7.0 m and is constructed in built-up area and adjoining underpass locations. The Project Road has total service road length of 62.28 kms. The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

km. 180+250

km. 190+350

3.3 Major / Minor Junctions

There are 12 nos. of major junctions and 50 nos. of minor junctions along Project Road.

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Junctions

Junction at km. 221+800

Junction at km. 225+750

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Structures:	
Major Bridges (MJB)	02
Minor Bridges (MNB)	31
Slab Culverts / Box Culverts	44
Pipe Culverts	104
Road over Bridges (ROB)	02
Vehicle / Cattle Underpass	06
Total	**189**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Major Bridge								
1	197+330	LHS	3 x 21.4	9	10.25	RCC	Open	Structure is in sound condition.
		RHS	3 x 21.4	9	10.25	RCC	Open	
2	239+800	LHS	6 x 17	9.5	12.5	RCC	Open	Structure is in sound condition.
		RHS	6 x 17	9.5	12.5	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of Structure	Type of foundation	Remarks
Minor Bridges								
1	182+330	SR(LHS)	1 x 7.3	7.5	8.5	RCC	Open	Structure is in sound condition.
		LHS+RHS	1 x 7.3	9.5+9.5	10.5	RCC	Open	
2	184+697	LHS	1 x 6.3	9	12	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.3	9	12	RCC	Open	
3	189+490	LHS	2 x 6.5	7.5	10	RCC	Open	Structure is in sound condition.
		RHS	2 x 6.5	7.5	10	RCC	Open	
4	189+075	SR+LHS	1 x 6.1	8.5+7.5	10+9.0	RCC	Open	Structure is in sound condition.
		SR+RHS	1 x 6.1	7.5+7.5	10+9.0	RCC	Open	
5	193+150	LHS	1 x 6.8	9	12	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.8	9	12	RCC	Open	
6	193+850	LHS	2 x 6.5	7.5	9	RCC	Open	Structure is in sound condition.
		RHS	2 x 6.5	9	15	RCC	Open	
7	203+023	LHS	1 x 8	9	10	RCC	Open	Structure is in sound condition.
		RHS	1 x 8	9	10	RCC	Open	
8	204+016	SR+LHS	2 x 5	7+8.75	8+9.75	RCC	Open	Structure is in sound condition.
		RHS+SR	2 x 5	8.75+7	9.75+8	RCC	Open	
9	204+611	LHS	2 x 6	7.5	10	RCC	Open	Structure is in sound condition.
		RHS	2 x 6	7.5	10	RCC	Open	
10	206+700	SR+LHS	1 x 10	7.5+8	9+10	RCC	Open	Structure is in sound condition.
		RHS+SR	1 x 10	8+7.5	10+9	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of Structure	Type of foundation	Remarks
11	209+124	SR(LHS)	1 x 6.5	8	9	RCC	Open	Structure is in sound condition.
		Main+SR	1 x 6.5	9+8+9	29	RCC	Open	
12	213+173	LHS	2 x 8.9	9	10.5	RCC	Open	Structure is in sound condition.
		RHS	2 x 8.9	9	10.5	RCC	Open	
13	216+087	LHS	1 x 8.5	9	10.5	RCC	Open	Structure is in sound condition.
		RHS	1 x 8.5	9	10.5	RCC	Open	
14	217+035	LHS	1 x 8	9	10	RCC	Open	Structure is in sound condition.
		RHS	1 x 8	9	10	RCC	Open	
15	226+335	LHS	1 x 10	8.75	10.25	RCC	Open	Structure is in sound condition.
		RHS	1 x 10	8.75	10.25	RCC	Open	
16	226+500	LHS	1 x 10	8.75	10.25	RCC	Open	Structure is in sound condition.
		RHS	1 x 10	8.75	10.25	RCC	Open	
17	226+910	LHS	1 x 10.2	9	11.5	RCC	Open	Structure is in sound condition.
		RHS	1 x 10.2	9	11.5	RCC	Open	
18	227+343	LHS	1 x 6.8	9.25	10.5	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.8	9.25	10.5	RCC	Open	
19	229+962	LHS	1 x 10	8.75	10.25	RCC	Open	Structure is in sound condition.
		RHS	1 x 10	8.75	10.25	RCC	Open	
20	232+107	LHS	1 x 6.6	9.25	10.5	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.6	9.25	10.5	RCC	Open	
21	232+620	LHS	1 x 6.6	9	10.5	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.6	9	10.5	RCC	Open	
22	232+984	LHS	1 x 10	8.75	10.25	RCC	Open	Structure is in sound condition.
		RHS	1 x 10	8.75	10.2	RCC	Open	
23	233+134	LHS	1 x 10	7.5	10	RCC	Open	Structure is in sound condition.
		RHS	1 x 10	7.5	10	RCC	Open	
24	234+194	LHS	1 x 6.6	9	10.25	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.6	9	10.25	RCC	Open	
25	235+236	LHS	1 x 6.6	9	11.75	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.6	9	11.75	RCC	Open	
26	237+412	LHS	1 x 6.8	9	10	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.8	9	10	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of Structure	Type of foundation	Remarks
27	237+945	LHS	1 x 6.6	9.25	12	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.6	9.25	12	RCC	Open	
28	238+309	LHS	1 x 8	9	10	RCC	Open	Structure is in sound condition.
		RHS	1 x 8	9	10	RCC	Open	
29	238+981	LHS	1 x 6.8	9.25	12	RCC	Open	Structure is in sound condition.
		RHS	1 x 6.8	9.25	12	RCC	Open	
30	239+695	LHS	1 x 10	9	12.5	RCC	Open	Structure is in sound condition.
		RHS	1 x 10	9	12.5	RCC	Open	
31	239+952	LHS	1 x 10	9.5	12.5	RCC	Open	Structure is in sound condition.
		RHS	1 x 10	9.5	12.5	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of Structure	Type of foundation	Condition of Structure
ROB									
1	219+170	LHS	1 x 25	25	7.5	11	RCC	Open	Structure is in sound condition.
		RHS	1 x 25	25	7.5	11	RCC	Open	
2	242+750	LHS	2 x 20 + 23 + 2 x 20	103	9.5	12.5	RCC	Open	Structure is in sound condition.
		RHS	2 x 20 + 23 + 2 x 21	103	9.5	12.5	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Remarks
VUP								
1	190+335	LHS	2 x 10	20	9	20.5	RCC	Structure is in sound condition.
		RHS	2 x 10	20	9		RCC	
2	192+352	LHS	1 x 10	10	9	23	RCC	Structure is in sound condition.
		RHS	1 x 10	10	9		RCC	
3	200+980	LHS	2 x 10	20	9	23.5	RCC	Structure is in sound condition.
		RHS	2 x 10	20	9		RCC	
4	202+710	LHS	1 x 11.5	11.5	9	23.5	RCC	Structure is in sound condition.
		RHS	1 x 11.5	11.5	9		RCC	
5	206+880	LHS	2 x 10	20	9	23	RCC	Structure is in sound condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Remarks
		RHS	2 x 10	20	9		RCC	
6	218+361	LHS	2 x 10	20	9.25	21.67	RCC	Structure is in sound condition.
		RHS	2 x 10	20	10.5		RCC	

Figure 3-4 Photographs of Major Structures

Minor Bridge at km. 189+075

VUP at km. 190+335

Minor Bridge at km. 193+850

Major Bridge at km. 197+330

Vehicular Underpass at km. 218+361

View of ROB at km. 219+170

Major Bridge at km. 239+800

View of ROB at km. 242+750

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 104 Nos. of pipe culverts and 44 Nos. of box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, The cement concrete pitching or stone pitching has been provided for slope protection.

The photographs taken during site visit are presented below.

Figure 3-5 Photographs of Culverts

Pipe culvert at km. 186+991

Box culvert at km. 181+205

3.6 Drainage

A total length of 4.51 kms of pucca / concrete drain (which includes drain on both sides) is constructed along the Project Road. The photographs taken during site visit is presented as below.

Figure 3-6 Photograph of RCC Drain

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations.

3.8 Road Furniture

The Concessionaire has provided additional road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. Details of the items are provided below.

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Some of the photographs of road marking are presented below.

Figure 3-7 Photographs of Pavement Marking

km. 180+050

km. 185+000

km. 220+000

km. 240+000

Road Studs

Road stud / cat's eye for the project Road is done as per the design standards indicated in section 12 of Schedule-D. Road studs / cat's eye has been fixed at junction and zebra crossings. Some of the photographs of road studs are presented below.

Figure 3-8 Photographs of Road Studs

km. 184+500

km. 194+600

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-9 Photographs of Road Signages

km. 209+000

km. 180+250

km. 182+020

km. 184+500

km. 193+800

km. 183+410

Highway Lighting

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers. Some of the photographs of highway lighting are presented below.

Figure 3-10 Photograph of Street Light

km. 239+800

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-11 Photographs of MBCB / Crash Barrier

km. 190+600

km. 180+300

Delineators

The traffic delineators are provided by Concessionaire for road users in abnormal condition of weather for the Project Road. The same is maintained by the Concessionaire. Some of the photographs of delineators are presented below.

Figure 3-12 Photograph of Delineator

km. 182+330

Pedestrian Guard Rail

The pedestrian guard rails are provided in the median. It is maintained by the Concessionaire. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-13 Photographs of Pedestrian Guard Rail

km. 181+200

Road Land Boundary

Road land boundary pillars are available on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantations are done only in forest land due to ROW issues and median plantation has been provided along the project length as per IRC specification.

Figure 3-14 Photographs of Median and Avenue Plantation

km. 181+200

km. 225+000

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at km. 185.860 near Nanguneri village, with the following infrastructure.

Table 3-3 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 185+860
2	Number of Tolling Lanes	10 lanes for toll operation plus 2 lanes for over dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel/No
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	4
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-15 Photographs of Toll Plaza

Toll Plaza at km. 243+200

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a camara based sensors, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC at Toll Plaza

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane "Open" and "Close" sign consists of a pair of "GREEN" (arrow) and "RED" (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza

3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at Toll Plaza

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

3.12.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location (km. 185.860). As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km. 185+860).

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.13.3 Emergency Call Boxes (ECB)

ECB's are not installed at site.

3.13.4 Portable Weigh in Motion (PWIM)

PWIM is provided at site.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km 185+860.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 13 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

3.13.7 CCTV Surveillance Cameras

Surveillance cameras are installed at 50 locations along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed.

3.13.8 Video Incident Detection System

73 Nos. fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at 8 locations each on LHS and RHS.

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy-All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.

- Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.14 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are provided at Toll Plaza.

3.15 Toilet Block

There is 1 no. of Toilet Block constructed at site and the same is maintained by the Concessionaire. The details of the same is presented below.

Table 3-4 Details of Toilet Block

Sr. No.	Chainage (km)	Side		Remarks
		LHS	RHS	
1	185+860	Yes	-	

3.16 Bus Bays and Passenger Shelters

There are 30 Nos. of bus bays / shelter along the Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-16 Photographs of Bus Bay / Passenger Shelter

km. 182+100 (LHS)

3.17 Balance Work Status

During site visit it has been observed that construction work of 01 No. of VUP at km. 235+550 is in progress. The cost of Balance Work is presented in the subsequent chapter.

3.18 Operation and Maintenance

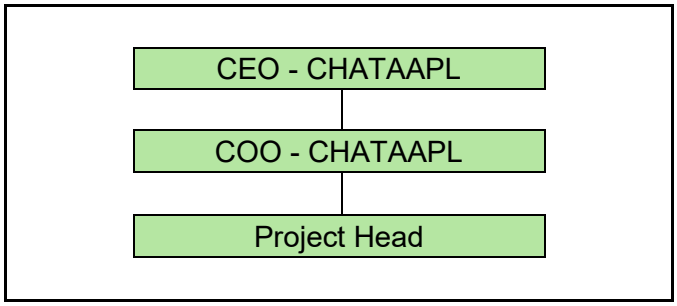
3.18.1 O&M Contract

As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement. The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

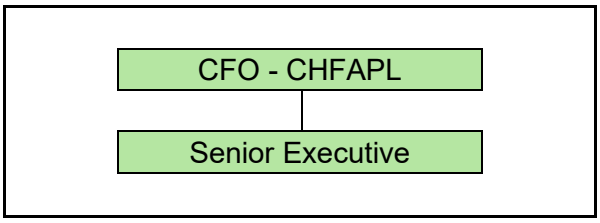
3.18.2 Organization Chart

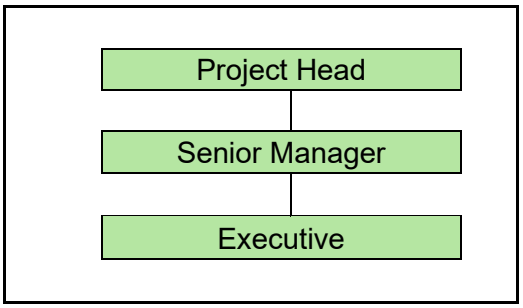
The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (HR), 01 Manager (TMS / IT), 01 Executive (TMS / IT), 01 supervisor, 01 executive, 01 electrician 01 Plaza Manager, 01 Assistant Plaza Manager, 03 Cashiers and 04 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart

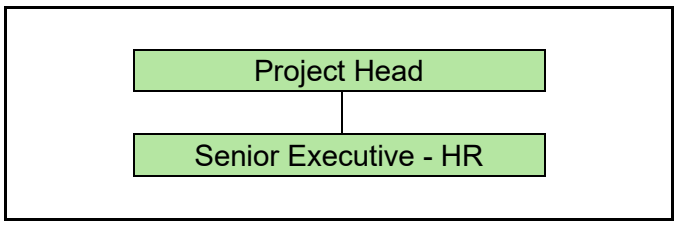


Finance & Accounts

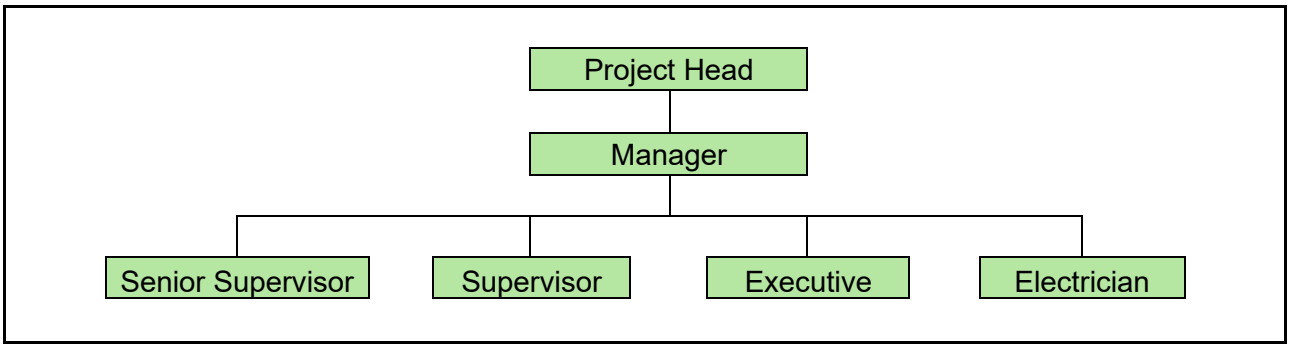




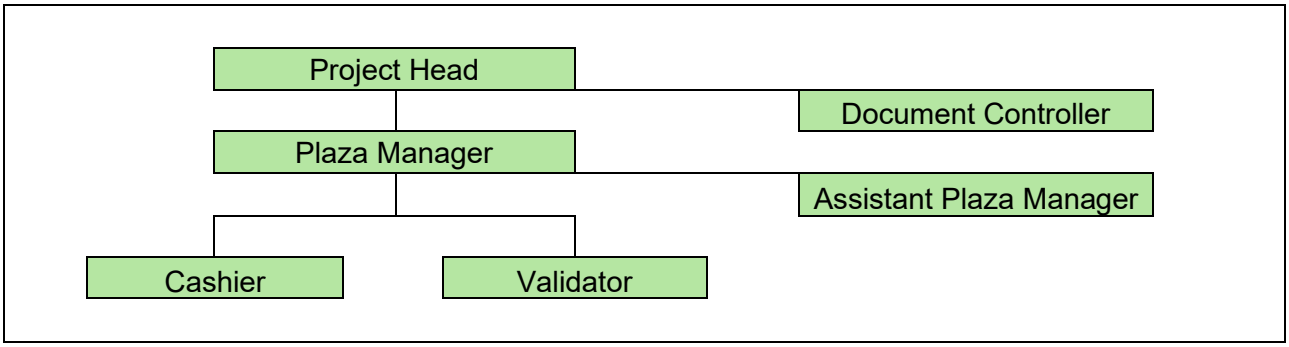
Human Resource



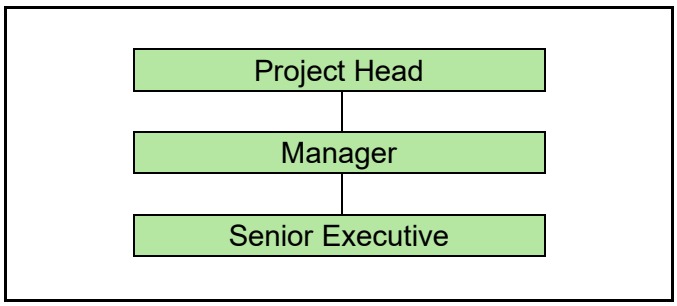
Operation & Maintenance



Operations System



Traffic and safety



3.18.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.18.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Article 15 and Schedule-F of the Concession Agreement defines the Operation and Maintenance requirement during the concession period.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 185+860 (near Toll Plaza) from 19th March 2020 to 21st March 2020. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor (VDF)

Sr. No.	Vehicle Type	Direction	
		Madurai - Kanyakumari	Kanyakumari - Madurai
1	BUS	0.725	0.869
2	LCV	0.800	0.570
3	2-Axle	2.850	2.599
4	3-Axle	7.108	3.805
5	MAV	14.429	6.201

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculations NKTPL Project					
Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
FY26	2.01	**2.01**	1.15	**1.15**	
FY27	2.10	**4.11**	1.20	**2.35**	
FY28	2.19	**6.30**	1.25	**3.60**	
FY29	2.29	**8.59**	1.30	**4.90**	1st MM Cycle
FY30	2.37	**10.96**	1.35	**6.25**	1st MM Cycle
FY31	2.45	**13.41**	1.39	**7.64**	
FY32	2.54	**15.95**	1.44	**9.08**	
FY33	2.62	**18.57**	1.49	**10.57**	
FY34	2.71	**21.28**	1.54	**12.11**	
FY35	2.81	**24.09**	1.59	**13.70**	

MSA Calculations NKTPL Project					
Year	**MSA**	**Cumulative**	**MSA**	**Cumulative**	**Remarks**
FY36	2.90	**26.99**	1.64	**15.34**	2nd MM Cycle
FY37	2.99	**29.98**	1.69	**17.03**	2nd MM Cycle
FY38	3.09	**33.07**	1.75	**18.78**	
FY39	3.19	**36.26**	1.80	**20.58**	
FY40	3.29	**39.55**	1.86	**22.44**	Crossing 40000 PCU's limit
FY41	3.39	**42.94**	1.91	**24.35**	Crossing 40000 PCU's limit
FY42	3.49	**46.43**	1.97	**26.32**	Crossing 40000 PCU's limit
FY43	3.60	**50.03**	2.03	**28.35**	DPR & 3rd MM cycle
FY44	3.71	**53.74**	2.09	**30.44**	DPR & 3rd MM cycle
FY45	3.82	**57.56**	2.15	**32.59**	Augmentation 6-Laning (Assuming 3 years Construction Period)
FY46	3.93	**61.49**	2.21	**34.80**	
FY47	4.05	**65.54**	2.28	**37.08**	
FY48	3.36	**68.90**	1.89	**38.97**	
FY49	3.46	**72.36**	1.94	**40.91**	
FY50	3.56	**75.92**	2.00	**42.91**	
FY51	3.65	**79.57**	2.05	**44.96**	
FY52	3.75	**83.32**	2.11	**47.07**	End of concession period

4.4 Network Survey Vehicles (NSV) Survey

Roughness Index

The Concessionaire has conducted pavement condition survey on each lane of carriageway through NSV. The NSV survey was conducted on the Project Road on 05th January 2025 to 18th January 2025. The summary of the same is presented below.

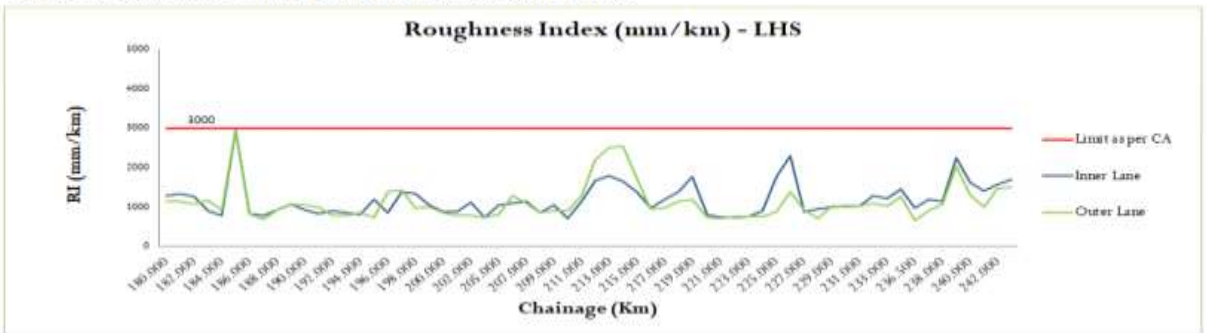
Table 4-3 Summary of Roughness Index

Table 2-1: Summary of RI Limit as per Schedule F of CA

Roughness Summary % as per Schedule F of CA (mm/km)					
Condition	Limit as per Schedule F of CA (mm/km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<3000	100.00%	100.00%	100.00%	100.00%
Poor	>3000	**0.00%**	**0.00%**	**1.66%**	**1.66%**

Note: Higher Roughness values are observed from km 185.700 to km 185.900 at Toll Plaza.

Figure 2-3: Roughness Summary for NKTPL as per Schedule F of CA



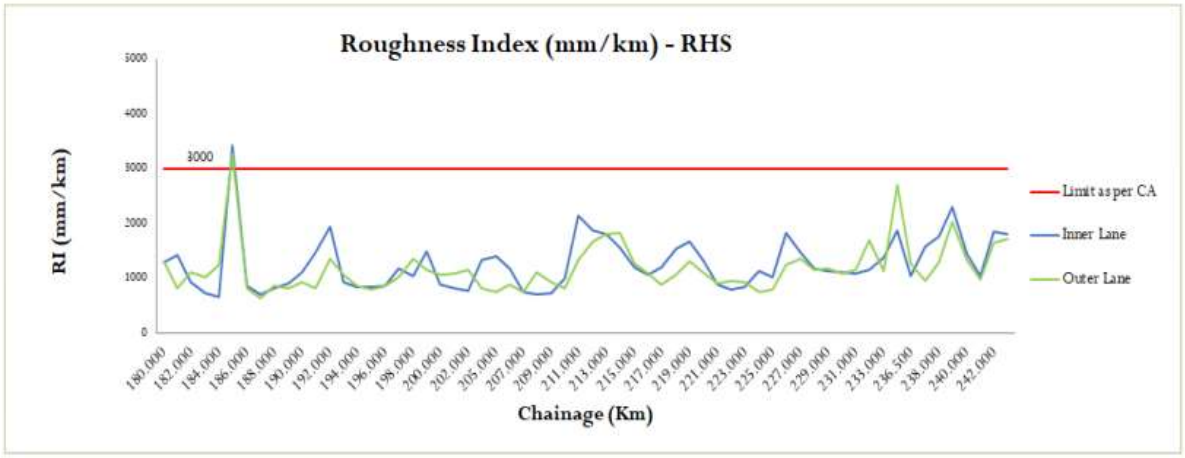
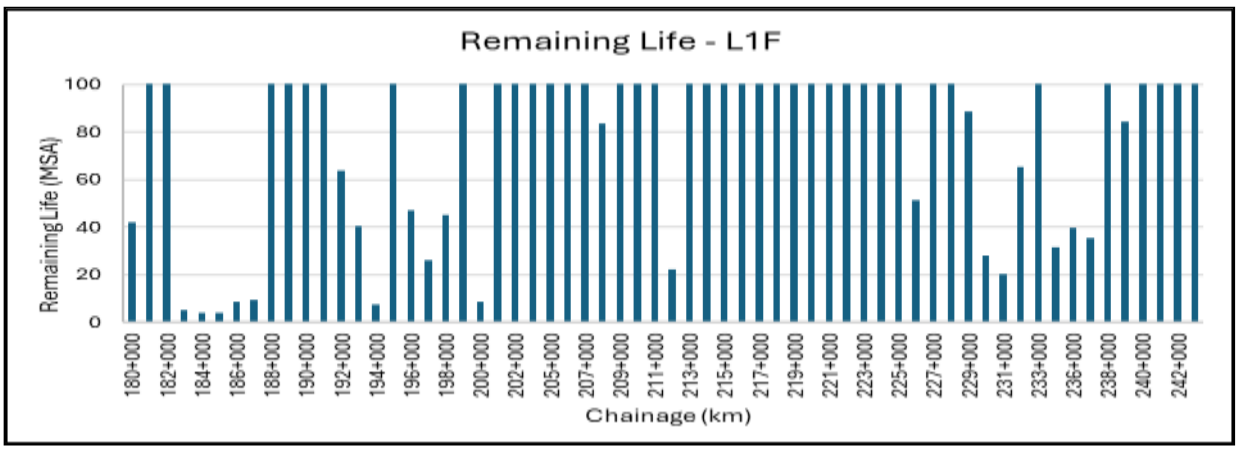


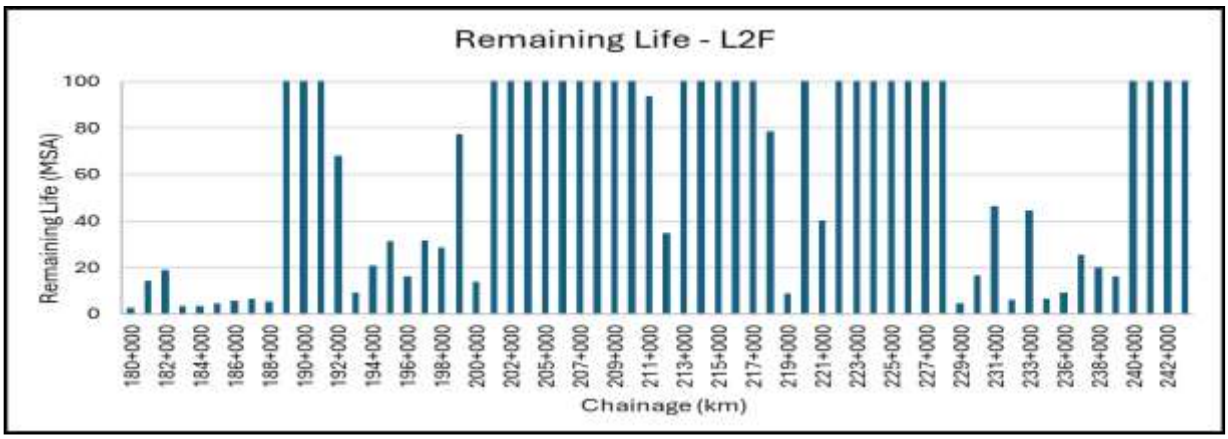
Figure 2-4: Roughness Index for NKTPL as per Schedule F of CA

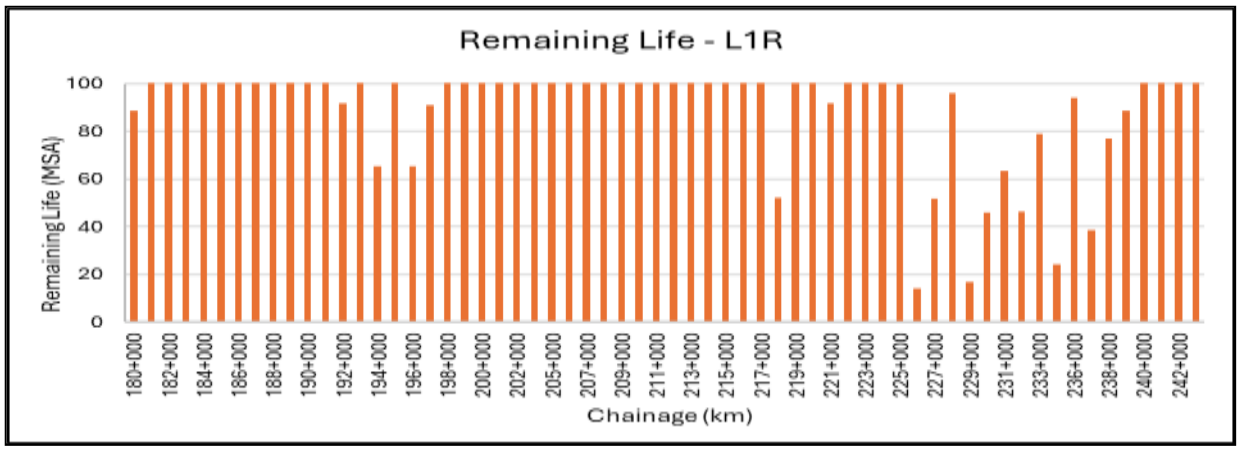
4.5 FWD Survey

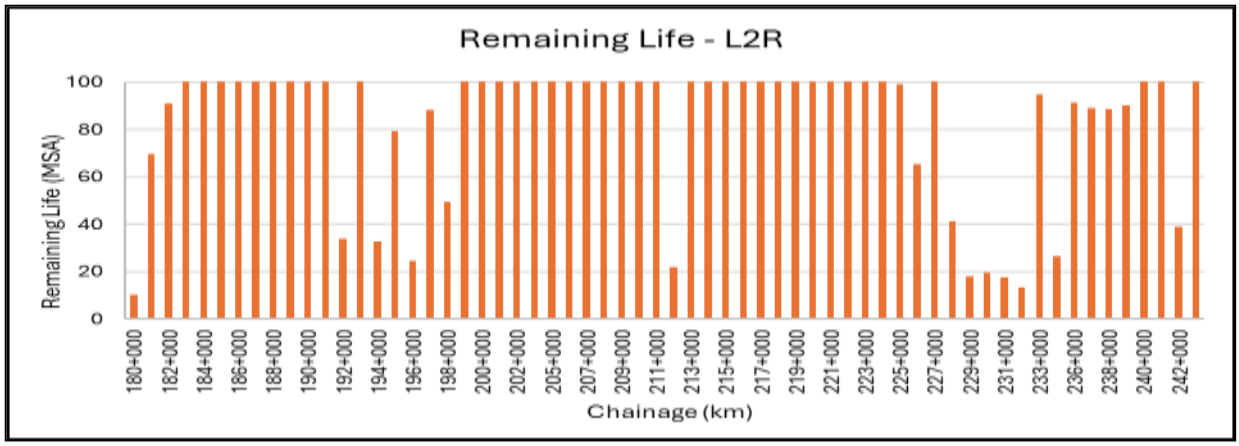
The structural evaluation and analysis of the remaining life of project was carried out in conformity with IRC:115-2014 "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique".

The FWD survey was conducted on the Project Road on 05th February 2025 to 10th February 2025. The summary of the same is presented below.









However, the maintenance can be carried out on as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. However, improvement in Riding Quality is expected if the roughness value exceeds 3000 mm/km.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
1	NH-7	182+200	RHS	13.0
2	NH-7	184+800	LHS	10.6
3	NH-7	187+500	RHS	12.4
4	NH-7	192+400	LHS	28.0
5	NH-7	192+400	RHS	14.6
6	NH-7	194+800	LHS	13.8
7	NH-7	197+300	RHS	11.4
8	NH-7	199+750	LHS	20.6
9	NH-7	202+600	RHS	16.4
10	NH-7	205+000	LHS	15.4
11	NH-7	207+500	RHS	17.8
12	NH-7	210+000	LHS	16.0
13	NH-7	212+500	RHS	14.4
14	NH-7	215+000	LHS	13.0

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
15	NH-7	217+150	RHS	17.2
16	NH-7	220+000	LHS	19.8
17	NH-7	222+200	RHS	12.9
18	NH-7	225+000	LHS	12.1
19	NH-7	227+500	RHS	14.0
20	NH-7	230+000	LHS	17.8
21	NH-7	235+000	LHS	12.8
22	NH-7	237+400	RHS	9.1
23	NH-7	241+000	LHS	16.5
24	NH-7	242+600	RHS	14.0

Table 4-4 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Location (km)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		4-Days Soaked CBR (%)	Free Swell Index (%)
				19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	212+600	LHS	SM-SC	100.0	98.5	85.2	66.8	51.2	45.2	45.2	25	20	5	2.02	9.2	11.1	10.0
2	214+900	LHS	SC	100.0	100.0	98.5	90.2	78.5	62.1	40.1	32	22	10	1.98	10.8	10.3	25.0
3	235+450	LHS	MI	100.0	100.0	99.5	80.2	60.5	55.1	55.1	36	25	11	1.92	10.1	7.4	25.0
4	235+500	RHS	CL	100.0	100.0	90.5	88.1	78.5	66.2	60.2	30	22	8	1.88	10.7	6.3	20.0

Table 4-5 Granular Layer's Test Results Summary

Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
1	182+200	RHS	GSB	100.0	96.5	87.0	52.6	41.5	38.0	30.7	28.6	21.1	14.9	11.2	0.6	26.5mm,9.5mm IS Sieve Material is Slightly Coarser Side in GSB-I	26.5mm,9.5mm IS Sieve Material is Slightly Coarser Side in GSB-I	23	NP	NP	2.83	0.41	35.58
2	184+800	LHS	WMM	100.0	100.0	100.0	78.3	69.3	43.5	36.4	28.2	21.2	11.6	8.6	0.8	Conforming to WMM Gradation	Conforming to WMM Gradation	20	NP	NP	2.82	0.37	31.79
3	187+500	RHS	WMM	100.0	100.0	95.2	65.3	62.3	48.2	34.3	30.2	23.6	16.8	16.2	1.1	Conforming to WMM Gradation	Conforming to WMM Gradation	21	NP	NP	2.84	0.32	30.16
4	192+400	LHS	GSB	100.0	100.0	86.7	41.9	32.2	9.8	6.4	3.4	2.4	1.6	1.5	0.4	26.5mm &4.75mm IS Sieve Material is Slightly Coarser side in GSB III&IV	26.5mm &4.75mm IS Sieve Material is Slightly Coarser side in GSB IV&V	22	NP	NP	2.83	0.35	32.14
5	192+400	RHS	GSB	100.0	100.0	100.0	48.9	36.5	28.0	24.2	18.5	16.9	10.5	8.5	1.9	26.5mm IS Sieve Material is Slightly Coarser Side in GSB-III&IV	26.5mm IS Sieve Material is Slightly Coarser Side in GSB-IV&V	20	NP	NP	2.75	0.33	35.82
6	194+800	LHS	WMM	100.0	100.0	100.0	52.8	40.9	23.4	20.5	16.6	14.4	8.2	6.6	1.3	Not Confirming to any Gradation	Not Confirming to any Gradation	20	NP	NP	2.73	0.37	34.27

Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
7	197+300	RHS	WMM	100.0	100.0	100.0	84.3	74.6	48.2	44.4	39.8	34.9	21.8	17.0	1.3	Not Conforming to any Gradation	Not Conforming to any Gradation	20	NP	NP	2.76	0.51	35.13
8	199+750	LHS	GSB	100.0	100.0	100.0	70.7	57.0	38.7	34.1	30.0	25.8	16.7	13.2	0.7	Conforming to GSB-IV	Conforming to GSB-IV	21	NP	NP	2.75	0.32	37.53
9	202+600	RHS	GSB	100.0	100.0	98.2	56.5	47.2	16.1	13.4	11.3	9.6	6.6	5.2	0.7	Conforming to GSB-III	Conforming to GSB-IV	21	NP	NP	2.71	0.36	39.43
10	205+000	LHS	GSB	100.0	100.0	100.0	68.0	56.1	24.8	21.5	18.9	16.2	10.5	8.4	0.9	Conforming to GSB-III & IV	Conforming to GSB-IV & V	22	NP	NP	2.74	0.27	33.48
11	207+500	RHS	WMM	100.0	100.0	100.0	79.8	72.8	44.8	34.6	25.8	22.7	13.5	10.7	1.3	Conforming to WMM Gradation	Conforming to WMM Gradation	22	NP	NP	2.74	0.34	35.82
12	210+000	LHS	GSB	100.0	100.0	100.0	71.0	56.6	32.5	28.3	24.2	20.3	13.3	9.7	0.4	Conforming to GSB-III & IV	Conforming to GSB-IV & V	22	NP	NP	2.74	0.39	37.63
13	212+500	RHS	GSB	100.0	100.0	97.8	56.5	51.5	28.5	22.5	15.8	11.4	7.9	7.2	0.2	Conforming to GSB-III&IV	Conforming to GSB-IV&V	23	NP	NP	2.68	0.30	27.97
14	215+000	LHS	WMM	100.0	100.0	100.0	56.5	46.2	35.0	31.9	28.0	23.3	16.3	13.1	1.0	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	24	NP	NP	2.73	0.32	33.09
15	217+150	RHS	WMM	100.0	100.0	100.0	59.6	52.3	38.1	32.5	28.3	22.8	12.3	8.2	1.2	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	23	18	5	2.74	0.39	35.83
16	220+000	LHS	GSB	100.0	91.8	89.7	68.7	59.8	31.0	25.1	21.0	15.7	8.4	6.9	0.4	53mm, IS Sieve Material is Slightly Coarder Side in GSB-IV	Conforming to GSB-IV & V	25	NP	NP	2.70	0.45	37.53

Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
17	222+200	RHS	GSB	100.0	100.0	90.4	56.2	47.0	23.2	21.4	19.4	16.3	10.1	8.1	0.5	Conforming to GSB-III&IV	Conforming to GSB-IV & V	21	NP	NP	2.71	0.34	34.97
18	225+000	LHS	WMM	100.0	100.0	96.6	62.9	56.2	38.5	32.4	31.8	24.1	18.2	14.5	1.3	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22	NP	NP	2.72	0.25	32.98
19	227+500	RHS	WMM	100.0	100.0	100.0	74.2	66.8	45.5	39.0	30.6	26.9	14.6	10.3	0.9	Conforming to WMM Gradation	Conforming to WMM Gradation	22	NP	NP	2.74	2.27	32.34
20	230+000	LHS	GSB	100.0	100.0	100.0	65.2	49.0	26.3	20.5	18.6	15.4	12.3	8.4	0.7	Confirming to GSB-III&IV	Confirming to GSB-IV&V	19	NP	NP	2.72	0.29	30.69
21	235+000	LHS	WMM	100.0	100.0	100.0	92.3	76.5	45.6	34.2	29.1	19.2	14.3	8.5	1.6	Confirming to WMM Gradation	Confirming to WMM Gradation	19	NP	NP	2.74	0.32	30.27
22	237+400	RHS	WMM	100.0	100.0	97.3	78.2	63.2	38.2	20.2	18.5	15.0	11.7	6.5	5.0	11.2mm,4.75mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	11.2mm,4.75mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.72	0.33	34.23
23	241+000	LHS	GSB	100.0	100.0	70.6	34.3	26.5	21.3	18.3	8.2	12.8	7.2	6.5	1.0	26.5mm,4.75mm IS Sieve Material Slightly Coarser side in GSB-III & IV	26.5mm,4.75mm IS Sieve Material Slightly Coarser side in GSB-IV & V	22	NP	NP	2.73	0.33	34.12
24	242+600	RHS	GSB	100.0	100.0	59.4	45.2	26.9	12.5	11.2	10.5	6.8	2.9	0.8	0.2	26.5mm IS Sieve Material is Slightly Coarser Side in GSB-III	26.5mm IS Sieve Material is Slightly Coarser Side in GSB-IV	20	NP	NP	2.74	0.35	32.42

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Overlay work is completed at site on both side of the carriageway in the month of October 2021 i.e., FY 2022. Thus, next cycle of the overlay is proposed in FY 2029 after 7 years from previous MM cycle.

As per Article 14 of CA, the Authority shall carry out capacity augmentation under EPC contract if traffic exceeds 40,000 PCU for three consecutive accounting years. As per the traffic study report submitted by the Company it is observed that, the project traffic crosses 40,000 PCU in FY 2040, FY 2041, FY 2042. Assumption has made that execution of 6-laning of Project Road will start in the year 2045 or 2046. It is also assumed that during 6-laning of Project Road, overlay of existing four lane road will be the part of the capacity augmentation. Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-6 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2024 to FY 2028	-	
2	FY 2029	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (7%)	Major Maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
3	FY 2030 to FY 2035	-	
4	FY 2036	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (6%)	Major Maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
5	FY 2037 to FY 2042	-	
6	FY 2043	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (5%)	Major Maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
7	FY 2044	-	
8	FY 2045 to FY 2047	Assumption of Capacity Augmentation to Six Lane Configuration	
9	FY 2048 to FY 2051	-	
10	FY 2052	End of Concession Period	

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

      Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2025 and FY 2026. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2027 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

d. **Cement:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

e. **Steel :** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, median filling rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam	Cum	8,567
2	Bituminous Concrete (VG40)	Cum	9,800
3	Bituminous Concrete (PMB)	Cum	11,106
4	Milling	Sqm	86
5	Micro-surfacing	Sqm	155
6	Kerb Re-laying	Rmt	316
7	Road Marking on BC surface	Sqm	571
8	Road Marking on micro surface	Sqm	682
9	Road Studs	Nos.	193

5.3 Balance Work Cost

As discussed in previous chapters, construction work of 01 Nos. of VUP at km. 235+550 is in progress. The Concessionaire has issued work order to PVC Infrastructure Pvt Ltd. for construction of VUP at km. 235+550. The cost of construction of VUP as per work order is Rs. 26.69 Cr. (including GST). The construction period is 15 months from the issued of work order.

Figure 5-1 Photographs of VUP (Work in progress)

Construction of VUP work is in progress

Construction of RE wall work is in progress

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I.**

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026 to FY 2047)	Amount FY 2048 to onwards
1	Salary and Welfare Expenses	1,34,44,358	1,34,44,358
2	Tolling Operations Services	2,22,71,855	2,22,71,855
3	Toll Security Services	51,81,540	51,81,540
4	Incident Management & Emergency Services	3,03,06,272	3,03,06,272
5	Electricity and Diesel Charges	39,79,944	39,79,944
6	TMS/HTMS/System Expenses	63,11,638	45,44,561
7	Office Operating Expenses	33,67,629	33,67,629
8	Vehicle Running Expenses	26,40,000	26,40,000
9	Professional Fees Expense	65,83,249	1,00,63,272
10	Community Development	11,00,000	11,00,000
11	Communication Expenses	3,32,063	3,32,063
12	Conveyance Expenses	3,62,250	3,62,250
13	Insurance Expense	62,47,418	62,47,418
14	IE Fees	75,67,344	75,67,344
15	Routine Maintenance Cost	3,15,06,173	4,09,28,339
16	Horticulture & ROW Maintenance	2,03,65,340	2,03,65,340
17	Miscellaneous including Contingency	43,87,822	44,56,340
	Total Cost (Rs.)	**16,59,54,895**	**17,71,58,525**
	Total Cost (Cr.)	16.60	17.72
	Per km Cost (Lakhs)	**26.15**	**27.91**

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

The summary of Major Maintenance Cost is provided as below.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2024 to FY 2028	-	
2	FY 2029	70.79	
3	FY 2030 to FY 2035	-	
4	FY 2036	78.21	
5	FY 2037 to FY 2042	-	
6	FY 2043	69.62	
7	FY 2044 to FY 2052	-	End of concession period
Total Cost (Cr.)		**218.62**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	7.54	
2	FY 2034	7.54	
3	FY 2041	7.54	

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
4	FY 2048	7.54	
Total Cost (Cr.)		**30.18**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	3.99%
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	FY 36	FY 37	FY 38	FY 39	FY 40	FY 41	FY 42	FY 43	FY 44	FY 45	FY 46	FY 47	FY 48	FY 49	FY 50	FY 51	FY 52
1	Routine O&M Cost																											
1.01	Salary and Welfare Expense	1.34	1.42	1.48	1.55	1.62	1.68	1.75	1.82	1.89	1.97	2.05	2.13	2.22	2.30	2.40	2.49	2.59	2.69	2.80	2.91	3.03	3.15	3.28	3.41	3.54	3.68	4.03
1.02	Tolling Operations Services	2.23	2.34	2.46	2.57	2.68	2.79	2.90	3.02	3.14	3.26	3.39	3.53	3.67	3.82	3.97	4.13	4.29	4.46	4.64	4.83	5.02	5.22	5.43	5.64	5.87	6.10	6.68
1.03	Toll Security Services	0.52	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.17	1.21	1.26	1.31	1.37	1.42	1.55
1.04	Incident Management Services	3.03	3.19	3.34	3.49	3.64	3.79	3.95	4.10	4.27	4.44	4.62	4.80	4.99	5.19	5.40	5.62	5.84	6.07	6.32	6.57	6.83	7.10	7.39	7.68	7.99	8.31	9.09
1.05	Electricity and Diesel Charges	0.40	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.61	0.63	0.66	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.90	0.93	0.97	1.01	1.05	1.09	1.19
1.06	TMS/HTMS/System Expenses	1.07	0.33	0.45	0.58	0.72	0.75	1.02	1.45	0.44	0.60	0.76	0.95	0.98	1.35	1.91	0.58	0.78	1.01	1.24	1.29	1.34	2.51	0.76	1.03	1.32	1.64	1.79
1.07	Office Operating Expenses	0.34	0.35	0.37	0.39	0.40	0.42	0.44	0.46	0.47	0.49	0.51	0.53	0.55	0.58	0.60	0.62	0.65	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.89	0.92	1.01
1.08	Vehicle Running Expenses	0.26	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.70	0.72	0.79
1.09	Professional Fees Expense	0.66	0.69	0.73	0.76	0.79	0.82	0.86	0.89	0.93	0.96	1.00	1.04	1.08	1.13	1.17	1.22	1.27	1.32	1.37	1.43	1.48	1.54	2.45	2.55	2.65	2.76	3.02
1.10	Community Development	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.33
1.11	Communication Expenses	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.10	0.10	0.11
1.13	Insurance Expense	0.62	0.66	0.69	0.72	0.75	0.78	0.81	0.85	0.88	0.92	0.95	0.99	1.03	1.07	1.11	1.16	1.20	1.25	1.30	1.35	1.41	1.46	1.52	1.58	1.65	1.71	1.87
1.14	IE Fees	0.76	0.80	0.84	0.87	0.91	0.95	0.99	1.02	1.07	1.11	1.15	1.20	1.25	1.30	1.35	1.40	1.46	1.52	1.58	1.64	1.71	1.77	1.84	1.92	1.99	2.07	2.27
1.15	Routine Maintenance Cost	3.15	3.32	3.48	3.63	3.79	3.94	4.10	4.27	4.44	4.62	4.80	4.99	5.19	5.40	5.61	5.84	6.07	6.31	6.57	6.83	7.10	7.38	9.97	10.37	10.79	11.22	12.28
1.16	Horticulture & ROW Maintenance	2.04	2.14	2.25	2.35	2.45	2.55	2.65	2.76	2.87	2.98	3.10	3.23	3.36	3.49	3.63	3.77	3.92	4.08	4.24	4.41	4.59	4.77	4.96	5.16	5.37	5.58	6.11
1.17	Miscellaneous and Contingency	0.44	0.46	0.48	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.70	0.72	0.75	0.78	0.81	0.85	0.88	0.91	0.95	0.99	1.03	1.09	1.13	1.17	1.22	1.34
	Subtotal of O&M Cost	17.04	17.13	18.07	18.98	19.90	20.72	21.81	23.07	22.93	23.99	25.10	26.25	27.29	28.71	30.36	30.16	31.55	33.00	34.51	35.89	37.32	39.92	42.83	44.78	46.81	48.94	53.57
2	Major Maintenance Cost	-	-	-	78.43	-	-	-	-	-	-	108.41	-	-	-	-	-	-	119.03	-	-	-	-	-	-	-	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	7.94	-	-	-	-	-	-	10.63	-	-	-	-	-	-	13.98	-	-	-	-	-	-	18.39	-	-	-	-
4	Balance Works Cost	26.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**43.72**	**25.07**	**18.07**	**97.41**	**19.90**	**20.72**	**21.81**	**23.07**	**33.55**	**23.99**	**133.50**	**26.25**	**27.29**	**28.71**	**30.36**	**44.15**	**31.55**	**152.03**	**34.51**	**35.89**	**37.32**	**39.92**	**61.22**	**44.78**	**46.81**	**48.94**	**53.57**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost (4-Lane)	
Ordinary Repair Cost for Flexible (with GST)	**3,15,06,173**
(inclusive of GST)	**= 4.96 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	**More than 4500 CVD**				
				2,50,522	**2,97,980**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	383299.00	455909.00	-	-	-	-
		Paved shoulder	1.70	425888.00	506565.00	43.98	-	1,87,32,684	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	501044.00	595959.00	-	-	-	-
		Paved shoulder	2.20	551149.00	655555.00	-	19.49	-	1,27,73,489
					TOTAL		**63.470**		**3,15,06,173**

Routine Maintenance Cost (6-Lane)	
Ordinary Repair Cost for Flexible (with GST)	**4,09,28,340**
(inclusive of GST)	**= 6.45 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD	**Urban** More than 4500 CVD	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				2,50,453	**2,97,870**				
						Normal	**Urban**	**Normal**	**Urban**
1	Six lane with divided carriageway	without Paved shoulder	2.09	523591.00	622777.00	-	-	-	-
		with Paved shoulder	2.26	566180.00	673434.00	43.98	-	2,49,03,428	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	641337.00	762828.00	-	-	-	-
		with Paved shoulder	2.76	691441.00	822423.00	-	19.49	-	1,60,24,912
					TOTAL		**63.470**		**4,09,28,340**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			10532
	Cost in Rupees			52,658
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			421
	Cost in Rupees			42,126
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			76
	Cost in Rupees			18,907
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.50%
	Area (sqm)			187.5
	Rs/m^2			50
	Cost in Rupees			9,465
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			421
	Cost in Rupees			31,595
	v) Road marking	14%	Once in 7th year & @	14676

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
			Repaired location	
	SUB TOTAL			**1,69,427**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6831
	ii) Jungle Clearance	100%	Twice in a Year	2241
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1201
	SUB TOTAL			**10,273**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	3026
	ii) Repair of floors	100%	Once in a Year	5475
	iii) Repair of parapets	100%	As & when required	2282
	SUB TOTAL			**10,783**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	40,026
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**40,026**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2668
	ii) Maintenance of gang hut store, sheds, animal & debries		Once in a Year	4003

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	removal			
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	4003
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	8005
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1334
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**20,013**
	GRAND TOTAL (Normal)			**2,50,522**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	15169
	ii)Repairs to footpath	100%	As & when required	5337
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	5337
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	8272
	vi) Repair of divider/ Railing in City portion	100%	As & when required	10674
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2668
	SUB TOTAL			**47,457**
	GRAND TOTAL (Urban)			**2,97,980**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,18,787	18	2,19,13,783
	For BC	Sqm	1	1	10,82,484.22		10,82,484	10,82,484		
	For DBM	Sqm	1	1	62,445.20		62,445	62,445		
	For Misc. Location	Sqm	1	1	73,857.20		73,857	73,857		
2	BC with 30 mm	Cum	1	1	11,56,341.42	0.03	34,690	34,690	11,106	38,52,83,017
3	DBM with 50 mm	Cum	1	1	62,445.20	0.05	3,122	3,122	8,567	2,67,48,337
4	Milling	Sqm	1	1	62,445.20		62,445	62,445	86	53,85,898
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	77	43,086
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	942	1,24,785
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,327	12,35,350
	Service Road									
8	Tack coat	Sqm	1	19,485	6.85		1,33,530	1,46,883	18	26,40,956
9	BC with 30 mm	Cum	1	19,485	6.85	0.03	4,006	4,406	9,800	4,31,83,734
10	Micro Surfacing	Sqm	1	19,485	6.85		1,33,530	1,46,883	155	2,28,03,586
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1	31,140.8		31,141	31,141	18	5,59,911
12	Wearing Coat BC with 30 mm	Cum	1	1	31,140.8	0.03	934	934	11,106	1,03,75,840
13	Milling of Ex. Wearing Coat	Sqm	1	1	31,140.8		31,141	31,141	86	26,85,892
14	Painting of Crash Barrier	Sqm	4	1,638		1.12	7,305	7,305	107	7,81,662
	Other Works									
15	Raising of Road Kerb	Rmt	-	1,02,094			-	-	316	-
15	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,758			15,516	15,516	193	29,97,691
	Solar Road Stud	Nos	-	490			-	-	682	-
16	Painting of Kerb	Sqm	2	1,02,094		0.375	76,571	76,571	107	81,93,044
17	Road Marking on BC	Sqm					51,598	51,598	571	2,94,62,347
18	Road Marking on Micro	Sqm					4,540	4,540	682	30,97,532
	MCW									
	a) Median & Edge line	Sqm	4	66,644	0.15		39,986			

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	21,992	0.10		4,398			
	Service Road									
	a) Edge line	Sqm	2	38,970	0.10		7,794			
	b) Lane line	Sqm	1	12,860	0.10		1,286			
	Junction crossing	Sqm					2,673			
19	Filling of Earthen shoulder	Cum					9,314	9,314	415	38,65,243
	MCW		2	42,001	1.50	0.06	7,560			
	Service Road		1	19,485	1.50	0.06	1,754			
20	Median Filling	Cum	-	61,054	4.17	0.10	-	-	415	-
21	Miscellaneous	5%								2,85,69,085
									Total Major Maintenance Cost (Rs.)	**59,99,50,779**
									Total Major Maintenance Cost with GST (Rs.)	**70,79,41,919**
									Total Major Maintenance Cost with GST (Cr.)	**70.79**
									Per km Cost (lakh)	**111.54**
									Escalation Factor for FY 2029	**1.15**
									Total Escalated Cost for Major Maintenance Cost (FY 2029) (Cr.)	**78.43**

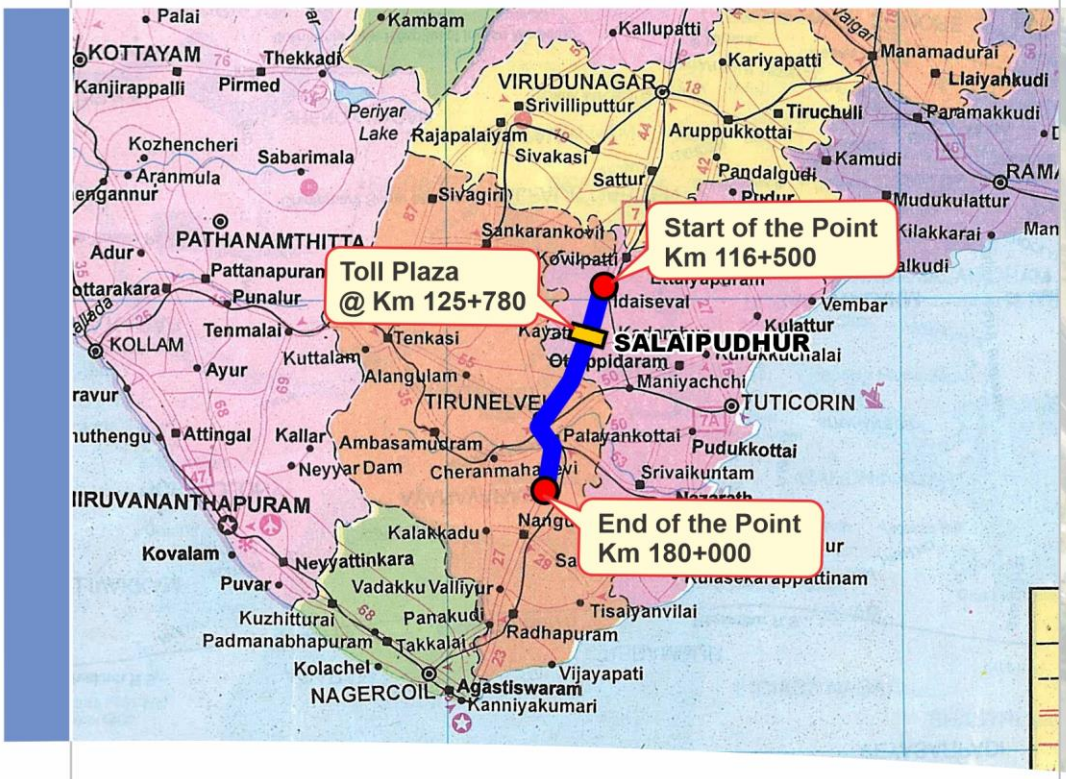
Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,09,866	18	2,17,53,388
	For BC	Sqm	1	1	10,82,484.22		10,82,484	10,82,484		
	For DBM	Sqm	1	1	53,524.45		53,524	53,524		
	For Misc. Location	Sqm	1	1	73,857.20		73,857	73,857		
2	BC with 30 mm	Cum	1	1	11,56,341.42	0.03	34,690	34,690	11,106	38,52,83,017
3	DBM with 50 mm	Cum	1	1	53,524.45	0.05	2,676	2,676	8,567	2,29,27,146
4	Milling	Sqm	1	1	53,524.45		53,524	53,524	86	46,16,484
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	77	43,086
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	942	1,24,785
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,327	12,35,350
	Service Road									
8	Tack coat	Sqm	1	19,485	6.85		1,33,530	1,46,883	18	26,40,956

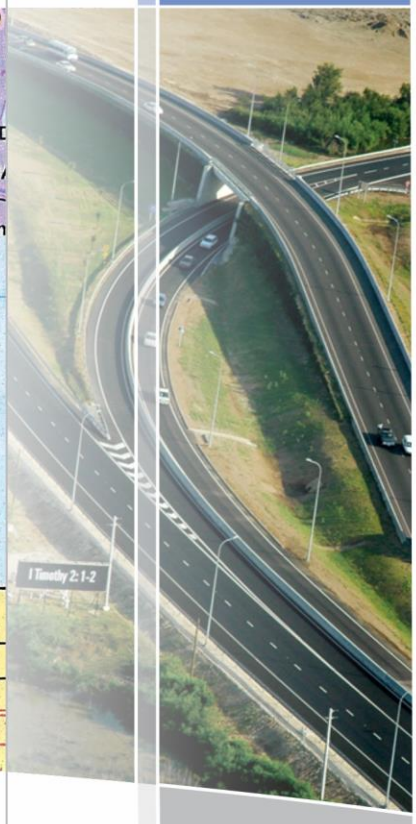
Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
9	BC with 30 mm	Cum	1	19,485	6.85	0.03	4,006	4,406	9,800	4,31,83,734
10	Micro Surfacing	Sqm	1	19,485	6.85		1,33,530	1,46,883	155	2,28,03,586
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1	31,140.8		31,141	31,141	18	5,59,911
12	Wearing Coat BC with 30 mm	Cum	1	1	31,140.8	0.03	934	934	11,106	1,03,75,840
13	Milling of Ex. Wearing Coat	Sqm	1	1	31,140.8		31,141	31,141	86	26,85,892
14	Painting of Crash Barrier	Sqm	4	1,638		1.12	7,305	7,305	107	7,81,662
	Other Works									
15	Raising of Road Kerb	Rmt	2	1,02,094			2,04,188	2,04,188	316	6,45,74,455
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,758			15,516	15,516	193	29,97,691
17	Painting of Kerb	Sqm	2	1,02,094.00		0.375	76,571	76,571	107	81,93,044
18	Road Marking on BC	Sqm					51,598	51,598	571	2,94,62,347
19	Road Marking on Micro	Sqm					4,540	4,540	682	30,97,532
	MCW									
	a) Median & Edge line	Sqm	4	66,644	0.15		39,986			
	b) Lane line	Sqm	2	21,992	0.10		4,398			
	Service Road									
	a) Edge line	Sqm	2	38,970	0.10		7,794			
	b) Lane line	Sqm	1	12,860	0.10		1,286			
	Junction crossing	Sqm					2,673			
20	Filling of Earthen shoulder	Cum					9,314	9,314	415	38,65,243
	MCW		2	42,001	1.50	0.06	7,560			
	Service Road		1	19,485	1.50	0.06	1,754			
21	Miscellaneous	5%								3,15,60,257
Total Major Maintenance Cost (Rs.)										**66,27,65,407**
Total Major Maintenance Cost with GST (Rs.)										**78,20,63,180**
Total Major Maintenance Cost with GST (Cr.)										**78.21**
Per km Cost (lakh)										**123.22**
Escalation Factor for FY 2036										**1.52**
Total Escalated Cost for Major Maintenance Cost (FY 2036) (Cr.)										**108.41**

Major Maintenance Cost (FY 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,00,945	18	2,15,92,993
	For BC	Sqm	1	1	10,82,484.22		10,82,484	10,82,484		
	For DBM	Sqm	1	1	44,603.71		44,604	44,604		
	For Misc. Location	Sqm	1	1	73,857.20		73,857	73,857		
2	BC with 30 mm	Cum	1	1	11,56,341.42	0.03	34,690	34,690	11,106	38,52,83,017
3	DBM with 50 mm	Cum	1	1	44,603.71	0.05	2,230	2,230	8,567	1,91,05,955
4	Milling	Sqm	1	1	44,603.71		44,604	44,604	86	38,47,070
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	77	43,086
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	942	1,24,785
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,327	12,35,350
	Service Road									
8	Tack coat	Sqm	1	19,485	6.85		1,33,530	1,46,883	18	26,40,956
9	BC with 30 mm	Cum	1	19,485	6.85	0.03	4,006	4,406	9,800	4,31,83,734
10	Micro Surfacing	Sqm	1	19,485	6.85		1,33,530	1,46,883	155	2,28,03,586
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1	31,140.8		31,141	31,141	18	5,59,911
12	Wearing Coat BC with 30 mm	Cum	1	1	31,140.8	0.03	934	934	11,106	1,03,75,840
13	Milling of Ex. Wearing Coat	Sqm	1	1	31,140.8		31,141	31,141	86	26,85,892
14	Painting of Crash Barrier	Sqm	4	1,638		1.12	7,305	7,305	107	7,81,662
	Other Works									
15	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,758			15,516	15,516	193	29,97,691
16	Painting of Kerb	Sqm	2	1,02,094.00		0.375	76,571	76,571	107	81,93,044
17	Road Marking on BC	Sqm					51,598	51,598	571	2,94,62,347
18	Road Marking on Micro	Sqm					4,540	4,540	682	30,97,532
	MCW									
	a) Median & Edge line	Sqm	4	66,644	0.15		39,986			
	b) Lane line	Sqm	2	21,992	0.10		4,398			
	Service Road									
	a) Edge line	Sqm	2	38,970	0.10		7,794			
	b) Lane line	Sqm	1	12,860	0.10		1,286			

Major Maintenance Cost (FY 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Junction crossing	Sqm					2,673			
19	Filling of Earthen shoulder	Cum					9,314	9,314	415	38,65,243
	MCW		2	42,001	1.50	0.06	7,560			
	Service Road		1	19,485	1.50	0.06	1,754			
20	Miscellaneous	5%								2,80,93,985
Total Major Maintenance Cost (Rs.)										**58,99,73,679**
Total Major Maintenance Cost with GST (Rs.)										**69,61,68,941**
Total Major Maintenance Cost with GST (Cr.)										**69.62**
Per km Cost (lakh)										**109.68**
Escalation Factor for FY 2043										**2.00**
Total Escalated Cost for Major Maintenance Cost (FY 2043) (Cr.)										**119.03**

FP Project Management





Technical Due Diligence of Madurai - Kanyakumari (Package-3) of NH-44 from km. 116+500 to km. 180+000 in the state of Tamil Nadu

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Delivering Commitment

REVISION RECORD					
Document No. 255051 / HE / LIE / Final Report / R0					
Rev	**Description**	**Date**	**Originator**	**Checked**	**Approved**
R0	Final Report	27-Oct-2025	RMW / VKD	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 5
2.7 Existing Utilities 5
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 9
3.3 Major / Minor Junctions 9
3.4 Condition Survey of Bridge 10
3.5 Condition Survey of Culverts 16
3.6 Drainage 16
3.7 Slope Protection 16
3.8 Road Furniture 17
3.9 Avenue Plantation and Median Plantation 21
3.10 Toll Plaza 22
3.11 Lane Equipment 23
3.11.1 RFID ETC Transceiver 23
3.11.2 Lane Controller with Industrial PC 24
3.11.3 Automatic Vehicle Classification (AVC) Sensors 24
3.11.4 Automatic Lane Barrier 24
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 25

3.11.6 Incident Capture Camera (AVC Camera) 25
3.11.7 License Plate Image Capture Camera (LPIC) 25
3.11.8 Over Head Lane Signal (OHLS) 25
3.11.9 Toll Booth Equipment 26
3.11.10 Medium Speed Weigh in Motion (MSWIM) 27
3.12 Plaza Equipment 27
3.12.1 TMS Server 27
3.12.2 55" LED screen for CCTV monitoring 27
3.12.3 Workstations in Control Room, POS room 27
3.13 Advanced Traffic Management System (ATMS) 27
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 28
3.13.2 Mobile Radio communication System (MRCS) 28
3.13.3 Emergency Call Boxes (ECB) 28
3.13.4 Portable Weigh in Motion (PWIM) 28
3.13.5 MET System 28
3.13.6 Variable Message Signboards (VMS) 28
3.13.7 CCTV Surveillance Cameras 29
3.13.8 Video Incident Detection System 29
3.13.9 Vehicle Actuated Speed Display (VASD) 29
3.13.10 Adequacy of Toll Collection System and ATMS 29
3.14 Truck Lay-bye 29
3.15 Traffic Aid Post and Medical Aid Post 29
3.16 Toilet Block 29
3.17 Bus Bays and Passenger Shelters 30
3.18 Balance Work Status 30
3.19 Operation and Maintenance 30
3.19.1 O&M Contract 30
3.19.2 Organization Chart 30
3.19.3 Operation 32
3.19.4 Routine Maintenance 32
4 Pavement Investigation and Assessment 33
4.1 General 33
4.2 Axle Load and VDF 33
4.3 Design Traffic 33
4.4 Network Survey Vehicles (NSV) Survey 34
4.5 FWD Survey 35
4.6 Test pit and Subgrade Investigation 36

4.7 Periodic Maintenance Strategy 40
5 Cost Estimates 41
5.1 General 41
5.2 Rate Assumption 41
5.3 Balance Work Cost 42
5.4 Routine O&M Cost 42
5.5 Major Maintenance Cost 44
5.6 Periodic Replacement of TMS / ATMS System 44
5.7 Escalation Assumption 44
5.8 Summary of Cost 45
Annexures 47
Annexure I : Routine Maintenance Cost 48
Annexure II : Major Maintenance Cost 54

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Major Junctions 9
Table 3-2 Details of Summary for Structures 10
Table 3-3 Condition Survey of Major Structure 11
Table 3-4 Details of Additional Gantry / Cantilever Sign 17
Table 3-5 Details of Summary for Toll Plaza Items 22
Table 3-6 Details of Truck Lay-bye 29
Table 4-1 Vehicle Damage Factor 33
Table 4-2 MSA Calculation 33
Table 4-3 Test Results Summary of granular layer Samples 38
Table 4-4 Test Results Summary of Natural Ground Soil Samples 39
Table 4-5 Major Maintenance Cycle 40
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 41
Table 5-2 Summary of Unit Rates 42
Table 5-3 Summary of Operation Cost 43
Table 5-4 Summary of Major Maintenance Cost 44
Table 5-5 Escalation 44

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start and End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 8
Figure 3-2 Photographs of Service Road / Slip Road 9
Figure 3-3 Photograph of Junctions 9
Figure 3-4 Photographs of Major Structures 15
Figure 3-5 Photographs of Culverts 16
Figure 3-6 Photographs of Pavement Marking 18
Figure 3-7 Photographs of Sign Boards 19
Figure 3-8 Photographs of Highway Lighting 19
Figure 3-9 Photographs of MBCB / Crash Barrier 20
Figure 3-10 Photographs of Delineator 20
Figure 3-11 Photographs of Pedestrian Guard Rail 21
Figure 3-12 Photographs of Avenue Plantation 21
Figure 3-13 Photographs of Median Plantation 22
Figure 3-14 Photographs of Toll Plaza 23
Figure 3-15 Photographs of Passenger Shelter 30

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Madurai to Kanyakumari section (Package-III) km. 116+500 to km. 180+000 in the State of Tamil Nādu (hereinafter referred as "Project Road").

Salaipudhur Madurai Tollway Private Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Madurai to Kanyakumari Section (from km. 116+500 to km. 180+000) of NH-44. The project was awarded to Concessionaire on 20th October 2020.The length of Project Road is 63.50 kms with one toll plaza at Salaipudhur Village at km. 125+350.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and filed investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period.
- Review of balance work cost for Project Road including estimation of quantities and item rates.

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets, mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out from **21st January 2025 to 22nd January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Salaipudhur Madurai Tollway Private Limited** is a company promoted by Cube Highways or a Special Purpose Vehicle (SPV) formed for implementing this project on 27th December 2019. The Appointed Date for the Project Road is 20th October 2020.

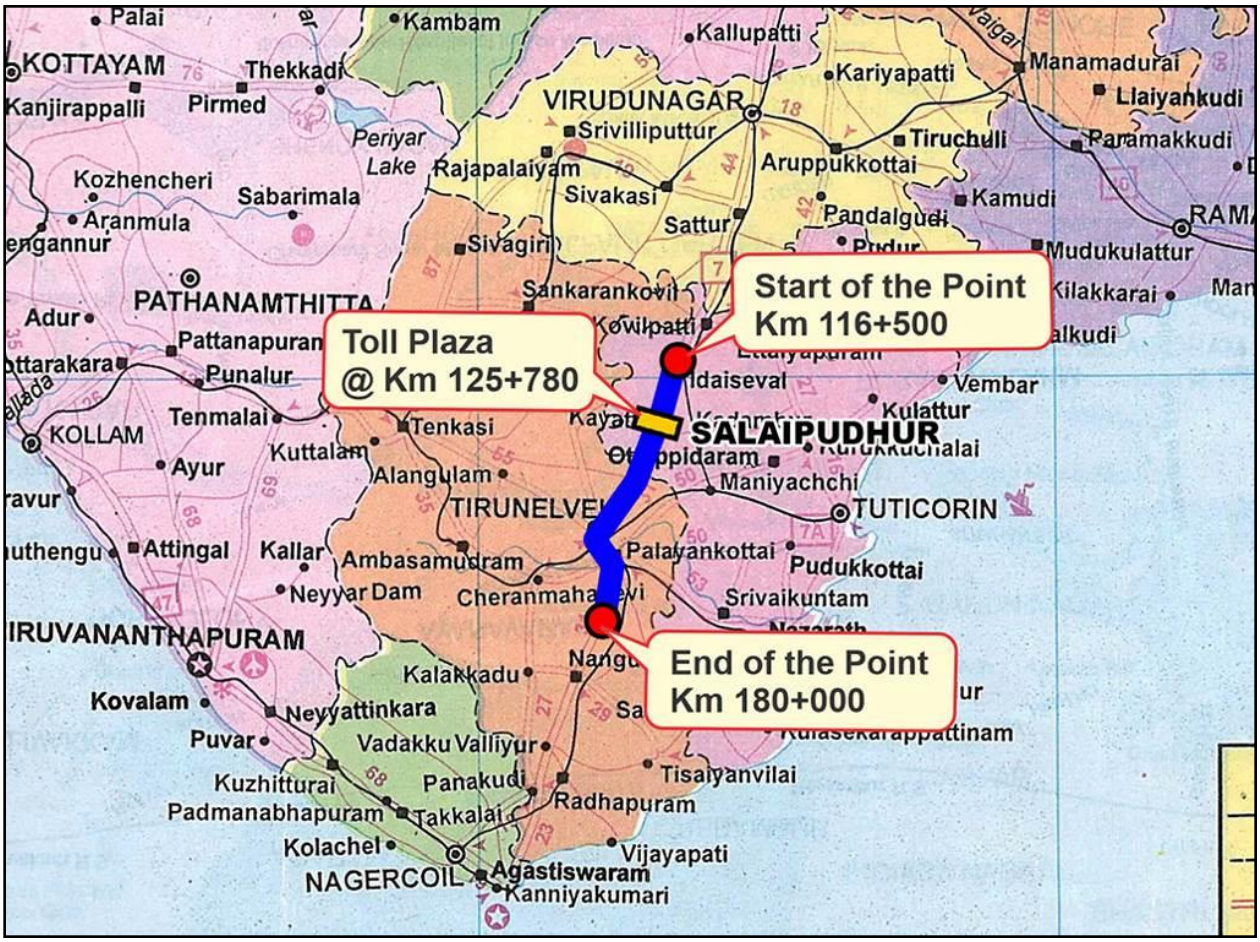
The project is being developed under TOT (Toll Operate Transfer) Bundle-3 with concession period of 30 years from the Appointed Date. The end of the concession period is 21st October 2050.

2.2 Location

The Project Road is part of National Highway No. 44 (old NH-7) of Madurai - Kanyakumari section in the state of Tamil Nādu. The total project length is 63.50 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map



The photographs taken during the site visit are presented below.

Figure 2-2 Start and End of Project Road

Start of Project Road at km. 116+500

End of Project Road at km. 180+000

2.3 Climate

The project area being in the region of southeast of the western ghats, the area is hot and dry. Temperatures range between a maximum of 37 °C and a minimum of 22 °C. April to June are the hottest months and December and January are the coldest with temperatures rising towards the end of February. Rainfall occurs mostly during the north-east monsoon in the months of October to December. However, the project stretch receives little rainfall, averaging 840 mm. Annual rainfall has ranged from 964 mm to 228 mm during past decades.

2.4 Terrain

The Project Road traverses through plain terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up area.

2.6 Right of Way

The width of the existing Right of Way (ROW) for the Project Road is 60 m throughout its length.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC cables, etc.

2.8 Development as per Schedule-B

The Project Road from Kayathar (km. 116+500) to Nanguneri village (km. 180+000) has been developed as a four-lane divided carriageway with median width of 2 m, service road at some built-up locations and other arrangements. The Project Road passes through rural as well as built-up sections.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	63.50	
2	Construction of Service Road	km.	3.02	Total (LHS+RHS)
3	Repair & rehabilitation of Major Bridges	Nos.	05	
4	Repair & rehabilitation of Minor Bridges	Nos.	17	
5	Repair & rehabilitation of Box Culvert	Nos.	24	
6	Repair & rehabilitation of Pipe Culvert	Nos.	86	
7	Repair & rehabilitation of Flyover	Nos.	01	
8	Repair & rehabilitation of ROB	Nos.	03	
9	Repair & rehabilitation Vehicular Underpass (VUP)	Nos.	16	
10	Junction Improvement	Nos.	10	
11	Provision of Unlined Drain	m	2501	Total (LHS+RHS)
12	Provision of RCC Cover Drain	m	150	RHS

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 9.0 m with earthen shoulder of 1.5 m on either side. The Project Road has a median width of 2.0 m throughout its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **21st January 2025 to 22nd January 2025**, through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

km. 118+380

km. 122+000

km. 122+470

km. 123+150

km. 128+200

km. 132+990

km. 144+500

km. 174+200

km. 173+100

km. 120+000

km. 145+000

km. 165+000

3.2 Service Road / Slip Road

The service road with a width of 5.50 m is constructed in built-up areas and adjoining underpass locations. The Project Road has a total length of 46.040 km of existing and new service road (which includes service road on both sides).

Figure 3-2 Photographs of Service Road / Slip Road

Service Road at km. 118+680 (LHS)

Service Road at km. 161+100 (RHS)

3.3 Major / Minor Junctions

There are 03 nos. of major junctions and 31 nos. of minor junctions along Project Road. The junction details are presented in the table below.

Table 3-1 Details of Major Junctions

Sr. No.	Chainage (km)	Type of Junction	Name of Access Road		Surface Type of Access Road	
			LHS	RHS	LHS	RHS
1	138+720	Y	Old NH	-	BT	
2	142+450	T		Village		BT
3	144+350	T		Renacon		ER+BT

The photographs taken during site visit is presented as below:

Figure 3-3 Photograph of Junctions

Major Junction at km. 138+720

Minor Junction at km. 139+980.

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, flyover, underpasses and culverts is presented in table as below:

Table 3-2 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	03
Flyover	01
Major Bridges (MJB)	05
Minor Bridges (MNB)	17
Vehicular Underpass (VUP)	16
Culverts:	
Pipe Culverts	86
Box Culverts	24
Total	**152**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-3 Condition Survey of Major Structure

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Major Bridges								
1	127+850	LHS	6 x 17	7.5	10.5	RCC	Open	Structure is sound in condition.
		RHS	6 x 17	7.5	10.5	RCC	Open	
2	130+100	LHS	11 x 17.3	7.5	10.5	RCC	Open	Structure is sound in condition.
		RHS	11 x 17.3	7.5	10.5	RCC	Open	
3	131+600	LHS	9 x 8	7.5	11	RCC	Open	Structure is sound in condition.
		RHS	5 x 18.7	7.5	10.5	RCC	Open	
4	139+450	LHS	15 x 12	7.5	11	RCC	Open	Structure is sound in condition.
		RHS	7 x 24	7.5	10.5	RCC	Open	
5	153+800	LHS	11 x 20	7.5	10.5	RCC	Open	Structure is sound in condition. Not In concessionaire scope.
		RHS	11 x 20	7.5	10.5	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Minor Bridges								
1	118+440	LHS	4 x 5.8	7.5	8.5	RCC	Open	Structure is sound in condition.
		RHS	4 x 5.8	12.5	13.5	RCC	Open	
2	118+640	LHS	3 x 4.8	7.5	8.5	RCC	Open	Structure is sound in condition.
		RHS	3 x 4.8	12.5	13.5	RCC	Open	
3	122+110	LHS	2 x 6.5	7.5	8.5	RCC	Open	Structure is sound in condition.
		RHS	2 x 6.5	12.5	13.5	RCC	Open	
4	123+210	LHS	2 x 5.4	7.5	8.5	RCC	Open	Structure is sound in condition.
		RHS	2 x 5.4	9	10	RCC	Open	
5	125+510	LHS	2 x 6.8	7.5	8.5	RCC	Open	Structure is sound in condition.
		RHS	2 x 6.8	12.5	12	RCC	Open	
6	129+100	LHS	1 x 9.5	9	10	RCC	Open	Structure is sound in condition.
		RHS	1 x 9.5	9	10	RCC	Open	
7	139+990	SR+LHS	2 x 8	7+10.5	8+12.9	RCC	Open	Structure is sound in condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
		RHS+SR	2 x 8	10.5+7	10+8	RCC	Open	
8	140+400	SR+LHS	2 x 6.7	7+10.1	8+11.1	RCC	Open	Structure is sound in condition.
		RHS+SR	2 x 6.7	9+7	10+8	RCC	Open	
9	148+700	SR+LHS	3 x 4.75	7+8.75	8+9.75	RCC	Open	Structure is sound in condition.
		RHS+SR	3 x 4.75	10+7	11+8	RCC	Open	
10	151+700	LHS	2 x 10	9	10	RCC	Open	Structure is sound in condition.
		RHS	2 x 10	9	10	RCC	Open	
11	152+000	LHS	1 x 10	9	10.5	RCC	Open	Structure is sound in condition.
		RHS	1 x 10	9	10.5	RCC	Open	
12	154+550	LHS	1 x 10	9	10	RCC	Open	Structure is sound in condition.
		RHS	1 x 10	9	10	RCC	Open	
13	156+210	LHS	1 x 10	9	10.5	RCC	Open	Structure is sound in condition.
		RHS	1 x 10	9	10.5	RCC	Open	
14	156+450	LHS	3 x 7.5	7.5	10	RCC	Open	Structure is sound in condition.
		RHS	3 x 7.5	7.5	10	RCC	Open	
15	157+650	LHS	1 x 10	9	10	RCC	Open	Structure is sound in condition.
		RHS	1 x 10	9	10	RCC	Open	
16	166+012	LHS	1 x 10	9	10	RCC	Open	Structure is sound in condition.
		RHS	1 x 10	9	10	RCC	Open	
17	166+350	LHS	1 x 10	9	10	RCC	Open	Structure is sound in condition.
		RHS	1 x 10	9	10	RCC	Open	
18	172+800	LHS				RCC	Open	Structure is sound in condition.
		RHS				RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length (m)	Carriageway width (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
Flyover									
1	159+400	Both	20 + 30 + 5 x 20 + 30 + 20	200	9.5	12.5	RCC	Open	Structure is sound in condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Type of foundation	Remarks
ROB									
1	150+600	LHS	1 x 33.3	33.3	7.5	10	RCC	Open	Structure is sound in condition. Steel expose at diaphragm beam
		RHS	1 x 33.3	33.3	7.5	10	RCC	Open	
2	161+520	LHS	1 x 27.3	27.3	9.5	12.5	RCC	Open	Structure is sound in condition.
		RHS	1 x 27.3	27.3	9.5	12.5	RCC	Open	
3	179+380	LHS	3 x 22.10 + 26.70 + 22.10	70.9	9	12.5	RCC	Open	Structure is sound in condition.
		RHS	1 x 12.14	12.14	9	10.5	RCC	Open	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Remarks
VUP								
1	127+600	LHS	2 x 10	20	10.25	25	RCC	Structure is sound in condition.
		RHS	2 x 10	20	10.25		RCC	
2	128+210	LHS	1 x 10	10	9	10	RCC	Structure is sound in condition. Road under VUP is need to repaired.
		RHS	1 x 10	10	9	10	RCC	
3	130+730	LHS	2 x 10	20	9.75	25	RCC	Structure is sound in condition.
		RHS	2 x 10	20	9.75		RCC	
4	140+700	LHS	1 x 10	10	10.25	25	RCC	Structure is sound in condition.
		RHS	1 x 10	10	10.25		RCC	
5	148+860	LHS	2 x 10	20	8.75	20	RCC	Structure is sound in condition.
		RHS	2 x 10	20	8.75		RCC	
6	149+130 (LVUP)	LHS	1 x 10	10	8.75	20	RCC	Structure is sound in condition.
		RHS	1 x 10	10	8.75		RCC	
7	150+190	LHS	2 x 10	20	8.75	20	RCC	Structure is sound in condition.
		RHS	2 x 10	20	8.75		RCC	
8	151+125	LHS	1 x 5.0	5	10.5	32	RCC	Structure is sound in condition.
		RHS	1 x 5.0	5	10.5		RCC	
9	153+630	LHS	1 x 10	10	9.75	25	RCC	Structure is sound in condition.

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Remarks
		RHS	1 x 10	10	9.75		RCC	
10	157+050	LHS	1 x 10	10	9.75	25	RCC	Structure is sound in condition.
		RHS	1 x 10	10	9.75		RCC	
11	161+390	LHS	1 x 12.7	12.7	9.5	27	RCC	Structure is sound in condition.
		RHS	1 x 12.7	12.7	9.5		RCC	
12	162+710	LHS	1 x 10	10	9.75	25	RCC	Structure is sound in condition.
		RHS	1 x 10	10	9.75		RCC	
13	166+650	LHS	1 x 10	10	9.75	25	RCC	Structure is sound in condition.
		RHS	1 x 10	10	9.75		RCC	
14	169+475	LHS	2 x 10	20	9.75	25	RCC	Structure is sound in condition.
		RHS	2 x 10	20	9.75		RCC	
15	171+780	LHS	1 x 10	10	8.75	20	RCC	Structure is sound in condition.
		RHS	1 x 10	10	8.75		RCC	
16	173+600	LHS					RCC	Structure is sound in condition. Not In concessionaire scope
		RHS					RCC	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Remarks
LUP								
1	149+130	LHS	1 x 10	10	8.75	20	RCC	Structure is sound in condition.
		RHS	1 x 10	10	8.75		RCC	
2	158+260	LHS	1 x 10	10	9.75	24	RCC	Structure is sound in condition.
		RHS	1 x 10	10	9.75		RCC	

Sr. No.	Chainage (km)	Side	Span Arrangement (m)	Total Length of Bridge (m)	Carriageway (m)	Deck Width (m)	Type of structure	Remarks
PUP								
1	149+600	LHS				25	RCC	Structure is sound in condition. Not in Concessionaire scope.
		RHS					RCC	

Figure 3-4 Photographs of Major Structures

View of MNB at km. 118+440

View of VUP at km. 127+600

View of MJB at km. 127+850

View of VUP at km. 128+210

View of MJB at km. 130+100

View of ROB at km. 150+600

View of flyover at km. 159+400

View of ROB at km. 161+520

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and box culverts at various locations. There are 110 Nos. of culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Concessionaire. The cement concrete pitching or stone pitching has been provided for slope protection.

The culverts are maintained by the Concessionaire during O&M period. However, in case of few culverts, cement concrete pitching has been damaged which required to be addressed under routine repair work by the Concessionaire.

The photographs taken during site visit is presented as below.

Figure 3-5 Photographs of Culverts

Pipe culvert at km. 122+470

Box culvert at km. 127+263

3.6 Drainage

There are 6.030 kms of existing drain (which includes drain on both sides) of the Project Road. However, 0.150 kms of RCC drain is additionally constructed in locations where service roads are provided.

3.7 Slope Protection

Slope protection and chute drains are found on Project Road at required locations. A few of the slope protection and chute drains are damaged which need to be rectified by the Concessionaire.

3.8 Road Furniture

The Concessionaire has provided additional road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C. The details of the items are provided below.

a) Lighting Along the Project Road

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

b) Transverse / Thermoplastic Bar Marking Locations

Transverse / Thermoplastic Bar Markings on either side of carriageway is provided as per Section 11.2 of IRC:35-2015.

c) New Installation of Safety Barriers

There are 3015 m of new installation of safety barriers installed by the Concessionaire along the Project Road.

d) Additional Gantry / Cantilever Sign Board

As per schedule-B, additional gantry/ cantilever sign is provided at the following locations.

Table 3-4 Details of Additional Gantry / Cantilever Sign

Sr. No.	Chainage (km)	Side	Location	Type
1	130+600	BHS	Underpass	Cantilever Gantry Sign Board
2	140+500	BHS	Underpass	Cantilever Gantry Sign Board
3	159+000	BHS	Flyover	Cantilever Gantry Sign Board
4	166+550	BHS	Underpass	Cantilever Gantry Sign Board

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which will be rectified by the Concessionaire. Some of the photographs of road marking are presented below.

Figure 3-6 Photographs of Pavement Marking

km. 118+680

km. 144+500

km. 120+750

km. 156+200

Road Studs

Road studs / Cat's eye for the Project Road is provided as per the design standards indicated in section 12 of Schedule-D. Road studs / Cat's eye has been fixed at junction and zebra crossings. However, at a few locations some cat eyes have been damaged, which will be rectified by the Concessionaire.

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Roadside signs, overhead signs, kerb mounted signs, Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are all in good condition.

Some of the photographs of sign boards are presented below.

Figure 3-7 Photographs of Sign Boards

Village name board at km.118+350

Kilometer stone at km.122+000

Direction name board at km. 122+700

Hectometer stone at km.125+400

Hazard marker board at km.130+100

Slow Speed indicative signage at km. 156+200

Highway Lighting

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

Figure 3-8 Photographs of Highway Lighting

km.125+400

km. 161+100

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of metal beam crash barriers are presented below.

Figure 3-9 Photographs of MBCB / Crash Barrier

km. 128+200 (LHS)

km.130+100 (RHS)

Delineators

The traffic delineators are provided by Concessionaire for road users in abnormal condition of weather for the Project Road. The same is maintained by the Concessionaire. Some of the photographs of delineators are presented below.

Figure 3-10 Photographs of Delineator

km. 118+380 (RHS)

km. 122+000 (LHS)

Pedestrian Guard Rail

The pedestrian guard rails are provided in the median. It is maintained by the Concessionaire.

Some of the photographs of pedestrian guard rails are presented below.

Figure 3-11 Photographs of Pedestrian Guard Rail

km. 118+680 (Service roadside)

km. 170+100 (Median portion)

Road Land Boundary

Road land boundary pillar has been found / available on Project Road.

3.9 Avenue Plantation and Median Plantation

Avenue plantations are done in open country location and median plantation has been provided in the project length as per IRC specification.

Some of the photographs taken during the site visit are presented below.

Figure 3-12 Photographs of Avenue Plantation

km. 133+500 (LHS)

km. 118+400 (LHS)

Figure 3-13 Photographs of Median Plantation

km. 118+300 to km. 119+200

km. 128+200 to km. 129+100

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at Salaipudhur Village at km. 125+350 with the following infrastructure.

Table 3-5 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 125+350
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for over dimensional vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	9 singles
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel/no
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	4
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-14 Photographs of Toll Plaza

Toll Plaza at km. 125+350

Toll Plaza at km. 125+350

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction).

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

Lane Controller at Toll Plaza

3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza

3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

Toll Booth at Toll Plaza

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

MSWIM at Toll Plaza

3.12 Plaza Equipment

3.12.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio WiFi module. Firewall with Sophos antivirus is provided.

3.12.2 55" LED screen for CCTV monitoring

55" LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installed for the Project Road is controlled by the ATMS center at the toll plaza location (km. 125.350). As per Concession Agreement, ATMS shall conform to ATMS Policy guidelines (2016) which comprises of the following:

- Automatic Traffic Counter cum Classifier (ATCC)
- Mobile Radio communication system
- Emergency Call Box
- Portable Weigh in Motion
- Meteorological Data system
- Variable Message Signboards (VMS)
- CCTV system

- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza (km. 125+350).

3.13.2 Mobile Radio communication System (MRCS)

Mobile Radio communication System (MRCS) is not yet installed. Application for MRCS UHF band has been sought from WPC, DoT, Ministry of Communications which is not yet allocated.

3.13.3 Emergency Call Boxes (ECB)

ECB's are not installed at site.

3.13.4 Portable Weigh in Motion (PWIM)

PWIM's are provided at site.

3.13.5 MET System

Meteorological sensors comprise of sensors to measure the atmospheric temperature, humidity, pavement surface temperature, visibility and equipment for measuring wind speed and direction and installed at Toll Plaza km 125.350.

3.13.6 Variable Message Signboards (VMS)

Variable message sign boards are installed at 10 locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

3.13.7 CCTV Surveillance Cameras

Surveillance cameras are installed at 34 locations along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed.

3.13.8 Video Incident Detection System

45 nos. fixed CCTV cameras are installed as part of Video incident detection system.

3.13.9 Vehicle Actuated Speed Display (VASD)

VASD is installed at 11 locations each on LHS and RHS.

3.13.10 Adequacy of Toll Collection System and ATMS

- Adequacy-All lanes are hybrid ETC system as stipulated by NHAI in Technical Specifications of Hybrid ETC system. NHAI has approved maintenance costs for TMS. TMS shall be upgraded every 5 years at the cost of the Authority.

- Advanced Traffic Management System (ATMS) installed is as per specifications required by the Authority and in working condition.

3.14 Truck Lay-bye

The truck lay-bye are provided at the following locations on Project Road.

Table 3-6 Details of Truck Lay-bye

Sr. No.	Chainage (km)	Remarks
1	130+100	LHS
2	139+500	RHS

3.15 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Posts are present in the toll plaza location at 125.350.

3.16 Toilet Block

Toilet blocks are provided at the Toll Plaza on Project Road.

3.17 Bus Bays and Passenger Shelters

There are 36 Nos. of bus bays / shelter along the Project Road.

The photographs taken during the site visit are presented below.

Figure 3-15 Photographs of Passenger Shelter

3.18 Balance Work Status

There are no balance works to be executed as per the Concession Agreement.

3.19 Operation and Maintenance

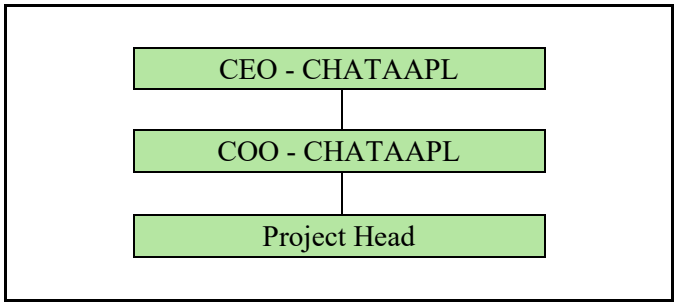
3.19.1 O&M Contract

As per Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall confirm to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement. The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

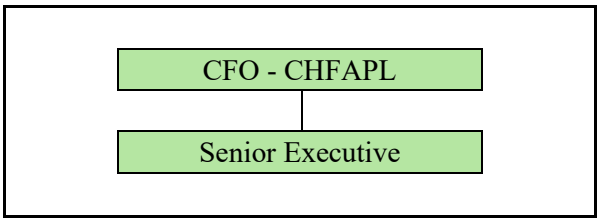
3.19.2 Organization Chart

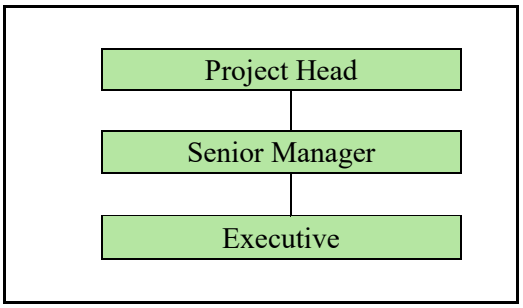
The Concessionaire has shared the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (HR), 01 Manager (TMS / IT), 01 Executive (TMS / IT), 01 supervisor , 01 executive, 01 electrician 01 Plaza Manager, 01 Assistant Plaza Manager, 03 Cashiers and 04 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent subcontractors.

Organization Chart

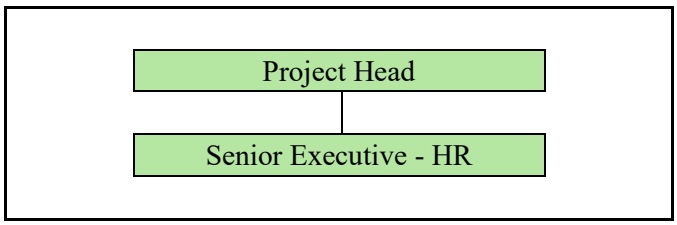


Finance & Accounts

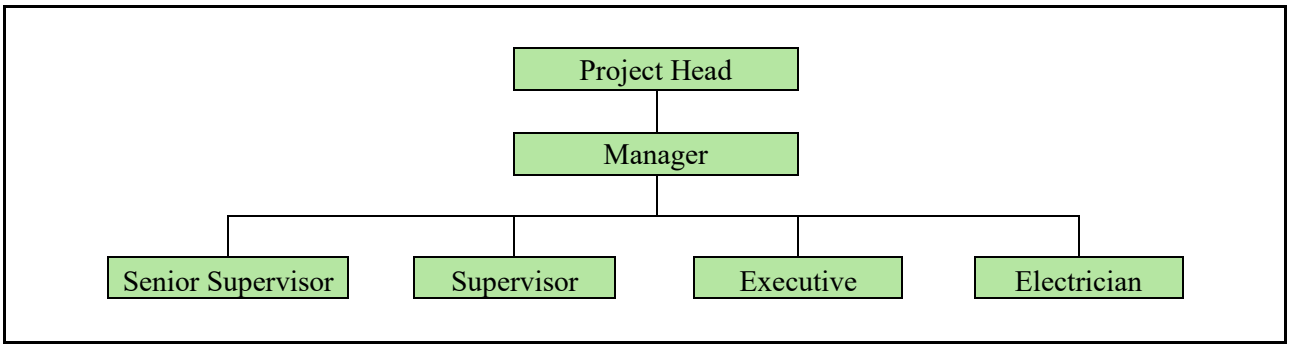




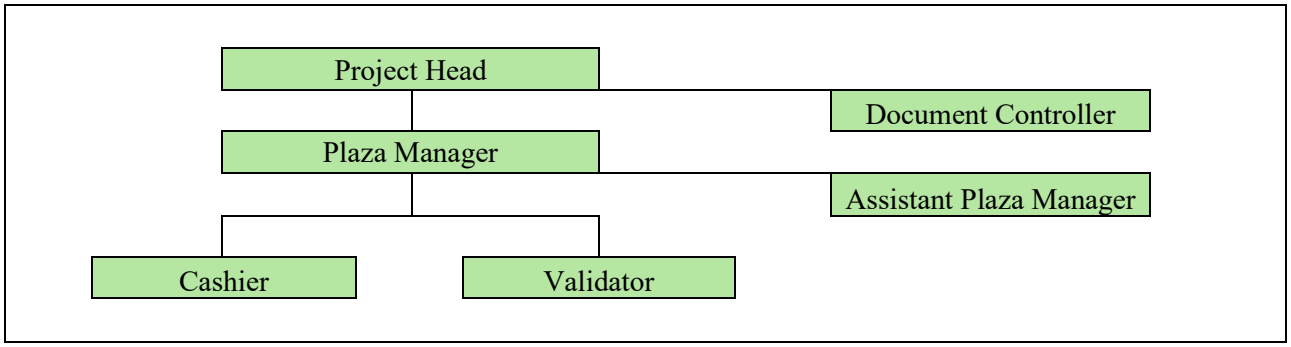
Human Resource



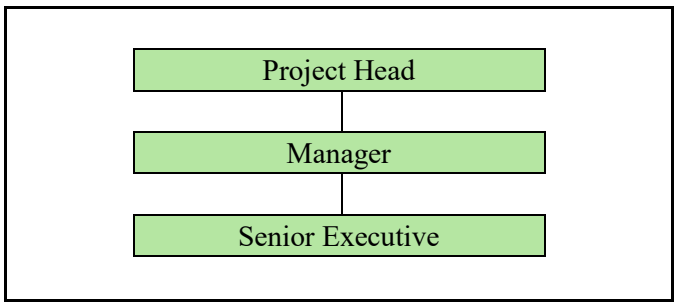
Operations & Maintenance



Operations System



Traffic and safety



3.19.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.19.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Article 15 and Schedule-F of the Concession Agreement defines the Operation and Maintenance requirement during the concession period.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 30 years from the Appointed Date (as TOT Package i.e., 20th October 2020) including construction period.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 125.780 (near Toll Plaza) from 17th March 2020 to 19th March 2020. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Weighted Average VDF Values			
Sr. No.	Vehicle Type	Direction	
		Madhurai - Kanyakumari	Kanyakumari - Madhurai
1	BUS	0.777	0.968
2	LCV	0.808	0.695
3	2-Axle	2.921	3.279
4	3-Axle	5.656	5.103
5	MAV	13.441	7.893

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

MSA Calculations SMTPL Project					
Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
FY26	2.09	**2.09**	1.58	**1.58**	
FY27	2.17	**4.26**	1.64	**3.22**	
FY28	2.25	**6.51**	1.70	**4.92**	
FY29	2.33	**8.84**	1.76	**6.68**	1st MM Cycle
FY30	2.41	**11.25**	1.82	**8.50**	1st MM Cycle
FY31	2.50	**13.75**	1.88	**10.38**	
FY32	2.58	**16.33**	1.94	**12.32**	
FY33	2.67	**19.00**	2.01	**14.33**	
FY34	2.77	**21.77**	2.07	**16.40**	

MSA Calculations SMTPL Project					
Year	**MSA**	**Cumulative**	**MSA**	**Cumulative**	**Remarks**
FY35	2.86	**24.63**	2.14	**18.54**	
FY36	2.96	**27.59**	2.21	**20.75**	2nd MM Cycle
FY37	3.06	**30.65**	2.29	**23.04**	2nd MM Cycle
FY38	3.16	**33.81**	2.36	**25.40**	
FY39	3.26	**37.07**	2.43	**27.83**	
FY40	3.36	**40.43**	2.51	**30.34**	
FY41	3.47	**43.90**	2.59	**32.93**	
FY42	3.58	**47.48**	2.67	**35.60**	
FY43	3.69	**51.17**	2.75	**38.35**	3rd MM Cycle & Crossing 40000 PCU's limit
FY44	3.80	**54.97**	2.83	**41.18**	3rd MM Cycle & Crossing 40000 PCU's limit
FY45	3.92	**58.89**	2.91	**44.09**	Crossing 40000 PCU's limit
FY46	4.04	**62.93**	3.00	**47.09**	DPR
FY47	4.16	**67.09**	3.09	**50.18**	DPR
FY48	4.28	**71.37**	3.18	**53.36**	Augmentation 6-Laning (Assuming 2 years Construction Period)
FY49	4.40	**75.77**	3.27	**56.63**	Augmentation 6-Laning (Assuming 2 years Construction Period)
FY50	3.63	**79.40**	2.69	**59.32**	
FY51	3.73	**83.13**	2.76	**62.08**	

4.4 Network Survey Vehicles (NSV) Survey

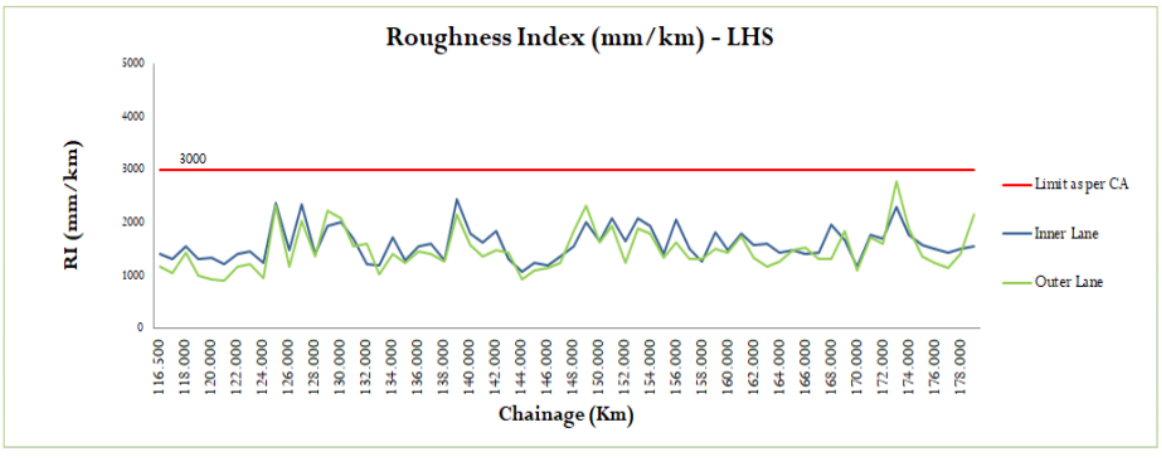
The Concessionaire has conducted pavement condition survey on each lane of carriageway through NSV. The NSV survey was conducted on the Project Road on 05th January 2025 to 18th January 2025. The summary of the same is presented below.

Table 2-1: Summary of RI Limit as per Schedule F of CA

Roughness Summary % as per Schedule F of CA (mm/km)					
Condition	Limit as per Schedule F of CA (mm/km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<3000	100.00%	100.00%	100.00%	100.00%
Poor	**>3000**	**0.00%**	**0.00%**	**1.57%**	**0.00%**

Note: The section from km 173.000 to 174.000 where higher roughness is observed is a VUP which is still under defect liability period and therefore pavement rectification is not in Concessionaire's scope.

Figure 2-3: Roughness Summary for SMTPL as per Schedule F of CA



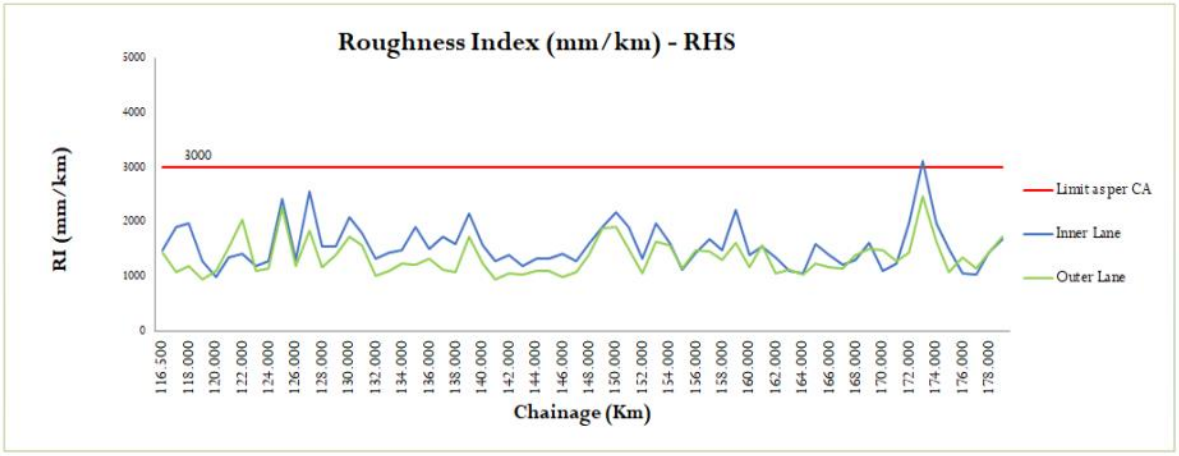
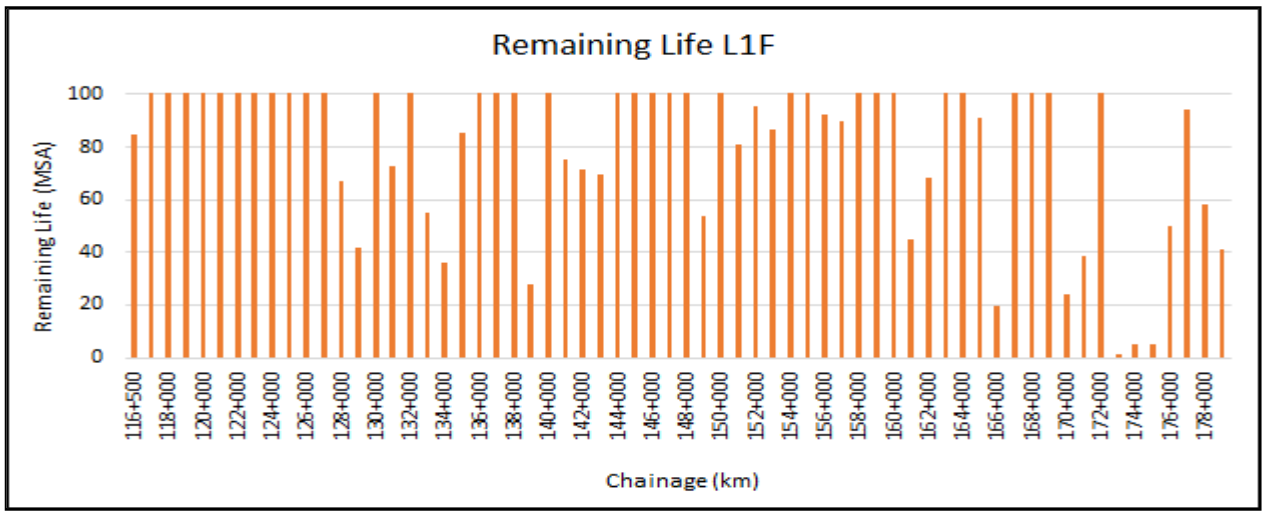


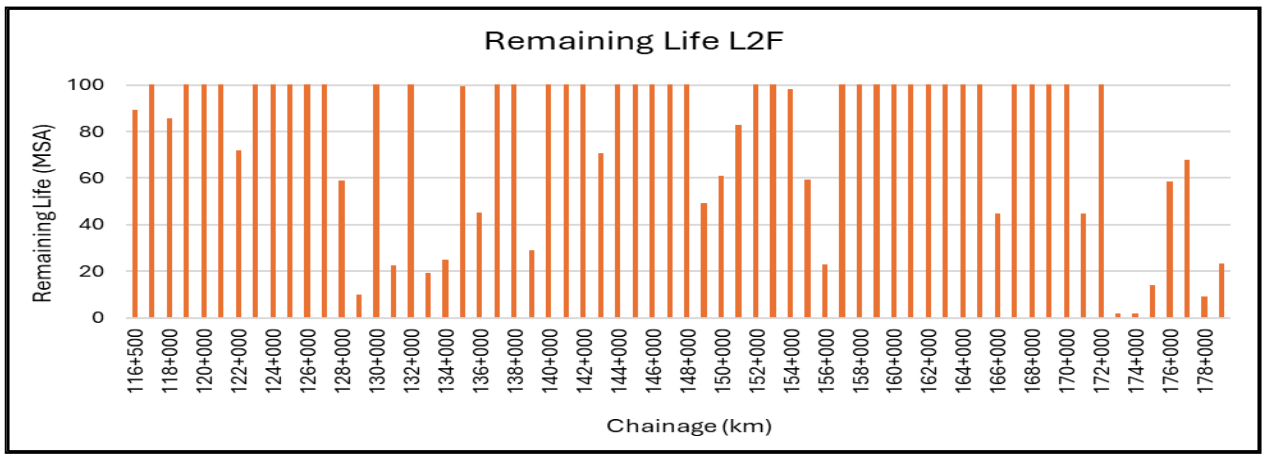
Figure 2-4: Roughness Index for SMTPL as per Schedule F of CA

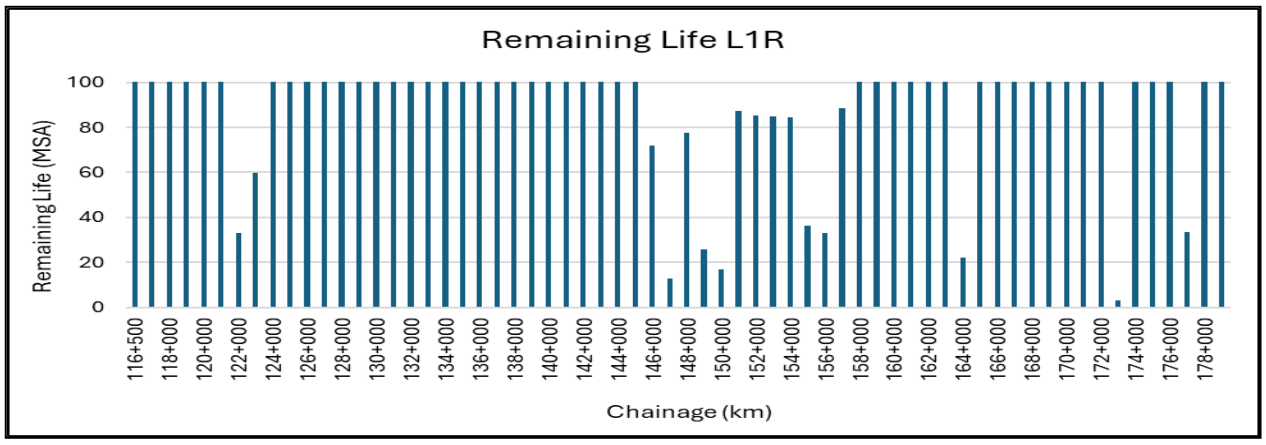
4.5 FWD Survey

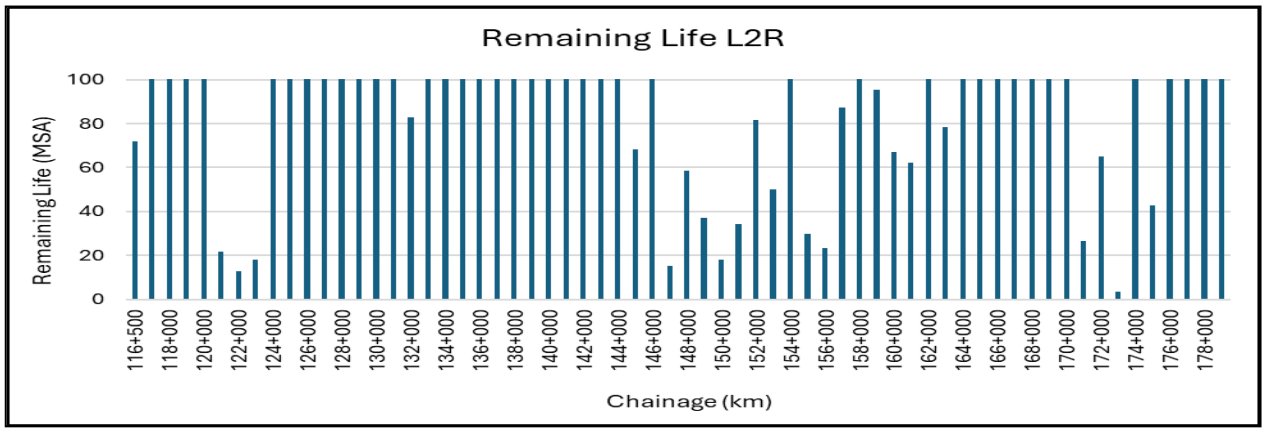
The structural evaluation and analysis of the remaining life of project was carried out in conformity with IRC:115-2014 "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique".

The FWD survey was conducted on the Project Road on 01st February 2025 to 06th February 2025. The summary of the same is presented below.









However, the maintenance can be carried out on as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. However, improvement in Riding Quality is expected if the roughness value exceeds 3000 mm/km.

4.6 Test pit and Subgrade Investigation

The Concessionaire has carried out the subgrade investigation for Project Road. The results of the same as provided by the Concessionaire are tabulated as below.

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
1	NH-7	117.500	RHS	13.1
2	NH-7	120.000	LHS	24.3
3	NH-7	122.600	RHS	15.2
4	NH-7	125.000	LHS	13.9
5	NH-7	128.000	RHS	15.3
6	NH-7	130.700	LHS	19.9
7	NH-7	131.600	RHS	16.2
8	NH-7	132.500	RHS	14.4
9	NH-7	135.000	LHS	17.2
10	NH-7	137.400	RHS	16.3
11	NH-7	137.550	RHS	13.9
12	NH-7	139.800	LHS	16.1
13	NH-7	142.700	RHS	15.6
14	NH-7	145.000	LHS	20.0
15	NH-7	147.550	RHS	12.4

Sr. No.	Road Name	Existing Chainage (km)	Side	DCP-CBR
16	NH-7	150.800	LHS	14.1
17	NH-7	152.450	RHS	13.9
18	NH-7	154.650	LHS	17.0
19	NH-7	155.000	LHS	12.2
20	NH-7	157.000	LHS	21.6
21	NH-7	157.100	RHS	13.5
22	NH-7	160.020	LHS	17.2
23	NH-7	162.700	RHS	15.3
24	NH-7	164.950	LHS	11.2
25	NH-7	166.800	RHS	13.4
26	NH-7	170.150	LHS	12.6
27	NH-7	172.400	RHS	16.8
28	NH-7	175.000	RHS	19.7
29	NH-7	177.200	RHS	16.4
30	NH-7	177.300	LHS	13.7
31	NH-7	180.000	LHS	16.9
Average DCP-Equivalent CBR				**15.8**

Table 4-3 Test Results Summary of granular layer Samples

Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
1	117.500	RHS	WMM	100.0	93.5	85.2	51.4	46.9	28.7	24.2	19.0	15.1	9.2	7.3	0.6	Not Conforming to any Gradation	Not Conforming to any Gradation	21	NP	NP	2.83	0.33	34.97
2	120.000	LHS	GSB	100.0	100.0	92.1	53.1	44.2	19.9	14.9	10.2	6.6	3.1	2.4	0.7	4.75mm IS Sieve Material is Slightly Coarser side in GSB-IV	4.75mm IS Sieve Material is Slightly Coarser side in GSB-V	23	18	5	2.82	0.39	35.47
3	122.600	RHS	GSB	100.0	100.0	100.0	68.0	59.8	34.2	28.0	21.5	16.3	10.5	8.7	1.1	Conforming to GSB-III & IV	Conforming to GSB-III & IV	21	NP	NP	2.76	0.23	32.71
4	125.000	LHS	WMM	100.0	100.0	100.0	91.9	78.6	41.0	32.7	24.6	20.7	11.8	9.4	1.0	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	22	NP	NP	2.77	0.21	30.15
5	128.000	RHS	WMM	100.0	100.0	100.0	76.3	48.9	36.2	30.5	26.9	19.5	11.9	8.6	1.2	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	23	NP	NP	2.80	0.25	27.57
6	130.700	LHS	GSB	100.0	98.3	82.6	6.5	0.8	0.5	0.4	0.3	0.3	0.3	0.2	0.2	Not Conforming to any Gradation	Not Conforming to any Gradation	24	NP	NP	2.83	0.30	30.18
7	131.600	RHS	WMM	100.0	100.0	98.6	58.5	46.7	38.1	31.0	26.5	20.3	16.8	10.2	1.0	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	20	NP	NP	2.74	0.28	31.63
8	132.500	RHS	GSB	100.0	100.0	98.2	58.2	44.1	18.2	13.6	9.7	7.1	4.7	4.5	0.5	4.75mm, IS Sieve Material is Slightly Coarser Side in GSB-III & IV	4.75mm, IS Sieve Material is Slightly Coarser Side in GSB-IV & V	21	NP	NP	2.81	0.25	32.6
9	135.000	LHS	WMM	100.0	100.0	100.0	95.6	83.6	37.9	31.1	26.8	20.7	14.3	12.4	0.8	22.4mm IS Sieve Material Slightly Finer & 11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22.4mm IS Sieve Material Slightly Finer & 11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	19	NP	NP	2.80	0.24	28.35
10	137.400	RHS	WMM	100.0	100.0	96.2	85.6	68.2	36.9	32.5	19.3	16.1	10.8	9.2	1.3	11.2mm,4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	11.2mm,4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	19	NP	NP	2.81	0.29	29.87
11	137.550	RHS	WMM	100.0	100.0	100.0	91.5	74.6	46.8	35.4	30.2	18.6	15.4	10.8	1.8	Confirming to WMM Gradation	Confirming to WMM Gradation	19	NP	NP	2.78	0.28	26.86
12	139.800	LHS	GSB	100.0	100.0	96.8	64.2	42.5	34.9	19.5	9.2	6.3	4.1	2.2	1.1	4.75mm IS Sieve Material is Slightly Coarser side in GSB-III&IV	4.75mm IS Sieve Material is Slightly Coarser side in GSB-IV&V	20	NP	NP	2.83	0.25	33.42
13	142.700	RHS	GSB	100.0	100.0	98.0	68.5	52.6	31.6	21.3	10.9	8.2	5.2	3.8	1.5	Confirming to GSB-III	Confirming to GSB-IV	23	NP	NP	2.82	0.24	35.14
14	145.000	LHS	WMM	100.0	100.0	100.0	75.5	55.9	35.3	30.3	30.0	20.2	8.9	6.4	0.9	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22.4mm,11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	22	NP	NP	2.79	0.31	30.15
15	147.550	RHS	WMM	100.0	100.0	100.0	72.7	60.7	36.9	31.9	26.9	23.0	11.7	9.2	1.0	11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	11.2mm IS Sieve Material Slightly Coarser side in WMM Gradation	20	NP	NP	2.82	0.32	33.24
16	150.800	LHS	GSB	100.0	100.0	100.0	43.7	35.2	15.0	13.1	11.4	9.7	7.3	6.1	1.0	26.5mm IS Sieve Material is Slightly Coarser Side in GSB-III	26.5mm IS Sieve Material is Slightly Coarser Side in GSB-IV	22	NP	NP	2.74	0.24	31.24
17	152.450	RHS	GSB	100.0	100.0	88.0	62.3	44.1	36.5	30.2	29.4	26.8	21.5	11.6	4.6	9.5mm IS Sieve Material Slightly Coarser side in GSB-I	9.5mm IS Sieve Material Slightly Coarser side in GSB-I	20	NP	NP	2.79	0.31	32.41
18	154.650	LHS	GSB	100.0	100.0	96.5	74.1	65.7	46.6	45.9	35.3	28.9	21.2	13.5	11.1	0.075 mm IS Sieve Material is Slightly Finer Side in GSB-I	0.075 mm IS Sieve Material is Slightly Finer Side in GSB-I	23	NP	NP	2.77	0.38	31.06
19	155.000	LHS	WMM	100.0	100.0	100.0	65.5	55.6	43.5	30.5	28.8	19.2	13.8	7.9	0.7	22.4mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	21	NP	NP	2.74	0.26	24.67
20	157.000	LHS	WMM	100.0	100.0	100.0	50.2	40.3	29.8	29.0	27.6	23.3	16.3	13.0	1.7	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side	19	NP	NP	2.82	0.29	29.23

Sr. No.	Chainage (km)	Side (LHS/RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												MoRTH 5th Revision	MoRTH 4th Revision	Atterberg Limits			Specific Gravity	W.A (%)	AIV (%)
				75	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075			Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
																in WMM Gradation	in WMM Gradation						
21	157.100	RHS	WMM	100.0	100.0	100.0	48.7	38.9	5.8	2.1	0.9	0.8	0.8	0.7	0.4	Not Conforming to Any Gradation	Not Conforming to Any Gradation	20	NP	NP	2.83	0.32	27.53
22	160.020	LHS	GSB	100.0	100.0	96.8	58.4	43.4	11.7	9.4	8.1	6.2	4.0	3.3	0.2	4.75mm, IS Sieve Material is Slightly Coarser Side in GSB-III & IV	4.75mm, IS Sieve Material is Slightly Coarser Side in GSB-IV& V	20	NP	NP	2.79	0.26	26.15
23	162.700	RHS	GSB	100.0	100.0	100.0	55.9	39.7	14.2	11.9	9.9	7.8	6.1	5.3	1.0	4.75mm, IS Sieve Material is Slightly Coarser Side in GSB-IV & V	4.75mm, IS Sieve Material is Slightly Coarser Side in GSB-III & V	23	NP	NP	2.82	0.37	31.55
24	164.950	LHS	WMM	100.0	100.0	100.0	82.0	67.1	45.3	35.9	21.6	16.8	12.1	9.8	0.6	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	4.75mm IS Sieve Material Slightly Coarser side in WMM Gradation	22	NP	NP	2.74	0.22	27.69
25	166.800	RHS	WMM	100.0	100.0	92.9	59.8	50.9	27.6	19.0	10.3	6.1	3.0	2.6	0.4	Not Conforming to any Gradation	Not Conforming to any Gradation	21	NP	NP	2.76	0.36	27.63
26	170.150	LHS	GSB	100.0	97.1	89.1	47.4	36.7	25.2	22.3	19.2	16.9	10.9	8.2	0.8	53mm,26.5 mm IS Sieve Material is Slightly Coarder Side in GSB-IV	26.5 mm IS Sieve Material is Slightly Coarder Side in GSB-IV	20	NP	NP	2.76	0.44	32.23
27	172.400	RHS	GSB	100.0	100.0	97.8	67.3	60.2	41.1	37.0	32.3	27.0	14.9	11.3	1.1	Conforming to GSB-I	Conforming to GSB-I	22	NP	NP	2.77	0.42	35.93
28	175.000	RHS	WMM	100.0	100.0	100.0	47.6	41.8	32.8	28.4	25.6	21.5	18.2	15.2	1.1	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	22.4mm,11.2mm IS Sieve Material is Slightly Coarser Side in WMM Gradation	20	NP	NP	2.83	0.41	36.45
29	177.200	RHS	WMM	100.0	100.0	95.2	65.3	62.3	48.2	34.3	30.2	23.6	16.8	16.2	1.1	Conforming to WMM Gradation	Conforming to WMM Gradation	22	NP	NP	2.81	0.38	34.26
30	177.300	LHS	WMM	100.0	100.0	100.0	73.2	62.7	40.1	34.3	28.7	23.5	14.4	10.6	0.5	Conforming to WMM Gradation	Conforming to WMM Gradation	21	NP	NP	2.75	0.34	33.45
31	180.000	LHS	GSB	100.0	97.8	82.2	47.6	43.9	34.8	31.9	27.8	23.8	13.9	10.4	0.2	53mm,26.5 mm IS Sieve Material is Slightly Coarder Side in GSB-III &IV	26.5 mm IS Sieve Material is Slightly Coarder Side in GSB-IV	23	NP	NP	2.78	0.38	36.52

Table 4-4 Test Results Summary of Natural Ground Soil Samples

Sr. No.	Location (Km.)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)						Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		4-Days Soaked CBR (%)	Free Swell Index (%)
				19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	133.200	LHS	SM	95.5	88.5	65.3	6	21.5	15.8	15.8	18	NP	NP	2.11	8.3	18.7	0.0
2	141.800	LHS	ML-CL	100.0	100.0	88.5	5	65.2	55.4	55.4	28	21	7	1.97	9.6	8.6	15.0
3	145.000	RHS	MI	100.0	98.5	88.2	8	68.2	55.1	55.1	38	25	13	1.85	13.2	5.3	35.0
4	153.300	RHS	CL	100.0	100.0	88.5	6	55.0	52.1	52.1	30	22	8	1.96	10.4	8.9	20.0
5	163.100	LHS	ML-CL	100.0	100.0	88.5	6	65.2	51.2	51.2	28	21	7	1.91	10.0	8.3	15.0
6	166.500	LHS	SM-SC	100.0	100.0	78.5	55.2	45.2	38.8	38.8	21	17	4	2.03	9.0	13.7	10.0
7	166.600	RHS	ML-CL	100.0	100.0	88.5	65.2	55.5	50.2	50.2	28	22	6	1.95	9.2	9.2	10.0

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length periodic maintenance. Schedule-F of the Concession Agreement specifies the threshold limits and the timeline for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-F requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Overlay work is completed at site on both side of the carriageway in the month of October 2021 i.e., FY 2022. Thus, next cycle of the overlay is proposed in FY 2029 after 7 years from previous MM cycle.

As per Article 14 of CA, the Authority shall carry out capacity augmentation under EPC contract if traffic exceeds 40,000 PCU for three consecutive accounting years. As per the traffic study report submitted by the Company it is observed that the project traffic crosses 40,000 PCU in FY 2043, FY 2044, FY 2045. Assumption has made that execution of 6-laning of Project Road will start in the year 2048 or 2049. It is also assumed that during 6-laning of Project Road, the overlay of existing four lane road will be part of the capacity augmentation. Hence, the major maintenance cycle is adjusted accordingly.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-5 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026 to FY 2028	-	-
2	FY 2029	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (6%)	Major Maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
3	FY 2030 to FY 2035	-	-
4	FY 2036	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (5%)	Major Maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
5	FY 2037 to FY 2042	-	-
6	FY 2043	Major maintenance with 30 mm BC with PMB (100%) + Milling & 50 mm DBM (5%)	Major Maintenance with 30 mm BC with VG-40 (50%) + Micro-surfacing (50%)
7	FY 2044 to FY 2047	-	-
8	FY 2048	Assumption of Capacity Augmentation to Six Lane Configuration	
9	FY 2049 to FY2050	-	-
10	FY 2051	End of Concession Period	

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026 and FY 2027. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

d. **Cement:** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

e. **Steel :** Rates are taken from Public works Department Tamilnadu SOR FY 2024-25.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, median filling rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam	Cum	8,519
2	Bituminous Concrete (VG40)	Cum	9,743
3	Bituminous Concrete (PMB)	Cum	11,050
4	Milling	Sqm	86
5	Micro-surfacing	Sqm	155
6	Kerb Re-laying	Rmt	316
7	Road Marking on BC surface	Sqm	571
8	Road Marking on micro surface	Sqm	682
9	Road Studs	Nos.	251

5.3 Balance Work Cost

As discussed in the previous chapter, the balance works cost for Project Road is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the

operating cost in the vicinity of the project area. Same has been divided into following major heads.

1 Salary and Welfare Expenses
2 Tolling Operations Services_Outsourced
3 Toll Security Services_Outsourced
4 Incident Management & Emergency Services_Outsourced
5 Electricity and Diesel Charges
6 TMS/HTMS/System Expenses
7 Office Operating Expenses
8 Vehicle Running Expenses
9 Professional Fees Expense
10 Community Development
11 Communication Expenses
12 Conveyance Expenses
13 Insurance Expense
14 IE Fees
15 Routine Maintenance Cost (Project Highway)
16 Horticulture & ROW Maintenance
17 Miscellaneous including Contingency

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026 to FY 2050)	Amount (FY 2051)
1	Salary and Welfare Expenses	1,50,06,270	1,50,06,270
2	Tolling Operations Services	2,15,54,472	2,15,54,472
3	Toll Security Services	51,81,540	51,81,540
4	Incident Management & Emergency Services	1,84,82,709	1,84,82,709
5	Electricity and Diesel Charges	25,07,747	25,07,747
6	TMS/HTMS/System Expenses	52,48,003	53,83,740
7	Office Operating Expenses	12,98,154	12,98,154
8	Vehicle Running Expenses	26,40,000	26,40,000
9	Professional Fees Expense	68,77,032	1,02,12,054
10	Community Development	2,41,500	2,41,500
11	Communication Expenses	3,32,063	3,32,063
12	Conveyance Expenses	3,62,250	3,62,250
13	Insurance Expense	70,23,498	70,23,498
14	IE Fees	75,67,344	75,67,344
15	Routine Maintenance Cost (Project Road)	3,13,10,590	4,05,21,474

Sr. No.	Particulars	Amount (FY 2026 to FY 2050)	Amount (FY 2051)
16	Horticulture & ROW Maintenance	2,03,74,966	2,03,74,966
17	Miscellaneous including Contingency	37,72,903	39,11,734
	Total Cost (Rs.)	**14,97,81,039**	**16,26,01,514**
	Total Cost (Cr.)	14.98	16.26
	Per km Cost (Lakhs)	**23.59**	**25.61**

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Table 5-4 Summary of Major Maintenance Cost

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2024 to FY 2028	-	
2	FY 2029	72.91	
3	FY 2030 to FY 2035	-	
4	FY 2036	80.82	
5	FY 2037 to FY 2042	-	
6	FY 2043	72.26	
7	FY 2044 to FY 2047	-	
8	FY 2048 to FY 2049	-	Capacity Augmentation in FY 2048 / FY 2049
9	FY 2050	-	
9	FY 2051	-	End of concession period
Total Cost (Cr.)		**226.00**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	7.29	
2	FY 2034	7.29	
3	FY 2041	7.29	
4	FY 2048	7.29	
Total Cost (Cr.)		**29.19**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-5 Escalation

Year	Escalation	Year	Escalation
2025	-	**2041**	3.99%
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%

Year	Escalation	Year	Escalation
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49	FY50	FY51
1	Routine O&M Cost																										
1.01	Salary and Welfare Expense	1.50	1.58	1.66	1.73	1.80	1.88	1.95	2.03	2.11	2.20	2.29	2.38	2.47	2.57	2.67	2.78	2.89	3.01	3.13	3.25	3.38	3.52	3.66	3.80	3.95	4.11
1.02	Tolling Operations Services	2.16	2.27	2.38	2.48	2.59	2.70	2.81	2.92	3.04	3.16	3.29	3.42	3.55	3.69	3.84	3.99	4.15	4.32	4.49	4.67	4.86	5.05	5.25	5.46	5.68	5.91
1.03	Toll Security Services	0.52	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.17	1.21	1.26	1.31	1.37	1.42
1.04	Incident Management Services	1.85	1.95	2.04	2.13	2.22	2.31	2.41	2.50	2.60	2.71	2.82	2.93	3.05	3.17	3.29	3.43	3.56	3.70	3.85	4.01	4.17	4.33	4.50	4.68	4.87	5.07
1.05	Electricity and Diesel Charges	0.25	0.26	0.28	0.29	0.30	0.31	0.33	0.34	0.35	0.37	0.38	0.40	0.41	0.43	0.45	0.46	0.48	0.50	0.52	0.54	0.57	0.59	0.61	0.64	0.66	0.69
1.06	TMS/HTMS/System Expenses	1.00	0.27	0.39	0.51	0.65	0.67	0.94	1.36	0.37	0.52	0.68	0.85	0.89	1.24	1.79	0.48	0.68	0.89	1.12	1.17	1.63	2.35	0.63	0.89	1.17	1.48
1.07	Office Operating Expenses	0.13	0.14	0.14	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.36
1.08	Vehicle Running Expenses	0.26	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.70	0.72
1.09	Professional Fees Expense	0.69	0.72	0.76	0.79	0.83	0.86	0.90	0.93	0.97	1.01	1.05	1.09	1.13	1.18	1.23	1.27	1.33	1.38	1.43	1.49	1.55	1.61	1.68	1.74	1.81	2.80
1.10	Community Development	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07
1.11	Communication Expenses	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.10	0.10
1.13	Insurance Expense	0.70	0.74	0.78	0.81	0.84	0.88	0.91	0.95	0.99	1.03	1.07	1.11	1.16	1.20	1.25	1.30	1.35	1.41	1.46	1.52	1.58	1.65	1.71	1.78	1.85	1.92
1.14	IE Fees	0.76	0.80	0.84	0.87	0.91	0.95	0.99	1.02	1.07	1.11	1.15	1.20	1.25	1.30	1.35	1.40	1.46	1.52	1.58	1.64	1.71	1.77	1.84	1.92	1.99	2.07
1.15	Routine Maintenance Cost	3.13	3.30	3.46	3.61	3.76	3.92	4.08	4.24	4.41	4.59	4.77	4.96	5.16	5.37	5.58	5.80	6.03	6.27	6.53	6.79	7.06	7.34	7.63	7.94	8.25	11.11
1.16	Horticulture & ROW Maintenance	2.04	2.14	2.25	2.35	2.45	2.55	2.65	2.76	2.87	2.99	3.11	3.23	3.36	3.49	3.63	3.78	3.93	4.08	4.25	4.42	4.59	4.78	4.97	5.16	5.37	5.58
1.17	Miscellaneous and Contingency	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.58	0.60	0.62	0.65	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.88	0.92	0.96	0.99	1.07
	Subtotal of O&M Cost	15.46	15.49	16.34	17.17	18.01	18.76	19.76	20.93	20.73	21.70	22.71	23.76	24.70	26.01	27.54	27.27	28.53	29.86	31.24	32.49	34.20	36.22	35.86	37.52	39.27	44.56
2	Major Maintenance Cost	-	-	-	72.79	-	-	-	-	-	-	80.20	-	-	-	-	-	-	72.11	-	-	-	-	-	-	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	7.68	-	-	-	-	-	-	10.28	-	-	-	-	-	-	13.53	-	-	-	-	-	-	17.79	-	-	-
4	Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**15.46**	**23.17**	**16.34**	**89.96**	**18.01**	**18.76**	**19.76**	**20.93**	**31.01**	**21.70**	**102.91**	**23.76**	**24.70**	**26.01**	**27.54**	**40.79**	**28.53**	**101.96**	**31.24**	**32.49**	**34.20**	**36.22**	**53.64**	**37.52**	**39.27**	**44.56**

ANNEXURES

ANNEXURE I : ROUTINE MAINTENANCE COST

Routine Maintenance Cost (4-Lane)	
Ordinary Repair Cost for Flexible (with GST)	**3,13,10,590**
(inclusive of GST)	**= 4.93 lakhs per km**

CONVERSION FACTORS								
National Highways / State Highways								
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders								
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)								
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal**	**Urban**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
				More than 4500 CVD	More than 4500 CVD				
				2,40,859	**2,90,965**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	368515.00	445176.00	-	-	-	-
		Paved shoulder	1.70	409461.00	494640.00	40.48	-	1,65,74,981	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	481719.00	581930.00	-	-	-	-
		Paved shoulder	2.20	529890.00	640122.00	-	23.02	-	1,47,35,609
					TOTAL		**63.500**		**3,13,10,590**

Routine Maintenance Cost (6-Lane)	
Ordinary Repair Cost for Flexible (with GST)	**4,05,21,474**
(inclusive of GST)	**= 6.38 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,40,859**	**Urban** More than 4500 CVD **2,90,965**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
1	Six lane with divided carriageway	without Paved shoulder	2.09	503396.00	608116.00	-	-	-	-
		with Paved shoulder	2.26	544342.00	657580.00	40.48	-	2,20,34,964	-
2	Six lane with divided carriageway and service lane on either side	without Paved shoulder	2.56	616600.00	744870.00	-	-	-	-
		with Paved shoulder	2.76	664772.00	803063.00	-	23.02	-	1,84,86,510
					TOTAL		**63.500**		**4,05,21,474**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			10473
	Cost in Rupees			52,363
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			419
	Cost in Rupees			41,890
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	1.50%
	Area (sqm)			150
	Rs/m^2			75
	Cost in Rupees			11,266
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.50%
	Area (sqm)			187.5
	Rs/m^2			50
	Cost in Rupees			9,399

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			419
	Cost in Rupees			31,418
	v) Road marking	14%	Once in 7th year & @ Repaired location	13428
	SUB TOTAL			**1,59,764**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6831
	ii) Jungle Clearance	100%	Twice in a Year	2241
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1201
	SUB TOTAL			**10,273**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	3026
	ii) Repair of floors	100%	Once in a Year	5475
	iii) Repair of parapets	100%	As & when required	2282
	SUB TOTAL			**10,783**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	40,026

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**40,026**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2668
	ii) Maintenance of gang hut store, sheds, animal & debries removal		Once in a Year	4003
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	4003
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	8005
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1334
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**20,013**

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	GRAND TOTAL (Normal)			**2,40,859**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	17817
	ii)Repairs to footpath	100%	As & when required	5337
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	5337
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	8272
	vi) Repair of divider/ Railing in City portion	100%	As & when required	10674
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2668
	SUB TOTAL			**50,105**
	GRAND TOTAL (Urban)			**2,90,965**

ANNEXURE II : MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,43,381	18	2,22,44,079
	For BC	Sqm	1	1	10,96,533.41		10,96,533	10,96,533		
	For DBM	Sqm	1	1	59,124.50		59,125	59,125		
	For Misc. Location	Sqm	1	1	87,722.67		87,723	87,723		
2	BC with 30 mm	Cum	1	1	11,84,256.08	0.03	35,528	35,528	11,050	39,25,79,469
3	DBM with 50 mm	Cum	1	1	59,124.50	0.05	2,956	2,956	8,519	2,51,83,255
4	Milling	Sqm	1	1	59,124.50		59,125	59,125	86	50,99,488
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	1,013	1,34,228
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,299	12,31,675
	Service Road									
8	Tack coat	Sqm	1	23,020	6.81		1,56,778	1,72,455	18	30,85,224
9	BC with 30 mm	Cum	1	23,020	6.81	0.03	4,703	5,174	9,743	5,04,09,428
10	Micro Surfacing	Sqm	1	23,020	6.81		1,56,778	1,72,455	155	2,67,73,678
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1	26,966.6		26,967	26,967	18	4,82,432
12	Wearing Coat BC with 30 mm	Cum	1	1	26,966.6	0.03	809	809	11,050	89,39,394
13	Milling of Ex. Wearing Coat	Sqm	1	1	26,966.6		26,967	26,967	86	23,25,869
14	Painting of Crash Barrier	Sqm	4	1,618		1.12	7,217	7,217	107	7,72,214
	Other Works									
15	Raising of Road Kerb	Rmt	-	1,09,194			-	-	316	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,762			15,524	15,524	193	29,96,132
17	Painting of Kerb	Sqm	2	1,09,194		0.375	81,896	81,896	107	87,62,819
18	Road Marking on BC	Sqm					52,526	52,526	571	2,99,92,262
19	Road Marking on Microsurfacing	Sqm					5,364	5,364	682	36,59,491

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW									
	a) Median & Edge line	Sqm	4	66,675	0.15		40,005			
	b) Lane line	Sqm	2	22,003	0.10		4,401			
	Service Road									
	a) Edge line	Sqm	2	46,040	0.10		9,208			
	b) Lane line	Sqm	1	15,193	0.10		1,519			
	Junction crossing	Sqm					2,757			
20	Filling of Earthen shoulder	Cum					9,005	9,005	414	37,30,628
	MCW		2	38,516	1.50	0.06	6,933			
	Service Road		1	23,020	1.50	0.06	2,072			
21	Miscellaneous	5%								2,94,23,480
Total Major Maintenance Cost (Rs.)										**61,78,93,084**
Total Major Maintenance Cost with GST (Rs.)										**72,91,13,839**
Total Major Maintenance Cost with GST (Cr.)										**72.91**
Per km Cost (lakh)										**114.82**
Escalation Factor for Major Maintenance Cost (FY 2029)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY 2029) (Cr.)										**80.78**

Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,33,526	18	2,20,67,789
	For BC	Sqm	1	1	10,96,533.41		10,96,533	10,96,533		
	For DBM	Sqm	1	1	49,270.42		49,270	49,270		
	For Misc. Location	Sqm	1	1	87,722.67		87,723	87,723		
2	BC with 30 mm	Cum	1	1	11,84,256.08	0.03	35,528	35,528	11,050	39,25,79,469
3	DBM with 50 mm	Cum	1	1	49,270.42	0.05	2,464	2,464	8,519	2,09,86,046
4	Milling	Sqm	1	1	49,270.42		49,270	49,270	86	42,49,574
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	1,013	1,34,228
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,299	12,31,675
	Service Road									
8	Tack coat	Sqm	1	23,020	6.81		1,56,778	1,72,455	18	30,85,224
9	BC with 30 mm	Cum	1	23,020	6.81	0.03	4,703	5,174	9,743	5,04,09,428
10	Micro Surfacing	Sqm	1	23,020	6.81		1,56,778	1,72,455	155	2,67,73,678
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1	26,967		26,967	26,967	18	4,82,432
12	Wearing Coat BC with 30 mm	Cum	1	1	26,967	0.03	809	809	11,050	89,39,394
13	Milling of Ex. Wearing Coat	Sqm	1	1	26,967		26,967	26,967	86	23,25,869
14	Painting of Crash Barrier	Sqm	4	1,618		1.12	7,217	7,217	107	7,72,214
	Other Works									
15	Raising of Road Kerb	Rmt	2	1,09,194			2,18,388	2,18,388	316	6,90,65,205
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,762			15,524	15,524	193	29,96,132
17	Painting of Kerb	Sqm	2	1,09,194		0.375	81,896	81,896	107	87,62,819
18	Road Marking on BC	Sqm					52,526	52,526	571	2,99,92,262
19	Road Marking on Microsurfacing	Sqm					5,364	5,364	682	36,59,491
	MCW									

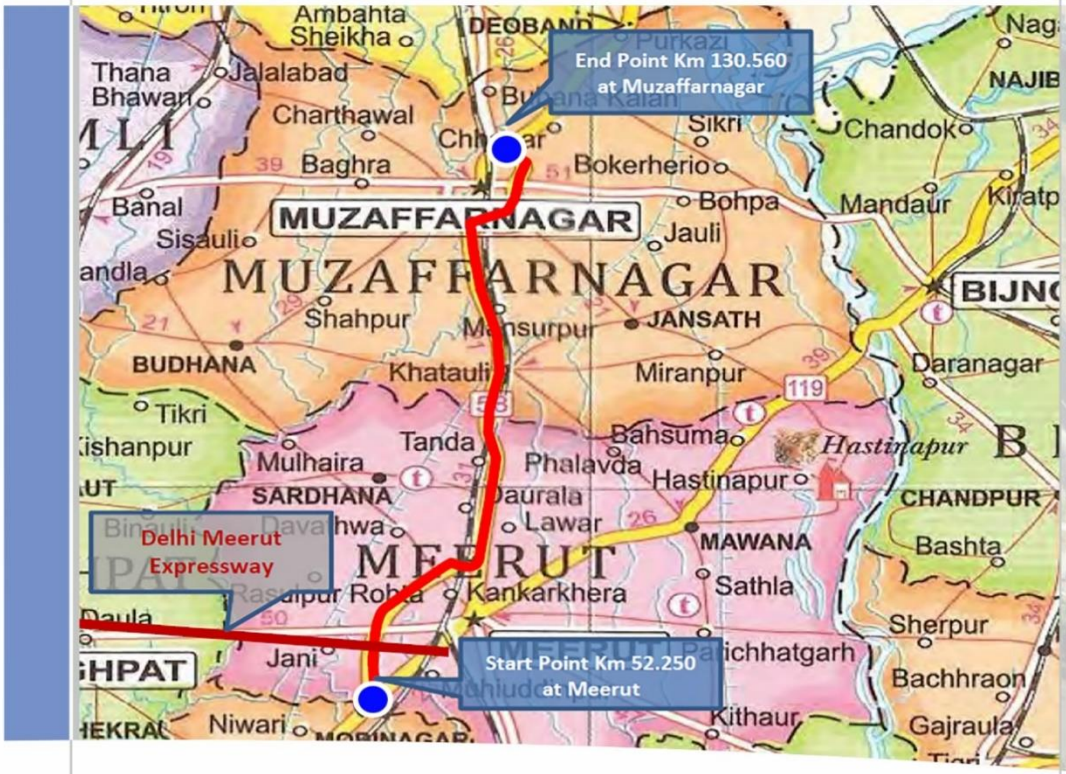
Major Maintenance Cost (FY 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	a) Median & Edge line	Sqm	4	66,675	0.15		40,005			
	b) Lane line	Sqm	2	22,003	0.10		4,401			
	Service Road									
	a) Edge line	Sqm	2	46,040	0.10		9,208			
	b) Lane line	Sqm	1	15,193	0.10		1,519			
	Junction crossing	Sqm					2,757			
20	Filling of Earthen shoulder	Cum					9,005	9,005	414	37,30,628
	MCW		2	38,516	1.50	0.06	6,933			
	Service Road		1	23,020	1.50	0.06	2,072			
21	Median Filling	Cum	-	61,104	4.17	0.10	-	-	414	-
20	Miscellaneous	5%								3,26,15,570
Total Major Maintenance Cost (Rs.)										**68,49,26,965**
Total Major Maintenance Cost with GST (Rs.)										**80,82,13,819**
Total Major Maintenance Cost with GST (Cr.)										**80.82**
Per km Cost (lakh)										**127.28**
Escalation Factor for Major Maintenance Cost (FY 2036)										**1.52**
Total Escalated Cost for Major Maintenance Cost (FY 2036) (Cr.)										**112.07**

Major Maintenance Cost (FY 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						12,33,526	18	2,20,67,789
	For BC	Sqm	1	1	10,96,533.41		10,96,533	10,96,533		
	For DBM	Sqm	1	1	49,270.42		49,270	49,270		
	For Misc. Location	Sqm	1	1	87,722.67		87,723	87,723		
2	BC with 30 mm	Cum	1	1	11,84,256.08	0.03	35,528	35,528	11,050	39,25,79,469
3	DBM with 50 mm	Cum	1	1	49,270.42	0.05	2,464	2,464	8,519	2,09,86,046
4	Milling	Sqm	1	1	49,270.42		49,270	49,270	86	42,49,574
	Main Carriageway - Rigid Pavement									

Major Maintenance Cost (FY 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
5	Joint Sealant Replacement @ 5% length	Rmt	5%	1,402	3.50	4.50	561	561	121	67,839
6	Dismantling of CC Panels @ 2% area	Cum	2%		22,076	0.30	132	132	1,013	1,34,228
7	Replacement of Panels - PQC @ 2% area	Cum	2%		22,076	0.30	132	132	9,299	12,31,675
	Service Road									
8	Tack coat	Sqm	1	23,020	6.81		1,56,778	1,72,455	18	30,85,224
9	BC with 30 mm	Cum	1	23,020	6.81	0.03	4,703	5,174	9,743	5,04,09,428
10	Micro Surfacing	Sqm	1	23,020	6.81		1,56,778	1,72,455	155	2,67,73,678
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1	26,967		26,967	26,967	18	4,82,432
12	Wearing Coat BC with 30 mm	Cum	1	1	26,967	0.03	809	809	11,050	89,39,394
13	Milling of Ex. Wearing Coat	Sqm	1	1	26,967		26,967	26,967	86	23,25,869
14	Painting of Crash Barrier	Sqm	4	1,618.150		1.12	7,217	7,217	107	7,72,214
	Other Works									
15	Raising of Road Kerb	Rmt	-	1,09,194			-	-	316	-
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	7,762			15,524	15,524	193	29,96,132
17	Painting of Kerb	Sqm	2	1,09,194		0.375	81,896	81,896	107	87,62,819
18	Road Marking on BC	Sqm					52,526	52,526	571	2,99,92,262
19	Road Marking on Microsurfacing	Sqm					5,364	5,364	682	36,59,491
	MCW									
	a) Median & Edge line	Sqm	4	66,675	0.15		40,005			
	b) Lane line	Sqm	2	22,003	0.10		4,401			
	Service Road									
	a) Edge line	Sqm	2	46,040	0.10		9,208			
	b) Lane line	Sqm	1	15,193	0.10		1,519			
	Junction crossing	Sqm					2,757			
20	Filling of Earthen shoulder	Cum					9,005	9,005	414	37,30,628
	MCW		2	38,516	1.50	0.06	6,933			
	Service Road		1	23,020	1.50	0.06	2,072			
21	Median Filling	Cum	-	61,104	4.17	0.10	-	-	414	-

Major Maintenance Cost (FY 2043)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
22	Miscellaneous	5%								2,91,62,310
									Total Major Maintenance Cost (Rs.)	**61,24,08,500**
									Total Major Maintenance Cost with GST (Rs.)	**72,26,42,030**
									Total Major Maintenance Cost with GST (Cr.)	**72.26**
									Per km Cost (lakh)	**113.80**
									Escalation Factor for Major Maintenance Cost (FY 2043)	**2.00**
									Total Escalated Cost for Major Maintenance Cost (FY 2043) (Cr.)	**123.55**

FP Project Management



Technical Due Diligence of Meerut - Muzaffarnagar Section of NH-58 (km. 52+250 to km. 130+560) in the State of Uttar Pradesh on BOT Mode

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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R0	Final Report	27-Oct-2025	VKS / STP	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 8
3.3 Major / Minor Junction 9
3.4 Condition Survey of Bridge 9
3.5 Condition Survey of Culverts 17
3.6 Additional Structures 19
3.7 Slope Protection, Drain 21
3.8 Road Furniture 21
3.9 Avenue Plantation and Median Plantation 24
3.10 Toll Plaza 24
3.11 Lane Equipment 26
3.11.1 RFID ETC Transceiver 26
3.11.2 Lane Controller with Industrial PC 27
3.11.3 Automatic Vehicle Classification (AVC) Sensors 27
3.11.4 Automatic Lane Barrier 27
3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 28

3.11.6 Incident Capture Camera (AVC Camera) 28
3.11.7 License Plate Image Capture Camera (LPIC) 29
3.11.8 Over Head Lane Signal (OHLS) 29
3.11.9 Toll Booth Equipment 30
3.11.10 Medium Speed Weigh in Motion (MSWIM) 30
3.12 Plaza Equipment 31
3.12.1 TMS/ATMS Server 31
3.12.2 55" LED screen for CCTV monitoring 31
3.12.3 Workstations in Control Room, POS room 32
3.13 Advanced Traffic Management System (ATMS) 32
3.13.1 Automatic Traffic Counter cum classifier (ATCC) 32
3.13.2 Variable Message Signboards (VMS) 33
3.13.3 CCTV Surveillance Cameras 33
3.13.4 Video Incident Detection System 33
3.14 Truck Lay-bye 33
3.15 Traffic Aid Post and Medical Aid Post 34
3.16 Toilet Block 34
3.17 Bus Bays and Passenger Shelters 34
3.18 Balance Work Status: Nil 35
3.19 Operation and Maintenance 35
3.19.1 O&M Contract 35
3.19.2 Organization Chart 35
3.19.3 Operation 37
3.19.4 Routine Maintenance 38
4 Pavement Investigation and Assessment 39
4.1 General 39
4.2 Axle Load and VDF 39
4.3 Design Traffic 39
4.4 Network Survey Vehicles (NSV) Survey 39
4.4.1 Structural Investigations 41
4.4.2 Periodic Maintenance Strategy 41
5 Cost Estimates 43
5.1 General 43
5.2 Rate Assumption 43
5.3 Balance Work Cost 44
5.4 Routine O&M Cost 44
5.5 Major Maintenance Cost 46

5.6 Periodic Replacement of TMS / ATMS System....46
5.7 Escalation Assumption....46
5.8 Summary of Cost....47

Annexures....48
Annexure I - Routine Maintenance Cost....49
Annexure II - Major Maintenance Cost....53

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 9
Table 3-2 Condition Survey of Major Structure 10
Table 3-3 Details of Summary for Toll Plaza Items 24
Table 3-4 Details of Truck Lay-bye 33
Table 4-1 Vehicle Damage Factor 39
Table 4-2 MSA Calculation 39
Table 4-3 Roughness summary % as per Schedule-L of CA 40
Table 4-4 Major Maintenance Cycle 42
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 43
Table 5-2 Summary of Unit Rates 44
Table 5-3 Summary of Operation Cost 45
Table 5-4 Escalation 46

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 7
Figure 3-2 Photographs of Service Road 8
Figure 3-3 Photographs of Major / Minor Junctions 9
Figure 3-4 Photographs of Major Structures 12
Figure 3-5 Photographs of Culverts (HPC / Box / Slab) 18
Figure 3-6 Photographs of Additional Structures 20
Figure 3-7 Photographs of Pavement Marking and Road Studs 21
Figure 3-8 Photographs of Road Signages 22
Figure 3-9 Photographs of Highway Lighting / Crash Barrier / Delineator 23
Figure 3-10 Photographs of Avenue and Median Plantation 24
Figure 3-11 Photographs of Toll Plaza 25
Figure 3-12 Photographs of Truck Lay-bye 34

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of Four Lane Highway of Meerut - Muzaffarnagar section of NH-58 from km. 52+250 to km. 130+560 on BOT Basis in the State of Uttar Pradesh (hereinafter referred as "Project Road").

M/s. Western UP Tollway Limited (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Improvement, Operation and Maintenance, Rehabilitation and Strengthening of existing 2-lane and widening it to 4-lane divided highway from km. 52+250 to km. 130+560 of NH-58, Meerut - Muzaffarnagar Section in the State of Uttar Pradesh on BOT Basis or Project Road. The project was awarded to Concessionaire (M/s. Western UP Tollway Limited, a Company promoted and incorporated by M/s. Nagarjuna Construction Company Limited and M/s. Maytas Infra Private Limited) on 9th September 2005 with a concession period of 20 years (including construction period) by National Highway Authority of India (NHAI). Cube Highway Group acquired the SPV **M/s. Western UP Tollway Limited** in the year 2016 and has been operating the Project Road since 2016. The length of Project Road is 78.310 kms with one toll plaza at km. 75+990.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and flied investigations. The same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyze the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **7th February 2025 to 10th February 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **M/s. Western UP Tollway Limited**, a Company promoted and incorporated by M/s. Nagarjuna Construction Company Limited and M/s. Maytas Infra Private Limited. The Appointed Date of the project was 7th March 2006. The concession period of the project is 20 years including construction period. The project has received COD on 2nd June 2016.

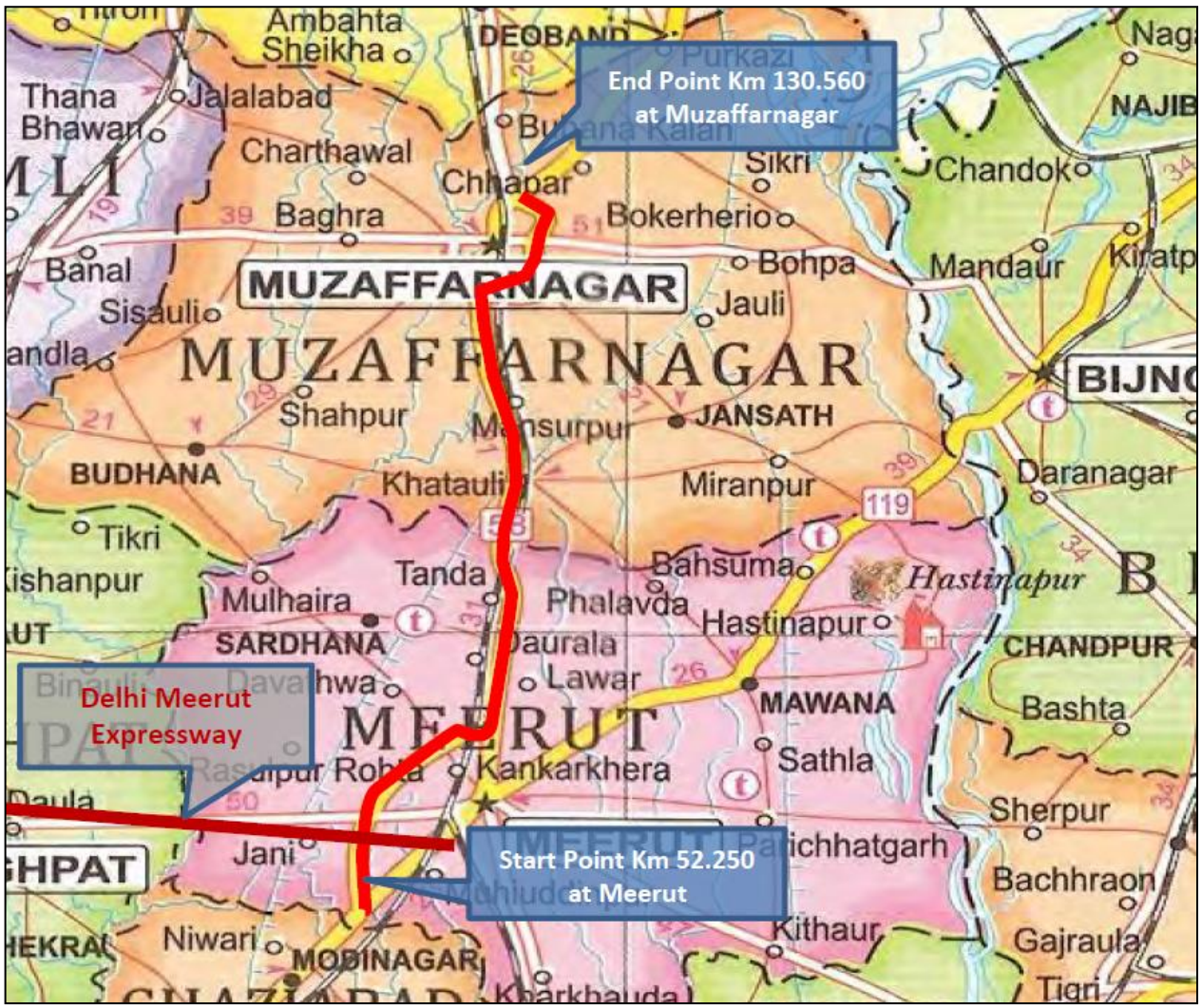
Cube Highways Group acquired the SPV **M/s. Western UP Tollway Limited** in the year 2016 and has been operating the Project Road since 2016 as per the scope of work mentioned in Concession Agreement.

2.2 Location

The Project Road is part of National Highway No. 58 of Meerut - Muzaffarnagar section in the state of Uttar Pradesh. The total project length is 78.310 kms.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map



The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

Figure 2-3 End of Project Road

2.3 Climate

The climate of the project area is generally arid, except during a brief span during the monsoon season. The corridor falls in the sub-tropical monsoon, dry-mild winter and hot summer climate classification zone. May is usually the hottest month with the average maximum temperature at 39.7 °C and average minimum at 24.1 °C. Maximum rainfall occurs during the monsoon period from June to September. There is a gradual decline in annual as well as monsoon rainfall from east to west along the corridor.

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The land use along the Project Road is predominantly agriculture or barren with intermittent built-up areas.

2.6 Right of Way

The width of the existing Right of Way (ROW) throughout the Project Road is 40 to 60 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services were shifted to proposed ROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC cables, etc.

2.8 Development as per Schedule-B

The Project Road from Meerut (km. 52+250) to Muzaffarnagar (km. 131+560) has developed as a four-lane divided carriageway with median width of 2 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.

b) Build, Operate and Transfer of the Project Highway subject to and in accordance with the provisions of this Agreement.

c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	O&M of Main Carriageway	km.	78.31	
2	Construction of Service Road	km.	15.89	
3	Widening / Reconstruction of Culverts	Nos.	256	
4	Major Bridges	Nos.	02	
5	Minor Bridges	Nos.	03	
6	Underpasses (VUP+PUP)	Nos.	11	
7	Flyover	Nos.	01	
8	ROB	Nos.	03	
10	Additional cantilever Sign Boards	Nos.	09	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has a paved carriageway of 8.50 m with earthen shoulder of 2.0 m on either side. The Project Road has a median width of 4.50 / 2.0 m in its length.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

The pavement condition survey was carried out from **7th February 2025 to 10th February 2025**. through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good to Fair. The overlay has done for entire stretch of Project Road in FY 2022. The continuous cracks observed in the MCW are being addressed by the company, which is filling them with emulsions to maintain the road. According to discussions with the company, they plan to begin major maintenance in April 2025.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

Pavement Condition at km. 63+500

Pavement Condition at km. 75+600

Pavement Condition at km. 84+250

Pavement Condition at km. 99+400

Pavement Condition at km. 109+000

Pavement Condition at km. 113+800

3.2 Service Road / Slip Road

The service road with width 5.5 is constructed in built-up area and adjoining underpass locations. The total service road length is 15.896 kms. The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Service Road at km. 71+750 (LHS)

Service Road at km. 104+000 (LHS)

3.3 Major / Minor Junction

There are 12 Nos. of major junctions and 56 Nos. of minor junctions along Project Road.

The photographs taken during site visit is presented below.

Figure 3-3 Photographs of Major / Minor Junctions

Junction at km. 113+480 (LHS)

Junction at km. 101+630

3.4 Condition Survey of Bridge

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Road Over Bridge (ROB)	03
Flyover	01
Major Bridges (MJB)	02
Minor Bridges (MNB)	03
Vehicular Underpass (VUP)	08
Light Vehicular Underpass (LVUP)	-
Pedestrian Underpass (PUP)	03
Cattle Underpass (CUP)	-
Foot over Bridge	-
Culverts (Box / Slab / HPC)	249
Total	**269**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

Table 3-2 Condition Survey of Major Structure

Condition Survey of Major Bridges								
Sr. No.	**Chainage (km)**	**Side**	**Span Arrangement (m)**	**Carriageway Width (m)**	**Type of Sub-structure**	**Type of Super-structure**	**Type of foundation**	**Remarks**
1	95+686	B/S	1 x 20 + 3 x 30 + 1 x 20	1 x 9.5	Circular Pier	PSC Beam	Well	**New Bridge -** Structure is in sound condition. Expansion Joint, crash barrier and slope protection are in good condition.
2	98+653	B/S	1 x 20 + 2 x 30	1 x 12.4	Circular Pier	PSC Beam	Well	**New Bridge -** Structure is in sound condition. At Expansion Joint crack observed, crash barrier and slope protection are in good condition. Vegetation needs to be cleared.

Condition Survey of Minor Bridges						
Sr. No.	**Design Chainage (km)**	**Structural Configuration**	**Structure Type**	**Span Arrangement (m) (No. x Length)**	**Total Structure Width (m)**	**Remarks**
1	109+260	New 4-Lane bridge	PSC Beam	2 x 26	4-lane	**New Bridge -** Well foundation, RCC wall sub-structure and PSC Beam with slab super structure - Structure is in sound condition. Vegetation and debris need to be cleared.
2	115+250	New 4-Lane bridge	RCC Slab	1 x 8.8 + 1 x 8.8+ 1 x 9.0	4-lane	**New Bridge –** Open Foundation RCC wall type substructure with RCC Slab type super structure - Structure is in sound condition. Vegetation needs to be cleared.
3	117+700	New 4-Lane bridge	RCC Slab	1 x 8.8 + 1 x 9.5	4-lane	**New Bridge –** Open Foundation RCC wall type substructure with RCC Slab type super structure - Structure is in sound condition. Vegetation needs to be cleared.

Condition Survey of VUP and PUP								
Sr. No.	**Chainage (km)**	**Side**	**Type**	**Span Arrangement (m)**	**Width (m)**	**Vertical Clearance (m)**	**Type of structure**	**Remarks**
1	58+775	B/S	VUP	2 x 10	23	5.5	Box	Box Type - Structure is in sound condition.
2	61+775	B/S	VUP	2 x 10	23	5.5	Box	Box Type - Structure is in sound condition.
3	66+875	B/S	VUP	2 x 10	23	5.5	Box	Box Type - Structure is in sound condition.
4	78+815	B/S	VUP	2 x 10	23	5.5	Box	Box Type - Structure is in sound condition.
5	87+400	B/S	VUP	1 x 7	8.5	5.5	Box	Box Type - Structure is in sound condition.
6	95+100	B/S	VUP	1 x 11	23	5.5	Box	Box Type - Structure is in sound condition.
7	118+550	B/S	VUP	2 x 10	23	5.5	Box	Box Type - Structure is in sound condition.
8	122+175	B/S	VUP	2 x 10	23	5.5	Box	Box Type - Structure is in sound condition.
9	93+900	B/S	PUP	1x6.0	-	-	Box	Box Type - Structure is in sound condition.
10	97+070	B/S	PUP	1x6.6	-	-	Box	Box Type - Structure is in sound condition.
11	100+050	B/S	PUP	1x6.0	-	-	Box	Box Type - Structure is in sound condition.

Condition Survey of Flyover							
Sr. No.	**Chainage (km)**	**Side**	**Span Arrangement (m)**	**Width (m)**	**Vertical Clearance (m)**	**Type of structure**	**Remarks**
1	70+800	RHS	3 x 35	1 x 13.25	5.5	PSC Beam and RCC Deck Slab	Pile Foundation - Structure is in sound condition.

Condition Survey of Road Over Bridge (ROB)								
Sr. No.	**Chainage (km)**	**Side**	**Span Arrangement (m)**	**Carriageway Width (m)**	**Type of Sub-structure**	**Type of Super-structure**	**Type of foundation**	**Remarks**
1	69+490	B/S	1 x 48.60	1 x 9.5	RCC Wall	Steel composite girder With RCC Slab.	Pile Foundation	The structure is in sound condition. Expansion Joint, crash barrier and RE wall approach are in good condition Vegetation needs to be cleared.
2	87+583	B/S	1 x 12.0 + 2 x	1 x 9.5	RCC	PSC Beam With RCC	Pile	The structure is in sound

Condition Survey of Road Over Bridge (ROB)								
Sr. No.	**Chainage (km)**	**Side**	**Span Arrangement (m)**	**Carriageway Width (m)**	**Type of Sub-structure**	**Type of Super-structure**	**Type of foundation**	**Remarks**
			30 + 1 x 12		circular	Slab.	Foundation	condition. Expansion Joint, crash barrier and RE wall approach are in good condition. Vegetation needs to be cleared.
3	114+289	B/S	1 x 40.60	1 x 9.5	RCC Wall	PSC Beam with RCC Slab.	Pile Foundation	The structure is in sound condition. Expansion Joint, crash barrier and RE wall approach are in good condition. Vegetation needs to be cleared.

Figure 3-4 Photographs of Major Structures

Major Bridge at km. 95+686 (Top View)

Major Bridge at km. 95+686 (Structure View)

Major Bridge at km. 98+653 (Top View)

Major Bridge at km. 98+653 (Structure View)

Minor Bridge at km. 109+260 (Top View)

Minor Bridge at km. 109+260 (Structure View)

Minor Bridge at km. 109+260 (Structure View)

Minor Bridge at km. 115+250 (Top View)

Minor Bridge at km. 107+250 (Structure View)

Minor Bridge at km. 107+250 (Sub-structure and Super-structure)

Minor Bridge at km. 117+700 (Top View)

Minor Bridge at km. 117+700 (Structure View)

VUP at km. 59+775
(Structure View)

VUP at km. 61+775
(Structure View)

VUP at km. 66+875
(Structure View)

VUP at km. 78+815
(Structure View)

VUP at km. 87+400
(Structure View)

VUP at km. 95+100
(Structure View)

VUP at km. 118+550
(Structure View)

VUP at km. 122+175
(Structure View)

PUP at km. 93+900 (Structure View)

PUP at km. 97+070 (Structure View)

PUP at km. 100+070 (Structure View)

Flyover at km. 70+800

Flyover at km. 70+800 (Sub-structure and Super-structure)

Flyover at km. 70+800 (Sub-structure and Super-structure)

Flyover at km. 70+800 (RE Wall)

ROB at km. 69+490 (Structure top View)

ROB at km. 69+490 (Sub-structure and Super-structure)

ROB at km. 69+490 (Sub-structure and Super-structure)

ROB at km. 87+583 (Structure top View)

ROB at km. 87+583 (Sub-structure and Super-structure)

ROB at km. 87+583 (Sub-structure and Super-structure)

ROB at km. 114+289 (Structure top View)

ROB at km. 114+289 (Sub-structure and Super-structure)

3.5 Condition Survey of Culverts

The cross-drainage structures include hume pipe culverts and box culverts at various locations. There are total 249 Nos. of culverts in which 221 Nos. are pipe culverts and 28 Nos. are box culverts along the Project Road. The height of culvert varies from 0.5 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway with service road on both side and construction of new four lane carriageway at proposed bypass location. The culverts beneath the existing alignment are either widened or reconstructed. The structural condition of box culverts is generally found to be in good condition and most of the HPC inlet and outlet are totally filled with soil. The quality of surface concrete of box culverts and slab culverts is found to be satisfactory. The RCC parapet, metal beam crash barrier or RCC railing has been provided at culvert locations which is maintained properly.

Vegetation growth and accumulation of debris at waterways need to be removed and cleaned by the Concessionaire on a regular basis.

Figure 3-5 Photographs of Culverts (HPC / Box / Slab)

Box Culvert at km. 65+540 (Vent blocked)

Pipe Culvert at km. 81+150

PIPE Culvert at km. 93+550

Box Culvert at km. 93+750

Box Culvert at km. 104+600

PipeCulvert at km. 117+600

Box Culvert at km. 123+400

3.6 Additional Structures

During the site visit, it was informed by the Concessionaire that some additional structures were constructed by Krishna Construction under the guidance of NHAI. The following are the details of the additional structures.

Sr. No.	Chainage (km)	Work Description	Side	Remarks
1	58+360	FOB	B/S	Structure is in sound condition.
2	66+280	FOB	B/S	Structure is in sound condition.
3	67+750	LVUP	B/S	Structure is in sound condition.
4	70+380	FOB	B/S	Structure is in sound condition.
5	71+970	Flyover	B/S	Structure is in sound condition.
6	88+690	VUP	B/S	Structure is in sound condition.
7	89+025	Box Culvert	B/S	Structure is in sound condition.
8	92+970	Flyover	RHS	Structure is in sound condition.
9	98+630	PUP	B/S	Structure is in sound condition.
9	98+385	Box Culvert	B/S	Structure is in sound condition.
10	101+630	Flyover	RHS	Structure is in sound condition.
11	104+550	LVUP	B/S	Structure is in sound condition.
12	103+961	Box Culvert	B/S	Structure is in sound condition.
13	105+700	FOB	B/S	Structure is in sound condition.
14	123+965	VUP	B/S	Structure is in sound condition.
15	123+853	Box Culvert	B/S	Structure is in sound condition.
16	124+148	Box Culvert	B/S	Structure is in sound condition.

Figure 3-6 Photographs of Additional Structures

FOB at km. 66+280

VUP at km. 67+750

Flyover at km. 71+970

VUP at km. 88+690

Flyover at km. 92+970

PUPat km. 98+685

Flyover at km. 101+640

VUP at km. 123+965

3.7 Slope Protection, Drain

Slope protection, median drain, RCC drain, earthen drain and chute drains are found on Project Road at required locations.

Slope protection

Median drain

RCC drain

3.8 Road Furniture

The Concessionaire has provided road furniture along the Project Road as per the standards and specifications mentioned in Schedule-C.

Pavement Marking and Road Studs

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Pavement marking is faded at some locations which will be rectified by the Concessionaire. Some of the photographs of road marking are presented below.

Cat's eye / road studs for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Cat's eye / road studs have been fixed at junction and zebra crossings. However, at few locations some road studs have damaged which will be rectified by the Concessionaire.

Some of the photographs of road marking and road studs are presented below.

Figure 3-7 Photographs of Pavement Marking and Road Studs

Road Marking at km. 71+000 to km. 72+000

Road Marking at km. 86+000

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs includes roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of project highway and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-8 Photographs of Road Signages

Gantry sign board at km. 92+850 (LHS)

Gantry sign board at km. 95+200

Kilometer Stone at km. 64+000

Highway Lighting / Crash Barriers / Delineators

Highway lighting is provided at underpasses, flyovers, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass and flyovers.

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

The traffic delineators are provided by Concessionaire for road users in abnormal condition of weather for the Project Road. The same is maintained by the Concessionaire.

Some of the photographs of highway lighting, crash barrier and delineators are presented below.

Figure 3-9 Photographs of Highway Lighting / Crash Barrier / Delineator

Street Lighting at Structure Approach at km. 123+000

Blinker at Median opening at km. 90+000

Crash Barrier at km. 92+400

Crash Barrier at High Embankment at km. 71+000

Road Land Boundary

Road land (ROW) boundary demarcation is required to be maintained by the Concessionaire on the Project Road during the concession period. The road land boundary pillars are being fixed at required locations whenever required.

3.9 Avenue Plantation and Median Plantation

Avenue plantations are done only where ROW is available and median plantation has been providing in the project length as per IRC specification.

Figure 3-10 Photographs of Avenue and Median Plantation

Median Plantation on Project Road at km 78+000

Avenue Plantation on Project Road at km. 99+000

3.10 Toll Plaza

As per the Concession Agreement, there is one existing toll plaza at km. 75+990 with the following infrastructure.

The construction of toll plaza is completed and is in operation. 12 Nos. of lanes [2x(5+1)] has been constructed and all are under operation. Concessionaire has constructed administration, operation and maintenance facility at base camp. All required facilities are available at the toll plaza.

Some of the photographs of toll plaza are presented below:

Table 3-3 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 75+990
2	Number of Tolling Lanes	12 (6+6) lanes for toll operation for vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	12
6	Canopy	Present
7	Administrative Building	Present
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway for Movement between Toll Lanes and Administrative Building	Tunnel/Yes
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for	No

Sr. No.	Particulars	Details
	Overloaded Vehicles	
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	3
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-11 Photographs of Toll Plaza

Toll Plaza at km. 75+990

Ambulance, Crane and Weigh Bridge at Toll Plaza at km. 75+990

Toll Plaza office and Generator Room at km. 75+990

3.11 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

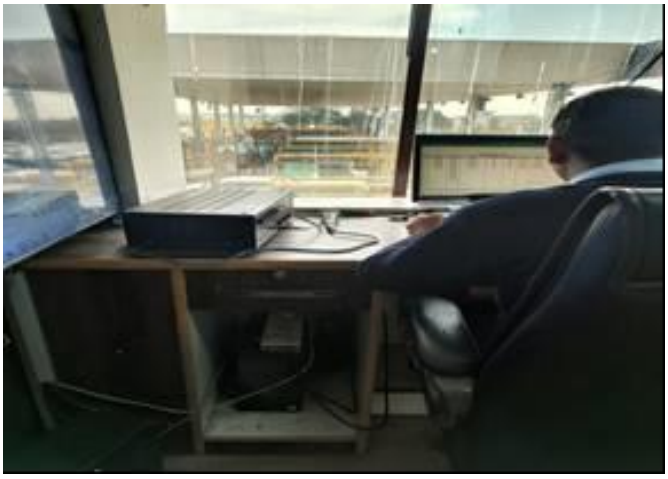
3.11.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID

3.11.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.



3.11.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

3.11.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

Automatic Lane Barrier at Toll Plaza

3.11.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

Lane Traffic Light (LTL) and User Fare Display (UFD) at Toll Plaza

3.11.6 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

AVC Camera

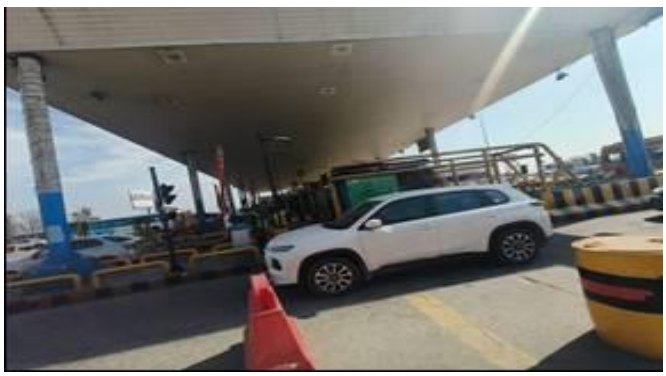
3.11.7 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC

3.11.8 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.



Over Head Lane Signal at Toll Plaza

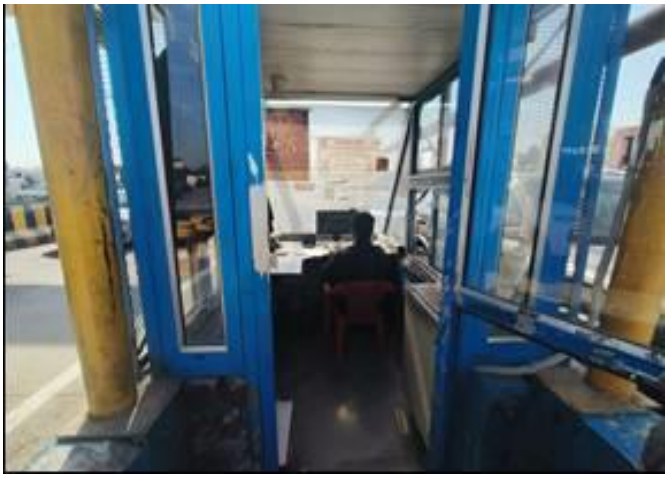
3.11.9 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.



Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11.10 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

Medium Speed Weigh in Motion at TP

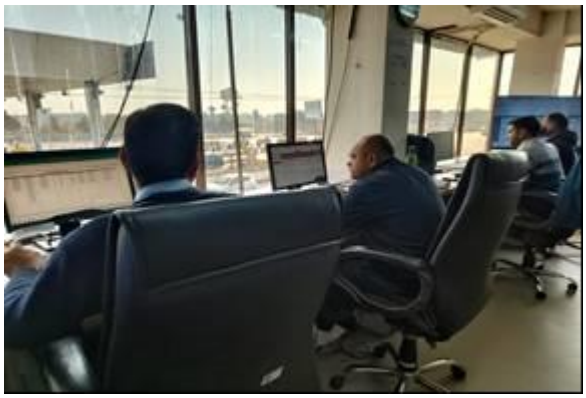
3.12 Plaza Equipment

3.12.1 TMS/ATMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

3.12.2 55" LED screen for CCTV monitoring

55" LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).



The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.12.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.13 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) installation is under progress. As informed by the Concessionaire, the same will be completed by end of June 2023. The ATMS is under COS. The following are installed / being installed at site.

- Automatic Traffic Counter cum Classifier (ATCC)
- Variable Message Signboards (VMS)
- CCTV system
- Video Incident Detection System (VIDS)
- Vehicle actuated Speed Display (VASD)

Status of these systems at site is described below:

3.13.1 Automatic Traffic Counter cum classifier (ATCC)

Automatic Traffic Counter cum Classifiers (ATCC) is installed at Toll Plaza.

3.13.2 Variable Message Signboards (VMS)

Variable message sign boards are installed at some locations. These display specific messages to the users based on the prevailing conditions on the highway. The message can be changed at any point of time from the HTMS centre. About 250 customised messages can be stored on the system.

3.13.3 CCTV Surveillance Cameras

Surveillance cameras are installed at various locations along the Project Road. The ATMS control room has video wall to monitor these locations through the cameras installed.

3.13.4 Video Incident Detection System

62 Nos. of fixed CCTV cameras are installed as part of Video incident detection system.

3.14 Truck Lay-bye

The Concessionaire has constructed truck lay-bye at the following locations.

Table 3-4 Details of Truck Lay-bye

Sr. No.	Design Chainage (km)	Side	Carriageway (m)
1	81+100	LHS	7.5
2	81+520	RHS	7.5
3	122+600	LHS	7.5
4	122+850	RHS	7.5

The photographs taken during the site visit are presented below.

Figure 3-12 Photographs of Truck Lay-bye

Truck Lay-Bye at km. 81+100 (LHS)

Truck Lay-Bye at km. 122+000 (RHS)

3.15 Traffic Aid Post and Medical Aid Post

Traffic Aid Post and Medical Aid Post are maintained by Concessionaire.

3.16 Toilet Block

The Concessionaire has constructed 02 Nos. of Toilet Blocks along the Project Road.

3.17 Bus Bays and Passenger Shelters

There are 18 Nos. of bus bays / shelter (LHS+RHS) along the Project Road.

3.18 Balance Work Status: Nil

The Project Road has received Final Completion Certificate on 2nd June 2016 by completing all the works as mentioned in the Technical Schedules of Concession Agreement. There are no balance works to be executed as per Concession Agreement.

3.19 Operation and Maintenance

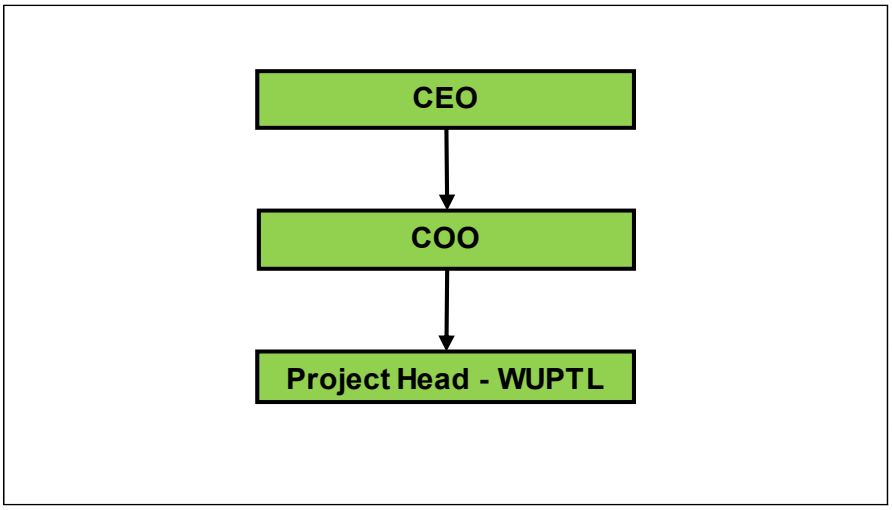
3.19.1 O&M Contract

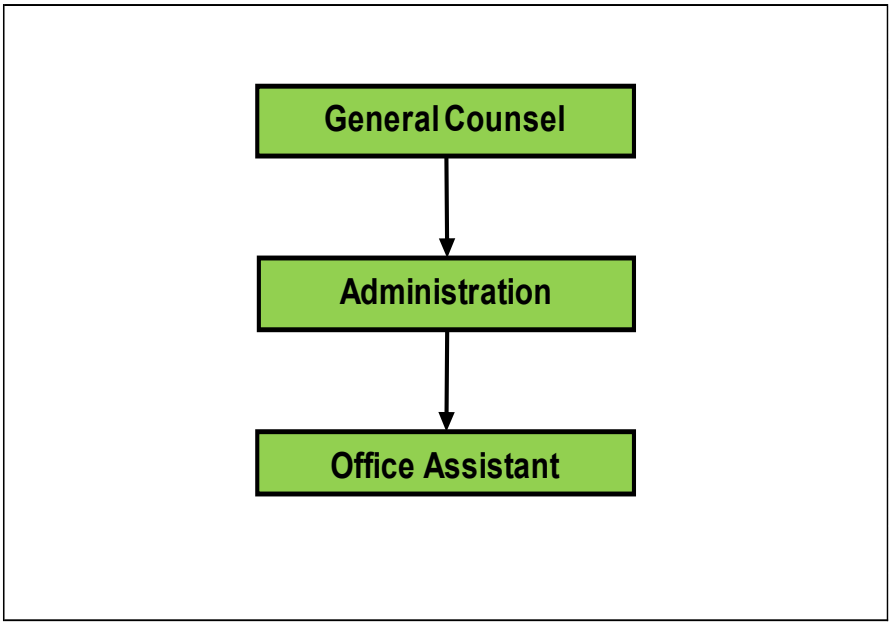
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall confirm to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement. The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

3.19.2 Organization Chart

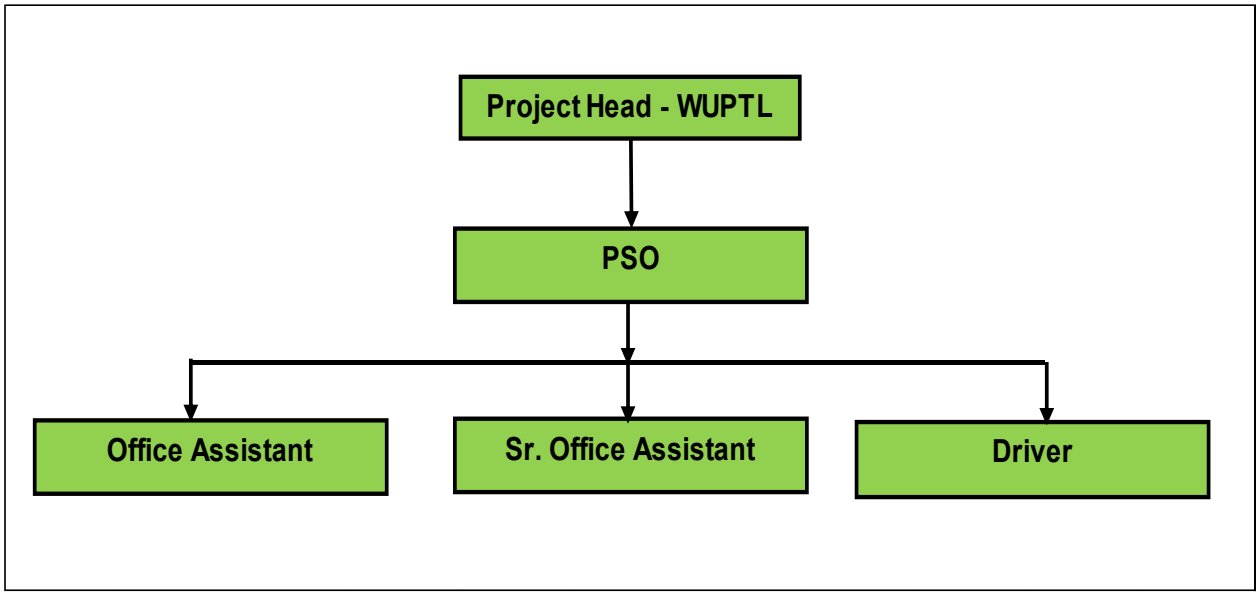
The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (HR), 01 Assistant Manager (TMS / IT), 01 Executive (TMS / IT), 01 Plaza Manager, 01 Assistant Plaza Manager, 04 Cashiers and 04 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.

Organization Chart

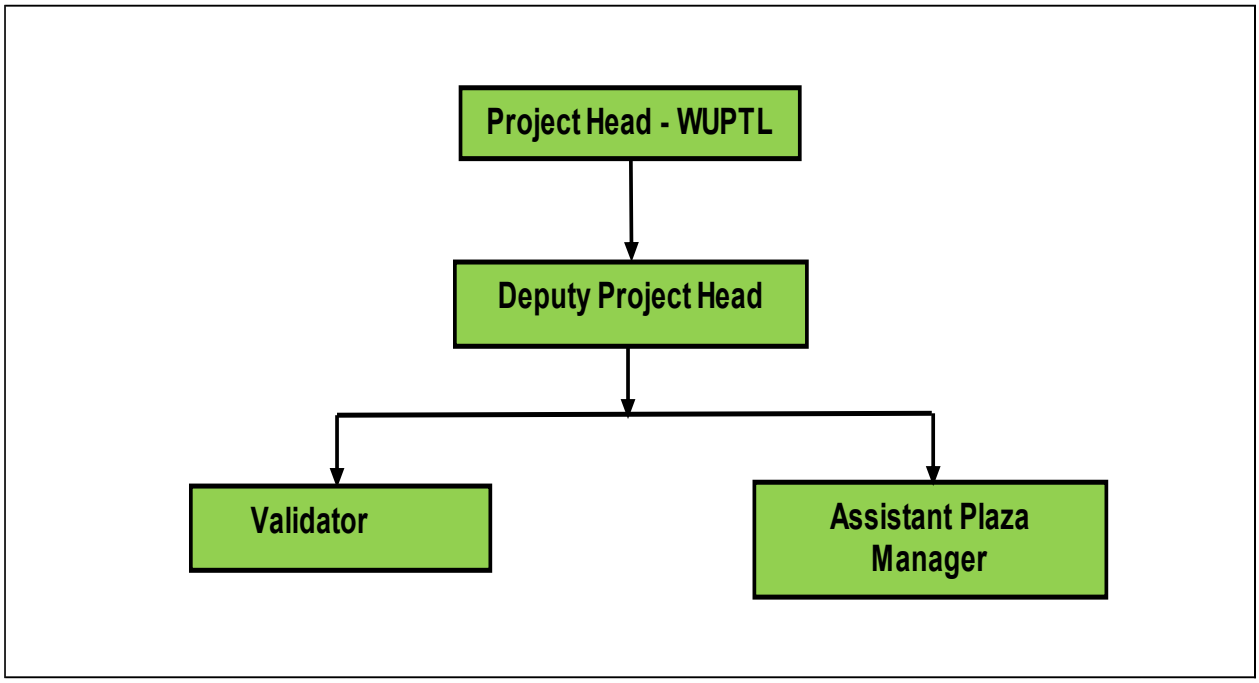




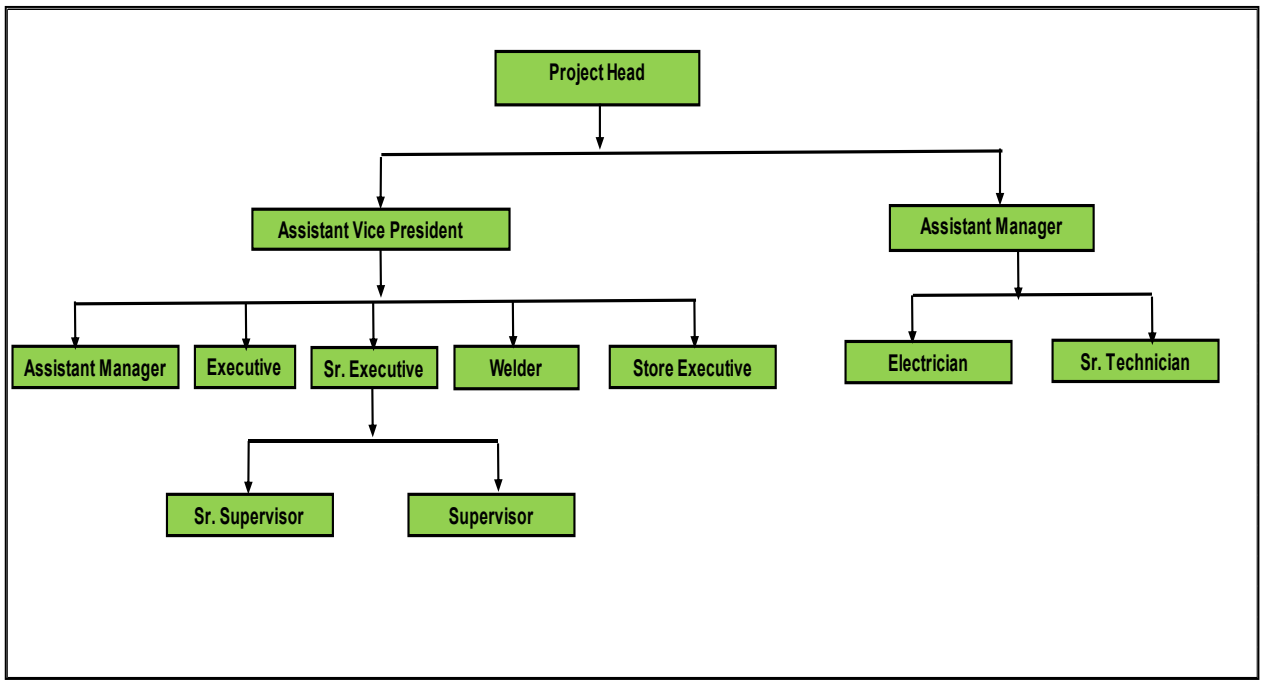
Head Office Administration



Site Administration



Site Operation System



Maintenance

3.19.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.19.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire has received Completion Certificate on 2nd June 2016.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 20 years from the Appointed Date (as BOT Project i.e., 7th March 2006) including construction period. The end of concession period is on 6th March 2026.

4.2 Axle Load and VDF

The Concessionaire has conducted the Axle Load Survey on Project Road at km. 75+800 (near Toll Plaza) on 27th November 2019 and 28th November 2019. The summary of Vehicle Damage Factor (VDF) as calculated and provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor

Vehicle Category	Vehicle Damage Factor (VDF)	
	LHS	RHS
Bus	0.86	1.34
LCV	0.80	0.63
2A	1.76	2.38
3A	5.16	4.34
MAV	11.34	15.62

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

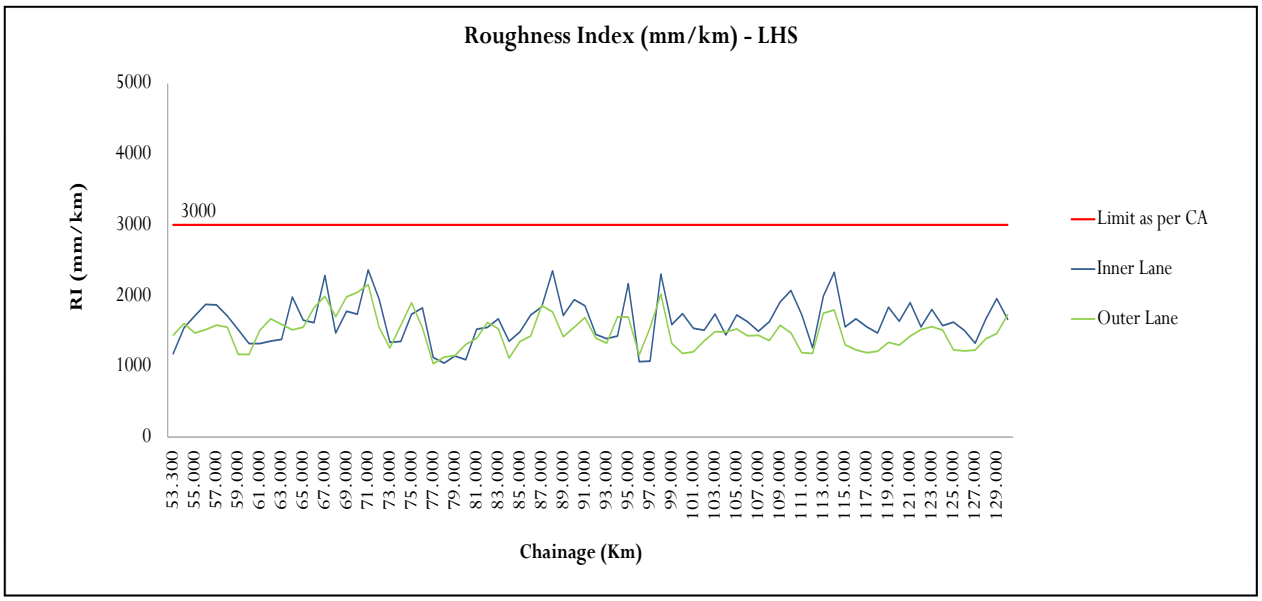
Year	LHS		RHS		Remarks
	MSA	Cumulative MSA	MSA	Cumulative MSA	
2024-25	2.34	**2.34**	3.02	**3.02**	
2025-26	2.32	**4.66**	3.01	**6.03**	End of Concession Period

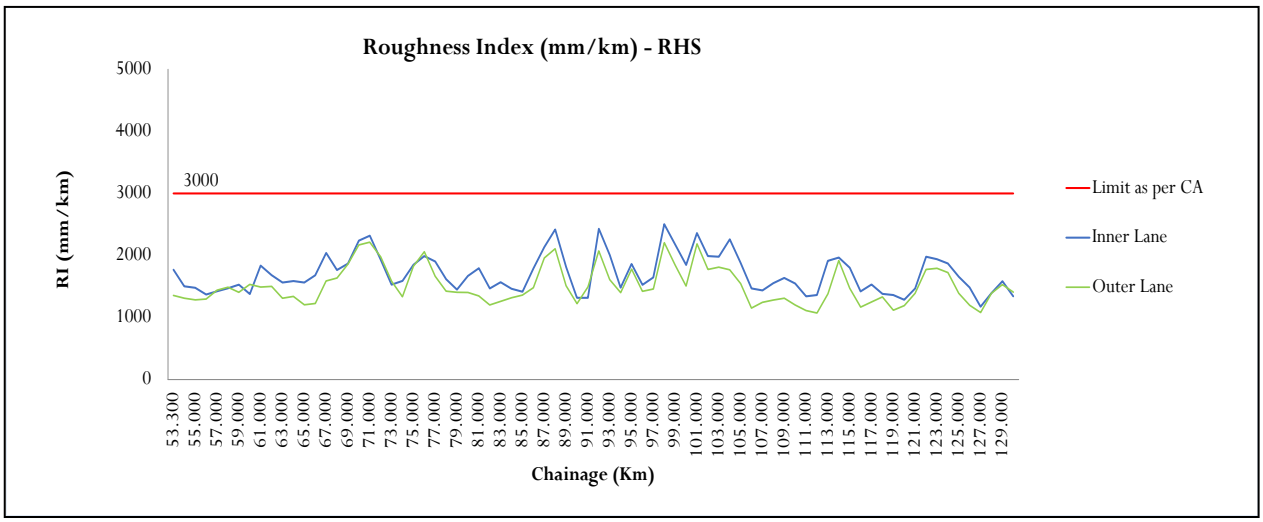
4.4 Network Survey Vehicles (NSV) Survey

The NSV Survey has been carried out by Concessionaire in April 2024. Result of the Survey is given in the below graphs.

Table 4-3 Roughness summary % as per Schedule-L of CA

Condition	Limit as per CA (mm/Km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<3000	100.00%	100.00%	100.00%	100.00%
Poor	>3000	0.00%	0.00%	0.00%	0.00%

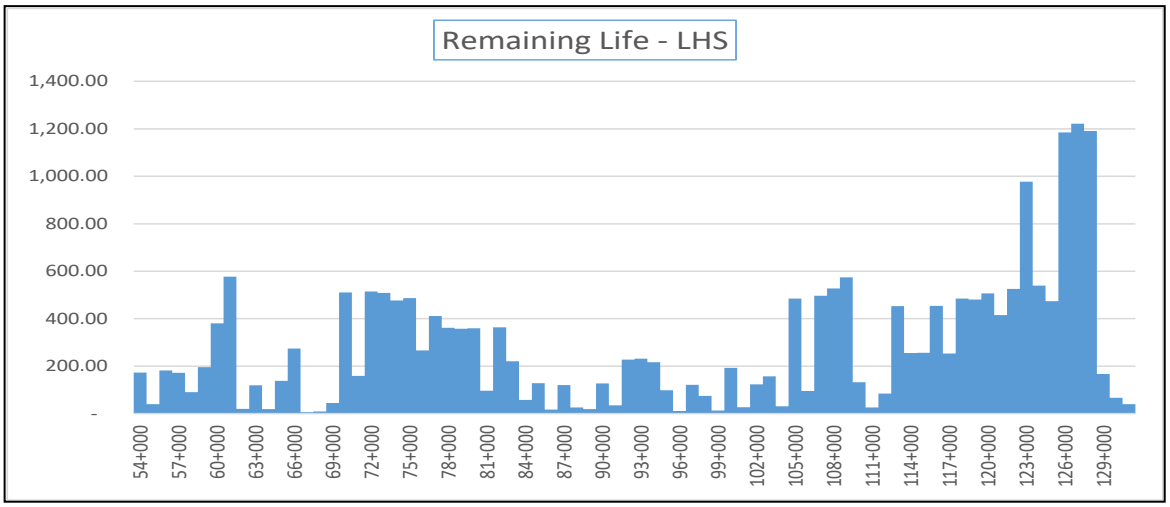


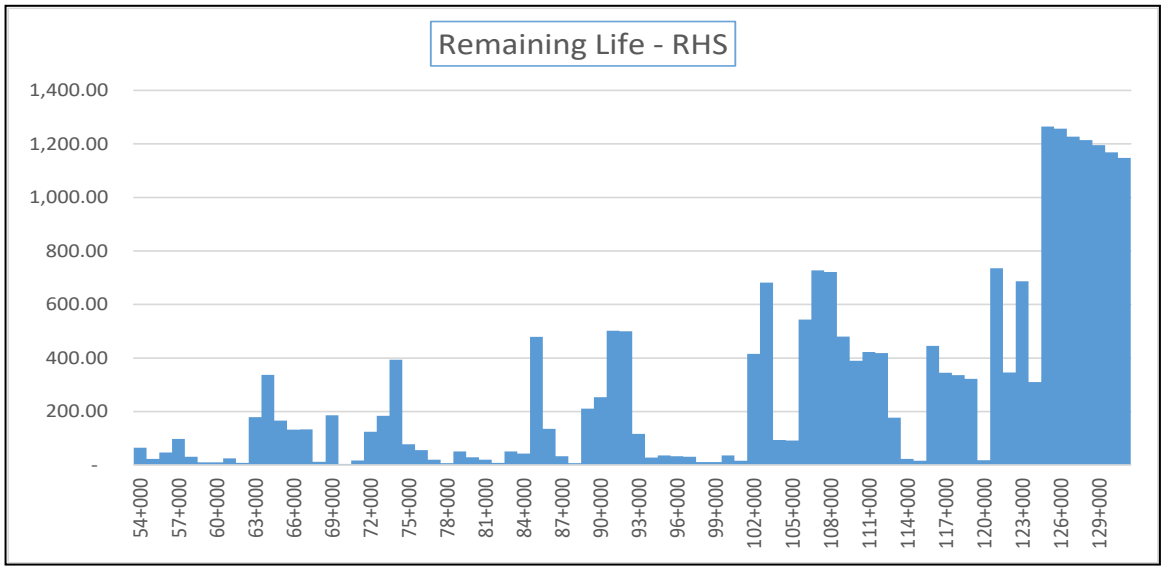


From the above graph, it is observed that the average BI value lies in the range from 1500 to 2500 mm/km. Hence, it is concluded that average road condition is Good and not required any immediate major maintenance. Moreover, Project Road had gone through major / periodic maintenance recently in FY 2022.

4.4.1 Structural Investigations

The FWD Survey has been carried out by the Concessionaire in April 2024. The results obtained from the FWD Test are shown in the following graphs.





4.4.2 Periodic Maintenance Strategy

As per the Schedule-L of the Concession Agreement, the Periodic Maintenance shall be carried out at least once in every 5th year from COD and in the last year of the concession period.

Currently, the Project Road has been maintained by Cube Highways since 2016. The Project Road has received COD on 2nd June 2016. As informed by Concessionaire, periodic maintenance for the Project Road is recently completed on 25th June 2021.

As the Concession Period of the Project Highway ends in March 2026, Major Maintenance work is in progress. As on date, around 30% of BC Overlay work is completed. Since the road condition is good to fair, the Concessionaire is doing BC overlay of 30 mm for 50% length and BC inlay of 30 mm for 50% length of the Project Highway. Wherever the distresses are observed, those stretches are being treated/repaired with milling and 50 mm DBM.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-4 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2025	-	
2	FY 2026	Major maintenance with 30 mm BC (VG-40) (100%) + Milling & 50 mm DBM (4%)	Major maintenance with 30 mm BC (100%)
		End of concession period	

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Work Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

   a. **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

   Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years.

   Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540

Refineries	Grade	Rate for FY 2026 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel:** Rate of steel is taken from SAIL.

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.

g. **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam (VG-40)	Cum	9,562
2	Bituminous Concrete (VG-40)	Cum	11,735
3	Bituminous Concrete (VG-30)	Cum	11,085
4	Milling	Sqm	95
5	Micro-surfacing	Sqm	173
6	Kerb Re-laying	Rmt	440
7	Road Marking	Sqm	596
8	Road Studs	Nos.	244

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, balance work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the

operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS / HTMS / System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026)
1	Salary and Welfare Expenses	1,68,30,000
2	Tolling Operations Services	2,53,41,939
3	Toll Security Services	1,49,96,502
4	Incident Management & Emergency Services	2,62,89,231
5	Electricity and Diesel Charges	98,55,171
6	TMS/HTMS/System Expenses	23,14,000
7	Office Operating Expenses	62,02,152
8	Vehicle Running Expenses	34,45,200
9	Professional Fees Expense	1,16,29,035
10	Community Development	19,38,173
11	Communication Expenses	11,19,833
12	Conveyance Expenses	26,70,371
13	Insurance Expense	78,38,831
14	IE Fees	72,78,915
15	Routine Maintenance Cost (Project Highway)	3,27,89,258
16	Horticulture & ROW Maintenance	2,19,55,618
17	Miscellaneous including Contingency	55,09,974
	Total Cost (Rs)	**19,80,04,203**
	Total Cost (Cr)	**19.80**
	Per km Cost (Lakh)	25.28

5.5 Major Maintenance Cost

As mentioned in earlier chapter, the end of concession period for the Project Road is on 6th March 2026. The Concessionaire has to carry out periodic maintenance before handing over of the project confirming the pavement parameters kept within the limits as per Table-1 (Maintenance Criteria for Pavements) of Schedule-F. Hence, the major maintenance cycle is proposed in FY 2026 i.e. at the end of concession period.

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2026	97.72	
Total Cost (Cr.)		**97.72**	

5.6 Periodic Replacement of TMS / ATMS System

Replacement of ATMS is not required because the same is under COS.

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2042**	3.99%
2027	5.25%	**2043**	3.99%
2028	4.86%	**2044**	3.99%
2029	4.44%	**2045**	3.99%
2030	4.24%	**2046**	3.99%
2031	4.13%	**2047**	3.99%
2032	4.08%	**2048**	3.99%
2033	4.01%	**2049**	3.99%
2034	4.00%	**2050**	3.99%
2035	4.03%	**2051**	3.99%
2036	4.01%	**2052**	3.99%
2037	3.98%	**2053**	3.99%
2038	3.98%	**2054**	3.99%
2039	4.00%	**2055**	3.99%
2040	3.99%	**2056**	3.99%
2041	3.99%		

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26
1	Routine O&M Cost	
1.01	Salary and Welfare Expense	1.68
1.02	Tolling Operations Services	2.53
1.03	Toll Security Services	1.50
1.04	Incident Management Services	2.63
1.05	Electricity and Diesel Charges	0.99
1.06	TMS/HTMS/System Expenses	0.23
1.07	Office Operating Expenses	0.62
1.08	Vehicle Running Expenses	0.34
1.09	Professional Fees Expense	1.16
1.10	Community Development	0.19
1.11	Communication Expenses	0.11
1.12	Conveyance Expenses	0.27
1.13	Insurance Expense	0.78
1.14	IE Fees	0.73
1.15	Routine Maintenance Cost	3.28
1.16	Horticulture & ROW Maintenance	2.20
1.17	Miscellaneous and Contingency	0.55
	Subtotal of O&M Cost	19.80
2	Major Maintenance Cost	97.72
3	Periodic Cost of TMS/HTMS Replacement	-
4	Balance Works Cost	-
	Total Cost	**117.52**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Western UP Tollway	
Ordinary Repair Cost for Flexible (with GST)	**3,27,89,257.90**
(inclusive of GST)	**= 4.19 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,33,786**	**Urban** More than 4500 CVD **2,71,108**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	357693.00	414795.00	-	-	-	-
		Paved shoulder	1.70	397436.00	460884.00	69.94	-	2,77,95,878.97	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	467572.00	542216.00	-	-	-	-
		Paved shoulder	2.20	514330.00	596438.00	-	8.37	-	49,93,378.94
					TOTAL		**78.310**		**3,27,89,257.90**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year (Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			11844
	Cost in Rupees			59,220
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			474
	Cost in Rupees			47,376
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	1.50%
	Area (sqm)			150
	Rs/m^2			90
	Cost in Rupees			13,485
	b) Width less than 3 mm	75 % Crack Less	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			61
	Cost in Rupees			4,538
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	0.50%
	Area (sqm)			37.5
	Rs/m^2			474
	Cost in Rupees			17,766
	v) Road marking	14%	Once in 7th year &	28530

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
			@ Repaired location	
	SUB TOTAL			**1,70,915**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	ii) Repair of floors	100%	Once in a Year	4978
	iii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	36,387
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277

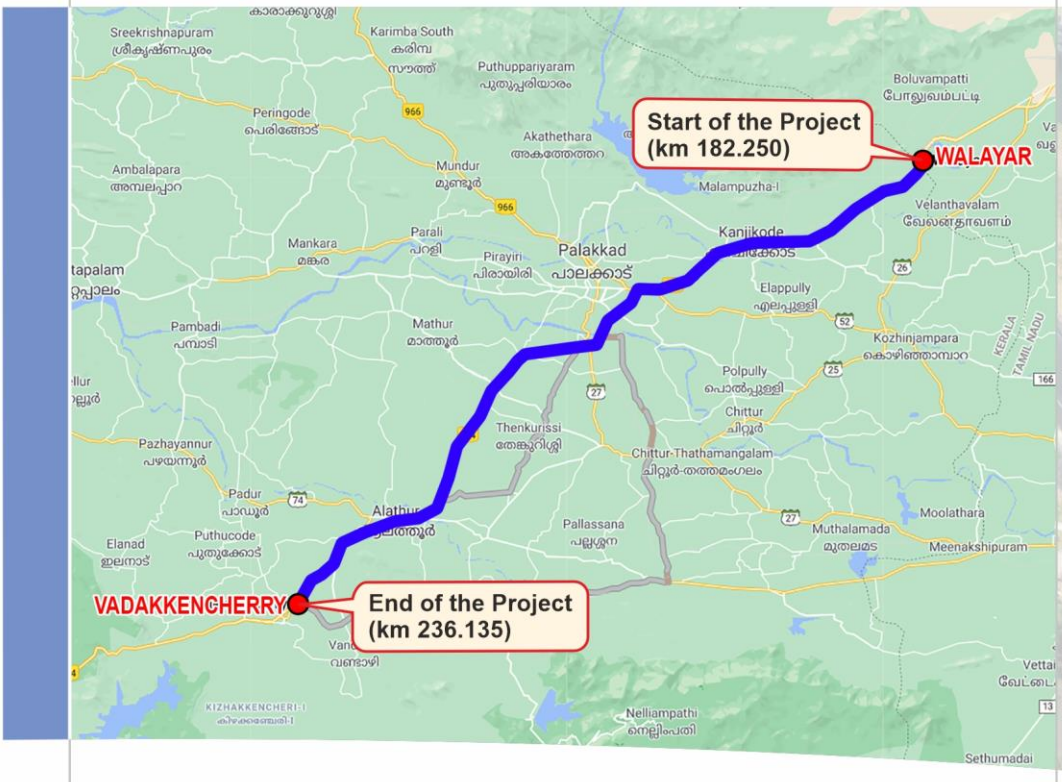
Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**2,33,786**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	7969
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**37,322**
	GRAND TOTAL (Urban)			**2,71,108**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY - 2026)										
Sr. No.	**Description**	**Unit**	**No.**	**Length**	**Width**	**Depth**	**Quantity**	**Total Quantity**	**Rate**	**Amount**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						14,85,985	17	2,51,87,437
	For BC	Sqm	2	77,082	8.75		13,48,942	13,48,942		
	For DBM	Sqm	2	3,083	7.00		43,166			
	For Misc. Location	Sqm	2	7,831	8.75		1,37,043	1,37,043		
2	BC with 30 mm	Cum	2	84,913	8.75	0.03	44,580	44,580	11,735	52,31,29,698
3	DBM 50 mm	Cum	2	3,083	7.00	0.05	2,158	2,158	9,562	2,06,37,885
4	Milling for BC	Sqm	2	77,082	7.00		5,39,577	5,39,577	95	5,09,90,008
5	Milling for DBM	Sqm	2	3,083	7.00		43,166	43,166	95	40,79,201
	Main Carriageway - Rigid Pavement									
6	Joint Sealant Replacement @ 5% length	Rmt	5%	1,669	3.50	4.50	668	668	119	79,435
7	Dismantling of CC Panels @ 2% area	Cum	2%		26,284	0.30	158	158	995	1,56,913
8	Replacement of Panels - PQC @ 2% area	Cum	2%		26,284	0.30	158	158	8,545	13,47,611
	Service Road									
9	Tack coat	Sqm	1	15,896	5.50		87,428	87,428	17	14,81,905
10	BC with 30 mm	Cum	1	15,896	5.50	0.03	2,623	2,623	11,735	3,07,78,372
11	Micro Surfacing	Sqm	1	-	5.50		-	-	173	-
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	2	802	11.0		17,635	17,635	17	2,98,917
12	Wearing Coat BC with 30 mm	Cum	2	802	11.0	0.03	529	529	11,085	58,64,813
13	Milling of Ex. Wearing Coat	Sqm	2	802	11.0		17,635	17,635	95	16,66,526
14	Painting of Crash Barrier	Sqm	4	882		1.12	3,933	3,933	105	4,12,928
	Other Works									
15	Raising of Road Kerb	Rmt	2	77,082			1,54,165	1,54,165	440	6,78,32,512
16	Replacement of Road Stud									
	Normal Road Stud	Nos	2	9,572			19,144	19,144	250	47,86,000
	Solar Road Stud	Nos	1	-			-	-	1,647	-
17	Painting of Kerb	Sqm	2	77,082		0.315	48,562	48,562	129	62,64,487

Major Maintenance Cost (FY - 2026)										
Sr. No.	**Description**	**Unit**	**No.**	**Length**	**Width**	**Depth**	**Quantity**	**Total Quantity**	**Rate**	**Amount**
18	Road Marking	Sqm					61,389	61,389	596	3,65,87,992
	MCW									
	a) Median & Edge line	Sqm	4	82,226	0.15		49,335			
	b) Lane line	Sqm	2	27,134	0.10		5,427			
	Service Road									
	a) Edge line	Sqm	2	15,896	0.10		3,179			
	b) Lane line	Sqm	1	5,246	0.10		525			
	Junction crossing	Sqm					2,923			
19	Filling of Earthen shoulder	Cum					15,893	15,893	449	71,29,761
	MCW		2	77,082	2.00	0.05	15,416			
	Service Road		1	15,896	1.00	0.03	477			
15	Miscellaneous	5%								3,94,35,620
Total Major Maintenance Cost (Rs)										**82,81,48,020**
Total Major Maintenance Cost with GST @18% (Rs)										**97,72,14,663**
Total Major Maintenance Cost with GST (Cr)										**97.72**
Per km Cost (lakh)										**124.79**
Escalation Factor for Major Maintenance Cost (FY - 2026)										**1.00**
Total Escalated Cost for Major Maintenance Cost (FY - 2026) (Cr)										**97.72**

FP Project Management



Technical Due Diligence of Walayar - Vadakkancherry Section (NH-47) from km. 182+250 to km. 240+000 in the State of Kerala on DBFOT (Toll) Modes

Final Report

October 2025

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

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Document No. 255051 / HE / LIE / TDD_Final Report / R0					
Rev	**Description**	**Date**	**Originator**	**Checked**	**Approved**
R0	Final Report	27-Oct-2025	RMW / VKS	AKA	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 6
2.4 Terrain 6
2.5 Abutting Land Use 6
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Service Road 6
2.9 Development as per Schedule-B 6
3 Condition Assessment of Project Road 8
3.1 Pavement 8
3.1.1 Pavement Condition Survey 8
3.2 Service Road / Slip Road 9
3.3 Major / Minor Junctions 10
3.4 Inventory and Condition Survey of Structures and Bridges 12
3.4.1 Cross Drainage (Bridges and Culverts) 13
3.4.2 Minor Bridges 15
3.4.3 Major Bridge (length > 60 m) 19
3.4.4 Underpasses 21
3.4.5 Pedestrian / Cattle Underpasses 22
3.4.6 Grade separators 23
3.4.7 ROB 24
3.4.8 New Construction of VUP at Major Junction 25
3.5 Drainage 26
3.6 Slope Protection 27
3.7 Road Furniture 28

3.7.1 Pavement Marking 28
3.7.2 Traffic Signage 28
3.7.3 Highway Lighting 29
3.7.4 Road Studs / Cat's eyes 29
3.7.5 Pedestrian Guard Rail 30
3.7.6 Avenue Plantation and Median Plantation 30
3.7.7 Traffic Signage / Median kerb painting / KM Stone 30
3.7.8 Crash Barriers 32
3.7.9 Delineators 33
3.7.10 Pedestrian Guard Rail 33
3.8 Toll Plaza 34
3.9 Lane Equipment 37
3.9.1 RFID ETC Transceiver 37
3.9.2 Lane Controller with Industrial PC 37
3.9.3 Automatic Vehicle Classification (AVC) Sensors 38
3.9.4 Automatic Lane Barrier 38
3.9.5 Lane Traffic Light (LTL) and User Fare Display (UFD) 39
3.9.6 Over Head Lane Signal (OHLS) 39
3.9.7 Toll Booth Equipment 40
3.9.8 Medium Speed Weigh in Motion (MSWIM) 41
3.10 Plaza Equipment 41
3.10.1 TMS Server 41
3.10.2 55" LED screen for CCTV monitoring 42
3.10.3 Workstations in Cash Room & POS room 42
3.11 Toilet Block 42
3.12 Bus Bays and Passenger Shelters 43
3.13 Balance Work Status 43
3.14 Operation and Maintenances 43
3.14.1 O&M Contract 43
3.14.2 Organization Chart 44
3.14.3 Operation 44
3.14.4 Routine Maintenance 44
4 Pavement Investigation and Assessment 46
4.1 General 46
4.2 Surveys and Investigation 46
4.2.1 Pavement Condition Survey 46
4.2.2 Axle Load Survey 46

4.2.3 Design Traffic 47
4.2.4 Network Survey Vehicles (NSV) Survey 47
4.2.5 Structural Investigations 48
4.2.6 Test pit and Subgrade Investigation 50
4.2.7 Periodic Maintenance Strategy 51
5 Cost Estimates 52
5.1 General 52
5.2 Rate Assumption 52
5.3 Balance Work Cost 53
5.4 Routine O&M Cost 53
5.5 Major Maintenance Cost 55
5.6 Periodic Replacement of TMS / ATMS System 55
5.7 Escalation Assumption 55
5.8 Summary of Cost 56
Annexures 58
Annexure I - Routine Maintenance Cost 59
Annexure II - Major Maintenance Cost 63

List of Tables

Table 2-1 Details of Scope of Work 7
Table 3-1 Details of Summary for Structures 12
Table 3-2 Details of New Minor Bridges 15
Table 3-3 Details of Major Bridges 19
Table 3-4 Details of Vehicular Underpasses 21
Table 3-5 Details of Pedestrian Underpasses 22
Table 3-6 Details of Grade Separators 23
Table 3-7 Details of ROB 24
Table 3-8 Details of Summary for Toll Plaza Items 34
Table 4-1 Summary of Pavement Condition 46
Table 4-2 Vehicle Damage Factor 46
Table 4-3 MSA Calculation 47
Table 4-4 Result of Roughness Survey 47
Table 4-5 Test Results Summary of Natural Ground Soil Samples 50
Table 4-6 Major Maintenance Cycle 51
Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST 52
Table 5-2 Summary of Unit Rates 53
Table 5-3 Summary of Operation Cost 54
Table 5-4 Escalation 55

List of Figures

Figure 2-1 Location Map 4
Figure 2-2 Start of Project Road 5
Figure 2-3 End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (Main Carriageway) 8
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photographs of Major Junctions 10
Figure 3-4 Photographs of Minor Junctions 11
Figure 3-5 Photographs of Culverts 14
Figure 3-6 Photographs of Minor Bridge 17
Figure 3-7 Photographs of Major Bridges 19
Figure 3-8 Photographs of Underpasses 21
Figure 3-9 Photographs of Pedestrian Underpass 22
Figure 3-10 Photographs of Grade Separators 23
Figure 3-11 Photographs of ROB 24
Figure 3-12 Photographs of New VUP (under construction) 25
Figure 3-13 Photographs of Drainage 26
Figure 3-14 Photographs of Slope Protection 27
Figure 3-15 Photographs of Road Signages 31
Figure 3-16 Photographs of MBCB / Crash Barrier 32
Figure 3-17 Photographs of Delineators 33
Figure 3-18 Photographs of Pedestrian Guard Rail 34
Figure 3-19 Photographs of Toll Plaza 35
Figure 3-20 Photographs of Bus Bays / Passenger Shelter 43

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of National Highway No. 47 including the section from Walayar to Vadakkancherry (km. 182+250 to km. 240+000 of NH-47) - Package NS-2/BOT/KL-2 - on DBFOT (Toll) basis under NHDP Phase-II in the State of Kerala (approx. 54.00 kms) (hereinafter referred as "Project Road").

Walayar Vadakkencherry Expressways Private Limited (WVEPL) (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for development, maintenance and management of National Highway No. 47 including the section from Walayar to Vadakkancherry on DBFOT (Toll) basis under NHDP Phase-II.

The Date of Concession Agreement is 17th September 2012. The concession period of the project is 20 years commencing from the Appointed Date including implementation period. The Appointed Date of the project is 18th May 2013. The Provisional Completion Certificate was issued on 18th May 2015 and the Commercial Operation commenced from 23rd May 2015. The Completion Certificate was issued on 31st October 2015 for total length of the project i.e. 53.495 kms.

Sr. No.	Description	Date
1	Date of Signing the Concession Agreement	17th Sep 2012
2	Appointed Date	18th May 2013
3	Scheduled Project Completion Date	13th Nov 2015
4	Scheduled End of Concession	17th May 2033
5	Date of issue of Provisional Completion Certificate	18th May 2015
6	Date of Commencement of Commercial Operation	23rd May 2015
7	Date of Issue of Completion Certificate	31st Oct 2015

Presently, the project is under operation and maintenance and the Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. The same is according to presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.

- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets, mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimates.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Client. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyses the same as per the best engineering / industry practices.

The site visit and inspection of the project site was carried out during the period from **28th January 2025 to 31st January 2025**.

The report is organized with the following chapters for easy understanding of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for technical due diligence study.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development etc.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on the site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecast for O&M and major maintenance costs over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

National Highways Authority of India signed the Concession Agreement with **Walayar Vadakkencherry Expressways Private Limited (WVEPL),** is a company promoted by Cube Highways or company a Special Purpose Vehicle (SPV) formed for implementing this project on 20th October 2020.

2.2 Location

The Site of the Four-Lane divided Project Road comprises the section of National Highway 47 commencing from km. 182.250 (Design Chainage km. 182.250) at Walayar to km. 240.000 (Design Chainage km. 236.135) (Approx Length is 53.495 kms) at Vadakancherry in the State of Kerala.

The Location Map of the Project Road is presented below:

Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start of Project Road

Start of Project at km. 182+207 (RHS)

Start of Project at km. 182+207 (LHS)

Figure 2-3 End of Project Road

End of Project at km. 236+130 (LHS)

End of Project at km. 236+130 (RHS)

Sign board at End of Project at km. 236+130 (RHS)

2.3 Climate

The project location has a tropical wet and dry climate. Temperatures remain moderate throughout the year with the exception in March and April being the hottest months. A very high amount of precipitation is received in project area, mainly due to the South-West monsoon. July is the wettest month, and the total annual rainfall is around 83 inches (210 cm).

2.4 Terrain

The Project Road traverses through plain / rolling terrain.

2.5 Abutting Land Use

The Project Road passes through residential and agricultural zones.

2.6 Right of Way

The width of existing Right of Way (RoW) throughout the project stretch is 60.0 m, except Toll Plaza area.

2.7 Existing Utilities

During the widening of the Project Road, various affected utility services located along the project road were shifted out at the edge of the ROW. The different types of utilities found along the road include, electrical poles, telephone poles, hand pumps, permanent structures, temples etc.

2.8 Service Road

The total length of service road on both side is 49.338 kms.

2.9 Development as per Schedule-B

The Project Road from km. 182+250 (Design Chainage km. 182+250) at Walayar to km. 240+000 (Design Chainage km. 236+135) at Vadakancherry (Approx Length is 53.495 kms) has been developed as a four-lane paved carriageway 17.5 m wide excluding median. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.
b) Tolling, operation, management, maintenance, and transfer of the Project Highway subject to and in accordance with the provisions of this Agreement.
c) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of the Concession Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under the Concession Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Particulars	Unit	Scope as per Schedule-B	Constructed as per site
1	O&M of Main Carriageway	km	53.885	53.495*
2	Rail Over Bridge (ROB)	Nos.	01	01
3	Grade Separator	Nos.	02	02
4	Major Bridge	Nos.	02	02
5	Minor Bridge	Nos.	17	17
6	Vehicular Underpass	Nos.	08	08
7	Culverts	Nos.	165	165

*Difference of about 0.39 km in the project length is due to the missing chainage. Hence, the total construction length is 53.495 kms.

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The paved carriageway is 17.50 m wide excluding the median. The project is widened to a four lane-carriageway with a width of 17.50 m as per standard cross section including paved shoulders. Service Road of 7.0 m width has been provided on one side or both sides wherever required in the built-up area to cater for the local traffic.

The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the toll plaza including taper is of rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **28th January 2025 to 31st January 2025** through visual inspection for the entire project length. From the visual inspection, the pavement condition of the Project Road is found to be Good.

Some of the photographs taken during the site visit are presented as below:

Figure 3-1 Photographs of Pavement Condition (Main Carriageway)

Pavement Condition at km. 182+000 (LHS)

Pavement Condition at km. 188+000 (LHS)

Pavement Condition at km. 201+000 (LHS)

Pavement Condition at km. 222+000 (RHS)

Pavement Condition at km. 224+000 (LHS)

Pavement Condition at km. 230+000 (LHS)

3.2 Service Road / Slip Road

The service road of width 7.0 is constructed in built-up area and adjoining underpass locations. The Project Road has total service road length of 49.338 kms. The condition of service roads at under construction VUP locations are poor and need to be repaired. After the completion of VUP construction, NHAI will repair the service road and hand it over to the Concessionaire for maintenance.

The photographs taken during the site visit are presented below:

Figure 3-2 Photographs of Service Road

Service Road at km. 187+500 (LHS)

Service Road at km. 193+500 (RHS)

Service Road at km. 216+400

Service Road at km. 222+000

3.3 Major / Minor Junctions

There are 09 nos. of major junctions and 36 nos. of minor junctions along the Project Road.

The photographs taken during site visit are presented as below:

Figure 3-3 Photographs of Major Junctions

Major Junction at km. 191+980

Major Junction at km. 193+620 (LHS)

Major Junction at km. 196+000 (LHS)

Major Junction at km. 209+850 (LHS)

Major Junction at km. 225+507 (LHS)

Figure 3-4 Photographs of Minor Junctions

T-Junction at km. 183+100

T-Junction at km. 207+310 (RHS)

Y-Junction at km. 212+850 (LHS)

Y-Junction on Service Road at VUP at km. 213+500

3.4 Inventory and Condition Survey of Structures and Bridges

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Sr. No.	Type of Structure	Total Number of Structures as per Concession Agreement	Total Number of Structures as per site
1	Rail Over Bridge (ROB)	01	01
2	Grade Separator	02	02
3	Major Bridge	02	02
4	Minor Bridge	17	17
5	Vehicular Underpass	08	08
6	Culverts	165	165

All major structures and CD works were visually inspected. The structures are generally sufficient for storm water drainage. The waterway needs regular cleaning. All the old bridges are 2-lane and widened to 2 additional lanes. Old bridges have RCC railing. They are constructed in open foundation. Expansion joints in some of the bridges are observed to be damaged. Bearings of some of the bridges need to be re-inspected and repaired, if necessary. In case of some bridges, settlement in approaches and cracks in the pavement has been observed. New bridges are constructed in 2-lane with footpath keeping a provision of converting into 3-lane in future. Foundation is RCC pile foundation. The wearing course and expansion joints are found okay. Crash barriers are of RCC type and are in sound condition. Return wall are of RCC type and pitching has been provided in almost all bridges. ROB on Project Road is found in sound condition. Structures are of Box type and RCC type and are in sound condition. Expansion joints are in good condition. RE walls are provided for the approaches of the structure.

The detailed condition survey of ROB, major bridges, minor bridges, flyovers and culverts was carried out by visual inspection. The observations and findings are presented below.

3.4.1 Cross Drainage (Bridges and Culverts)

Slab culverts are visually inspected. Some culverts are old and widened. The old structures have been strengthened with repair and rehabilitation during widening. The widening is either concentric or eccentric. The quality of concrete of abutment, slab, and wing wall, or return wall, parapet wall is satisfactory except at some locations. Minor settlement on approach is observed at few culverts. The slope protection was done at a major location. The slopes are stable. Generally, all the slab culverts are found in sound condition. The waterway needs to be cleaned on both sides of the culverts. Box culverts are visually inspected. The RCC box culverts are retained and widened. The RCC quality of new box culverts is good. The structure number is painted on the parapet wall or crash barrier in most of the culverts. The waterway is clear in most of the culverts and needs to be cleared for a few culverts, particularly in urban areas.

Pipe culverts are visually inspected. The pipe culverts are either newly constructed or reconstructed and the pipe culverts are retained and widened. The widening is either concentric or eccentric. In most of the culverts, the ends are blocked by debris, garbage or vegetation, especially in urban areas or buried underground. These require regular cleaning of the waterway to avoid damage to pavement.

The following photographs were taken during the inspection of culverts.

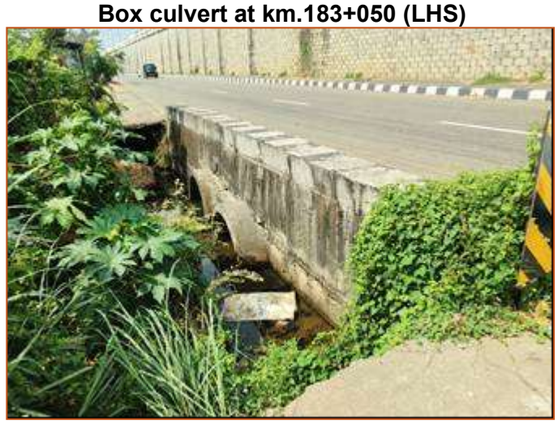
Figure 3-5 Photographs of Culverts

Box culvert at km.183+050 (LHS)

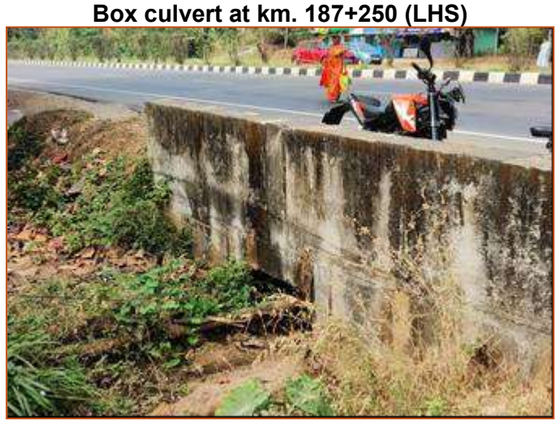
Box culvert at km. 187+250 (LHS)

HP culvert at km. 207+270 (LHS)

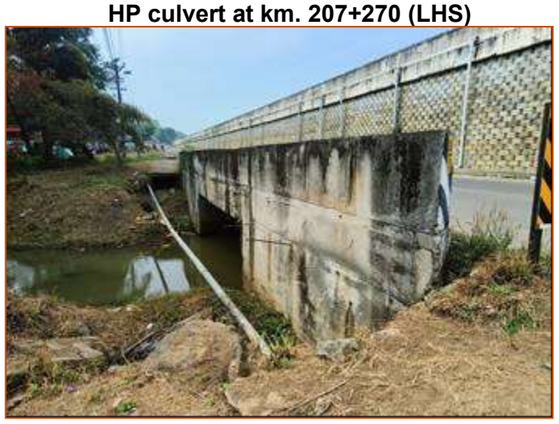
HP culvert at km. 225+850 (LHS)



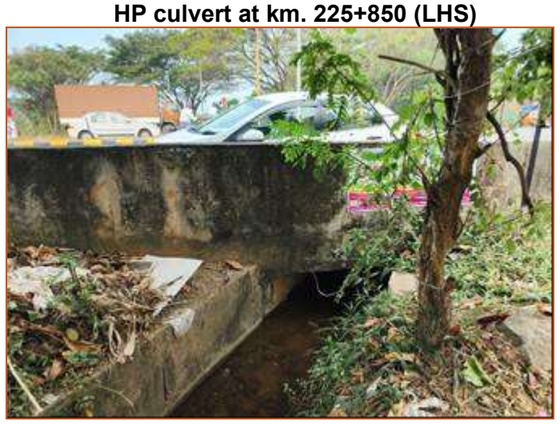
HP culvert at km. 225+400 (LHS)



Box culvert at km. 214+750 (LHS)



Box culvert at km. 215+700 (LHS)



Box culvert at km. 218+950 (LHS)

3.4.2 Minor Bridges

Table 3-2 Details of New Minor Bridges

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Proposed structural configuration	Proposed Structure type	Proposed span arrangement (m)	Total width of the structure (m)	TDD Consultant's Remarks
1	182+236	182+237	2 lane c/w with footpath	RCC Structure	3 x 9.15	12.00	RR masonry pier & Solid slab structure is on LHS. The pavement is in good condition. The new structure of RCC pier, abutment & T-beam girder is on RHS. Expansion joints, crash barriers, pavement is in Fair condition. Vegetation is removed
2	190+940	190+970	2 lane c/w with footpath	RCC Structure	1 x 16.50	12.00	The new structure is on LHS. The structure is in good condition. Minor honeycomb is repaired. Condition of pavement, crash barrier, slope protection is in Fair condition.
3	194+390	194+470	2 lane c/w with footpath	RCC Structure	1 x 22.00	12.00	The new structure is on RHS. The structure condition is good. The overall structure of the old bridge is in good condition. Cleaning and vegetation removal are necessary. Further, expansion joint and drainage spout cleaning is necessary.
4	201+l25	201+295	2 lane c/w with footpath	RCC Structure	1 x 11.20	12.00	Old structure is on LHS. The structure is in good condition. The new structure is on RHS. The structure is in good condition.
5	204+539	204+680	2 lane c/w with footpath	RCC Structure	1 x 21.40	12.00	The new structure is on RHS. The structure condition is good. Vegetation and silt need to be removed. Cleaning of expansion joints is necessary for new structure.
6	209+350	209+950	2 lane c/w with footpath (Skew)	RCC Structure	2 x 13.00	12.00	The new structure is located on the right-hand side (RHS), and its condition is good. According to the NHAI proposal for the new construction of a Vehicular Underpass (VUP) at km. 209+900, the height of the minor bridge on both sides will be increased by another agency and the same work is in progress.
7	212+568	213+160	2 lane c/w with footpath	RCC Structure	1 x 20.00	12.00	Single span structure with girders on both sides. Silt needs to be removed from the bed portion. Further, vegetation needs to be removed. Cleaning of expansion joint needs to be done
8	214+252	214+272	2 lane c/w with footpath	RCC Structure	1 x 13.50	12.00	RCC old structure is on LHS which is in good condition. Single span structure with girders, RCC pier and solid slab. The new structure is on RHS. The overall structure condition is good on both sides. Removal of heavy, thick vegetation and silt on either side etc. to be done and waterway to be cleared.
9	221+895	219+570	2 lane c/w with footpath	RCC Structure	1 x 9.00	12.00	RCC old structure is on RHS which is in good condition. The new structure is in good condition. Cleaning is required as there is presence of vegetation in the waterway of canal.
10	224+531	222+165	2 lane c/w with footpath (Skew)	RCC Structure	3 x 9.00	12.00	RCC old structure is on LHS which is in good condition. The new structure which is in LHS is in good condition. Rehabilitation is required as there is presence of vegetation and silt.
11	227+358	224+902	2 lane c/w with footpath	RCC Structure	3 x 16.40	12.00	RCC old structure is on RHS where concrete crash barrier is reconstructed. The new structure which is in LHS is in good condition. Rehabilitation is required in the form of cleaning of expansion joints, removal of vegetation in waterway etc.
12	239+030	235+180	2 lane c/w with footpath	RCC Structure	3 x 16.40	12.00	RCC Old structure is on RHS. The new structure which is in LHS is in good condition, but exposure of steel is observed on the side of deck slab which need to be repaired. Vegetation / silt removal is also required for both structures apart from rehabilitation.

Construction of New Cross Drainage Structures on Service Road at Minor Bridge Locations

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Proposed structural configuration	Proposed Structure type	Proposed span arrangement (m)	Side (LHS / RHS)	Total width of the structure (m)	TDD Consultant's Remarks
1	194+390	194+470	2 lane c/w	RCC Structure	1 x 22.00	Both sides	8.50	The new structure is on RHS. The structure condition is good. Overall structure condition of old structure is good. Debris and vegetation removal are necessary.
2	212+568	213+160	2 lane c/w	Causeway	10 x 1.2m dia. HP	LHS	8.50	Single span structure. Silting and vegetation grown need to be removed from the bed portion. Cleaning of expansion joints is required.
3	212+568	213+160	2 lane c/w (Skew)	RCC box culvert	3 x 3.00	RHS	8.50	Single span structure. Debris and silt deposition need to be removed from the bed portion. Cleaning and repairing of expansion joint is required.
4	227+358	224+902	2 lane c/w	RCC Structure	3 x 16.40	Both sides	8.50	RCC structure (old) is on RHS where removal of thick vegetation and cleaning of expansion joint is required. On LHS (new structure), cleaning of expansion joint is required. Further, on both side removal of thick vegetation and desilting is necessary for waterway.

Sr. No.	Existing Chainage (km)	Design Chainage (km)	Proposed structural configuration	Proposed Structure type	Proposed span arrangement (m)	Side (LHS / RHS)	Total width of the structure (m)	TDD Consultant's Remarks
5	239+030	235+180	2 lane c/w	RCC Structure	3 x 16.40	RHS	8.50	RCC masonry pier and solid slab structure. Parapet wall rehabilitation work and wearing course overlaying is done. Honeycombing is observed on piers. Further, steel is exposed / came out at slab level. Pier foundation protection work is damaged. Hence, rehabilitation measures are required to be carried out to correct the deficiency / deterioration.

The following photographs were taken during the inspection of Minor Bridges.

Figure 3-6 Photographs of Minor Bridge

MNB at km. 182+237 (LHS - old bridge)

MNB at km. 182+237 (RHS - New bridge)

MNB at km. 190+970 (LHS)

MNB at km. 190+970 (RHS)

MNB at km. 194+470 at Service Road

MNB at km. 194+470

MNB at km. 201+295 (LHS - old bridge)

MNB at km. 201+295 (RHS - New bridge)

MNB at km. 204+680 (Canal Crossing)

MNB at km. 204+680 (Canal Crossing)

MNB at km. 209+930 (LHS - Old Structure)

MNB at km. 209+930 (RHS - Old Structure)

MNB at km. 213+160 (Old - MCW - LHS)

MNB at km. 213+160 (New - MCW - RHS)

MNB at km. 224+902 (On Mangalam River)

MNB at km. 235+180 (On Mangalam River)

MNB at km. 219+570 (Canal)

MNB at km. 214+272 and slope protection

MNB at km. 222+165

MNB at km. 235+180

3.4.3 Major Bridge (length > 60 m)

There are 02 Nos. of Major Bridges on Project Road. Both Major Bridges were visually inspected. The structures are generally sufficient for the crossing of river water. The waterway needs regular cleaning. Old structures are present on the right side of both locations. All the old bridges are additional 2-lane lanes with footpaths. Old bridges have RCC railing. The sub-structures are constructed with RCC piers. Expansion joints on both the bridges need to be cleaned. Minor settlement in approaches and damage on pavement has been observed. New bridges are constructed in 2-lane with footpath. Old bridges on RHS have RCC pier and T-beam girders. The wearing course and expansion joints are found to be in good condition. W-beam and RCC type crash barriers are in sound condition. Drainage spouts and expansion joints need to be cleaned regularly. Further, vegetation and silt need to be removed from the waterway for smooth flow of water.

Table 3-3 Details of Major Bridges

Sr. No.	Design Chainage (km)	New Chainage (km)	Type of Structure	No. of Span	Span Arrangement (m)	No. of Lane with footpath	Side	Construction Scheme	TDD Consultant's Remarks
1	198+725	198+870	Major Bridge (Nagargampally River)	4	4 x 26.60	2	LHS	New Construction	The structure is in good condition. Pipe railing & Concrete crash barriers are in good condition.
				4	4 x 26.60	2	RHS	Old Construction	The structure is in fair condition. Apron Pitching needs to be repaired. Crash barriers are in sound condition. Rectification work of RHS is done with replacement of bearings.
2	207+260	207+900	Major Bridge (Yakkara River)	8	8x 21.40	2	LHS	New Construction	The structure is in good condition. Pipe railing and Concrete crash barriers are in good condition. Cleaning of Expansion joints is required.
				8	8x 21.40	2	RHS	Old Construction	The structure is in fair condition. In slope protection works vegetation needs to be clean. Drainage spouts cleaning is required. Bearings & Expansion joint replacement work is in progress as per IE requirement.

The following photographs were taken during the inspection of Major Bridges.

Figure 3-7 Photographs of Major Bridges

At pier and super-structure of Major Bridge at km. 198+870 (old Structure)

Expansion joint of Major Bridge at km. 198+870 (RHS)

Major Bridge at km. 198+870 (LHS - new structure)

Major Bridge at km. 198+870 (old structure)

At pier and super-structure Major bridge at km. 198+870 (New Structure)

Major Bridge at km. 207+900 (LHS - Old structure)

Major Bridge at km. 207+900 (new structure)

Major Bridge at km. 207+900 (LHS - New structure bearing and slope protection)

Slope Protection of Major Bridge at km. 207+900 (LHS)

Top view of Major Bridge at km. 207+900 LHS

Expension joint replacement work is in progress at km. 207+900 (RHS)

3.4.4 Underpasses

Table 3-4 Details of Vehicular Underpasses

Sr. No.	New Chainage (km)	Type of Structure	No. of Span	Span Width (m)	No. of Lane	Construction scheme	TDD Consultant's Remarks
1	197.730	VUP	1	17.50	4	New construction	The overall structure condition of all underpasses is found to be good. RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat is found to be good. Minor settlement on approaches is noticed. In underpasses at km. 217+500 and km. 234+400 vegetation removal on RE wall portion and cleaning of drainage spout is required. At the old Vehicular Underpass at km. 209+076, a crack is observed on slope protection. Vegetation removal on slab / crash barrier needs to be removed on old underpass Approach at A1 side.
2(a)	209.076	VUP (L/S)	1	13.20	2	Old construction	
2(b)	209.076	VUP (R/S)	1	13.20	2	New construction	
3	217.500	VUP	1	25.00	4	New construction	
4	234.400	VUP	1	17.50	4	New construction	
Note: The Concessionaire has constructed two underpasses under Change of scope apart from regular scope shown above. The structures are constructed at km. 202+760 and km. 206+310 (Skew).							

The following photographs were taken during the inspection of Underpasses:

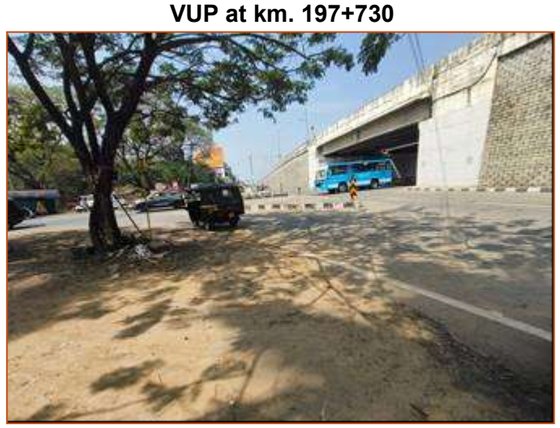
Figure 3-8 Photographs of Underpasses

VUP at km. 197+730

RE wall for VUP at km. 197+730 (LHS)

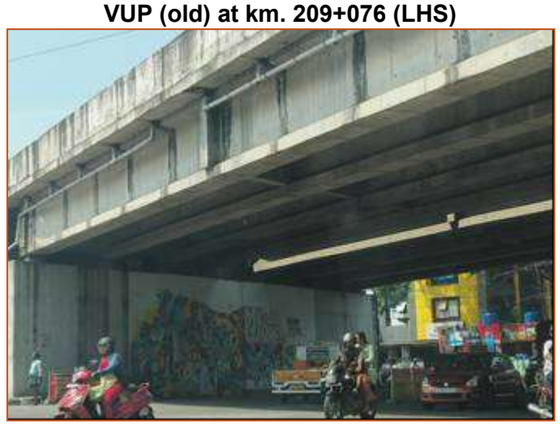
VUP (old) at km. 209+076 (LHS)

VUP (new) at km. 209+076 (RHS)

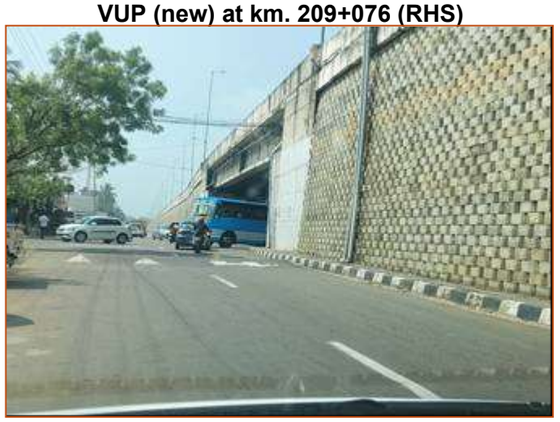


VUP at km. 202+750 LHS (COS)

VUP at km. 202+750 (COS)



VUP at km. 206+310 (COS)



VUP at km. 206+310 (COS)

VUP at km. 217+500

RE wall for VUP at km. 217+500

VUP at km. 234+400

RE wall for VUP at km. 234+400

3.4.5 Pedestrian / Cattle Underpasses

Table 3-5 Details of Pedestrian Underpasses

Sr. No.	New Chainage (km)	Type of Structure	No. of Span	Span Width (m)	No. of Lane	Construction scheme	TDD Consultant's Remarks
1	187.350	PUP	1	12.00	4	New construction	The overall structure condition of all underpasses is found to be good. RCC crash barriers, W-beam crash barriers, slope protection work, wearing coat is found to be in good. condition Vegetation removal on RE wall portion and cleaning of drainage spout is required.
2	216.400	PUP	1	12.00	4	New construction	
3	222.680	PUP	1	12.00	4	New construction	
4	223.530	PUP	1	12.00	4	New construction	

The following photographs were taken during the inspection of the Pedestrian Underpass.

Figure 3-9 Photographs of Pedestrian Underpass

PUP at km. 216+337

PUP at km. 216+337

PUP at km. 223+530

PUP at km. 223+530

PUP at km. 187+350

PUP at km. 187+350

RE wall for PUP at km. 222+622 (LHS)

PUP at km. 222+622

3.4.6 Grade separators

Table 3-6 Details of Grade Separators

Sr. No.	Design Chainage (km)	Type of Structure	Side	Span Width (m)	No. of Lane	Construction scheme	TDD Consultant's Remarks
1	203.900	Flyover	RHS	1 x 60 + (2 x 7) x 25	1 x 2	New construction	The structure is in good condition. Slope protection works and crash barriers are in good condition. Vegetation is removed on RE wall portion, cleaning of drainage spout is required.
2	225.507	VUP	B/S	1 x 23.5 (Skew)	2 x 2	New construction	The structure is in good condition. Slope protection works and crash barriers are in good condition. Vegetation removal on RE wall portion and cleaning of drainage spout is required.

The following photographs were taken during the inspection of Grade separators.

Figure 3-10 Photographs of Grade Separators

RE wall for RHS MCW Grade separator, Flyover at km. 203+900

Grade separator, VUP at km. 203+900

Grade separator, VUP at km. 225+507

Grade separator, VUP at km. 225+507

3.4.7 ROB

There is 01 No. of ROB on Project Road at km. 208+975. A new structure is constructed on the right side and the existing structure is on the left side. Old structure is RCC box type. Steel reinforcement is exposed to the wing wall of old ROB. The new structure is constructed with RCC girder of single span. The structure is in good condition. Wearing coat is in good condition. The crash barrier for new structure is found to be in good condition.

Table 3-7 Details of ROB

Sr. No.	Design Chainage (km)	Type of Structure	Side	No. of Span	Span Width (m)	Length (m)	No. of Lane	Construction scheme	TDD Consultant's Remarks
1	208+375 / 208+975	ROB	LHS	1	10.50	6.50	2	Old construction	The pavement is in good condition. kerbs are re-cast. Vegetation is observed at slope protection area. Chute drains are not provided on embankment, as per the provision of CA. So, all the lapses / defects mentioned above need to be attended.
			RHS	1	12.00	6.50	2	New construction	Overall, the structure is in good condition. The pavement & crash barrier condition is good.

The following photographs were taken during the inspection of ROB.

Figure 3-11 Photographs of ROB

Slope protection of New ROB at km. 208+975

Abutment and Girder of New ROB at km. 208+975

Old ROB Wing wall & structure condition

Condition of Abutment at New ROB

3.4.8 New Construction of VUP at Major Junction

The National Highways Authority of India (NHAI) has appointed a new agency for the construction of new Vehicle Underpass (VUP) with approaches at three major junctions located at km. 209+900, km. 215+750 and km. 226+700. The work is in progress.

The following photographs were taken during the inspection.

Figure 3-12 Photographs of New VUP (under construction)

Work is in progress at km. 209+700

Work is in progress at km. 226+000

VUP at km. 226+700

3.5 Drainage

Drains are to be constructed at the Project Road to have good drainage. Lined drains are provided at the sides of the service road and at some locations covered lined drains are provided at the separators between the main carriageway and service road. Median cut drains are provided at superelevation locations. The drainage condition of Project Road is in order. Silt deposits need to be removed during routine maintenance. Total 11.2 kms of covered / open line side drain is found on site. The condition of the same is good to fair.

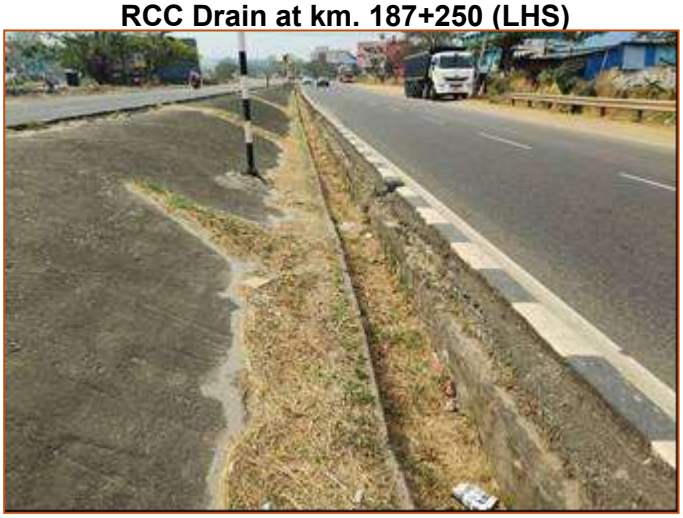
Some of the photographs taken during the site visit are presented below.

Figure 3-13 Photographs of Drainage

Median Drain at km. 208+000

RCC Drain at km. 187+250 (LHS)

Earthen Drain at km. 207+350 (LHS)



Drain at Median km. 240+000 (RHS)

Drain at km 209+800 (LHS)

Earthen Drain at km. 221+000 (LHS)

3.6 Slope Protection

Slope protection is found on Project Road at certain locations. At a few locations, the slope protection is damaged, which needs to be rectified by the Concessionaire.

Some of the photographs taken during the site visit are presented below.

Figure 3-14 Photographs of Slope Protection

Slope Protection at km. 194+500

Slope Protection at km. 196+000 (LHS)

Slope protection at km. 224+900 (LHS)

Slope protection at km. 234+000

3.7 Road Furniture

3.7.1 Pavement Marking

The design and marking for the Project Road are done as per the design standards as indicated in Schedule-D and the location for various treatments are drafted in consultation with the Independent Engineer.

Some of the photographs taken during the site visit are presented below.

Pavement Marking at km. 230+000

Pavement Marking at km. 208+500 (LHS)

3.7.2 Traffic Signage

Traffic signs include roadside signs, overhead signs, curb mounted signs and road marking along the Project Road. The design for the Project Road is done as per the design standard indicated in Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule 'D'. Overhead signs shall be installed ahead of major intersections, toll plazas and urban areas as per detailed design requirements.

3.7.3 Highway Lighting

Highway Lighting is provided in urban and semi-urban areas of the Project Road. Lighting is provided at the locations of truck lay-bye, rest areas, toll plazas, underpasses, ROBs, service road stretches and at intersections / interchanges. IS:1944 (Part I and Part II) is followed for lighting installations. High mast lighting systems are provided at major junctions, locations of ROB / Flyover / Underpass / Grade Separator.

Some of the photographs taken during the site visit are presented below.

Highway Lighting at km. 197+100

Highway Lighting at km. 217+600 (LHS)

3.7.4 Road Studs / Cat's eyes

The Concessionaire has provided road studs / cat's eyes as per Schedule-D on the curves, road junctions, zebra crossings, in municipal area and village settlement and ramps etc. to provide the proper visibility to the road users. All the road studs / cat's eyes on the Project Road are replaced.

Some of the photographs taken during the site visit are presented below.

Road Studs at km. 193+650 (Junction)

3.7.5 Pedestrian Guard Rail

The pedestrian guard rails are provided between main carriageway and service road at built-up locations. Damaged / missing pedestrian guard rails are replaced or repaired.

3.7.6 Avenue Plantation and Median Plantation

Avenue Plantation is available intermittently along the Project Road. However, the same requires regular maintenance. Median Plantation too needs proper regular maintenance.

Trees were planted in ROW and on either side of the road with staggered pitch as per IRC:SP:21. At present, replantation is in progress wherever required on Project Road. Arrangements for plantation of trees is in accordance with the MORT&H Technical Circle No. NH-41 (34) / 69. A spacing of 10 m - 15 m c/c is recommended for spacing of trees parallel to the roads. Set back distance of trees needed in different situations is as per the IRC:SP:21 and IRC:66. Shrubs in median is normally exceed 1 m - 1.5 m heights and as per IRC:SP:21. The landscaping is carried out as per the extent policy of NHAI as is being done on NHAI's public funded projects.

Some of the photographs taken during the site visit are presented below.

Median Plantation at km. 190+000 to 191+000

Avenue Plantation at km. 188+000 to 189+000

3.7.7 Traffic Signage / Median kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location and installation are as per relevant clauses of Schedule ‘D’. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards and median kerb paint are faded at few locations which will be rectified by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-15 Photographs of Road Signages

Signage at km. 182+250

Signage at km. 182+500

Signage Gantry at km. 188+000

Signage at km. 195+700

5th Kilometer Stone at km. 215+000

Hectometer Stone at km. 222+200

ROW Piller at km. 221+590

Hazard marker at BXC at km. 218+950 (LHS)

3.7.8 Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site.

Some of the photographs of metal beam crash barriers are presented below.

Figure 3-16 Photographs of MBCB / Crash Barrier

MBCB at km. 217+000 to km. 216+000

Crash barrier at km. 215+000 to km. 216+000

MBCB at km.190+000 to km. 190+000

Crash barrier at km. 185+000 to km. 186+000

3.7.9 Delineators

The traffic delineators are provided by the Concessionaire on the Project Road for road users. The same are maintained by the Concessionaire.

Some of the photographs of delineators are presented below.

Figure 3-17 Photographs of Delineators

Delineator at km. 186+450

Delineator at km. 225+000

3.7.10 Pedestrian Guard Rail

The pedestrian guard rails are provided in the median. It is maintained by the Concessionaire.

Some of the photographs of pedestrian guard rails are presented below.

Figure 3-18 Photographs of Pedestrian Guard Rail

Guardrail at km. 201+950

3.8 Toll Plaza

As per the Concession Agreement, there is one toll plaza on the Project Road at km. 189+400. The details of the Toll Plaza are as follows.

Table 3-8 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details		Remarks
		LHS	RHS	
1	Number of Tolling Lanes	5	5	
2	Weigh in Motion Facility (Number of Lanes)	5	5	
3	No. of ETC lanes	5	5	
4	No of Toll booths	9 Singles		
5	Canopy	Present		
6	Administrative building	Present		
7	Parking cum Toilet block	Present		Toilet block available
8	Availability of Tunnel or Elevated walkaway for movement between Toll lanes and administrative building	Tunnel / Yes		
9	Availability of static weigh bridge	Yes		2 numbers
10	Availability of Loading/Unloading Facility for Overloading vehicles	No		
11	Storage facility for Overloaded material	No		
12	High mast light	Yes		
13	Streetlight	Yes		
14	Low mast light	No		
15	User fee boards	Yes		
16	Cantilever/Gantry boards	Yes		
17	Automatic boom barrier	Yes		

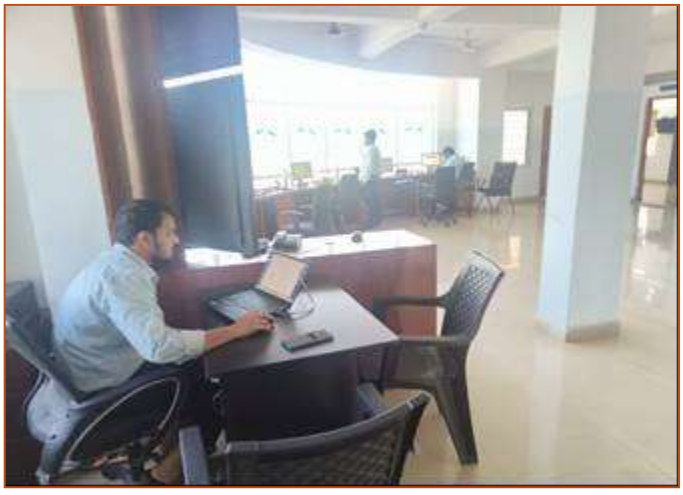
Figure 3-19 Photographs of Toll Plaza

View of Toll Plaza - km. 189.400 Walayar end (Pampampalam)

Admin Building at Toll Plaza

Ambulance at Toll Plaza at km. 189+400

Medical Aid Post at Toll Plaza



Toll Plaza View at km. 189+400 Control Room and Painting work is completed

Tunnel at Toll Plaza

Crane at Toll Plaza

Generator at Toll Plaza

Static Weigh Bridge at Toll Plaza (LHS)

Crane at Toll Plaza

Medical Facility at Toll Plaza

3.9 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver
2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.9.1 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

RFID at Toll Plaza

3.9.2 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data.

Lane Controller in Tunnel at TP

3.9.3 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

AVCC at Toll Plaza

3.9.4 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at Toll Plaza

3.9.5 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at Toll Plaza

3.9.6 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

OHLS at Toll Plaza

3.9.7 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.
The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Toll Booth at Toll Plaza

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Cameras are provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.9.8 Medium Speed Weigh in Motion (MSWIM)

Medium Speed Weigh in Motion (MSWIM) is installed on entry lanes of Toll Plaza.

SWIM at Toll Plaza

3.10 Plaza Equipment

3.10.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

TMS Server at Toll Plaza

3.10.2 55" LED screen for CCTV monitoring

55" LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager can observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager can comprehend the situation at the lane by a zoomed view of the particular lane.

3.10.3 Workstations in Cash Room & POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and POS.

Cash Room at Toll Plaza

Point of sale room at Toll Plaza

3.11 Toilet Block

There is one toilet block provided at Toll Plaza. A photograph of the toilet block is presented below.

Photographs of Toilet Block

3.12 Bus Bays and Passenger Shelters

There are 43 Nos. of bus bays / passenger shelter along Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-20 Photographs of Bus Bays / Passenger Shelter

Bus bay at km. 213+050 (LHS)

Bus bay at km. 219+550

3.13 Balance Work Status

The project has received Completion Certificate on 31st October 2015 by completing all the works as mentioned in the Technical Schedules of Concession Agreement. Hence, there are no balance works to be executed as per CA.

3.14 Operation and Maintenances

3.14.1 O&M Contract

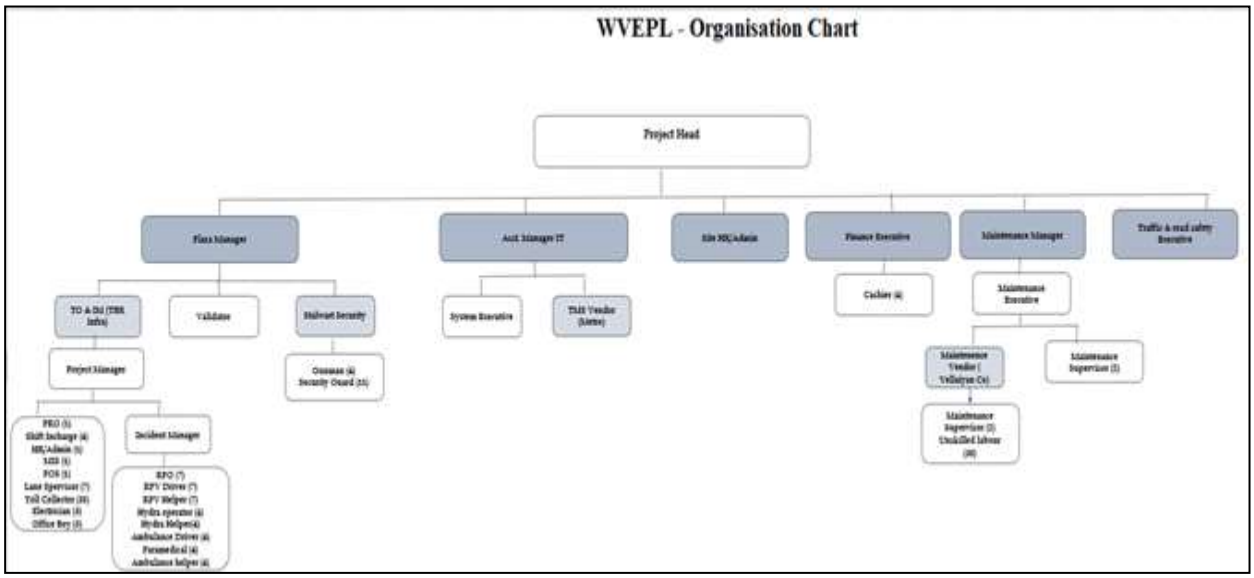
As per Clause 15.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, improve the Project Road to comply with Specifications and Standards, and other

requirements set forth in the Agreement through Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems. The Operation and Maintenance activities shall conform to all the requirements laid down in MoRT&H, IRC Specifications and the Concession Agreement.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services, AMC for TMC and AMC for DG set.

3.14.2 Organization Chart

The Concessionaire has given the Organization Chart at site for Operation and maintenance. Accordingly, there is 01 Project Head, 01 Senior Executive (F&A), 01 Senior Executive (HR), 01 Assistant Manager (TMS / IT), 01 Executive (TMS / IT), 01 Maintenance Manager, 01 Store Executive, 03 Supervisor, 02 Electrician, 01 Plaza Manager, 01 Document Controller, 04 Cashiers and 03 validators to carry out O&M activities. The team controls the maintenance activities. However, the maintenance work is undertaken and executed through competent sub-contractors.



3.14.3 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on the best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.14.4 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of Work. The Concessionaire has received Completion Certificate on 31st October 2015 for the complete Project stretch.

The project is currently under the Operation and Maintenance stage. The concession period of the project is 20 years from the Appointed Date 18th May 2013 including construction period of 2.5 years.

4.2 Surveys and Investigation

4.2.1 Pavement Condition Survey

Pavement condition survey was carried out by the Technical Consultant from **28th January 2025 to 31st January 2025** through visual inspection for the project road and for the entire length.

The summary of pavement condition based on the visual inspection is tabulated below.

Table 4-1 Summary of Pavement Condition

Sr. No.	Chainage (km)		Length (km)	Visual Condition (As per IRC:115-2014)	
	From	To		Left Carriageway	Right Carriageway
1	182.207	236.130	53.495	Good	Good

Observation and Conclusion:

From the above table, it is observed that the overall pavement condition for the entire project stretch is found to be Good.

4.2.2 Axle Load Survey

The Concessionaire conducted the Axle Load Survey on Project Road at km. 189+600 (near Toll Plaza) on 19th January 2021 and 20th January 2021. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-2 Vehicle Damage Factor

Vehicle Category	Vehicle Damage Factor at km. 189+600 (near Toll Plaza)	
	Walayar - Vadakkancherry	Vadakkancherry - Walayar
Bus	0.856	0.759
LCV	2.000	0.470
2A	3.856	1.503
3A	9.218	2.419
MAV	17.073	6.082

4.2.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-3 MSA Calculation

Year	LHS		RHS		Remarks
	MSA	Cumulative MSA (Walayar - Vadakkancherry)	MSA	Cumulative MSA (Vadakkancherry - Walayar)	
FY 2026	8.97	**8.97**	3.15	**3.15**	
FY 2027	9.59	**18.56**	3.38	**6.53**	
FY 2028	10.16	**28.72**	3.58	**10.11**	
FY 2029	10.84	**39.56**	3.82	**13.93**	
FY 2030	11.35	**50.91**	4.00	**17.93**	
FY 2031	11.87	**62.78**	4.19	**22.12**	
FY 2032	12.42	**75.20**	4.39	**26.51**	
FY 2033	13.03	**88.23**	4.60	**31.11**	
FY 2034	13.66	**101.89**	4.83	**35.94**	End of concession period as per appointed date & CA
FY 2035	14.32	**116.21**	5.07	**41.01**	
FY 2036	15.01	**131.22**	5.31	**46.32**	
FY 2037	15.73	**146.95**	5.57	**51.89**	
FY 2038	16.48	**163.43**	5.84	**57.73**	End of concession period as per target revenue

4.2.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has conducted a pavement condition survey on each lane of each carriageway with NSV. The NSV survey was conducted on the Project Road on 29th November 2024.

Roughness Survey

Roughness Survey results were provided by the Concessionaire for analysis and to assess the riding quality on each direction (each lane) of the carriageway of Project Road.

The side-wise results of Roughness Survey are presented as below.

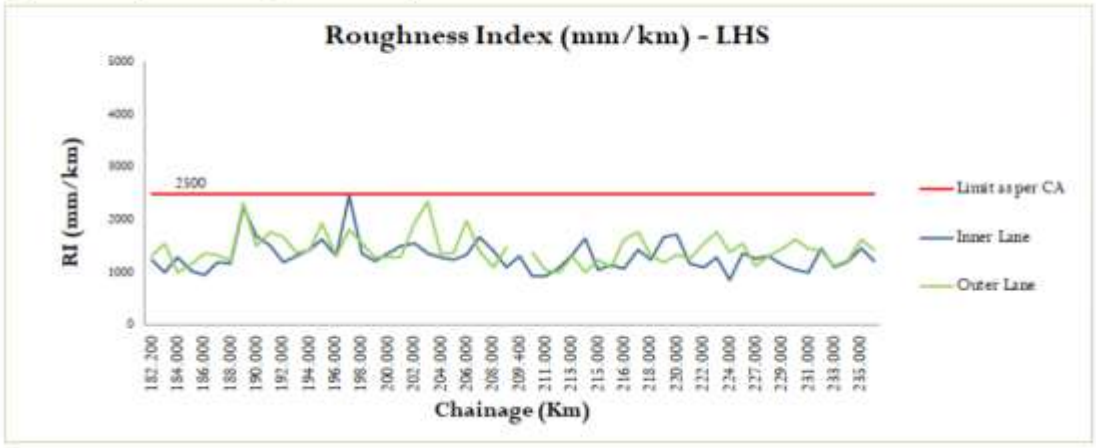
Table 4-4 Result of Roughness Survey

Table 2-1: Summary of RI Limit as per Schedule K of CA

Roughness Summary % as per Schedule K of CA (mm/km)					
Condition	Limit as per Schedule K of CA (mm/km)	LHS		RHS	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane
Good	<2500	100.00%	100.00%	100.00%	98.02%
Poor	>2500	**0.00%**	**0.00%**	**0.00%**	**1.98%**

Note: The roughness values of 1.98% on the RHS outer lane are higher due to the presence of the Toll Plaza.

Figure 2-3: Roughness Summary for WVEPL as per Schedule K of CA



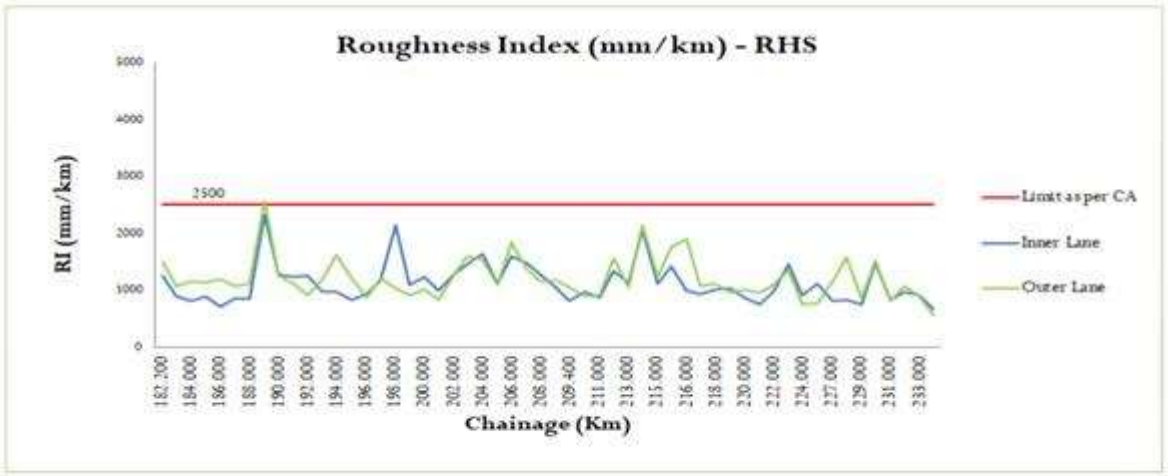


Figure 2-4: Roughness Index for WVEPL as per Schedule K of CA

Observation and Conclusion:

From the table of roughness survey result, it is observed that the overall pavement condition for the entire project stretch is found to be Good. The roughness is exceeded 2500 mm/km at Toll Plaza location as the pavement is Rigid type.

4.2.5 Structural Investigations

The structural evaluation and analysis of the remaining life of project was carried out in conformity with IRC:115-2014 “Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique”.

The FWD survey was conducted on the Project Road from 13th February 2025 to 19th February 2025. The summary of the same is presented below.

Remaining Life of pavement on LHS

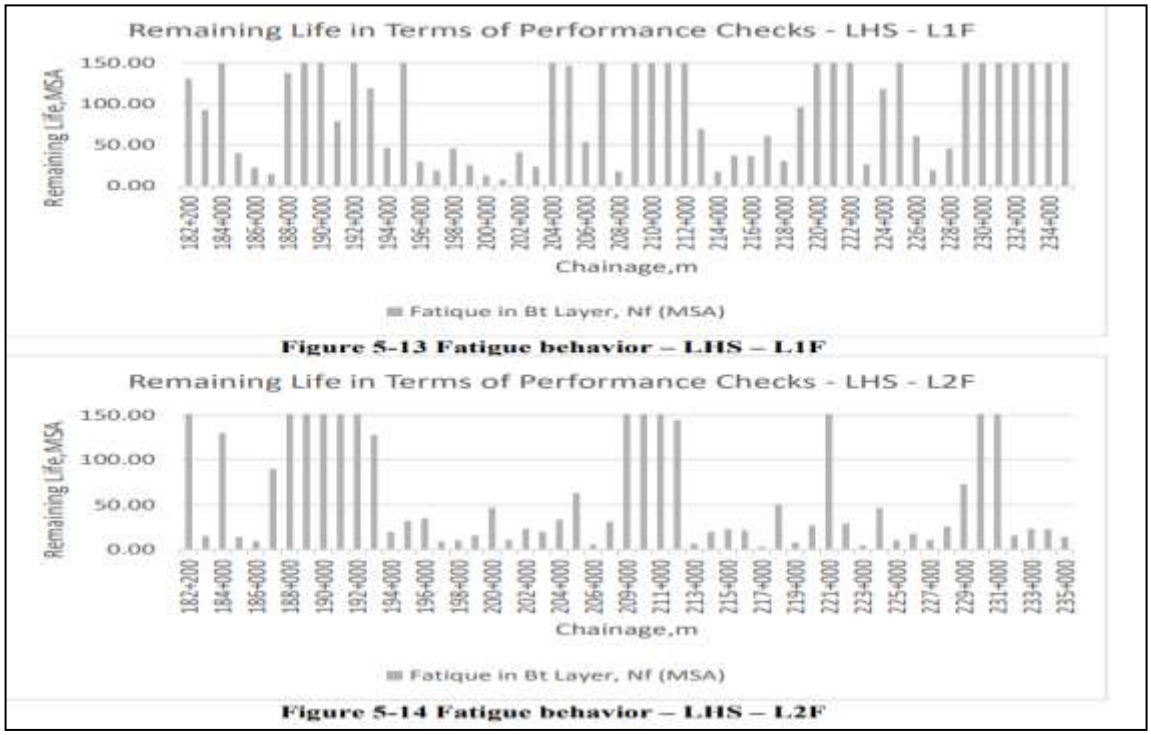


Figure 5-13 Fatigue behavior – LHS – L1F

Figure 5-14 Fatigue behavior – LHS – L2F

Remaining Life of pavement on RHS

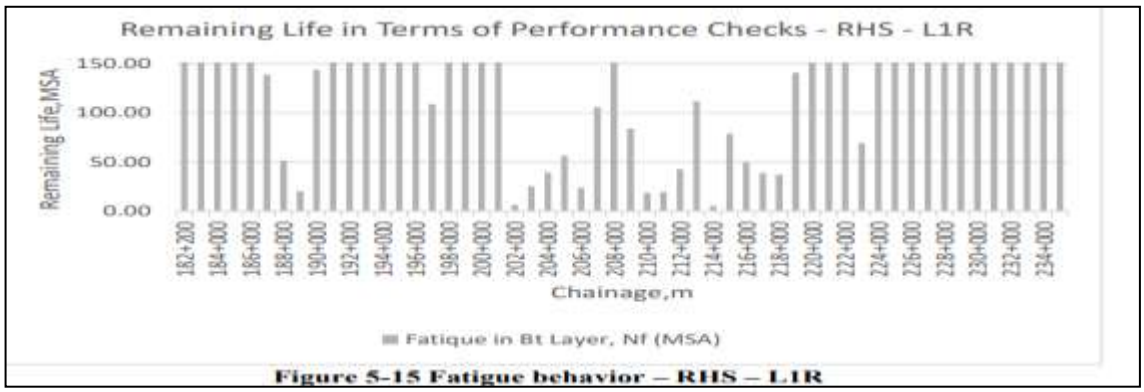


Figure 5-15 Fatigue behavior – RHS – L1R

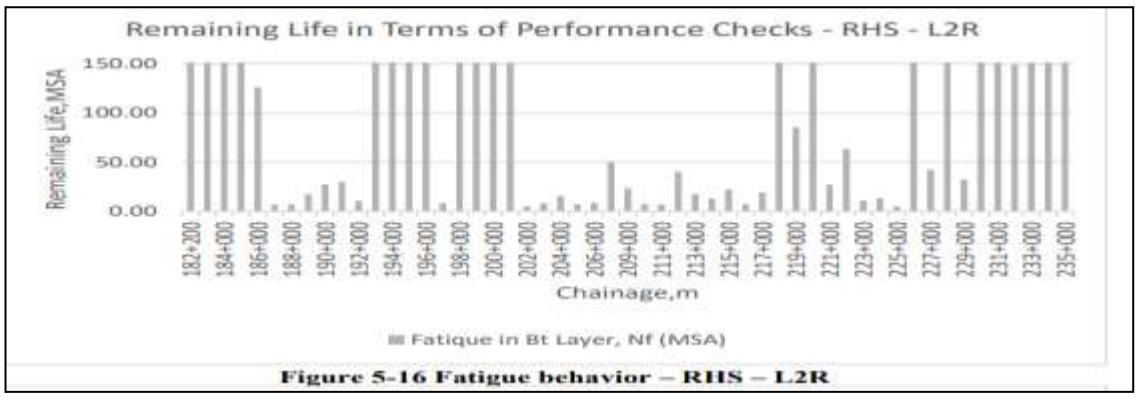


Figure 5-16 Fatigue behavior – RHS – L2R

However, the maintenance can be carried out on as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. However, improvement in Riding Quality is expected if the roughness value exceeds 2500 mm/km.

4.2.6 Test pit and Subgrade Investigation

The Concessionaire carried out the subgrade investigation for the Project Road in February 2021. The results of the same as provided by the Concessionaire are tabulated below.

Table 4-5 Test Results Summary of Natural Ground Soil Samples

S. No.	Existing Chinage (Km.)	Side (LHS/RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-IV)		Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		In-situ Density		4-Days Soaked CBR (%)	Free Swell Index	Degree of Compaction (%)
				19.0 mm	4.75 mm		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density gm/cc.	OMC (%)	FDD (gm/cc)	FMC (%)			
1	182+500	LHS	SM	100.0	70.3	13.5	23	NP	NP	2.11	8.4	1.94	2.0	17.9	0.0	91.9
2	187+900	RHS	SM	100.0	94.0	19.5	25	NP	NP	2.09	8.7	1.89	4.0	15.4	11.1	90.4
3	190+900	LHS	SM	100.0	98.3	30.3	26	NP	NP	2.02	9.0	1.85	9.0	12.6	12.5	91.6
4	198+700	RHS	SC	100.0	93.8	39.6	30	18	12	1.96	12.4	1.88	8.0	9.7	22.2	95.9
5	200+850	LHS	SM-SC	97.7	58.0	18.2	29	22	7	2.01	10.9	1.92	5.0	11.7	15.2	95.5
6	205+000	RHS	SM	98.7	85.7	15.2	23	NP	NP	2.08	8.6	1.88	7.0	16.3	0.0	90.4
7	211+500	LHS	SM	100.0	97.3	28.4	22	NP	NP	2.03	9.1	1.99	6.0	13.6	0.0	98.0
8	215+500	RHS	SM	98.5	89.4	12.4	25	NP	NP	2.11	8.4	1.89	5.0	17.7	0.0	89.6
9	219+950	LHS	SM	98.1	89.1	33.2	26	NP	NP	1.96	9.2	1.83	7.0	12.9	0.0	93.4
10	222+150	RHS	SM	100.0	95.4	33.2	27	NP	NP	1.95	9.1	1.89	6.0	13.6	0.0	96.9
11	230+100	LHS	SM-SC	97.4	81.4	38.9	29	22	7	1.97	10.8	1.89	8.0	11.8	15.2	95.9
12	236+000	RHS	MI	100.0	96.6	50.8	36	25	11	1.93	12.3	1.91	6.0	9.2	20.0	99.0

4.2.7 Periodic Maintenance Strategy

The Concessionaire has completed an overlay on both sides of project MCW throughout the entire project length and in Service Road, BC Overlay of 30 mm / 40 mm has been provided on both sides at distress locations in FY 2023.

The maintenance can be carried out as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. Only improvement in the Riding Quality is to be made if the roughness value exceeds 2500 mm/km.

The table below shows the major / periodic maintenance cycle throughout the concession period for the Project Road.

Table 4-6 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2023	Overlay completed for Project Length	Overlay completed at distress locations
2	FY 2024 to FY 2028	-	-
3	FY 2029	Major Maintenance with 30 mm BC (75%) and 40 mm BC (25%) + Milling & 50 mm DBM (11%)	Major Maintenance with 30 mm BC (50%) + Micro-surfacing (50%)
4	FY 2030 to FY 2035	-	-
5	FY 2036	Major Maintenance with 30 mm BC (100%)	Major Maintenance with 30 mm BC (50%) + Micro-surfacing (50%)
6	FY 2037	-	-
7	FY 2038	End of Concession Period as per traffic study	

**Actual end of concession period as per Concession Agreement is May 2033. However, as per traffic details submitted by the Concessionaire, the revised concession period is up to FY 2038 as per provision of Article 14 of CA.*

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Work Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

1. Unit rates of different items (Tack Coat, BC, DBM etc.) are calculated as per the PRICE (kerala.gov.in).

   a. **Manpower and Labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

   b. **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

      Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2025 and FY 2026. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2027 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex-MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
IOC Mathura	VG-10	45,202	33,038
IOC Mathura	VG-30	47,502	34,719
IOC Mathura	VG-40	50,242	36,721
IOC Haldia	VG-10	47,702	33,971
IOC Haldia	VG-30	48,502	34,540
IOC Haldia	VG-40	51,242	36,492
IOC Barauni	VG-10	47,702	33,971
IOC Barauni	VG-30	48,502	34,540
IOC Barauni	VG-40	51,242	36,492
CPC Chennai	VG-10	48,202	34,156

Refineries	Grade	Rate for FY 2026 and FY 2027 (Rs. / MT)	Rate for FY 2028 onwards (Rs. / MT)
CPC Chennai	VG-30	49,002	34,723
CPC Chennai	VG-40	51,752	36,672

c. **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.

d. **Cement:** Market rates are considered from the nearest local market.

e. **Steel :** Rate of steel is taken from SAIL

f. **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PRICE (kerala.gov.in).

g. **Rates of items as per Work Order:** The rates of road marking, kerb raising, micro-surfacing, milling, road stud etc. are considered as per the Work Order issued to Contractor at Site shared by the client.

2. Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below.

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.)
1	Dense Bituminous Macadam	Cum	8,856
2	Bituminous Concrete	Cum	9,902
3	Milling	Sqm	89
4	Micro-surfacing	Sqm	160
5	Kerb raising	Rm	265
6	Road Marking	Sqm	465
7	Road Studs	Nos.	185

5.3 Balance Work Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, the balance work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management Services
5. Electricity and Diesel Charges
6. TMS / HTMS / System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Horticulture & ROW Maintenance
16. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation Cost is presented as below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026-38)	Remarks
1	Salary and Welfare Expenses	1,17,48,000	
2	Tolling Operations Services	2,35,60,481	
3	Toll Security Services	48,33,289	
4	Incident Management & Emergency Services	2,62,22,395	
5	Electricity and Diesel Charges	69,07,891	
6	TMS / HTMS / System Expenses	37,72,897	
7	Office Operating Expenses	31,31,651	
8	Vehicle Running Expenses	60,25,800	
9	Professional Fees Expense	1,44,38,597	
10	Community Development	13,74,376	
11	Communication Expenses	3,48,666	
12	Conveyance Expenses	3,80,362	
13	Insurance Expense	1,48,34,137	
14	IE Fees	1,30,00,790	
15	Routine Maintenance Cost (Project Road)	2,29,25,729	
16	Horticulture & ROW Maintenance	1,69,14,734	
17	Miscellaneous including Contingency	52,23,173	

Sr. No.	Particulars	Amount (FY 2026-38)	Remarks
	Total Cost (Rs.)	**17,56,42,969**	
	Total Cost (Cr.)	**17.56**	
	Per km Cost (Lakhs)	32.83	

5.5 Major Maintenance Cost

As informed by the Concessionaire, overlay has been completed in FY 2023 as a part of major maintenance. The Concessionaire has completed overlay of 40 mm BC (100%) on LHS and 30 mm BC (100%) on RHS. The pavement is also treated with 50 mm DBM on RHS at distressed section. As per the NSV test report conducted at site on 29th December 2023, MCW is in good condition and same has been verified during site visit.

The summary of Major Maintenance Cost is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remarks
1	FY 2024 to FY 2028	-	
2	FY 2029	62.44	
3	FY 2030 to FY 2035	-	
4	FY 2036	60.51	
5	FY 2037 to FY 2038	-	
Total Cost (Cr.)		**122.95**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	HTMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2027	0.61	
2	FY 2034	0.61	
Total Cost (Cr.)		**1.22**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Escalation	Year	Escalation
2026	-	**2039**	4.00%
2027	5.25%	**2040**	3.99%
2028	4.86%	**2041**	3.99%
2029	4.44%	**2042**	3.99%
2030	4.24%	**2043**	3.99%
2031	4.13%	**2044**	3.99%
2032	4.08%	**2045**	3.99%
2033	4.01%	**2046**	3.99%
2034	4.00%	**2047**	3.99%
2035	4.03%	**2048**	3.99%
2036	4.01%	**2049**	3.99%

Year	Escalation	Year	Escalation
2037	3.98%	**2050**	3.99%
2038	3.98%	**2051**	3.99%

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in Clause 5.7.

Escalated O&M Cost (in INR Cr.)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38
1	Routine O&M Cost													
1.01	Salary and Welfare Expense	1.17	1.24	1.30	1.35	1.41	1.47	1.53	1.59	1.65	1.72	1.79	1.86	0.32
1.02	Tolling Operations Services	2.36	2.48	2.60	2.72	2.83	2.95	3.07	3.19	3.32	3.45	3.59	3.73	0.65
1.03	Toll Security Services	0.48	0.51	0.53	0.56	0.58	0.60	0.63	0.65	0.68	0.71	0.74	0.77	0.13
1.04	Incident Management Services	2.62	2.76	2.89	3.02	3.15	3.28	3.41	3.55	3.69	3.84	4.00	4.16	0.72
1.05	Electricity and Diesel Charges	0.69	0.73	0.76	0.80	0.83	0.86	0.90	0.94	0.97	1.01	1.05	1.09	0.19
1.06	TMS/HTMS/System Expenses	0.30	0.32	0.33	0.35	0.36	0.38	0.39	0.41	0.43	0.44	0.46	0.48	0.08
1.07	Office Operating Expenses	0.31	0.33	0.35	0.36	0.38	0.39	0.41	0.42	0.44	0.46	0.48	0.50	0.09
1.08	Vehicle Running Expenses	0.60	0.63	0.67	0.69	0.72	0.75	0.78	0.82	0.85	0.88	0.92	0.95	0.17
1.09	Professional Fees Expense	1.44	1.52	1.59	1.66	1.73	1.81	1.88	1.96	2.03	2.12	2.20	2.29	0.40
1.10	Community Development	0.14	0.14	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.04
1.11	Communication Expenses	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.01
1.12	Conveyance Expenses	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.01
1.13	Insurance Expense	1.48	1.56	1.64	1.71	1.78	1.86	1.93	2.01	2.09	2.17	2.26	2.35	0.41
1.14	IE Fees	1.30	1.37	1.43	1.50	1.56	1.63	1.69	1.76	1.83	1.91	1.98	2.06	0.36
1.15	Routine Maintenance Cost	2.29	2.41	2.53	2.64	2.75	2.87	2.99	3.11	3.23	3.36	3.49	3.63	0.63
1.16	Horticulture & ROW Maintenance	1.69	1.78	1.87	1.95	2.03	2.12	2.20	2.29	2.38	2.48	2.58	2.68	0.46
1.17	Miscellaneous and Contingency	0.52	0.55	0.58	0.60	0.63	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.14
	Subtotal of O&M Cost	17.49	18.41	19.30	20.16	21.01	21.88	22.77	23.69	24.64	25.63	26.66	27.72	4.80
2	Major Maintenance Cost	-	-	-	68.92	-	-	-	-	-	-	83.39	-	-
3	Periodic Cost of TMS/HTMS Replacement	-	0.64	-	-	-	-	-	-	0.86	-	-	-	-
4	Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**17.49**	**19.05**	**19.30**	**89.08**	**21.01**	**21.88**	**22.77**	**23.69**	**25.50**	**25.63**	**110.05**	**27.72**	**4.80**

ANNEXURES

ANNEXURE I - ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Walayar -Vadakancherry	
Ordinary Repair Cost for Flexible (with GST)	**2,29,25,729**
(inclusive of GST)	**= 4.29 lakhs per km**

CONVERSION FACTORS									
National Highways / State Highways									
Reference cost taken for Two / four lane (7.0 or 14m or 21m) with 1.5m wide shoulders									
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)									
Sr. No.	**Description for Flexible Pavement**		**Factor**			**Project Length (km)**		**Per Year Project Maintenance Cost**	
				Normal	**Urban**				
				More than 4500 CVD	More than 4500 CVD				
				1,93,021	**2,48,138**				
						Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	295322.00	379651.00	-	-	-	-
		Paved shoulder	1.70	328136.00	421834.00	28.83	-	94,58,848	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	386042.00	496276.00	-	-	-	-
		Paved shoulder	2.20	424646.00	545903.00	-	24.67	-	1,34,66,881
					TOTAL		**53.495**		**2,29,25,729**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	0.50%
	Volume (cum)			2.50
	Rs/m^3			11653
	Cost in Rupees			29,131
	ii) Patch repair	100 % Patch less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			466
	Cost in Rupees			23,305
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	2.50%
	Area (sqm)			250
	Rs/m^2			83
	Cost in Rupees			20,650
	b) Width less than 3 mm	75 % Crack Less	As & when required	2.00%
	Area (sqm)			150
	Rs/m^2			61
	Cost in Rupees			9,204
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			466
	Cost in Rupees			34,958
	v) Road marking	14%	Once in 7th year & @	12902

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
			Repaired location	
	SUB TOTAL			**1,30,150**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6210
	ii) Kuccha Drain Maintenance	100%	Twice in a Year	1092
	SUB TOTAL			**7,302**
3	**Maintenance of Cross Drainage works:**			
	i) Repair of floors	100%	Once in a Year	4978
	ii) Repair of parapets	100%	As & when required	2074
	SUB TOTAL			**7,052**
4	**Maintenance of Minor & Major Bridges:**			
	i) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints	100%	As & when required	36,387
	ii) Repair of minor washouts, erosion scour and animal holes			
	iii) Sealing Cracks with Cement/ Epoxy Mortar			
	iv) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**36,387**
5	**Miscellaneous Items:**			
	i) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3639
	ii) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7277
	iii) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1213
	iv) Traffic Census		Once in a Year	0
	v) Provision for roughness measurement		Twice in a Year	0

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0 m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per Km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	SUB TOTAL			**12,129**
	GRAND TOTAL (Normal)			**1,93,021**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	33%	Once in three years with thermoplastic paint	25764
	ii)Repairs to footpath	100%	As & when required	4852
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	4852
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	7520
	vi) Repair of divider/ Railing in City portion	100%	As & when required	9703
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2426
	SUB TOTAL			**55,117**
	GRAND TOTAL (Urban)			**2,48,138**

ANNEXURE II - MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						10,27,389	18	1,84,92,997
	For BC	Sqm	2	51,550	8.75		9,02,129	9,02,129		
	For DBM	Sqm	2	5,671	7.00		79,387	79,387		
	For Misc. Location	Sqm	2	2,621	8.75		45,872	45,872		
2	BC with 30 mm	Cum	2	40,629	8.75	0.03	21,330	30,810	9,902	30,50,81,050
3	DBM with 50 mm	Cum	2	5,671	7.00	0.05	3,969	3,969	8,856	3,51,52,734
4	Milling	Sqm	2	5,671	7.00		79,387	79,387	89	70,73,416
	Main Carriageway - Rigid Pavement									
5	Joint Sealant Replacement @ 10% length	Rmt	10%	1,518	3.50	4.50	1,214	1,214	111	1,34,779
6	Dismantling of CC Panels @ 5% area	Cum	5%		23,905	0.30	359	359	1,354	4,85,513
7	Replacement of Panels - PQC @ 5% area	Cum	5%		23,905	0.30	359	359	8,485	30,42,527
	Service Road									
8	Tack coat	Sqm	1	25,902	7.00		1,81,317	1,81,317	18	32,63,709
9	BC with 30 mm	Cum	1	25,902	7.00	0.03	5,440	5,440	9,902	5,38,62,073
10	Micro Surfacing	Sqm	1	25,902	7.00		1,81,317	1,81,317	160	2,89,20,085
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
11	Tack coat	Sqm	1	1,560	19.1		29,807	29,807	18	5,36,521
12	Wearing Coat BC with 30 mm	Cum	1	1,560	19.1	0.03	894	894	9,902	88,54,378
13	Milling of Ex. Wearing Coat	Sqm	1	1,560	19.1		29,807	29,807	89	26,55,777
	Other Works									
14	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,539			13,078	13,078	185	24,16,814
15	Painting of Kerb	Sqm	2	1,04,915		0.315	66,096	66,096	92	60,80,873
16	Road Marking on BC	Sqm					45,918	45,918	465	2,13,65,787
17	Road Marking	Sqm					6,035	6,035	682	41,17,714
	MCW									
	a) Median & Edge line	Sqm	4	56,170	0.15		33,702			

Major Maintenance Cost (FY 2029)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	b) Lane line	Sqm	2	18,536	0.10		3,707			
	Service Road									
	a) Edge line	Sqm	2	51,805	0.10		10,361			
	b) Lane line	Sqm	1	17,096	0.10		1,710			
	Junction crossing	Sqm					2,474			
18	Filling of Earthen shoulder	Cum	1	51,296	1.50	0.06	4,617	4,617	516	23,82,168
19	Miscellaneous	5%								2,51,95,946
Total Major Maintenance Cost (Rs)										**52,91,14,862**
Total Major Maintenance Cost with 18% GST (Rs)										**62,43,55,537**
Total Major Maintenance Cost with GST (Cr)										**62.44**
Per km Cost (lakh)										**116.71**
Escalation Factor for Major Maintenance Cost (FY - 2029)										**1.15**
Total Escalated Cost for Major Maintenance Cost (FY - 2029) (Cr)										**68.92**

Major Maintenance Cost (FY - 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
Main Carriageway - Flexible Pavement										
1	Tack coat	Sqm						9,48,001	18	1,70,64,024
	For BC	Sqm	2	51,550	8.75		9,02,129	9,02,129		
	For DBM	Sqm	2	-	7.00		-	-		
	For Misc. Location	Sqm	2	2,621	8.75		45,872	45,872		
2	BC with 30 mm	Cum	2	54,172	8.75	0.03	28,440	28,440	9,902	28,16,13,277
	Main Carriageway - Rigid Pavement									
3	Joint Sealant Replacement @ 10% length	Rmt	10%	1,518	3.50	4.50	1,214	1,214	111	1,34,779
4	Dismantling of CC Panels @ 5% area	Cum	5%		23,905	0.30	359	359	1,354	4,85,513
5	Replacement of Panels - PQC @ 5% area	Cum	5%		23,905	0.30	359	359	8,485	30,42,527
	Service Road									
6	Tack coat	Sqm	1	25,902	7.00		1,81,317	1,81,317	18	32,63,709
7	BC with 30 mm	Cum	1	25,902	7.00	0.03	5,440	5,440	9,902	5,38,62,073
8	Micro Surfacing	Sqm	1	25,902	7.00		1,81,317	1,81,317	160	2,89,20,085

Major Maintenance Cost (FY - 2036)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
9	Tack coat	Sqm	1	1,560	19.1		29,807	29,807	18	5,36,521
10	Wearing Coat BC with 30 mm	Cum	1	1,560	19.1	0.03	894	894	9,902	88,54,378
11	Milling of Ex. Wearing Coat	Sqm	1	1,560	19.1		29,807	29,807	89	26,55,777
	Other Works									
12	Raising of Road Kerb	Rmt	2	1,00,888			2,01,777	2,01,777	256	5,17,26,603
13	Replacement of Road Stud									
	Normal Road Stud	Nos	2	6,539			13,078	13,078	185	24,16,814
14	Painting of Kerb	Sqm	2	1,02,448		0.315	64,542	64,542	92	59,37,892
15	Road Marking on BC	Sqm					45,918	45,918	465	2,13,65,787
16	Road Marking on Micro Surfacing	Sqm					6,035	6,035	682	41,17,714
	MCW									
	a) Median & Edge line	Sqm	4	56,170	0.15		33,702			
	b) Lane line	Sqm	2	18,536	0.10		3,707			
	Service Road									
	a) Edge line	Sqm	2	51,805	0.10		10,361			
	b) Lane line	Sqm	1	17,096	0.10		1,710			
	Junction crossing	Sqm					2,474			
17	Filling of Earthen shoulder	Cum	1	51,296	1.50	0.06	4,617	4,617	516	23,82,168
18	Miscellaneous	5%								2,44,18,982
Total Major Maintenance Cost (Rs)										**51,27,98,624**
Total Major Maintenance Cost with 18% GST (Rs)										**60,51,02,376**
Total Major Maintenance Cost with GST (Cr)										**60.51**
Per km Cost (lakh)										**113.11**
Escalation Factor for Major Maintenance Cost (FY - 2036)										**1.52**
Total Escalated Cost for Major Maintenance Cost (FY - 2036) (Cr)										**83.39**

Technical Due Diligence Report

4-laning of Jammu - Udhampur section of NH-1A on BOT (Annuity)

in the state of Jammu & Kashmir

PREPARED FOR

CUBE HIGHWAYS TRUST

PREPARED BY

Knight Frank

Rev. No.	Effective Date	Revision Description	Checked and Approval Record		
			Activity	**Name**	**Signature**
R1	**12.10.2025**	Draft DD Report of Jammu-Udhampur Section	Prepared By	Aashif Ahmed	
R2	**15.10.2025**		Reviewed by	Maj Gen K T Gajria	
R3	**25.10.2025**	Final DD Report of Jammu-Udhampur Section	Approved By	Rajeev Vijay	

Disclaimer

This report has been prepared, based on the inputs provided by the Client. Every effort is made to submit realistic details as available, statistics and information obtained/furnished at site by Client during our interaction at various levels.

In preparing this report, Knight Frank relied, in whole or in part, on data and information provided by the Client which information has not been independently verified by Knight Frank and which Knight Frank has assumed to be accurate, complete, reliable, and current. Therefore, while Knight Frank has utilized its best efforts in preparing this report, Knight Frank does not warrant or guarantee the conclusions set forth in this report which are dependent or based upon data, information, or statements supplied by third parties or the client.

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TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION AND SCOPE OF SERVICES 11

1.1 Background 11
1.2 Scope of Services 11
1.3 Approach 12
1.4 Methodology 12
1.5 Study 12
1.6 Structure of the Report 13

CHAPTER 2. PROJECT DESCRIPTION 15

2.1 Project Road 15
2.2 Climate 17
2.3 Terrain 18
2.4 Administrative details of the Project 18
2.5 Salient Features of the Project 20
2.6 Tunnel Details 21
2.7 Pavement Composition 22
2.8 Project Completion Certificate and PCOD & FCOD 23
2.9 Extension of Time 23
2.10 Penalty 23
2.11 Annuity Payment 24
2.12 Change of Scope 25
2.13 Approvals & Permits 25

CHAPTER 3. REVIEW OF PROJECT AGREEMENTS 27

3.1 Review of Concession Agreement 27
3.2 Review of Supplementary Agreement 32
3.3 Review of State Support Agreement 33
3.4 Review of Settlement Agreement 35
3.5 Review of Final Settlement Agreement 36

CHAPTER 4. CONDITION ASSESMENT OF PROJECT ROAD 40

4.1 General 40
4.2 Pavement Composition 41
4.3 Assessment of Highway 43
4.4 Assessment of Structures 46
4.5 Assessment of Tunnels 48

CHAPTER 5. REVIEW OF PAVEMENT CONDITION & DESIGN 51

5.1 Pavement Condition 51

5.2 Objectives 52
5.3 Review of Pavement Design 52
5.4 Pavement Evaluation by Falling Weight Deflectometer (FWD) Technique 55
5.5 Major Maintenance of Pavement 79

CHAPTER 6. COST ESTIMATE 81

6.1 Assumptions 81
6.2 Routine Operation & Maintenance (O& M) Cost 84
6.3 Highway Lighting 87
6.4 Corridor Management 88
6.5 Manpower Cost 88
6.6 Office Expenses 88
6.7 Major Maintenance 90
6.8 Major Maintenance items 90
6.9 Major Maintenance Cycles & Cost 91
6.10 Summary of Cost 93

CHAPTER 7. PROJECT PHOTOGRAPHS 96

LIST OF EXHIBITS

EXHIBIT 1 SCOPE OF TDD SERVICES 11
EXHIBIT 2 STRUCTURE OF THE REPORT 13
EXHIBIT 3 PROJECT LOCATION MAP 16
EXHIBIT 4 KEY LOCATION MAP 16
EXHIBIT 5: PROJECT CHAINAGE DETAILS 17
EXHIBIT 6: ADMINISTRATIVE DETAILS OF PROJECT 18
EXHIBIT 7:SALIENT FEATURES OF PROJECT 20
EXHIBIT 8:SALIENT FEATURES OF PROJECT 21
EXHIBIT 9: DESIGN TRAFFIC IN MSA FOR NEW CONSTRUCTION & OVERLAY SECTION 22
EXHIBIT 10: PAVEMENT COMPOSITION-MAIN CARRIAGEWAY 22
EXHIBIT 11: PAVEMENT COMPOSITION -SERVICE ROAD 23
EXHIBIT 12: DETAILS OF ANNUITY PAYMENTS 24
EXHIBIT 13: CHANGE OF SCOPE DETAILS 25
EXHIBIT 14: KEY TERMS OF CONCESSION AGREEMENT 27
EXHIBIT 15: KEY OBLIGATIONS OF PARTIES 28
EXHIBIT 16: KEY FINANCIAL COVENANTS DETAIL 29
EXHIBIT 17: KEY TERMS OF DAMAGES/ PENALTY 30
EXHIBIT 18: SUMMARY OF SUPPLEMENTARY AGREEMENTS 32
EXHIBIT 19: KEY TERMS OF THE STATE SUPPORT AGREEMENT 33
EXHIBIT 20: KEY ASPECTS OF SETTLEMENT AGREEMENT 35
EXHIBIT 21: OVERLAPPING STRETCH BETWEEN DAK EXPRESSWAY AND JAMMU–UDHAMPUR NH-44 36
EXHIBIT 21: KEY ASPECTS OF FINAL SETTLEMENT AGREEMENT 36
EXHIBIT 27: DESIGN TRAFFIC IN MSA FOR NEW CONSTRUCTION & OVERLAY SECTION 41
EXHIBIT 28: PAVEMENT COMPOSITION-MAIN CARRIAGEWAY 42
EXHIBIT 29: PAVEMENT COMPOSITION -SERVICE ROAD 42
EXHIBIT 30: DETAILS OF TUNNEL 48
EXHIBIT 32 PAVEMENT DESIGN COMPOSITION OF MAIN CARRIAGEWAY 53
EXHIBIT 33: PAVEMENT COMPOSITION -SERVICE ROAD 53
EXHIBIT 34: PAVEMENT COMPOSITION -OVERLAY WORKS 54
EXHIBIT 35 REMAINING LIFE OF THE EXISTING PAVEMENT, ... 58
EXHIBIT 36 LIST OF BRIDGE INSPECTED 62
EXHIBIT 38 BITUMEN RATES (IN INR/MT) - EX-MI SUPPLY EXCLUDING DISCOUNT AND GST 82
EXHIBIT 39: ADOPTED UNIT RATES FOR KEY ITEMS 83

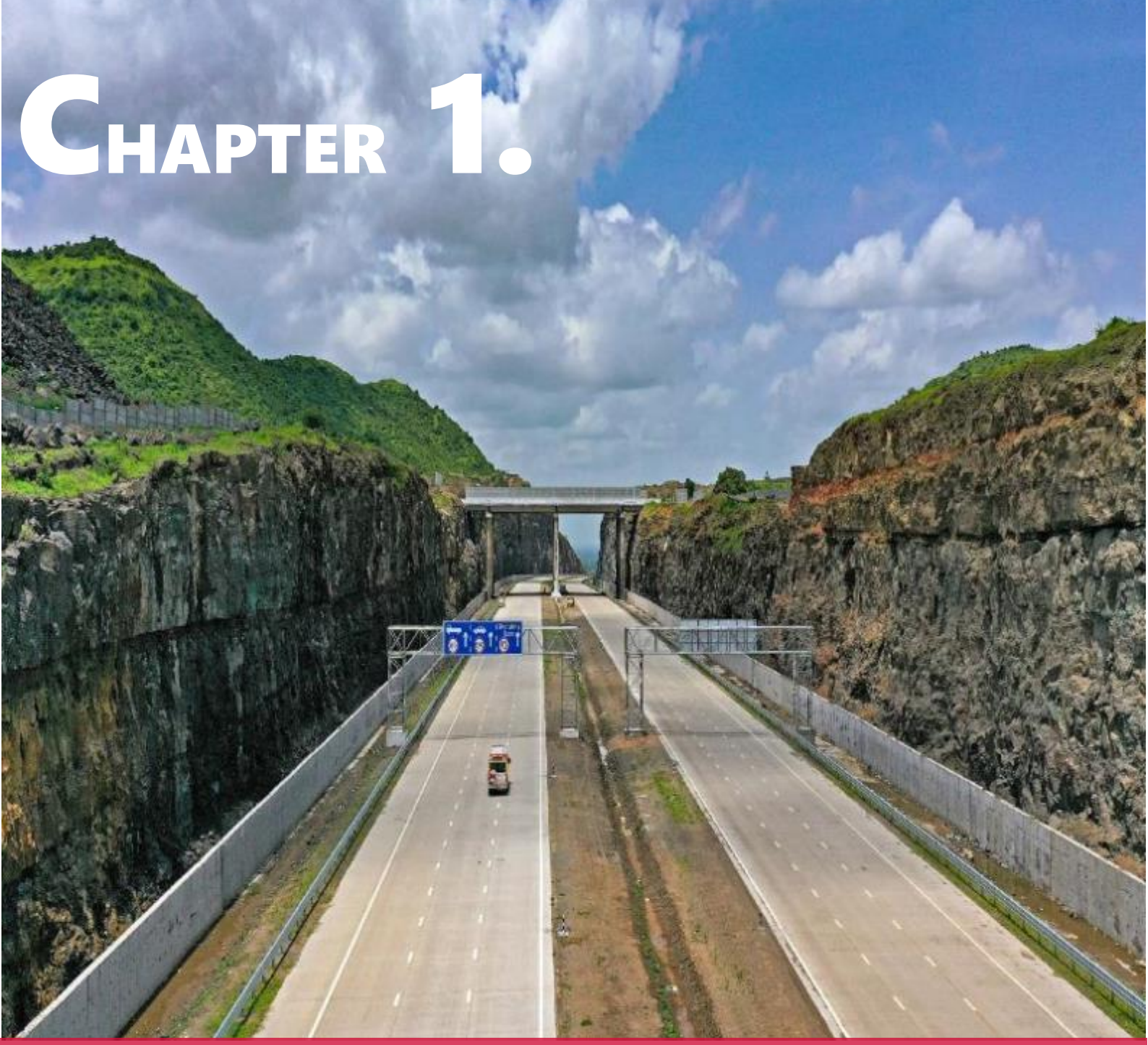
EXHIBIT 40: MAJOR COMPONENTS DETAIL FOR KEY ITEMS 83
EXHIBIT 41: WORK OUTSOURCING FOR OPERATIONS AND MAINTENANCE WORK 86
EXHIBIT 42: ROUTINE MAINTENANCE COST 86
EXHIBIT 43: PREVENTIVE MAINTENANCE COST 87
EXHIBIT 45: MAJOR MAINTENANCE CYCLES & COST 91
EXHIBIT 46: SUMMARY O & M COST FOR REMAINING CONCESSION PERIOD 94

ACRONYMS AND ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SPV	**M/s Athaang Jammu Udhampur Highway Limited**	**NHAI**	**National Highway Authority of India**
AMC	Annual Maintenance Contract	MM	Major Maintenance
ATMS	Advanced Traffic Management System	MS	Milestone
BC	Bituminous Concrete	NCR	Non-Compliance Report
BOQ	Bill of Quantities	NOC	No Objection Certificate
BHS	Both hand Side	NMS	Network Management System
BI	Bump Indicator	NSV	Network Survey Vehicle
CA	Concession Agreement	OFC	Optical Fibre Cable
CAPEX	Capital Expenditure	OPEX	Operation Expenditure
COD	Commercial Operations Date	O&M	Operation and Maintenance
COS	Change of Scope	PCC	Plain Cement concrete
CUP	Cattle Under Pass	PCI	Pavement condition Index
DBM	Dense Bituminous Macadam	PCR	Pavement condition rating
DG	Diesel Generator	PCU	Passenger Car Unit
DLC	Dry Lean Concrete	PCOD	Provisional Completion Certificate
DLP	Defect liability period	PQC	Pavement Quality Concrete

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
DPR	Detailed Project Report	PUP	Pedestrian Under Pass
ECB	Emergency Call Box	POP	Pedestrian Over pass
ESAL	Equivalent Standard Axle Load	PMB	Polymer Modified Bitumen
EPC	Engineering Procurement & Construction	QA/QC	Quality Assurance/Quality Control
ETC	Electronic Toll Collection	RCC	Reinforced Cement Concrete
FOB	Foot Over Bridge	RAP	Reclaimed Asphalt Concrete
FO	Flyover	RFQ	Request for Qualification
FRL	Formation Road Level	RHS	Right Hand Side
FWD	Falling Weight Deflectometer	RM	Routine Maintenance
GAD	General Arrangement Drawing	RMS	Radio Mobile System
GFC	Good for Construction	ROB	Road Over Bridge
GSB	Granular Subbase	ROW	Right of Way
GST	Goods & Service Tax	SR	Service Road
IPC	Interim Payment Certification	SPV	Special Purpose Vehicle
IRC	Indian Roads Congress	SOR	Schedule of Rates
INR	Indian Rupees	SAN	Storage Area Network
ITM	Integrated Traffic Management	TMS	Toll Management System
KVA	Kilo-Volt-Ampere	TOR	Terms of reference

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
LA	Land acquisition	BOT	Build Operate & Transfer
LHS	Left hand side	TLB	Truck lay bay
LCV	Light Commercial Vehicle	VUP	Vehicular Under Pass
LVUP	Low height Vehicular under pass	VDF	Vehicle Damage Factor
LED	Light Emitting Diode	VIDS	Video Incident Detection System
LIU	Light Interface Units	VMS	Variable Message Sign
MIS	Management Information System	WIP	Work in Progress
MSA	Million Standard Axles	WIM	Weigh in motion
MAV	Multi Axle Vehicle	WMM	Wet mix macadam



Chapter 1.

Introduction and Scope of Services

Chapter 1. INTRODUCTION AND SCOPE OF SERVICES

1.1 BACKGROUND

Cube Highways Fund Advisors Pvt Ltd (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt Ltd has appointed **M/s Knight Frank India (KFI)** (hereinafter referred as "Technical Consultant" or "KFI") to carry out Technical Due Diligence of Rehabilitation, Strengthening and Four Laning of Jammu - Udhampur Section from Km 15.00 (Jammu Bypass) To Km 67.00 of NH-1A on BOT (Annuity) Basis on DBFOT Pattern in the state of Jammu & Kashmir (hereinafter referred as "Project Road").

1.2 SCOPE OF SERVICES

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below –

Exhibit 1 Scope of TDD Services

S. No	Terms of Reference
1	A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
2	Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, as built drawings, O&M manual, COD/PCOD certificate, Punch list, previous major maintenance etc.
3	Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle Load, material investigations etc.
4	Formulation of future major maintenance Strategy.
5	Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
6	Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period

S. No	Terms of Reference
7	Estimation of Annual Operation expenses along with Systems cost (TMS/HTMS) till the end of concession period.
8	Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Approach

Approach followed for this Due Diligence study is to understand the requirement of the client and terms of reference set forth. Our aim is that the study report should assist the clients in achieving their objectives.

1.4 Methodology

Methodology adopted is broadly outlined as under:

- Objectives of the client were identified from discussions and terms of reference spelt out for the study.
- Available data was collated and analysed by desk study.
- Requirements were identified to augment information/ data as available.
- Detailed List of data required was sent to Concessioner team from time to time
- Personal discussions were carried out with Clients by senior executives from KF to explain data requirements.
- Extensive interaction was made by KF with Clients and data was collected.
- Information to be gathered from Client head office & team were listed
- Relevant documents regarding project highway, including CA Agreement and other documents were collected and the provisions studied in detail.
- All data as collected was duly collated and arranged in the order as required for preparation of the report.

1.5 Study

- Data collected from all sources was duly collated and disseminated to concerned experts in KF.
- Project documents such as CA Agreement, O&M Costing details, O&M Manual etc were studied in detail.
- The data made available was analysed, and comments formulated for inclusion in the report.

1.6 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

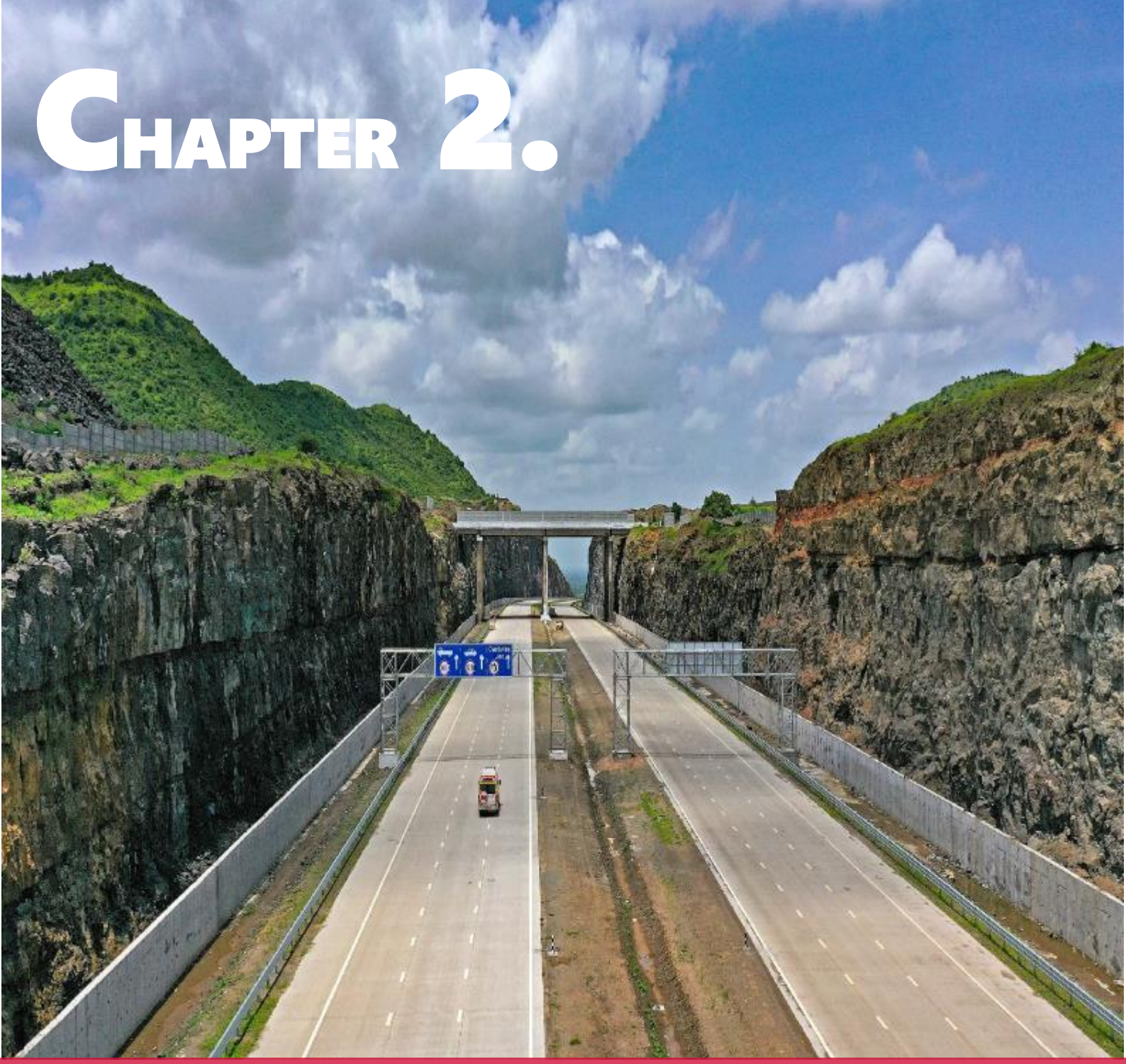
The site visit and inspection were carried out between the periods from 08th October 2025 to 10th October 2025.

The report is organized with the following chapters for easy understanding of various issues –

Exhibit 2 Structure of the Report

S.nos	Chapter	Description
1	**Chapter 1**	**Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**
2	**Chapter 2**	**Project Description:** The chapter describes existing project features, overview of project development.
3	**Chapter 3**	**Review of Agreements:** The chapter describes review of CA, Supplementary, State Support Agreement, Settlement Agreement & Various O & M Agreements.
4	**Chapter 4**	**Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**
5	**Chapter 5**	**Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance
6	**Chapter 6**	**Cost Estimates**: This chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period

Chapter 2.



Project Description

Chapter 2. PROJECT DESCRIPTION

2.1 Project Road

National Highway-1A (NH-1A) is presently known as National Highway-44 (NH-44). This highway is a four lane road in Jammu and Kashmir that connects city of Udhampur with Jammu City passing through mountain terrain. This road connects important Army and Air bases in the state of J & K and passes along the international border. The highway also serves as the main pilgrimage and tourist route for pilgrims going to Amarnath Shrine and to Katra for Vaishno Devi Shrine and tourists going to Kashmir valley and even further up to Leh Ladakh.

The project corridor passes through following urban stretches namely Sidhra, Nagrota, Suketar, Jhajjarkotli, Tikri, Mand and Udhampur. The terrain of this project corridor is mostly mountainous except at Jammu bypass, which has rolling terrain. The state of Jammu & Kashmir is accessed by only one major highway, this National Highway-1A linking Uri in the north of J&K with the rest of the country via the cities of Jammu and Srinagar.

The highway runs through Nandini Wildlife Sanctuary. The highway enables seamless movement of traffic and goods, with enhanced inter-region connectivity and a significant reduction of travel time between the hilly cities.

To execute the project, NHAI issued a Request for Qualification (RFQ) on February 27, 2009, inviting bids for the project. Shapoorji Pallonji & Co. Ltd. was selected as the successful bidder and received the Letter of Award (LOA) on April 30, 2010. A Special Purpose Vehicle (SPV), M/s SP Jammu Udhampur Highway Limited, was incorporated for project implementation. The Concession Agreement was signed on July 19, 2010.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and flied investigations. Same is presented in this report.

The project achieved Provisional Completion (PCOD) on June 1, 2014, and the Final Completion Certificate was issued on May 31, 2018. The project is currently in the Operation & Maintenance (O&M) phase with toll collection ongoing.

Subsequently, ***NIIF acquired SP Jammu Udhampur Highway Limited on July 30, 2022***. The project has since been managed by Athaang Infrastructure, NIIF's proprietary roads platform, and the company was renamed ***M/s Athaang Jammu Udhampur Highway Limited***. The **current proposed acquisition** of the project is by ***M/s Cube Highways Trust.***

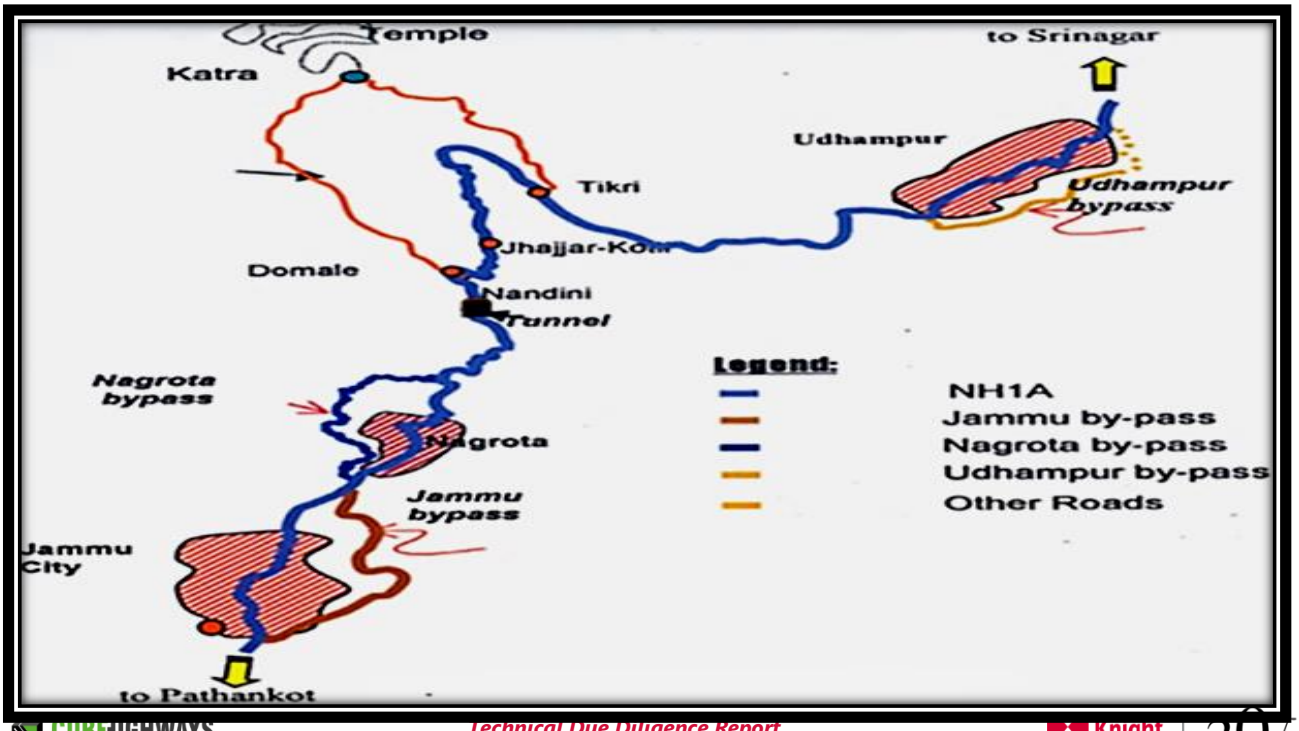
The total project length is **64.58 km**, commencing from **Km 15.00 near Jammu** to **Km 67.00 near Udhampur**, comprising **one toll plazas** located at **Ban (Km 22.00)**. The project plays a crucial role in enhancing connectivity between **Jammu and Srinagar**, ensuring improved traffic flow, safety, and overall highway efficiency.

The Project Location Map in wider context and Specific Project Road Context is shown below at **Exhibit 3.** The Project Location Map is shown below in

Exhibit 4

Exhibit 3 Project Location Map

Exhibit 4 Key Location Map



As per the CA, the corridor has different design chainage systems, which are presented in the table below.

Exhibit 5: Project Chainage Details

Referencing System	Section	Chainage		Length	Total Length (km)
		From	To	(km)	
CA Design Chainage	Jammu Bypass (JBP)	15.2	20.3	5.1	5.1
CA Design Chainage	Main Road (MR)	9.35	9.9	0.55	
	Nagrota Bypass (NBP)	9.9	21.78	11.88	43.027
	Main Road (MR)	21.78	50.33	28.55	
	Realignment Udhampur Bypass	50.33	52.377	2.047	
	Udhampur Bypass (UBP)	0	16.452	16.452	16.452
Total length				64.579	
Descope length				16.995	
Actual length (kms)				47.584	

2.2 Climate

The project corridor experiences a **sub-tropical to temperate climate**, influenced by its varying elevation along the Himalayan foothills. The region is characterized by **hot summers, moderate monsoons, and cold winters**.

During the **summer months (April to June)**, the temperature ranges between **25°C to 40°C**, while in **winter (November to February)**, it may drop to **4°C to 10°C**, with occasional frost in elevated zones. The **monsoon season (July to September)** brings considerable rainfall, contributing to high surface runoff, landslides, and localized flooding in low-lying stretches.

Relative humidity generally varies from **40% to 90%**, depending on season and altitude. The **annual average rainfall** in the region is approximately **1,100–1,400 mm**, predominantly concentrated during the monsoon months.

Due to these climatic conditions, special attention is required in the **design and maintenance of pavement, drainage structures, slope protection works, and erosion control measures**, to ensure long-term performance and serviceability of the project road.

2.3 Terrain

The terrain along the project alignment is **predominantly hilly and undulating**, traversing through the lower Himalayan ranges. The topography exhibits **sharp gradients, steep slopes, and deep valleys**, especially in the middle and northern sections of the corridor.
The **southern stretch** of the alignment, near Jammu, consists of **rolling terrain with moderate gradients**, while the **northern portion towards Udhampur** features **rugged terrain with significant elevation differences**, requiring multiple **cutting and filling operations, retaining structures, and slope stabilization measures**.
Geotechnically, the area comprises **sedimentary and metamorphic rock formations**, with occasional exposure of shale and sandstone. The soil is generally **silty clay to sandy loam**, prone to erosion during heavy rainfall.
The complex topography and geotechnical conditions necessitate careful consideration of **geometric design standards, drainage planning, and slope protection works**, along with **regular geotechnical monitoring** to mitigate risks of slope instability and landslides.

2.4 Administrative details of the Project

The Concession stands granted to operate the road from the Appointed date for the concession period with the obligation on concessionaire to maintain the road in the same period. Administrative details of projects are as at Exhibit 2 below.

Exhibit 6: Administrative Details of Project

S. No	Particulars	Details
1	Project Corridor	Rehabilitation, Strengthening and Four Laning of Jammu - Udhampur Section from Km 15.00 (Jammu Bypass) To Km 67.00 of NH-1A on BOT (Annuity) Basis on DBFOT Pattern in the state of Jammu & Kashmir
2	Employer	National Highways Authority of India
3	Concessionaire	**M/s Athaang Jammu Udhampur Highway Limited**
4	Independent Engineer (During O & M)	M/s TPF Getinsa Euroestudios SL in association with Segmental Consulting Infrastructure Advisory Pvt Ltd.
5	EPC Contractor	Afcons Infrastructure Limited

S. No	Particulars	Details
6	Project Road Length	Total Length 64.579 kms Descope: 16.995 kms Actual length: 47.584 Kms
7	Project Cost	₹1814 Cr.
8	Annuity Bi-annually	34 installments of ₹201.90 Crores each, every 6 months
9	Date of LOA	30-Apr-10
10	Date of Concession Agreement	19-Jul-10
11	Appointed Date	16-Jun-11
12	Concession Period	20 years (including construction period of 1095 days from appointed date)
13	Construction Period	1095
14	Schedule Date of COD	16-Jun-14
15	Schedule End to Concession Period	22-Jul-31
16	PCOD	01-Jun-14
17	Final COD	31-May-18
18	No. of Toll Plazas (Number and Location)	Ban Toll Plaza: Ch. 22+700

2.5 Salient Features of the Project

Salient features of the project are covered at **Exhibit 7** below.

Exhibit 7:Salient Features of Project

S. No	Particulars	Description and details
1	Main Carriageway	Total Length: 64.579 Kms Descope Length: 16.995 Kms **Actual Length: 47.584 Kms**
2	Existing Slip / Service Road	20.18 Km
3	Major Bridges	36 Nos
4	Minor Bridges	31 Nos
5	Causeway	01 no
6	Box Culverts	177 Nos
7	Pipe Culvert	45 Nos
8	Underpass	12 Nos
9	FOB	02 Nos
10	VOP	02 Nos
11	No of Toll Plaza & Location of Toll Plaza (chainage) & Toll Lanes	1 No (Ban Ch. 22+700) Toll Plaza with 8 lanes
12	Tunnels	4 nos Twin Tunnels
13	Traffic Control and Management	• Ambulance – 3 nos. • Tow away cranes - 3 nos. • Corridor Management Vehicle – 3 nos
14	Length of RCC Crash Barrier	31.588 km
15	Length of W-Beam Crash Barrier	21.007 km
16	Brifen Wire Rope	12.292 km
17	Length of Median Drain	30.536 km
18	RCC Cover Drain	9.407 Km
19	Toe Drain	56.577 km
20	Median Width	1.5m/4.00m
21	Toll Plaza Sign Boards	8 Nos
22	Sign Boards	3412 Nos
23	Overhead Gantry	2 Nos
24	Solar Blinkers	62 Nos
25	Highway Lighting	26 Nos (single arm poles), 71 Nos (double arm poles)
26	Highway Mast Lighting	32 Nos
27	Toilets and Drinking water facility	12 Nos

S. No	Particulars	Description and details
28	DG Set	15 Nos (11 nos at Tunnels, 1 no at Toll Plaza & 3 nos at office & medical aid post)
29	Major Intersection	13 Nos
30	Minor Intersection	15 Nos
31	Median Opening	44 Nos
32	Bus Bay with Shelter	28 nos
33	Truck Lay Bye	13 nos
34	Rest Area	Nil
35	Breast Wall	23.607 Km
36	Gabion Wall	1.576 km
37	RCC Retaining wall	10.231 KM
38	Stepped Wall	1.060 Km
39	Concrete Railing	19.379 Km
40	Transformers	22 Nos
41	5th Kilometre/ Kilometre/ HM Kilometre stones	320 Nos
42	Delineators	336 nos

2.6 Tunnel Details

The highway features four twin-tube tunnels with a combined length of 2.77 km. An overview of the tunnel details for the project is provided below.

Exhibit 8:Salient Features of Project

Tunnel No.	Section	LHS/RHS	Design Chainage		length(m)
T-1	Main Road	LHS	23.72	23.89	170
		RHS	23.715	23.88	165
T-2	Main Road	LHS	24.48	24.711	231
		RHS	24.533	24.8	267
T-3	Main Road	LHS	24.94	25.37	430
		RHS	24.916	25.39	474
T-4	Main Road	LHS	25.49	26.02	530
		RHS	25.49	26.00	510

2.7 Pavement Composition

The pavement has been designed in accordance with IRC:37-2001. The concessionaire has based the design on CBR values of 8% and 10%. Although the design traffic on the RHS is relatively lower than on the LHS, the concessionaire has opted to provide the same pavement thickness for both directions.

As mentioned in Pavement Design Report, design consultants summarized the calculated design traffic for the next 20 years for BT and Base and subbase layer respectively.

Exhibit 9: Design traffic in MSA for New Construction & Overlay Section

As per Concessionaire			
S. No	**Section Type**	**Design Traffic MSA for 20 years (Jammu to Udhampur)**	**Design Traffic MSA for 20years (Udhampur to Jammu)**
1	New Construction	41	16
2	Overlay	47	19

Pavement Configuration for Project is given in **Exhibit 24**

Exhibit 10: Pavement Composition-Main Carriageway

S. No	Design MSA	As built drawings
Flexible Pavement		
1	**Adopted MSA – 10**	
2	BC in mm	40
3	DBM in mm	110
4	WMM in mm	250
5	GSB in mm	200
Rigid Pavement		
	PQC	**DLC**
1	300	150
Overlay Works		
The Overlay thickness proposed for design traffic of 50 MSA for the project corridor. Based on the BBD Test Result Concessionaire Proposed Overlay of 50 mm thickness with DMB of 50 mm thickness.		

As per the Preliminary Design Report (PDR), the concessionaire has stated that the existing bituminous layer in the JBP, NBP, and MR sections ranges between 140 to 150 mm, with a granular layer thickness of 325 to 330 mm. In contrast, the Udhampur Bypass section has a thinner bituminous layer of only 80 mm but a thicker base/sub-base layer of approximately 430 mm.

As per Approved Pavement Design Report the service road has been designed for 10 MSA & CBR-10%. The Pavement layer adopted for service road as given below:

Exhibit 11: Pavement Composition -Service Road

S. No	Design MSA	
	Adopted MSA – 10 years	**25**
1	BC in mm	40
2	DBM in mm	50
3	WMM in mm	250
4	GSB in mm	200

2.8 Project Completion Certificate and PCOD & FCOD

A. Partial Commercial Operation Date (PCOD):

- The scheduled completion date was 1 June 2014. (Letter attached as annexure)

B. Final Commercial Operation Date (COD):

- The final COD achieved date was 31st May 2018. (Letter attached as annexure)

2.9 Extension of Time

There is no extension of the concession period on the project.

2.10 Penalty

There is no penalty on project as of now.

2.11 Annuity Payment

As per the Concession Agreement, an annuity amount of ₹201.90 crore is payable every six months. To date, a total of 22 annuity payments has been made by the Authority. The detailed breakdown of these annuity payments is provided below

Exhibit 12: Details of Annuity Payments

Annuity No.	Amount Payable (₹-Crore)	Deductions (₹-Crore)	Amount Received (₹-Crore)	Remarks
1st Annuity	197.93	-	197.93	
2nd Annuity	201.90	-	201.90	
3rd Annuity	201.90	0.17	201.73	
4th Annuity	201.90	0.08	201.82	
5th Annuity	201.90	0.13	201.77	
6th Annuity	201.90	0.10	201.80	
7th Annuity	201.90	0.20	201.70	
8th Annuity	201.90	-	201.90	
9th Annuity	201.90	-	201.90	
10th Annuity	201.90	0.09	201.81	
11th Annuity	201.90	-	201.90	
12th Annuity	201.90	0.10	201.80	
13th Annuity	201.90	-	201.90	
14th Annuity	201.90	-	201.90	
15th Annuity	201.90	-	201.90	
16th Annuity	201.90	-	201.90	
17th Annuity	201.90	0.01	201.89	
18th Annuity	201.90	0.26	201.64	
19th Annuity	201.90	0.20	201.70	
20th Annuity	201.90	-	201.90	
21st Annuity	201.90	0.02	201.88	
22nd Annuity	201.90	-	201.90	01-06-25
23rd Annuity			-	01-12-25
Total Amount (₹-Crore)	**4,438**	**1.35**	**4,436**	
Deduction %		**0.030%**		

Based on the above, Knight Frank is of the opinion that the cumulative deductions amounting to only ₹1.35 crore across all 22 annuity payments reflect the consistently high standard of maintenance maintained by the concessionaire over the 11-year duration of the project.

2.12 Change of Scope

Following items considered under Change of scope.

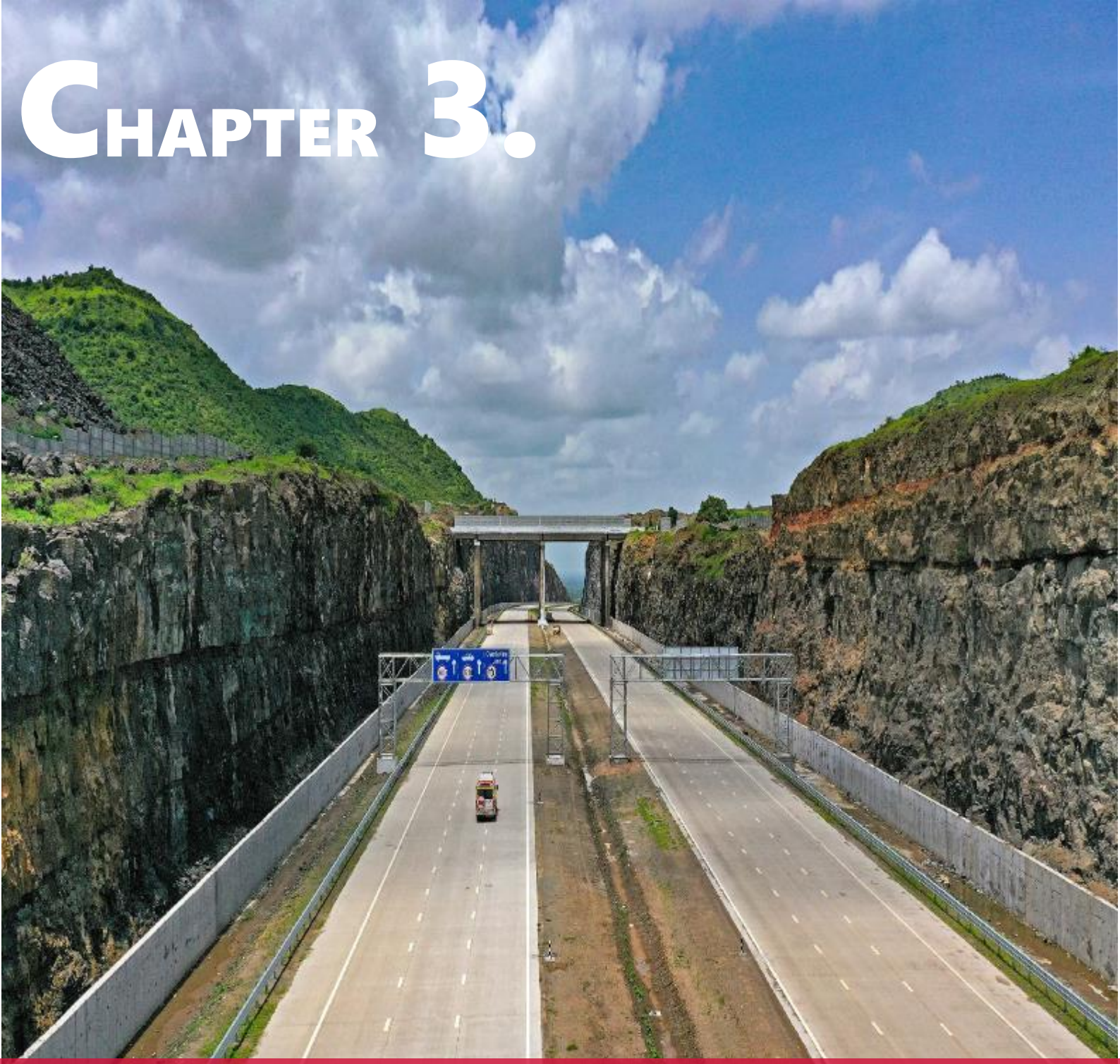
Exhibit 13: Change of Scope Details

S. No.	Structure Type	Location (Chainage)	Change Details
1	Major Bridge (MJB)	Ch. 20+690 (MNB-V/2B)	Span changed from 55m (as per CA) to 150m (executed as MJB)
2	Major Bridge (MJB)	Ch. 11+886 (BHS, UBP Section)	Flyover constructed and considered under MJB
3	Major Bridge to Causeway	Ch. 9+928 (CD1 at NBP)	Executed as Causeway instead of MJB under Negative COS
4	Major Bridge (MJB) / Minor Bridge (MNB)	Ch. 36+923 (V-12)	RHS converted to MNB; LHS remains as MJB
5	Minor Bridge (MNB)	Ch. 12+607 (B31A at RHS)	Additional MNB executed at site
6	Minor Bridge (MNB)	Ch. 13+545 (B32 at LHS)	Additional MNB executed at site
7	Vehicular Overpass (VOP)	Not specified	Executed under COS
8	Foot Over Bridge (FOB)	Not specified	Executed under COS

2.13 Approvals & Permits

Since Project is in O & M stage therefore all necessary approvals required are in place with concessionaire.

Chapter 3.



Review of Project Agreement

Chapter 3. Review of Project Agreements

3.1 Review of Concession Agreement

Concession Agreement was executed on **19th July 2010** between:

- **National Highways Authority of India (NHAI)**, (hereinafter referred to as the "Authority"); and **SP Jammu Udhampur Highway Private Limited**, (hereinafter referred to as the "Concessionaire").

The Agreement relates to the *Rehabilitation, Strengthening and Four Laning of Jammu–Udhampur Section from Km 15.000 (Jammu Bypass) to Km 67.000 of NH-1A in Jammu & Kashmir on DBFOT (Annuity) basis under NHDP Phase-II.*

Exhibit 14: Key Terms of Concession Agreement

Parameter	Details
Date of Agreement	19th July 2010
Appointed Date	Declared by NHAI after Conditions Precedent are fulfilled 16th June 2011
Employer (Authority)	**National Highways Authority of India (NHAI)**, Ministry of Road Transport & Highways, GoI
Concessionaire	**M/s Athang Jammu Udhampur Highway Private Limited**
Concession Period	20 years from Appointed Date
Length of Project	**Total Length: 64.579 km** (Km 15.000 to Km 67.000, NH-1A, J&K)
Total Project Cost	**₹1814 crore** (as per definition in Concession Agreement)
Project Milestones	Linked to Right of Way & completion schedule
Construction/Scheduled Completion	COD on achieving Completion Certificate
Premium / Concession Fee	₹1 per year (token concession fee)
Annuity Payment	₹201.90 crore per half year, payable by NHAI to Concessionaire post COD
Performance Security	₹90.70 crore Bank Guarantee, valid until 1 year from Appointed Date; replenishable if encashed
Extension of Time / COD	Permitted in case of NHAI default / Force Majeure
PCOD	Provisional Commercial Operation Date (partial completion)

Parameter	Details
FCOD	Final Commercial Operation Date (full completion & tests)
Respective Rights & Obligations	NHAI: ROW, support, annuity payment. Concessionaire: DBFOT design, construction, O&M, financing
Change in Ownership	No dilution below 51% during construction & 2 years post COD (without NHAI approval)
Dispute Resolution	Arbitration under ICADR Rules, New Delhi
Governing Law & Jurisdiction	Laws of India; Courts at Delhi

3.1.1 Obligations of the Authority & Concessionaire

Exhibit 15: Key Obligations of Parties

Authority	Concessionaire
Provide Right of Way (ROW) for the Project Highway, free from encumbrances	Design, engineer, finance, procure, construct, operate, and maintain the Project Highway on DBFOT (Annuity) basis
Assist in obtaining statutory approvals, permits, and clearances from Government authorities	Achieve Financial Close within 180 days (extendable with damages) and furnish Performance Security
Pay annuity of ₹201.90 crore (half yearly) post COD, as per Article 27	Maintain the Project Highway in accordance with Specifications, Standards, and O&M requirements (Schedule K)
Maintain existing highway during the development period until Appointed Date	Comply with safety requirements, traffic regulations, and emergency response obligations
Provide assistance for utilities shifting, police support, medical aid posts, and land acquisition (if required)	Ensure timely achievement of project milestones and Scheduled Completion Date (COD within 1,095 days of Appointed Date)
Not levy any additional local tax/toll on the Project Highway	Hand back the Project Highway to NHAI at the end of Concession Period or upon termination, free of encumbrances
Cooperate with Independent Engineer for monitoring construction and O&M	Bear project risks, costs, and liabilities, except as specifically allocated to NHAI under the Agreement

3.1.2 Financial Covenants

The Agreement (Articles 28, 29; Schedules L & R) sets out strict financial safeguards to protect cash flows and lender interests. All revenues and annuities flow through an escrow with defined payment priority, equity is locked in to ensure sponsor commitment, and lenders hold substitution rights in case of default. Provisions on insurance, change in law, and regular financial reporting further enforce financial discipline. **The detailed covenants are presented in the exhibit below.**

Exhibit 16: Key Financial covenants detail

Aspect	Details
Escrow Account	All project revenues, annuity payments, insurance proceeds, and other receivables to be deposited in an **Escrow Account** maintained with an Escrow Bank. Disbursements in priority order: (i) statutory dues, (ii) O&M expenses, (iii) senior debt servicing, (iv) reserve creation, (v) equity distribution.
Annuity Payments	NHAI to pay fixed annuity of **₹201.90 crore (semi-annually)** post COD. Payments routed through Escrow, first applied to debt servicing.
Debt Service Coverage	Senior lenders have priority rights over project cash flows. Any shortfall to be funded by Concessionaire through sponsor support until COD achieved.
Equity Lock-In	Minimum **51% equity shareholding** of lead sponsor (SP group) to be maintained during construction period and for **2 years after COD** without NHAI's prior approval.
Change in Law Compensation	Financial impact of change in law to be compensated on **Net Present Value (NPV)** principle, adjusted via annuity or concession period extension.
Insurance	Comprehensive insurance cover required during construction and O&M periods, with assignment of benefits to lenders and NHAI.
Substitution Rights	Lenders empowered to substitute Concessionaire in case of persistent default, through a **Substitution Agreement** (Schedule R).
Financial Reporting	Concessionaire to furnish audited accounts, progress reports, and financial statements to NHAI and Lenders periodically.

3.1.3 Delay Damages and Penalties under the Concession Agreement

Exhibit 17: Key Terms of Damages/ Penalty

Clause / Article	Situation	Damages / Penalty	Remarks
Clause 4.2 & 10.3	Delay by Authority in providing Right of Way beyond 90 days from Appointed Date	₹50 per day per 1,000 sq. m. of land delayed	Payable to Concessionaire until ROW is given
Clause 4.3 & 24.1	Delay by Concessionaire in achieving **Financial Close** within 180 days	0.1% of Performance Security per day (extendable up to 120 days); further extension possible at 0.2% per day; max 20% of Performance Security	Weekly advance payment required for extension
Article 15.2 (COD Delay)	COD not achieved within 91 days after Scheduled Completion Date (Appointed Date + 1095 days)	0.1% of Performance Security per day until COD	If not achieved within 270 days, Authority may terminate
Article 17.7.3 (Lane Closure)	Delay in reopening lanes after repair/maintenance	0.1% of Average Daily Annuity per 250 m stretch/day	Independent Engineer approval required for closures
Article 35 (Compensation for Breach)	Breach by Concessionaire or Authority (other than those with specified damages)	Compensation = direct costs incurred by non-defaulting party	Does not include consequential losses
Article 49 (Transitional Arrangements)	Delay in completing Affected Stretch (wildlife clearance pending) beyond 180 days after Scheduled COD	₹57,250 per day	Recoverable by deduction from annuity

3.1.4 Legal and Operational Framework:

- **Force Majeure Events:**
    - Covers natural events, political events, and indirect events.
    - Relief is available only if reported within 7 days.
    - Time extensions granted for achievement of milestones and COD.
    - Compensation limited to actual costs, no claim for indirect losses.
- **Compensation for Breach of Agreement**
    - Sets principles for damages due to breach.
    - Damages are pre-estimated, not penalties.
    - Both parties are obligated to mitigate costs/losses.
- **Termination:**
    - Covers natural events, political events, and indirect events.
    - Relief is available only if reported within 7 days.
    - Time extensions granted for achievement of milestones and COD.
    - Compensation limited to actual costs, no claim for indirect losses.
- **Divestment of Rights and Interest**
    - On termination, Concessionaire must hand over project assets free of encumbrance.
    - Obligations include O&M records, designs, clearances, contracts, and project facilities.
- **Defects Liability after Termination**
    - Concessionaire remains liable for construction defects discovered post-termination.
    - Liability period typically one year from termination/transfer date.

3.2 Review of Supplementary Agreement

The Concession Agreement of **19.07.2010** was modified through three Supplementary Agreements. The first, dated **14.03.2011**, revised termination and delayed payment provisions by linking payouts to debt due, adjusted equity, and 10-year Government Security (G-Sec) yield, thereby strengthening financial clarity. The second, dated **18.06.2015**, addressed delays in land availability by obligating completion of ~9.5 km balance works, waiving annuity interest claims, and proportionally extending the O&M period. The third, dated **15.05.2018**, implemented the **Hybrid ETC system**, mandating installation and O&M of RFID and tolling infrastructure under Change of Scope, with costs reimbursable and periodic escalation. Together, these agreements ensured financial certainty, addressed construction delays, and modernized project operations.

Exhibit 18: Summary of Supplementary Agreements

Date	Parties	Purpose / Context	Key Terms / Amendments
14.03.2011	NHAI & SP Jammu Udhampur Highway Pvt. Ltd.	Early Supplementary Concession Agreement	• Revised termination payment structure (Force Majeure, Defaults). • Linked delay interest to 10-year Government Security (G-Sec) yield. • Termination payments = full & final settlement.
18.06.2015	NHAI & SP Jammu Udhampur Highway Ltd.	Addressing ROW delays & pending works post COD	• Identified ~9.5 km "Remaining Sites". • Completion window: 18 months max. • No annuity reduction if admissible. - Extended maintenance obligations proportionately. • Concessionaire waived interest on delayed annuity.
15.05.2018	NHAI & SP Jammu Udhampur Highway Ltd.	Implementation of Hybrid ETC System	• Scope expanded for ETC installation & O&M. • Hybrid ETC to reduce congestion. • 5-year O&M cycle with NHAI cost. - Equipment handover at concession end. • Quarterly O&M charges with escalation.

3.3 Review of State Support Agreement

State Support Agreement was executed on **28th November 2011** between:

- **The Governor of Jammu & Kashmir**, (the *State Government*), and
- **The President of India**, represented by the Joint Secretary, Ministry of Road Transport & Highways (the *Authority*).

This agreement provides the framework for support from the State Government to ensure smooth implementation and operation of the *Jammu–Udhampur Highway Project* under the Concession Agreement.

Exhibit 19: Key Terms of the State Support Agreement

Parameter	Details
Date of Agreement	28th November 2011
Parties	The Governor of Jammu & Kashmir (State Government) & The President of India (Authority)
Purpose	To ensure State Government support for implementation and operation of the Jammu–Udhampur Highway BOT (Annuity) Project
Support by State Government	• Provide continued access to Site/ROW • Assist in obtaining permits & approvals • Facilitate shifting of utilities • Ensure no barriers/taxes imposed by local authorities • Provide police, traffic, and medical aid support • Prohibit competing roads or tollways except as per Agreement
Restriction on Competing Roads	State shall not construct any competing roads violating Concession Agreement; exceptions only if notified annually to Authority
Restriction on Additional Tollways	No additional Tollway construction except as per Concession Agreement
Restriction on Local Taxes	State Government shall not levy local taxes/tolls on project highways; existing revenue interests at Lakhanpur & Lower Munda protected
Substitution of Concessionaire	State acknowledges lenders and Authority's right to substitute Concessionaire under Concession Agreement
Obligations of Authority	Ensure Concessionaire complies with laws, permits, and Concession Agreement

Parameter	Details
State Default	Failure by State Government/Agency to cure breach within 60 days constitutes *State Default*; treated as breach under Concession Agreement
Compensation & Termination Payments	State Government liable for compensation/damages/termination payments arising from its breach or default, payable within 60 days (with interest for delay at Bank Rate +3%)
Duration	Effective from date of signing; continues till termination of all related Concession Agreements
Indemnity	Both Authority and State indemnify each other against losses due to their respective breaches
Dispute Resolution	First conciliation (under Arbitration & Conciliation Act, 1996), failing which arbitration under ICADR Rules, New Delhi
Governing Law & Jurisdiction	Laws of India; Courts at Delhi
Miscellaneous	• Waiver of sovereign immunity by State Govt • Agreement binding on successors/assigns • Notices to be in writing - Agreement in English

3.4 Review of Settlement Agreement

Settlement Agreement was executed on **15th March 2022** at NHAI HQ, New Delhi, between:

- **National Highways Authority of India (NHAI** (Authority); and **SP Jammu Udhampur Highway Limited**, (Concessionaire).

The Agreement was signed under **Section 73 of the Arbitration and Conciliation Act, 1996**, following conciliation proceedings by the Conciliation Committee of Independent Experts (CCIE-2). It records the settlement of disputes arising from the Concession Agreement dated 19.07.2010, including arbitration awards, counterclaims, and change in law claims.

Exhibit 20: Key Aspects of Settlement Agreement

Parameter	Details
Parties	National Highways Authority of India (NHAI) & SP Jammu Udhampur Highway Ltd.
Context	Settlement under Section 73 of Arbitration and Conciliation Act, 1996, resolving disputes from Concession Agreement (2010)
Reference 1 – Arbitration Award (25.02.2021)	Tribunal award ~₹333.55 Cr → Settled at **₹282.67 Cr**
Reference 2 – Pending Arbitration	Concessionaire claims ~₹275.48 Cr → Settled at **₹36.28 Cr**
Total Settlement Amount	**₹318.95 Cr (₹282.67 + ₹36.28)**
Financial Impact	Reduction of ~₹290 Cr (~48%) vs. total arbitral awards/claims
O&M Extension	Concessionaire to perform O&M for **36 days beyond concession end** (16.06.2031–22.07.2031)
NHAI Obligations	Pay settlement amounts; withdraw Section 34 & 36 petitions
Concessionaire Obligations	Withdraw claims; record settlement in arbitration award; indemnify NHAI from third-party claims
Finality	Full and final settlement; no residual claims or litigation permitted
Governing Law	Laws of India; Courts at Delhi

3.5 Review of Final Settlement Agreement

The **Final Settlement Agreement** was executed on **30th April 2025** at **NHAI HQ, New Delhi**, between:

- **National Highways Authority of India (NHAI)** – *Authority*
- **Athaang Jammu Udhampur Highway Pvt. Ltd.** – *Concessionaire*

This Settlement Agreement addresses the **financial settlement arising due to descoping of 16.995 km of maintenance obligations** from the Concessionaire's scope, following the **overlapping construction of Delhi–Amritsar–Katra (DAK) Expressway Packages 17 & 18** over the existing **Jammu–Udhampur NH-44 corridor**.

Exhibit 21: Overlapping Stretch Between DAK Expressway and Jammu–Udhampur NH-44

Section / Package	Chainage (Start – End)	Overlapping Length
DAK Expressway – Package 17	528.100 to 528.900 550.900 to 552.300	**0.8 km + 1.4 km**
DAK Expressway – Package 18	530.000 to 543.100 544.000 to 545.300	**13.395 km + 1.4 km**
Jammu–Udhampur Section (as per CA)	15.200 to 16.000 17.100 to 19.475 28.400 to 29.800 21.864 to 23.264	—
Total Overlapping / Affected Length	—	**2.2 km + 14.795 km = 16.995 km**

It implements a **financial reconciliation mechanism through annuity deductions**, based on the **Lenders' Financial Model shared by Standard Chartered Bank**, with **bi-annual recovery linked to Annexure-1 of Final Settlement Agreement (30 April 2025)**.

Exhibit 22: Key Aspects of Final Settlement Agreement

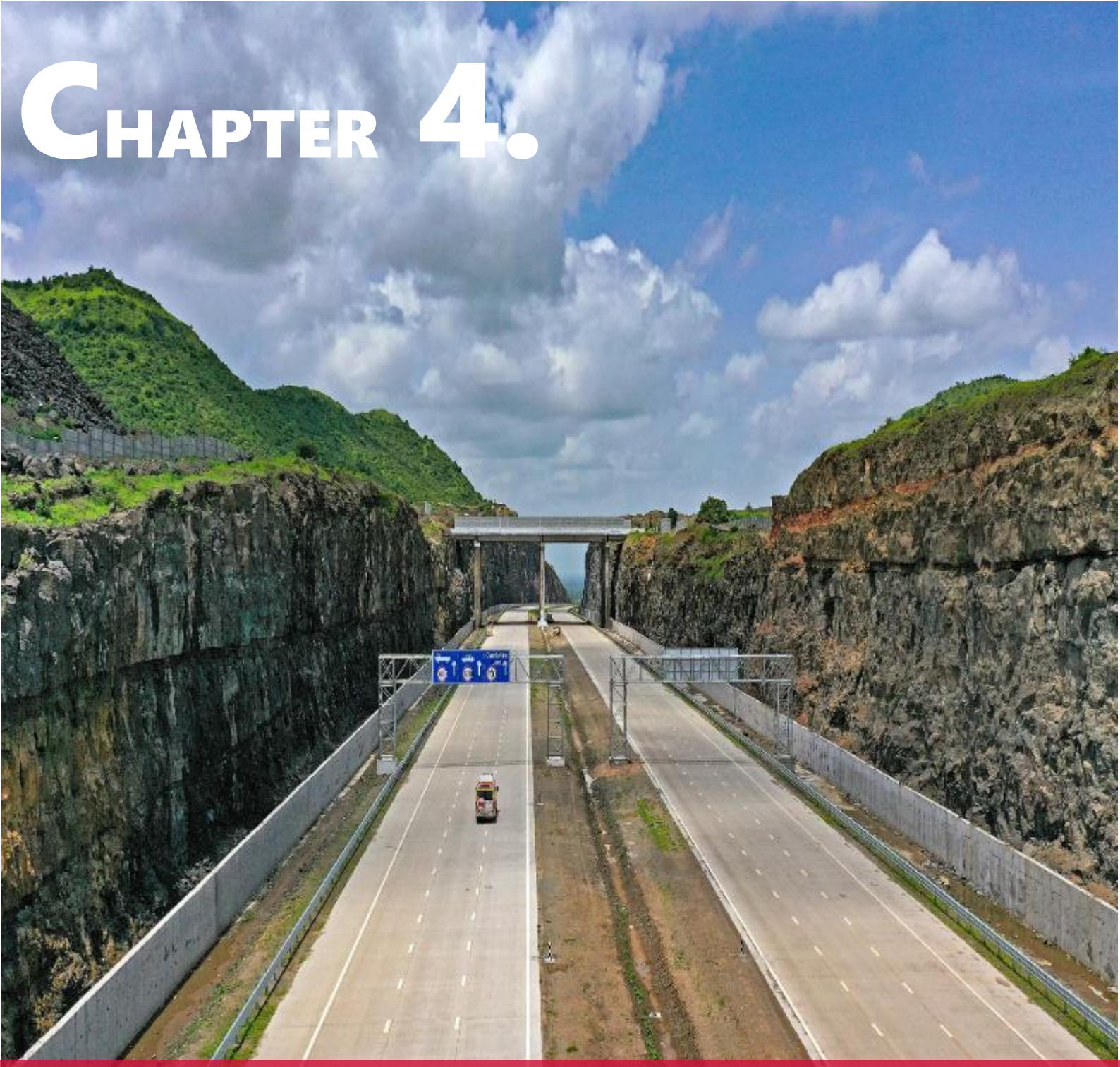
Parameter	Details
Parties	National Highways Authority of India (NHAI) & Athaang Jammu Udhampur Highway Pvt. Ltd.
Legal Basis	Settlement under **Section 73** of Arbitration & Conciliation Act, 1996 (Conciliation Outcome – Binding as Arbitral Consent Award)

<table>
<tr><th>Parameter</th><th>Details</th></tr>
<tr><td>Project Reference</td><td>Concession Agreement dated 19.07.2010 – NHDP Phase-II/BOT/VI/J&K, Jammu–Udhampur Highway Section</td></tr>
<tr><td>Trigger for Settlement</td><td>DAK Expressway (Pkg-17 & 18) overlap leading to descoping of 16.995 km maintenance length</td></tr>
<tr><td>Formal Descoping Notification</td><td>NHAI Letter No. 13020/1/2022/PIU-Udp/Cont./2227 dated 07.03.2024</td></tr>
<tr><td>Scope Affected</td><td>16.995 km out of original 65 km O&M stretch</td></tr>
<tr><td>Financial Model Applied</td><td>Standard Chartered Bank Financial Model (as used by Lenders)</td></tr>
<tr><td>Recovery Mechanism</td><td>• Regular Recovery of ₹61.09 Cr from 07.03.2024 till end of concession on a bi-annual basis for reduced costs of maintenance, insurance, IE fees, and toll O&M for the descoped 16.995 km, as per the Standard Chartered Bank financial model.
• Periodic renewal costs to be recovered in the year major maintenance is carried out by the Concessionaire for the non-descoped section, based on the lender's financial model.
• The Authority also agreed that routine maintenance costs will not be levied in the year when major maintenance is done by the Concessionaire.</td></tr>
<tr><td>Routine Maintenance Recovery</td><td>Regular Recovery of ₹61.09 Cr from 07.03.2024 till end of concession on a bi-annual basis for reduced costs of maintenance, insurance, IE fees, and toll O&M for the descoped 16.995 km, as per the Standard Chartered Bank financial model.
<table>
<tr><th>As per FM - Length</th><th>Lender# (16.995 Km Descoped Length)</th></tr>
<tr><td>(IE) Fees</td><td>7.36</td></tr>
<tr><td>Insurance Costs</td><td>22.20</td></tr>
<tr><td>Administration Costs</td><td>10.07</td></tr>
<tr><td>Toll Annual Maintenance Costs</td><td>2.22</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Parameter</th><th>Details</th></tr>
<tr><td></td><td>
<table>
<tr><td>Total</td><td>41.84</td></tr>
<tr><td>Asset Management Cost</td><td>6.12</td></tr>
</table>
</td></tr>
<tr><td>Major Maintenance Recovery</td><td>Based on 5% escalation model, applicable only in the year of MMR event as per Lenders' Financial Table as per Annexure-1 Final Settlement Agreement (30 April 2025)
<table>
<tr><th>Financial Years</th><th>FY2025</th><th>FY2026</th><th>FY2027</th><th>FY2028</th><th>FY2029</th><th>FY2030</th><th>FY2031</th></tr>
<tr><td>For Descoped Length</td><td>36.87</td><td>38.72</td><td>40.65</td><td>42.69</td><td>44.82</td><td>47.06</td><td>49.41</td></tr>
</table>
</td></tr>
<tr><td>Relief Granted to Concessionaire</td><td>No routine O&M deduction in the year when Major Maintenance is executed</td></tr>
<tr><td>No Claim / Closure Clause</td><td>Both parties confirm no residual claims pending concerning this descoping matter (Clause 3.5)</td></tr>
<tr><td>Supremacy Clause</td><td>In case of conflict, Settlement Agreement prevails over Concession Agreement & Supplementary Agreements (Clause 3.10)</td></tr>
<tr><td>Cost Responsibility</td><td>Stamp duty cost borne by Concessionaire, both parties bear their own negotiation expenses</td></tr>
<tr><td>Indemnity</td><td>Concessionaire indemnifies NHAI from any third-party action related to this Settlement (Clause 3.8)</td></tr>
<tr><td>Governing Law & Jurisdiction</td><td>Indian Law, exclusive jurisdiction at New Delhi courts</td></tr>
</table>

Knight Frank reviewed and noted that an amount of ₹7,63,87,976/- towards IE Fees has been deducted by the Independent Engineer from the 22nd Annuity Bill, in accordance with the provisions of the Settlement Agreement-2 Signed on 30.04.2025. The deduction was made vide letter reference LION-HCPT/O&M1124/Athaang/Jammu-Udhampur/0239, dated 07.05.2025, issued by the Independent Engineer to the Concessionaire.

Chapter 4.



Condition Assessment of Project Road

Chapter 4. CONDITION ASSESMENT OF PROJECT ROAD

4.1 General

This chapter presents a detailed assessment of the existing condition of the Jammu–Udhampur Project Highway in accordance with the provisions of the Concession Agreement and relevant IRC guidelines. The objective of this assessment is to evaluate the current condition and performance of the pavement, structures, tunnels, toll plaza facilities, service roads, drainage systems, safety installations and other highway assets. The observations are based on site inspections, maintenance records, annuity performance, and interaction with the concessionaire's O&M team.

This section presents the findings of the **condition assessment** of the **Jammu–Udhampur Section of NH-44** (Km 15+000 to Km 67+000) in the **Union Territory of Jammu & Kashmir**. The assessment has been prepared based on **field observations** recorded during the **site inspection conducted on 08 October 2025** & Based on Result of **Falling Weight Deflectometer (FWD) survey** carried out in **June 2023**, and the **Mobile Bridge Inspection Unit (MBIU) survey** conducted in **November 2023**.

The integration of these three key datasets — **pavement deflection study (FWD)**, **structural evaluation of bridges (MBIU)**, and **visual field inspection** — provides a **comprehensive and reliable representation** of the current **structural and functional condition** of the project highway and its associated assets.

The **project corridor** traverses the **Shivalik foothills** of the outer Himalayas, characterized by **steep terrain, deep cuttings, and landslide-prone zones**, with sections passing through high embankments, tunnels, and major structures. The alignment commences near **Jammu (Km 15+000)** and terminates near **Udhampur (Km 67+000)**, covering the **Jammu Bypass, Nandni and Jakhani Hills**, and the **Udhampur Bypass**. The stretch forms a vital component of **NH-44**, serving as a strategic link for all-weather connectivity between **Jammu and Srinagar** and facilitating both civil and defense transport movement.

The assessment integrates **instrumental evaluations** (FWD and MBIU) and **visual observations** to provide a holistic appraisal of pavement condition, bridge integrity, drainage, and highway appurtenances.

This assessment has been carried out in accordance with the following key references:

- **IRC:115-2014** – Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements using FWD Technique
- **IRC:117-2014** – Guidelines for Structural Evaluation of Rigid Pavements
- **IRC:37-2018** – Guidelines for the Design of Flexible Pavements
- **IRC: SP:35-2015** – Code of Practice for Inspection and Maintenance of Bridges
- **IRC:83-2019 (Part I & II)** – Guidelines for Design and Condition Assessment of Bridge Components
- **IRC: SP:16** and **IRC: SP:83** – Guidelines for Maintenance and Management of Highways and Toll Facilities

4.2 Pavement Composition

The pavement has been designed in accordance with IRC:37-2001. The concessionaire has based the design on CBR values of 8% and 10%. Although the design traffic on the RHS is relatively lower than on the LHS, the concessionaire has opted to provide the same pavement thickness for both directions.

As mentioned in Pavement Design Report, design consultants summarized the calculated design traffic for the next 20 years for BT and Base and subbase layer respectively.

Exhibit 23: Design traffic in MSA for New Construction & Overlay Section

As per Concessionaire			
S. No	**Section Type**	**Design Traffic MSA for 20 years (Jammu to Udhampur)**	**Design Traffic MSA for 20years (Udhampur to Jammu)**
1	New Construction	41	16
2	Overlay	47	19

Pavement Configuration for Project is given in **Exhibit 24**

Exhibit 24: Pavement Composition-Main Carriageway

S. No	Design MSA	As built drawings
Flexible Pavement		
1	**Adopted MSA – 10**	
2	BC in mm	40
3	DBM in mm	110
4	WMM in mm	250
5	GSB in mm	200
Rigid Pavement		
	PQC	**DLC**
1	300	150
Overlay Works		
The Overlay thickness proposed for design traffic of 50 MSA for the project corridor. Based on the BBD Test Result Concessionaire Proposed Overlay of 50 mm thickness with DMB of 50 mm thickness.		

As per Approved Pavement Design Report the service road has been designed for 10 MSA & CBR-10%. The Pavement layer adopted for service road as given below:

Exhibit 25: Pavement Composition -Service Road

S. No	Design MSA	
	Adopted MSA – 10 years	**25**
1	BC in mm	40
2	DBM in mm	50
3	WMM in mm	250
4	GSB in mm	200

4.3 Assessment of Highway

Knight Frank carried out a detailed review and assessment of the **project highway assets**, which included **Service Roads (SR), Intersections, TLBs, BLBs, Sign Boards, MBCBs, and other related infrastructure components**. The assessment was undertaken through **comprehensive visual inspections** along the entire project stretch, supplemented by a **review of relevant reports and maintenance records** shared by the Client during site visit.

The objective of this exercise was to evaluate the **existing physical condition, functionality, and maintenance requirements** of each asset category. Based on the observations and data collected, a **maintenance strategy** has been formulated covering **regular repair, preventive, and routine maintenance activities** to ensure the long-term sustainability and serviceability of the highway assets.

Furthermore, the **pavement condition** was assessed through a combination of **visual inspection, Network Survey Vehicle (NSV) survey, and Falling Weight Deflectometer (FWD) testing**, providing a comprehensive understanding of surface condition, structural strength, and performance.

Overall, the review indicates that the **project highway assets are in satisfactory condition**, with all key components performing as intended. Minor deficiencies identified during the inspection can be addressed through routine and preventive maintenance measures as part of the recommended asset management plan.

a) Service Road/Slip:

Total length of service road is 20.180 kms. The width of service road is 5.50m to 7.00m. Service Road / Slip Roads is constructed along the project as flexible pavements. The overall pavement condition is good. Pavement Markings are also found in service roads but are faded at some places

b) Highway Lighting:

Highway lighting has been provided at key locations such as junctions, flyovers, tunnels, and toll plazas to ensure adequate visibility and road safety during night hours. High mast lighting systems are installed specifically at junctions and toll plaza areas for enhanced illumination. Additionally, solar-powered blinker signals have been installed at selected median openings to alert and guide motorists at potential conflict points.

c) Drainage:

As per CA, lined between MCW and Service Road to be provided and at outer edge of slip road at approach of grade separated structures.

Drainage arrangements are provided in the project. But these Roadside drainage along the Highway as well as lined drains at median needs appropriate maintenance by cleaning debris and vegetations to make the arrangement working. Total 9.47 Kms of RCC covered drains available at site.

The project includes a total drainage network comprising 30.536 km of median drain, 9.407 km of RCC cover drain, and 56.577 km of toe drain, ensuring effective surface water management along the highway.

d) Metal Beam & Wire Rope Safety Barrier:

The project stretch includes 31.588 km of RCC crash barriers, 21.007 km of W-Beam crash barriers, and 12.292 km of Brifen wire rope barriers, ensuring road safety across various sections of the highway.

Metal Beam Crash Barriers (MBCBs) have been installed along the main carriageway, at underpasses, on approach sections, and at high embankment locations along the inner side of service roads to enhance road safety and prevent vehicular run-off. During the inspection, it was observed that at a few locations, the wire ropes appear slightly loose. These minor deficiencies can be rectified through routine maintenance activities to restore the barriers to their optimal functional condition.

e) Bus Bays /Bus Shelters & Truck Lay Byes:

There are 28 numbers bus-bays both side along the project road, out of these at 02 locations bus bays are not there. Lighting has not been provided at any bus bay locations. Pavement condition of bus bays is satisfactory.

There are 13 Truck lay byes provided along the project highway.

f) Major/Minor Junctions

Intersections are the places where one or more roads shares the common space. These includes major and minor intersections. There is total 28 junctions along the project road. Out of these, there are 13 major junctions and 15 minor junctions. Junctions are provided with flexible pavement.

g) Traffic Signs Boards:

The project highway is equipped with various types of road signs, including roadside signs, overhead gantry-mounted signs, kerb-mounted signs, and median signs. The stretch features approximately 1,873 signboards, 15 overhead gantry signboards, and 19 cantilever gantry signboards.

h) Plantation

Landscaping and avenue plantation are present along the project highway; however, they are observed to be sparse and unevenly distributed. Shrubs and flowering plants have been intermittently planted within the median, though the variety of species is limited. Median plantation is available at certain stretches of the corridor, comprising a mix of shrubs and ornamental plants, but the overall continuity and density of plantation remain inconsistent throughout the project road.

i) Median & Median Opening:

Width of median is 1.5m/4.00m

Median openings have been provided in accordance with the Concession Agreement (CA) provisions and the requirements of local authorities and nearby residents along the project highway. These openings are generally equipped with pavement markings to guide traffic movement. A total of 46 median openings were identified during the site inspection. However, it was observed that at a few locations, blinker lights and signboards are missing, which should be reinstated as part of regular maintenance activities to ensure road safety and compliance with standards.

KF View:

Overall, the project highway is in satisfactory condition, with all major assets performing as intended. Minor deficiencies such as faded markings, missing blinkers, and loose barriers can be addressed through routine maintenance to ensure continued safe and efficient operation.

4.4 Assessment of Structures

A **visual condition survey** of all bridge and culvert structures was carried out jointly by the **Knight Frank (KF) team** and the **Concessionaire**, with the objective of **identifying and quantifying structural deterioration** arising from various factors such as **dead load, live load, wind load**, and **physical or chemical influences** exerted by the environment. In addition to examining **damages caused by unpredictable natural events** or **vehicular collisions**, the inspection also aimed to detect or monitor the impact of any **construction-related imperfections** that may affect long-term performance. Such periodic inspections play an important role in **enhancing the service life and safety** of both existing and newly built bridge structures.

Knight Frank reviewed the **structural condition assessment** of bridges and culverts along the **Jammu–Udhampur Section of NH-44 (Km 15+000 to Km 67+000)** during the **Operation & Maintenance phase**, based on **visual inspection** and findings from the **Mobile Bridge Inspection Unit (MBIU) survey** carried out in **November 2023 (attached as Para 5.4.2)**. The assessment encompassed all **major and minor bridges**, as well as **underpasses** along both the **left-hand and right-hand carriageways** of the corridor.

The objective of the inspection was to evaluate the **structural integrity, durability, and functional safety** of bridge assets through a **systematic visual examination**, supplemented by **limited Non-Destructive Testing (NDT)** wherever required. The assessment methodology adhered to the provisions of **IRC: SP:35-2015** (Code of Practice for Inspection and Maintenance of Bridges) and **IRC:83-2019 (Part I & II)** pertaining to bridge design and inspection standards.

A total of **335 structures** were covered under this assessment, comprising:

- **4 Major Bridges** – PSC Box Girder / PSC T-Beam Type
- **24 Minor Bridges** – RCC T-Beam and RCC Slab Type
- **1 Vehicular/Non-Vehicular Underpass** – RCC Box Type
- **44 Arch Culverts** – Masonry Arch / RCC Type
- **3 Pipe Culverts** – RCC Pipes (1.0–1.5 m dia.)
- **261 Slab Culverts** – RCC Slab Spans (2–6 m)
- **1 Grade Separator** – RCC Box Configuration

Most bridges are of **RCC T-Beam or PSC Box Girder construction**, supported by **reinforced concrete abutments and piers** with open foundations and **stone-pitched protection works**. The **superstructure and substructure** elements were generally found to be **structurally sound** and **stable**, with no significant distress reported.

KF View:

Overall, based on the review of the previous MBIU survey reports (conducted by the SPV in November 2023) and a comprehensive visual examination during the site visit, it was observed that most structures are in sound structural condition and maintained in a fair state of serviceability.

4.5 Assessment of Tunnels

The **Kashmir Himalaya** is divided into three main physiographic zones from south to north — the **Siwalik Himalaya**, the **Middle Himalaya**, and the **Greater Himalaya**. The project area primarily lies within the **Siwalik formation** of the Outer Himalaya, part of the **Siwalik Himalayan Belt (Foreland Basin)** comprising the **Siwalik and Murree formations**, which overlie the northern margin of the Indian shield.

The **Siwalik group** is subdivided into **Lower, Middle, and Upper Siwalik**, consisting mainly of **fine to medium-grained sandstone** (light grey to reddish brown), **siltstone**, **claystone**, and **shale**. The **Lower Murree formation** is predominantly **argillaceous** with hard sandstone bands, while the **Upper Murree** is **arenaceous**, comprising fine to medium-grained sandstone.

Tunnels 1, 2, 3, and 4 traverse through the **Middle Siwalik**, except for a portion of **Tunnel 4 (near Portal 2)**, which passes through the **Lower Siwalik**. **None of the tunnels in the Jammu–Udhampur section of NH-44 intersect major fault zones such as the Reasi Thrust.** All tunnels are located along the **southern limb of the Suruin–Mastgarh anticline**, whose axial plane passes through **Jhajjar Kotli**.

The highway features four twin-tube tunnels with a combined length of 2.77 km. An overview of the tunnel details for the project is provided below.

Exhibit 26: Details of Tunnel

Tunnel No.	Section	LHS/RHS	Design Chainage		length(m)
T-1	Main Road	LHS	23.72	23.89	170
		RHS	23.715	23.88	165
T-2	Main Road	LHS	24.48	24.711	231
		RHS	24.533	24.8	267
T-3	Main Road	LHS	24.94	25.37	430
		RHS	24.916	25.39	474
T-4	Main Road	LHS	25.49	26.02	530
		RHS	25.49	26.00	510

4.5.1 Power Supply & Substations in Tunnels:

- **Each tunnel portal is supported by a dedicated substation, totaling four substations across the project.**
    - **Substation 1** (Tunnel 1) receives an 11 KV HT power supply from JDPL, which also feeds **Substations 2 and 3**.
    - **Substation 4** (Tunnel 4) receives an independent 11 KV HT power supply from JDPL dedicated solely to that substation.
- **Tunnel Ventilation System & Safety Features**:

The tunnels at lengths of 530 m and 510 m operate using a longitudinal ventilation system. Both tubes are interconnected via a cross passage, which serves as an emergency escape route. Each tube is equipped with 8 jet fans to support ventilation. Additionally, 4 carbon monoxide (CO) sensors and 4 nitrogen dioxide (NO_2) sensors are installed on either side of the tunnel to monitor air quality. The entire ventilation system is currently operating on diesel generator (DG) power supply

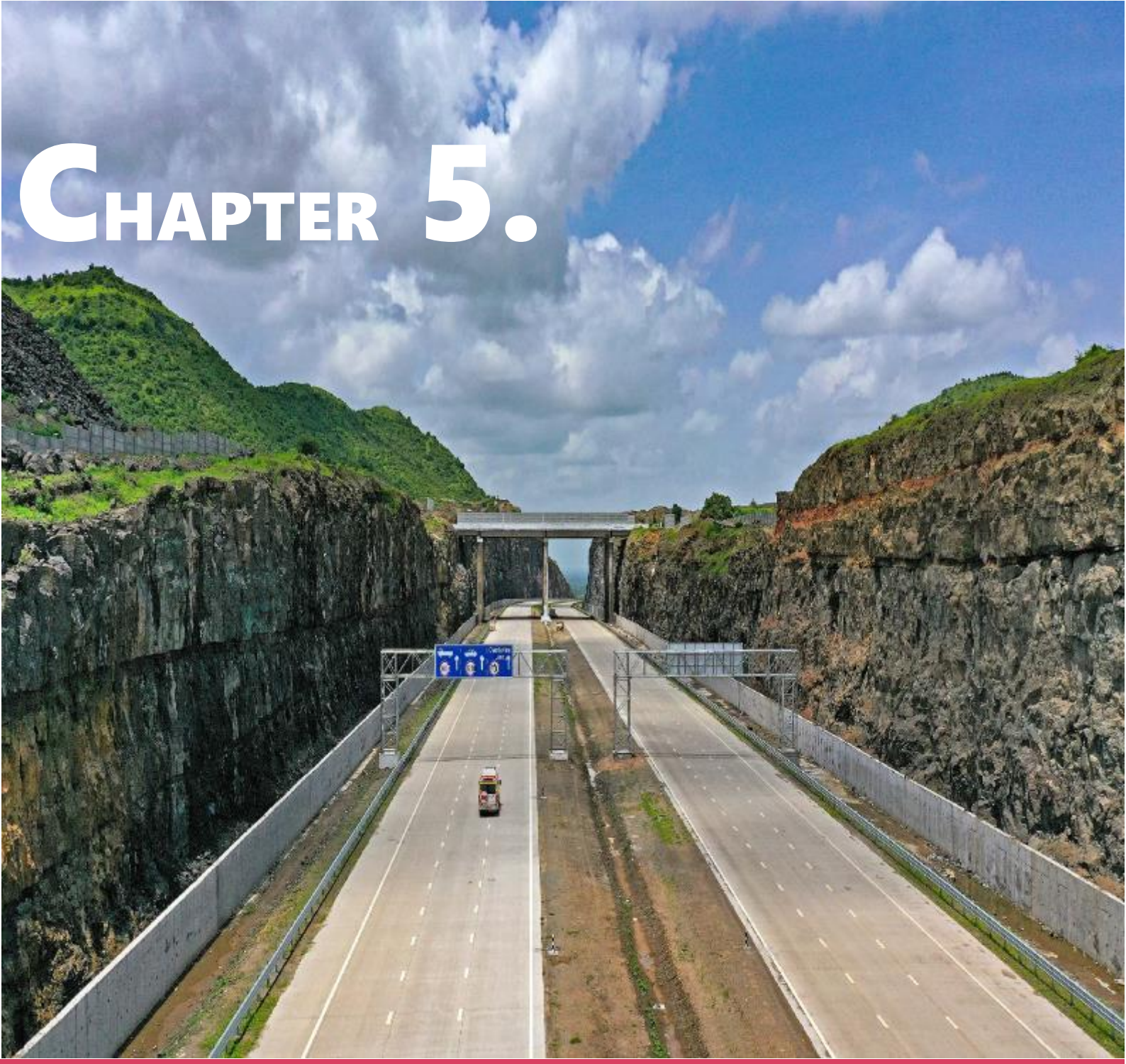
The tunnels are equipped with a comprehensive ventilation system that includes:

- 2 nos. of 500 KVA DG sets
- 1 DG synchronizing panel (with 3 nos. of 1600A ACBs)
- 1 ventilation panel (comprising 3 nos. of 1600A ACBs and 6 nos. of 400A MCCBs)
- 4 sub-panels (each with 1 no. 400A MCCB and 6 nos. of 100A MCCBs)
- 16 nos. of VFD (Variable Frequency Drive) panels

KF View:

The Jammu–Udhampur section of NH-44 has been operational for over nine years, and no major issues related to tunnel or slope stability have been reported during this period.

- ***During Site Visit, Minor erosion and distress of shotcrete have been observed, but no major mass movements were detected. The subsurface drainage system is functional and in good condition.***
- ***The false portal is protected with shotcrete wire mesh and berm, while longitudinal drains on both sides are in satisfactory condition.***



Chapter 5.

Review of Pavement Condition & Design

Chapter 5. REVIEW OF PAVEMENT CONDITION & DESIGN

5.1 Pavement Condition

The life of the Pavement has a co-relation with both its structural as well as Functional Condition. Inspecting and tracking of pavement condition, scheduling maintenance, and treating distress can have serious ramifications impinging on safety of road users and enhancing functional efficiency in end use of the Facility. It is therefore essential to carry out the assessment of the condition of the pavement on a given date taking into cognizance a variety of data to arrive at well-considered decisions and drawing up of the maintenance strategy and taking appropriate course of action to apply funds and resources in optimizing the desired levels of operations on the road assets. Condition data can include factors like roughness, specific distresses, friction, and overall structural health.

Once measurements of road condition are available, they are interpreted in such a way that allows the decision-making process to occur in a logical fashion. This might involve converting multiple physical parameters into a single index, allowing different sections of a road network to be directly compared against one another etc.

Pavement performance under prevailing environmental conditions is crucial as it has a direct bearing on the economic returns from the project development. While an under-designed pavement will fail prematurely, imposing undesirable Cost Over runs on the Project. It is therefore necessary to ensure the pavement layer thicknesses; configurations and materials are adequately designed and require minimal maintenance under the anticipated traffic loading throughout the life cycle of the project.

To achieve this objective and thereby to predict the performance of any pavement structure, it is necessary to analyze material characteristics, traffic condition, present physical condition of the pavement layers, local environment, and its impacts.

Due to the variety of variables involved, it is essential to determine the exact level of pavement performance through the project life. But, based on the assessment of present condition of pavement, analysis of available survey data, and estimations regarding the pavement life, future maintenance requirements can be estimated.

This part of the report deals with the details of the series of field investigations and analysis carried out to find out the present condition of pavement as well as to determine the future maintenance requirements for sound pavement performance throughout the project life.

5.2 Objectives

- Collect data regarding physical conditions of pavement.
- Prepare a plan for rectification as required for damaged/poor sections in consonance with requirements of the CA.
- Project maintenance requirement in physical and monetary terms over the life cycle of the project road.

5.3 Review of Pavement Design

A. Design Period

As per the four-laning manual and IRC: SP:84-2009, the sub-base and base layers of the pavement should be designed for a minimum period of 15 years, while the initial bituminous surfacing should be designed for a minimum of 10 years. ***However, the concessionaire has opted to design the flexible pavement for an extended design life of 20 years.***

B. Design CBR

As per the pavement design report, concessionaire considered the 8% and 10% CBR for pavement design. However, during execution time only 8% CBR is used.

C. Design MSA

As stated in the Pavement Design Report, the design consultants have provided a summary of the projected design traffic for the next 20 years, separately for the bituminous (BT) layer and the base and sub-base layers. The design of the new traffic construction and overlay is as detailed below:

Sl. No	Section Type	Design Traffic MSA for 20years (Jammu to Udhampur)	Design Traffic MSA for 20years (Udhampur to Jammu)
1	New Construction	41	16
2	Overlay	47	19

D. Pavement Crust of Main Carriageway

The adopted pavement crust for the Main Carriageway meets the requirements of IRC 37-2001 Concessionaire carried out the pavement design with 8% & 10% CBR values. Even though the design traffic in RHS direction is relatively less compared to the LHS direction, but the concessionaire is providing the same thickness for both directions

The crust thicknesses are as follows:

Exhibit 27 Pavement Design Composition of Main Carriageway

S. No	Design MSA	As built drawings
Flexible Pavement		
1	**Adopted MSA – 10**	
2	BC in mm	40
3	DBM in mm	110
4	WMM in mm	250
5	GSB in mm	200
Rigid Pavement		
	PQC	**DLC**
1	300	150
Overlay Works		
The Overlay thickness proposed for design traffic of 50 MSA for the project corridor. Based on the BBD Test Result Concessionaire Proposed Overlay of 50 mm thickness with DMB of 50 mm thickness.		

E. <u>For Service Road/Slip Road</u>

As per the Preliminary Design Report (PDR), the concessionaire has stated that the existing bituminous layer in the JBP, NBP, and MR sections ranges between 140 to 150 mm, with a granular layer thickness of 325 to 330 mm. In contrast, the Udhampur Bypass section has a thinner bituminous layer of only 80 mm but a thicker base/sub-base layer of approximately 430 mm.

As per Approved Pavement Design Report the service road has been designed for 10 MSA & CBR-10%. The Pavement layer adopted for service road as given below:

Exhibit 28: Pavement Composition -Service Road

S. No	Design MSA	
	Adopted MSA – 10 years	**25**
1	BC in mm	40
2	DBM in mm	50
3	WMM in mm	250
4	GSB in mm	200

F. Pavement Overlay design for Existing Carriageway

As per the Pavement Design Report (PDR), the concessionaire noted that the existing bituminous layer thickness ranges from 140 to 150 mm, and the granular layer thickness is around 325 to 330 mm in the JBP, NBP, and MR sections. In contrast, the Udhampur Bypass has a thinner bituminous crust of 80 mm, but a thicker base/sub-base layer of approximately 430 mm. A Benkelman Beam Deflection test was conducted on the existing surface in April 2011, and based on the analysis, the concessionaire proposed overlay thicknesses, details of which are provided in the below

Exhibit 29: Pavement Composition -Overlay Works

Section	Design Chainages	Jammu to Udhampur direction		Udhampur to Jammu direction	
		BC (mm)	DBM (mm)	BC (mm)	DBM (mm)
Main Road	21+940 to 26+710 27+250 to 33+971 34+975 to 41+695	50	50	50	50
	42+850 to 52+340	50	65	50	50
Nagrota Bypass	10+400 to 21+730	50	50	50	50
Udhampur Bypass	0+225 to 2+650 3+220 to 7+310 8+055 to 15+025	50	55	50	50
	15+540 to 16+550	50	50	50	50
Jammu Bypass	15+200 to 20+000	50	50	50	50

5.4 Pavement Evaluation by Falling Weight Deflectometer (FWD) Technique

FWD surveys were carried out to determine the present condition of pavement as well as finding out the future maintenance requirements.

a) Introduction:

The **Falling Weight Deflectometer (FWD) survey** was conducted in 2023 for the Jammu–Udhampur section of NH-44, covering chainage **Km 15+000 to Km 67+000**. The primary objective of this exercise was to evaluate the **structural strength of the in-service pavement**, determine the **moduli of individual pavement layers**, and estimate the **remaining life** of the pavement with respect to fatigue and rutting criteria.

This evaluation was carried out as per the provisions of **IRC:115-2014 "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer"**. The survey results form a critical input for deciding the overlay requirements and long-term maintenance strategy of the project highway.

b) Project Road

The Jammu–Udhampur section of NH-44 serves as a vital north–south corridor, connecting Jammu city with Udhampur and further to Srinagar. The project alignment includes three distinct segments:

1. **Section I: Jammu Bypass (Km 15+200 to Km 20+260) -** Urban and peri-urban stretch with relatively high mixed traffic.
2. **Section II: MR & NBP (Km 9+380 to Km 52+450) -** A long intermediate stretch carrying a large share of heavy commercial vehicles.
3. **Section III: Udhampur Bypass (Km 0+000 to Km 16+352) -** A bypass section designed for smoother passage of highway traffic avoiding city areas.

The section passes through rolling to hilly terrain, experiencing climatic variations including hot summers and cold winters, both of which impact pavement performance

c) Falling Weight Deflectometer

The FWD survey was carried out using standard equipment with the following parameters:

- **Load Applied:** Equivalent to 40 kN impulse load (representing 80 kN standard axle).

- **Deflection Measurement:** At 7 radial offsets (D0 to D7) up to 1200 mm from the load center.
- **Survey Spacing:** 250–500 m interval along both carriageways.
- **Temperature Correction:** All bituminous layer moduli corrected to a reference temperature of 35°C.
- **Seasonal Correction:** Since the survey was conducted in winter (November 2023), appropriate seasonal correction factors were applied to granular and subgrade moduli.
- **Back-calculation Software:** KGPBACK (Genetic Algorithm based) used for determining layer moduli; IITPAVE used for fatigue and rutting life analysis

5.4.1.1 FWD Analysis

The FWD data collected has been analysed as per IRC:115-2014 guidelines with the suggested ranges for in-service pavements.

Description	Range
Subgrade Modulus	5 CBR to 20 CBR
Granular Layer Modulus	100 MPa to 500 MPa
Bituminous Layers –Thick without distress	750 MPa to 3000 MPa
Bituminous Layers in distressed condition	400 MPa to 1500 MPa

The above suggested ranges are for guidance only and pavement engineer shall use his judgment based on available data while fixing the above ranges. By looking at the age, condition and performance of the pavement following different set of ranges have been used in the analysis:

Layer	Bituminous Layers	Granular Layer Modulus	Subgrade
Modulus Value (MPa)	750-3000	100-500	50-75

Bituminous layer Moduli obtained from back calculations shall be corrected for a standard pavement temperature of 35°C using given equations. Whereas, for back calculated moduli values obtained for granular and subgrade layer shall be corrected for seasonal variations (using winter and summer equations). As FWD tests are performed during winter, accordingly winter correction factor is applied for granular and subgrade layers.

Remaining life in base year and overlay requirement (with VG-40 mix for >20 MSA) has been estimated in accordance with IRC: 115-2014 and IRC: 37-2018. The summary of the results is shown in tables below.

Exhibit 30 Remaining life of the existing pavement,

Sl. No.	Homogenous Sections (SCI)		Length	Thickness, mm		Total Crust	Moduli, Mpa			Strains		Life remains 90% reliability			Design MSA	Check
	From	To		Existing BT	Existing Granular		Mr of BT	Granular	Subgrade	Tensile (Et)	Vertical (Ev)	Fatigue (Nf)	Rutting (Nr)	Min		
Remaining Life of Existing Pavement for Section-I (Jammu Bypass From Km.15+200 to Km.20+260)																
Four Lane LHS																
1	15.2	17.75	2.55	160	450	610	2629	361	86	1.39E-04	2.08E-04	85.4	689	85.4	**50**	Safe
2	17.75	20.26	2.51	160	450	610	2629	358	86	1.40E-04	2.09E-04	84	680.1	84	**50**	Safe
Total Length			**5.06**													
Four Lane RHS																
1	15.2	17.35	2.15	160	450	610	2630	369	87	1.38E-04	2.06E-04	89.3	731	89.3	**50**	Safe
2	17.35	20.26	2.91	160	450	610	2530	371	86	1.40E-04	2.08E-04	86.5	698.1	86.5	**50**	Safe
Total Length			**5.06**													
Remaining Life of Existing Pavement for Section-II (MR & NBP From Km.9+350 to Km.52+450)																
Four Lane LHS																
1	9.38	18.85	9.47	160	450	610	2695	337	87	1.42E-04	2.11E-04	77.2	647.2	77.2	**50**	Safe
2	18.85	29.25	10.4	160	450	610	2700	315	87	1.47E-04	2.16E-04	68.4	587	68.4	**50**	Safe
3	29.25	36.5	7.25	160	450	610	2834	258	87	1.56E-04	2.27E-04	51.9	472.3	51.9	**50**	Safe
4	36.5	40.75	4.25	160	450	610	2855	271	87	1.52E-04	2.23E-04	56.8	505.9	56.8	**50**	Safe
5	40.75	43.85	3.1	160	450	610	3000	348	86	1.33E-04	2.06E-04	92.4	732.6	92.4	**50**	Safe
6	43.85	52.45	8.6	160	450	610	1589	368	86	1.74E-04	2.26E-04	54.8	480.9	54.8	**50**	Safe
Total Length			**43.07**													
Four Lane RHS																
1	9.38	14.25	4.87	160	450	610	2476	325	86	1.51E-04	2.19E-04	65.7	554.8	65.7	**50**	Safe
2	14.25	18.85	4.6	160	450	610	2389	329	87	1.53E-04	2.18E-04	64.7	561.8	64.7	**50**	Safe
3	18.85	31.85	13	160	450	610	2416	348	87	1.48E-04	2.13E-04	72.9	618.8	72.9	**50**	Safe
4	31.85	35.75	3.9	160	450	610	2392	320	86	1.55E-04	2.21E-04	61.4	525.9	61.4	**50**	Safe
5	35.75	42.35	6.6	160	450	610	2768	346	87	1.39E-04	2.08E-04	83.6	690.5	83.6	**50**	Safe
6	42.35	52.45	10.1	160	450	610	2536	326	87	1.49E-04	2.16E-04	67.9	583.3	67.9	**50**	Safe
Total Length			**43.07**													
Remaining Life of Existing Pavement for Section-III (Udhampur Bypass From Km.0+000 to Km.16+350)																
Four Lane LHS																
1	0	4.75	4.75	160	450	610	2258	381	86	1.46E-04	2.10E-04	81.7	664.1	81.7	**50**	Safe

Sl. No.	Homogenous Sections (SCI)		Length	Thickness, mm		Total Crust	Moduli, Mpa			Strains		Life remains 90% reliability			Design MSA	Check
	From	To		Existing BT	Existing Granular		Mr of BT	Granular	Subgrade	Tensile (Et)	Vertical (Ev)	Fatigue (Nf)	Rutting (Nr)	Min		
2	4.75	12.25	7.5	160	450	610	3000	386	86	1.26E-04	1.98E-04	111.7	863.1	111.7	**50**	Safe
3	12.25	16.35	4.1	160	450	610	2296	384	86	1.44E-04	2.09E-04	84.3	683.1	84.3	**50**	Safe
Total Length			**16.35**													
Four Lane RHS																
1	0	4.85	4.85	160	450	610	3000	382	87	1.27E-04	1.98E-04	109.6	869	109.6	**50**	Safe
2	4.85	10.85	6	160	450	610	3000	364	86	1.30E-04	2.03E-04	100.1	784.8	100.1	**50**	Safe
3	10.85	16.35	5.5	160	450	610	3000	388	87	1.26E-04	1.97E-04	112.7	891.2	112.7	**50**	Safe
Total Length			**16.35**													

The FWD survey results demonstrate that the Jammu–Udhampur corridor is **structurally sound and serviceable** for current and near-future traffic. The majority of sections have long fatigue and rutting lives, well above the design traffic demand. However, **localized deficiencies in Section II** require corrective overlays and rehabilitation to ensure uniform serviceability across the entire stretch.

This evaluation reinforces that **targeted strengthening, rather than uniform overlays**, is the most cost-effective maintenance approach for this corridor**.**

5.4.2 MBIU survey

a. Introduction:

The **Mobile Bridge Inspection Unit (MBIU) survey** was conducted in **November 2023** for the Jammu–Udhampur Section of NH-44, covering **Km 15+000 (Jammu Bypass) to Km 67+000 (Udhampur)**. This was undertaken as part of Independent Engineer services during the O&M period, in accordance with **Clause 6.4 of the Terms of Reference** of the Concession Agreement.

The primary objective of the inspection was to assess the **structural and functional condition of bridges and culverts**, covering superstructure, substructure, bearings, deck, joints, drainage spouts, crash barriers, and approaches. The inspection was carried out with the aid of a **truck-mounted Palfinger PK1901 articulated unit**, enabling access to the underside of bridge decks and otherwise inaccessible elements

b. Project Corridor:

The inspected section forms a crucial part of the North–South corridor. The Jammu–Udhampur stretch includes **Jammu Bypass, MR & Nagarota Bypass, and Udhampur Bypass**, covering a mix of **major bridges, minor bridges, vehicular underpasses (VUPs), pedestrian underpasses (PUPs), and causeways**.

The bridges traverse rivers, streams, and gorges, many of which are subject to **siltation, waterlogging, heavy monsoon flows, and vegetation growth** along slopes. Accessibility issues in high-level bridges made the MBIU indispensable for systematic inspection.

c. Instrumentation & Methodology:

Instrument: Palfinger PK1901 MBIU, electro-mechanically operated articulated arm system mounted on truck.

Working Range: Allows horizontal, vertical, and underneath access across long spans.

Supporting Equipment: Laser densitometer, crack measurement card, tape (5 m, 30 m), ladders, torches, hammer, and digital cameras.

Inspection Standard: Observations recorded in accordance with **IRC SP-35 (Guidelines for Inspection and Maintenance of Bridges) and IRC SP-52 (Bridge Condition Survey Manual).**

Procedure:

- Visual examination of deck slab, girders, expansion joints, spouts, parapets, crash barriers.
- Recording of defects like honeycombing, spalling, exposed reinforcement, vegetation growth, clogged drainage, cracks, silting at abutments and pier caps.
- Photographic evidence taken for all critical observations

Exhibit 31 List of Bridge Inspected

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
1	16+860	Vehicular Underpass	MCW	1 × 12.00	12	2 × 7.50	24.1	RCC Box	1. Drainage spouts are partially clogged. 2. Growth of vegetation on RE wall. 3. Honeycombing on superstructure.
2	17+510	Minor Bridge	LHS	2 × 4.80	9.6	8.7	12.9	RCC solid slab	1. Vegetation on side slopes of approaches and vent ways. 2. Drainage spouts clogged. 3. Vegetation and honeycombing on substructure.
2a	17+510	Minor Bridge	RHS	1 × 10.00	10	7.5	10.3	RCC solid slab	1. Vegetation on retaining wall. 2. Drainage spouts clogged.
3	18+250	Major Bridge	LHS	15 × 46.00	690	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches and abutment. 2. Abutment front protection partly damaged. 3. Silt & debris on abutment and pier cap. 4. Reinforcement exposed on superstructure. 5. Expansion joints filled with debris.
3a	18+250	Major Bridge	RHS	15 × 46.00	690	7.5	10.5	Box girder	1. Vegetation on side slopes of approaches and abutment. 2. Honeycombing on superstructure. 3. Reinforcement exposed on superstructure.
4	18+920	Minor Bridge	LHS	1 × 25.00	25	7.5	10.5	RCC deck slab + girder	1. Expansion joints filled with debris.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
									2. Vegetation on side slopes of abutment.
									3. Cracks on substructure, pavement surface and pedestal.
4a	18+920	Minor Bridge	RHS	2 × 13.25	26.5	7.75	8.75	RCC deck slab + girder	1. Vegetation on side slopes of approaches, abutment and retaining wall.
									2. Reinforcement exposed on superstructure.
									3. Spalling, reinforcement exposed and honeycombing on superstructure.
									4. Drainage spouts clogged.
5	19+320	Minor Bridge	LHS	1 × 25.00	25	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches and abutment.
									2. Cracks on substructure.
									3. Expansion joints filled with debris.
5a	19+320	Minor Bridge	RHS	1 × 26.40	26.4	7.5	8.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches and abutment.
									2. Spalling and vegetation on wing wall.
									3. Expansion joints covered with bitumen.
6	19+560	Minor Bridge	LHS	2 × 20.00	40	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches and abutment.
									2. Expansion joints filled with debris.
6a	19+560	Minor Bridge	RHS	1 × 22.40	22.4	7.5	8.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches.
									2. Spalling & honeycombing on superstructure.
									3. Reinforcement exposed on superstructure.
									4. Drainage spouts clogged.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
7	19+820	Minor Bridge	LHS	2 × 25.00	50	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches. 2. Expansion joints filled with debris.
7a	19+820	Minor Bridge	RHS	1 × 27.00	27	7.7	8.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches. 2. Drainage spouts clogged. 3. Expansion joints filled with bitumen.
8	20+090	Vehicular Underpass	MCW	1 × 14.00	14	8	39.5	RCC deck slab + girder	Cracks on side walls and pavement surface.
MAIN ROAD & NAGAROTA BYPASS									
9	9+380	Minor Bridge	MCW	1 × 12.00	12	2 × 8.00	24.6	RCC box	1. Vegetation on side slopes of approaches. 2. Drainage spouts partially clogged.
10	9+928	Major Bridge cum Vehicular Underpass	LHS	5 × 20.00 + 1 × 10.00	110	8	11	RCC deck slab + solid slab + girder	1. Vegetation on side slopes of approaches & RE wall. 2. Expansion joints filled with debris. 3. Drainage spouts partially clogged. 4. Honeycombing on superstructure.
10a	9+928	Major Bridge cum Vehicular Underpass	RHS	5 × 20.00 + 1 × 10.00	110	8	11	RCC deck slab + solid slab + girder	1. Vegetation on side slopes; 2. Expansion joints filled with debris.
11	10+250	Causeway (vented)	LHS SR	28 × 1.20	46.5	7.5	10.3	Vented causeway	1. Flow obstructed due to silt & boulders in ventway. 2. Reinforcement exposed on superstructure.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
12	10+520	Vehicular Underpass	MCW	1 × 12.00	12	2 × 8.10	24.25	RCC box	1. Vegetation on RE plates. 2. Drainage spouts partially clogged.
13	10+800	Vehicular Underpass	MCW	1 × 12.00	12	2 × 8.10	24.25	RCC box	1. Vegetation on RE plates. 2. Drainage spouts partially clogged.
14	11+160	Vehicular Underpass	MCW	1 × 12.00	12	2 × 8.00	24.2	RCC box	1. Vegetation on RE plates. 2. Drainage spouts partially clogged.
15	11+600	Minor Bridge	LHS	2 × 20.00	40	8	11	RCC deck slab + girder	1. Vegetation on side slopes of approaches. 2. Expansion joints filled with debris.
15a	11+600	Minor Bridge	RHS	2 × 20.00	40	8	11	RCC deck slab + girder	1. Vegetation on side slopes; 2. Expansion joints filled with debris.
16	12+290	Pedestrian Underpass	MCW	1 × 7.00	7	2 × 8.00	25.2	RCC box	1. Vegetation on RE plates. 2. Drainage spouts partially clogged.
17	12+500	Major Bridge	LHS	7 × 20.00	140	8	11	RCC deck slab + girder	1. Stone pitching partially damaged. 2. Expansion joints filled with debris. 3. Vegetation on side slopes of approaches.
17a	12+500	Major Bridge	RHS	7 × 20.00	140	8	11	RCC deck slab + girder	1. Stone pitching partially damaged. 2. Vegetation on side slopes.
18	13+370	Major Bridge	LHS	12 × 20.00	240	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches. 2. Expansion joints filled with debris. 3. Drainage spouts partially clogged. 4. Honeycombing on superstructure & arrestor pedestal.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
18a	13+370	Major Bridge	RHS	12 × 20.00	240	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris. 3. Drainage spouts partially clogged.
19	14+280	Major Bridge	LHS	6 × 20.00	120	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches. 2. Expansion joints filled with debris.
19a	14+280	Major Bridge	RHS	6 × 20.00	120	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes and abutment. 2. Expansion joints filled with debris.
20	14+470	Major Bridge	LHS	3 × 20.00	60	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris. 3. RCC crash barrier partially damaged.
20a	14+470	Major Bridge	RHS	3 × 20.00	60	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris. 3. RCC crash barrier partially damaged.
21	15+450	Major Bridge	LHS	8 × 20.00 + 7 × 20.00 +1×10.00 (as reported)	150	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris. 3. RCC crash barrier partially damaged.
21a	15+450	Major Bridge	RHS	(same configuration)	150	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris. 3. RCC crash barrier partially damaged.
22	15+920	Major Bridge	LHS	8 × 20.00	160	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
22a	15+920	Major Bridge	RHS	8 × 20.00	160	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris. 3. Soil erosion observed on embankment approaches.
23	16+860	Major Bridge	LHS	7 × 20.00	140	8	11.5	RCC deck slab + girder	1. Vegetation on side slopes of approaches and retaining wall. 2. Expansion joints filled with debris.
23a	16+860	Major Bridge	RHS	7 × 20.00	140	8	11.5	RCC deck slab + girder	1. Vegetation on side slopes & retaining wall. 2. Expansion joints filled with debris.
24	18+120	Vehicular Underpass	MCW	1 × 12.00	12	2 × 7.50	24.1	RCC box	1. Vegetation on RE plates. 2. Drainage spouts partially clogged.
25	18+910	Vehicular Underpass	MCW	1 × 12.00	12	2 × 8.20	24	RCC box	1. Vegetation on RE plates. 2. Drainage spouts not provided.
26	18+560	Major Bridge	LHS	5 × 20.00	100	8	11	RCC deck slab + girder	1. Vegetation on side slopes & retaining wall. 2. Expansion joints filled with debris.
26a	18+560	Major Bridge	RHS	5 × 20.00	100	8	11	RCC deck slab + girder	1. Vegetation on side slopes & retaining wall. 2. Expansion joints filled with debris.
27	19+420	Major Bridge	LHS	6 nos. & 1 × 33.00 m + 4 × 20.00 m + 1 × 30.00	143	8.3	11.3	RCC deck slab + girder	1. Vegetation on side slopes & retaining wall. 2. Expansion joints filled with debris. 3. Spalling & reinforcement exposed on substructure & superstructure.
27a	19+420	Major Bridge	RHS	6 nos. & same spans	143	8.3	11.3	RCC deck slab + girder	1. Vegetation on side slopes & retaining wall.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
									2. Expansion joints filled with debris.
28	20+360	Minor Bridge	LHS	1 × 24.00	24	8.4	11.2	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris.
28a	20+360	Minor Bridge	RHS	1 × 19.00	19	8.4	11.2	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris.
29	20+700	Major Bridge	LHS	7 nos. & 1×40.00 + 5×20.00 + 1×10.00	150	8.4	11.2	RCC deck slab + girder + composite girder	1. Vegetation on side slopes & retaining wall. 2. Expansion joints filled with debris. 3. Honeycombing on superstructure. 4. Edge beam repair ongoing at expansion joint.
29a	20+700	Major Bridge	RHS	7 nos. & 1×40 + 4×20 +1×10.00	130	8.4	11.2	RCC deck slab + girder + composite girder	1. Vegetation on side slopes; 2. Expansion joints filled with debris; 3. Honeycombing on superstructure.
30	23+000	Major Bridge (Service road)	LHS (service)	3 × 20.00	60	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts partially clogged. 3. Vegetation on side slopes and retaining wall.
31	23+060	Vehicular Underpass	MCW	1 × 12.00	12	2 × 7.50	21	RCC box	1. Vegetation on RE plates. 2. Drainage spouts partially clogged.
32	23+440	Major Bridge	LHS	18 nos. & 17 ×20.00 +1×10.00	350	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Reinforcement exposed & honeycombing on arrestor pedestals. 3. Vegetation on side slopes.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
32a	23+440	Major Bridge	RHS	same config	350	7.5	10.3	RCC deck slab + girder	same observations as LHS
33	24+050	Major Bridge	LHS	7 nos. & 3×20.50 + 4×20.00	141.5	8	10.8	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes.
33a	24+050	Major Bridge	RHS	same config	141.5	8	10.8	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Honeycombing & exposed reinforcement on superstructure. 3. Vegetation on side slopes.
34	24+280	Major Bridge	LHS	7 nos. & 6×40.00 + 1×29.50	269.5	8	10.8	RCC deck slab + girder + composite girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris. 3. Stone pitching partially damaged.
34a	24+280	Major Bridge	RHS	same	269.5	8	10.8	same	
35	24+880	Major Bridge	LHS	3 × 20.00	60	8	11	RCC deck slab + girder	1. Stone pitching partially damaged. 2. Expansion joints filled with debris. 3. Vegetation on side slopes & retaining wall. 4. RCC crash barrier partially damaged.
35a	24+880	Major Bridge	RHS	3 × 20.00	60	8	11	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Spalling & reinforcement exposed on superstructure. 3. Vegetation on side slopes. 4. RCC crash barrier partially damaged.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
36	25+460	Minor Bridge	LHS	3 × 10.00	30	7.5	10.3	RCC solid slab	Expansion joints filled with debris.
36a	25+460	Minor Bridge	RHS	3 × 10.00	30	7.5	10.3	RCC solid slab	Expansion joints filled with debris.
37	26+300	Minor Bridge	LHS	2 × 20.00	40	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
37a	26+300	Minor Bridge	RHS	2 × 20.00	40	7.5	10.5	RCC deck slab + girder	Expansion joints filled with debris; drainage spouts clogged.
38	28+600	Minor Bridge	LHS	1 × 25.50	25.5	7.5	10.5	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts clogged.
38a	28+600	Minor Bridge	RHS	1 × 25.50	25.5	7.5	10.5	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts clogged.
39	29+000	Minor Bridge	LHS	1 × 19.80	19.8	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts clogged.
39a	29+000	Minor Bridge	RHS	1 × 19.80	19.8	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts clogged.
40	31+435	Major Bridge	LHS	7 nos. & 4×20 + 1×40 +1×80 +1×40	240	7.5	10.5	Box girder + RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall.
40a	31+435	Major Bridge	RHS	same	240	7.5	10.5	Box girder + RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall. 3. Honeycombing on superstructure.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
41	31+920	Vehicular Overpass	MCW	2 × 14.50	29	5.5	6	RCC solid slab	1. Vegetation on side slopes. 2. Drainage spouts clogged.
42	35+480	Major Bridge	LHS	11 nos. & 7×10 + 3×20 +1×10	140	7.5	10.3	RCC deck slab + girder + RCC solid slab	1. Expansion joints filled with debris. 2. Vegetation on retaining wall.
42a	35+480	Major Bridge	RHS	same	140	7.5	10.3	RCC deck slab + girder + RCC solid slab	1. Expansion joints filled with debris. 2. Vegetation on retaining wall.
43	36+920	Major Bridge	LHS	4 × 20.00	80	8	11	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Toe wall partially damaged at abutment side. 3. Drain pipes not provided.
43a	36+920	Minor Bridge	RHS	2 × 20.00	40	8	11	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts partially clogged.
44	38+080	Minor Bridge	LHS	1 × 30.00	30	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall & vent ways.
44a	38+080	Minor Bridge	RHS	1 × 30.00	30	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall & vent ways.
45	39+500	Minor Bridge	LHS	1 × 30.00	30	7.5	10.3	RCC deck slab + girder	1. Expansion joint filled with debris. 2. Vegetation on side slopes and retaining wall.
46	39+600	Major Bridge	LHS	6 × 20.00	120	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall.
46a	39+600	Major Bridge	RHS	5 × 20.00	100	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
									2. Vegetation on retaining wall.
47	39+860	Major Bridge	LHS	3 × 20.00	60	8.1	10.6	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall. 3. Drainage spouts partially clogged.
48	40+040	Major Bridge	LHS	6 × 20.00	120	8.1	10.9	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall.
48a	40+040	Major Bridge	RHS	4 × 20.00	80	8.1	10.9	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes.
49	40+950	Major Bridge	LHS	3 × 20.00	60	7.5	10.3	RCC deck slab + girder	Expansion joints filled with debris.
49a	40+950	Major Bridge	RHS	3 × 20.00	60	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes.
50	41+760	Minor Bridge	LHS SR	1 × 30.00	30	7.5	8.5	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts clogged.
50a	41+760	Minor Bridge	LHS	1 × 30.00	30	8.2	9.2	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Drainage spouts clogged.
50b	41+760	Minor Bridge	RHS	1 × 30.00	30	8.2	9.2	RCC deck slab + girder	1. Growth of vegetation on side slopes & abutment. 2. Expansion joints filled with debris. 3. Drainage spouts partially clogged.
51	42+460	Major Bridge	RHS	2 × 30.00	60	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on retaining wall & vent ways.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
									3. RCC crash barrier partially damaged.
52	44+160	Minor Bridge	LHS	1 × 25.00	25	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
53	46+120	Major Bridge	RHS	3 × 20.00	60	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes & vent ways. 3. Drainage spouts partially clogged.
54	46+600	Minor Bridge	MCW	1 × 7.00	7	2 × 7.50	22.4	RCC box	1. Vegetation on side slopes of approaches. 2. Drainage spouts not provided.
55	47+870	Minor Bridge	LHS	1 × 12.00	12	7.5	10.5	RCC box	1. Vegetation on side slopes & abutment. 2. Drainage spouts partially clogged; drain pipes not provided. 3. Toe wall partially damaged.
55a	47+870	Minor Bridge	RHS	1 × 12.00	12	7.5	8.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Reinforcement exposed on superstructure. 3. Toe wall and median crash barrier damaged. 4. Drainage spouts not provided.
56	48+660	Minor Bridge	RHS	1 × 12.00	12	7.5	10.5	RCC box	Growth of vegetation on side slopes & wing wall.
57	49+080	Minor Bridge	LHS	2 × 20.00	40	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris.
57a	49+080	Minor Bridge	RHS	2 × 20.00	40	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes & abutment.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
									2. Expansion joints filled with debris.
									3. Drainage spouts partially clogged.
58	49+450	Major Bridge	LHS	7 × 20.00	140	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris.
									2. Vegetation on side slopes and pier cap.
58a	49+450	Major Bridge	RHS	7 × 20.00	140	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris.
									2. Vegetation on side slopes and pier cap. Minor cracks on substructure.
59	49+703	Major Bridge	LHS	3 × 20.00	60	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris.
									2. Vegetation on side slopes, substructure & superstructure.
59a	49+703	Major Bridge	RHS	6 × 20.00	120	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris.
									2. Vegetation on side slopes & substructure.
									3. Drainage spouts clogged. 4. RCC crash barrier partially damaged.
60	50+100	Minor Bridge	LHS	2 × 20.00	40	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
60a	50+100	Minor Bridge	RHS	2 × 20.00	40	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
61	50+250	Major Bridge	LHS	5 × 20.00	100	8	10.8	RCC deck slab + girder	1. Vegetation on side slopes & substructure.
									2. Expansion joints filled with debris.
									3. Drainage spouts clogged.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
61a	50+250	Major Bridge	RHS	5 × 20.00	100	8	10.8	RCC deck slab + girder	same as LHS
62	50+530	Major Bridge	LHS	7 × 20.00	140	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
62a	50+530	Major Bridge	RHS	7 × 20.00	140	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris. 3. Drainage spouts partially clogged.
63	52+220	Major Bridge	LHS	5 × 20.00	100	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes. 3. Drainage spouts partially clogged.
63a	52+220	Major Bridge	RHS	5 × 20.00	100	7.5	10.3	RCC deck slab + girder	same as LHS
—	**UDHAMPUR BYPASS**	—	—	—	—	—	—	—	—
64	0+150	Minor Bridge	LHS	1 × 30.00	30	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes. 2. Drainage spouts partially clogged. 3. Expansion joints filled with debris.
65	0+230	Minor Bridge	LHS	1 × 30.00	30	7.5	10.3	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
66	0+730	Minor Bridge	LHS	1 × 20.00	20	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
66a	0+730	Minor Bridge	RHS	1 × 20.00	20	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
67	0+940	Minor Bridge	LHS	1 × 25.00	25	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris. 3. Vegetation on retaining wall.
67a	0+940	Minor Bridge	RHS	1 × 25.00	25	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
68	1+970	Minor Bridge	LHS	1 × 25.00	25	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
68a	1+970	Minor Bridge	RHS	1 × 20.00	20	7.5	10.5	RCC deck slab + girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
69	2+850	Major Bridge	LHS	6 nos. & 3×20 + 2×35 +1×70	200	7.5	10.5	RCC deck slab + girder + box girder	1. Vegetation on side slopes. 2. Honeycombing on super & substructure. 3. Expansion joints filled with debris.
69a	2+850	Major Bridge	RHS	1 × 60.00	60	7.5	10.5	RCC deck slab + box girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes.
70	3+470	Minor Bridge	LHS	1 × 20.00	20	8.1	10.9	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes of approaches.
70a	3+470	Minor Bridge	RHS	1 × 20.00	20	8.1	10.9	RCC deck slab + girder	same as LHS

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
71	5+590	Major Bridge	LHS	(complex spans: 37 + 66 + 37 + 7×...)	300	7.5	10.5	RCC deck slab + girder + box girder	1. Vegetation on side slopes. 2. Expansion joints filled with debris.
72	5+680	Major Bridge	RHS	1 × 66.00	66	7.5	18.8	RCC deck slab + box girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris. 3. RCC crash barrier partially damaged.
73	5+840	Minor Bridge	RHS	1 × 24.00	24	8.1	10.9	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes of approaches.
74	8+820	Pedestrian Underpass	MCW	1 × 7.00	7	2 × 8.20	25.2	RCC box	Pavement to be cleaned.
75	11+886	Major Bridge	LHS	4 nos. & 1×20 + 2×30 +1×22.50	102.5	7.5	10.3	RCC deck slab + girder + box girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes of approaches.
75a	11+886	Major Bridge	RHS	same	102.5	7.5	12	Box girder	Expansion joints filled with debris.
76	12+580	Minor Bridge	RHS	1 × 21.40	21.4	7.5	12.1	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes. 3. Silt & debris on abutment cap. 4. Spalling & honeycombing on superstructure.
77	12+607	Major Bridge	LHS	4 nos. & 2×20 +2×30	100	8.1	11	RCC deck slab + girder	1. Vegetation on side slopes & abutment. 2. Expansion joints filled with debris. 3. Silt & debris on abutment cap.

S.No	Chainage (km)	Type of Structure	Side	No. of Spans	Total length (m)	Carriage way Width (m)	Deck Width (m)	Superstructure	General Observations
78	13+420	Minor Bridge	LHS	1 × 21.70	21.7	7.5	12.1	RCC deck slab + girder	1. Expansion joints buried with bitumen. 2. Vegetation on side slopes & retaining wall. 3. Silt & debris on abutment cap. 4. Spalling & exposed reinforcement on substructure. 5. Honeycombing on superstructure.
79	13+420	Major Bridge	RHS	4 nos. & 2×20 +2×25	90	7.5	10.5	RCC deck slab + girder	1. Vegetation on retaining wall, vent ways & abutment. 2. Expansion joints filled with debris. 3. Drain spouts partially clogged.
80	14+140	Minor Bridge	MCW	1 × 12.00	12	2 × 8.20	24.7	RCC box	1. Vent way choked. 2. Silt & debris accumulated on side slopes.
81	15+230	Major Bridge	LHS	1 × 61.00	61	8	11.6	Box girder	1. Reinforcement exposed on superstructure. 2. Expansion joints filled with bitumen. 3. Honeycombing & spalling on superstructure. 4. Drain spouts clogged.
81a	15+230	Major Bridge	RHS	2 × 30.00	60	7.5	10.3	RCC deck slab + girder	1. Expansion joints filled with debris. 2. Vegetation on side slopes. 3. Drain spouts clogged.
82	15+640	Vehicular Overpass	MCW	2 × 12.80	25.6	7.5	10.5	RCC box	Drainage spouts clogged.

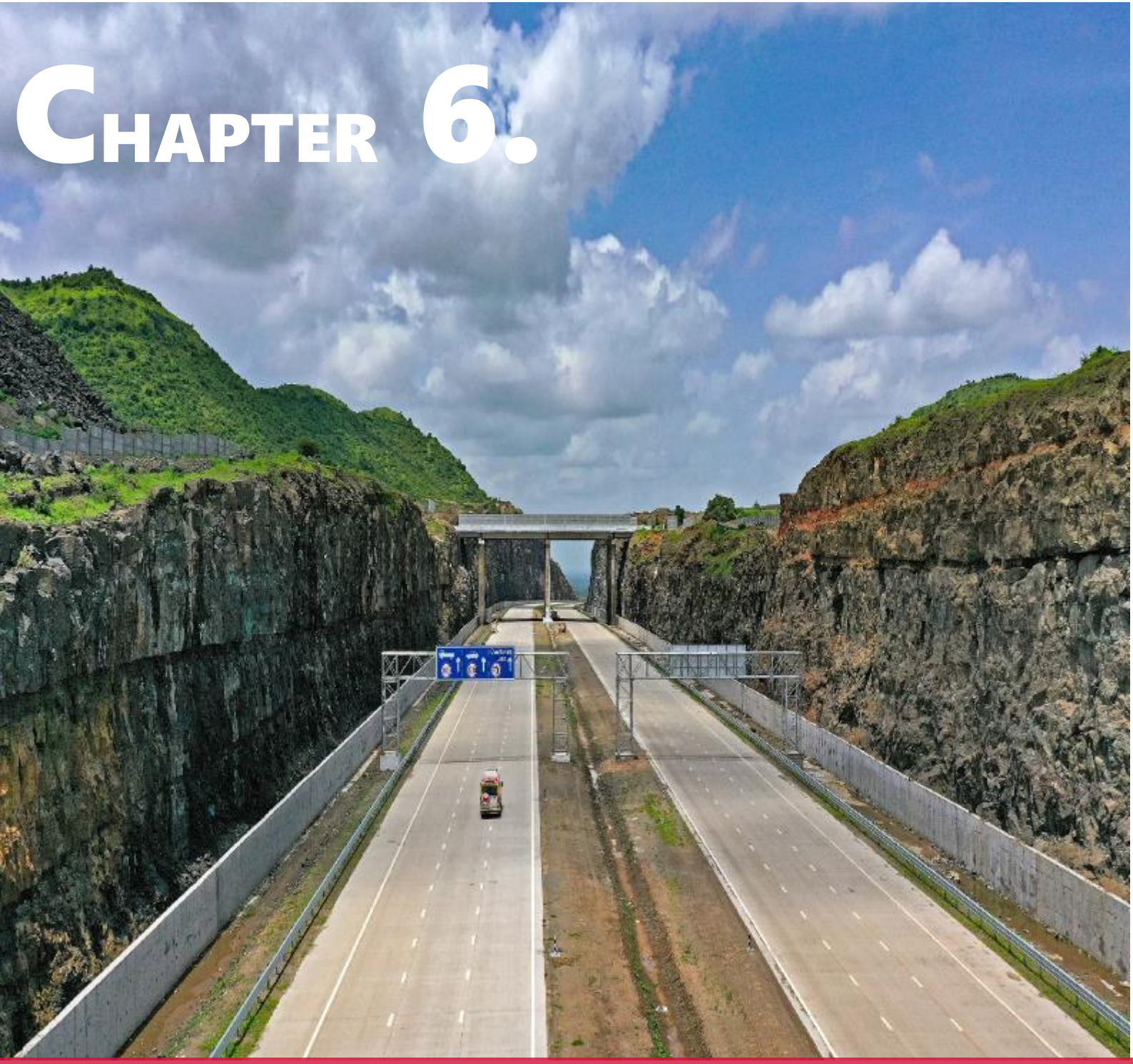
The MBIU survey of November 2023 has provided a comprehensive assessment of the bridge and culvert inventory of the Jammu–Udhampur section. The findings highlight that while the overall load-carrying capacity of structures remains adequate, the functional and durability-related deficiencies are substantial. Timely maintenance interventions are necessary to ensure the safety, serviceability, and long-term performance of the structures throughout the concession period.

5.5 Major Maintenance of Pavement

All pavements require maintenance. Stresses from traffic, weather, and moisture change effects on the Surface. Regardless of the reason, without maintenance, pavement deteriorates at a fast pace. An asphalt pavement is an essential asset which must always be maintained. Allowing the pavement to have minor problems will grow into major ones. No road user likes to hit potholes or step into a puddle of water. Sun, rain, and wind age the pavement. Friction from tires rolling wears away the asphalt glues and line stripping. Sunlight oxidizes and draws all the essential oils which results in the pavement breaking away. Water enters the lower layers of the pavement through cracks damaging the foundation which leads to potholes and failure. The summary of required overlay thickness in LHS direction as per FWD (MCW)

Major Maintenance details discussed at **Chapter 6**

Chapter 6.



Cost Estimate

Chapter 6. COST ESTIMATE

Based on the assessment carried out in above chapters, various costs were worked out by Knight Frank. The costs are divided into following categories

- Routine Maintenance
- Major Maintenance Cost
- Periodic Replacement of TMS/ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and Escalation.

6.1 Assumptions

The cost estimates are based on the following assumptions:

Following assumptions are considered for unit rates of various items while estimating the cost –

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard data book. The input rates for MoRTH standard data book were adopted as below
   a) **Manpower and labor** – As per applicable minimum wages published by Ministry of Labour & Employment, Government of India
   b) **Bitumen** – Bitumen rates are considered to be sourced from IOCL Panipat Refinery. The distance (to- from) from the midpoint of Project Highway is considered as 550 kms. VG-30 and VG-40 grades of bitumen are considered in our cost estimate.

☛ ***Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.***

Therefore, Bitumen prices are considered as per the client's forecast. Current published of bitumen are considered for unit rates calculation for FY26 and FY27. Average 10 years of price of bitumen are considered for unit rates calculation for FY28 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered

Exhibit 32 Bitumen Rates (in INR/MT) - Ex-MI supply excluding discount and GST

Refineries	Grade	Rate for FY24 and FY25	Rate for FY26 onwards
IOC Mathura	VG10	45522	33955
IOC Mathura	VG30	46322	34552
IOC Mathura	VG40	48652	36290
IOC Haldia	VG10	45922	33258
IOC Haldia	VG30	46722	33838
IOC Haldia	VG40	49052	35525
IOC Barauni	VG10	46952	34004
IOC Barauni	VG30	47752	34584
IOC Barauni	VG40	50082	36271
CPC Chennai	VG10	44922	33541
CPC Chennai	VG30	45722	34138
CPC Chennai	VG40	48052	35878
IOCL Panipat	**VG10**	**45,830**	**33,915**
IOCL Panipat	**VG30**	**46,630**	**34,506**
IOCL Panipat	**VG40**	**48,960**	**36,230**

c) **Sand and Aggregate** are sourced from the nearest quarry located on project highway.

d) **Cement** is procured from the nearest local market.

e) **Machinery Hire charges** of Plant and Machinery for various items of works have been considered from J&K SOR 2022 and some rates are considered from MORT&H Standard Data Book 2001-2002. Escalation has been considered on MORT&H Plant and Machinery rates to arrive at the present rates of 2024-25.

f) **Material Rates** are obtained from SOR of J&K, PWD 2021-22.

g) Some of the rates are based on Consultant's experience on similar ongoing projects in adjacent locations.

h) **Overheads and profits** have been considered based on MORT&H Standard Data Book. Applicable taxes have been considered in the Rate Analysis.

i) **Goods and Service Tax (GST)** is considered as 18% as per the latest Government Guidelines.

Exhibit 33: Adopted Unit Rates for Key items

S.nos	Items Description	Unit	Rates (₹)
1	Bituminous Concrete	Cum	11,518
	DBM	Cum	9,942
2	Milling	Cum	100
3	Tack Coat	Sqm	13
4	Road Marking	Sqm	485
5	Earthen Shoulder	Cum	330
6	Kerb Raising	Rm	350
7	Kerb Painting	Sqm	130
8	Road Studs	Nos.	215

- *The above unit rates are excluding GST.
- The unit rate of each item includes 10 % overhead for road works, 15 % overhead for structure works and 10 % contractor's profit.
- Details of components considered in rate analysis & quantification are presented in below **Exhibit 34.**

Exhibit 34: Major components detail for Key items

Sr. No.	Particular	Source	Reference
1	Rate Analysis	MORTH	Standard Data Books published by MORTH
2	**Material**		
A	Aggregate Rates	Nearby Project Corridor	As per Local Market Rates
B	ATMS, TMS cost		As per Vendor offer.
C	Cement	As provided in Local market	As per Local Market Rates
3	Equipment hire cost	Nearby project location	Standard Data Books published by MORTH
4	Labour	As per minimum wages	As per minimum wages

6.2 Routine Operation & Maintenance (O& M) Cost

Operations and Routine Maintenance work required as per the CA. During the concession period, the Concessionaire is fully responsible for Operation & Maintenance of Project Highway. Schedule K elaborates the requirements of various service factor desirable level and acceptable level during O & M period along with time if any parameter level of service beyond acceptable limit.

The CA Stipulates that the Concessionaire shall Operate and Maintain the Project Highway in accordance with Article 17 – Operation & Maintenance & Schedule –K Maintenance Requirements of Concession Agreement. The obligation of Concessionaire as per Article 17 is as follows:

- permitting safe, smooth, and uninterrupted flow of traffic on the Project Highway during normal operating conditions; collecting and appropriating the Fee.
- minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with the emergency services of the State.
- carrying out periodic preventive maintenance of the Project Highway.
- undertaking routine maintenance including prompt repairs too, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices.
- undertaking major maintenance such as replacement of panels in rigid pavement and associated activities
- preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the Project Highway
- preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Project Highway
- protection of the environment and provision of equipment and materials therefore
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media, and other agencies; and
- Complying with Safety Requirements in accordance with Article 18.

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operating cost. The estimates are projected based on best industry practices and are compared with the operation cost in the vicinity of the project area. Same has been divided into following major head

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS/HTMS/System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

6.2.1 O & M Strategy

Important Operations and maintenance work have been outsourced by the SPV. Details of important work orders outsourced are listed below **Exhibit 35**

Exhibit 35: Work outsourcing for Operations and Maintenance work.

Sn	Activity	Strategy
1	Routine Maintenance	In-house
2	Preventive Maintenance	In-house
3	Management and Supervision Staff	In-house
4	Security	Outsource
5	Corridor Management	Outsource

6.2.2 Routine Maintenance

Routine and Preventive maintenance encompasses work that is performed in reaction to an event, season, or overall deterioration of the transportation asset. This work requires regularity and reoccurring in nature. Routine and Preventive Maintenance is essential to maintain the condition of the highway asset or to respond to specific conditions or events that restore the highway system to a functional state of operation.

Total Routine Maintenance cost estimated by Knight Frank is ₹ 19.15 Crore for the balance concession period of 06 years. The routine and preventive maintenance covers maintenance of the following assets:

- Cleaning of Main Carriageway, service road, bridge deck
- Pruning of median plantation, watering
- Maintenance of Avenue Plantation
- Cleaning of debris from carriageway and shoulder
- Plantation and Landscaping
- ROW Cleaning
- Cleaning of all road asset, Toll Plaza
- Tunnel, MEP & Slope Protection

The average cost for Routine Maintenance is ₹41,180/ km/ month including GST. Based on our previous projects experience & based on the thumb rule method routine maintenance costs are reasonable.

Exhibit 36: Routine Maintenance Cost

Sr. No.	Item Description	As per Knight Frank	Remarks
1)	Routine Maintenance Cost (₹-Crore) (6 Years Concession Period)	19.15	
2)	Routine Maintenance Cost Per Year (₹-Crore)	3.19	
3)	Routine Maintenance Cost Per Km/Year (₹-Lakh)	4.94	

Above cost is including of GST

6.2.3 Preventive Maintenance

Total Preventive maintenance cost considered is ₹8.40 Crore for balance concession period of 06 years & following items considered for preventive maintenance work:

- Repair cost of pavement as and when pavement distress occurred.
- Repair of road Kerb, crash barrier, metal beam crash barrier and guard rail
- Repair of faded road marking
- Fixing of damaged sign boards, KM stones
- Shoulder maintenance
- Repair and maintenance of structure – bearing, expansion joint.
- Repair of crossroad junction
- Maintenance of Truck lay-bys

Average cost considered for Preventive Maintenance is ₹ 18,068/km/ month including GST. Based on our previous projects' experience & based on thumb rule method, preventive maintenance cost is reasonable.

Exhibit 37: Preventive maintenance Cost

Sr. No.	Item Description	As per KF	Remarks
1	Preventive Maintenance Cost (₹-Crore) (20 Years Concession Period)	8.40	
2	Preventive Maintenance Cost Per Year (₹-Crore)	1.40	
3	Preventive Maintenance Cost Per Km/Year (₹-Lakh)	2.17	

Above cost is including of GST

6.3 Highway Lighting

Electricity charge and maintenance cost of highway lighting is calculated as follows:

a) Each lighting post has counted from site and consider having LED light will be operated for 12 hours a day round the year.

b) Lighting post at median / separator are having with two halogen/LED lamp and service road shall be with single lamp only.

c) Tunnel & MEP OPEX

The O & M Cost estimated towards highway lighting is ₹2.23 Crore per year including GST.

6.4 Corridor Management

The following equipment along with operation manpower is required to provide as per Concession agreement.

a) 3 nos. of Crane

b) 3 nos. of route patrol vehicle

c) 3 nos. of Ambulance

O & M Cost estimated towards incident management with operation manpower is ₹1.12 Crore per year including GST.

6.5 Manpower Cost

The requirement of manpower is worked out to function all activity at project road for compliance of CA requirement, toll collection and security of asset. Requirement of manpower is classified into following broad division:

a) Management, Administration/HR and Supervision Staff: in-house manpower (**Cost considered towards SPV Manpower is ₹1.50 Crore per year)**

b) Toll Operation Manpower: outsource/In-house for providing 24-hour uninterrupted traffic flow at toll plaza and collection of tolls. Due to Nationwide implementation of Hybrid-ETC System, it is expected drop in toll collection manpower. However, where collection of overloading is expected, manpower for toll collection is not possible at this stage. The company is expecting revenue from overloading in this asset therefore curtailment of toll collectors is not expected. (**Cost considered towards SPV 3rd Party Manpower is ₹4.05 crore per year)**

The cost of manpower is estimated as ₹5.56 crore per year.

6.6 Office Expenses

Cost towards operation of office, insurance premium, professional fees for carrying out traffic, asset condition survey etc., IE fees, AMC for equipment installed at office, communication charge,

conveyance cost etc. are considered under Office Expenses. **The cost considered regarding office expenses & operation are ₹5.59 crore per year which is bifurcated as follows.**

- ***₹1.57 crore per year for Independent Engineer (IE)/Authority Engineer (AE) and professional fees covering legal, arbitration, and audit certification during the O&M period***
- ***Actual cost of insurance policy: ₹3.63 crore per year (inclusive of 18% GST)***
- ***Survey and investigation charges: ₹0.09 crore per year (inclusive of 18% GST)***

6.7 Major Maintenance

As mentioned in earlier chapter, Currently, the Project Highway is maintained by existing Annuity Concessionaire.

Based on RI & FWD Test results, SPV team made 02 MM cycles for the overlay of projects. Following items were considered during each MM cycle based on the ground requirements.

A. Flexible Pavement

- Overlay of 30-40 mm BC on MCW based on ground conditions and Test results.
- Overlay of 30 mm BC on service road considered.

B. Rigid Pavement

- Dismantling for existing PQC
- Relaying of dismantled panels
- Grouting with cement mortar
- Replacement and relaying of joints
- Diamond grinding with texturing

C. Replacement of Wearing Coat on structures

It is assumed that the pavement will be overlaid before handing over of the project confirming the pavement parameters kept within the limits as per Detailed strategy at **Exhibit 38.** Hence, the major maintenance cycles are proposed between year 2029 and end of concession period.

6.8 Major Maintenance items

Based on detailed highway inventory carried out during site investigation and data provided by the concessionaire following items considered during major maintenance work

- Bituminous concrete for MCW using VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Bituminous concrete for Service Road using VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Micro surfacing
- Repair of Transverse & Longitudinal joints on MCW & Service Road for Rigid pavement area
- Joint Sealant replacement of rigid area
- PQC taxing for rigid pavement area
- Removal & Relaying of Panels
- Crack Sealing

6.9 Major Maintenance Cycles & Cost

Major maintenance works to be considered in 02 cycles up to the year 2032. A total Cost of ₹69.23 crore (Without Escalation) considered for major maintenance work Upto end of Concession period. Major maintenance Strategy is shown in **Exhibit 38. Detailed Cost Estimate attached as Annexure A.**

Exhibit 38: Major Maintenance Cycles & Cost

Major Maintenance Strategy & Cost Details for Jammu Udhampur Project				
Cycle	**Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-01	**(Year 2028-2029)**	**A) Main Carriageway:** 01. 40 mm BC on LHS: 100% Length & 30mm BC on 20% length RHS 02. DBM Rectification: 5% Area 50 mm 03. Milling 04. Tack Coat: 100% LHS and 20% RHS 05. Road Marking: (100% LHS and 20% RHS) 06. Kerb Raising: 50% length 07. Kerb Painting: 100% Length 08. Road Studs: 100% **B) Service Road:** 01. 30 mm BC on 100% length 02. Road Marking 100% length	**39.18**	

Major Maintenance Strategy & Cost Details for Jammu Udhampur Project				
Cycle	**Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-02	**(Year 2031-32) Handover Period**	***A) Main Carriageway:*** 01. 30 mm BC on 100% length RHS and 40mm BC on 20% on LHS 02. DBM Rectification: 5% Area 50 mm 03. Milling 05. Tack Coat: 100% RHS + 20% on LHS 05. Road Marking: (100% RHS and 20% LHS) 06. Kerb Raising: 50% length 07. Kerb Painting: 100% Length 08. Road Studs: 50% ***B) Service Road:*** 01. 30 mm BC on 50% length 02. Tack Coat 50% Length	**30.05**	
Total MMR Cost (₹-Crore)			**69.23**	

*** Above cost is without escalation & inclusive of GST**

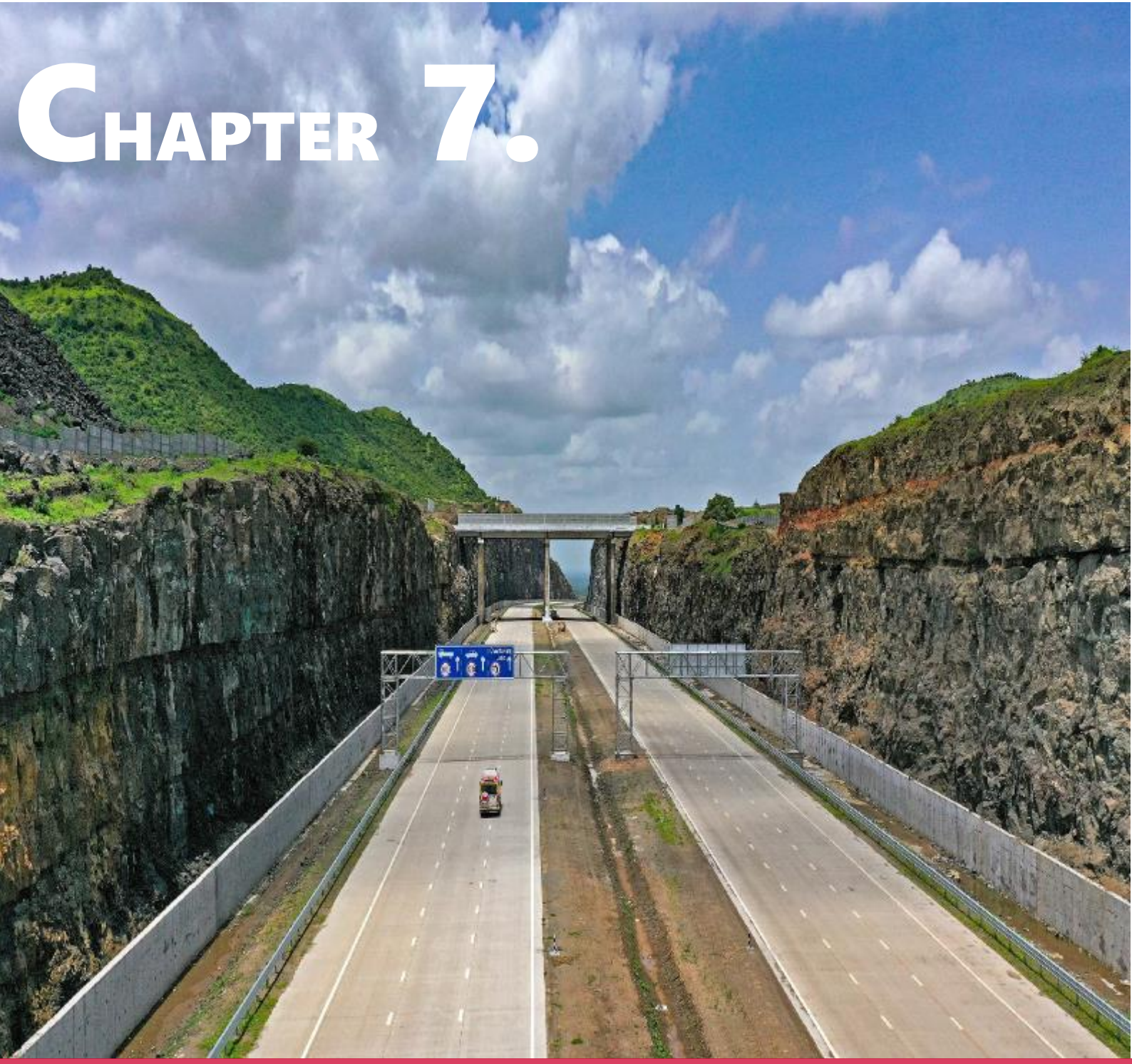
6.10 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period as below.

Exhibit 39: Summary O & M Cost for Remaining Concession Period

Summary of O & M Cost (₹-Crore)									
S.nos	**Type/Year of Expenses**	**2025***	**2026**	**2027**	**2028**	**2029**	**2030**	**2031****	**Total Cost**
1	**Routine O & M Cost**								
1.01	Preventive Maintenance	0.96	1.31	1.53	1.41	1.45	1.44	0.30	**8.40**
1.02	Routine Maintenance	2.65	3.17	3.17	3.17	3.17	3.17	0.65	**19.15**
1.03	Tunnel OPEX	0.57	0.68	0.68	0.68	0.68	0.68	0.14	**4.13**
1.04	Highway Lighting	1.87	2.23	2.23	2.23	2.23	2.23	0.46	**13.50**
1.05	Corridor Management	0.94	1.13	1.13	1.13	1.13	1.13	0.23	**6.81**
1.06	AMC cost Toll Plaza	0.22	0.26	0.26	0.26	0.26	0.26	0.05	**1.60**
1.07	SPV Manpower Cost+OH	4.65	5.57	5.57	5.57	5.57	5.57	1.14	**33.62**
1.08	Transportation Cost	0.62	0.74	0.74	0.74	0.74	0.74	0.15	**4.50**
1.09	Other Office Operation Cost	4.68	5.60	5.60	5.60	5.60	5.60	1.15	**33.81**
	Sub Total of O & M Cost	**17.16**	**20.70**	**20.91**	**20.79**	**20.83**	**20.83**	**4.28**	**125.51**
2	**Major Maintenance Cost**			**19.59**	**19.59**			**30.05**	**69.23**
3	Periodic Cost of TMS/HTMS Replacement								0
	Total Cost	**17.16**	**20.70**	**40.50**	**40.38**	**20.83**	**20.83**	**34.33**	**194.74**

Chapter 7.



Project Photographs

Chapter 7. PROJECT PHOTOGRAPHS

Toll Plaza @ 22+700 at Ban (Towards Udhampur)

Toll Plaza @ 22+700 at Ban (Towards Jammu)

Main Carriageway

Service Road

Project at Udhampur (VOP Portion)

Project at Udhampur (VOP Portion)

Tunnel-T-1

Tunnel-T-2

Tunnel-T-3

Tunnel-T-4

Bus bay

Truck lay bay

Median

RCC Coverd Drain

RCC Open Drain

Highway Lighting- Double Arm

Highway Lighting- High mast Light

Solar Blinker

Metal beam crash barrier

Metal wire mesh crash barrier

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TECHNICAL DUE DILIGENCE REPORT

QUAZIGUND TO BANIHAL SECTION OF NH-1A INCLUDING TUNNEL OF 8.45KM IN THE UNION TERRITORY OF J&K

PREPARED FOR

CUBE HIGHWAYS TRUST

PREPARED BY

Knight Frank

Rev. No.	Effective Date	Revision Description	Checked and Approval Record		
			Activity	**Name**	**Signature**
R0	**12.10.2025**	Draft DD Report of Quazigud Banihal Section	Prepared By	Aashif Ahmed	
R1	**15.10.2025**		Reviewed by	Maj Gen K T Gajria	
R2	**25.10.2025**	Final DD Report of Quazigud Banihal Section	Approved By	Rajeev Vijay	

Disclaimer

This report has been prepared, based on the inputs provided by the Client. Every effort is made to submit realistic details as available, statistics and information obtained/furnished at site by Client during our interaction at various levels.

In preparing this report, Knight Frank relied, in whole or in part, on data and information provided by the Client which information has not been independently verified by Knight Frank and which Knight Frank has assumed to be accurate, complete, reliable, and current. Therefore, while Knight Frank has utilized its best efforts in preparing this report, Knight Frank does not warrant or guarantee the conclusions set forth in this report which are dependent or based upon data, information, or statements supplied by third parties or the client.

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TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION 11

1.1 BACKGROUND 11
1.2 SCOPE OF WORK 11
1.3 APPROACH 12
1.4 METHODOLOGY 12
1.5 STUDY 12
1.6 STRUCTURE OF THE REPORT 13

CHAPTER 2. PROJECT DESCRIPTION 15

2.1 LOCATION OF PROJECT ROAD 15
2.2 TERRAIN 16
2.3 CLIMATE 18
2.4 DEVELOPMENT AS PER SCHEDULE B 18
2.5 ADMINISTRATIVE DETAILS OF THE PROJECT 20
2.6 SALIENT FEATURES OF PROJECT 22
2.7 PROJECT COMPLETION CERTIFICATE AND PCOD & FCOD 28
2.8 ANNUITY DETAILS 28
2.9 EXTENSION OF TIME 29
2.10 PENALTY 29
2.11 APPROVALS & PERMITS 29
2.12 CHANGE OF SCOPE 29
2.13 POWER AVAILABILITY OF PROJECT 30
2.14 SPECIAL FEATURES OF PROJECT 31
2.15 TUNNEL SAFETY AND OPERATIONS SYSTEMS OVERVIEW 31

CHAPTER 3. REVIEW OF PROJECT AGREEMENTS 35

3.1 REVIEW OF CONCESSION AGREEMENT 35
3.2 REVIEW OF SUPPLEMENTARY AGREEMENTS 42
3.3 REVIEW OF STATE SUPPORT AGREEMENT 45
3.4 REVIEW OF SETTLEMENT AGREEMENTS 47
3.5 REVIEW OF MAJOR O&M CONTRACTS 51

CHAPTER 4. CONDITION ASSESSMENT OF PROJECT ROAD 64

4.1 GENERAL 64
4.2 PAVEMENT 66
4.3 ASSESSMENT OF HIGHWAY 67
4.4 ASSESSMENT OF STRUCTURES 70
4.5 ASSESSMENT OF ROAD FURNITURE & PROJECT FACILITIES 72

4.6 Assessment of Tunnels 75
4.7 Assessment of Tunnel FIREFIGHTING SYSTEM 79
4.8 Assessment of TUNNEL VENTILATION SYSTEM 81
83
4.9 Assessment of INTEGRATED TUNNEL MANAGEMENT SYSTEM (ITMS) 84
4.10 Assessment of Toll Plaza 85
4.11 Assessment of Toll Management System (TMS) 87

CHAPTER 5. PAVEMENT INVESTIGATION & ASSESSMENT 90

5.1 General 90
5.2 Objectives 91
5.3 Review of Pavement Design 91
5.4 Test Pits & Subgrade Investigations 93
5.5 Network Survey Vehicles (NSV) Survey 93
5.6 Falling Weight Deflectometer (FWD) Survey 94
5.7 Structural Investigations 96
5.8 Major Maintenance of Pavement 100

CHAPTER 6. COST ESTIMATES 102

6.1 General 102
6.2 Rate Assumption 102
6.3 Routine Operation & Maintenance (O& M) Cost 105
6.4 O & M Strategy 107
6.5 Manpower cost 107
6.6 Vehicle Maintenance Cost 109
6.7 Civil work cost 110
6.8 Electrical and Mechanical (E & M) Cost 112
6.9 Toll Plaza TMS Cost 114
6.10 Major Maintenance Cost 115
6.11 Major Maintenance items 115
6.12 Major Maintenance items 116
6.13 Summary of Cost 118
120

CHAPTER 7. PROJECT PHOTOGRAPHS 121

LIST OF EXHIBITS

EXHIBIT 1 SCOPE OF TDD SERVICES 11
EXHIBIT 2 STRUCTURE OF THE REPORT 13
EXHIBIT 3 PROJECT LOCATION MAP 16
EXHIBIT 4 ROADWAY AND GEOMETRIC 19
EXHIBIT 5 ADMINISTRATIVE DETAILS OF PROJECT 20
EXHIBIT 6 SALIENT FEATURES OF PROJECT 22
EXHIBIT 7 TUNNEL LAYOUT 25
EXHIBIT 8 VEHICULAR CROSS PASSAGE DETAILS 26
EXHIBIT 9 ELECTRICAL CROSS PASSAGE DETAILS 27
EXHIBIT 10 DETAILS OF ANNUITY PAYMENTS 28
EXHIBIT 11 POWER DETAILS OF PROJECT 30
EXHIBIT 12 KEY TERMS OF CONCESSION AGREEMENT 35
EXHIBIT 13: KEY OBLIGATIONS OF PARTIES 37
EXHIBIT 14: KEY FINANCIAL COVENANTS DETAIL 38
EXHIBIT 15: KEY TERMS OF DAMAGES/ PENALTY 40
EXHIBIT 16: SUMMARY OF SUPPLEMENTARY AGREEMENTS 43
EXHIBIT 17: KEY TERMS OF THE STATE SUPPORT AGREEMENT 45
EXHIBIT 18: KEY ASPECTS OF THE 2018 SETTLEMENT AGREEMENT 47
EXHIBIT 19: KEY ASPECTS OF THE 2022 SETTLEMENT AGREEMENT 49
EXHIBIT 20: KEY TERMS OF ITMS ANNUAL MAINTENANCE CONTRACT (AMC) AGREEMENT 51
EXHIBIT 21: KEY TERMS OF SUBSTATION AMC AGREEMENT 54
EXHIBIT 22: KEY TERMS OF ELECTRICAL SUBSTATION SYSTEM 57
EXHIBIT 23: KEY TERMS OF TOLL MANAGEMENT SYSTEM AMC AGREEMENT 60
EXHIBIT 24 EXISTING VS SCHEDULE B 65
EXHIBIT 25 MAIN CARRIAGEWAY (FLEXIBLE PAVEMENT) 66
EXHIBIT 26 SERVICE ROAD PAVEMENT 66
EXHIBIT 27 RIGID PAVEMENT (TOLL PLAZA / TUNNEL SECTION) 66
EXHIBIT 28 DETAILS OF STRUCTURES 70
EXHIBIT 29 DETAILS OF ROAD FURNITURE'S ITEMS 72
EXHIBIT 30 DETAILS OF PROJECT FACILITIES 73
EXHIBIT 31: DETAILS OF TUNNEL 75
EXHIBIT 32: SUMMARY OF TUNNEL SYSTEMS 78
EXHIBIT 33 DETAILS OF TOLL PLAZA 85

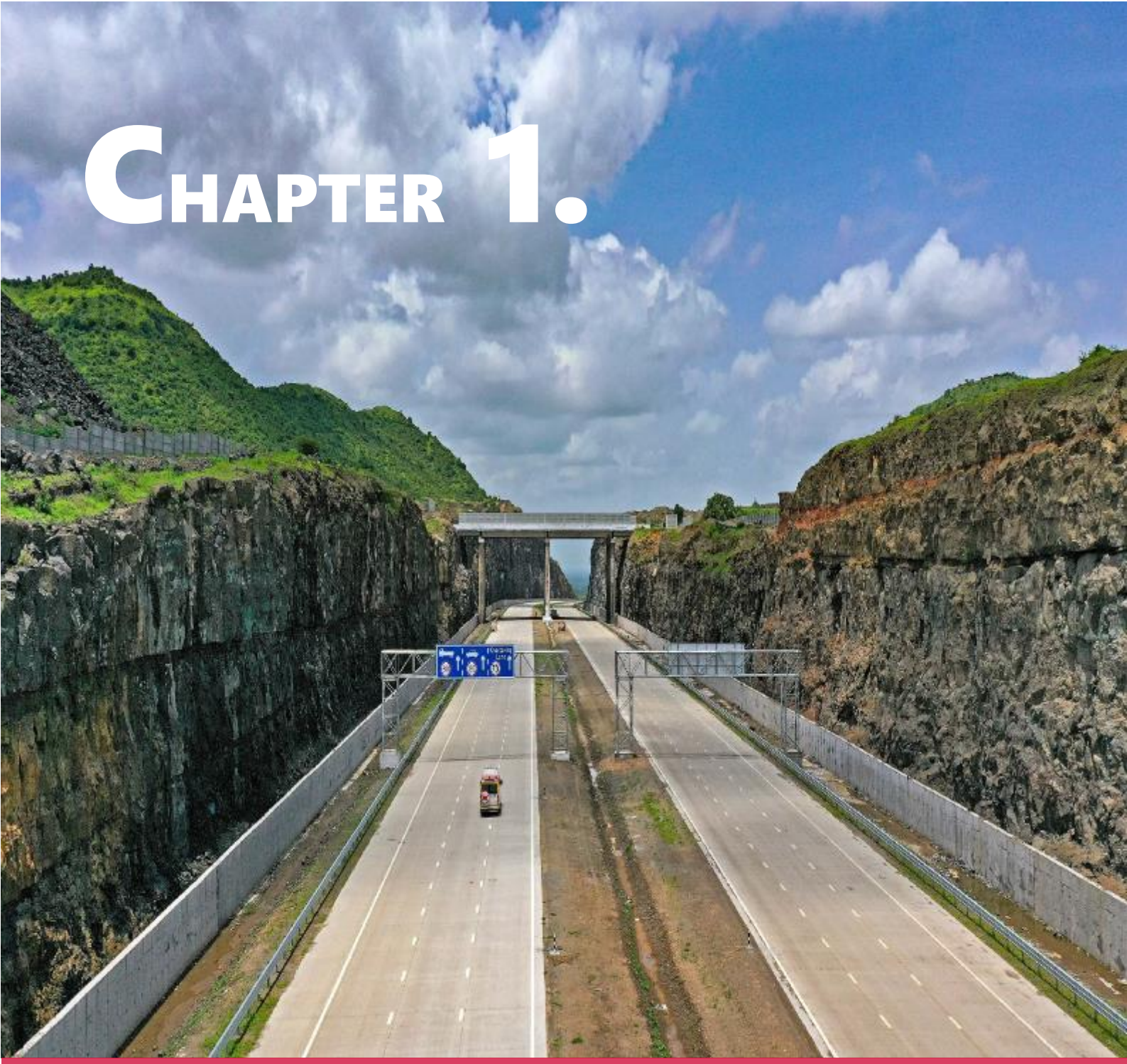
EXHIBIT 34 ADOPTED COMPOSITION – MAIN CARRIAGEWAY:....92
EXHIBIT 35 ADOPTED COMPOSITION – SERVICE ROADS: 92
EXHIBIT 36 ADOPTED COMPOSITION - TUNNEL AND TOLL PLAZA: 93
EXHIBIT 37 LIST OF BRIDGE INSPECTED 96
EXHIBIT 38 INSPECTION REPORTS OF BRIDGES NH-44, SECTION: BANIHAL TO QUAZIGUND 97
EXHIBIT 39 BITUMEN RATES (IN INR/MT) - EX-MI SUPPLY EXCLUDING DISCOUNT AND GST....103
EXHIBIT 40 ADOPTED UNIT RATES FOR KEY ITEMS....104
EXHIBIT 41 MAJOR COMPONENTS DETAIL FOR KEY ITEMS 104
EXHIBIT 42 O & M STRATEGY 107
EXHIBIT 43 MANPOWER COST....108
EXHIBIT 44 VEHICLE MAINTENANCE COST 109
EXHIBIT 45 CIVIL WORK COST (₹-CRORE) 111
EXHIBIT 46 DETAILS OF TOTAL E & M COST (₹-CRORE) 112
EXHIBIT 47 BREAKUP OF YEARLY E & M COST (₹-CRORE)....113
EXHIBIT 48 MAJOR MAINTENANCE CYCLES & COST 116
EXHIBIT 49 SUMMARY OF COST 119

ACRONYMS AND ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SPV	**QUAZIGUND EXPRESSWAY PRIVATE LIMITED**	**NHAI**	**National Highway Authority of India**
AMC	Annual Maintenance Contract	MM	Major Maintenance
ATMS	Advanced Traffic Management System	MS	Milestone
BC	Bituminous Concrete	NCR	Non-Compliance Report
BOQ	Bill of Quantities	NOC	No Objection Certificate
BHS	Both hand Side	NMS	Network Management System
BI	Bump Indicator	NSV	Network Survey Vehicle
CA	Concession Agreement	OFC	Optical Fibre Cable
CAPEX	Capital Expenditure	OPEX	Operation Expenditure
COD	Commercial Operations Date	O&M	Operation and Maintenance
COS	Change of Scope	PCC	Plain Cement concrete
CUP	Cattle Under Pass	PCI	Pavement condition Index
DBM	Dense Bituminous Macadam	PCR	Pavement condition rating
DG	Diesel Generator	PCU	Passenger Car Unit
DLC	Dry Lean Concrete	PCOD	Provisional Completion Certificate
DLP	Defect liability period	PQC	Pavement Quality Concrete

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
DPR	Detailed Project Report	PUP	Pedestrian Under Pass
ECB	Emergency Call Box	POP	Pedestrian Over pass
ESAL	Equivalent Standard Axle Load	PMB	Polymer Modified Bitumen
EPC	Engineering Procurement & Construction	QA/QC	Quality Assurance/Quality Control
ETC	Electronic Toll Collection	RCC	Reinforced Cement Concrete
FOB	Foot Over Bridge	RAP	Reclaimed Asphalt Concrete
FO	Flyover	RFQ	Request for Qualification
FRL	Formation Road Level	RHS	Right Hand Side
FWD	Falling Weight Deflectometer	RM	Routine Maintenance
GAD	General Arrangement Drawing	RMS	Radio Mobile System
GFC	Good for Construction	ROB	Road Over Bridge
GSB	Granular Subbase	ROW	Right of Way
GST	Goods & Service Tax	SR	Service Road
HT	High Tension		
IPC	Interim Payment Certification	SPV	Special Purpose Vehicle
IRC	Indian Roads Congress	SOR	Schedule of Rates
INR	Indian Rupees	SAN	Storage Area Network
ITM	Integrated Traffic Management	TMS	Toll Management System

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
KVA	Kilo-Volt-Ampere	TOR	Terms of reference
LA	Land acquisition	BOT	Build Operate & Transfer
LHS	Left hand side	TLB	Truck lay bay
LCV	Light Commercial Vehicle	VUP	Vehicular Under Pass
LVUP	Low height Vehicular under pass	VDF	Vehicle Damage Factor
LED	Light Emitting Diode	VIDS	Video Incident Detection System
LIU	Light Interface Units	VMS	Variable Message Sign
MIS	Management Information System	WIP	Work in Progress
MSA	Million Standard Axles	WIM	Weigh in motion
MAV	Multi Axle Vehicle	WMM	Wet mix macadam



Chapter 1.

Introduction

Chapter 1. INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt Ltd (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt Ltd has appointed M/s Knight Frank India (KFI) (hereinafter referred as "Technical Consultant" or "KFI") to carry out Technical Due Diligence of **Rehabilitation, Strengthening, and Four-Laning of the Quazigund to Banihal section (from km 189.350 to km 205.618), including construction of two 2-lane tunnels spanning a total of 8.45 km,** was conceptualized in the Union Territory of Jammu & Kashmir. This project was structured on a DBFOT (Annuity) model.

1.2 Scope of Work

Exhibit 1 Scope of TDD Services

S. No	Terms of Reference
1.	A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
2.	Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, as built drawings, O&M manual, COD/PCOD certificate, Punch list, previous major maintenance etc.
3.	Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle Load, material investigations etc.
4.	Formulation of future major maintenance Strategy.
5.	Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
6.	Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period

S. No	Terms of Reference
7.	Estimation of Annual Operation expenses along with Systems cost (TMS/HTMS) till the end of concession period.
8.	Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Approach

Approach followed for this Due Diligence study is to understand the requirement of the client and terms of reference set forth. Our aim is that the study report should assist the clients in achieving their objectives.

1.4 Methodology

Methodology adopted is broadly outlined as under:

- Objectives of the client were identified from discussions and terms of reference spelt out for the study.
- Available data was collated and analysed by desk study.
- Requirements were identified to augment information/ data as available.
- Detailed List of data required was sent to Mapple team from time to time
- Personal discussions were carried out with Clients by senior executives from KF to explain data requirements.
- Extensive interaction was made by KF with Clients and data was collected.
- Information to be gathered from Client head office & team were listed
- Relevant documents regarding project highway, including CA Agreement and other documents were collected and the provisions studied in detail.
- All data as collected was duly collated and arranged in the order as required for preparation of the report.

1.5 Study

- Data collected from all sources was duly collated and disseminated to concerned experts in KF.
- Project documents such as CA Agreement, O&M Costing details, O&M Manual etc were studied in detail.
- The data made available was analysed, and comments formulated for inclusion in the report.

1.6 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

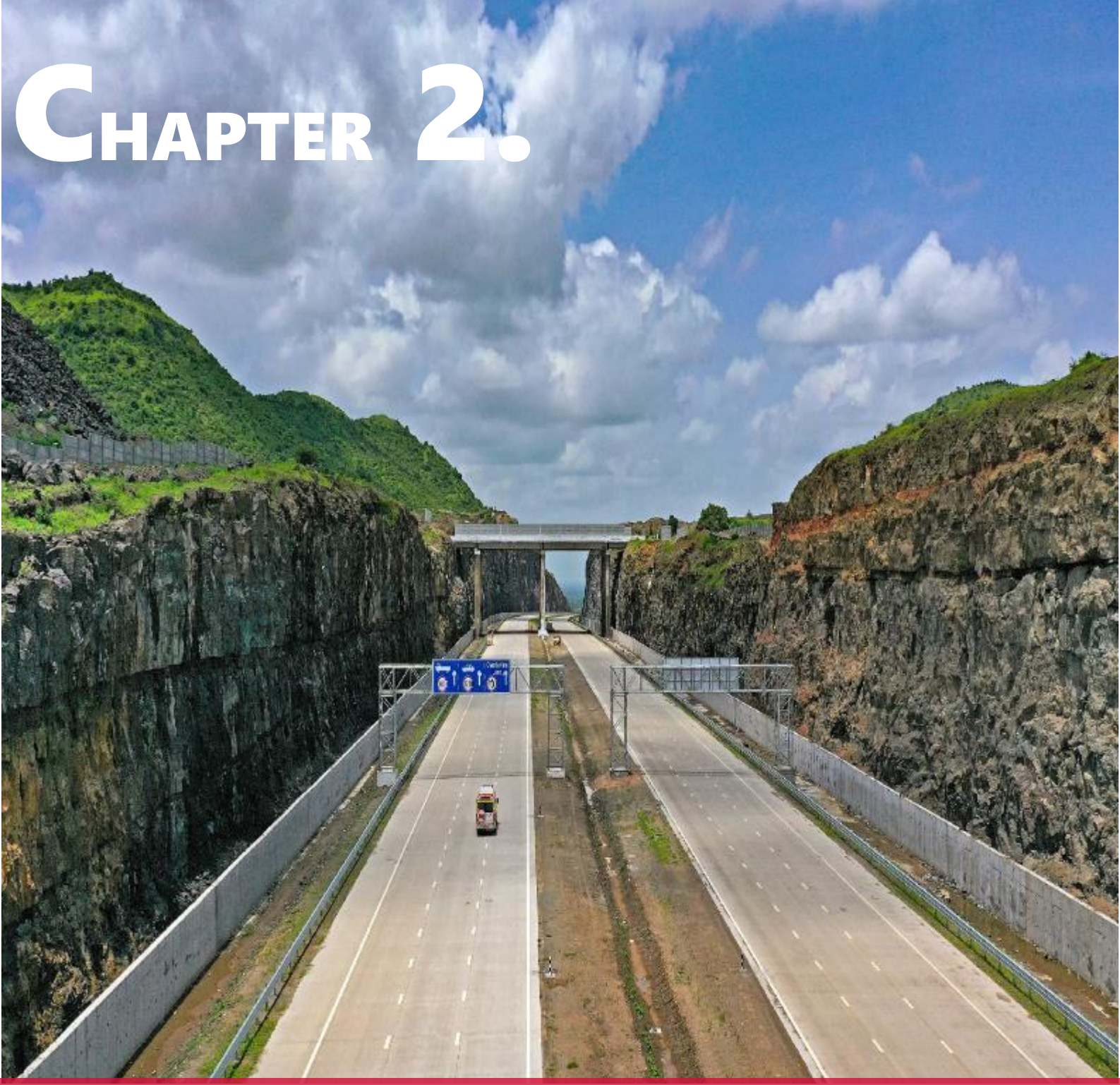
The site visit and inspection were carried out between the periods from 08th October 2025 to 10th October 2025.

The report is organized with the following chapters for easy understanding of various issues –

Exhibit 2 Structure of the Report

S.nos	Chapter	Description
1	**Chapter 1**	**Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**
2	**Chapter 2**	**Project Description:** The chapter describes existing project features, overview of project development.
3	**Chapter 3**	**Review of Agreements:** The chapter describes review of CA, Supplementary, State Support Agreement, Settlement Agreement & Various O & M Agreements.
4	**Chapter 4**	**Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**
5	**Chapter 5**	**Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance
6	**Chapter 6**	**Cost Estimates**: This chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period

Chapter 2.



Project Description

Chapter 2. PROJECT DESCRIPTION

2.1 Location of Project Road

This asset is a DBFOT (Annuity) project that involves the operation and maintenance of a four-lane stretch from Quazigund to Banihal, covering km 189.350 to km 205.618 of NH-44, including two tunnels (2-lane each) with a combined length of 8.45 km on NH-1A, situated in the Union Territory of Jammu & Kashmir. The Banihal–Quazigund Road Tunnel, spanning approximately 8.45 km, is positioned at an elevation of 1,790 meters (5,870 feet) beneath the Banihal Pass in the Pir Panjal range of the lower Himalayas. This vital infrastructure connects Anantnag and Ramban districts, significantly improving regional connectivity by reducing the distance between Srinagar and Jammu by 16 km and cutting travel time from 6 hours to approximately 5.5 hours.

As one of the longest road tunnels in India, it serves as a key all-weather route, bypassing the previously troublesome Jawahar Tunnel and Shaitan Nalla—areas often rendered impassable during winter due to snowfall and landslides. Its lower elevation compared to the Jawahar Tunnel (by 400 meters) makes it less susceptible to avalanches, ensuring year-round connectivity between Kashmir and the rest of India.

The tunnel is equipped with advanced features including forced ventilation for air circulation, 126 jet fans to prevent harmful gas buildup, cross passages every 500 meters for emergency evacuation, and state-of-the-art safety and monitoring systems. These include 234 CCTV cameras and a comprehensive fire-fighting system installed throughout the twin tubes. Constructed using the Austrian tunnelling method, the tunnel exemplifies modern engineering and plays a vital role in enhancing transportation efficiency and strategic connectivity in the region.

Following a competitive bidding process, the contract was awarded to a consortium comprising **M/s Navayuga Engineering Company Limited and M/s Krishnapatnam Port Company Limited,** with Navayuga Engineering serving as the lead member. In order to implement the project, the consortium incorporated a Special Purpose Vehicle (SPV) named M/s Navayuga Quazigund Expressway Private Limited. The Concession Agreement was signed on 13th July 2010.

The project road achieved Provisional Completion (PCOD) on 31st July 2021, followed by the receipt of the Completion Certificate on 15th December 2022. Currently, the project is in the Operations and Maintenance (O&M) phase

The project was subsequently acquired by the National Investment and Infrastructure Fund (NIIF) through its NIIF Master Fund in 12th July 2022.

The project has since been managed by Athaang Infrastructure, NIIF's proprietary roads platform, and the company was renamed ***M/s* Quazigund Expressway Private Limited**. The **current proposed acquisition** of the project is by ***M/s Cube Highways and Infrastructure V Pte. Ltd.***

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and flied investigations. Same is presented in this report.

Exhibit 3 Project Location Map

2.2 Terrain

The valleys flanking the Pir Panjal range lie at an elevation of around 1800 meters, while the highest peak directly above the planned tunnel alignment rises to approximately 3000 meters above sea level. Near the northern portal, quaternary soft rocks such as clayey silt are anticipated at shallow depths, only a few tens of meters deep. However, the majority of the tunnel will be excavated through a diverse array of hard rocks with varying lithological characteristics.

During geological field investigations, various rock types and structural features were identified. The sequence of lithologies observed follows a south-to-north trend, moving from older to younger formations.

Quartzite

Quartzite encountered in the region is fine to medium-grained, typically grey to white in color, and appears in thick beds, occasionally interbedded with shale. The rock is siliceous and extremely hard, with bedding planes often lacking joints. Quartzite is predominantly found in the southern section near the south portal, although interbedded quartzite layers also appear within the shale-dominated Mesozoic sedimentary sequence in the northern section. Near the south portal, quartzite exhibits several transitional features, including layers and gradations into conglomerates, indicating complex depositional processes within the massive quartzite formation.

2.3 Climate

The Quazigund–Banihal project corridor, located in the Pir Panjal range of the lower Himalayas in Jammu & Kashmir, experiences a cold mountain climate with significant seasonal variations. Winters, from December to March, are long and harsh, with temperatures often dropping below freezing — average lows near –5°C and highs around 3–5°C — accompanied by heavy snowfall. Summers, from May to August, are mild and pleasant, with daytime temperatures ranging between 15°C and 25°C. The region receives moderate to heavy precipitation throughout the year, averaging between 900 mm and 1,200 mm annually, primarily from western disturbances in winter and monsoon rains from June to September. Humidity levels remain moderate to high, typically between 60% and 80%. Due to its elevation of about 1,790 m above sea level, the area often experiences fog, frost, and occasional strong valley winds. Despite these challenging conditions, the Banihal–Quazigund tunnel ensures reliable, all-weather connectivity by mitigating the impacts of snow and landslides that commonly affect higher-altitude routes

2.4 Development as per Schedule B

As per **Schedule–B (Development of the Project Highway)** of the Concession Agreement for the **Quazigund–Banihal Section of NH-44 (Km 189.350 to Km 204.700)**, the Concessionaire is required to undertake the **design, engineering, construction, and development** of the following works:

The project involves **four-laning** of the existing two-lane highway, including the construction of **two parallel tunnels**—one of **0.69 km** and another of **8.45 km** length—along with approaches and associated infrastructure. The scope of development includes:

- **Main Carriageway:** Four-lane divided highway with appropriate pavement composition and geometric standards.
- **Tunnels:** Two 2-lane tunnels with modern ventilation, lighting, fire-fighting, drainage, and safety systems.
- **Bridges and Structures:** Construction and rehabilitation of bridges, culverts, retaining and breast walls as per design requirements.
- **Drainage Works:** Longitudinal and cross-drainage systems for efficient stormwater discharge.
- **Slope Protection:** Embankment stabilization, retaining structures, and erosion control measures.

- **Roadside and Safety Works:** Provision of crash barriers, traffic signage, road markings, boundary stones, kilometer and hectometer stones, and delineators.
- **Ancillary Facilities:** Construction of toll plazas at Km 193.760 and Km 203.880, bus bays, truck lay-bys, rest areas, pedestrian facilities, and landscaping.
- **Mechanical & Electrical Systems:** High-mast and tunnel lighting, communication systems, traffic management and surveillance systems, and emergency call boxes.
- **Environmental Works:** Tree plantation, slope greening, and environmental protection structures as per the Environmental Management Plan.

All works are to be executed in conformity with the **Manual of Specifications and Standards for Four-Laning of Highways (IRC:SP-84-2009)** and the **technical specifications provided in Schedule-D**.

2.4.1 Roadway and Geometric

Exhibit 4 Roadway and Geometric

Component	Chainage (km)	Description	Specifications
Four-Lane Main Highway	189.350–193.792 & 203.865–204.700	New 4-lane carriageway connecting Banihal to Quazigund	2 × 7.5 m lanes + 2 × 1.5 m paved shoulders + 4.0 m median
Twin Tube Tunnel		**Twin Tube Tunnel**	• **Tube 1 – 8457.70 meter Tube 2 – 8463.38 meter**
Viaduct	194.236 to 195.660		• ***Viaduct of length 1526m approved by NHAI HO***
Intervening 2-lane Rigid Pavement Road	194.488–195.425	Rigid pavement between tunnels	Width: 2 × 3.75 m + 2 × 1.5 m paved shoulders

The total project length is **15.35 km**, consisting of **two tunnels (9.146 km total length)** and **6.204 km of approach and open road sections.**

2.5 Administrative details of the Project

The Concession stands granted to operate the road from the Appointed date for the concession period with the obligation on concessionaire to maintain the road in the same period. Administrative details of projects are as at Exhibit 2 below.

Exhibit 5 Administrative Details of Project

Feature	Description
Project Name	Augment the Rehabilitation, Strengthening and Four Lanning of Quazigund to Banihal Section from km 189.350 to km 205.618 of NH1A, Including 2-Tunnels (2-Lane) of 8.45 km Length on NH-1A, on DBFOT(Annuity) basis, in the UT of Jammu & Kashmir.
Mode of the Execution (BOT Toll/ BOT Annuity	BOT Annuity
Scheme / Phase	Operation, Maintenance and Transfer
No. of Lanes/ Configuration	4 (Twin tunnel 2 lane)
Length of the Project (in Km)	As per CA: 15.35 Kms Actual Construction: 16.268 Kms
Total Project Cost (in Cr)	₹1987 Crore
Annuity Bi-annually	34 installments of INR 245 Crores each, every 6 months
NH No. (New / Old)	NH 44 / NH 1A
Concessionaire	**M/s Quazigund Expressway Private Limited.**
EPC Contractor	NAVAYUGA QUAZIGUND EXPRESSWAY PRIVATE LIMITED
Independent Engineer (O&M phase)	M/S ISAN Corporation in JV with M/S Chaitanya Projects Consultancy Pvt. Ltd.
Date of Award of Work (LOA)	13.07.2010
Date of Signing of Concession Agreement	13-Jul-10
Appointed Date	05-Jun-11
Concession Period	20 years (including 5 Years construction period from appointed date)
Construction period	1825 Days

Feature	Description
PCOD Date	31.07.2021
Final Completion Date	15.12.2022
End Date of Concession period	Year 2031
No. of Toll Plazas (Number and Location)	Two (One on Banihal side and one on Quazigund side) ○ Lamber Toll Plaza @ Ch: 193+760 (7 Lanes) ○ Ujroo Toll Plaza m 204+563 (7 Lanes)

2.6 Salient Features of Project

Salient features of the project are covered at **Exhibit 6** below.

Exhibit 6 Salient Features of Project

Sl. No.	Particulars	As per Schedule-B	As Built
1	Project Road Start	Km 189+350 at Banihal	Km 189+350 at Banihal
2	Project Road End	Km 204+700 at Quazigund	Km 205+618 at Quazigund
3	Project Length	15.35 km	16.268 km
4	Rigid Pavement	17+1 Kms	
Tunnel			

1	Tunnel	• **Short Tunnel** –
		  ○ Length 696 m
		  ○ From Km 193.792 to Km 194.488
		• **Long Tunnel** –
		  ○ Length 8.45 Km Single Tube Tunnel
		  ○ From Km 195.425 to Km 203.865
			• **Twin Tube Tunnel**
			• **Tube 1 – 8457.70 meter**
			• **Tube 2 – 8463.38 meter**

2	Length (Excavation) (Portal to Portal)	• **1st Tube: 8442.51m** • **2nd Tube: 8457.45 m,**	*Both tunnels relate to Vehicular cross passages at an interval of 500m*
3	Tunnel Details	• **Clearance above pavement: 5.0 meters** • **Tunnel type: Uni-directional twin tube** • **Clear width: 7.0 meters** • **Driving lane width: 3.750 meters** • **Emergency lane width: 3.250 meters** • **Tunnel height from pavement level: 8.58 meters**	

Sl. No.	Particulars	As per Schedule-B	As Built
		• **Intermediate slab height: 5.55 meters** • **Slab thickness: 200 mm**	
Twin tube solution approved by NHAI vide letter no. NHAI/BOT/11019/5/2010/QB/38 dated 26.05.2011			
5	Cross Passage	16 nos.	
6	Functional Cross Section	○ 7.0m single lane carriage way with an emergency lane, ○ Driving Lane 3.75m wide and emergency lane 3.25m wide, Vertical clearance 5.50m	
6	Firefighting and Scudder system	SCADA System, Fire Fighting system	
Structures			
1	Viaduct	1 no. Length: 1424 m	Viaduct at km 194.236 to 195.660
Viaduct of length 1526m approved by NHAI HO & conveyed vide PD's letter no. PD/SGR/14001/2014/Gen/049 dated 30.10.2014, in lieu of short tunnel T-1 (696 m length & viaduct of length 270 m)			
2	RUB (Road Under Bridge)	1 no. Length: 79.95 m	RUB on Katra-Quazigund New B.G. Railway line at Ch. 191.107 (Railway Chainage Ch. 151.710).
3	Minor Bridges	6 Nos South End- (Span-110.85 M, 22.854M, 9.940M,25M,10.82M,9.22M.)	
4	Major Bridges -	1 no. Length: 110.95 m	Four Lane Bridge across River Bichlari at Ch.189.440
5	Minor Bridges	05 nos.	
6	Culvert	20 nos. (Box Culvert)	
Misc.			
1	Toll Plaza	2 Nos. (for north side and south side traffic	Ch: 193+760 and Km 204+563 having 7 lanes

Sl. No.	Particulars	As per Schedule-B	As Built
2	Drainage pipe in tunnel Tube I	8.450 km (4 nos.)	
3	Drainage pipe in tunnel Tube II	8.450 Km (4nos.)	
4	Drainage pipe in Cross passages	32 Nos. (On both the ends)	
5	Slope Protection works at South Portal	100 mts	
6	Slope Protection works at North Portal	150 mts	
7	Lay bays	2 Nos.	
8	Firefighting Niches	66 Nos.	
9	Vehicular emergency exit	11 Nos.	
10	Ventilation Building	02 Nos.	
11	Tunnel Control Centre (Building)	02 Nos.	
12	Toll Plaza Building	02 Nos	

Exhibit 7 Tunnel Layout

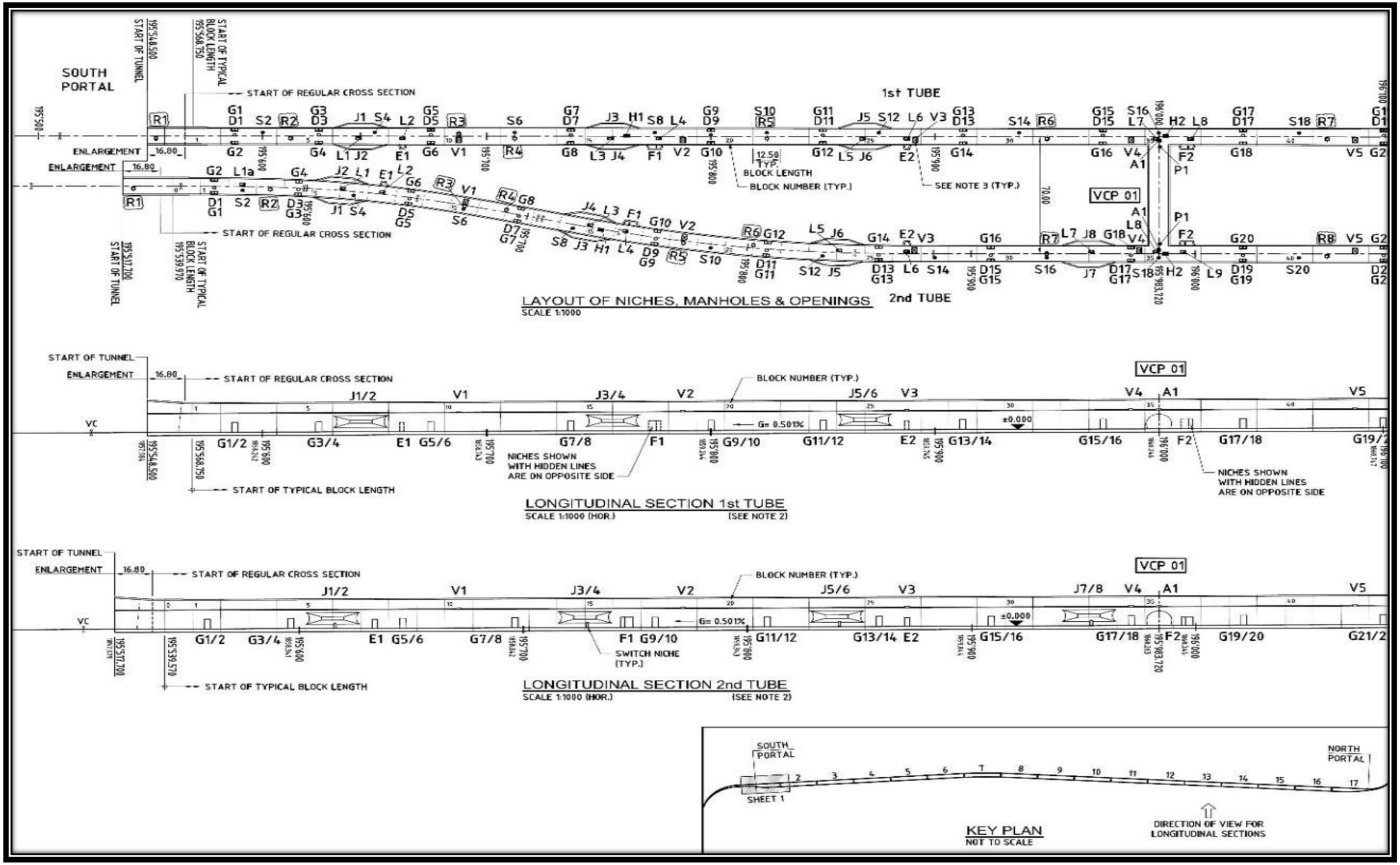


Exhibit 8 Vehicular Cross Passage Details

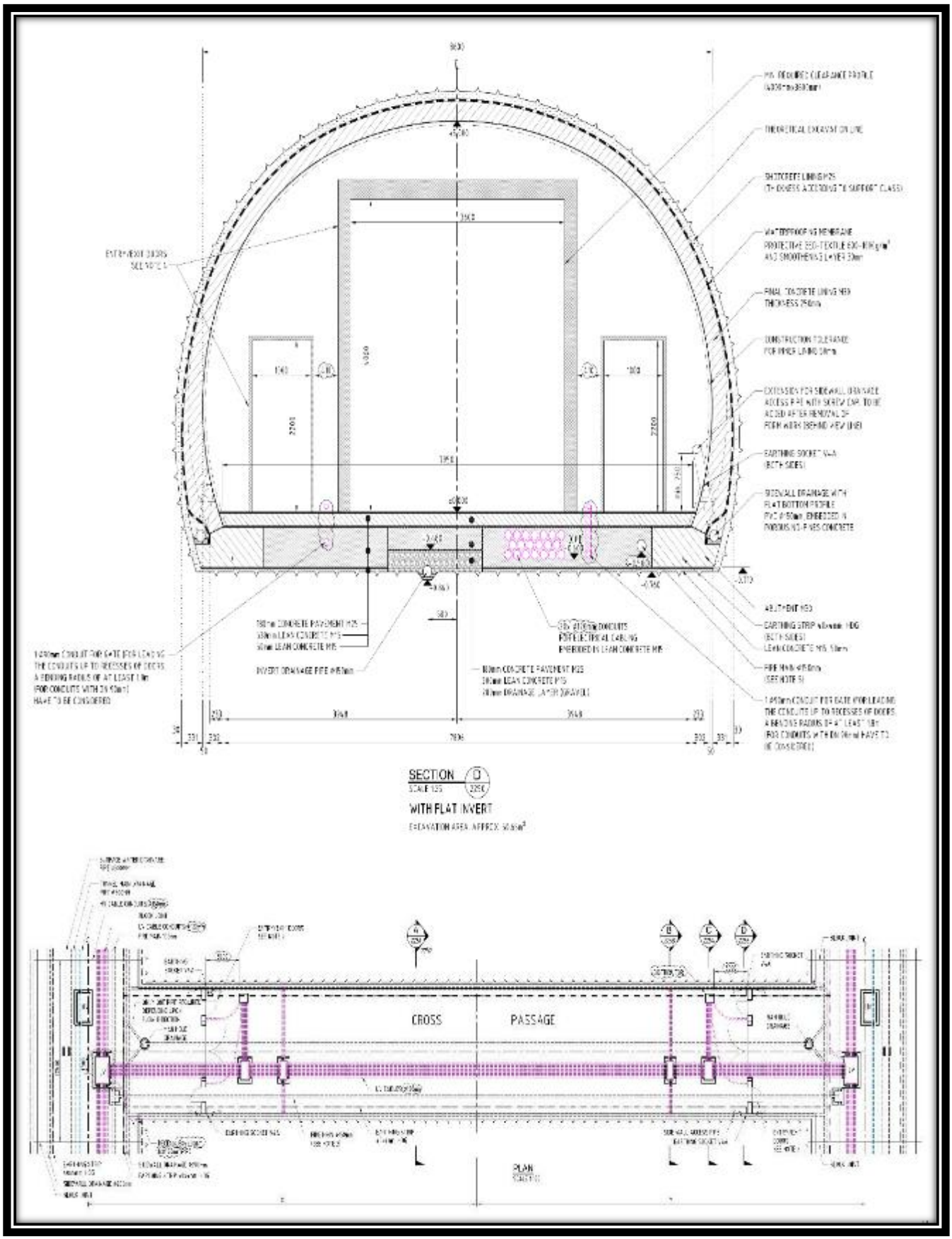
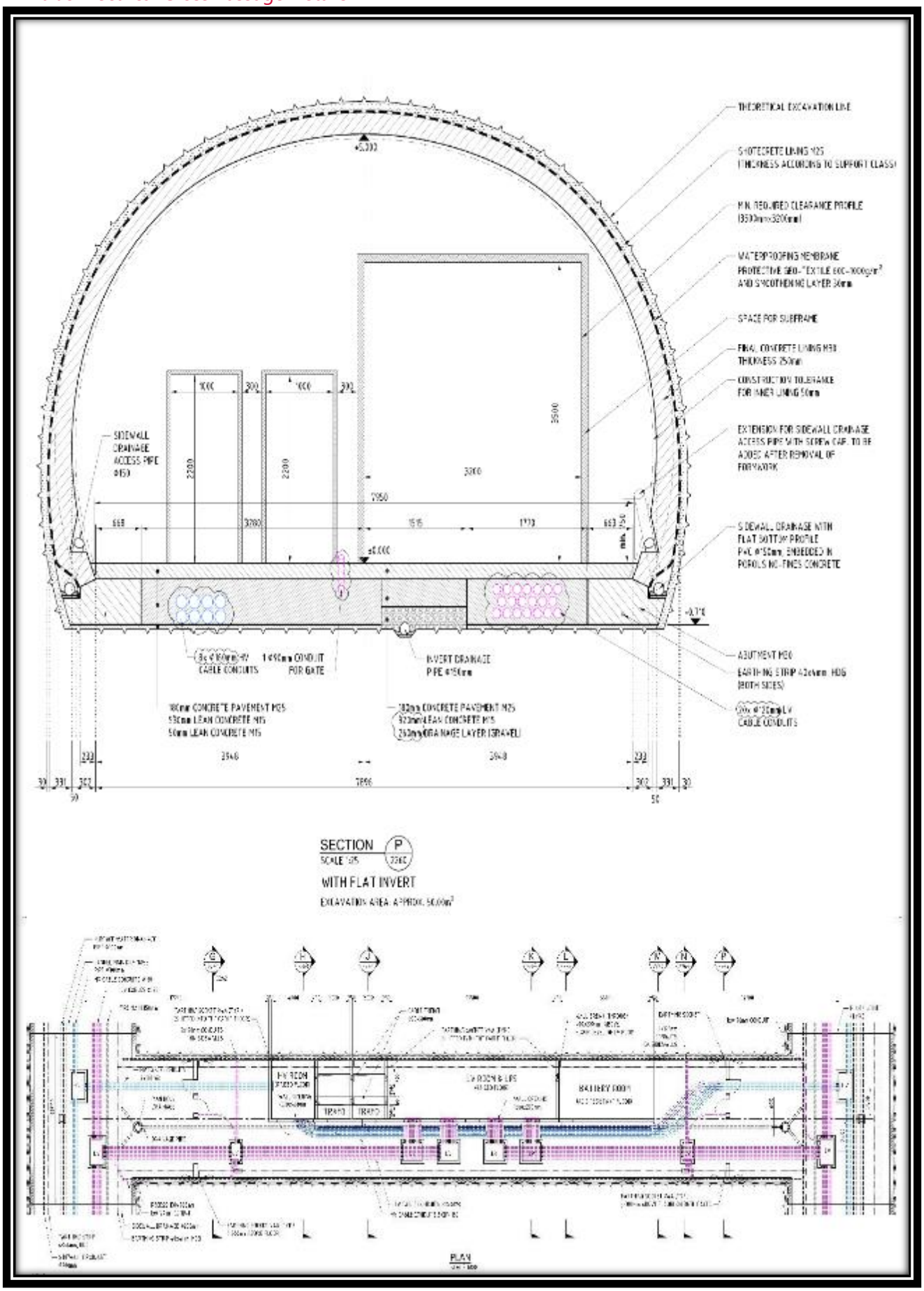


Exhibit 9 Electrical Cross Passage Details



2.7 Project Completion Certificate and PCOD & FCOD

A. Partial Commercial Operation Date (PCOD):

- The scheduled completion date was 31.072021.

B. Final Commercial Operation Date (COD):

- The IE issued the Completion Certificate on 15.12.2022.

2.8 Annuity Details

As per the Concession Agreement, an annuity amount of ₹201.90 crore is payable every six months. To date, a total of 22 annuity payments have been made by the Authority. The detailed breakdown of these annuity payments is provided below

Exhibit 10 Details of Annuity Payments

Sr. No.	Annuity	Annuity Due On	Amount Claimed	Ded. by IE	Annuity Received	Remarks
1	1st Annuity	30-07-2022	245	0	245	
2	2nd Annuity	30-01-2023	245	0.34	244.66	Deduction for Descope items
3	3rd Annuity	31-07-2023	245	0	245	
4	4th Annuity	30-01-2024	245	0.38	244.62	Deduction for Maintenance works
5	5th Annuity	30-07-2024	245	0	245	
6	6th Annuity	30-01-2025	245	0	245	
Total Amount (₹-Crore)			**1470**	**0.72**	**1469.28**	
Deduction (%)				**0.05%**		

Based on the above, Knight Frank is of the view that the total deductions of just ₹0.72 crore across six annuity payments—including ₹0.35 crore for descoped items—indicate the concessionaire's consistently high standard of maintenance over the three-year project period

2.9 Extension of Time

There is no extension of time for the concession period on the project

2.10 Penalty

There is no penalty on project as of now.

2.11 Approvals & Permits

Since Project is in O & M stage therefore all necessary approvals required are in place with concessionaire.

2.12 Change of Scope

As informed, the Concessionaire submitted a cost estimate for street lighting along the viaduct and highway section between Km 193+600 and Km 195+366 via letter no. NQEPL/1239/JK/21-22/300 dated 06.09.2021 to the then Independent Engineer under the Change of Scope (CoS). The Independent Engineer provided comments on the proposal to the Authority through letter no. CPC/OM-03/2021/HO/GEN/015/4642 dated 12.01.2022. Subsequently, the Contractor referred the matter back to the Independent Engineer through letter no. NQEPL/1239/JK/21-22/402 dated 24.01.2022. Following further review, the Change of Scope proposal was recommended to the Authority via the Independent Engineer's letter no. CPC/OM-03/NQE/2021/HO/CON/049/5960 dated 04.05.2022.

2.13 Power Availability of Project

Exhibit 11 Power Details of Project

Location	DPR Status	33KV Line	33/11 KV Substation	Remarks
Status 33/11kv sub-station (permanent)				
North Portal	Approved	23 Kms from Wanpoh Anantnag Grid, work under progress	12.5MVA capacity (OLTC AVR, with +45% to -3% voltage correction)	Substation work completed
South Portal	Approved	3 Kms from nearest Grid (line installed). To be extended by 1 Km to SPVB permanent station later	Proposed 12.5MVA OLTC AVR, with +45% to -3% voltage correction	Concessionaire should approach NHAI for further course of action
Present Power availability.				
North Portal	Local receiving station at Hiller (Augmented to 10MVA). Independent power transformer for tunnel uses with automatic voltage correction up to 15%.	At 11KV level (dedicated line), 2 KM line length, Dog (100mm^2) conductor installed and commissioned.	From Local Area 33/11KV Sub-Station	In use for tunnel equipment operation till permanent 12.5MVA station is in place.
South Portal	3.15MVA (Augmented to 10MVA) with 15% voltage correction.	At 33KV level (dedicated line), 11KV line with 2X50 sqmm conductor used for overhead line from 33/11KV Sub-station to SPVB	From Tethar 80MVA, 33/11KV Substation	In use for tunnel equipment operation till permanent 12.5MVA station is in place.

☛ **Currently, both North and South Portals are operating on temporary power arrangements using augmented substations (10MVA) with voltage correction. While the permanent 12.5MVA substations are either completed or proposed, they are not yet commissioned for operational output. Timely commissioning and coordination with NHAI are essential to ensure uninterrupted long-term power supply for tunnel operations.**

2.14 Special Features of Project

Each tunnel tube ensures uninterrupted traffic flow, featuring a 3.75-meter-wide main carriageway and a 3.25-meter-wide emergency lane, which is designated for use during vehicle breakdowns and rescue operations.

An Integrated Tunnel Control System (ITCS) has been implemented to oversee and manage various tunnel facilities and utilities. The ITCS includes:

1. Monitoring and control of traffic management systems inside and outside the tunnel.
2. Monitoring and control of the tunnel's ventilation systems.
3. Monitoring and control of the power supply systems within and outside the tunnel.
4. Monitoring of the emergency call system within the tunnel.
5. Monitoring of the Linear Heat Sensing System inside the tunnel and the fire alarm system in external buildings.
6. Monitoring and control of video surveillance systems both inside and outside the tunnel.

2.15 Tunnel Safety and Operations Systems Overview

- ***Traffic Control System***

The Traffic Control System includes traffic lights, message signs, and road signs positioned at the north and south roundabouts, tunnel portals, and inside the tunnel. These components regulate traffic under normal, congested, and emergency conditions. All traffic devices are monitored and operated using Programmable Logic Controllers (PLCs) through the Integrated Tunnel Management System (ITMS), with both automatic and manual operation modes available.

- **CCTV Monitoring & Video Surveillance**

The CCTV system monitors vehicle movement and road conditions inside and around the tunnel. It supports live viewing, recording, and playback functionalities.

  - Fixed cameras installed inside the tunnel enable incident detection.
  - Rotating cameras are positioned 50 meters before each portal.
  - A traffic counting system is integrated with the video feed.
  - Automatic Incident Detection is included.
  - All devices are connected via CAT6 on a TCP/IP network, managed through a Video Management System (VMS).
  - The system provides server redundancy and 24-hour recording capacity.

- **Linear Heat Sensing (LHS) and Fire Alarm System**

- LHS systems with optical sensors are installed in both portals, control rooms, and ECP LV rooms.
- Evaluation units trigger zone alarms, interfaced with the ITCS SCADA system via Modbus.
- Addressable fire alarm panels are located in the north and south control rooms and admin buildings.
- Conventional smoke detectors are installed in ECP LV rooms at ~1.5 km intervals and connected via RIOs using hardwired NO/NC contacts.

- **Emergency Communication System (ECS) & Public Address (PA) System**
  - SOS call boxes are installed every 250 meters along the emergency lanes within the tunnel.
  - The system allows verbal communication between tunnel users and operators. All calls are recorded and stored for 30 days.
  - PA speakers with noise-sensing microphones are located in ECP LV rooms and buildings to broadcast emergency or general messages.

- **Networking Infrastructure**

The tunnel network is structured in three rings:

- **Major Ring**: Four core switches (two each at Main Control Centre and Backup Control Centre), configured with redundancy protocols.
- **Sub Rings**: Two rings connecting MCC and BCC via ten distribution (aggregation) switches to ensure continuity even if a cross-passage is down.
- **Access Rings**: Eight rings (four per tunnel side) connecting SOS points via access switches (E1–E34), ensuring localized failure does not disrupt the entire network.

- **Telephone System**

The telephone network facilitates emergency communication between Tunnel Control Centre (TCC), Backup Control Centre (BCC), and tunnel staff at ECP LV rooms. It remains operational during fire events and supports emergency coordination.

- **Rigid Height Barriers**

Rigid height restriction barriers are installed at:

- South Portal railway junction
- Junction near the North Portal

These prevent entry of oversized vehicles into the tunnel.

- **Ventilation System**

A combination of semi-transversal and longitudinal ventilation systems is installed to ensure safety and air quality. Key functions include:

- Smoke control and safe evacuation during fire events
- Maintaining visibility and clear escape routes
- Effective smoke extraction during firefighting

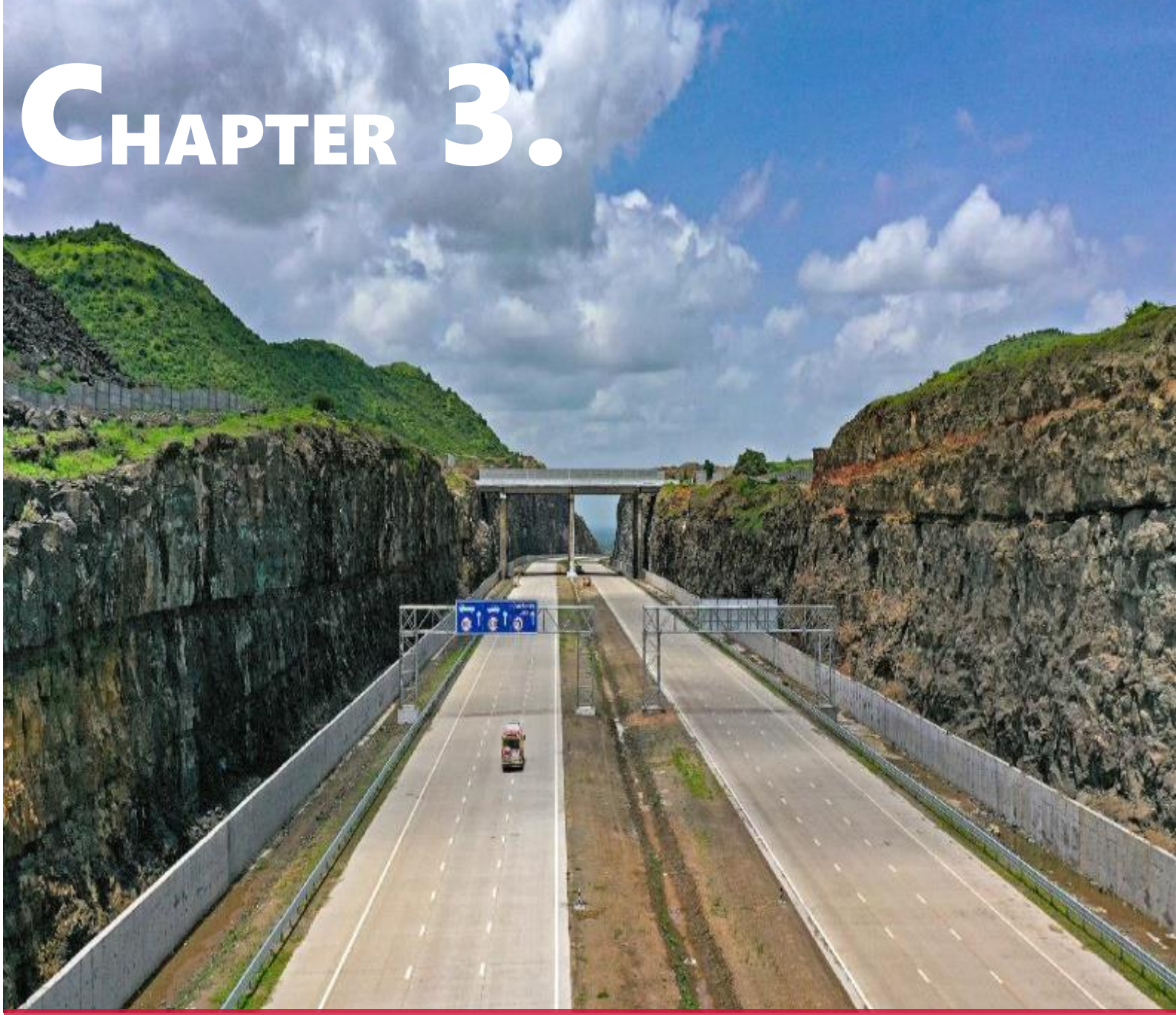
The system is designed to manage a fire heat release rate of 50 MW (as per HBI Technical Report I6007-13-R-04/01 – 04/00).

During early fire stages, smoke stratifies and spreads bi-directionally at ~1–2 m/s. After 5 minutes and at ~600 m from the source, smoke cools, descends, and reduces visibility if not ventilated.

KF View:

The tunnel is equipped with a comprehensive, integrated safety and operations system including traffic control, surveillance, emergency response, ventilation, and communication networks. These systems are designed with redundancy, automation, and real-time monitoring to ensure uninterrupted tunnel operations and quick response in case of emergencies, thereby enhancing safety, reliability, and user experience.

Chapter 3.



Review of Project Agreements

Chapter 3. REVIEW OF PROJECT AGREEMENTS

3.1 Review of Concession Agreement

The Concession Agreement was executed between NHAI and Navayuga Quazigund Expressway Pvt. Ltd. (NQEPL) on 13 July 2010 for Rehabilitation, Strengthening and Four-Laning of the Quazigund–Banihal section of NH-1A from Km 189.350 to Km 204.700, including two tunnels (≈0.69 km and 8.45 km) on a DBFOT (Annuity) basis under NHDP in the Union Territory of Jammu & Kashmir.

Exhibit 12 Key Terms of Concession Agreement

Particulars	Description
Date of Agreement	13 July 2010 (execution following LOA dated 30.04.2010).
Appointed Date	05 June 2011
Employer	NHAI (National Highways Authority of India)
Concessionaire	Quazigund Expressway Private Limited (NQEPL).
Concession Period	**20 years** from Appointed Date, covering construction, O&M, and eventual transfer
Length of the Project, Total project Cost	Length of Project: 15.35 km stretch including 2 tunnels (0.69 km & 8.45 km) Total Project Cost **₹2070 crore**.
Achievement of Project Milestones	Linked to Right of Way & completion schedule. **Project Milestones – Quazigund–Banihal CA (Schedule G)** The project has a **5-year (1825 days) construction period** from Appointed Date. Milestones are defined with deadlines and minimum expenditure thresholds of the **Total Project Cost (TPC)**.
Construction Period/ Scheduled completion date	• **1825 days (5 years) from Appointed Date.** • 04 June 2016
Premium / Fee	Concession Fee obligations exist (Art. 26), but **no toll right**; revenue is **Annuity** (Art. 27)

Particulars	Description
Annuity Payment	₹245 crore per half year, payable by NHAI to Concessionaire post COD
Performance Security	**₹99.35** crore Bank Guarantee, valid until 1 year from Appointed Date; replenishable if encashed
Extension of Time COD	Allowed in case of **Force Majeure** (Article 34) or **Authority default** (delays in ROW, approvals).
Escrow	**Escrow Account** before Appointed Date; deposits include **Financial Package, Annuities, other revenues/receipts**; detailed in **Article 31/Schedule-S.**
PCOD	The **Provisional COD was achieved on 31 July 2021**. It was recognized formally in the **Settlement Agreement dated 24 June 2022**, after RO Jammu recommended EOT till 30 June 2021.
FCOD	The **Final COD was achieved and certified on 15 December 2022**. This milestone was formally recorded in the **Supplementary Agreement dated 10 November 2023**.
Respective rights and obligations of the Parties	NHAI: ROW, support, annuity payment. Concessionaire: DBFOT design, construction, O&M, financing
Change in Ownership	**Equity lock-in (≥51% for construction period + 2 years' post-COD)**
Dispute Resolution Process	Tiered: conciliation (Article 44.2) arbitration (Article 44.3) under Arbitration Act, 1996.
Governing Law and Jurisdiction	Agreement governed by Indian Law; jurisdiction vested with Delhi courts. (**Article 47**).

3.1.1 Obligations of the Authority & Concessionaire

Exhibit 13: Key Obligations of Parties

Authority	Concessionaire
Provide Right of Way (ROW) for the Project Highway, free from encumbrances	Design, engineer, finance, procure, construct, operate, and maintain the Project Highway on DBFOT (Annuity) basis
Assist in obtaining statutory approvals, permits, and clearances from Government authorities	Achieve Financial Close within 180 days (extendable with damages) and furnish Performance Security
Pay annuity of ₹201.90 crore (half yearly) post COD, as per Article 27	Maintain the Project Highway in accordance with Specifications, Standards, and O&M requirements (Schedule K)
Maintain existing highway during the development period until Appointed Date	Comply with safety requirements, traffic regulations, and emergency response obligations
Provide assistance for utilities shifting, police support, medical aid posts, and land acquisition (if required)	Ensure timely achievement of project milestones and Scheduled Completion Date (COD within 1,095 days of Appointed Date)
Not levy any additional local tax/toll on the Project Highway	Hand back the Project Highway to NHAI at the end of Concession Period or upon termination, free of encumbrances
Cooperate with Independent Engineer for monitoring construction and O&M	Bear project risks, costs, and liabilities, except as specifically allocated to NHAI under the Agreement

3.1.2 Financial Provisions and Settlements:

The Agreement (Articles 28, 29; Schedules L & R) sets out strict financial safeguards to protect cash flows and lender interests. All revenues and annuities flow through an escrow with defined payment priority, equity is locked in to ensure sponsor commitment, and lenders hold substitution rights in case of default. Provisions on insurance, change in law, and regular financial reporting further enforce financial discipline. **The detailed covenants are presented in the exhibit below.**

Exhibit 14: Key Financial covenants detail

Aspect	Details
Escrow Account	All project-related revenues, including annuity payments from NHAI, insurance proceeds, and any other receivables, are deposited into a designated **Escrow Account** maintained with an Escrow Bank. Disbursements follow a defined priority sequence: (i) statutory dues, (ii) O&M expenses, (iii) senior debt servicing, (iv) reserve creation, and (v) equity returns/distributions. *(Ref: Article 31, Schedule S)*
Annuity Payments	The project operates on a **DBFOT (Annuity)** basis. NHAI pays a **fixed semi-annual annuity of ₹245 crore** to the Concessionaire for **20 years from COD/PCOD**, irrespective of traffic volume. Payments are routed through the **Escrow Account**, with deductions only for **O&M or lane-availability shortfalls**, as per **Article 27 and Schedule M**.
Toll Fees	The Concessionaire has **no right to collect tolls** from road users. Under **Article 25**, the right to levy and collect tolls rests with **NHAI**, which may collect directly or through its appointed agencies under the **National Highways Fee Rules, 2008**. The Concessionaire's revenue stream consists solely of **annuity payments**, making it **traffic independent**.
Debt Service Coverage	Senior lenders have **first charge** over project cash flows routed through the Escrow Account. In the event of a shortfall in debt servicing, the Concessionaire is required to provide **sponsor support** until sufficient project cash flows are achieved post-COD.
Equity Lock-In	The lead sponsor is required to maintain a **minimum 51% equity shareholding** in the Concessionaire during the **construction period** and for a further **two years post-COD**, unless otherwise approved by NHAI. *(Ref: Article 5.2.5)*

Aspect	Details
Change in Law Compensation	Under **Article 41 (Change in Law)**, if any legislative or regulatory change materially impacts project costs or revenues, the affected party is compensated to maintain **financial neutrality**. Compensation is determined on a **Net Present Value (NPV)** basis and may be implemented through **annuity adjustments or concession period extensions**.
Revenue Shortfall Loan	Not applicable. The Concession Agreement does **not provide for a Revenue Shortfall Loan**, as the project's annuity structure ensures fixed payments from NHAI irrespective of traffic performance.
Total Project Cost (TPC)	The **Indicative Project Cost** defined at the Invitation for Qualification (IFQ) stage is **₹1,987 crore**, used for determining limits for Change of Scope (COS) and related financial covenants. *(Ref: Article 48.1)*
Insurance	The Concessionaire must maintain comprehensive **insurance coverage** for construction, third-party liability, O&M, and force majeure events, naming **NHAI and lenders as co-insureds**. Certificates must be furnished periodically as per **Article 32**.
Substitution Rights	In case of persistent Concessionaire default, **lenders have the right to substitute** the Concessionaire with a nominated entity under a **Substitution Agreement (Schedule R)**, ensuring continuity of operations and debt protection.
Financial Reporting	The Concessionaire is required to submit **periodic financial statements, progress reports, and audited accounts** to **NHAI and lenders**, in compliance with Articles **29 and 33** of the Concession Agreement.

3.1.3 Delay Damages and Penalties under the Concession Agreement

Exhibit 15: Key Terms of Damages/ Penalty

Clause / Article	Situation	Damages / Penalty	Remarks
Clause 4.2 & 10.3	Delay by Authority in providing Right of Way beyond 90 days from Appointed Date	₹50 per day per 1,000 sq. m. of land delayed	Payable to Concessionaire until ROW is given
Clause 4.3 & 24.1	Delay by Concessionaire in achieving **Financial Close** within 180 days	0.1% of Performance Security per day (extendable up to 120 days); further extension possible at 0.2% per day; max 20% of Performance Security	Weekly advance payment required for extension
Article 15.2 (COD Delay)	COD not achieved within 91 days after Scheduled Completion Date (Appointed Date + 1095 days)	0.1% of Performance Security per day until COD	If not achieved within 270 days, Authority may terminate
Article 17.7.3 (Lane Closure)	Delay in reopening lanes after repair/maintenance	0.1% of Average Daily Annuity per 250 m stretch/day	Independent Engineer approval required for closures
Article 35 (Compensation for Breach)	Breach by Concessionaire or Authority (other than those with specified damages)	Compensation = direct costs incurred by non-defaulting party	Does not include consequential losses
Article 49 (Transitional Arrangements)	Delay in completing Affected Stretch (wildlife clearance pending) beyond 180 days after Scheduled COD	₹57,250 per day	Recoverable by deduction from annuity

3.1.4 Legal and Operational Framework:

- **Force Majeure Events:**
    - Covers natural events, political events, and indirect events.
    - Relief is available only if reported within 7 days.
    - Time extensions granted for achievement of milestones and COD.
    - Compensation limited to actual costs, no claim for indirect losses.
- **Compensation for Breach of Agreement**
    - Sets principles for damages due to breach.
    - Damages are pre-estimated, not penalties.
    - Both parties are obligated to mitigate costs/losses.
- **Termination:**
    - Covers natural events, political events, and indirect events.
    - Relief is available only if reported within 7 days.
    - Time extensions granted for achievement of milestones and COD.
    - Compensation limited to actual costs, no claim for indirect losses.
- **Divestment of Rights and Interest**
    - On termination, Concessionaire must hand over project assets free of encumbrance.
    - Obligations include O&M records, designs, clearances, contracts, and project facilities.
- **Defects Liability after Termination**
    - Concessionaire remains liable for construction defects discovered post-termination.
    - Liability period typically one year from termination/transfer date.

3.2 Review of Supplementary Agreements

The **Concession Agreement of 13.07.2010** was modified through **four Supplementary Agreements** and one **Annex Undertaking**. The first, dated **27.06.2011**, revised termination payment provisions under Force Majeure, clarifying payout formulas linked to Debt Due and Insurance Cover, thereby strengthening financial transparency and lender assurance. The second, dated **25.08.2014**, approved tunnel design modifications to twin unidirectional tubes and redefined cost responsibilities, ensuring project continuity without altering concession terms. The third, dated **06.10.2020**, partially modified the 2018 Settlement Agreement by restructuring timelines and confirming the ₹575 crore advance repayment terms. The fourth, dated **10.11.2023**, formally recorded project completion milestones and corporate restructuring, while the **Annex-2 Undertaking** dated **08.11.2023** reaffirmed the concessionaire's commitment to complete all residual works. Together, these agreements enhanced contractual clarity, reinforced financial stability, and ensured smooth transition from construction to operation.

Exhibit 16: Summary of Supplementary Agreements

Date	Parties	Purpose / Context	Key Terms / Amendments
27 June 2011	NHAI & Navayuga Quazigund Expressway Pvt. Ltd.	***Supplementary Concession Agreement (Termination Clauses)***	•Amended **Article 34.9** concerning termination payments during Force Majeure events. Clarified financial compensation for **Non-Political**, **Indirect Political**, and **Political** Force Majeure. • Non-Political FM: payout = **90% of Debt Due minus Insurance Cover**. • Established clear termination formulas improving **lender protection** and **financial certainty**.
25 August 2014	NHAI & NQEPL	***Second Supplementary Agreement – Viaduct and Twin Tunnel Design Modification***	• Approved alternate tunnel configuration: **twin unidirectional tubes** (8.45 km and 0.69 km). • Tunnel component constituted ~**86%** of total civil cost; redesign added ~₹207 crore (~10% of TPC). • Concessionaire agreed to **bear entire additional cost**, exceeding the 5% COS threshold. • Improved **safety and operational efficiency**; minor time extension allowed for design approval and execution.
6 October 2020	NHAI & NQEPL	***Supplementary Agreement – Modification of 2018 Settlement***	• Adjusted timelines following construction delays and fund infusion. • Revised interim completion date to **10 July 2020** (from 31 December 2019).

Date	Parties	Purpose / Context	Key Terms / Amendments
			• Confirmed interest on **₹575 crore advance** at **Bank Rate + 2% p.a.** • Both parties waived pending claims upon achieving COD within revised timeline. • Ensured continued project funding and completion certainty.
8 November 2023	Quazigund Expressway Pvt. Ltd. (formerly NQEPL) → NHAI	***Annex-2 Undertaking***	• Concessionaire undertook to **complete all pending punch-list and maintenance items** identified by the Independent Engineer. • Committed to completion within stipulated timelines. • Served as **final compliance assurance** during transition to O&M phase.
10 November 2023	NHAI & Quazigund Expressway Pvt. Ltd.	***Post-Completion Supplementary Agreement***	• Formally acknowledged **project completion** and **corporate restructuring**. • Recorded milestones: Appointed Date – **05 June 2011**; EOT – **30 June 2021**; PCOD **31 July 2021**. COD **15 December 2022**. • Confirmed transition from construction to full O&M phase and validated revised schedules.

3.3 Review of State Support Agreement

The **State Support Agreement** was executed on **28th November 2011** between:

- **The Governor of Jammu & Kashmir** (the *State Government*), acting through the **Public Works Department (PWD)**, and
- **The President of India**, represented by the **Ministry of Road Transport & Highways (MoRTH)** and the **National Highways Authority of India (NHAI)** (the *Authority*).

This agreement provides the framework for **State Government support** to ensure the **smooth implementation, operation, and maintenance** of the **Quazigund–Banihal Highway Project** under the **Concession Agreement dated 13 July 2010** between NHAI and **Navayuga Quazigund Expressway Pvt. Ltd. (NQEPL)**.

Exhibit 17: Key Terms of the State Support Agreement

Parameter	Details
Date of Agreement	28th November 2011
Parties	The Governor of Jammu & Kashmir (State Government) & The President of India (Authority), represented by MoRTH/NHAI
Purpose	To provide State Government support and facilitation for the implementation and operation of the **Quazigund–Banihal Highway Project** under the **DBFOT (Annuity)** model
Support by State Government	• Provide continuous **Right of Way (ROW)** and unhindered site access.• Assist in obtaining all **applicable permits, clearances, and local approvals**.• Facilitate **utility shifting** (electricity, water, telecom, etc.).• Ensure **no local levies, barriers, or municipal taxes** are imposed on the project highway.• Provide **police support** for traffic control, removal of encroachments, and ensuring project security.• Establish **traffic aid posts, mobile patrol units, medical aid posts, and ambulance services** as per government standards.
Restriction on Competing Roads	The State shall not develop or permit any **competing road or Tollway** that adversely affects project traffic, except as allowed under the Concession Agreement and with annual notification to NHAI.
Restriction on Additional Tollways	No additional or parallel Tollway to be constructed except as permitted by the Concession Agreement.

Parameter	Details
Restriction on Local Taxes	The State Government shall not impose **local tolls, taxes, or levies** on the project highway; however, existing State revenue interests at **Lakhanpur and Lower Munda** shall remain unaffected.
Substitution of Concessionaire	The State acknowledges the **lenders' and Authority's rights** to substitute the Concessionaire in the event of persistent default, as per the Substitution Agreement (Schedule-R of CA).
Obligations of Authority	The Authority shall ensure that the Concessionaire **complies with applicable laws, permits, and the Concession Agreement** in coordination with the State Government.
State Default	Failure by the State Government or its agencies to **cure a breach within 60 days** of notice constitutes **State Default**, treated as a breach under the Concession Agreement.
Compensation & Termination Payments	The State Government is liable for **compensation or termination payments** resulting from its default, payable within **60 days**, with **interest at Bank Rate + 3%** for delays.
Duration	Effective from the date of execution and valid until **termination or expiry** of all related Concession Agreements under the project.
Indemnity	Both the State and the Authority mutually **indemnify each other** against losses or liabilities arising from their respective breaches or defaults.
Dispute Resolution	Initial resolution through **conciliation** under the **Arbitration and Conciliation Act, 1996**; failing which, disputes shall be settled by **arbitration under ICADR Rules, New Delhi**.
Governing Law & Jurisdiction	Governed by the **laws of India**; jurisdiction lies with **Courts at Delhi**.
Miscellaneous	• Includes **waiver of sovereign immunity** by the State Government. • Agreement **binding on successors and assigns**. • All notices to be in **writing**. • The agreement is executed in **English**.

3.4 Review of Settlement Agreements

3.4.1 First Settlement Agreement (2018)

The **Settlement Agreement** was executed on **11th December 2018** at **NHAI HQ, New Delhi**, between:

- **National Highways Authority of India (NHAI)** (*Authority*), and
- **Navayuga Quazigund Expressway Pvt. Ltd. (NQEPL)** (*Concessionaire*).

The Agreement was signed under **Section 73 of the Arbitration and Conciliation Act, 1996**, following conciliation by the **Conciliation Committee of Independent Experts (CCIE-2)**. **It was executed to resolve project delays, financial constraints, and claims arising under the Concession Agreement dated 13.07.2010**, including disputes related to land acquisition, Force Majeure events, and One-Time Fund Infusion (OTFI) support.

Exhibit 18: Key Aspects of the 2018 Settlement Agreement

Parameter	Details
Date of Agreement	11th December 2018
Parties	NHAI (Authority) & Quazigund Expressway Pvt. Ltd. (Concessionaire)
Context	Settlement under Section 73 of the Arbitration and Conciliation Act, 1996, following CCIE-2 conciliation to address delays, cost overruns, and fund infusion for project completion
Background	• Concession Agreement signed 13.07.2010.• Appointed Date: 05.06.2011; scheduled completion: 04.06.2016. • Project delayed due to land acquisition, utility shifting, weather, law & order, and Force Majeure events.
NHAI Support	• Approved **One-Time Fund Infusion (OTFI)** of ₹575 Cr as advance loan .• Carried interest: **Bank Rate + 2% p.a.** • Recovery mechanism: from future annuities.
EOT & Compensation	• Extension of Time up to **31.12.2019**.• **880 days** delay recognized as not attributable to Concessionaire. • **424 days** (2.327 annuities) deducted for Concessionaire default. • Restored Annuities = ₹1,180.90 Cr (against 880 days).
Settlement Scope	• All pending claims and disputes till date of signing fully settled. • Concessionaire waived all cost overrun, IDC, escalation, and overhead claims.

Parameter	Details
Utilization Conditions	• ₹575 Cr to be used **only for physical completion**; not for IDC, debt servicing, or administrative costs. • To be disbursed in tranches based on verified progress.
Monitoring Mechanism	• Oversight by a **Monitoring Committee** comprising NHAI CGM (Tech), RO Jammu, and lender's representative. • Concurrent audit by NHAI-appointed auditor. • Sub-escrow account established for fund flow control.
Concessionaire Obligations	• Achieve **COD by 31.12.2019**. • Resume and complete stalled works .• Indemnify NHAI for any claims linked to land or delay.
NHAI Obligations	• Release ₹575 Cr advance loan. • Restore eligible missed annuities (880 days). • Grant time extension and finalize closure of all pending disputes.
Finality	Full and final settlement of all disputes up to 11.12.2018; no residual claims permissible.
Governing Law & Jurisdiction	Laws of India; Courts at Delhi.

3.4.2 Second Settlement Agreement (2022)

The **Settlement Agreement** was executed on **24th June 2022** at **NHAI HQ, New Delhi**, between:

- **National Highways Authority of India (NHAI)** (*Authority*), and
- **Quazigund Expressway Pvt. Ltd. (NQEPL)** (*Concessionaire*).

The Agreement was signed under **Section 73 of the Arbitration and Conciliation Act, 1996**, after review by **CCIE-2** and approval of the **Empowered Committee (MoRTH)**. It settled all remaining disputes till **Provisional COD (31.07.2021)**, including annuity restoration, change in law claims, and VAT reimbursement.

Exhibit 19: Key Aspects of the 2022 Settlement Agreement

Parameter	Details
Date of Agreement	24th June 2022
Parties	NHAI (Authority) & Quazigund Expressway Pvt. Ltd. (Concessionaire)
Context	Conciliation under Section 73 of the Arbitration & Conciliation Act, 1996 (CCIE-2), resolving all disputes till PCOD (31.07.2021)
Reference – 2018 SA	Original Settlement Agreement (11.12.2018) established OTFI & 880-day compensation; 2022 SA finalized reconciliation of missed annuities, O&M claims, and VAT liabilities.
Disputes Resolved	Claims under Clause 35.2 & 35.3 of CA, delays in 100% land availability, restoration of annuities, VAT impact, O&M cost reimbursement, interest reconciliation.
Settlement Amount	**₹863.24 Cr** (against total claim ₹2,223 Cr) comprising: • ₹719.81 Cr – 2.938 annuities restored (after 0.23 annuity deduction for 42-day delay). • ₹143.43 Cr – reimbursement for VAT, O&M, power supply, and excess TDS on interest.
Financial Impact	~61% reduction versus total claim value.
PCOD & Schedule	• **PCOD Date**: 31.07.2021. • Revised **Schedule M** finalized accordingly. • No change in total concession period.
NHAI Obligations	• Pay ₹863.24 Cr within 30 days of signing (by 30.06.2022). • Recognize PCOD and revised Schedule M. • Close all pending claims.

Parameter	Details
Concessionaire Obligations	• Maintain project highway per CA terms till concession end. • Waive all claims (cost overrun, IDC, escalation, O&M expenses). • Indemnify NHAI from third-party or statutory authority claims.
Legal Validation	Authenticated by **CCIE-2 (Justice I.P. Vasishth, Mr. A.K. Upadhyay, Mr. V.V. Ranganathan)** confirming voluntary and fair settlement.
Finality	Full and final closure of all disputes and claims till 31.07.2021; no residual claims or litigations permissible.
Governing Law & Jurisdiction	Laws of India; Courts at New Delhi.

3.5 Review of Major O&M Contracts

3.5.1 Review of Integrated Tunnel Management System (ITMS) Annual Maintenance Contract (AMC) Agreement

The Annual Maintenance Contract (AMC) for the Integrated Tunnel Management System (ITMS) at the Banihal Tunnel Project, Jammu & Kashmir, was executed between Athaang Infrastructure Pvt. Ltd. and Honeywell Automation India Ltd. in August 2023. The agreement covers comprehensive maintenance of key tunnel safety, control, and communication systems under a structured one-year service framework.

Exhibit 20: Key Terms of ITMS Annual Maintenance Contract (AMC) Agreement

Parameter	Details
Date of Work Order	07th August 2023
Parties	**Athaang Infrastructure Pvt. Ltd.** (Employer) & **Honeywell Automation India Ltd.**, Ground Floor, United Trade Centre, Sector 43, Gurgaon, Haryana (Contractor)
Contract Reference	Offer Ref.: HBS/North/2023/AIPL/New Contract/0039
Contract Value	**Basic AMC:** ₹1,25,10,000/- **GST @18%:** ₹22,51,800/- **Total: ₹1,47,61,800/- (Rupees One Crore Forty-Seven Lakh Sixty-One Thousand Eight Hundred Only)**
Project / Location	Banihal Tunnel Project, Jammu & Kashmir
Contract Period	1 Year (Service 180° Program) from date of award; extendable based on performance
AMC Type	Non-Comprehensive – includes manpower, maintenance, and software support; excludes hardware/spare replacement (chargeable basis)
Scope of Works	• Maintenance of **Integrated Tunnel Management System (ITMS)** comprising:– SCADA and PLC Systems– Fire Detection & Linear Heat Sensing (LHS)– CCTV Surveillance Network– Emergency Call & Telephone Systems– Traffic Management and Networking Systems

Parameter	Details
	• Software patching and bug fixes • Preventive and corrective maintenance • 4 preventive visits per year and SLA-based breakdown response
Support Model	• **On-site Team:** First-line troubleshooting (2 engineers on site) • **Technical Support Group (TSG), Pune HQ:** Advanced diagnosis and configuration • **Global Assistance Centers (Australia/USA/Germany):** Escalation and specialized support
Service Response & SLA	• **Minor Faults:** Within 24 hours • **Major Faults (CCTV/SCADA):** Within 24–48 hours • **Uptime Commitment:** ≥95% per quarter
Penalty for Downtime	• ≥95% uptime – Nil • 90–95% – 1% of quarterly AMC • 85–90% – 2%• 80–85% – 3% • <80% – 5% (maximum annual cap 5%)
Manpower Deployment	Two (2) full-time engineers at site (9×6 shift), supported by Honeywell's regional service network; PPE and equipment provided by Contractor
Payment Terms	• Quarterly advance payment against invoice within 30 days of receipt • No escalation permitted except statutory variations • Applicable deductions: TDS, GST, and other statutory levies
Mobilization Period	Within 15–20 days from the date of award
Cooling / Grace Period	120 days from contract commencement (no penalties during this stabilization phase)
Reports & Documentation	• Maintenance service report after each visit • Quarterly system health and uptime reports• Performance logbook maintained at site
Exclusions	Replacement of major hardware components, PCs, cabling, batteries, consumables, and civil/electrical works
Inspection & Quality	Subject to inspection by Employer, Independent Engineer, or Authority (NHAI); defects to be rectified at Contractor's cost

Parameter	Details
Liability & Indemnity	Contractor responsible for safety of personnel, equipment, and work quality; indemnifies Employer against any losses due to negligence or misconduct
Insurance	Contractor must insure workmen, materials, tools, and equipment; failure to maintain insurance may result in withholding of payments
Termination	Either party may terminate with **30 days' written notice**; Employer may terminate for non-performance, subcontracting without consent, breach, or safety violations
Suspension of Payments	Employer may suspend payments if Contractor fails to rectify defaults within 7 days of notice
Special Conditions	• Contractor bound by **Step-in Rights** of NHAI/Lenders • Replacement of unfit or negligent staff mandatory• Strict confidentiality of project data to be maintained
Jurisdiction	Laws of India; Arbitration under the **Arbitration and Conciliation Act, 1996**; Courts at Delhi

3.5.2 Review of Substation AMC Agreement

The Annual Maintenance Contract (Non-Comprehensive) for the Substation System at the Banihal Tunnel (NH-44) was executed between Quazigund Expressway Pvt. Ltd. (QEPL) and Sterling & Wilson Pvt. Ltd. The contract ensures the preventive and breakdown maintenance of the complete substation network supporting tunnel operations and ancillary systems.

Exhibit 21: Key Terms of Substation AMC Agreement

Parameter	Details
Date of Agreement / Work Order	04th October 2023
Employer	Quazigund Expressway Pvt. Ltd. (QEPL), Control Room, South Portal, Banihal, Ramban District, J&K
Contractor	Sterling & Wilson Pvt. Ltd.
Service Order Reference	QB/E&M/2023-24/158
Linked Proposal Reference	Honeywell Proposal Ref.: HBS/North/2023/AIPL/New Contract/0039 dated 07 August 2023
Contract Period	As per preventive maintenance cycle (2 quarters) – extendable based on performance and mutual consent
Contract Value	Net Total: ₹17,57,500/- GST @18%: ₹3,16,350/- Total: ₹20,73,850/- (Rupees Twenty Lakh Seventy-Three Thousand Eight Hundred Fifty Only)
Payment Terms	• Payment as per approved AMC schedule (2 quarters). • Payment released after successful completion of each service cycle. • All statutory deductions (TDS, GST, cess) as applicable.
Scope of Work	• Preventive maintenance of complete substation system. • Four preventive maintenance visits per year (as per Annexure I checklist) • Emergency breakdown visits on call. • Performance testing, tightening, cleaning, insulation, and functional checks.

Parameter	Details
	• Compliance with client's specifications and statutory regulations.
Execution Requirements	• Maintenance to be carried out under the supervision of QEPL officials and in line with NHAI guidelines. • All work to conform with relevant Indian Standards and safety norms. • Contractor to deploy qualified and experienced personnel only.
Service Provider Obligations	• Responsible for quality, reliability, and timeliness of services. • Must maintain qualified manpower and tools at all times. • Any deficiencies to be rectified at Contractor's cost.
Performance Documentation	• Preventive Maintenance Reports (PMRs) to be submitted after each visit. • Emergency Breakdown Reports (EBRs) to be filed post-rectification. • Post-implementation support as per agreement framework.
Standards & Compliance	• All works in accordance with client's technical standards, OEM manuals, and statutory safety laws.• Contractor responsible for compliance with all labour, EHS, and regulatory requirements.
Inspection & Verification	Subject to verification by QEPL, Independent Engineer, and/or NHAI. Non-compliance or defects to be rectified by Contractor at own cost.
Termination Clause	• QEPL may terminate the agreement at any stage without compensation if the Contractor fails to meet contractual obligations or timelines. • Contractor must refund any advance payments immediately upon termination. • QEPL may also terminate for breach, EHS violations, or non-performance.
Confidentiality (Clause 13)	All information shared by QEPL to be treated as strictly confidential. Any breach constitutes a material breach, giving QEPL termination rights.

Parameter	Details
Indemnity	Contractor shall indemnify QEPL against all losses, damages, claims, or IPR infringements arising from its acts, negligence, or performance failures.
Assignment / Subletting	Contractor shall not assign, transfer, or subcontract any part of the agreement without prior written consent of QEPL.
Delay & Damages	• Time is of essence. • Delay or non-compliance with specifications allows QEPL to terminate the contract • No explicit LD clause; remedy limited to termination and refund of advances.
Liability & Risk	Contractor responsible for safety of personnel, tools, and equipment; liability capped to contract value except for willful misconduct or statutory violations.
Insurance	Contractor to maintain insurance coverage for workmen, materials, tools, and equipment; non-compliance may lead to withheld payments.
Dispute Resolution / Arbitration	Disputes to be resolved through arbitration under the Arbitration and Conciliation Act, 1996; Sole Arbitrator to be appointed by QEPL COO; Venue: Mumbai; Language: English.
Governing Law & Jurisdiction	Governed by the laws of India; jurisdiction with Courts at Mumbai.

3.5.3 Review of Electrical Substation AMC Agreement

The Annual Maintenance Contract (Non-Comprehensive) for the Electrical Substation System at the Banihal Tunnel (NH-44) was executed between **Navayuga Quazigund Expressways Pvt. Ltd. (NQEL)** and **Sterling & Wilson Pvt. Ltd.** The contract covers routine preventive maintenance as well as emergency corrective support for the complete substation infrastructure supporting tunnel operations and associated electrical systems.

Exhibit 22: Key Terms of Electrical Substation System

Parameter	Details
Date of Agreement / Service Order	11th January 2023
Employer	Navayuga Quazigund Expressways Pvt. Ltd. (NQEL), South Portal, Banihal, Ramban District, J&K
Contractor	Sterling & Wilson Pvt. Ltd.
Service Order Reference	Service Order No. 35
Contract Period / Validity	01-Jan-2023 to 31-Dec-2023 (12 Months)
Contract Value	Base AMC: ₹35,15,000/- GST @18%: ₹6,32,700/- **Total: ₹41,47,700/-** (Rupees Forty-One Lakh Forty-Seven Thousand Seven Hundred Only)
Payment Terms	• 25% advance within 15 days of order issuance (adjustable in final invoice).• Balance through quarterly invoices, payable within 30 days of certification.
Scope of Work	• Non-Comprehensive AMC for complete electrical substation system. • Preventive maintenance: Quarterly, Half-yearly, and Annual detailed inspections including transformers, ACBs, VCB/SF6 panels, UPS, relays, and thermography. • Emergency breakdown support with corrective rectifications. • Thermography before and after rectification.
Execution Requirements	• Services to commence within 45 days of advance payment • Work to be executed under supervision of NQEL and as per statutory electrical safety norms and OEM standards.

Parameter	Details
Maintenance Schedule	• **Quarterly:** Visual inspection, logbook verification, fuse and protection checks. • **Half-Yearly:** Transformer IR/PI testing, breaker servicing, cable terminations. • **Annual:** Dielectric tests, relay calibration, CT testing, complete thermography of substation.
Corrective Maintenance	Emergency visit and repair/rectification in event of faults, failures, or operational disruption.
Documentation & Reporting	• Submission of Preventive Maintenance Reports (PMRs) after each planned visit. • Breakdown Maintenance Reports (BMRs) after each emergency intervention. • Annual Thermography Study Report.
Standards & Compliance	Services to comply with client specifications, statutory regulations, OEM manuals, and electrical safety protocols. Contractor responsible for manpower competency and regulatory compliance.
Performance Monitoring	All maintenance activities to be jointly certified by NQEL authorities. Any deficiencies to be rectified at contractor's cost.
Termination Clause	• NQEL may terminate the contract by giving 30 days' notice.• Compensation limited strictly to proportionate value of work completed. • Failure to meet service standards may lead to recovery of damages from invoices or retention.
Deficiency & Damages Clause	• Any service lapse, negligence, or operational impact shall be treated as "Deficiency in Service." • Client reserves right to assess and recover damages as liquidated claim (not considered penalty).
Confidentiality	All client-shared drawings, operational data, and technical details to be treated as confidential. Breach is considered material and may trigger termination.

Parameter	Details
Indemnity	Contractor indemnifies NQEL against any claims, IPR violations, service failures, or damages caused due to negligence or improper maintenance.
Assignment/ Subletting	Permitted only with prior written approval of NQEL. Contractor remains fully liable for subcontractor performance.
Force Majeure	Applicable in case of strikes, war, natural calamities, civil disruptions, or conditions beyond reasonable control.
Arbitration & Dispute Resolution	Sole Arbitrator appointed by Client COO; Arbitration under Arbitration and Conciliation Act 1996; Venue: Mumbai; Language: English
Governing Law & Jurisdiction	Indian Law applicable; Courts at Mumbai shall have jurisdiction

3.5.4 Review of Toll Management System AMC Agreement

The Annual Maintenance Contract (Non-Comprehensive) for the Toll Management System (TMS) on the Banihal Tunnel Section (NH-44) was executed between **Athaang Infrastructure Pvt. Ltd. / Quazigund Expressways Pvt. Ltd. (QEPL)** and **Techsture Technologies India Pvt. Ltd.** The agreement covers preventive and corrective maintenance of all toll system hardware, software, networking assets, and plaza-level IT infrastructure to ensure uninterrupted toll collection and system uptime.

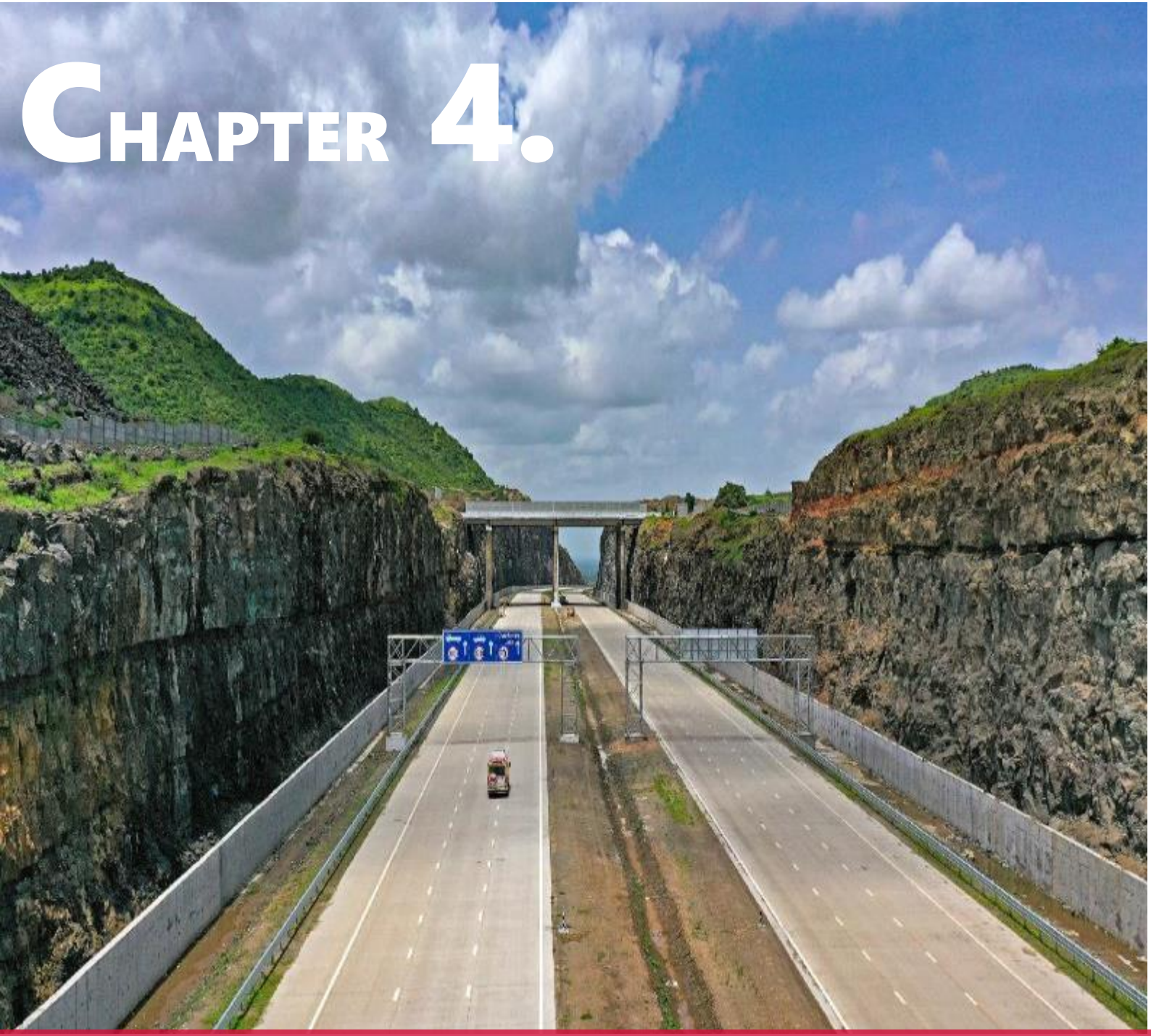
Exhibit 23: Key Terms of Toll Management System AMC Agreement

Parameter	Details
Date of Agreement / Purchase Order	30th June 2023
Employer / Purchaser	Athaang Infrastructure Pvt. Ltd. / Quazigund Expressways Pvt. Ltd. (QEPL)
Contractor / Service Provider	Techsture Technologies India Pvt. Ltd.
Purchase Order Reference	QB/IT/2023-24/86
Contract Period / Validity	01-Jul-2023 to 30-Jun-2024 (12 Months)
Automatic Renewal Clause	Automatically renewed annually unless terminated by either party with 30 days' prior written notice
Contract Value	**Base AMC: ₹14,98,600/-** **GST @18%: ₹2,28,600/-** **Total: ₹17,27,200/- (Rupees Seventeen Lakh Twenty-Seven Thousand Two Hundred Only)**
Payment Terms	• Monthly billing after successful completion of each month. • Payments subject to statutory deductions (TDS, GST, etc.).

Parameter	Details
Scope of Work	• Comprehensive AMC for TMS including hardware, software, ATMS support, lane systems, networking and control systems. • Daily/weekly preventive maintenance of critical components – barriers, printers, power supply, UPS, cabling, controllers. • Free software updates for compliance with IHMCL/NHAI standards. • Corrective maintenance including bug fixing, emergency rectification, and service restoration.
Manpower Deployment	• 1 Resident IT Engineer at each toll plaza (9 AM – 6 PM, emergency on-call support). • 1 Remote Software Engineer (offsite). • 1 Service Manager for escalation and reporting control.
System Uptime Requirement	Minimum **98% uptime** for toll system operations.
Penalty Clause	• If downtime >5% and attributable to contractor → **12% deduction on AMC value**. • Response to faults must be immediate (online support).
Maintenance & Reporting Protocol	• Daily and weekly system checklists to be logged. • Fault register maintained at plaza, signed by QEPL authority. • Weekly reports and MoM documentation for review meetings.
Training Obligations	Techsture to provide preventive and corrective maintenance training to QEPL technical team.
Spares Management	Contractor to provide list of recommended spares; QEPL to maintain onsite stock and manage issuance log.
Termination Clause	• QEPL reserves right to terminate anytime for non-performance or breach. • Supplier must refund any advance in case of early termination. • "Time is essence of contract" – delays qualify for termination action.

Parameter	Details
Confidentiality (Clause 13)	All toll data, system logs, configurations, and operational records are confidential. Breach is considered material → liable for termination.
Indemnity	Contractor indemnifies QEPL against all claims, damages, losses, or IPR-related disputes arising due to performance deficiencies.
Assignment / Subletting	Contractor shall not assign or subcontract any portion of the contract without written consent from QEPL.
Arbitration & Dispute Resolution	Arbitration under the Arbitration & Conciliation Act, 1996; Sole Arbitrator to be appointed by QEPL COO; Venue: Mumbai; Language: English.
Governing Law & Jurisdiction	Governed by the laws of India; Jurisdiction with Courts at Mumbai.

Chapter 4.



Review of Pavement Design

Chapter 4. CONDITION ASSESSMENT OF PROJECT ROAD

4.1 General

This chapter presents a detailed assessment of the existing condition of the Jammu–Udhampur Project Highway in accordance with the provisions of the Concession Agreement and relevant IRC guidelines. The objective of this assessment is to evaluate the current condition and performance of the pavement, structures, tunnels, toll plaza facilities, service roads, drainage systems, safety installations and other highway assets. The observations are based on site inspections, maintenance records, annuity performance, and interaction with the concessionaire's O&M team.

This section presents the findings of the **condition assessment** of the **Quazigund–Banihal Section of NH-44 (Km 189+350 to Km 204+700)** in the Union Territory of Jammu & Kashmir. The assessment has been prepared based on **field observations recorded during the site inspection conducted on 08 October 2025**, the results obtained from the **Falling Weight Deflectometer (FWD) survey carried out in June 2023**, and the **Mobile Bridge Inspection Unit (MBIU) survey conducted in December 2023**.

The integration of these three key datasets — *pavement deflection study (FWD)*, *structural evaluation of bridges (MBIU)*, and *visual field inspection* — provides a **comprehensive and reliable representation** of the current structural and functional condition of the project highway and its associated infrastructure.

The project corridor lies in a **mountainous and geotechnically sensitive zone** of the Himalayas, characterized by **steep gradients, sharp horizontal curves, high rainfall, and frequent exposure to adverse weather conditions**. The alignment commences near **Banihal village at Km 189+350** and terminates near **Quazigund at Km 204+700**, passing through two critical tunnel sections — a **single-tube short tunnel (Km 193+830 to Km 194+540)** and a **double-tube long tunnel (Km 194+700 to Km 204+000)**. The corridor serves as a **vital component of NH-44**, ensuring all-weather connectivity between Jammu and Srinagar.

The purpose of this condition assessment is to determine the **current structural health, performance efficiency, and serviceability** of the project highway and its assets. The study integrates data from both **instrumental evaluations** (FWD and MBIU) and **visual condition surveys**, enabling a holistic review of the **pavement system**, **structures**, **drainage**, and **associated highway facilities**.

Exhibit 24 Existing Vs Schedule B

Sl. No.	Particulars	As per Schedule–B	As Built & Deviations Settled in Supplementary Agreement
1	Project Road Start	Km 189+350 at Banihal	Km 189+350 at Banihal
2	Project Road End	Km 204+700 at Quazigund	Km 205+618 at Quazigund
3	Project Length	15.35 km	16.268 km
4	Tunnel	Short Tunnel – Km 193.792 to Km 194.488 (Length 696 m) Long Tunnel – Km 195.425 to Km 203.865 (Length 8.45 km)	Twin Tube Tunnel Tube 1 – 8457.70 m Tube 2 – 8463.38 m

The primary objectives of this assessment are to:

- Evaluate the **structural adequacy, layer stiffness, and residual life** of the pavement using **FWD test results (June 2023)**.
- Assess the **structural integrity and physical condition of bridges and culverts** based on the **MBIU inspection results (December 2023)**.
- Document the **on-ground physical condition of the pavement, structures, and roadside facilities** based on the **site inspection (08 October 2025)**.
- Identify **stretches requiring overlay, rehabilitation, or other maintenance interventions** to restore performance levels.
- Evaluate the **functionality of drainage, signage, tolling, and traffic management systems**.
- Verify **compliance with Operation and Maintenance (O&M) standards** as prescribed by **IRC codes** and the **Concession Agreement**.

This assessment has been carried out in accordance with the following key references:

- **IRC:115-2014** – *Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements using FWD Technique*
- **IRC:117-2014** – *Guidelines for Structural Evaluation of Rigid Pavements*
- **IRC:37-2018** – *Guidelines for the Design of Flexible Pavements*
- **IRC:SP:35-2015** – *Code of Practice for Inspection and Maintenance of Bridges*
- **IRC:83-2019 (Part I & II)** – *Guidelines for Design and Condition Assessment of Bridge Components*
- **IRC:SP:16 and IRC:SP:83** – *Guidelines for Maintenance of Highways and Toll Facilities*

4.2 Pavement

The proposed pavement design for the **Quazigund–Banihal Section (Km 189.350–Km 204.700)** follows **IRC:37-2012** and **IRC:58-2015** standards for flexible and rigid pavements respectively.

Exhibit 25 Main Carriageway (Flexible Pavement)

S. No.	Layer	Material Description	Thickness (mm)
1	Bituminous Concrete (BC)	Wearing course using VG-30 grade bitumen	40
2	Dense Bituminous Macadam (DBM)	Binder course with VG-30 bitumen	110
3	Wet Mix Macadam (WMM)	Granular base layer	250
4	Granular Sub-base (GSB)	Well-graded granular material	200
	Total Crust Thickness		**600 mm**

Exhibit 26 Service Road Pavement

S. No.	Layer	Material Description	Thickness (mm)
1	Bituminous Concrete (BC)	Surface course using VG-30 bitumen	40
2	Dense Bituminous Macadam (DBM)	Binder course	60
3	Wet Mix Macadam (WMM)	Granular base	250
4	Granular Sub-base (GSB)	Granular sub-base material	200
	Total Crust Thickness		**550 mm**

Exhibit 27 Rigid Pavement (Toll Plaza / Tunnel Section)

S. No.	Layer	Material Description	Thickness (mm)
1	Pavement Quality Concrete (PQC)	M-40 grade concrete	300
2	Dry Lean Concrete (DLC)	M-10 grade concrete	150
3	Granular Sub-base (GSB)	Granular layer	150
	Total Thickness		**600 mm**
	Reinforcement Details		

4.3 Assessment of Highway

Knight Frank carried out a detailed review and assessment of the **project highway assets**, which included **Service Roads (SR), Intersections, TLBs, BLBs, Sign Boards, MBCBs, and other related infrastructure components**. The assessment was undertaken through **comprehensive visual inspections** along the entire project stretch, supplemented by a **review of relevant reports and maintenance records** shared by the Client during site visit.

The objective of this exercise was to evaluate the **existing physical condition, functionality, and maintenance requirements** of each asset category. Based on the observations and data collected, a **maintenance strategy** has been formulated covering **regular repair, preventive, and routine maintenance activities** to ensure the long-term sustainability and serviceability of the highway assets.

Furthermore, the **pavement condition** was assessed through a combination of **visual inspection, and Falling Weight Deflectometer (FWD) testing**, providing a comprehensive understanding of surface condition, structural strength, and performance.

Overall, the review indicates that the **project highway assets are in satisfactory condition**, with all key components performing as intended. Minor deficiencies identified during the inspection can be addressed through routine and preventive maintenance measures as part of the recommended asset management plan.

a) Service Road/Slip:

Total length of service road is 400 m & the width of service road is 4.5 m. Haulage Road length is 3.546 Kms & the width of Haulage Road is 6 m. Service Road / Haulage Roads is constructed along the project as flexible pavements. The overall pavement condition is good. Pavement Markings are also found in service roads but are faded at some places

b) Lighting

Highway lighting has been provided at key locations such as junctions, flyovers, tunnels, and toll plazas to ensure adequate visibility and road safety during night hours. High mast lighting systems are installed specifically at junctions and toll plaza areas for enhanced illumination. Additionally, solar-powered blinker signals have been installed at selected median openings to alert and guide motorists at potential conflict points.

c) Metal Beam Crash Barrier

Metal beam crash barriers and wire-rope barriers are installed at critical locations (carriageway edges, underpasses, approaches and high-embankment zones) to protect against vehicular run-offs.

During inspection, minor looseness in some wire-rope assemblies and local damage to parapets/railings were observed. These are localized issues that can be rectified through routine tightening, replacement of worn components, and targeted repairs to restore full safety performance.

d) Drainage

The **drainage system** along the **Quazigund–Banihal Section of NH-44**, including the **Banihal Tunnels (T1 & T2)**, is a **comprehensive surface and subsurface drainage network** designed to efficiently manage both stormwater runoff and groundwater infiltration. The system comprises **longitudinal side drains**, **cross-drainage connections**, and **inspection manholes** categorized as **Surface (S), Drainage (D), Cable Recess (R), Low Voltage (L), and High Voltage (H)** types, placed at regular intervals along both tubes. These drains are interconnected through **RCC channels and perforated pipes** located behind the waterproofing layer to prevent hydrostatic pressure and ensure proper discharge towards portal-side sumps and outfalls.

Drainage Statistics:

- **Total drainage length (T1 & T2 combined): ~18.3 km (both tubes)**
- **Manholes and access chambers: 520 Nos (S, D, R, L, H types)**
- **Average spacing between manholes: 25–30 m**
- **Discharge outlets / sumps: 4 Nos (2 per tunnel)**

e) Bus Bays /Bus Shelters & Truck Lay Byes:

The project includes **two bus bays with passenger shelters** and **two truck lay-byes**, located near the **tunnel portals and toll plaza approaches**. These facilities are provided on both carriageways for safe stoppage, passenger convenience, and parking of heavy vehicles. All areas are equipped with **paved surfaces, drainage, lighting, and signage**, and were observed to be **functionally operational and well-maintained**, with only **minor repairs and cleaning** required at isolated locations.

f) Median & Median Opening:

The **median width** along the **Quazigund–Banihal Section of NH-44** varies between **1.5 m and 4.0 m**, constructed with **RCC kerbs and reinforced concrete shoulders** as per the **Concession Agreement (CA)** specifications. **Median openings** have been provided at designated locations to facilitate controlled cross-movement in accordance with traffic and safety requirements approved by local authorities. These openings are delineated with **pavement markings and reflective studs** to guide vehicular movement. A total of **46 median openings** are provided along the project stretch.

During inspection, it was noted that **blinker lights and cautionary signboards** were missing at a few openings, which should be reinstated under routine maintenance to ensure continued compliance with **IRC:67 and MoRTH safety standards**.

KF View:

Overall, the project highway is in satisfactory condition, with all major assets performing as intended. Minor deficiencies such as faded markings, missing blinkers, and loose barriers can be addressed through routine maintenance to ensure continued safe and efficient operation.

4.4 Assessment of Structures

A **visual condition survey** of all bridge and culvert structures was carried out jointly by the **Knight Frank (KF) team** and the **Concessionaire**, with the objective of **identifying and quantifying structural deterioration** arising from various factors such as **dead load, live load, wind load**, and **physical or chemical influences** exerted by the environment. In addition to examining **damages caused by unpredictable natural events** or **vehicular collisions**, the inspection also aimed to detect or monitor the impact of any **construction-related imperfections** that may affect long-term performance. Such periodic inspections play an important role in **enhancing the service life and safety** of both existing and newly built bridge structures.

Knight Frank reviewed the **structural condition assessment** of bridges and culverts along the **Banihal village at Km 189+350** and terminates near **Quazigund at Km 204+700**, passing through two critical tunnel sections — a **single-tube short tunnel (Km 193+830 to Km 194+540)** and a **double-tube long tunnel (Km 194+700 to Km 204+000)** during the **Operation & Maintenance phase**, based on **visual inspection** and findings from the **Mobile Bridge Inspection Unit (MBIU) survey** carried out in **December 2023** . The assessment encompassed all **major and minor bridges**, as well as **underpasses** along both the **left-hand and right-hand carriageways** of the corridor.

The observations were made through detailed **visual inspection, functionality checks, and performance verification** of all civil, structural, and electromechanical components, including **bridges, tunnels, culverts, toll plazas, ventilation buildings, drainage systems, and associated road furniture**.

Exhibit 28 Details of Structures

S. No.	Type of Structure	Chainage (Km)	Description / Configuration
1	**Major Bridge No. 1 (LHS)**	189+435	3×36.63 m span, RCC abutments & piers
2	**Major Bridge No. 4**	190+310	RCC deck slab type
3	**Railway Over Bridge (ROB)**	190+400 – 191+100	45 m wide steel girder with RCC slab
4	**Viaduct (South Portal Approach)**	192+600 – 194+200	Multi-span elevated viaduct

S. No.	Type of Structure	Chainage (Km)	Description / Configuration
5	**Truck Parking – South Portal (Lamber)**	192+700 – 193+500 (LHS)	Concrete pavement area with drainage channels
6	**Tunnel T1 (Short Tunnel)**	193+792 – 194+488	Length 0.69 km; 8.50 m wide carriageway with 1.05 m footpath
7	**Tunnel T2 (Main Tunnel)**	195+425 – 203+865	Length 8.45 km; 9.35 m wide carriageway with 1.16 m footpath
8	**Viaduct / Bridge (North Portal Exit)**	204+100 – 204+600	RCC spans with expansion joints
9	**Box Culverts (3 Nos)**	204+814, 205+131, 205+527	RCC Box type structures
10	**Truck Parking – North Portal (Ujroo)**	205+100 (RHS)	Concrete pavement area with facilities
11	**Toll Plaza Building – South (Lamber)**	193+760 (Approx.)	Admin + ETC + Control Rooms
12	**Toll Plaza Building – North (Ujroo)**	203+880 (Approx.)	Admin + ETC + Power rooms
13	**Ventilation Building – South Portal**	193+750	Jet fans, axial fans, and control panels
14	**Ventilation Building – North Portal**	203+880	Louvers, dampers, DG set & exhaust shafts
15	**Drainage Systems (General)**	Throughout alignment	Longitudinal drains, sumps, de-oiling tanks

The inspection revealed that the overall condition of the project assets is **functionally satisfactory**, with **major structures, tunnels, and ancillary facilities in operational condition**, while a few **localized deficiencies** such as damaged gratings, faded signages, non-functional tunnel lights, open hydrant cabinets, and minor surface cracks were observed at specific chainages. Routine **maintenance, cleaning, repainting, and rectification** activities were found to be ongoing under the scope of the concessionaire.

KF View:

Overall, based on the review of the previous MBIU survey reports (conducted by the SPV in December 2023) and a comprehensive visual examination during the site visit, it was observed that most structures are in sound structural condition and maintained in a fair state of serviceability.

4.5 Assessment of Road Furniture & Project Facilities

The inspection of highway and road furniture included **signages, guardrails, pavement markings, hazard markers, drainage gratings, SOS boxes, and lighting systems**. The overall condition was **fair**, but several elements were found needing repainting, replacement, or cleaning.

Road safety devices like **hazard markers, chevrons, and reflective signs** were either faded or damaged at several chainages, and some **road studs and rumble strips** were missing or worn. Tunnel SOS boxes were functional but had **non-working LED indicators** at certain points.

Exhibit 29 Details of Road Furniture's Items

S. No.	Facility / Item	Chainage (Km)	Observation / Condition
1	**Hazard Marker (Damaged)**	189+520 (RHS)	Bent / missing marker
2	**Overhead Gantry Sign Boards**	189+350 & 205+618	Faded / damaged boards
3	**Chevron Signs (Faded)**	192+300 – 192+400 (RHS)	Reflective film worn out
4	**Weighbridge Sign Board (Missing)**	193+935 (LHS)	Missing near Lamber Toll Plaza
5	**Informative Sign – Toll Ahead (Faded)**	193+300 (LHS)	Film faded
6	**Hazard Marker (Rectified)**	192+350 (LHS)	Earlier missing, now fixed
7	**Drainage Gratings – Truck Parking SP**	192+700 – 193+500	Damaged gratings
8	**Pavement Cracks / Settlement Zone**	193+050 – 193+080 (LHS)	Settlement at MCW
9	**Median Plantation – Section 1**	189+350 – 191+000	Plantation with tree guards

S. No.	Facility / Item	Chainage (Km)	Observation / Condition
10	**Road Studs / Cat Eyes (Missing)**	Inside tunnels and viaduct	Missing at several locations
11	**SOS Boxes (LED not working)**	Inside tunnels	Few SOS box lights not functional
12	**Fire Hydrant Cabinets (Open)**	Inside tunnels	Doors unlocked and unprotected
13	**Median Kerb Painting (Trial Patch)**	First 500 m inside Tunnel T1	Trial painting executed
14	**ROW Poles / Boundary Markers**	Throughout corridor	Not installed per NHAI standards
15	**Plantation – North Portal Section**	205+000 – 205+618	Ongoing plantation
16	**Lighting (Tunnel & Toll Plaza)**	Both tunnels and portals	Many non-functional lights
17	**Ventilation Jet Fans (Dusty)**	Inside tunnels	Working intermittently
18	**Bridge Name & ID Boards**	All bridge locations	Damaged / faded
19	**Medical Aid Post (Toll Plaza Complex)**	South & North Toll Plazas	Functional
20	**Rumble Strips**	Tunnel approaches & junctions	Faint markings

4.5.1 Project Facilities

Project facilities include **ventilation buildings, truck lay-bys, drainage systems, and tunnel support structures**. These were found in operational state with periodic maintenance activities.

Exhibit 30 Details of Project Facilities

Facility	Chainage (Km)	Condition / Observation
Ventilation Building – South Portal	193+750	Minor dust accumulation: fan cleaning required
Ventilation Building – North Portal	203+880	GI sheets replaced; louver maintenance pending

Facility	Chainage (Km)	Condition / Observation
Truck Parking – South Portal	192+700 – 193+500	Drainage damaged; repair under process
Truck Parking – North Portal	205+100	ROW cleaning required; gratings damaged
Drainage System	Entire corridor	Desilting in progress

KF View:

Based on the site visit, Knight Frank is of the view that the road furniture and project facilities are functionally adequate but require targeted remedial and maintenance action. Most defects are localized and maintenance-driven; however, a small number of safety-critical items (non-working SOS LED indicators, open fire-hydrant cabinets, missing road studs and non-functional lighting) should be rectified immediately to maintain safety and serviceability

4.6 Assessment of Tunnels

The **Quazigund–Banihal Section of NH-44 (Km 189+350 to Km 205+618)** traverses the **Pir Pranjal range of the Middle Himalaya**, a geologically complex zone characterized by folded sedimentary formations of the **Murree and Siwalik Groups**. The alignment primarily passes through the **Middle Siwalik formation**, comprising **medium- to fine-grained sandstone, siltstone, shale, and claystone**, with interbedded argillaceous and arenaceous strata. The overburden varies significantly across the alignment due to steep topographical gradients and sharp elevation differences between the north (Quazigund) and south (Banihal) portals.

The project features **two major tunnels – Tunnel T1 and Tunnel T2**, forming the critical connectivity link between Banihal and Quazigund, thereby bypassing the earlier snow-prone Jawahar Tunnel stretch. Both tunnels are twin-tube structures designed to carry **unidirectional traffic**, with dedicated **ventilation, lighting, fire safety, and drainage systems** as per **MoRTH and IRC:SP:91-2010 guidelines**.

An overview of the tunnel details for the project is provided below.

Exhibit 31: Details of Tunnel

Tunnel No.	Section	Portal Location	Design Chainage (Km)	Length (m)
T-1 (Short Tunnel)	South Portal (Banihal)	193.792 – 194.488	193+792 to 194+488	**690 m**
T-2 (Main Tunnel)	South to North (Banihal–Quazigund)	195.425 – 203.865	195+425 to 203+865	**8,440 m**

- **Total Tunnel Length:** 9.13 km (comprising two twin-tube tunnels)
- **Tunnel Configuration:** 2 × 2 carriageways (unidirectional, twin-tube)
- **Cross Passages:** At 300 m intervals for emergency evacuation
- **Fire Hydrant System:** Provided along both tubes at 90 m intervals
- **Drainage Sumps and Pumps:** Installed at each portal for dewatering

4.6.1 Tunnel Drainage

During our site visit, two separated drainage systems are Observed in tunnel for carriageway (surface) water and groundwater.

a) SURFACE WATER DRAINAGE SYSTEM:

The surface water is collected at surface water manholes located inside the driving lane side with inlets at intervals of approx. 50-60 m.

b) GROUNDWATER WATER DRAINAGE SYSTEM

The groundwater is collected by the sidewall drainage and the sub-base drainage. The groundwater within the side wall drainage is discharged into the main ground water drainage at the maintenance niches at intervals of approx. 50-60 m.

4.6.2 Manhole

During the inspection, manholes were observed to be strategically positioned at regular intervals to allow for routine inspection of electrical cables and drainage systems. Various types of manholes are present within the tunnel, including:

- Surface Water Manholes
- Cable Recess Manholes
- Low Voltage (LV) Cable Manholes
- High Voltage (HV) Cable Manholes

The details of manholes and their location are

- **Driving Lane: HV cable manholes, Recess manholes, Surface drainage manholes**
- **Emergency Lane: LV cable manholes**

Based on the site visit, Knight Frank (KF) is of the view that the regularly provided surface drain boxes—typically spaced at 25–50 m—provide effective access to the principal drainage conduit running the length of the tunnel. At the time of inspection, the drain boxes showed no visible clogging, which indicates consistent and effective maintenance practices to keep the drainage system operating unobstructed.

4.6.3 Power Supply & Substations in Tunnels:

Each tunnel portal is served by a dedicated **33/11 kV substation**, ensuring reliable power supply for tunnel systems, control rooms and ancillary buildings. The substations are located at the **Banihal (South) and Quazigund (North) portals** and receive primary power from the local utility (JKPDD). Redundant feed arrangements (Circuit A and Circuit B) and a looped HT cable between portal ventilation buildings and the five in-tunnel substations provide continuity of supply along the tunnel. UPS units provide conditioned emergency power for TMS and essential lighting; diesel generators provide backup in the event of utility failure.

- **Substation–1 (South / Banihal):** receives 11 kV from JKPDD and feeds tunnel lighting, ventilation, TMS and fire systems.
- **Substation–2 (North / Quazigund):** independent 11 kV supply feeding ventilation fans, control room and firefighting systems.

Key power assets and configuration observed / provided:

- DG sets: **one 500 kVA (North) and one 600 kVA (South)** (capable of being synchronized to provide improved redundancy for critical loads).
- DG synchronizing panel with **3 × 1600 A ACBs**.
- Ventilation power panels with **3 × 1600 A ACBs** and **6 × 400 A MCCBs**.
- Four (4) distribution sub-panels (each with a **400 A MCCB** and multiple **100 A MCCBs**).
- **16 VFD panels** for jet-fan control.
- MV/LV transformers located inside the ventilation buildings and at five in-tunnel electrical cross-passage substations (ECP-01 to ECP-05), spaced at approximately **1,500 m** intervals.
- 11 kV MV cables routed in conduit beneath the tunnel carriageway; HT cables looped between all substations to enable cross-feeding.

Redundancy is provided by the dual-circuit arrangement: **each tunnel substation can be fed from either portal** (Circuit A via Tube-1 or Circuit B via Tube-2), allowing one portal to supply the combined emergency/UPS load in the event of a failure at the other portal. DGs are sized and configured principally to sustain **UPS and essential systems (TMS & emergency lighting)**; full-load support for all tunnel loads from DGs alone is limited and therefore utility redundancy and cable loop arrangements remain the primary resilience strategy.

All major subsystems and field equipment are integrated to the **Control Room** via server–client/Modbus interfaces. The control room features a widescreen video wall tied to operator workstations and a master–slave server configuration with a database management system for

logging events, alarms and maintenance records; a designated operator monitors and controls day-to-day operations.

4.6.4 Tunnel Ventilation System and Safety Features

The **ventilation system** in both tunnels is of the **longitudinal type**, designed to maintain acceptable air quality and visibility levels within the tubes. Each tunnel tube is fitted with **axial jet fans**, strategically placed to regulate air movement and remove exhaust gases. The system is integrated with **CO (Carbon Monoxide)** and **NO_2 (Nitrogen Dioxide)** sensors for real-time air quality monitoring and is controlled through a **centralized SCADA system** housed at the south portal control building.

- **Tunnel T1:** Equipped with **8 jet fans**, 4 CO sensors, and 4 NO_2 sensors.
- **Tunnel T2:** Equipped with **20 jet fans**, 10 CO sensors, and 10 NO_2 sensors.
- **Cross Passages:** Provided every 300 m for emergency evacuation and fire segregation.
- **Fire Safety:** Fire hydrant network with landing valves every 90 m; emergency fire extinguishers at both portals; CCTV and Public Address System integrated with ATMS.
- **Drainage:** Longitudinal drain with collection sumps and submersible pumps at each portal to remove seepage and stormwater.

Exhibit 32: Summary of Tunnel Systems

Component	Description / Quantity	Status
Number of Tunnels	2 (Twin-Tube Configuration)	Operational
Total Length	9.13 km	Functional
Jet Fans	28 Nos. (T1 – 8, T2 – 20)	Operational
CO & NO_2 Sensors	28 Nos. (distributed along tunnels)	Functional
Cross Passages	300 m interval	Operational
DG Sets	2 Nos. (500 KVA each) per portal	Working
Substations	2 Nos. (Banihal & Quazigund)	Active
Fire Hydrant Points	At 90 m intervals	Functional
Drainage Sumps	2 (one at each portal)	Operational

4.7 Assessment of Tunnel FIREFIGHTING SYSTEM

The firefighting system includes both portable fire extinguishers and a pressurized hydrant network. The tunnel hydrant system is specifically designed to deliver pressurized water through hydrant valves positioned within the tunnel. Two-way hydrants are installed in designated niches at **250-meter intervals**, while **isolation valves** are provided every **1,000 meters** to enable sectional control. The system utilizes **150 NB main header pipes** to distribute water throughout the tunnel. Fire pump houses are located at both the **north and south portals**, each responsible for covering half the tunnel length. The **pumping capacity** of the system is **144 m^3/h**.

Each pump house is equipped with:

- **One electric motor-driven horizontal centrifugal pump**
- **One standby diesel engine-driven horizontal centrifugal pump**, activated during power failure or main pump breakdown
- **One jockey pump** to maintain system pressure during minor leakages

At each portal, **fire water storage tanks** with an effective capacity of **144 cubic meters** are installed. These tanks are divided into compartments and fitted with essential monitoring equipment such as **level indicators** and **temperature transmitters** to ensure reliable operation.

4.7.1 List of Key Major Fire Fighting Equipment observed at site during visit

I. **Hydrant Main Pumps** – 2 units

II. **Hydrant Standby Pumps** – 2 units

III. **Jockey Pumps** – 2 units

IV. **Circulation Pumps** – 2 units

V. **HSD Tank** – 1 unit

Knight Frank review the Maintenance and Inspection Schedule adopted by company for the maintenance of Firefighting system.

The following schedule is followed by site team for the maintenance of firefighting system.

- **Fire Hydrants** – Inspected biannually to check for damages, leaks, and operational readiness
- **Hydrant Functional Tests** – Conducted twice a year or as needed to ensure proper valve function and system response
- **Fire Extinguishers** – Inspected twice a year by an authorized third-party agency
- **Fire Alarm System** – Checked periodically in accordance with the Standard Operating Procedure (SOP)
- **Sprinkler Systems** – Inspected as per the SOP or maintenance manual to ensure leak-free and unobstructed operation
- **Emergency Lighting** – Tested monthly or quarterly to ensure functionality during power outages
- **General Maintenance** – Carried out in line with the project-specific maintenance manual for all components

KF View:

Based on the site visit, Knight Frank is of the view that the firefighting installation (hydrants, pump houses, storage tanks and portable equipment) is fit for purpose and maintained to acceptable standards. KF advises targeted actions such as regular diesel engine exercise under load, documented monthly pump performance logs, and an annual full-system functional test to mitigate operational risk.

4.8 Assessment of TUNNEL VENTILATION SYSTEM

The **ventilation system** in both tunnels is of the **longitudinal type**, designed to maintain acceptable air quality and visibility levels within the tubes. Each tunnel tube is fitted with **axial jet fans**, strategically placed to regulate air movement and remove exhaust gases. The system is integrated with **CO (Carbon Monoxide)** and **NO_2 (Nitrogen Dioxide)** sensors for real-time air quality monitoring and is controlled through a **centralized SCADA system** housed at the south portal control building.

Knight Frank team reviewed the tunnel ventilation system adopted for the project which is as follows

- The ventilation system designed with the heat release rate of 50MW consists of two tubes with unidirectional traffic flow.
- The first tube, known as the Northbound tube, leads traffic in the northern direction towards Srinagar,
- Second tube, called the Southbound tube, leads traffic in the southern direction towards Banihal
- There are two ventilation stations each at one portal end with total of eight fans (four at each end) located at the ends of these ducts. Half of both the tubes are catered by one fan station from North & South bound portals. The ventilation duct of each tube is separated by a remotely operated fire damper.
- The tunnels are also featured by booster jet fan (in group of two) which are strategically placed in the niches on side wall of the tunnel at 100 m spacing.

I. **Northbound Tube**

- Number of Jet Fans: 60
- Number of Fan Groups: 30
- Fan Diameter: 1000 mm
- Power Rating (each): 30 kW

II. Southbound Tube

- Number of Jet Fans: 66
- Number of Fan Groups: 33
- Fan Diameter: 1000 mm

- Power Rating (each): 30 kW

KF View:

Both the Ventilation Stations house a total of eight axial fans, All the axial fans are reversible

In emergency situations, the fans operate based on demand, with their speed and operation directly proportional to the fire's location within the tunnel.

4.8.1 List of Major Equipment for Tunnel Ventilation System:

S. No.	Item Description	Qty (nos.)	Equipment Design Life
1	Axial Fan135 m^3/s @ 3381 Pa (incl. transition piece) **Motor**: 1500 kW, 807 A, 1500 rpm	8	30 Years
2	VFD Panel- VFD Module: 400V, 880A & 500 kW- Main ACB: 690V & 1250A	8	15 Years
3	Jet Fan26.3 m^3/s, 1004 N (incl. 2 silencers & 1 fan bracket) **Motor**: 130 kW, 52.6 A, 1475 rpm	126	20 Years

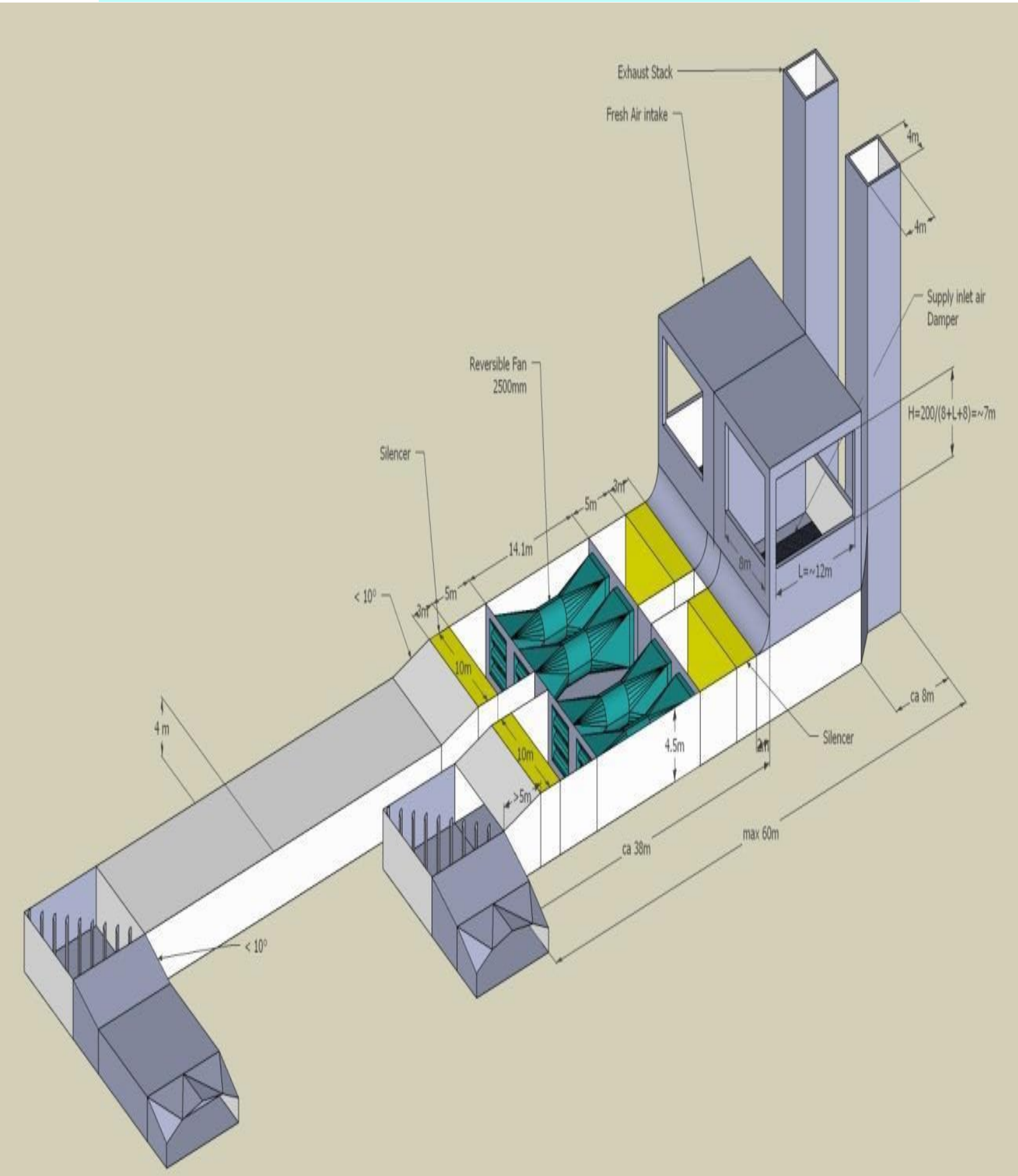
List of Maintenance Check & Frequency

Activity	Brief Description
Inspection	Check fans, dampers, systems for wear, noise, vibration.
Cleaning	Remove dust/debris to maintain airflow and efficiency.
Equipment Testing	Test fans/dampers; full tests post-fire incidents.
Monitoring Systems	Track air quality; adjust ventilation in real time.
Emergency Protocols	Define and train for emergency system use.
Fire Doors	Check closure, seals, and integrity.
Cross Pressure Test	Routine checks to detect air leakages.

KF View:

Based on the site visit, Knight Frank is of the view that the ventilation arrangement (two portal fan stations with 8 axial fans plus 126 jet fans and remotely-operated dampers) is fit for purpose and operates on demand as intended. To mitigate operational risk KF advises targeted actions: scheduled VFD and motor insulation

tests, vibration and bearing monitoring, regular jet-fan anchorage and silencer inspections, calibration of air-quality/smoke sensors, cross-pressure validation and annual full-load/realistic fire drills with control-system verification.



4.9 Assessment of INTEGRATED TUNNEL MANAGEMENT SYSTEM (ITMS)

Knight Frank team reviewed the Integrated Tunnel Management system adopted for the project which is as follows

- The ITMS network is composed of the optical fiber infrastructure installed inside the tunnels and the Ethernet switching equipment that provide the transmission backbone.
- The ITMS network transmission system will interface with the following systems to provide IP and ethernet services.
  - Emergency call station
  - CCTV Surveillance system & AID
  - Linear heat sensing
  - Traffic control system
  - Ventilation system
  - Tunnel lighting system
  - PLC & Power supply
  - Toll collections

KF View:

Knight Frank is in view that implementation of an Integrated Tunnel Management System (ITMS) leveraging fiber optic and Ethernet networks integrates multiple critical systems—CCTV, emergency call stations, ventilation, lighting, and traffic control—ensuring enhanced tunnel surveillance, control, and incident response capabilities.

4.10 Assessment of Toll Plaza

Two toll plaza complexes are located near **Lamber (South)** and **Ujroo (North)**, housing toll booths, administrative offices, control rooms, electrical panels, and washrooms. Both complexes are structurally stable and operational, though minor civil maintenance and electrical works were observed in progress.

Exhibit 33 Details of Toll Plaza

S.no	Toll Plaza Details		
1	Chainage (Km)	193+760	203+880
2	Toll plaza name	Lamber Toll Plaza	Urjoo Toll Plaza
3	No of lanes	6 lanes (3 each direction) – ETC & Manual mix	6 lanes (3 each direction) – ETC & Manual mix
4	Admin Building	Yes	Yes
5	Static Weigh Bridges (SWB)	2	2
6	Toilets	2	2
7	High mast lights	4 No's	4 No's
8	Toll Booths	12 No's	12 Nos.
9	Ambulance	2 Nos.	
10	Crane	2 No's	
11	Highway Patrolling Vehicles	2 No's	
12	Hybrid	10 No's	
13	Medical-Aid Post	Yes	Yes
14	Canteen	Yes	Yes
15	Control & Server Room	Yes	Yes
16	Firefighting System	Yes	Yes
17	Separator width at Toll booths (m)	1.8	1.8
18	Toll lanes width (m)	3.5	3.5
19	Extra Wide Lane width (m)	5.5	5.5

KF View:

Knight Frank reviewed the two toll plazas located at Km 193+760 (Lamber Toll Plaza) and Km 203+880 (Urjoo Toll Plaza) during the site visit, in line with the provisions of the Concession Agreement. Both plazas are equipped with 5 + 1 lanes

in each direction, operating under a Hybrid Electronic Toll Collection (ETC) system comprising both manual and electronic lanes.

Each toll plaza is provided with key facilities such as canopy and high mast lighting, administrative and control buildings, toilet blocks, static weighbridges, tow-away cranes, highway patrolling vehicles, paramedical booths, ambulance services, canteen, and firefighting systems.

Based on the inspection, Knight Frank is of the view that both Lamber and Urjoo Toll Plazas are in good operational condition, with all essential systems functional and routine maintenance being carried out satisfactorily.

4.11 Assessment of Toll Management System (TMS)

Knight Frank conducted a review of the **Toll Management System (TMS)**, including the **Electronic Toll Collection (ETC)**, **Weigh-in-Motion (WIM)** systems, and associated control mechanisms along the **Quazigund–Banihal Section of NH-44 (Km 189+350 to Km 205+618)** during the **site visit.**

The assessment was undertaken through field inspections, system demonstrations, and a review of documents and operational data provided by the Concessionaire. The TMS has been established to ensure **efficient, transparent, and automated toll collection**, integrating ETC, video surveillance, data logging, and centralized monitoring through control rooms at the **Lamber (Km 193+760)** and **Ujroo (Km 203+880)** toll plazas.

The system operates under a **Hybrid ETC framework**, equipped with **automatic vehicle classifiers, smart card readers, loop detectors, WIM sensors, automatic barriers, and CCTV cameras**. All systems are supported by **UPS and DG power backups** to maintain uninterrupted operation. Based on the inspection, the **TMS, ETC, and WIM systems were found to be in good working condition**, with only minor issues related to periodic calibration and sensor cleaning. Overall, the TMS is performing satisfactorily, ensuring smooth toll operations, reduced congestion, and improved transparency across the corridor.

4.11.1 Toll System Maintenance

The **Toll Management System (TMS)** for the **Quazigund–Banihal Section of NH-44** was installed by **M/s Techsture Technologies India Pvt. Ltd., Ahmedabad** and has been in continuous operation since its commissioning in **2017**. The **Concessionaire, M/s Quazigund Expressway Private Limited (QEPL),** has continued to engage the same system integrator under an **Annual Maintenance Contract (AMC)** for the operation and maintenance of all **TMS components**, including the **Hybrid Electronic Toll Collection (ETC) system** installed across all toll lanes at the **Lamber (Km 193+760)** and **Ujroo (Km 203+880)** Toll Plazas. The integrator remains responsible for the **upkeep, calibration, and servicing** of all tolling hardware and software systems to ensure uninterrupted functionality and compliance with NHAI standards.

4.11.2 Advanced Traffic Management System (TMS)

The ATMS installed in the tunnels includes **CCTV cameras, jet fans, ventilation controllers, and SOS panels**. Most systems are working, though several **CCTV cameras, jet fans, and LED indicators** require cleaning and calibration. The control rooms are functional, and operators were present during inspection.

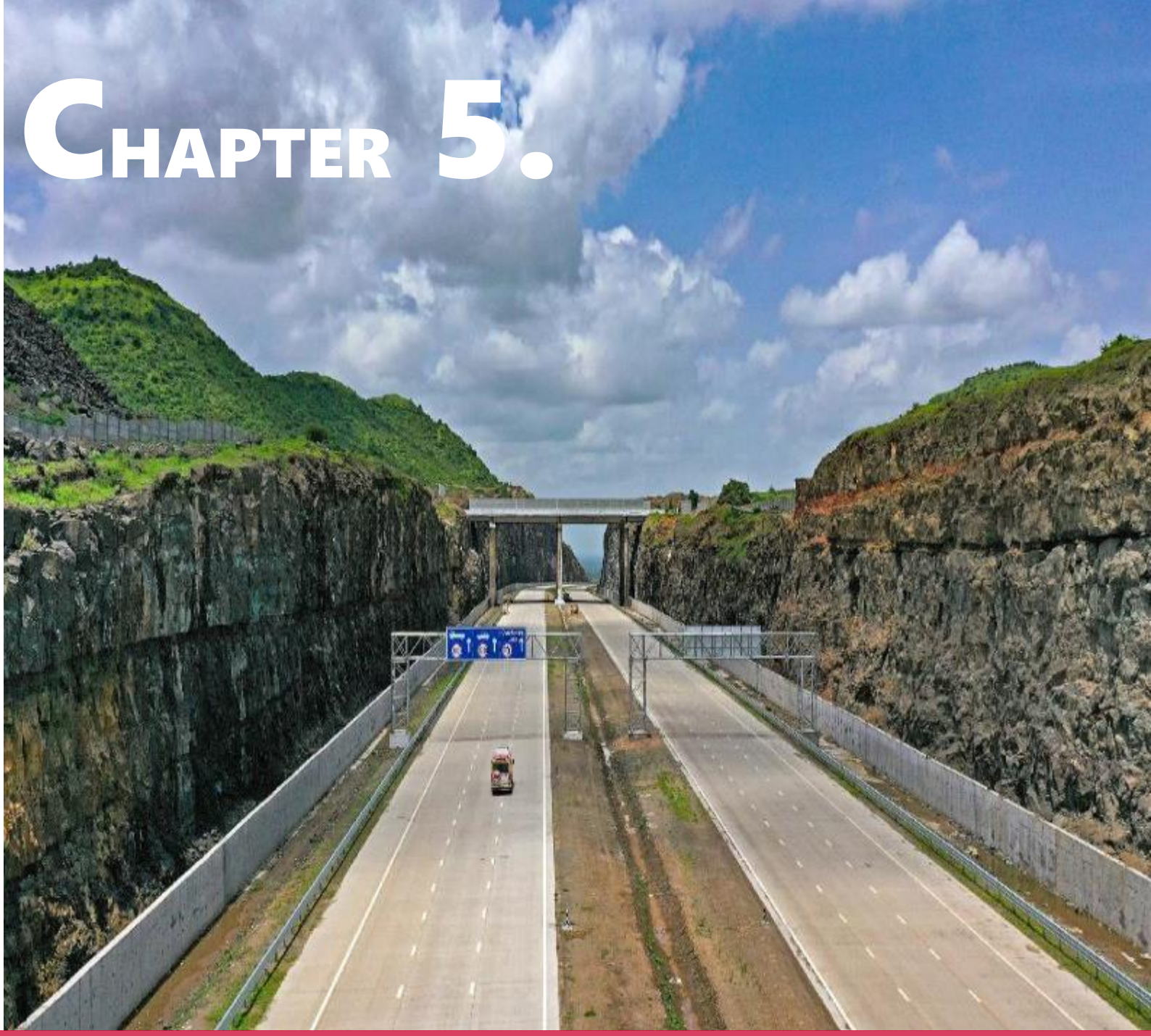
☛ Knight Frank reviewed the **Toll Management System (TMS)** installed along the **Quazigund–Banihal Section of NH-44 (Km 189+350 to Km 205+618)**, including **Electronic Toll Collection (ETC)** and **Weigh-in-Motion (WIM)** systems, through field inspections, system demonstrations, and review of operational records provided by the Concessionaire. The system operates under a **Hybrid ETC framework**, integrating **AVC, WIM, CCTV surveillance, and data logging** for centralized control at **Lamber (Km 193+760)** and **Ujroo (Km 203+880)** Toll Plazas.

The toll operations are being managed through a **third-party agency**, with the TMS presently **functional but operating with certain technical limitations**. The **Automatic Vehicle Classification (AVC)** system is profiler-based with local data storage; however, it does not transmit data independently when the lane controller is taken offline for maintenance. It was also observed that the **Lane Status Display Unit (LSDU)**—a critical component for real-time hardware monitoring and alert generation—has **not been installed**, leading to manual communication of equipment failures by toll operators or IT staff during inspections.

At present, the TMS functions primarily as a **ticketing-based system**, with toll transaction validation dependent on **manual inputs** from toll collectors. While overall tolling operations remain stable with no reported disruptions to revenue realization, **integration between AVC classification and Fastag validation** can be strengthened to improve transaction accuracy, transparency, and system reliability.

Based on the site inspection, Knight Frank is of the view that while the TMS and toll collection process are operational and performing satisfactorily, enhancements in real-time monitoring, system alerting, and data integration are recommended to ensure improved efficiency and long-term reliability.

Chapter 5.



Pavement Investigation & Assessment

Chapter 5. PAVEMENT INVESTIGATION & ASSESSMENT

5.1 General

The life of the Pavement has a co-relation with both its structural as well as Functional Condition. Inspecting and tracking of pavement condition, scheduling maintenance, and treating distress can have serious ramifications impinging on safety of road users and enhancing functional efficiency in end use of the Facility. It is therefore essential to carry out the assessment of the condition of the pavement on a given date taking into cognizance a variety of data to arrive at well-considered decisions and drawing up of the maintenance strategy and taking appropriate course of action to apply funds and resources in optimizing the desired levels of operations on the road assets. Condition data can include factors like roughness, specific distresses, rut depth, friction, and structural health.

Once measurements of road condition are available, they are interpreted in such a way that allows the decision-making process to occur in a logical fashion. This might involve converting multiple physical parameters into a single index, allowing different sections of a road network to be directly compared against one another etc.

Pavement performance under prevailing as well as projected traffic and environmental conditions is crucial as it has a direct bearing on the economic returns from the project developments. While an under-designed pavement will fail prematurely, imposing undesirable Cost Over runs on the Project. It is therefore necessary to ensure the pavement layer thicknesses; configurations and materials are adequately designed and require minimal maintenance under the anticipated traffic loading throughout the life cycle of the project.

To achieve this objective and thereby to predict the performance of any pavement structure, it is necessary to analyze material characteristics, traffic condition, present physical condition of the pavement layers, local environment, and its impacts. In addition, it is also necessary to presume what level of performance and what pavement conditions will be considered satisfactory to estimate the future operation and maintenance cost of the road.

Due to the variety of variables involved, it is essential to determine the exact level of pavement performance through the project life. But, based on the assessment of present condition of pavement, analysis of available survey data, traffic projections and estimations regarding the pavement life, future maintenance requirements can be estimated.

This part of the report deals with the Review of Pavement Design and provides insights on Design Life of the Pavement, Crust thickness, History of Overlays over the Existing Pavement Etc. for sound pavement performance through the project life.

The pavement design for the Quazigund–Banihal Section of NH-44 (Km 189.350 to Km 204.700) has been carried out in accordance with the guidelines laid down in **IRC:37-2012**, **IRC:81-1997**, and **MoRTH Specifications (5th Revision)**. The design accounts for the heavy commercial vehicle traffic, high axle loading, subgrade strength, and environmental conditions prevalent in the mountainous terrain of Jammu & Kashmir.

5.2 Objectives

The project road passes through a high-altitude hilly region of the Pir Panjal range, characterized by steep gradients, low temperatures, and substantial rainfall and snowfall. The alignment includes open road sections, tunnels, viaducts, and approaches requiring both **flexible and rigid pavement designs**.

The objective of the pavement design is to ensure durability, structural strength, and riding comfort for the design life of the pavement, while minimizing maintenance requirements under varying climatic and loading conditions. The design life adopted for flexible pavement is **15 years**, and for rigid pavement (tunnel and toll plaza sections) is **30 years**.

5.3 Review of Pavement Design

A. Design CBR

As per the Pavement design report, the subgrade CBR of **8%** was adopted for all flexible pavement designs. This value was derived from field investigations and laboratory tests and is consistent with IRC 37:2012 requirements. The CBR has been used to compute the resilient modulus of subgrade and thereby establish the required layer thicknesses.

B. Design MSA

Traffic projections were computed using commercial vehicle counts, axle load data, VDF, lane and directional distribution factors. The **Appendix-1 MSA Report** confirmed the following:

- COD 2017 – 2.80 million standard axles (base year traffic).
- 2026 (10 years) – 40 MSA,
- 2031 (15 years) – 70 MSA,
- 2036 (20 years) – 107 MSA

This formed the basis for flexible pavement thickness design and for extrapolating rigid pavement requirements.

C. Pavement Crust of Main Carriageway

The adopted pavement composition for the main carriageway, derived from IRC:37-2012 guidelines and IITPAVE analysis.

The crust thicknesses are as follows:

Exhibit 34 Adopted Composition – Main Carriageway:

Layer	Thickness	Remarks
Bituminous Concrete (BC)	40 mm	Surface Course, VG_30 grade bitumen
Dense Bituminous Macadam (DBM)	110 mm	Binder Course
Wet Mix Macadam (WMM)	250 mm	Base Layer
Granular Sub-Base (GSB)	200 mm	Sub-Base & Drainage Layer
Total Thickness	**600 mm**	**Adequate for 70 MSA (15 year)**

Paved shoulders are to be constructed with the same crust as the main carriageway, as per **IRC SP:84-2014 Clause 5.10**

D. For Service Road/Slip Road

The service road pavement design was carried out as per IRC SP:84-2014 requirements, with a design traffic of 10 MSA and subgrade CBR = 8%.

The crust thicknesses are as follows:

Exhibit 35 Adopted Composition – Service Roads:

Layer	Thickness	Remarks
Bituminous Concrete (BC)	40 mm	Surface Course
Dense Bituminous Macadam (DBM)	60 mm	Binder Course
Wet Mix Macadam (WMM)	250 mm	Base Layer
Granular Sub-Base (GSB)	200 mm	Sub-Base
Total Thickness	**550 mm**	**Adequate for 10 MSA (10 year)**

This configuration is economical, structurally adequate, and suitable for expected traffic demand on service roads.

E. Rigid Pavement – Tunnel and Toll Plaza

Rigid pavements are proposed for the tunnel and toll plaza areas, designed as per **IRC:58-2015** for a **30-year design life**. These sections are expected to carry cumulative loading equivalent to >100 MSA.

The crust thicknesses are as follows:

Exhibit 36 Adopted Composition - Tunnel and Toll Plaza:

Layer	Thickness	Remarks
Pavement Quality Concrete (PQC)	40 mm	Designed with dowel/tie bars, flexural strength governed by IRC:58
Dry Lean Concrete (DLC)	60 mm	Minimum cement content, strength as per IRC SP:49; extended 0.5 m beyond PQC
Granular Sub-Base (GSB – drainage)	250 mm	Designed with permeability ≥ 20 m/day
Total Thickness	**550 mm**	**Adequate for 30 years (>100 MSA cumulative traffic)**

F. Overlay Design

At the stage, **no overlay has been prescribed**, as the project involves the provision of **entirely new pavements**. The need for **future overlays** will be assessed based on **deflection surveys**, **roughness measurements**, and **distress mapping** conducted during the pavement's service life. Based on current projections, it is anticipated that overlays may be required after approximately **10 to 12 years** of service, subject to the **actual performance** of the pavement over time.

5.4 Test Pits & Subgrade Investigations

No information related to test pits or subgrade investigations is provided

5.5 Network Survey Vehicles (NSV) Survey

No information related to test pits or subgrade investigations is provided

5.6 FALLING WEIGHT DEFLECTOMETER (FWD) SURVEY

5.6.1 Pavement Evaluation by Falling Weight Deflectometer (FWD) Technique

a) Introduction:

The project stretch on NH-44 (old NH-1A), from **Km 189+350 to Km 204+700**, in Jammu & Kashmir, was evaluated using the Falling Weight Deflectometer (FWD) technique in June 2023. The study aimed to assess the **structural strength, residual life, and overlay requirements** for both flexible and rigid pavement sections in accordance with **IRC:115-2014** and **IRC:37-2018** guidelines.

b) Project Road

The evaluated corridor lies in Pulwama district, beginning near **Banihal (Km 189+350)** and terminating near **Km 204+700**. The stretch includes a **short single-tube tunnel (Km 193+830 to Km 194+540)** and a **long double-tube tunnel (Km 194+700 to Km 204+000)**. The alignment passes through hilly terrain with heavy traffic loading and experiences harsh climatic conditions including severe winters.

c) Pavement Condition

The pavement evaluation revealed distinct characteristics across flexible and rigid pavement sections. **Flexible pavement sections** comprised **bituminous layers over granular base and sub-base**, with **variable field conditions**. These sections exhibited typical **distresses such as rutting, cracking, and ravelling**. In contrast, **rigid pavement sections** featured **PQC slabs** at selected stretches, particularly near **tunnel approaches**, where **Load Transfer Efficiency (LTE)** and **flexural strength assessments** were conducted to evaluate structural performance. Overall, the **surface condition ranged from fair to good**, although certain stretches with **low residual life** were identified, necessitating **immediate overlay interventions** to maintain serviceability.

d) Falling Weight Deflectometer

In order to evaluate the structural strength of the existing flexible pavement, Falling Weight Deflectometer (FWD) survey has been carried out along the project road as per IRC: 115-2014 guidelines on the Main carriageway. The **equipment and procedure** for the pavement evaluation involved conducting a **Falling Weight Deflectometer (FWD) survey** using impulse loading equivalent to a **40 kN axle load**, simulating an **80 kN standard axle**. Deflections were recorded at

offsets of **0, 200, 300, 450, 600, 900, and 1200 mm**, with tests spaced at **250 to 500 meters** along both the **left-hand side (LHS)** and **right-hand side (RHS)** carriageways. To ensure accuracy, **temperature corrections** (standardized to **35°C**) and **seasonal variation adjustments** for **monsoon conditions** were applied.

For analysis, **KGPBACK** software was used to **back-calculate layer moduli**, while **IITPAVE** facilitated **fatigue and rutting life analysis** as well as **overlay design**.

5.6.1.1 FWD Analysis

i. Flexible Pavement Analysis

- **Back-calculated Moduli (15th Percentile):**
  - **Bituminous Layer:** 1644 – 2807 MPa (LHS), 1474 – 2234 MPa (RHS).
  - **Granular Layer:** 74 – 195 MPa (LHS), 72 – 253 MPa (RHS).
  - **Subgrade:** Stabilized at ~100 MPa (standardized).
- **Remaining Life & Overlay Requirement:**
  - **Design traffic considered:** 22 MSA.
  - **LHS:**
    - Section Km 191+200–193+500: Remaining life only **2.6–3 MSA**, requiring **80 mm overlay (30 mm BC + 50 mm DBM)**.
    - Section Km 204+370–204+700: Remaining life ~**4 MSA**, requiring **70 mm overlay (30 mm BC + 50 mm DBM)**.
    - Other stretches showed adequate life with no immediate overlay required.
  - **RHS:**
    - Section Km 193+800–191+700: Remaining life only **2 MSA**, requiring **80 mm overlay (30 mm BC + 50 mm DBM)**.
    - Section Km 191+700–189+350: Remaining life ~**12 MSA**, requiring **40 mm BC overlay**.
    - Other sections have sufficient rutting and fatigue life without overlay.

ii. Rigid Pavement Analysis

- **Methodology:**
  - Analysis followed **IRC:117-2014** using deflection basin parameters, load transfer efficiency (LTE), modulus of subgrade reaction, and flexural strength of concrete.
  - Fatigue behaviour checked through stress ratio (SR) models.

5.7 Structural Investigations

a. Introduction:

The MBIU survey was carried out in December 2023 to assess the structural and functional condition of bridges and viaducts along the Quazigund–Banihal section of NH-44. The objective was to record inventory details, identify maintenance requirements, and provide a comprehensive health check of the existing structures in service

b. Project Scope:

The inspected stretch covers NH-44 from Km 189+350 to Km 204+700. The inventory includes:

Total structures inspected: 14

Breakdown: 2 Major Bridges, 8 Minor Bridges, 2 RUBs (Road Under Bridges), and 2 Viaducts

Exhibit 37 List of Bridge Inspected

S. No	Chainage	Vent Size	Length of Bridge (m)	Type of Bridge
1	189+435 (Left)	3x36.63m	110.00	Major Bridge
2	189+435 (Right)	3x36.63m	110.00	Major Bridge
3	189+852 (Left)	1x22.654m	22.654	Minor Bridge
4	189+852 (Right)	1x22.654m	22.654	Minor Bridge
5	190+137	1x8.84m	8.84	Minor Bridge
6	190+318 (Left)	1x25m	25.00	Minor Bridge
7	190+318 (Right)	1x25m	25.00	Minor Bridge
8	191+097 (Left)	2x30m + 23.7m	83.70	RUB
9	191+097 (Right)	2x30m + 23.7m	83.70	RUB
10	191+427 (Left)	1x10.82m	10.82	Minor Bridge
11	191+427 (Right)	1x10.82m	10.82	Minor Bridge
12	193+395	1x9.2m	9.20	Minor Bridge
13	194+236 (Left)	38x36.60m	1390.80	Viaduct
14	194+236 (Right)	39x36.60m	1427.40	Viaduct

c. General Condition of Structure:

- Most structures are **serviceable** but exhibit early signs of distress.
- Common issues include:

- **Leakage through expansion joints** (observed at multiple bridges).
- **Clogged drainage spouts** across several structures.
- **Hairline cracks** on abutments, retaining walls, and underside decks (notably at Km 189+852).
- **Honeycombing and exposed reinforcement** near abutments and piers (e.g., A2 at Km 189+852).
- **Rusting in rivets and steel components** on viaduct piers (Km 194+236).
- **Debris accumulation** under and around bridges.

d. General Condition of Structure:

Exhibit 38 Inspection Reports of Bridges NH-44, Section: Banihal to Quazigund

S. No.	Location of Bridge (Ch)	Maintenance Requirements Observed During Inspection
1	189+435 (Left)	1. Leakage of Water through Expansion Joints. Needs to be repaired. 2. Clogging in Drainage Spouts, needs Cleaning.
2	189+435 (Right)	1. Leakage of Water through Expansion Joints Need to be repaired. 2. Clogging in Drainage Spouts, need Cleaning. 3. Slight settlement of 1st pier observed towards Quazigund, needs detailed inspection.
3	189+852 (Left)	1. Clogging in Drainage Spouts, need Cleaning. 2. Hair cracks were observed on the abutment surface & deck surface. 3. Honey combing & exposed reinforcement observed near A2 LHS, need to be repaired.
4	189+852 (Right)	1. Clogging in Drainage Spouts, need Cleaning. 2. Irregular surface of footpath, need proper plastering. 3. Hair cracks were observed on the surface of the deck underside & Abutment. 4. Steel bars were coming out of the retaining wall, need to be cut.
5	190+137	1. Bridge is in Good Condition.
6	190+318 (Left)	1. Clogging in Drainage Spouts, need Cleaning. 2. Debris observed in Expansion joints, need to be cleaned.
7	190+318 (Right)	1. Clogging in Drainage Spouts, need Cleaning.

S. No.	Location of Bridge (Ch)	Maintenance Requirements Observed During Inspection
8	191+097 (Left)	1. Bridge is in Good Condition. 2. Watermarks & leakage of water observed from the joints, need to be repaired. 3. The cover on the drainage in the footpath is damaged at a few locations, need to be replaced.
9	191+097 (Right)	1. Leakage of water from the joints was observed and rubber between the joints had also come out. Needs to be repaired. 2. The cover on the drainage in the footpath is damaged at few locations, need to be replaced.
10	191+427 (Left)	1. Clogging in Drainage Spouts, need Cleaning. 2. Debris under the bridge, require cleaning.
11	191+427 (Right)	1. Clogging in Drainage Spouts, need Cleaning. 2. Stone particles & Debris on footpath, need to be cleaned. 3. Steel reinforcement coming out of the parapet wall, need repairing.
12	193+395	1. Bridge is in Good Condition. 2. Stones & debris observed under the bridge, need cleaning. 3. Vegetation growth & accumulation of debris observed, require cleaning.
13	194+236 (Left)	1. Vertical cracks observed in the pier (4th & 5th). 2. Rusting started in rivets, need painting.
14	194+236 (Right)	1. Debris observed in the expansion joint, need to be cleaned. 2. Clogging in the Drainage spout, need to be cleaned. 3. Vertical cracks observed in pier no. 4th & 5th. 4. Steel beam in the expansion joints is damaged at the 17th expansion joint, needs repairing. 5. The Drainage spout at some location placed above deck level, need to be aligned properly. 6. Near 13th Expansion joints crash barrier is slightly damaged. 7. Horizontal surface cracks observed on 10th pier, require repair. 8. Rusting started in rivets, need painting.

e. Repair and Maintenance Requirements:

- **Expansion joints:** Repair of leakage and damaged sealing material.
- **Drainage spouts:** Cleaning, de-clogging, and realignment.
- **Cracks**: Repair of hairline and vertical cracks in abutments, piers, and decks with epoxy grouting/patching.
- **Concrete defects:** Honeycombing and exposed reinforcement require patch repair and protective coating.
- **Corrosion:** Application of anti-corrosive paint to rusted steel rivets and beams.
- **Structural safety:** Detailed inspection of the settled pier at Km 189+435 (RHS).
- **Debris removal:** Cleaning of accumulated debris beneath structures

The MBIU survey indicates that the bridge and viaduct structures along the Quazigund–Banihal stretch are **generally in a functional condition** but show **localised defects** requiring attention. Timely intervention, particularly on drainage systems, expansion joints, and structural cracks, is essential to prevent further deterioration.

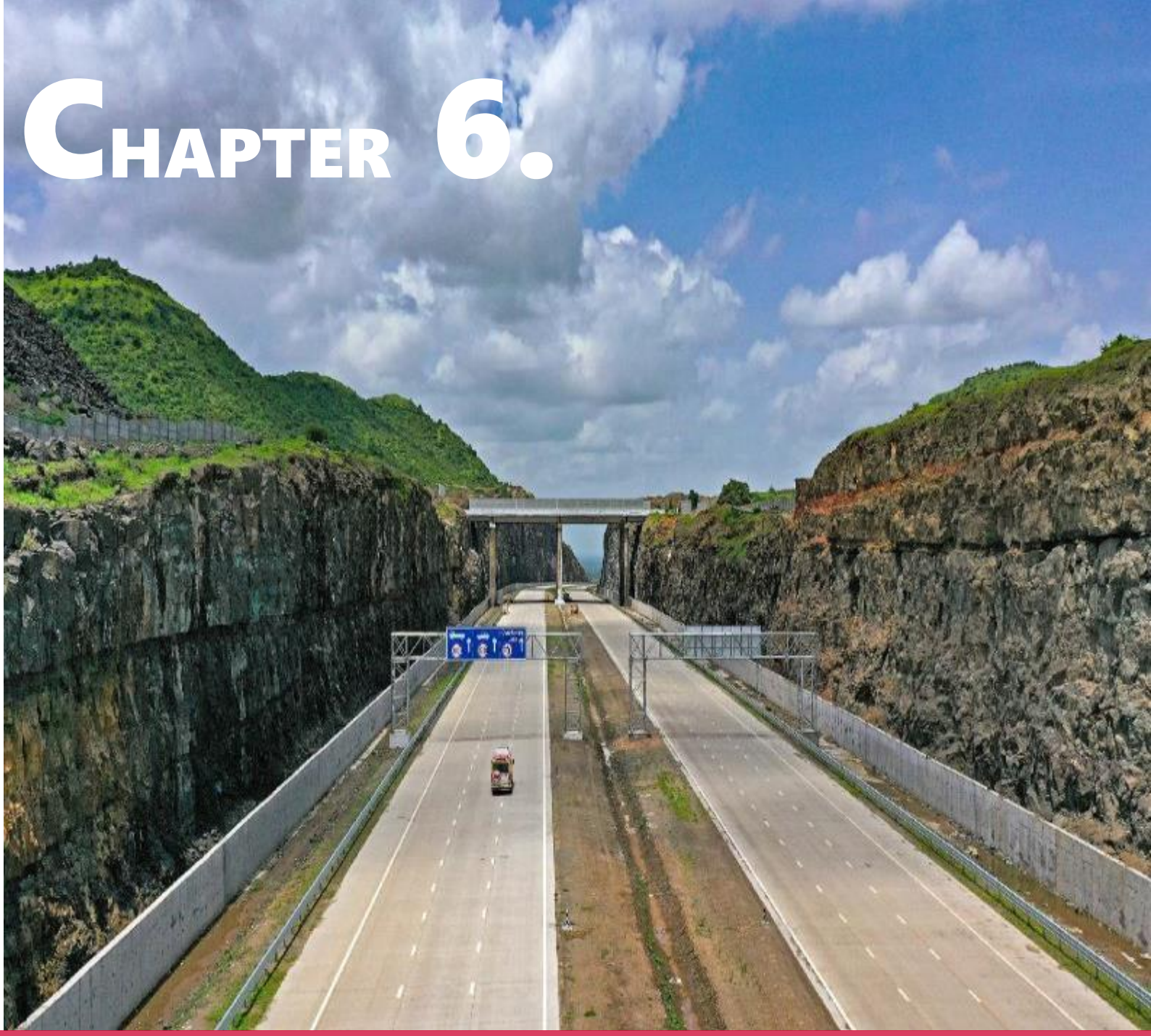
The **viaducts at Km 194+236** and **major bridge at Km 189+435** are critical locations requiring priority repair due to structural cracks, rusting, and settlement. Regular monitoring and preventive maintenance are recommended across the corridor.

5.8 Major Maintenance of Pavement

The periodic maintenance strategy has been developed considering the service life of flexible and rigid pavements, climatic conditions of the project corridor, and expected traffic loading. The project corridor (Km 189.350 – Km 204.700) includes both **flexible pavements** on the main carriageway and service roads, and **rigid pavements** at the toll plaza, tunnel sections, and lay-bys. Maintenance interventions are planned in two distinct **Maintenance Management (MM) Cycles**, ensuring the pavement network continues to perform within the serviceability criteria prescribed

Based on above test results, Concessionaire prepared Strategy, Major Maintenance details discussed at **Chapter 6**

Chapter 6.



Cost Estimate

Chapter 6. COST ESTIMATES

6.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories –

I. Routine O&M Cost
II. Major Maintenance Cost
III. Periodic Replacement of TMS/ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and Escalation.

6.2 Rate Assumption

The cost estimates are based on the following assumptions:

Following assumptions are considered for unit rates of various items while estimating the cost –

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard data book. The input rates for MoRTH standard data book were adopted as below
   a) **Manpower and labor** – As per applicable minimum wages published by Ministry of Labour & Employment, Government of India
   b) **Bitumen** – Bitumen rates are considered to be sourced from IOCL Panipat Refinery. The distance (to- from) from the midpoint of Project Highway is considered as 550 kms. VG-30 and VG-40 grades of bitumen are considered in our cost estimate.

☛ ***Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.***

Therefore, Bitumen prices are considered as per the client's forecast. Current published of bitumen are considered for unit rates calculation for FY24 and FY25. Average 10 years of price of bitumen are considered for unit rates calculation for FY26 and onwards, since bitumen prices have been range bound over the last five-six years. Following rates of bitumen are considered

Exhibit 39 Bitumen Rates (in INR/MT) - Ex-MI supply excluding discount and GST

Refineries	Grade	Rate for FY24 and FY25	Rate for FY26 onwards
IOC Mathura	VG10	45522	33955
IOC Mathura	VG30	46322	34552
IOC Mathura	VG40	48652	36290
IOC Haldia	VG10	45922	33258
IOC Haldia	VG30	46722	33838
IOC Haldia	VG40	49052	35525
IOC Barauni	VG10	46952	34004
IOC Barauni	VG30	47752	34584
IOC Barauni	VG40	50082	36271
CPC Chennai	VG10	44922	33541
CPC Chennai	VG30	45722	34138
CPC Chennai	VG40	48052	35878
IOCL Panipat	**VG10**	**45,830**	**33,915**
IOCL Panipat	**VG30**	**46,630**	**34,506**
IOCL Panipat	**VG40**	**48,960**	**36,230**

c) **Sand and Aggregate** are sourced from the nearest quarry located on project highway.

d) **Cement** is procured from the nearest local market.

e) **Machinery Hire charges** of Plant and Machinery for various items of works have been considered from J&K SOR 2022 and some rates are considered from MORT&H Standard Data Book 2001-2002. Escalation has been considered on MORT&H Plant and Machinery rates to arrive at the present rates of 2024-25.

f) **Material Rates** are obtained from SOR of J&K, PWD 2021-22.

g) Some of the rates are based on Consultant's experience on similar ongoing projects in adjacent locations.

h) **Overheads and profits** have been considered based on MORT&H Standard Data Book. Applicable taxes have been considered in the Rate Analysis.

Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines

Exhibit 40 Adopted Unit Rates for Key items

S.nos	Items Description	Unit	Rates (₹)
1	Dense Bituminous Macadam	Cum	10,936
2	Bituminous Concrete	Cum	12,676
3	Slab replacement cost (PQC)-MCW	Cum	8,933
4	Joint Sealant Replacement/Repairs	Rm	215
5	PQC Taxing	Sqm	208
6	Micro surfacing	Sqm	247
7	Milling	Sqm	125
8	Raising of Road Kerb	m	460
9	Road Marking	sqm	582
10	Kerb and Crash Barrier Painting	sqm	130
11	Tack Coat	Sqm	16
12	Manhole	Nos.	30,000

- *The above unit rates are excluding GST.
- The unit rate of each item includes 10 % overhead for road works, 15 % overhead for structure works and 10 % contractor's profit.
- Details of components considered in rate analysis & quantification are presented in below **Exhibit 41**

Exhibit 41 Major Components Detail for Key items

Sr. No.	Particular	Source	Reference
1	Rate Analysis	MORTH	Standard Data Books published by MORTH
2	**Material**		
A	Aggregate Rates	Nearby Project Corridor	As per Local Market Rates
B	ATMS, TMS cost		As per Vendor offer.
C	Cement	As provided in Local market	As per Local Market Rates
3	Equipment hire cost	Nearby project location	Standard Data Books published by MORTH
4	Labour	As per minimum wages	As per minimum wages

6.3 Routine Operation & Maintenance (O& M) Cost

Operations and Routine Maintenance work required as per the CA. During the concession period, the Concessionaire is fully responsible for Operation & Maintenance of Project Highway. Schedule K elaborates the requirements of various service factor desirable level and acceptable level during O & M period along with time if any parameter level of service beyond acceptable limit.

The CA Stipulates that the Concessionaire shall Operate and Maintain the Project Highway in accordance with Article 17 – Operation & Maintenance & Schedule –K Maintenance Requirements of Concession Agreement. The obligation of Concessionaire as per Article 17 is as follows:

- permitting safe, smooth, and uninterrupted flow of traffic on the Project Highway during normal operating conditions; collecting and appropriating the Fee.
- minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with the emergency services of the State.
- carrying out periodic preventive maintenance of the Project Highway.
- undertaking routine maintenance including prompt repairs too, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices.
- undertaking major maintenance such as replacement of panels in rigid pavement and associated activities
- preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the Project Highway
- preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Project Highway
- protection of the environment and provision of equipment and materials therefore
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media, and other agencies; and
- Complying with Safety Requirements in accordance with Article 18.

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operating cost. The estimates are projected based on best industry practices and are compared with the operation cost in the vicinity of the project area. Same has been divided into following major head

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS/HTMS/System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards

6.4 O & M Strategy

Important Operations and maintenance work have been outsourced by the SPV. Details of important works are listed below

Exhibit 42 O & M Strategy

Sn	Activity	Strategy
1	Manpower	In-house
2	Civil work cost	In-house
3	Manpower for Electrical & Mechanical	Outsource
4	Agency for Toll Plaza (TMS)	Outsource
5	AMC for Electrical system	Outsource
6	ITMS AMC	Outsource
7	Rectification work for Electromechanical	Outsource

6.5 Manpower cost

Manpower costs have been estimated based on a combination of market benchmarks and historical contractual data, with appropriate price escalation factored in to reflect anticipated future cost increases. The manpower requirements are categorized into four primary segments:

1. **Project Office and Administration**: Covers expenses related to staff involved in overall project management, administrative duties, and associated benefits and overheads.
2. **Route Operations**: Includes salaries and benefits for frontline operational personnel such as toll operators, traffic controllers, and other essential staff ensuring uninterrupted tunnel functionality.
3. **Ancillary Services**: Encompasses costs for support roles like security staff, emergency response units, and other service teams vital to maintaining safety and operational readiness.
4. **Highway and Tunnel Maintenance and Repair**: Pertains to compensation for technical and maintenance staff responsible for routine upkeep, repairs, and general infrastructure support within the tunnel.

Total Manpower cost estimated by Knight Frank is ₹ 99.41 Crore for the balance concession period of 06 years.

Exhibit 43 Manpower Cost

Manpower Cost			
Year in Nos	**Years**	**Manpower**	**Remarks**
1	FY25	9.8	Each year 10% escalation is considered
2	FY26	10.8	
3	FY27	11.9	
4	FY28	13.0	
5	FY29	14.4	
6	FY30	15.8	
7	FY31	17.4	
Total Cost (₹- Crore)		**93.0**	

Detailed Manpower Costs covers following items cost

- **Project Office and Administration**: Costs are derived from prevailing market rates and past contractual terms, incorporating annual cost escalations.
- **Route Operations**: Calculated based on staffing requirements, specific roles, and associated employee benefits, ensuring adequate coverage for smooth tunnel operations.
- **Ancillary Services**: Includes estimated expenses for security and emergency response personnel, along with costs for necessary equipment and training.
- **Highway and Tunnel Maintenance and Repair Works**: Provides a thorough breakdown of costs for maintenance crews, factoring in labor, tools, and essential equipment required for upkeep and repairs.

6.6 Vehicle Maintenance Cost

Total Vehicle maintenance cost considered is ₹6.3 Crore for balance concession period. It is assumed that all required vehicles will be continuously available for the entire duration of the project. & following items considered for preventive maintenance work:

- **Maintenance Costs:** Assumed at 2.5% of the vehicle cost annually, accounting for regular upkeep and minor repair work.
- **Insurance Costs:** Estimated at 3% of the vehicle cost each year, ensuring coverage for accidents and associated liabilities.
- **Fuel Costs:** Projected based on typical fuel consumption patterns and prevailing fuel rates, with provisions for future price variability.
- **Price Escalation:** Incorporated across maintenance, insurance, and fuel components to reflect anticipated inflation and market shifts over the seven-year duration**.**

Details of Vehicle maintenance cost is tabulated in below **Exhibit 44.**

Exhibit 44 Vehicle Maintenance cost

Vehicle Maintenance Cost (₹-Crore)			
Year in Nos	**Years**	**Vehicles**	**Remarks**
1	FY25	0.7	An annual escalation rate of 10% has been factored in each year.
2	FY26	0.7	
3	FY27	0.8	
4	FY28	0.9	
5	FY29	1.0	
6	FY30	1.1	
7	FY31	1.2	
Total Cost (₹- Crore)		**6.3**	

Above cost is including of GST

Breakdown of Vehicle Maintenance Costs:

- **Routine Maintenance**: Includes yearly expenses for regular servicing, part replacements, and minor repairs.
- **Insurance Premiums**: Calculated annually based on the vehicle's value and the required coverage.
- **Fuel Expenses**: Projected based on average fuel consumption and anticipated price escalation over time.

6.7 Civil work cost

Total Civil work cost considered is ₹13.4 Crore for balance concession period.

The civil cost component encompasses essential maintenance and repair activities for the tunnel and related infrastructure. The key elements include:

- **Painting**: Tunnel walls up to 4 meters high will be painted, with 30% of the total area refreshed annually to maintain appearance and structural integrity.
- **Bitumen and Concreting**: Includes roof concreting and waterproofing for the pump house and portal building, using a 50 mm concrete layer.
- **Grouting**: Applied to 20% of the tunnel length for crack repairs, with 20 nipples per location and 0.5 kg of epoxy per nipple. For water seepage, grouting is done on 2% of the tunnel length under similar specifications.
- **Drain Cleaning**: 25% of surface and main drains will be cleaned each year to ensure effective drainage and prevent clogging.
- **Instrumentation**: Installation of 1,000 crack meters is planned, with a dedicated instrumentation engineer stationed on-site to oversee monitoring and maintenance.
- **Miscellaneous Costs**: 10% of total civil expenses are reserved for unforeseen requirements and minor repair works.

Following items considered for Civil work:

- **Painting**: Includes costs for paint materials, labor, and equipment required for scheduled annual painting works.
- **Bitumen and Concreting**: Detailed cost allocation for concrete materials, waterproofing compounds, and associated labor charges.
- **Grouting**: Covers expenses for epoxy/resin materials, labor, and tools used for crack and water seepage grouting activities.
- **Drain Cleaning**: Encompasses labor, machinery, and waste removal costs for routine cleaning of surface and main drainage systems.
- **Instrumentation**: Costs related to procurement and installation of crack meters, along with the salary of an on-site instrumentation engineer.
- **Miscellaneous**: Budget provision for unforeseen repairs and incidental civil maintenance requirements.

The below **Exhibit 45** presents a detailed breakdown of costs related to manpower, vehicle maintenance, and civil works. It outlines specific estimates for each component across the seven-year period from FY 2025 to FY 2031, providing a comprehensive overview of all expenses associated with the operation and maintenance of the tunnel.

Exhibit 45 Civil Work Cost (₹-Crore)

S.No.	Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total Cost
1	***Painting***				3,54,13,735				**3,54,13,736**
2	***Bitumen + concreting***								
3	***Grouting***	61,67,342	65,99,056	70,60,989	75,55,259	80,84,127	86,50,016	92,55,517	**5,33,72,304**
4	***Cleaning of Drains***	26,92,885	28,81,386	30,83,084	32,98,899	35,29,822	37,76,910	40,41,294	**2,33,04,280**
5	***Instrumentation Engineer***	9,24,000	10,16,400	11,18,040	12,29,844	13,52,828	14,88,111	16,36,922	**87,66,146**
6	***Cracks Meter***	1,33,750	1,43,113	1,53,130	1,63,850	1,75,319	1,87,591	2,00,723	**11,57,475**
Sub Total		**99,17,976**	**1,06,39,954**	**1,14,15,243**	**4,76,61,587**	**1,31,42,096**	**1,41,02,628**	**1,51,34,455**	**12,20,13,941**
10% Miscellaneous		**9,91,798**	**10,63,995**	**11,41,524**	**47,66,159**	**13,14,210**	**14,10,263**	**15,13,446**	**1,22,01,394**
Total Cost		**1,09,09,774**	**1,17,03,950**	**1,25,56,768**	**5,24,27,746**	**1,44,56,306**	**1,55,12,891**	**1,66,47,901**	**13,42,15,335**

Average Civil work Cost estimated is ₹1.91 Crore per year including GST.

6.8 Electrical and Mechanical (E & M) Cost

Total E & M Cost estimated is ₹30.1 crore for balance concession period including GST.

The following considerations have been made during calculation of E & M costs:

- **Component Replacement Costs:** Several parts of the Electrical & Mechanical (E&M) systems—particularly energy storage units—have defined operational lifespans and will require periodic replacement. These costs are essential to include in the Life Cycle Cost (LCC) analysis to accurately reflect future financial requirements.
- **Annual Maintenance for MEP Equipment:** Includes detailed costs for regular maintenance activities such as routine servicing, minor repairs, and replacement of worn-out components.
- **Annual Consumable Costs:** Covers frequently used items like lubricants, filters, lighting fixtures, and other expendables that are consumed during daily operations. These are non-repairable parts that must be replaced regularly.
- **Additional Electromechanical Works:** Accounts for costs related to enhancements necessary for ensuring effective functioning of the tunnel ventilation during fire incidents, protective measures for E&M systems, and fire safety provisions for critical areas like tunnel control rooms.
- **Annual Electricity Costs:** Reflects average yearly electricity expenses factored into the overall cost estimation.

Exhibit 46 Details of Total E & M Cost (₹-Crore)

Electrical & Mechanical Cost			
Year in Nos	**Years**	**Electrical & mechanical (₹-Crore)**	**Remarks**
1	FY25	3.3	
2	FY26	3.6	
3	FY27	3.9	
4	FY28	4.2	
5	FY29	4.6	
6	FY30	5.0	
7	FY31	5.5	
Total E & M Cost (₹- Crore)		**30.1**	

Exhibit 47 Breakup of Yearly E & M Cost (₹-Crore)

S.nos	Items	Monthly Cost (₹-crore)
1	O&M Reports	0.16
2	O&M of Tunnel Ventilation System	0.65
3	O&M of MEP & SCADA	1.31
4	Miscellaneous	0.33
5	Energy Cost	0.82
Total Annual Cost (Annually)		3.27

Price Escalation: ***9% applied to replacement, maintenance, and spare consumable cost to account for inflation and other market changes over the 6-year periods.***

- **Tunnel Ventilation System:**

The tunnel ventilation system includes key components such as **Axial Flow Fans, Jet Fans, Dampers, and Attenuators**. Axial Flow Fans are primarily used for moving large volumes of air efficiently along the tunnel's length. Jet Fans are installed within the tunnel to provide longitudinal ventilation by pushing air in the direction of traffic flow. Dampers help regulate and control airflow by opening or closing specific ventilation pathways. Attenuators are used to reduce noise generated by the ventilation equipment, ensuring quieter and more efficient tunnel operations.

- **O & M of MEE & SCADA**

The tunnel's electrical and mechanical infrastructure comprises a range of essential components, including **Cable Trays**, **HV (High Voltage) Cables**, and **LV (Low Voltage) Cables** for power distribution. **Electrical Panels** and **Transformers** play a crucial role in regulating and managing electrical supply. Backup power is ensured through a **DG Set** and **UPS (Uninterruptible Power Supply)** systems.

For lighting and visibility, a robust **Lighting** setup is installed throughout the tunnel. **Fire Fighting Pipes**, **Pumps**, and **Valves** form the core of the fire suppression system, ensuring safety during emergencies. The HVAC system includes **HVAC Dampers**, **VRF (Variable Refrigerant Flow) units**, and **Extraction Fans** to manage air quality and temperature control. Additionally, **SCADA-PLC**

systems provide automation and centralized monitoring of all tunnel operations, enhancing safety and efficiency.

The average Electrical & Mechanical (E&M) Cost as per calculation is ₹51.6 Crore per year, which seems reasonable as per industrial practice.

6.9 Toll Plaza TMS Cost

The total cost estimated towards Toll Plaza TMS is ₹1.2 Crore per year including GST.

The cost estimation for the **Agency for Toll Plaza TMS** spans from FY25 to FY31, starting at ₹0.14 million in FY25 and increasing annually by approximately 9%, reaching ₹0.20 million by FY31. This escalation accounts for inflation and cost adjustments over time.

☛ ***The cost considered for the Toll Plaza TMS is based on the purchase order issued to Techsture Technologies, the agency appointed by the concessionaire.***

6.10 Major Maintenance Cost

As mentioned in earlier chapter, Currently, the Project Highway is maintained by existing Annuity Concessionaire.

Based on RI & FWD Test results, SPV team made 02 MM cycles for the overlay of projects. Following items were considered during each MM cycle based on the ground requirements.

A. Flexible Pavement

- Overlay of 30-40 mm BC on MCW based on ground conditions and Test results.
- Overlay of 30 mm BC on service road considered.

B. Rigid Pavement

- Dismantling for existing PQC
- Relaying of dismantled panels
- Grouting with cement mortar
- Replacement and relaying of joints
- Diamond grinding with texturing

C. Replacement of Wearing Coat on structures

It is assumed that the pavement will be overlaid before handing over of the project confirming the pavement parameters kept within the limits as per Detailed strategy at **Exhibit 48.** Hence, the major maintenance cycles are proposed between year 2027 and end of concession period.

6.11 Major Maintenance items

Based on detailed highway inventory carried out during site investigation and data provided by the concessionaire following items considered during major maintenance work

- Bituminous concrete for MCW using VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Bituminous concrete for Service Road using VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Micro surfacing
- Repair of Transverse & Longitudinal joints on MCW & Service Road for Rigid pavement area
- Joint Sealant replacement of rigid area
- PQC taxing for rigid pavement area
- Removal & Relaying of Panels
- Crack Sealing

6.12 Major Maintenance items

Major maintenance works to be considered in 02 cycles up to the year 2031. A total Cost of ₹36.97 crore (Without Escalation) considered for major maintenance work Upto end of Concession period. Major maintenance Strategy is shown in **Exhibit 48. Detailed Cost Estimate attached as Annexure A.**

Exhibit 48 Major Maintenance Cycles & Cost

Major Maintenance Strategy & Cost Details for QB Project				
Cycle	**Financial Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-01	**(Year 2027)**	**A) Main Carriageway:** 01. 40 mm BC: 50% Length 02. 30 mm BC: 50% Length 03.50mm DBM Rehabilitation: 5% Area 04. Road Marking: 100% Length 05. Kerb Painting: 100% Length 06. Kerb Raising: 100% Length 07. Manhole Repair: 100% **B) Service Road:** 01. 30 mm BC on 100% length 02. Road Marking 100% length **C) Rigid-MCW** 01. 5% Slab Replacement 02. 100% Joint Replacement	26.70	

Major Maintenance Strategy & Cost Details for QB Project				
Cycle	**Financial Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
		03. 100% Retexturing & Grinding 04. 100% Microsurfacing		
MM Cycle-02	**(Year 2031) Handover Period**	**A) Main Carriageway:** 01. 30 mm BC: 25% Length 02. 50mm DBM Rehabilitation: 5% Area 03. Road Marking: 100% Length 04. Kerb Painting: 100% Length 05. Manhole Repair: 25% **B) Service Road:** Nil **C) Rigid-MCW** 01. 5% Slab Replacement 02. 100% Joint Replacement 03. 25% Retexturing & Grinding 04. 25% Microsurfacing	10.27	
Total MMR Cost (₹-Crore)			**36.97**	

Above cost is inclusive of GST & Without Escalation.

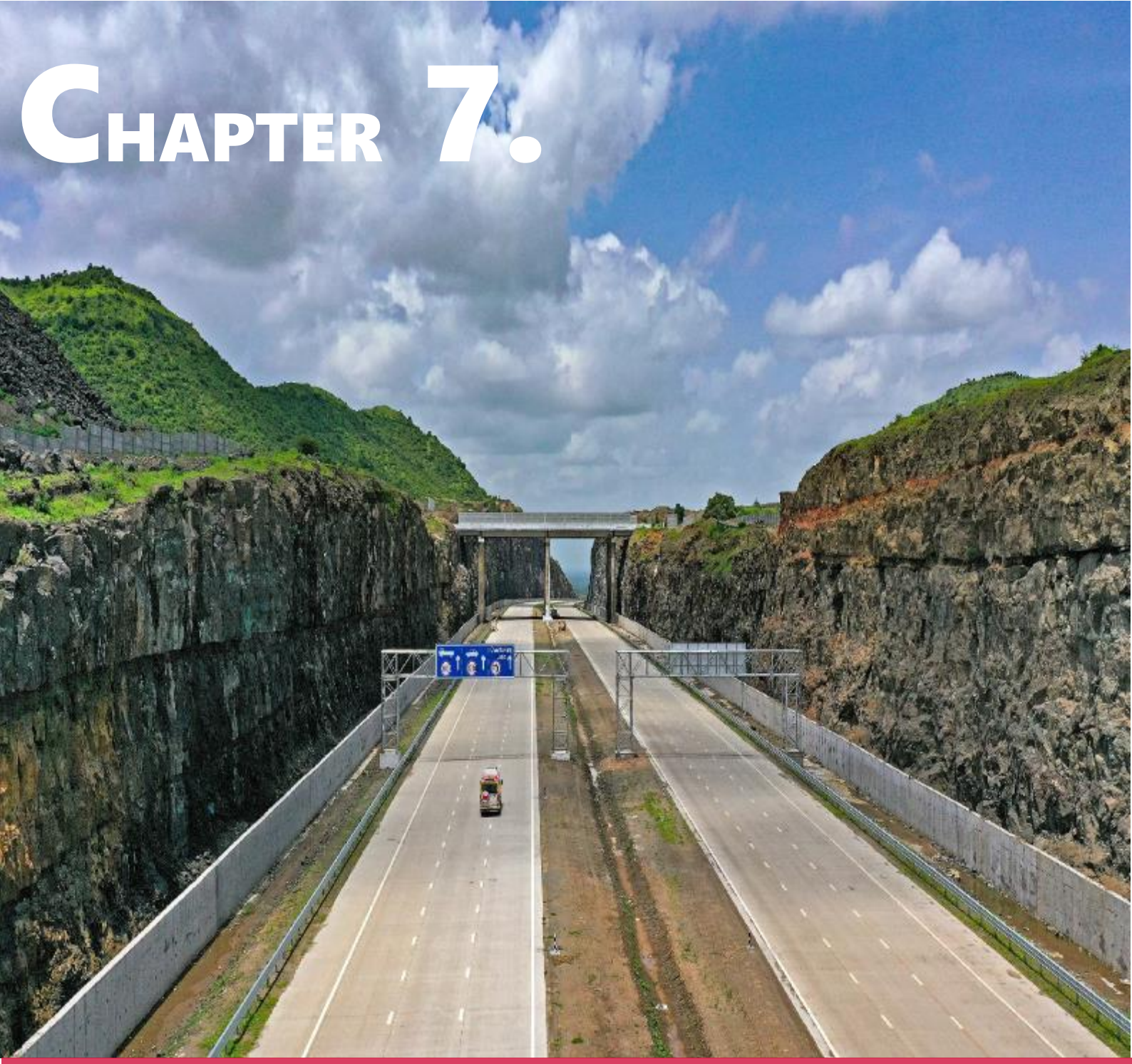
6.13 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period as below.

Exhibit 49 Summary of Cost

S.No.	Year of expense	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total Cost
1	**Routine O&M Cost**								
1.1	Manpower	9.8	10.8	11.9	13	14.4	15.8	17.4	93.1
1.2	Vehicles	0.7	0.7	0.8	0.9	1	1.1	1.2	6.4
1.3	Civil	1.1	1.2	1.3	5.2	1.4	1.6	1.7	13.5
1.4	Electro & Mechanical	3.3	3.6	3.9	4.2	4.6	5	5.5	30.1
1.5	Agency for Toll Plaza TMS	0.14	0.1	0.2	0.2	0.2	0.2	0.2	1.24
1.6	AMC for Electrical system	0.4	0.5	0.5	0.5	0.6	0.6	0.7	3.8
1.7	ITMS AMC	5.4	5.7	6.1	6.6	7	7.5	8	46.3
1.8	Rectification work for Electromechanical	-	-	-	-	-	-	-	0
	Subtotal of O&M Cost	**20.84**	**22.6**	**24.7**	**30.6**	**29.2**	**31.8**	**34.7**	**194.44**
2	**Major Maintenance Cost**			**26.70**				**10.27**	**36.97**
3	Periodic Cost of TMS/HTMS Replacement	-	-	-	-	-	-	-	0
	Total Cost	**20.84**	**22.6**	**51.39**	**30.6**	**29.2**	**31.8**	**44.96**	**231.41**

Chapter 7.



Project Photographs

Chapter 7. PROJECT PHOTOGRAPHS

Cross Passage

Jet FAN Inside Tunnel

Cross Passage

Ventilation FAN

Pump Room

Power Supply System

Ground water Niche & Main Drainage Manhole

Control Room – South Side

Control Room-North Side

Pump Room

LV Panels

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Technical Due Diligence Report

4-laning of Baharampore-Farakka Section of NH-34 from Km 191.700 to Km 292.294 in the State of West Bengal on DBFOT Toll Basis

PREPARED FOR

CUBE HIGHWAYS TRUST

PREPARED BY

Knight Frank

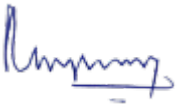
Rev. No.	Effective Date	Revision Description	Checked and Approval Record		
			Activity	**Name**	**Signature**
R0	**01.11.2025**	Draft DD Report of BAHARAMPORE-FARAKKA Section	Prepared By	Aashif Ahmed	
R1	**16.11.2025**		Reviewed by	Maj Gen K T Gajria	
R2	**18.11.2025**	Final DD Report of BAHARAMPORE-FARAKKA Section	Approved By	Rajeev Vijay	

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TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION AND SCOPE OF SERVICES 11

1.1 Background 11
1.2 Scope of Services 11
1.3 Approach 12
1.4 Methodology 12
1.5 Study 12
1.6 Structure of the Report 13

CHAPTER 2. PROJECT DESCRIPTION 15

2.1 Project Road 15
2.2 Climate 17
2.3 Terrain 18
2.4 Administrative details of the Project 19
2.5 Salient Features of the Project 21
2.6 Pavement Composition 23
2.7 Project Completion Certificate and PCOD & FCOD 25
2.8 Extension of Time 26
2.9 Penalty 27
2.10 Approvals & Permits 27

CHAPTER 3. REVIEW OF PROJECT AGREEMENTS 29

3.1 Review of Concession Agreement 29
3.2 Review of Supplementary Agreement 35
3.3 Review of O&M Contract 37

CHAPTER 4. CONDITION ASSESMENT OF PROJECT ROAD 40

4.1 General 40
4.2 Pavement Composition 41
4.3 Assessment of Highway 43
4.4 Assessment of Structures 46
4.5 Assessment of Toll Plaza 47

CHAPTER 5. REVIEW OF PAVEMENT CONDITION & DESIGN 51

5.1 Pavement Condition 51
5.2 Objectives 52
5.3 Review of Pavement Design 52
5.4 Pavement Evaluation by Falling Weight Deflectometer (FWD) Technique 55
5.5 Pavement Evaluation by Network Survey Vehicle 66
5.6 Pavement Evaluation by Test-Pit Survey 80

5.7 Major Maintenance of Pavement 87

CHAPTER 6. COST ESTIMATE 89

6.1 Assumptions 89
6.2 Routine Operation & Maintenance (O& M) Cost 92
6.3 Highway Lighting 96
6.4 Corridor Management 96
6.5 Manpower Cost 96
6.6 Office Expenses 97
6.7 Major Maintenance 98
6.8 Major Maintenance items 98
6.9 Major Maintenance Cycles & Cost 99
6.10 Summary of Cost 100

CHAPTER 7. PROJECT PHOTOGRAPHS 103

LIST OF EXHIBITS

EXHIBIT 1 SCOPE OF TDD SERVICES 11
EXHIBIT 2 STRUCTURE OF THE REPORT 13
EXHIBIT 3 PROJECT LOCATION MAP 16
EXHIBIT 4: PROJECT CHAINAGE DETAILS 17
EXHIBIT 5: ADMINISTRATIVE DETAILS OF PROJECT 19
EXHIBIT 6: SALIENT FEATURES OF PROJECT 21
EXHIBIT 7: DESIGN TRAFFIC (MSA) FOR 20 YEARS 23
EXHIBIT 8: PAVEMENT COMPOSITION-MAIN CARRIAGEWAY 23
EXHIBIT 9: PAVEMENT COMPOSITION -SERVICE ROAD 24
EXHIBIT 10: PROVISIONAL COD (PCOD) DETAILS 25
EXHIBIT 12: KEY TERMS OF CONCESSION AGREEMENT 29
EXHIBIT 13: KEY OBLIGATIONS OF PARTIES 30
EXHIBIT 14: KEY FINANCIAL COVENANTS DETAIL 31
EXHIBIT 15: KEY TERMS OF DAMAGES/ PENALTY 33
EXHIBIT 16: SUMMARY OF SUPPLEMENTARY AGREEMENTS 35
EXHIBIT 17: KEY TERMS OF ROUTINE CLEANING AND HORTICULTURE SERVICES AGREEMENT 37
EXHIBIT 18: DESIGN TRAFFIC IN MSA 41
EXHIBIT 19: PAVEMENT COMPOSITION-MAIN CARRIAGEWAY 41
EXHIBIT 20: PAVEMENT COMPOSITION -SERVICE ROAD 42
EXHIBIT 21: DETAILS OF TOLL PLAZAS 47
EXHIBIT 22 PAVEMENT DESIGN COMPOSITION OF MAIN CARRIAGEWAY 53
EXHIBIT 23: PAVEMENT COMPOSITION -SERVICE ROAD 54
EXHIBIT 24: PAVEMENT COMPOSITION -OVERLAY WORKS 54
EXHIBIT 25 REMAINING LIFE OF THE EXISTING PAVEMENT, ... 57
EXHIBIT 26 ROUGHNESS SUMMARY BEHRAMPUR TO FARAKKA - INNER LANE 67
EXHIBIT 27 ROUGHNESS SUMMARY BERHAMPORE TO FARAKKA - OUTER LANE 70
EXHIBIT 28 ROUGHNESS SUMMARY FARAKKA TO BERHAMPORE - INNER LANE 73
EXHIBIT 29 ROUGHNESS SUMMARY FARAKKA TO BERHAMPORE - OUTER LANE 76
EXHIBIT 30 SUBGRADE LAYER TEST RESULTS SUMMARY 82
EXHIBIT 31 GRANULAR LAYER TEST RESULTS SUMMARY 84
EXHIBIT 32 PAVEMENT COMPOSITION LAYER TEST RESULTS SUMMARY 86
EXHIBIT 34: ADOPTED UNIT RATES FOR KEY ITEMS 91
EXHIBIT 35: MAJOR COMPONENTS DETAIL FOR KEY ITEMS 91

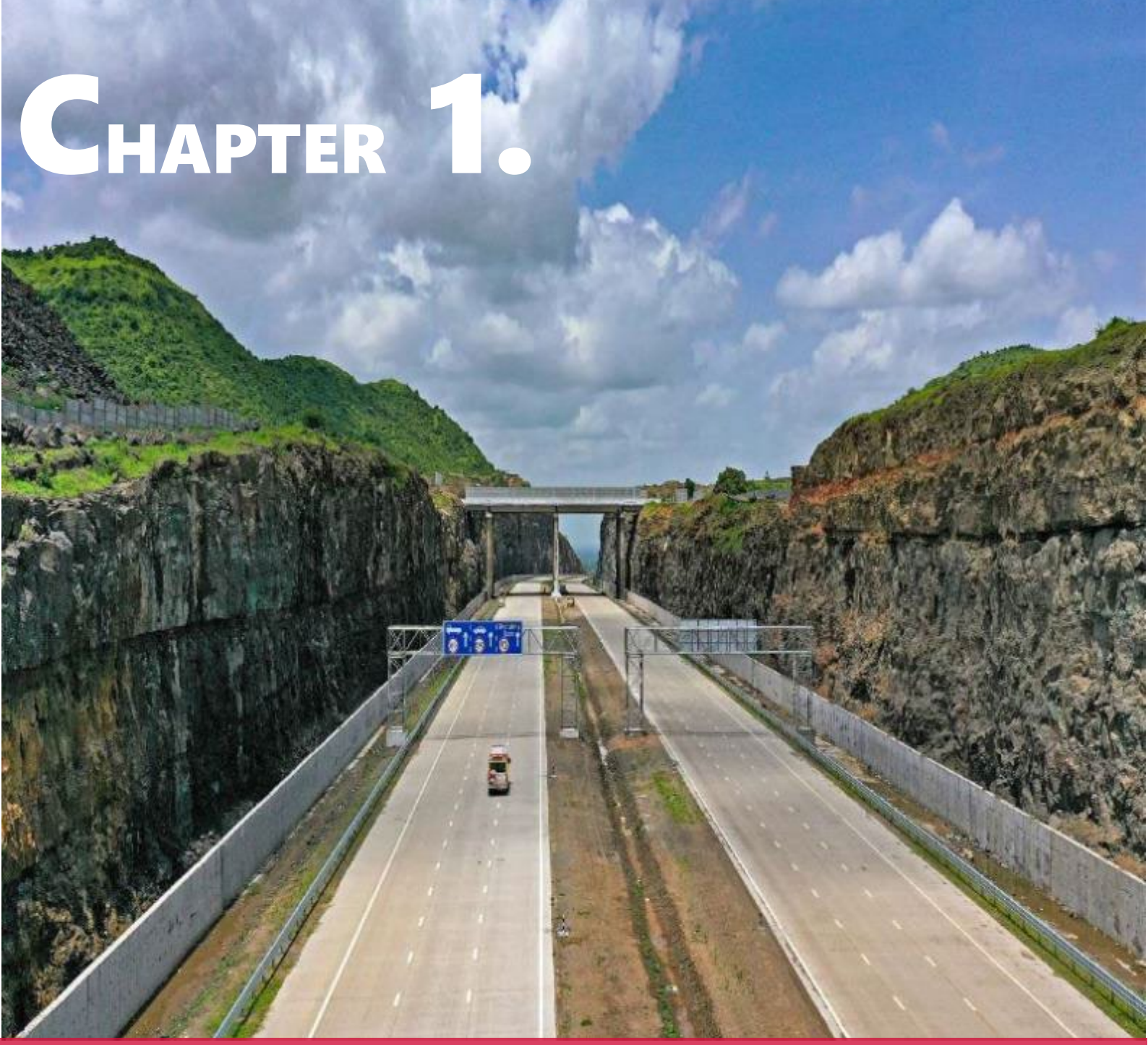
EXHIBIT 36: WORK OUTSOURCING FOR OPERATIONS AND MAINTENANCE WORK.....94
EXHIBIT 37: ROUTINE MAINTENANCE COST.....95
EXHIBIT 38: PREVENTIVE MAINTENANCE COST.....95
EXHIBIT 39: MAJOR MAINTENANCE CYCLES & COST.....99
EXHIBIT 40: SUMMARY O & M COST FOR REMAINING CONCESSION PERIOD.....101

ACRONYMS AND ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SPV	**M/s Baharampore–Farakka Highways Limited (BFHL)**	**NHAI**	**National Highway Authority of India**
AMC	Annual Maintenance Contract	MM	Major Maintenance
ATMS	Advanced Traffic Management System	MS	Milestone
BC	Bituminous Concrete	NCR	Non-Compliance Report
BOQ	Bill of Quantities	NOC	No Objection Certificate
BHS	Both hand Side	NMS	Network Management System
BI	Bump Indicator	NSV	Network Survey Vehicle
CA	Concession Agreement	OFC	Optical Fibre Cable
CAPEX	Capital Expenditure	OPEX	Operation Expenditure
COD	Commercial Operations Date	O&M	Operation and Maintenance
COS	Change of Scope	PCC	Plain Cement concrete
CUP	Cattle Under Pass	PCI	Pavement condition Index
DBM	Dense Bituminous Macadam	PCR	Pavement condition rating
DG	Diesel Generator	PCU	Passenger Car Unit
DLC	Dry Lean Concrete	PCOD	Provisional Completion Certificate
DLP	Defect liability period	PQC	Pavement Quality Concrete

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
DPR	Detailed Project Report	PUP	Pedestrian Under Pass
ECB	Emergency Call Box	POP	Pedestrian Over pass
ESAL	Equivalent Standard Axle Load	PMB	Polymer Modified Bitumen
EPC	Engineering Procurement & Construction	QA/QC	Quality Assurance/Quality Control
ETC	Electronic Toll Collection	RCC	Reinforced Cement Concrete
FOB	Foot Over Bridge	RAP	Reclaimed Asphalt Concrete
FO	Flyover	RFQ	Request for Qualification
FRL	Formation Road Level	RHS	Right Hand Side
FWD	Falling Weight Deflectometer	RM	Routine Maintenance
GAD	General Arrangement Drawing	RMS	Radio Mobile System
GFC	Good for Construction	ROB	Road Over Bridge
GSB	Granular Subbase	ROW	Right of Way
GST	Goods & Service Tax	SR	Service Road
IPC	Interim Payment Certification	SPV	Special Purpose Vehicle
IRC	Indian Roads Congress	SOR	Schedule of Rates
INR	Indian Rupees	SAN	Storage Area Network
ITM	Integrated Traffic Management	TMS	Toll Management System
KVA	Kilo-Volt-Ampere	TOR	Terms of reference

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
LA	Land acquisition	BOT	Build Operate & Transfer
LHS	Left hand side	TLB	Truck lay bay
LCV	Light Commercial Vehicle	VUP	Vehicular Under Pass
LVUP	Low height Vehicular under pass	VDF	Vehicle Damage Factor
LED	Light Emitting Diode	VIDS	Video Incident Detection System
LIU	Light Interface Units	VMS	Variable Message Sign
MIS	Management Information System	WIP	Work in Progress
MSA	Million Standard Axles	WIM	Weigh in motion
MAV	Multi Axle Vehicle	WMM	Wet mix macadam



Chapter 1.

Introduction and Scope of Services

Chapter 1. INTRODUCTION AND SCOPE OF SERVICES

1.1 BACKGROUND

Cube Highways Fund Advisors Pvt Ltd (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt Ltd has appointed **M/s Knight Frank India (KFI)** (hereinafter referred as "Technical Consultant" or "KFI") to carry out Technical Due Diligence of Rehabilitation, Strengthening and Four Laning of Baharampore-Farakka Section of NH-34 from Km 191.700 to Km 292.294 in the State of West Bengal under NHDP Phase-III on Design, Build, Finance, Operate and Transfer (DBFOT) Toll Basis (hereinafter referred as "Project Road").

1.2 SCOPE OF SERVICES

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below –

Exhibit 1 Scope of TDD Services

S. No	Terms of Reference
1	A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
2	Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, as built drawings, O&M manual, COD/PCOD certificate, Punch list, previous major maintenance etc.
3	Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle Load, material investigations etc.
4	Formulation of future major maintenance Strategy.
5	Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
6	Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period

S. No	Terms of Reference
7	Estimation of Annual Operation expenses along with Systems cost (TMS/HTMS) till the end of concession period.
8	Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Approach

Approach followed for this Due Diligence study is to understand the requirement of the client and terms of reference set forth. Our aim is that the study report should assist the clients in achieving their objectives.

1.4 Methodology

Methodology adopted is broadly outlined as under:

- Objectives of the client were identified from discussions and terms of reference spelt out for the study.
- Available data was collated and analysed by desk study.
- Requirements were identified to augment information/ data as available.
- Detailed List of data required was sent to Concessioner team from time to time
- Personal discussions were carried out with Clients by senior executives from KF to explain data requirements.
- Extensive interaction was made by KF with Clients and data was collected.
- Information to be gathered from Client head office & team were listed
- Relevant documents regarding project highway, including CA Agreement and other documents were collected and the provisions studied in detail.
- All data as collected was duly collated and arranged in the order as required for preparation of the report.

1.5 Study

- Data collected from all sources was duly collated and disseminated to concerned experts in KF.
- Project documents such as CA Agreement, O&M Costing details, O&M Manual etc were studied in detail.
- The data made available was analysed, and comments formulated for inclusion in the report.

1.6 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

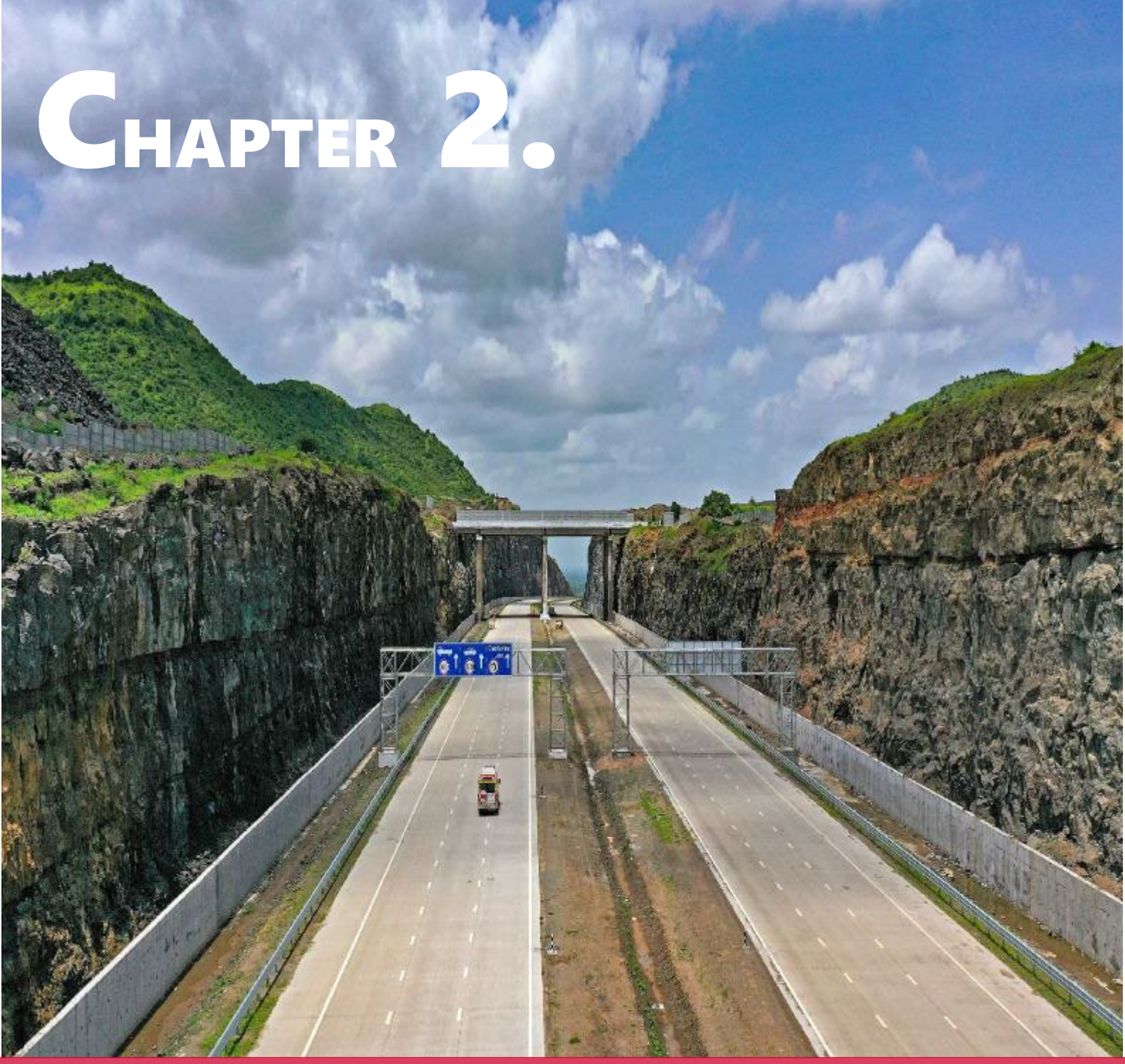
The site visit and inspection were carried out between the periods from 08th October 2025 to 10th October 2025.

The report is organized with the following chapters for easy understanding of various issues –

Exhibit 2 Structure of the Report

S.nos	Chapter	Description
1	**Chapter 1**	**Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**
2	**Chapter 2**	**Project Description:** The chapter describes existing project features, overview of project development.
3	**Chapter 3**	**Review of Agreements:** The chapter describes review of CA, Supplementary, State Support Agreement, Settlement Agreement & Various O & M Agreements.
4	**Chapter 4**	**Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**
5	**Chapter 5**	**Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance
6	**Chapter 6**	**Cost Estimates**: This chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period

Chapter 2.



Project Description

Chapter 2. PROJECT DESCRIPTION

2.1 Project Road

National Highway-34 (NH-34), now renumbered as **National Highway-12 (NH-12)**, is a major arterial highway in the state of **West Bengal**, forming part of the North–South corridor that connects **Kolkata to Siliguri** and serves as a vital trade and passenger link between southern and northern Bengal. The **Baharampore–Farakka Section** lies within the districts of **Murshidabad and Malda**, traversing predominantly plain terrain with a combination of semi-urban and rural landscapes.

This corridor serves as a key movement route for freight traffic from the **Haldia Port and Kolkata Metropolitan Region** towards the northeastern states, while also connecting several important commercial, agricultural and industrial towns. The project highway provides improved regional connectivity between **Baharampore**, **Jangipur**, **Ahiron**, and **Farakka**, and facilitates faster, safer, and more efficient travel along one of eastern India's busiest corridors. The stretch also connects to the **Farakka Barrage**, an important strategic bridge across the river Ganga.

This corridor serves as a key movement route for freight traffic from the **Haldia Port and Kolkata Metropolitan Region** towards the northeastern states, while also connecting several important commercial, agricultural and industrial towns. The project highway provides improved regional connectivity between **Baharampore**, **Jangipur**, **Ahiron**, and **Farakka**, and facilitates faster, safer, and more efficient travel along one of eastern India's busiest corridors. The stretch also connects to the **Farakka Barrage**, an important strategic bridge across the river Ganga.

The **four-laning of the Baharampore–Farakka Section** from **Km 191.700 to Km 292.294** of NH-34 was undertaken by the **National Highways Authority of India (NHAI)** under **NHDP Phase-III** on a **Design, Build, Finance, Operate and Transfer (DBFOT) Toll basis**. To execute the project, NHAI issued the Request for Qualification (RFQ) on **8 February 2010**, and the **Letter of Award (LOA)** was issued to **M/s Larsen & Toubro Limited**. A Special Purpose Vehicle (SPV), **M/s Baharampore–Farakka Highways Limited (BFHL)**, was incorporated for implementation of the project.

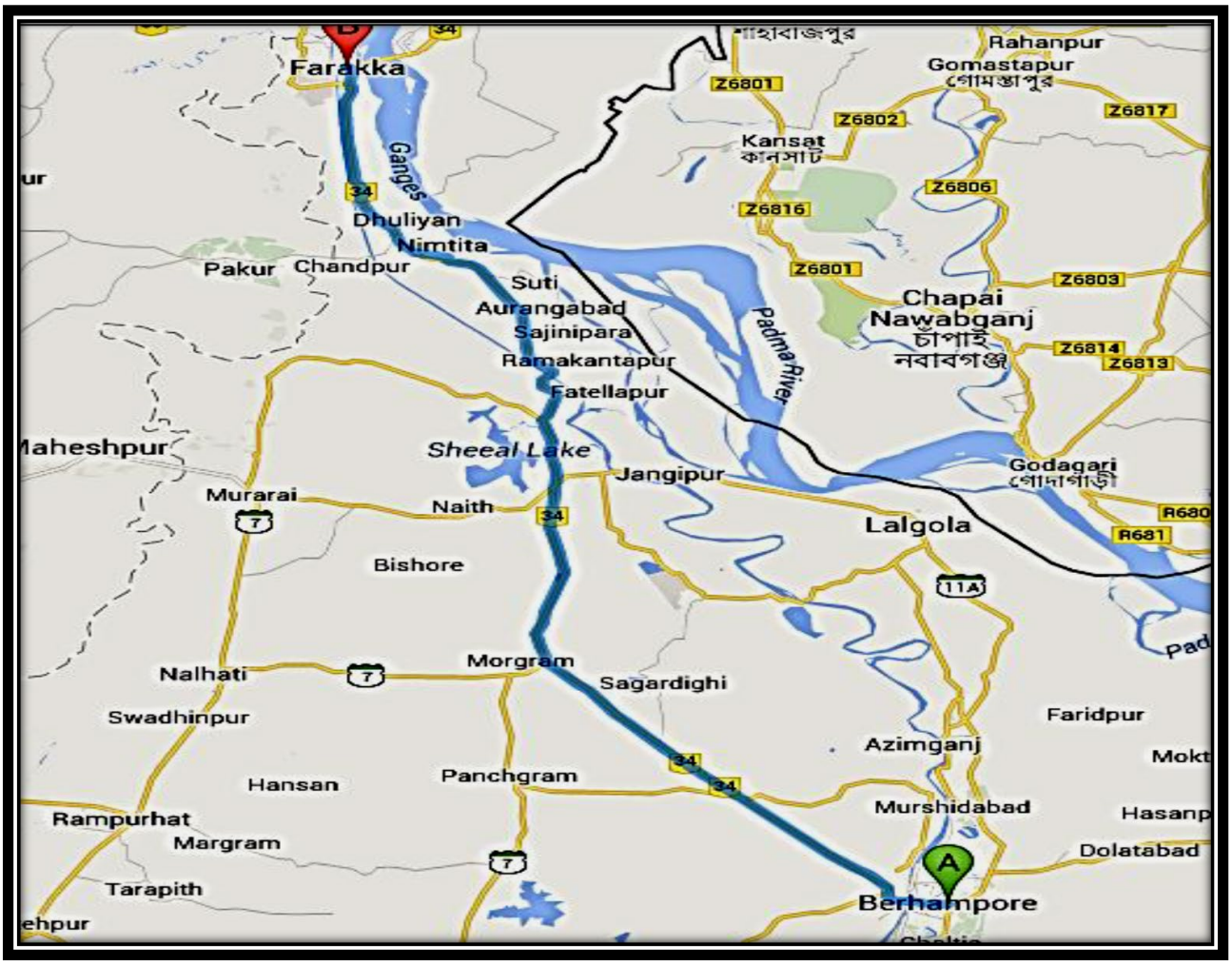
The **Concession Agreement** was signed on **8 February 2010**, and the **Appointed Date** was declared on **3 February 2011**. The project was structured for a **25-year Concession Period**, including a 910-day construction period. The **Total Project Cost** as per the Concession Agreement is **₹ 998.79 crore**. The project comprises approximately **100.6 km of four-lane highway.**

- **PCOD:** Out of the total **100.594 km** project highway stretch, **PCOD-I** was issued for a length of **75.450 km**, which has been under **Operation and Maintenance (O&M)** since **14th May 2014**. An **additional tolling stretch** of **14.350 km** was subsequently issued to the **Concessionaire** on **14th May 2021**. Accordingly, as of date, a **cumulative length of 89.800 km** out of **100.594 km.**
- **Final CoD: Final Completion Certificate was issued vide letter no. URSSWI/PMG/Baharampore–Farakka/2024/1073 dated 22nd June 2024.**

At present, the project is in the **Operation & Maintenance (O&M) phase**, with toll collection operational at two plazas—**Shibpur (TP-206)** and **Chandermore (TP-260)**. Routine and major maintenance works, drain cleaning, road-furniture replacement, horticulture upkeep, and safety improvements are being carried out under Independent Engineer's supervision.

The Project Location Map in wider context and Specific Project Road Context is shown below at **Exhibit 3.**

Exhibit 3 Project Location Map



As per the CA, the corridor has different design chainage systems, which are presented in the table below.

Exhibit 4: Project Chainage Details

Referencing	Section	Design (km)	Length (km)
CA Design Chainage	**Baharampore Bypass**	191.416 – 204.953	13.537
CA Design Chainage	**Main Carriageway (Existing NH-34)**	204.953 – 292.294	87.341
CA Design Chainage	**Farakka Approach / Transition Zone**	292.294 – 294.684	2.390
Total Design Length (as per CA)		**191.416 – 294.684**	**100.6 km (Actual Length)**

2.2 Climate

The project corridor experiences a **tropical monsoon climate**, typical of the **Gangetic plains of West Bengal**, characterized by hot and humid summers, heavy monsoon rainfall, and mild winters. The terrain along the Baharampore–Farakka section is predominantly plain, with low-lying areas adjacent to rivers and water bodies, making it prone to localized flooding and waterlogging during peak rainfall.

During the **summer months (April to June)**, temperatures generally range between **28°C and 40°C**, with high humidity levels. The **monsoon season (June to September)** brings intense and prolonged rainfall, with an **average annual precipitation of about 1,200–1,600 mm**, primarily influenced by the southwest monsoon. The **winter season (November to February)** is comparatively mild, with temperatures ranging from **10°C to 20°C** and low humidity.

Relative humidity typically varies from **60% to 90%**, depending on the season, with the highest levels recorded during monsoon months. The combination of high rainfall, clayey subgrade conditions, and prolonged wet periods often leads to **pavement deterioration, drainage congestion, and edge failures** in the absence of proper maintenance.

Given these climatic characteristics, **adequate surface and subsurface drainage**, **pavement design with moisture-resistant materials**, and **routine desilting of drains and culverts** are essential to ensure the **durability, serviceability, and long-term performance** of the project highway.

2.3 Terrain

The terrain along the **Baharampore–Farakka project alignment** is **predominantly flat to gently undulating**, typical of the **alluvial plains of the Ganga basin** in West Bengal. The corridor traverses through an extensive stretch of fertile floodplain interspersed with small mounds, roadside settlements, and agricultural fields. There are **no significant elevation changes or hilly sections**, and the alignment primarily follows the existing ground profile of the National Highway.

The **topography** is characterized by **low-lying areas**, particularly near river crossings and drainage channels, which are prone to **seasonal waterlogging** during the monsoon period. The corridor passes through multiple **canals, irrigation channels, and local streams**, necessitating a well-planned system of **cross-drainage and longitudinal drainage structures**.

From a **geotechnical perspective**, the area is underlain by **recent alluvial deposits** comprising **silty clay, fine sand, and sandy loam** soils, with a high-water table. These soils are **moderately compressible** and **susceptible to erosion and subgrade weakening** under prolonged wet conditions. Localized black cotton-type soils are also encountered in isolated patches.

2.4 Administrative details of the Project

The Concession stands granted to operate the road from the Appointed date for the concession period with the obligation on concessionaire to maintain the road in the same period. Administrative details of projects are as at Exhibit 2 below.

Exhibit 5: Administrative Details of Project

S. No.	Particulars	Details
1	**Project Corridor**	Four-Laning of Baharampore–Farakka section of NH-34 from **Km 191.700 to Km 292.294** in the state of **West Bengal**, on **Design, Build, Finance, Operate, and Transfer (DBFOT)** Toll basis under **NHDP–III** (Old NH-34, New NH-12).
2	**Employer**	**National Highways Authority of India (NHAI)**, Ministry of Road Transport and Highways.
3	**Concessionaire**	**M/s Baharampore–Farakka Highways Limited**
4	**Independent Engineer (During O&M)**	**M/s URS Scott Wilson India Pvt. Ltd.**
5	**EPC Contractor**	**M/s Hindustan Construction Company Ltd.**
6	**Project Road Length**	**Km 191.700 to Km 292.294 = 100.6 km** (including **10.798 km of Bypass Road**).
7	**Project Cost (as per NHAI)**	**₹ 998.79 Crore**
8	**Date of Letter of Award (LOA)**	**08.02.2010**
9	**Date of Concession Agreement**	**28.06.2010**
10	**Appointed Date**	**03.02.2011**
11	**Construction Period**	**910 days**
12	**Scheduled Date of COD**	**01.08.2013**
13	**Extension of Time (EOT) for Construction**	**31.01.2014**
14	**Provisional COD (PCOD)**	**• PCOD–I (75.450 km): 14.05.2014**

S. No.	Particulars	Details
		• **PCOD–II (14.350 km): 14.05.2021**
15	**Final COD**	**22.06.2024**
16	**Concession Period (Original)**	**25 years** (including 910 days of Construction Period)
17	**Scheduled End of Concession Period**	**Year 2036** (as projected by the Concessionaire)
18	**Revised Concession Period**	The **Independent Engineer (IE)** recommended a **5-year extension/modification**, revising the Concession Period from **25 years to 30 years** in accordance with **Article 29 of the Concession Agreement (CA)**, vide letter no. **URSSWI/B-F/PMG/Baharampore–Farakka/2022/1568** dated **04.10.2022**. **(Approval from the Authority is pending in this regard.)**

2.5 Salient Features of the Project

Salient features of the project are covered at **Exhibit 6** below.

Exhibit 6: Salient Features of Project

S. No.	Description of Item	Length in Km./Nos.
1	Total Length of the Project	100.594 Kms
2	Service Roads (Both Side)	1.06 Kms
3	**Bypass**	**1 Nos. Baharampore Bypass**
a	Length of Bypass	10.798 kms
	Proposed Structures:	
5	Flyover/Grade Separator	03 Nos
6	Major Bridges	04 Nos.
7	Minor Bridges (New Construction)	12 Nos.
8	VUP	01 Nos
9	PUP/CUP	08 Nos
10	No. of ROB	4 Nos.
11	No. of RUB	Nil
12	No. of Box/ Slab Culverts	138 Nos.
13	Major Junctions	24 Nos.
14	Minor Junctions	42 Nos
15	Bus Bays	46 Nos.
16	Toll Plaza	02 nos. 1. Toll Plaza @ Km.206+562 2. Toll Plaza @ Km.260+850
17	Truck Lay Byes	02 Nos.
18	Rest Areas/Way Side Amenities	01 Nos @ 198+187
	Proposed Facilities	
19	Signages	3023
20	Traffic Blinkers and Signals	154
21	Lightings	805
22	Delineators	1562
23	Kilometer Stones	214

S. No.	Description of Item	Length in Km./Nos.
24	MBCB-Semi Rigid Barrier	42675
25	Pedestrian Guardrail (PGR)	4153
26	Medical Aid Post	02 nos.
27	Traffic Aid Post:	02 nos.
28	Advance Traffic Management System (ATMS):	02 nos.
29	Variable Message Sign (VMS):	02 nos.
30	CCTV surveillance:	09 nos.
31	Emergency Call Box (ECB):	GSM based ECBs are installed after every 2 Kms in the entire stretch.

2.6 Pavement Composition

The pavement for the **Baharampore–Farakka Section of NH-34 (NH-12)** has been designed in accordance with **IRC: 37-2001** and the **Manual of Specifications and Standards for Four-Laning of National Highways (IRC: SP: 84-2009)**.

The Concessionaire's design consultant (**LEA Associates South Asia Pvt. Ltd.**) adopted a **design subgrade CBR of 10 percent** and **design traffic loadings of 40 MSA and 50 MSA** for the two traffic-homogeneous sections (Section I: Km 193–232 and Section II: Km 232–295).

Both directions were provided with the same pavement crust thickness to maintain uniformity of performance and ease of maintenance.

As mentioned in Pavement Design Report, design consultants summarized the calculated design traffic for the next 20 years for BT and Base and subbase layer respectively.

Exhibit 7: Design Traffic (MSA) for 20 Years

S. No.	Section	Design Traffic (MSA)- 20 Year
1	Section I (Km 193 – 232)	40 MSA
2	Section II (Km 232 – 295)	50 MSA

Pavement Configuration for Project is given in **Exhibit 18**

Exhibit 8: Pavement Composition-Main Carriageway

S. No	Design MSA	As built drawings
Flexible Pavement		
	Adopted MSA – 40	**Section-I (Km 193 – 232)**
1	BC in mm	40
2	DBM in mm	100
3	WMM in mm	250
4	GSB in mm	230
	Adopted MSA – 50	**Section-II (Km 232 – 295)**
1	BC in mm	40
2	DBM in mm	110
3	WMM in mm	250
4	GSB in mm	230
Rigid Pavement		

S. No	Design MSA	As built drawings
	PQC	DLC
1	300	150
Overlay Works		
The Overlay thickness proposed for design traffic of 40 MSA & 50 MSA for the project corridor. Based on the BBD Test Result Concessionaire Proposed Overlay of 50-75 mm thickness with DMB of 40 mm thickness with BC.		

As per the **Pavement Design Report (PDR)**, the **Concessionaire** has stated that the **existing bituminous layer** along the Baharampore–Farakka corridor generally varies between **140 mm to 160 mm**, with a combined **granular base and sub-base thickness of about 400 mm to 450 mm**, depending on location and pavement age.

In sections proposed for **overlay strengthening**, the existing pavement condition was assessed using **Benkelman Beam Deflection (BBD) tests**, and overlay thicknesses were accordingly designed for **40 MSA to 50 MSA** traffic loading. As per the **approved Pavement Design Report**, the **service road** has been designed for a **design traffic of 5 MSA** and **subgrade CBR of 10 %**.

The Pavement layer adopted for service road as given below:

Exhibit 9: Pavement Composition -Service Road

S. No.	Layer (Adopted = 5 MSA)	Thickness (mm)
1	Semi-Dense Bituminous Concrete (SDBC)	25
2	Dense Bituminous Macadam (DBM)	50
3	Wet Mix Macadam (WMM)	250
4	Granular Sub-Base (GSB)	150
5	Select Sub-grade (CBR 10 %)	500

2.7 Project Completion Certificate and PCOD & FCOD

A. Provisional Completion Certificate (PCOD):

Out of the total **100.594 km** project highway stretch, **PCOD-I** was issued for a length of **75.450 km**, which has been under **Operation and Maintenance (O&M)** since **14th May 2014**. An **additional tolling stretch** of **14.350 km** was subsequently issued to the **Concessionaire** on **14th May 2021**. Accordingly, as of date, a **cumulative length of 89.800 km** out of **100.594 km** is under **O&M.**

Exhibit 10: Provisional COD (PCOD) details

Sl. No.	Chainage (From – To)	Length (Km)
Total PCOD-I Stretch		
1	Km.204+550 to Km.229+300	24.75
2	Km.230+600 to Km.254+800	24.2
3	Km.258+350 to Km.284+850	26.5
Total PCOD-I Stretch (A)		**75.450 Km**
Total PCOD-II Stretch		
1	Km.202+500 to Km.204+550	2.05
2	Km.229+300 to Km.230+600	1.3
3	Km.254+800 to Km.258+350	3.55
4	Km.284+850 to Km.292+300	7.45
Total Additional Tolling Stretch (B)		**14.350 Km**
Total PCOD Length (A+B)		**89.8 Kms**

B. Final Commercial Operation Date (COD):

Upon successful completion of all balance works and compliance with the provisions of the **Concession Agreement**, the **Independent Engineer (M/s URS Scott Wilson India Pvt. Ltd.)** certified completion of the project highway for a **total length of 100.600 km (Km 191.700 to Km 292.300)**. Accordingly, the project was declared **fit for entry into commercial operation**, and the **Final Completion Certificate (Final CoD)** was issued **vide letter no. URSSWI/PMG/Baharampore–Farakka/2024/1073 dated 22nd June 2024**.

Knight Frank reviewed the Final CoD issued by the IE for a total project length of 100.600 km (Km 191.700 to Km 292.300), vide letter no. URSSWI/PMG/Baharampore–Farakka/2024/1073 dated 22nd June 2024.

2.8 Extension of Time

A. For Construction Period

Earlier, the Extension of Time (EOT) was approved for **3,602 days**, up to **12.06.2023**. Subsequently, the **Independent Engineer (IE)** recommended an additional **233 days**, extending the total EOT to **3,835 days**. Accordingly, the IE granted EOT up to **31.01.2024** vide letter no. **URSSWI/PMG/Baharampore–Farakka/NHAI/2024/1469** dated **04.09.2024**, to facilitate completion of the remaining works and necessary rectifications.

B. Extension of Concession Period:

- The Concessionaire submitted a proposal for modification of the Concession Period as per **Clause 29.2** of the Concession Agreement (CA).
- The **Independent Engineer (IE)** reviewed and verified all supporting documents related to the submission.
- Based on the assessment, the IE recommended an extension of **5 (five) years**, equivalent to **20% of the existing 25-year Concession Period**, in favor of the Concessionaire.
    - Recommendation communicated vide letter no. **URSSWI/B-F/PMG/Baharampore–Farakka/2022/1568** dated **04.10.2022**.
- The Authority, vide memo no. 62023/1/2022-23/BFHL/28/740 dated 13.10.2022, sought certain clarifications on the IE's recommendation.
- Subsequently, the **Team Leader**, through letter no. **URSSWI/B-F/TL/O&M/2022-23/0105** dated **19.10.2022**, requested the Concessionaire to provide comments on the observations raised by the Authority.
- The **Concessionaire** submitted the required clarifications and supporting documents vide letter no. **BFHL/NHAI/O&M/10-2022/1427** dated **20.10.2022**.
- **Upon review, the IE provided detailed comments and justifications and reaffirmed its recommendation for a 5-year extension/modification of the Concession Period extending it from 25 years to 30 years in accordance with Article 29 of the CA.**
- The recommendation was found valid and substantiated vide letter no. **URSSWI/B-F/PMG/Baharampore–Farakka/2022/1719** dated **03.11.2022**.

- Further, the **Authority** sought additional clarification vide memo no. **62023/1/2024-25/BFHL/21/341** dated **24.07.2024**
- Subsequently, the **Authority** sought verification of **traffic data (2019–2023)** and related videography, which the IE certified. Upon the Concessionaire's non-submission of certain documents, the **IE** independently finalized and submitted the required statement to the **Authority** in **September 2025**

☛ ***The Independent Engineer (IE) has recommended an extension/modification of the Concession Period from 25 years to 30 years in accordance with Article 29 of the Concession Agreement (CA). However, approval from the Authority is still awaited in this regard.***

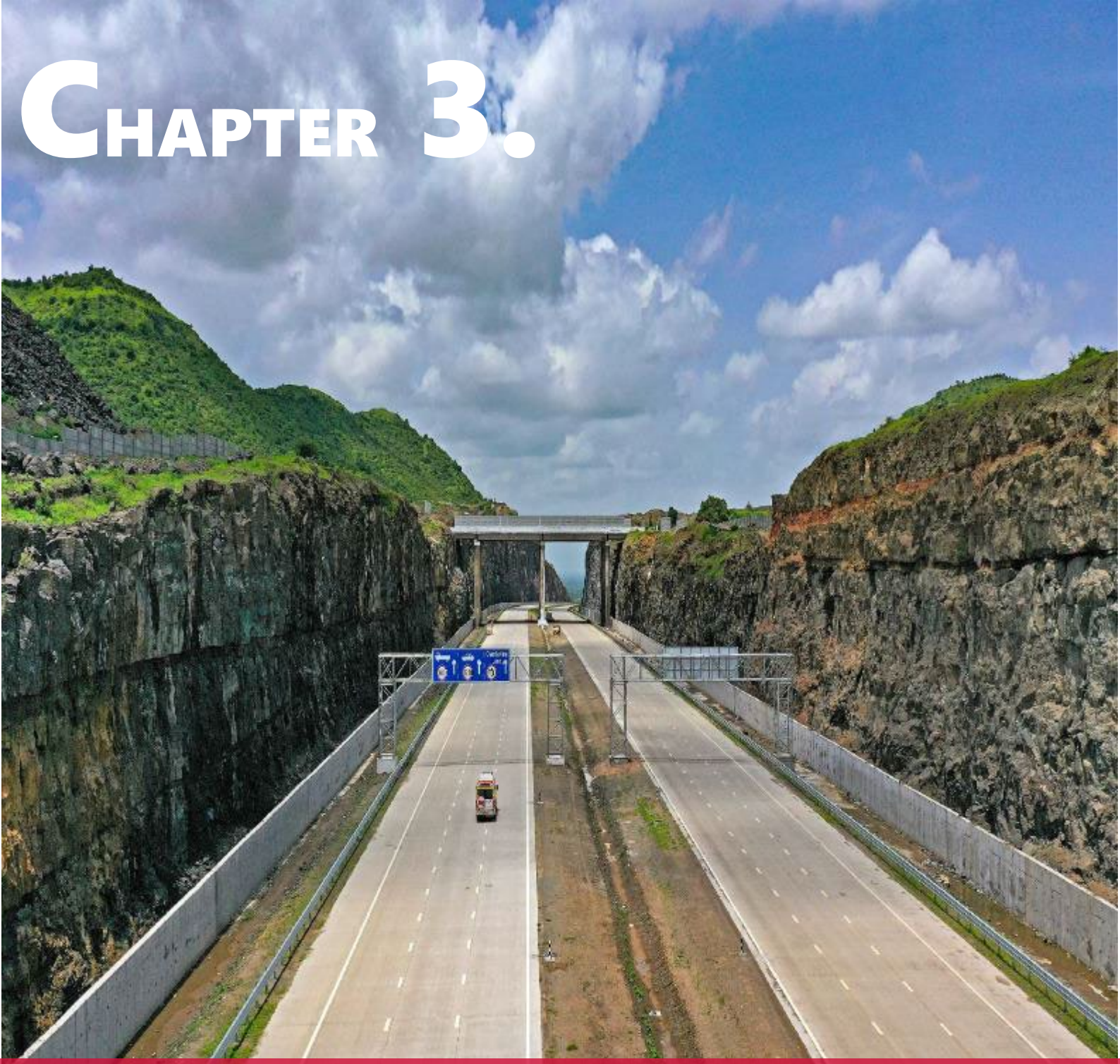
2.9 Penalty

There is no penalty on project as of now.

2.10 Approvals & Permits

Since Project is in O & M stage therefore all necessary approvals required are in place with concessionaire.

Chapter 3.



Review of Project Agreements

Chapter 3. Review of Project Agreements

3.1 Review of Concession Agreement

Concession Agreement was executed on **28th June 2010** between:

National Highways Authority of India (NHAI), (hereinafter referred to as the "Authority"); and **Baharampore–Farakka Highways Limited (BFHL)**, (hereinafter referred to as the "Concessionaire")

The Agreement relates to the **Rehabilitation, Strengthening and Four-Laning** of the **Baharampore–Farakka section of NH-34** from **Km 191.416 to Km 294.684** in the State of **West Bengal**, under **NHDP Phase–III**, on a **Design, Build, Finance, Operate, and Transfer (DBFOT) Toll Basis.**

Exhibit 11: Key Terms of Concession Agreement

Parameter	Details
Date of Agreement	28th June 2010
Appointed Date	Declared after fulfilment of Conditions Precedent (notified separately by NHAI)
Employer / Authority	National Highways Authority of India (NHAI), Ministry of Road Transport & Highways, GoI
Concessionaire	M/s Baharampore–Farakka Highways Limited
Concession Period	25 years from Appointed Date
Length of Project	103.268 km (Km 191.416 to Km 294.684 of NH-34, West Bengal)
Project Type	DBFOT (Toll)
Total Project Cost	₹998.79 crore (as referred in Schedule–F)
Performance Security	₹49.94 crore Bank Guarantee (Schedule–F)
Right of Way (ROW)	To be provided by NHAI, free from encumbrances (Clause 10.3)
Construction / Completion Period	910 days (approx. 2.5 years) from Appointed Date (Schedule–G)
Scheduled Four-Laning Date (COD)	910th day from Appointed Date
Concession Fee / Premium	As per Concession Agreement (Article 26 – Toll based model)
Toll Collection	Concessionaire entitled to collect and appropriate user fee as per Fee Notification (Article 27)
Financial Close	To be achieved within 180 days from Agreement Date

Parameter	Details
Change in Ownership	Restricted without prior approval during construction and first 2 years of O&M
Governing Law & Jurisdiction	Laws of India; Courts at Delhi
Dispute Resolution	Arbitration under the Arbitration & Conciliation Act / ICADR Rules, New Delhi

3.1.1 Obligations of the Authority & Concessionaire

Exhibit 12: Key Obligations of Parties

Authority	Concessionaire
Provide Right of Way (ROW) free from encumbrances (Clause 10.3)	Design, engineer, finance, procure, construct, operate & maintain the Project Highway on DBFOT (Toll) basis
Assist in obtaining statutory approvals, permits, and clearances	Achieve Financial Close within 180 days and furnish Performance Security
Maintain existing highway until Appointed Date	Maintain Project Highway per Specifications, Standards, and O&M Requirements (Schedule–K)
Provide support for utility shifting, land acquisition, and safety enforcement	Ensure safety, traffic regulation, and emergency response
Ensure no competing road constructed within 10 years of Appointed Date (Clause 6.3)	Meet all construction milestones per Schedule–G
Pay cost of utility shifting, tree felling, and environmental clearances	Hand back Project Highway at end of Concession free of encumbrances
Co-operate with Independent Engineer	Bear all project-related risks and liabilities, except those allocated to NHAI

3.1.2 Financial Covenants

The Agreement (Articles 28, 29, 31, 32 and 33; Schedules S and V) sets out **strict financial safeguards** to protect project cash flows and lender interests. All toll revenues flow through a dedicated **Escrow Account** with a defined payment-priority waterfall; equity is locked in to ensure sponsor commitment; and lenders are empowered with **substitution rights** in case of Concessionaire default. Comprehensive provisions on **insurance, change in law, revenue shortfall support, and financial reporting** reinforce overall fiscal discipline and transparency throughout the Concession Period. **The detailed covenants are presented in the exhibit below.**

Exhibit 13: Key Financial covenants detail

Aspect	Details
Escrow Account	All toll receipts, insurance proceeds, termination payments and any other revenues are to be credited into an **Escrow Account** maintained with an Escrow Bank (Schedule S). Withdrawals follow a fixed priority: (i) statutory dues and taxes, (ii) O&M expenses, (iii) debt-service obligations, (iv) maintenance and reserve funds, and (v) equity return or distribution.
Toll Revenues	The Concessionaire is entitled to collect and appropriate tolls as per the Fee Notification under Article 27. All receipts are routed through the Escrow Account before any appropriation.
Revenue Shortfall Loan (Article 28)	In case of lower-than-projected traffic, NHAI may, at its discretion, provide a **Revenue Shortfall Loan**, repayable from future surplus revenues; this ensures cash-flow stability during the early O&M years.
Traffic Variation Adjustment (Article 29)	If traffic volumes vary significantly from projections, the **Concession Period** may be modified to restore financial equilibrium. This mechanism insulates the project from abnormal revenue volatility.
Performance Security	₹ 49.94 crore Bank Guarantee maintained during construction; replenishable if encashed; released after 20 % of total project cost is expended and no default subsists (Article 9 & Schedule F).
Debt Servicing & Lender Protection	Senior lenders enjoy first-charge rights over project cash flows via Escrow Mechanism. The **Substitution Agreement** (Schedule V) empowers lenders to replace the Concessionaire in case of persistent default, ensuring continuity of operations and debt protection.

Aspect	Details
Equity Lock-In & Change in Ownership	No change in shareholding below 51 % by the lead sponsor is permitted during construction and for two years post-COD without prior NHAI approval (Clause 5.3 & 7.1).
Change in Law (Article 41)	Any financial impact arising from legislative or regulatory changes shall be compensated on an **NPV basis**, either through toll-rate adjustment or extension of the Concession Period.
Insurance (Article 32)	Comprehensive insurance coverage (construction, third-party liability, O&M phase, force-majeure risks) must be maintained; proceeds are assignable to lenders and NHAI. Failure to insure enables NHAI to recover costs and arrange cover directly.
Financial Reporting (Article 33)	The Concessionaire shall maintain separate project accounts and furnish audited statements, traffic and revenue reports, and other financial disclosures to NHAI and lenders periodically.
Independent Engineer & Auditors	An Independent Engineer (Schedule Q) oversees physical and financial progress, while statutory auditors certify claims, cost statements, and escrow compliance.
Termination Payments (Article 37)	Clear formulas define payment entitlements to lenders and Concessionaire in case of termination, ensuring recovery of Debt Due and protection of lender interests.

3.1.3 Delay Damages and Penalties under the Concession Agreement

Exhibit 14: Key Terms of Damages/ Penalty

Clause / Article	Situation	Damages / Penalty	Remarks
Clause 4.2	Delay by NHAI in providing ROW beyond 90 days from Appointed Date	0.1% of Performance Security per day	Subject to max 20% of Performance Security
Clause 4.3	Delay by Concessionaire in achieving Financial Close	0.2% of Performance Security per day	Max up to 20% of Performance Security
Article 12.4.2	Delay in achieving Milestones / Scheduled Four-Laning	0.1% of Performance Security per day	Delay beyond 90 days attracts penalty until completion
Article 15.2	Delay in achieving COD	0.1% of Performance Security per day	After 910 days from Appointed Date
Article 17.7.3	Delay in reopening lanes post-repair	0.1% of Average Daily Fee per 250m stretch/day	Requires IE approval
Article 35	Breach by either party	Compensation = direct costs only	No claim for consequential loss

3.1.4 Legal and Operational Framework:

- **Force Majeure (Article 34):**

  Covers Natural, Political, and Indirect Events; must be reported within 7 days; provides time extension and limited cost compensation.

- **Compensation for Breach (Article 35):**

  Based on direct cost to non-defaulting party; both parties obligated to mitigate loss.

- **Termination (Article 37):**

  - Permitted for Concessionaire or Authority default, or Force Majeure.
  - Termination payments defined under Clause 37.3.

- **Divestment of Rights (Article 38):**

  On termination or expiry, Concessionaire to hand over assets free of encumbrances with all O&M records and facilities.

- **Defects Liability after Termination (Article 39):**

  Concessionaire liable for construction defects for one year after termination / transfer

3.2 Review of Supplementary Agreement

The **Concession Agreement dated 28.06.2010** between **NHAI** and **M/s Baharampore–Farakka Highways Limited (BFHL)** was modified through a **Supplementary Agreement dated 23.03.2018**, executed **to facilitate the implementation of a Hybrid Electronic Toll Collection (ETC) System across all toll plazas of the project.** This modification was introduced pursuant to directions from the **Government of India** and **NHAI Circular No. NHAI/13013/2016-17/CO/Hybrid ETC/80 dated 30.11.2017**, which mandated the nationwide adoption of Hybrid ETC systems. The agreement was executed under **Change in Scope**, with costs reimbursable by NHAI and corresponding service obligations defined for the Concessionaire. The Supplementary Agreement formalized the installation, testing, commissioning, operation, and maintenance of **Hybrid ETC infrastructure**, integrating RFID, Weigh-in-Motion (WIM), Static Weigh Bridge (SWB), and associated hardware/software systems at both **Shibpur (Km 206+562)** and **Chandermore (Km 260+850)** toll plazas.

The arrangement ensures uniform compliance with national ETC standards, improved toll-lane efficiency, and enhanced auditability of user-fee transactions through RFID-based automation.

Exhibit 15: Summary of Supplementary Agreements

Date	Parties	Purpose / Context	Key Terms / Amendments
23.03.2018	**National Highways Authority of India (NHAI)** and **M/s Baharampore–Farakka Highways Limited (BFHL)**	Implementation of **Hybrid Electronic Toll Collection (ETC) System** under Government of India directive and NHAI circular	• Concession Agreement dated 28.06.2010 amended to incorporate Hybrid ETC. • Scope expanded to include design, supply, installation, integration, testing, commissioning, operation & maintenance of Hybrid ETC System at all toll plazas. • Hybrid ETC includes RFID transceivers, Medium-Speed Weigh-in-Motion (MS-WIM), Static Weigh

Date	Parties	Purpose / Context	Key Terms / Amendments
			Bridges, and integrated lane management software. • Concessionaire responsible for system uptime of **≥99% per lane per month** for 90% of lanes (SLA provision). • **Damages @0.1% of installation cost per day** for delays in installation/testing/commissioning, capped at **10% of total installation cost**. • **O&M Period:** 5 years per payment cycle, extendable with annual escalation of **5%**, paid quarterly by NHAI. • Hybrid ETC hardware to be handed over in operational condition at end of Concession Period. • No additional monetary benefits or time extensions allowed, except in case of **Authority Default** or **Force Majeure**. • **Maximum monthly damages** capped at ₹25,00,000 (subject to WPI-based revision every 3 years).

3.3 Review of O&M Contract

3.3.1 Review of Routine Cleaning and Horticulture Services Agreement

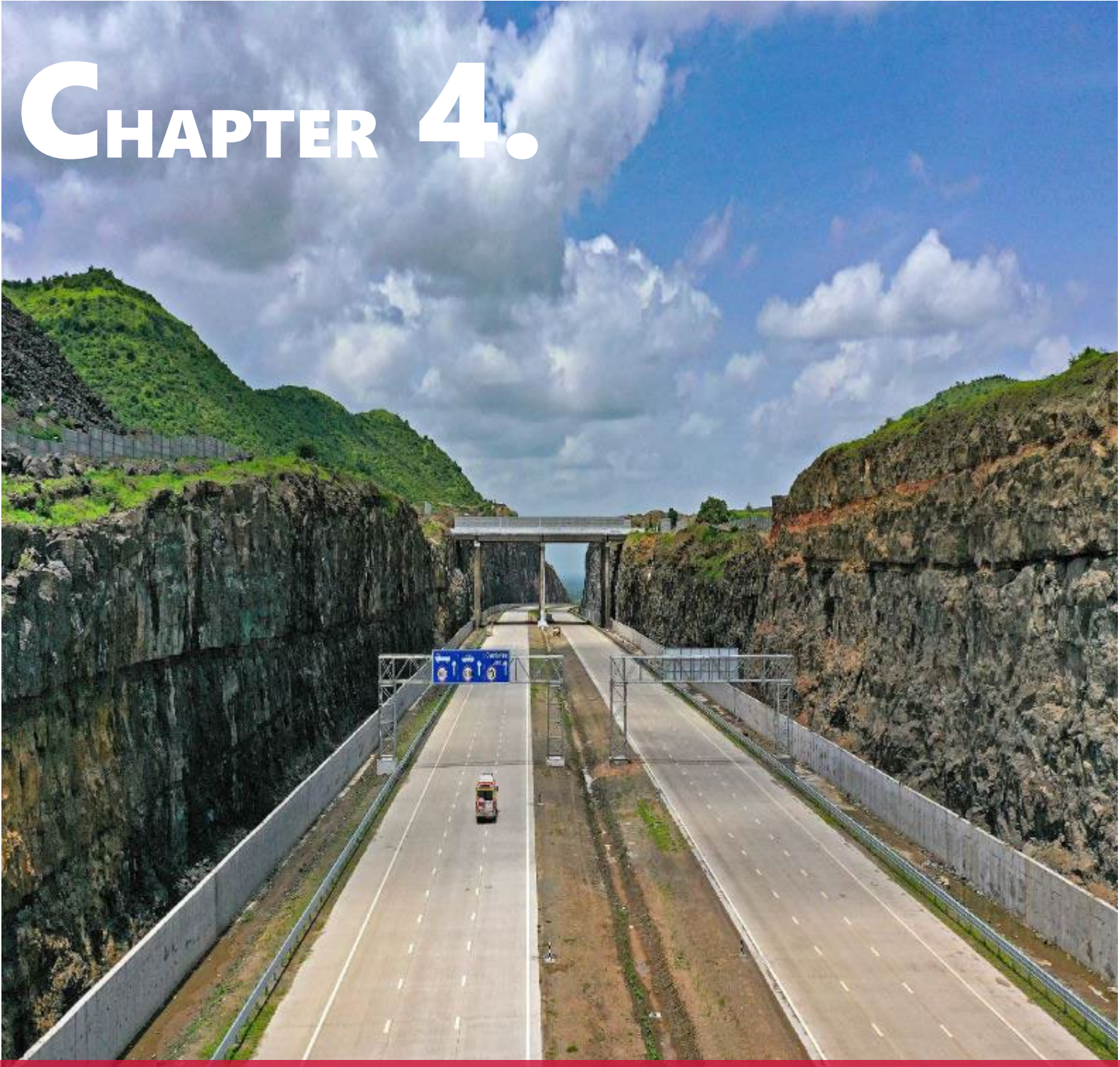
The **Service Agreement** for **Routine Cleaning and Horticulture Works** at the **Baharampore–Farakka Section (NH-34)** Project Highway was executed on **30th March 2025** between **Baharampore–Farakka Highways Limited (BFHL)** and **M/s Humayun Choudhury**. The agreement governs monthly housekeeping, cleaning, drain desilting, and horticultural maintenance of the project highway's Right of Way (ROW), medians, and toll plazas, in line with the obligations under the Concession Agreement and Cube Highways' ESG and IFC performance standards.

Exhibit 16: Key Terms of Routine Cleaning and Horticulture Services Agreement

Parameter	Details
Date of Agreement / Execution	30 March 2025
Parties	Baharampore–Farakka Highways Limited ("Company") and M/s Humayun Choudhury ("Service Provider")
Contract Reference	Service Agreement for Routine Cleaning and Horticulture Works – Project Highway NH-34 (BFHL)
Project / Location	Four-Laning of Baharampore–Farakka Section (NH-34) from Km 191.416 to Km 294.684 in the State of West Bengal
Scope of Work	Routine cleaning, sweeping, and horticulture of ROW, median, toll plaza, and structures including: • Median & avenue plant maintenance • Watering and grass trimming • Cleaning of drains, culverts & road furniture • Sweeping of carriageways & service roads • Safety management at work zones • Vegetation and environmental management as per ESG policy
Contract Value / Service Fee	**₹ 9,05,400 per month (exclusive of GST) — as per Schedule II (Service Fees & Activities Matrix)**
Contract Period	12 months (from 01 April 2025 to 31 March 2026) – extendable by mutual consent
AMC Type / Service Nature	Comprehensive Service Agreement – includes manpower, equipment, safety compliance, and reporting; non-comprehensive for hardware replacement if any

Parameter	Details
Commencement Date	01 April 2025
Performance Security	Not applicable (as per Particular Conditions)
Manpower Deployment	• Dedicated field teams for median, ROW and drain maintenance • Supervisors for each 50 km stretch • Authorized Representative: Mr. Humayun Choudhury
Service Frequency / KPIs	• Sweeping – daily main carriageway • Drain cleaning – monthly/ as required • Median/ avenue trimming – bi-monthly • Watering – alternate days during summer • Reporting – daily DPR through Road Aid App
Payment Terms	• Monthly invoicing within first week of each month • Payment within 30 days of approved invoice • Statutory deductions (TDS, GST) applicable • Retention / adjustments for defects or non-performance
Mobilization Period	Within 15 days from date of award
Cooling / Grace Period	Initial one-month stabilization phase without penalties
Penalty / Damages	As per Schedule V – performance-linked penalties up to 100 % of monthly fee for major non-compliances; activity-wise deductions (10–15 %)
Safety Compliance	Mandatory PPE for all staff; Work Zone Safety SOP (Schedule VIII); Shadow Vehicle with LED Arrow Board & Signage
Reporting & Documentation	• Monthly Invoices with Road Aid DPR • Safety Checklist and Attendance Logs • ESG and POSH Compliance Declarations (Schedule VI & VII)
Insurance Requirements	• Workmen Compensation & Third-Party Liability Insurance (≥ ₹ 5 crore limit) • Copy of policy to be submitted within 14 days of commencement
Indemnity & Liability	Service Provider indemnifies BFHL against any loss, injury, labour dispute, non-compliance, or accident arising out of Services
Termination Clause	• By either party with 30-day notice • Immediate termination for non-performance, safety breach, or statutory non-compliance
Jurisdiction	Laws of India; Courts at New Delhi; Arbitration under the Arbitration and Conciliation Act, 1996

Chapter 4.



Condition Assessment of Project Road

Chapter 4. CONDITION ASSESMENT OF PROJECT ROAD

4.1 General

This chapter presents a detailed assessment of the existing condition of the Baharampore–Farakka Section of NH-34 Project Highway in accordance with the provisions of the Concession Agreement and relevant IRC guidelines. The objective of this assessment is to evaluate the current condition and performance of the pavement, structures, toll plaza facilities, service roads, drainage systems, safety installations and other highway assets. The observations are based on site inspections, maintenance records, annuity performance, and interaction with the concessionaire's O&M team.

This section presents the findings of the **condition assessment** of the **Baharampore–Farakka Section of NH-34 Project Highway** in the **State of West Bengal**. The assessment has been prepared based on **field observations** & Based on Result of **Falling Weight Deflectometer (FWD) survey** carried out in **April 2023**.

The integration of these key datasets — pavement deflection study (FWD), structural evaluation of bridges, and visual field inspection — provides a comprehensive and reliable representation of the current structural and functional condition of the project highway and its associated assets. The **project corridor traverses the alluvial plains of the Ganga basin in the districts of Murshidabad and Malda**, characterized by flat to gently undulating terrain with intermittent low-lying areas and water channels. The alignment commences near **Baharampore (Km 191+700)** and terminates near **Farakka (Km 292+294)**, passing through key settlements such as **Ahiron, Jangipur, and Sujnipara**. The stretch forms a vital component of **NH-34**, serving as a major arterial link between **Kolkata and North Bengal**, facilitating both passenger and freight movement to the **northeastern region** of India.

The assessment integrates **instrumental evaluations** (FWD, Axle load, NSV) and **visual observations** to provide a holistic appraisal of pavement condition, bridge integrity, drainage, and highway appurtenances.

This assessment has been carried out in accordance with the following key references:

- **IRC:115-2014** – Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements using FWD Technique
- **IRC:117-2014** – Guidelines for Structural Evaluation of Rigid Pavements
- **IRC:37-2018** – Guidelines for the Design of Flexible Pavements
- **IRC: SP:35-2015** – Code of Practice for Inspection and Maintenance of Bridges
- **IRC:83-2019 (Part I & II)** – Guidelines for Design and Condition Assessment of Bridge Components
- **IRC: SP:16** and **IRC: SP:83** – Guidelines for Maintenance and Management of Highways and Toll Facilities

4.2 Pavement Composition

The Concessionaire's design consultant (**LEA Associates South Asia Pvt. Ltd.**) adopted a **design subgrade CBR of 10 percent** and **design traffic loadings of 40 MSA and 50 MSA** for the two traffic-homogeneous sections (Section I: Km 193–232 and Section II: Km 232–295).

Both directions were provided with the same pavement crust thickness to maintain uniformity of performance and ease of maintenance.

As mentioned in Pavement Design Report, design consultants summarized the calculated design traffic for the next 20 years for BT and Base and subbase layer respectively.

Exhibit 17: Design traffic in MSA

S. No.	Section	Design Traffic (MSA)- 20 year
1	Section I (Km 193 – 232)	40 MSA
2	Section II (Km 232 – 295)	50 MSA

Pavement Configuration for Project is given in **Exhibit 18**

Exhibit 18: Pavement Composition-Main Carriageway

S. No	Design MSA	Thickness (mm)
Flexible Pavement		
	Adopted MSA – 40	**Section-I (Km 193 – 232)**
1	BC in mm	40
2	DBM in mm	100

S. No	Design MSA	Thickness (mm)
3	WMM in mm	250
4	GSB in mm	230
	Adopted MSA – 50	**Section-II (Km 232 – 295)**
1	BC in mm	40
2	DBM in mm	110
3	WMM in mm	250
4	GSB in mm	230
Rigid Pavement		
	PQC	**DLC**
1	300	150
Overlay Works		
The Overlay thickness proposed for design traffic of 40 MSA & 50 MSA for the project corridor. Based on the BBD Test Result Concessionaire Proposed Overlay of 50-75 mm thickness with DMB of 40 mm thickness with BC.		

As per the **approved Pavement Design Report**, the **service road** has been designed for a **design traffic of 5 MSA** and **subgrade CBR of 10 %**. The Pavement layer adopted for service road as given below:

Exhibit 19: Pavement Composition -Service Road

S. No.	Layer (Adopted = 5 MSA)	Thickness (mm)
1	Semi-Dense Bituminous Concrete (SDBC)	25
2	Dense Bituminous Macadam (DBM)	50
3	Wet Mix Macadam (WMM)	250
4	Granular Sub-Base (GSB)	150
5	Select Sub-grade (CBR 10 %)	500

4.3 Assessment of Highway

Knight Frank carried out a detailed review and assessment of the **project highway assets**, which included **Service Roads (SR), Intersections, TLBs, BLBs, Sign Boards, MBCBs, and other related infrastructure components**. The assessment was undertaken through **comprehensive visual inspections** along the entire project stretch.

The objective of this exercise was to evaluate the **existing physical condition, functionality, and maintenance requirements** of each asset category. Based on the observations and data collected, a **maintenance strategy** has been formulated covering **regular repair, preventive, and routine maintenance activities** to ensure the long-term sustainability and serviceability of the highway assets.

Furthermore, the **pavement condition** was assessed through a combination of **visual inspection, Network Survey Vehicle (NSV) survey, and Falling Weight Deflectometer (FWD) testing**, providing a comprehensive understanding of surface condition, structural strength, and performance.

Overall, the review indicates that the **project highway assets are in satisfactory condition**, with all key components performing as intended. Minor deficiencies identified during the inspection can be addressed through routine and preventive maintenance measures as part of the recommended asset management plan.

a) Highway Lighting:

Lighting facilities have been provided at **junctions, ROBs, toll plazas, and key built-up zones** to improve nighttime visibility. **High-mast lighting** is installed at **toll plazas and major intersections**, while **solar-powered blinkers** are placed at selected median openings and black-spot locations to alert drivers.

b) Drainage:

As per CA, lined between MCW and Service Road to be provided and at outer edge of slip road at approach of grade separated structures.

Drainage arrangements are provided in the project. But these Roadside drainage along the Highway as well as lined drains at median needs appropriate maintenance by cleaning debris and vegetations to make the arrangement working.

c) Metal Beam & Wire Rope Safety Barrier:

As per the **Concession Agreement (Schedule C – Annex I, Section 2(b))**, the project highway includes the provision of **Concrete Crash Barriers**, **Metal Beam Crash Barriers**, and **Separators (MS Railings)** as part of the mandated roadside safety furniture.

The Agreement specifies a **minimum provision of 6.096 km of Concrete Crash Barriers**, **21.8 km of Metal Beam Crash Barriers**, and **3.8 km of MS Rail Separators**, to be installed along the **main carriageway**, **bridge approaches**, and **high embankment locations**, as well as at **median and underpass approaches**, in conformity with **MoRTH Clause 810** and **IRC: 119 – 2015**.

d) Bus Bays /Bus Shelters & Truck Lay Byes:

As per the **Concession Agreement (Schedule-C, Annex-I, Section 2(b))**, a total of **46 bus bays** are to be provided along the project highway at designated locations, in accordance with the approved layout and typical cross-section drawings.

Each bus bay is required to include **paved shoulders, approach tapers, and bus shelters**, designed as per **IRC: 80-1991** standards to ensure safe passenger movement and parking.

Additionally, the Agreement mandates the provision of **2 truck lay-bys**—two on each side of the carriageway—strategically located near **Moregram** and **New Farakka**, to facilitate parking and rest for heavy vehicles.

e) Major/Minor Junctions

Intersections are the places where one or more roads shares the common space. These includes major and minor intersections. The project highway comprises a total of 68 intersections, including 24 major and 42 minor junctions, extending from Km 191.416 to Km 294.684 of NH-34 (now NH-12).

f) Traffic Signs Boards:

The project highway is equipped with various types of road signs, including roadside signs, overhead gantry-mounted signs, kerb-mounted signs, and median signs. The stretch features signboards, overhead gantry signboards, cantilever gantry signboards.

g) Plantation

Landscaping and avenue plantation are present along the project highway; however, they are observed to be sparse and unevenly distributed. Shrubs and flowering plants have been

intermittently planted within the median, though the variety of species is limited. Median plantation is available at certain stretches of the corridor, comprising a mix of shrubs and ornamental plants, but the overall continuity and density of plantation remain inconsistent throughout the project road.

KF View:

Based on the assessment, the project highway exhibits a predominantly satisfactory road condition, with over 99% of both LHS and RHS carriageways in good and serviceable state. The limited portions identified as poor road condition (less than 1%) are minor and localized. Overall, the highway assets are functioning efficiently, with no significant structural or pavement distress observed. The minor issues noted during inspection—such as faded lane markings, vegetation growth inside drains, and localized adjustments required in safety barriers—can be addressed effectively through routine maintenance activities under the existing O&M plan

4.4 Assessment of Structures

A **visual condition survey** of all bridge and culvert structures was carried out jointly by the **Knight Frank (KF) team** and the **Concessionaire**, with the objective of **identifying and quantifying structural deterioration** arising from various factors such as **dead load, live load, wind load**, and **physical or chemical influences** exerted by the environment. In addition to examining **damages caused by unpredictable natural events** or **vehicular collisions**, the inspection also aimed to detect or monitor the impact of any **construction-related imperfections** that may affect long-term performance. Such periodic inspections play an important role in **enhancing the service life and safety** of both existing and newly built bridge structures.

The objective of the inspection was to evaluate the **structural integrity, durability, and functional safety** of bridge assets through a **systematic visual examination**, supplemented by **limited Non-Destructive Testing (NDT)** wherever required. The assessment methodology adhered to the provisions of **IRC: SP:35-2015** (Code of Practice for Inspection and Maintenance of Bridges) and **IRC:83-2019 (Part I & II)** pertaining to bridge design and inspection standards.

The assessment covered all structures listed in the Concession Agreement and verified through the IE's latest asset inventory, comprising:

- **4 Major Bridges – PSC Box Girder / RCC T-Beam type**
- **12 Minor Bridges – RCC Slab and T-Beam type**
- **4 Railway Over/Under Bridges (ROB/RUB)**
- **137 Culverts (Box and Pipe type combined)**
- **9 Pedestrian/Cattle Underpasses/VUP**
- **3 Grade Separators / Flyovers**

KF View:

Overall, the bridge and structure assets are in sound structural condition, with no major distress or deterioration observed in the primary load-bearing components. Minor issues such as localized surface cracks, drainage outlet blockages, and faded markings were noted, which can be addressed through routine maintenance and periodic cleaning under the ongoing O&M plan. The observed condition suggests

that the structures are structurally stable and functionally serviceable, ensuring continued safe operation of the project highway

4.5 Assessment of Toll Plaza

The project highway comprises **two toll plazas**, namely **TP–01 (Shibpur Toll Plaza at Km 206+562)** and **TP–02 (Chandermore Toll Plaza at Km 260+850)**, developed under the **Design, Build, Finance, Operate, and Transfer (DBFOT)** model. Both plazas have been designed and constructed as per **IRC:SP–84** and **MoRTH** specifications to ensure uniformity in layout, functionality, and operational efficiency. Each plaza is equipped with identical facilities, tolling infrastructure, safety systems, and support amenities to maintain seamless toll collection and user service along the corridor

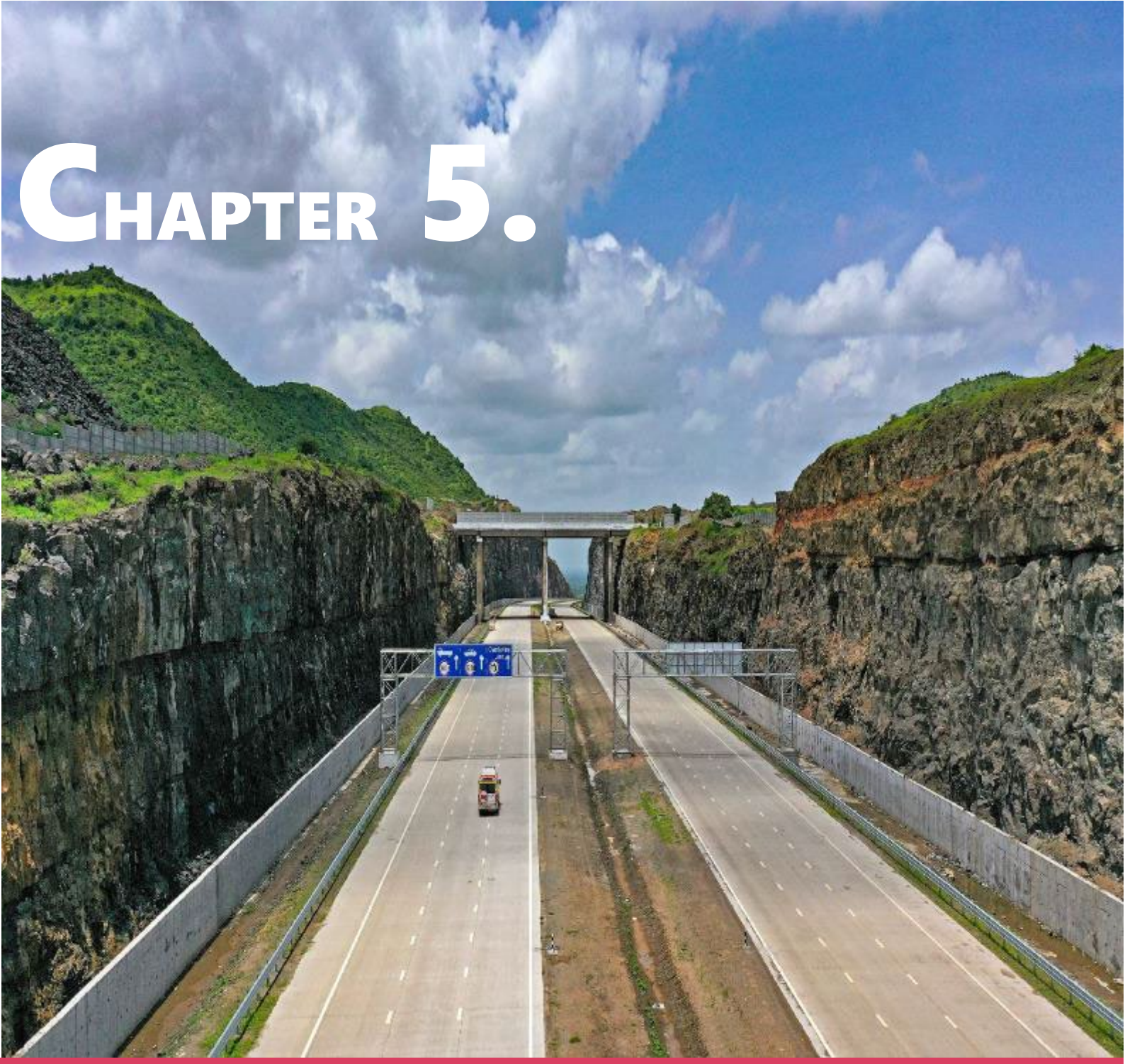
Exhibit 20: Details of Toll plazas

Sl. No.	Particulars	TP-01 – (TP-206) Shibpur Toll Plaza	TP-02 @ Plaza (TP-260) Chandermore Toll	Remarks
1	**Chainage (km)**	206.100 → 207.000 (Centre 206+562)	260.375 → 261.275 (Centre 260+850)	
2	**Existing Chainage (old NH-34)**	208.562 → 209.462	262.743 → 263.643	
3	**Toll Plaza Length (m)**	900	900	
4	**No. of Tolling Lanes**	14 (7 + 7)	14 (7 + 7)	
5	**Lane Width (m)**	3.5 (standard) / 4.5 (extra-wide)	3.5 / 4.5	
6	**Booth Separator Width (m)**	0.9 – 1.0	0.9 – 1.0	
7	**Toll Plaza Width (m)**	60 m (including medians & dividers)	60 m	
8	**Toll Booths**	14 Nos	14 Nos	
9	**Admin Building**	1 No. (G + 1)	1 No. (G + 1)	
10	**Control Room / Server Room**	1 No. integrated in Admin Block	1 No.	
11	**Static Weigh Bridge (SWB)**	2 Nos (Entry/Exit)	2 Nos (Entry/Exit)	
12	**Weigh-in-Motion (WIM)**	14 Nos (lane-embedded)	14 Nos	
13	**Automatic Vehicle Classifier (AVC)**	14 Nos	14 Nos	

Sl. No.	Particulars	TP-01 – (TP-206) Shibpur Toll Plaza	TP-02 @ Plaza (TP-260) Chandermore Toll	Remarks
14	**CCTV / ANPR Cameras**	28 Nos (dual lens)	28 Nos (dual lens)	
15	**Overhead Transceivers / Antennae**	14 Nos	14 Nos	
16	**Lane Controllers / PLC Panels**	14 Nos	14 Nos	
17	**Hand-held Readers**	3 Nos	3 Nos	
18	**Software Modules**	Lane/Plaza = 14 ; TMS = 5 ; Other = 2	Same	
19	**OEM / Equipment Vendors**	Katherien, Chainway, Metro, Scita, Hikvision, Asbee	Same	
20	**FASTag / ETC Lanes**	14 Hybrid (no dedicated ETC)	14 Hybrid (no dedicated ETC)	
21	**Ambulance (Post)**	1 No. stationed	1 No. stationed	
22	**Highway Patrol Vehicle (RPV)**	1 No. (joint for both)	– (joint with TP-01)	
23	**Crane (35 T)**	1 No.	1 No.	
24	**Hydra**	1 No.	1 No.	
25	**Toilets**	2 Nos (M/F separate)	2 Nos (M/F separate)	
26	**Drinking Water Kiosk / RO Plant**	1 No. integrated	1 No. integrated	
27	**High Mast Lights**	2 Nos (25 m height)	2 Nos (25 m height)	
28	**Power Backup / DG Sets**	2 Nos (125 kVA each)	2 Nos (125 kVA each)	
29	**Fire Safety Equipment**	CO_2 Extinguishers – 6 Nos ; Hydrant system at Admin Building	Same	
30	**Medical Aid Post**	1 No.	1 No.	
31	**Traffic Aid Post**	1 No.	1 No.	
32	**Vehicle Rescue Post**	1 No.	1 No.	
33	**Operation & Maintenance Centre**	Located within plaza premises	Same	
34	**Telecom / ATMS Integration**	Integrated with TMS & Emergency Call Box	Integrated	
35	**Compliance with Specifications**	Yes (IRC:SP-84 / MoRTH)	Yes	

KF View:

Overall, both Shibpur and Chandermore Toll Plazas are fully functional, well-equipped, and in compliance with the prescribed technical standards. All major systems including tolling equipment, surveillance, weighing systems, and power backups are operational and well-maintained. The plazas have adequate O&M, safety, and user facilities, ensuring efficient toll operations and uninterrupted highway service. Minor routine upkeep and periodic calibration of electronic systems are sufficient to sustain long-term performance and compliance.



Chapter 5.

Review of Pavement Condition & Design

Chapter 5. REVIEW OF PAVEMENT CONDITION & DESIGN

5.1 Pavement Condition

The life of the Pavement has a co-relation with both its structural as well as Functional Condition. Inspecting and tracking of pavement condition, scheduling maintenance, and treating distress can have serious ramifications impinging on safety of road users and enhancing functional efficiency in end use of the Facility. It is therefore essential to carry out the assessment of the condition of the pavement on a given date taking into cognizance a variety of data to arrive at well-considered decisions and drawing up of the maintenance strategy and taking appropriate course of action to apply funds and resources in optimizing the desired levels of operations on the road assets. Condition data can include factors like roughness, specific distresses, friction, and overall structural health.

Once measurements of road condition are available, they are interpreted in such a way that allows the decision-making process to occur in a logical fashion. This might involve converting multiple physical parameters into a single index, allowing different sections of a road network to be directly compared against one another etc.

Pavement performance under prevailing environmental conditions is crucial as it has a direct bearing on the economic returns from the project development. While an under-designed pavement will fail prematurely, imposing undesirable Cost Over runs on the Project. It is therefore necessary to ensure the pavement layer thicknesses; configurations and materials are adequately designed and require minimal maintenance under the anticipated traffic loading throughout the life cycle of the project.

To achieve this objective and thereby to predict the performance of any pavement structure, it is necessary to analyze material characteristics, traffic condition, present physical condition of the pavement layers, local environment, and its impacts.

Due to the variety of variables involved, it is essential to determine the exact level of pavement performance through the project life. But, based on the assessment of present condition of pavement, analysis of available survey data, and estimations regarding the pavement life, future maintenance requirements can be estimated.

This part of the report deals with the details of the series of field investigations and analysis carried out to find out the present condition of pavement as well as to determine the future maintenance requirements for sound pavement performance throughout the project life.

5.2 Objectives

- Collect data regarding physical conditions of pavement.
- Prepare a plan for rectification as required for damaged/poor sections in consonance with requirements of the CA.
- Project maintenance requirement in physical and monetary terms over the life cycle of the project road.

5.3 Review of Pavement Design

5.3.1 Design Period

As per the Four-Laning Manual and IRC: SP:84-2009, the sub-base and base layers of the pavement are required to be designed for a minimum of 15 years, while the bituminous surfacing shall be designed for a minimum of 10 years. ***However, in this project, the concession period is 25 years (including 2.5 years of construction and 22.5 years of operation). Hence, the consultant designed the pavement for the full operation period of 22.5 years following IRC 37-2001 and the stipulations of SP:84-2009 Clause 5.4.1(ii).***

5.3.2 Design CBR

As per the pavement design report, concessionaire considered the 10% CBR for pavement design.

5.3.3 Design MSA

As stated in the Pavement Design Report, traffic loading for the 22.5-year operation period was computed using classified volume counts and axle-load data collected at km 231 and km 242+500. Two homogeneous traffic sections were identified as detailed below:

Section	Chainage	Design Traffic (MSA) – 20 years
I	193 to 232 km	133 MSA
II	232 to 295 km	179 MSA

For the **initial bituminous layers**, 10-year traffic loading of **40 MSA (Section I)** and **50 MSA (Section II)** was considered.

Vehicle Damage Factors (VDFs) used in the design were derived from actual surveys, varying between 2.1 and 8.9 for heavy vehicles, aligning with observed over-loading patterns.

5.3.4 Pavement Crust of Main Carriageway

The adopted pavement crust for the Main Carriageway meets the requirements of IRC 37-2001 Concessionaire carried out the pavement design with 10% CBR values. Even though the design traffic in RHS direction is relatively less compared to the LHS direction, but the concessionaire is providing the same thickness for both directions. The crust thicknesses are as follows:

Exhibit 21 Pavement Design Composition of Main Carriageway

S. No	Design MSA	As built drawings
Flexible Pavement		
	Adopted MSA – 40	**Section-I (Km 193 – 232)**
1	BC in mm	40
2	DBM in mm	100
3	WMM in mm	250
4	GSB in mm	230
	Adopted MSA – 50	**Section-II (Km 232 – 295)**
1	BC in mm	40
2	DBM in mm	110
3	WMM in mm	250
4	GSB in mm	230
Rigid Pavement		
	PQC	**DLC**
1	300	150
Overlay Works		
The Overlay thickness proposed for design traffic of 40 MSA & 50 MSA for the project corridor. Based on the BBD Test Result Concessionaire Proposed Overlay of 50-75 mm thickness with DMB of 40 mm thickness with BC.		

5.3.5 For Service Road/Slip Road

As per Approved Pavement Design Report the service road has been designed for 5 MSA & CBR-10%. The Pavement layer adopted for service road as given below:

Exhibit 22: Pavement Composition -Service Road

S. No	Design MSA	
	Adopted MSA – 5 MSA	
1	SDBC in mm	25
2	DBM in mm	50
3	WMM in mm	250
4	GSB in mm	150

5.3.6 Pavement Overlay design for Existing Carriageway

As per the Pavement Design Report (PDR), The existing pavement comprised **bituminous layers of 90 – 350 mm** and **granular layers of 300 – 700 mm**. BBD tests showed characteristic deflections between 1.2 and 1.5 mm.

Overlay design followed **IRC 81-1997** using the deflection method. The design MSA was 40–50 for 10 years, the concessionaire proposed overlay thicknesses, details of which are provided in the below

Exhibit 23: Pavement Composition -Overlay Works

Chainage	Length	Characteristic Deflection (mm)	Adopted Overlay (mm) (BC)	Adopted Overlay (mm) (BC + DBM)
191 – 208	17 km	1.2	40	50
208 – 232	24 km	1.5	40	70
232 – 239	7 km	1.5	40	75
239 – 249	10 km	1.2	40	50
249 – 295	46 km	1.2	40	50

5.4 Pavement Evaluation by Falling Weight Deflectometer (FWD) Technique

FWD surveys were carried out to determine the present condition of pavement as well as finding out the future maintenance requirements.

5.4.1 Introduction:

The **Falling Weight Deflectometer (FWD) survey** for the **Baharampore–Farakka section of NH-34** was carried out in **April 2023**. The objective was to evaluate the structural condition of the existing pavement, determine the resilient moduli of individual pavement layers, and assess the remaining structural life of the corridor in terms of fatigue and rutting criteria.

This evaluation was carried out as per the provisions of **IRC:115-2014 "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer"**. The survey results form a critical input for deciding the overlay requirements and long-term maintenance strategy of the project highway.

5.4.2 Project Road

The project stretches forms part of the **NH-34 Baharampore-Farakka corridor (Package III, BFHL project)** in the state of **West Bengal**, connecting Murshidabad to Malda district. The section is a vital link of the Kolkata–Siliguri corridor under NHDP Phase III. The road passes through a plain to rolling terrain with clayey subgrade soil and high annual rainfall, making it susceptible to rutting and moisture-related distresses.

The FWD survey was conducted along both **LHS and RHS carriageways** for chainages **Km 193+000 to Km 295+000**, covering inner and outer lanes at 250–500 m intervals.

5.4.3 Falling Weight Deflectometer

The FWD survey was carried out using standard equipment with the following parameters:

- **Applied Load:** Equivalent to 40 kN impulse (≈ 80 kN standard axle).
- **Deflection Measurement:** At seven radial offsets (D0–D7) up to 1200 mm.
- **Spacing:** 250–500 m interval on each lane.
- **Temperature Correction:** All bituminous layer moduli adjusted to 35 °C.

- **Seasonal Correction:** Winter correction factors applied to granular and subgrade layers.
- **Analysis Tools:** *KGPBACK* (Genetic-Algorithm based back-calculation) and *IITPAVE* (for fatigue/rutting analysis)

5.4.4 FWD Analysis

The FWD data collected has been analysed as per IRC:115-2014 guidelines with the suggested ranges for in-service pavements.

Description	Range
Subgrade Modulus	5 CBR to 20 CBR
Granular Layer Modulus	100 MPa to 500 MPa
Bituminous Layers –Thick without distress	750 MPa to 3000 MPa
Bituminous Layers in distressed condition	400 MPa to 1500 MPa

The above suggested ranges are for guidance only and pavement engineer shall use his judgment based on available data while fixing the above ranges. By looking at the age, condition and performance of the pavement following different set of ranges have been used in the analysis:

Layer	Bituminous Layers	Granular Layer Modulus	Subgrade
Modulus Value (MPa)	750-3000	100-500	50-75

Bituminous layer Moduli obtained from back calculations shall be corrected for a standard pavement temperature of 35°C using given equations. Whereas, for back calculated moduli values obtained for granular and subgrade layer shall be corrected for seasonal variations (using winter and summer equations). As FWD tests are performed during winter, accordingly winter correction factor is applied for granular and subgrade layers.

Remaining life in base year and overlay requirement (with VG-40 mix for >20 MSA) has been estimated in accordance with IRC: 115-2014 and IRC: 37-2018. The summary of the results is shown in tables below.

Exhibit 24 Remaining life of the existing pavement,

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
1	202.500	203.000	LHS	Inner	0.500	1953.41	150.49	48.42	220	400	0.0001727	47.69	0.0003201	98.45	47.69
2	202.500	203.000	LHS	Outer	0.500	1378.86	172.70	48.42	220	400	0.0002061	32.28	0.0003619	56.43	32.28
3	202.500	203.000	RHS	Inner	0.500	1448.68	59.96	58.35	210	500	0.0003025	6.96	0.0003043	123.84	6.96
4	202.500	203.000	RHS	Outer	0.500	1093.08	84.87	91.48	210	500	0.0003185	7.24	0.0002394	367.44	7.24
5	203.000	204.000	LHS	Inner	1.000	2336.36	243.37	48.39	220	400	0.0001359	103.97	0.0002875	160.21	103.97
6	203.000	204.000	LHS	Outer	1.000	1788.37	244.44	48.38	220	400	0.0001545	79.31	0.0003094	114.85	79.31
7	203.000	204.000	RHS	Inner	1.000	1314.68	59.85	58.31	210	500	0.0003230	5.86	0.0003139	107.58	5.86
8	203.000	204.000	RHS	Outer	1.000	790.81	118.72	91.54	210	500	0.0003292	8.39	0.0002544	278.95	8.39
9	204.000	205.000	LHS	Inner	1.000	2819.99	201.57	48.42	220	400	0.0001321	98.87	0.0002831	171.81	98.87
10	204.000	205.000	LHS	Outer	1.000	1894.94	196.27	48.38	220	400	0.0001660	57.09	0.0003217	96.25	57.09
11	204.000	205.000	RHS	Inner	1.000	1008.43	136.62	80.38	210	500	0.0002734	14.05	0.0002587	258.54	14.05
12	204.000	205.000	RHS	Outer	1.000	1596.88	68.96	91.50	210	500	0.0002672	10.37	0.0002123	633.47	10.37
13	205.000	206.000	LHS	Inner	1.000	2290.09	254.93	48.42	220	400	0.0001345	110.11	0.0002856	165.10	110.11
14	205.000	206.000	LHS	Outer	1.000	1811.92	130.70	48.34	220	400	0.0001988	29.42	0.0003506	65.16	29.42
15	205.000	206.000	RHS	Inner	1.000	2833.36	62.17	87.43	210	500	0.0001828	27.83	0.0001786	1386.96	27.83
16	205.000	206.000	RHS	Outer	1.000	996.54	105.76	89.85	210	500	0.0003080	8.93	0.0002469	319.48	8.93
17	206.000	207.000	LHS	Inner	1.000	2188.01	235.32	48.42	220	400	0.0001426	91.19	0.0002954	141.68	91.19
18	207.000	208.000	LHS	Outer	1.000	2224.87	177.73	48.42	220	400	0.0001557	63.87	0.0003097	114.35	63.87
19	206.000	207.000	RHS	Inner	1.000	2033.22	59.96	83.39	210	500	0.0002351	13.88	0.0002076	701.14	13.88
20	207.000	208.000	RHS	Outer	1.000	980.10	75.04	91.36	210	500	0.0003559	5.16	0.0002460	324.82	5.16
21	207.000	208.000	LHS	Inner	1.000	2342.03	244.96	48.39	220	400	0.0001354	105.25	0.0002868	161.99	105.25
22	208.000	209.000	LHS	Outer	1.000	1393.38	149.76	48.42	220	400	0.0002183	25.58	0.0003714	50.18	25.58
23	207.000	208.000	RHS	Inner	1.000	1502.56	59.85	58.41	210	500	0.0002953	7.41	0.0003006	130.91	7.41
24	208.000	209.000	RHS	Outer	1.000	2169.54	89.98	84.44	210	500	0.0002022	23.61	0.0002084	689.02	23.61
25	208.000	209.000	LHS	Inner	1.000	2295.68	266.41	48.39	220	400	0.0001317	119.25	0.0002821	174.59	119.25
26	209.000	210.000	LHS	Outer	1.000	2435.38	240.81	48.42	220	400	0.0001336	107.24	0.0002847	167.48	107.24
27	208.000	209.000	RHS	Inner	1.000	1616.54	59.85	58.40	210	500	0.0002809	8.45	0.0002935	145.89	8.45
28	209.000	210.000	RHS	Outer	1.000	1099.42	123.31	91.49	210	500	0.0002732	13.09	0.0002357	394.32	13.09
29	209.000	210.000	LHS	Inner	1.000	2199.44	129.68	48.39	220	400	0.0001773	38.91	0.0003290	86.94	38.91
30	210.000	211.000	LHS	Outer	1.000	2504.35	242.46	48.42	200	404	0.0001311	112.70	0.0001417	3960.53	112.70
31	209.000	210.000	RHS	Inner	1.000	1823.65	85.32	91.42	210	500	0.0002298	16.65	0.0002070	710.40	16.65
32	210.000	211.000	RHS	Outer	1.000	1097.16	62.81	83.31	210	500	0.0003535	4.81	0.0002538	281.95	4.81
33	210.000	211.000	LHS	Inner	1.000	2518.80	186.21	48.39	190	406	0.0001705	40.35	0.0003419	73.03	40.35
34	211.000	212.000	LHS	Outer	1.000	3000.00	204.44	86.23	170	410	0.0001623	42.10	0.0002586	258.99	42.10
35	210.000	211.000	RHS	Inner	1.000	1215.78	60.28	78.17	210	500	0.0003355	5.40	0.0002580	261.73	5.40
36	211.000	212.000	RHS	Outer	1.000	933.91	66.77	91.49	210	500	0.0003823	4.07	0.0002476	315.41	4.07
37	211.000	212.000	LHS	Inner	1.000	2595.97	233.86	86.23	170	410	0.0001656	44.05	0.0002617	245.37	44.05
38	212.000	213.000	LHS	Outer	1.000	2519.14	148.81	86.17	170	410	0.0002021	20.82	0.0002819	175.16	20.82
39	211.000	212.000	RHS	Inner	1.000	980.70	61.50	89.53	210	500	0.0003816	3.93	0.0002471	318.31	3.93
40	212.000	213.000	RHS	Outer	1.000	1245.09	117.52	91.51	210	500	0.0002603	14.20	0.0002296	444.10	14.20
41	212.000	213.000	LHS	Inner	1.000	3000.00	270.65	86.23	170	410	0.0001441	66.87	0.0002449	331.48	66.87
42	213.000	214.000	LHS	Outer	1.000	1309.48	70.19	86.01	170	410	0.0003902	2.82	0.0003427	72.26	2.82

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
43	212.000	213.000	RHS	Inner	1.000	1742.52	60.07	91.04	210	500	0.0002611	10.53	0.0002041	757.33	10.53
44	213.000	214.000	RHS	Outer	1.000	1179.70	154.28	91.54	210	500	0.0002378	21.14	0.0002261	476.13	21.14
45	213.000	214.000	LHS	Inner	1.000	2690.84	223.50	86.23	170	410	0.0001658	42.52	0.0002618	244.95	42.52
46	214.000	215.000	LHS	Outer	1.000	1200.12	60.07	85.98	170	410	0.0004341	2.00	0.0003476	67.75	2.00
47	213.000	214.000	RHS	Inner	1.000	1479.81	100.01	78.43	210	500	0.0002511	14.10	0.0002460	324.82	14.10
48	214.000	215.000	RHS	Outer	1.000	1474.89	122.11	91.54	210	500	0.0002326	19.04	0.0002193	546.83	19.04
49	214.000	215.000	LHS	Inner	1.000	2842.79	202.16	86.20	170	410	0.0001679	38.63	0.0002627	241.16	38.63
50	215.000	216.000	LHS	Outer	1.000	1362.74	60.08	75.01	170	410	0.0004028	2.41	0.0003729	49.27	2.41
51	214.000	215.000	RHS	Inner	1.000	1357.46	65.73	84.50	210	500	0.0003030	7.31	0.0002365	388.31	7.31
52	215.000	216.000	RHS	Outer	1.000	1459.74	158.13	63.65	200	470	0.0002252	21.78	0.0002952	142.12	21.78
53	215.000	216.000	LHS	Inner	1.000	1543.16	287.75	86.15	170	410	0.0001863	43.43	0.0002782	185.97	43.43
54	216.000	217.000	LHS	Outer	1.000	920.39	61.90	86.15	170	410	0.0005050	1.40	0.0003739	48.68	1.40
55	215.000	216.000	RHS	Inner	1.000	2696.47	78.26	63.53	200	470	0.0001955	22.36	0.0002604	250.97	22.36
56	216.000	217.000	RHS	Outer	1.000	999.07	113.11	63.65	200	470	0.0003187	7.80	0.0003413	73.61	7.80
57	216.000	217.000	LHS	Inner	1.000	1493.35	232.85	86.15	170	410	0.0002139	26.10	0.0002960	140.39	26.10
58	217.000	218.000	LHS	Outer	1.000	823.84	59.85	65.09	170	410	0.0005509	1.09	0.0004775	16.06	1.09
59	216.000	217.000	RHS	Inner	1.000	1640.86	135.85	63.36	200	470	0.0002256	19.58	0.0002950	142.56	19.58
60	217.000	218.000	RHS	Outer	1.000	1326.22	153.42	63.65	200	470	0.0002398	18.52	0.0003038	124.77	18.52
61	217.000	218.000	LHS	Inner	1.000	2208.37	167.84	86.23	170	410	0.0002078	20.91	0.0002880	158.95	20.91
62	218.000	219.000	LHS	Outer	1.000	2884.32	154.00	86.11	170	410	0.0001844	26.50	0.0002707	210.50	26.50
63	217.000	218.000	RHS	Inner	1.000	1536.06	106.06	63.62	200	470	0.0002574	12.40	0.0003083	116.72	12.40
64	218.000	219.000	RHS	Outer	1.000	2099.90	121.72	63.62	200	470	0.0002031	23.86	0.0002787	184.46	23.86
65	218.000	219.000	LHS	Inner	1.000	2895.69	365.79	86.15	170	410	0.0001262	115.45	0.0002280	458.41	115.45
66	219.000	220.000	LHS	Outer	1.000	2974.81	209.13	72.25	172	412	0.0001610	43.75	0.0002808	178.29	43.75
67	218.000	219.000	RHS	Inner	1.000	1875.22	112.53	63.56	200	470	0.0002236	18.08	0.0002902	153.56	18.08
68	219.000	220.000	RHS	Outer	1.000	1911.85	133.57	63.62	200	470	0.0002080	23.56	0.0002832	171.54	23.56
69	219.000	220.000	LHS	Inner	1.000	2194.04	263.13	51.42	174	414	0.0001689	47.09	0.0003325	82.87	47.09
70	220.000	221.000	LHS	Outer	1.000	2454.38	246.70	51.42	180	420	0.0001603	52.44	0.0003169	103.04	52.44
71	219.000	220.000	RHS	Inner	1.000	2321.21	83.89	63.56	200	470	0.0002129	18.24	0.0002745	197.61	18.24
72	220.000	221.000	RHS	Outer	1.000	1936.74	183.66	63.65	200	470	0.0001819	39.26	0.0002673	222.91	39.26
73	220.000	221.000	LHS	Inner	1.000	2683.33	360.95	51.42	180	420	0.0001266	121.71	0.0002734	201.24	121.71
74	221.000	222.000	LHS	Outer	1.000	2541.20	266.89	51.42	180	420	0.0001518	62.92	0.0003068	119.33	62.92
75	220.000	221.000	RHS	Inner	1.000	1980.31	178.68	63.65	200	470	0.0001818	38.60	0.0002673	222.91	38.60
76	221.000	222.000	RHS	Outer	1.000	2133.78	192.57	63.56	200	470	0.0001692	47.90	0.0002584	259.90	47.90
77	221.000	222.000	LHS	Inner	1.000	2621.30	368.06	51.38	180	420	0.0001265	124.54	0.0002730	202.58	124.54
78	222.000	223.000	LHS	Outer	1.000	2550.51	269.73	51.42	180	420	0.0001508	64.36	0.0003056	121.47	64.36
79	221.000	222.000	RHS	Inner	1.000	2374.52	91.23	63.50	200	470	0.0002050	20.72	0.0002726	203.93	20.72
80	222.000	223.000	RHS	Outer	1.000	1404.36	162.25	63.65	200	470	0.0002270	21.83	0.0002964	139.53	21.83
81	222.000	223.000	LHS	Inner	1.000	1709.85	365.69	51.38	180	420	0.0001482	96.90	0.0002989	134.32	96.90
82	223.000	224.000	LHS	Outer	1.000	2743.65	359.99	51.42	180	420	0.0001256	123.16	0.0002724	204.61	123.16
83	222.000	223.000	RHS	Inner	1.000	2747.89	88.87	63.65	200	470	0.0001870	26.15	0.0002592	256.28	26.15
84	223.000	224.000	RHS	Outer	1.000	1265.58	168.08	63.65	200	470	0.0002349	20.88	0.0003013	129.53	20.88
85	223.000	224.000	LHS	Inner	1.000	1667.35	299.93	51.38	180	420	0.0001698	58.32	0.0003237	93.58	58.32
86	224.000	225.000	LHS	Outer	1.000	2714.69	367.08	51.26	180	420	0.0001249	127.01	0.0002714	208.05	127.01

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
87	223.000	224.000	RHS	Inner	1.000	1475.66	152.62	54.07	200	470	0.0002288	20.29	0.0003247	92.28	20.29
88	224.000	225.000	RHS	Outer	1.000	1398.96	291.11	63.65	200	470	0.0001659	74.16	0.0002531	285.50	74.16
89	224.000	225.000	LHS	Inner	1.000	1659.40	338.77	51.33	180	420	0.0001574	78.65	0.0003099	114.02	78.65
90	225.000	226.000	LHS	Outer	1.000	2366.72	307.63	51.42	180	420	0.0001457	78.43	0.0002977	136.79	78.43
91	224.000	225.000	RHS	Inner	1.000	1439.51	166.74	54.03	200	470	0.0002225	23.10	0.0003203	98.17	23.10
92	225.000	226.000	RHS	Outer	1.000	2357.09	217.03	63.65	200	470	0.0001525	65.91	0.0002451	330.26	65.91
93	225.000	226.000	LHS	Inner	1.000	1736.29	368.86	51.33	180	420	0.0001466	99.76	0.0002971	138.04	99.76
94	226.000	227.000	LHS	Outer	1.000	1912.81	223.08	51.37	180	420	0.0001894	33.91	0.0003464	68.82	33.91
95	225.000	226.000	RHS	Inner	1.000	2367.38	88.59	63.65	200	470	0.0002070	20.00	0.0002725	204.27	20.00
96	226.000	227.000	RHS	Outer	1.000	1346.82	323.70	76.91	110	520	0.0002466	16.39	0.0002757	193.74	16.39
97	226.000	227.000	LHS	Inner	1.000	1736.68	367.21	51.42	180	420	0.0001471	98.43	0.0002974	137.41	98.43
98	227.000	228.000	LHS	Outer	1.000	2219.70	264.25	51.42	180	420	0.0001624	54.32	0.0003177	101.86	54.32
99	226.000	227.000	RHS	Inner	1.000	1366.19	182.49	77.34	110	520	0.0003628	3.61	0.0003382	76.72	3.61
100	227.000	228.000	RHS	Outer	1.000	2685.60	367.18	77.16	110	520	0.0001808	30.41	0.0002419	350.53	30.41
101	227.000	228.000	LHS	Inner	1.000	1536.04	287.22	51.42	180	420	0.0001797	50.18	0.0003342	80.97	50.18
102	228.000	229.000	LHS	Outer	1.000	2026.48	242.02	51.33	180	420	0.0001770	42.00	0.0003337	81.52	42.00
103	227.000	228.000	RHS	Inner	1.000	2690.56	367.29	77.30	110	520	0.0001807	30.42	0.0002416	352.51	30.42
104	228.000	229.000	RHS	Outer	1.000	2618.82	368.05	77.29	110	520	0.0001823	30.08	0.0002422	348.57	30.08
105	228.000	229.000	LHS	Inner	1.000	1516.00	199.86	51.38	180	420	0.0002226	22.06	0.0003767	47.06	22.06
106	229.000	230.000	LHS	Outer	1.000	2383.77	209.38	51.42	180	420	0.0001754	37.88	0.0003341	81.08	37.88
107	228.000	229.000	RHS	Inner	1.000	2653.63	270.58	77.22	110	520	0.0002184	14.73	0.0002737	200.24	14.73
108	229.000	230.000	RHS	Outer	1.000	2600.84	359.25	77.25	110	520	0.0001856	28.22	0.0002449	331.48	28.22
109	229.000	230.000	LHS	Inner	1.000	1449.08	116.09	51.42	180	436	0.0002924	7.94	0.0004151	30.30	7.94
110	230.000	231.000	LHS	Outer	1.000	1839.13	130.85	74.85	180	460	0.0002396	14.05	0.0002912	151.19	14.05
111	229.000	230.000	RHS	Inner	1.000	2621.09	360.39	77.34	110	520	0.0001847	28.57	0.0002443	335.19	28.57
112	230.000	231.000	RHS	Outer	1.000	2547.99	314.04	77.23	110	520	0.0002034	20.11	0.0002596	254.50	20.11
113	230.000	231.000	LHS	Inner	1.000	939.57	170.10	67.48	180	460	0.0002939	11.26	0.0003420	72.93	11.26
114	231.000	232.000	LHS	Outer	1.000	1209.82	200.00	74.77	180	460	0.0002411	19.61	0.0002957	141.03	19.61
115	230.000	231.000	RHS	Inner	1.000	2568.21	364.27	77.22	110	520	0.0001848	29.01	0.0002439	337.69	29.01
116	231.000	232.000	RHS	Outer	1.000	2486.86	271.82	77.30	110	520	0.0002240	14.11	0.0002752	195.34	14.11
117	231.000	232.000	LHS	Inner	1.000	918.70	276.46	74.77	180	460	0.0002148	38.88	0.0002826	173.20	38.88
118	232.000	233.000	LHS	Outer	1.000	1719.50	253.91	74.85	180	460	0.0001818	43.55	0.0002587	258.54	43.55
119	231.000	232.000	RHS	Inner	1.000	2553.30	365.63	77.25	110	520	0.0001847	29.22	0.0002436	339.58	29.22
120	232.000	233.000	RHS	Outer	1.000	2416.93	326.36	77.25	110	520	0.0002028	21.28	0.0002571	265.91	21.28
121	232.000	233.000	LHS	Inner	1.000	895.10	130.27	74.85	180	460	0.0003477	6.11	0.0003426	72.35	6.11
122	233.000	234.000	LHS	Outer	1.000	2217.66	217.60	74.85	180	460	0.0001746	41.01	0.0002549	276.48	41.01
123	232.000	233.000	RHS	Inner	1.000	2547.73	205.80	77.18	110	520	0.0002583	7.94	0.0003022	127.79	7.94
124	233.000	234.000	RHS	Outer	1.000	2417.49	305.54	77.27	110	520	0.0002112	18.17	0.0002640	235.83	18.17
125	233.000	234.000	LHS	Inner	1.000	1473.95	120.86	74.85	180	460	0.0002801	9.25	0.0003104	113.19	9.25
126	234.000	235.000	LHS	Outer	1.000	2249.09	324.64	74.85	180	460	0.0001416	91.54	0.0002274	463.91	91.54
127	233.000	234.000	RHS	Inner	1.000	2455.64	366.81	77.25	110	520	0.0001870	28.79	0.0002444	334.57	28.79
128	234.000	235.000	RHS	Outer	1.000	2394.07	368.39	77.19	110	520	0.0001881	28.76	0.0002447	332.71	28.76
129	234.000	235.000	LHS	Inner	1.000	1636.06	233.91	74.85	180	460	0.0001943	35.09	0.0002673	222.91	35.09
130	235.000	236.000	LHS	Outer	1.000	1859.37	235.38	74.82	180	460	0.0001829	39.79	0.0002600	252.73	39.79

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
131	234.000	235.000	RHS	Inner	1.000	2460.50	367.55	77.18	110	520	0.0001866	28.98	0.0002442	335.81	28.98
132	235.000	236.000	RHS	Outer	1.000	2391.29	310.78	77.23	110	520	0.0002099	18.79	0.0002626	241.58	18.79
133	235.000	236.000	LHS	Inner	1.000	1234.87	118.07	73.02	180	460	0.0003115	7.11	0.0003297	86.10	7.11
134	236.000	237.000	LHS	Outer	1.000	1634.64	191.31	74.85	180	460	0.0002157	23.38	0.0002809	178.00	23.38
135	235.000	236.000	RHS	Inner	1.000	2417.43	205.59	77.27	110	520	0.0002649	7.53	0.0003042	124.03	7.53
136	236.000	237.000	RHS	Outer	1.000	2370.56	331.76	73.91	150	480	0.0002020	21.98	0.0002613	247.08	21.98
137	236.000	237.000	LHS	Inner	1.000	1420.78	115.02	55.71	180	460	0.0002948	7.82	0.0003791	45.72	7.82
138	237.000	238.000	LHS	Outer	1.000	872.89	283.14	74.78	180	460	0.0002142	41.06	0.0002827	172.92	41.06
139	236.000	237.000	RHS	Inner	1.000	1941.13	278.17	73.91	150	480	0.0001924	31.50	0.0002679	220.66	31.50
140	237.000	238.000	RHS	Outer	1.000	2347.67	366.84	73.78	150	480	0.0001515	67.85	0.0002351	398.91	67.85
141	237.000	238.000	LHS	Inner	1.000	969.01	177.86	74.77	180	460	0.0002824	12.81	0.0003172	102.59	12.81
142	238.000	239.000	LHS	Outer	1.000	1507.67	259.81	74.82	180	460	0.0001895	41.47	0.0002637	237.05	41.47
143	237.000	238.000	RHS	Inner	1.000	2420.04	309.90	73.85	150	480	0.0001646	47.88	0.0002488	308.57	47.88
144	238.000	239.000	RHS	Outer	1.000	2297.48	316.98	73.79	150	480	0.0001663	48.09	0.0002491	306.89	48.09
145	238.000	239.000	LHS	Inner	1.000	1611.88	129.38	73.85	180	460	0.0002593	11.56	0.0003039	124.58	11.56
146	239.000	240.000	LHS	Outer	1.000	897.76	197.08	74.77	180	460	0.0002729	15.62	0.0003135	108.20	15.62
147	238.000	239.000	RHS	Inner	1.000	2362.21	280.08	73.91	150	480	0.0001757	37.92	0.0002585	259.45	37.92
148	239.000	240.000	RHS	Outer	1.000	2301.28	309.28	73.91	150	480	0.0001685	45.63	0.0002510	296.50	45.63
149	239.000	240.000	LHS	Inner	1.000	901.04	158.48	74.71	180	460	0.0003111	9.36	0.0003301	85.63	9.36
150	240.000	241.000	LHS	Outer	1.000	939.57	221.13	89.23	170	460	0.0002620	17.61	0.0002833	171.27	17.61
151	239.000	240.000	RHS	Inner	1.000	2273.69	367.05	73.85	150	480	0.0001533	66.60	0.0002362	390.55	66.60
152	240.000	241.000	RHS	Outer	1.000	2276.70	330.92	73.91	150	480	0.0001629	52.52	0.0002454	328.43	52.52
153	240.000	241.000	LHS	Inner	1.000	1074.98	203.39	87.22	170	460	0.0002621	15.68	0.0002866	162.50	15.68
154	241.000	242.000	LHS	Outer	1.000	966.54	245.40	89.23	170	460	0.0002422	23.34	0.0002741	198.92	23.34
155	240.000	241.000	RHS	Inner	1.000	2333.22	360.45	73.88	150	480	0.0001535	64.81	0.0002368	386.09	64.81
156	241.000	242.000	RHS	Outer	1.000	2261.70	197.95	73.83	150	480	0.0002135	18.44	0.0002884	157.96	18.44
157	241.000	242.000	LHS	Inner	1.000	1117.66	129.41	89.31	170	460	0.0003304	6.16	0.0003049	122.74	6.16
158	242.000	243.000	LHS	Outer	1.000	1008.95	185.28	89.14	170	460	0.0002842	12.08	0.0002923	148.62	12.08
159	241.000	242.000	RHS	Inner	1.000	2268.59	362.19	73.88	150	480	0.0001547	64.41	0.0002374	381.68	64.41
160	242.000	243.000	RHS	Outer	1.000	1099.77	271.02	73.81	150	480	0.0002422	20.90	0.0002951	142.34	20.90
161	242.000	243.000	LHS	Inner	1.000	1172.92	185.61	89.11	170	460	0.0002671	13.52	0.0002845	168.01	13.52
162	243.000	244.000	LHS	Outer	1.000	1040.84	179.29	89.31	170	460	0.0002862	11.44	0.0002924	148.39	11.44
163	242.000	243.000	RHS	Inner	1.000	1146.79	237.51	73.79	150	480	0.0002607	15.15	0.0003068	119.33	15.15
164	243.000	244.000	RHS	Outer	1.000	2195.78	289.44	73.91	150	480	0.0001784	38.04	0.0002589	257.63	38.04
165	243.000	244.000	LHS	Inner	1.000	1189.03	209.89	86.04	170	460	0.0002474	18.00	0.0002816	176.00	18.00
166	244.000	245.000	LHS	Outer	1.000	1107.46	187.88	89.23	170	460	0.0002716	13.31	0.0002865	162.76	13.31
167	243.000	244.000	RHS	Inner	1.000	1671.20	183.44	73.88	150	480	0.0002571	11.59	0.0003109	112.36	11.59
168	244.000	245.000	RHS	Outer	1.000	2111.75	165.31	73.81	150	480	0.0002407	12.27	0.0003048	122.93	12.27
169	244.000	245.000	LHS	Inner	1.000	1224.73	186.48	86.15	170	460	0.0002617	14.11	0.0002877	159.71	14.11
170	245.000	246.000	LHS	Outer	1.000	1175.75	200.61	89.23	170	460	0.0002551	16.13	0.0002793	182.67	16.13
171	244.000	245.000	RHS	Inner	1.000	2057.31	210.35	73.83	150	480	0.0002172	18.70	0.0002890	156.48	18.70
172	245.000	246.000	RHS	Outer	1.000	2092.92	194.87	70.77	150	480	0.0002236	16.46	0.0003009	130.32	16.46
173	245.000	246.000	LHS	Inner	1.000	1286.68	171.98	82.45	170	460	0.0002679	12.35	0.0002977	136.79	12.35
174	246.000	247.000	LHS	Outer	1.000	1234.97	180.27	89.23	170	460	0.0002656	13.22	0.0002833	171.27	13.22

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
175	245.000	246.000	RHS	Inner	1.000	1983.44	200.22	71.60	150	480	0.0002266	16.36	0.0002998	132.50	16.36
176	246.000	247.000	RHS	Outer	1.000	2059.17	170.26	68.27	150	480	0.0002410	12.47	0.0003184	100.85	12.47
177	246.000	247.000	LHS	Inner	1.000	1332.38	208.54	65.02	170	460	0.0002381	18.96	0.0003224	95.30	18.96
178	247.000	248.000	LHS	Outer	1.000	1304.93	201.49	89.25	170	460	0.0002438	17.60	0.0002738	199.91	17.60
179	246.000	247.000	RHS	Inner	1.000	2115.88	165.02	68.32	150	480	0.0002412	12.15	0.0003188	100.28	12.15
180	247.000	248.000	RHS	Outer	1.000	2066.22	348.48	68.35	150	480	0.0001644	55.06	0.0002534	283.98	55.06
181	247.000	248.000	LHS	Inner	1.000	1468.08	206.41	57.45	170	460	0.0002305	19.80	0.0003384	76.51	19.80
182	248.000	249.000	LHS	Outer	1.000	2230.93	129.13	89.24	170	460	0.0002273	14.62	0.0002603	251.41	14.62
183	247.000	248.000	RHS	Inner	1.000	2170.08	363.50	68.27	150	480	0.0001572	62.85	0.0002474	316.57	62.85
184	248.000	249.000	RHS	Outer	1.000	2046.44	353.46	68.35	150	480	0.0001635	56.71	0.0002524	289.11	56.71
185	248.000	249.000	LHS	Inner	1.000	2211.66	114.97	58.65	170	460	0.0002427	11.42	0.0003453	69.82	11.42
186	249.000	250.000	LHS	Outer	1.000	1377.20	112.60	73.27	212	453	0.0002496	15.34	0.0002822	174.31	15.34
187	248.000	249.000	RHS	Inner	1.000	2140.44	221.22	68.32	150	480	0.0002081	21.36	0.0002948	143.00	21.36
188	249.000	250.000	RHS	Outer	1.000	1986.33	283.52	68.35	150	480	0.0001886	33.38	0.0002754	194.69	33.38
189	249.000	250.000	LHS	Inner	1.000	1301.19	129.96	73.91	194	456	0.0002686	12.11	0.0003024	127.41	12.11
190	250.000	251.000	LHS	Outer	1.000	1388.80	92.60	46.46	230	450	0.0002465	15.99	0.0003527	63.42	15.99
191	249.000	250.000	RHS	Inner	1.000	2122.57	185.58	68.35	150	480	0.0002274	15.23	0.0003097	114.35	15.23
192	250.000	251.000	RHS	Outer	1.000	2006.62	327.71	68.27	150	480	0.0001725	46.82	0.0002609	248.80	46.82
193	250.000	251.000	LHS	Inner	1.000	1083.98	66.32	73.83	230	450	0.0003127	7.83	0.0002797	181.49	7.83
194	251.000	252.000	LHS	Outer	1.000	670.24	59.85	53.03	230	450	0.0004423	3.07	0.0004105	31.87	3.07
195	250.000	251.000	RHS	Inner	1.000	2140.28	194.60	68.32	150	480	0.0002216	16.73	0.0003055	121.65	16.73
196	251.000	252.000	RHS	Outer	1.000	1352.66	193.17	68.31	150	480	0.0002761	10.52	0.0003321	83.32	10.52
197	251.000	252.000	LHS	Inner	1.000	942.13	59.94	73.76	230	450	0.0003532	5.50	0.0002905	152.85	5.50
198	252.000	253.000	LHS	Outer	1.000	760.61	60.34	58.40	230	450	0.0004071	3.80	0.0003692	51.55	3.80
199	251.000	252.000	RHS	Inner	1.000	1143.62	234.22	63.75	150	480	0.0002631	14.65	0.0003324	82.98	14.65
200	252.000	253.000	RHS	Outer	1.000	1777.84	194.67	68.35	150	480	0.0002425	13.80	0.0003161	104.22	13.80
201	252.000	253.000	LHS	Inner	1.000	1036.73	67.38	73.91	230	450	0.0003202	7.42	0.0002837	170.17	7.42
202	253.000	254.000	LHS	Outer	1.000	1142.77	59.85	63.06	230	450	0.0003137	7.39	0.0003069	119.16	7.39
203	252.000	253.000	RHS	Inner	1.000	2110.76	354.89	68.35	150	480	0.0001612	58.36	0.0002508	297.57	58.36
204	253.000	254.000	RHS	Outer	1.000	1976.05	284.70	68.27	150	480	0.0001886	33.53	0.0002754	194.69	33.53
205	253.000	254.000	LHS	Inner	1.000	952.25	62.18	73.91	230	450	0.0003468	5.85	0.0002899	154.29	5.85
206	254.000	255.000	LHS	Outer	1.000	644.84	59.85	52.41	230	450	0.0004527	2.89	0.0004185	29.20	2.89
207	253.000	254.000	RHS	Inner	1.000	2082.64	361.66	68.27	150	480	0.0001601	60.63	0.0002496	304.11	60.63
208	254.000	255.000	RHS	Outer	1.000	1981.01	301.34	68.32	150	480	0.0001823	38.18	0.0002696	214.42	38.18
209	254.000	255.000	LHS	Inner	1.000	722.73	62.45	73.91	230	450	0.0004111	3.82	0.0003150	105.88	3.82
210	255.000	256.000	LHS	Outer	1.000	799.93	59.85	60.91	230	450	0.0003951	4.09	0.0003526	63.50	4.09
211	254.000	255.000	RHS	Inner	1.000	2075.14	361.59	68.27	150	480	0.0001604	60.38	0.0002497	303.56	60.38
212	255.000	256.000	RHS	Outer	1.000	971.29	278.35	68.32	150	480	0.0002467	21.63	0.0003092	115.19	21.63
213	255.000	256.000	LHS	Inner	1.000	933.81	60.64	73.61	230	450	0.0003540	5.49	0.0002920	149.32	5.49
214	256.000	257.000	LHS	Outer	1.000	1007.00	62.85	73.81	230	450	0.0003334	6.50	0.0002853	165.89	6.50
215	254.000	255.000	RHS	Inner	1.000	1032.09	216.35	67.05	150	480	0.0002873	11.36	0.0003378	77.13	11.36
216	256.000	257.000	RHS	Outer	1.000	1913.97	368.85	42.78	142	468	0.0001706	50.90	0.0003236	93.71	50.90
217	256.000	257.000	LHS	Inner	1.000	1280.36	80.09	73.91	230	450	0.0002650	12.94	0.0002675	222.16	12.94
218	257.000	258.000	LHS	Outer	1.000	1295.74	59.85	73.49	230	450	0.0002861	9.50	0.0002623	242.84	9.50

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
219	256.000	257.000	RHS	Inner	1.000	1541.91	289.47	55.76	146	474	0.0002110	26.78	0.0003226	95.04	26.78
220	257.000	258.000	RHS	Outer	1.000	1951.83	369.17	42.78	130	450	0.0001809	39.85	0.0003552	61.42	39.85
221	257.000	258.000	LHS	Inner	1.000	1191.44	64.20	73.91	230	450	0.0002967	8.86	0.0002704	211.56	8.86
222	258.000	259.000	LHS	Outer	1.000	1381.64	60.21	73.23	230	450	0.0002734	10.74	0.0002574	264.51	10.74
223	257.000	258.000	RHS	Inner	1.000	1974.52	368.27	42.69	130	450	0.0001805	39.80	0.0003553	61.35	39.80
224	258.000	259.000	RHS	Outer	1.000	1922.55	364.54	42.66	130	450	0.0001833	38.35	0.0003585	58.90	38.35
225	258.000	259.000	LHS	Inner	1.000	1240.29	100.29	73.91	230	450	0.0002508	16.47	0.0002703	211.91	16.47
226	259.000	260.000	LHS	Outer	1.000	2137.04	209.96	50.73	169	426	0.0001961	26.94	0.0003592	58.38	26.94
227	258.000	259.000	RHS	Inner	1.000	1997.84	365.74	42.78	130	450	0.0001807	39.23	0.0003555	61.19	39.23
228	259.000	260.000	RHS	Outer	1.000	1874.67	366.55	42.78	130	450	0.0001842	38.44	0.0003585	58.90	38.44
229	259.000	260.000	LHS	Inner	1.000	1825.00	188.99	50.73	173	427	0.0002177	20.53	0.0003754	47.80	20.53
230	260.000	261.000	LHS	Outer	1.000	3000.00	367.90	50.76	130	410	0.0001572	47.67	0.0003461	69.09	47.67
231	259.000	260.000	RHS	Inner	1.000	1976.37	360.93	42.78	130	450	0.0001829	37.77	0.0003583	59.05	37.77
232	260.000	261.000	RHS	Outer	1.000	1902.33	367.31	42.78	130	450	0.0001830	38.94	0.0003574	59.73	38.94
233	260.000	261.000	LHS	Inner	1.000	3000.00	293.29	50.77	130	410	0.0001785	29.08	0.0003791	45.72	29.08
234	261.000	262.000	LHS	Outer	1.000	3000.00	325.97	50.77	130	410	0.0001685	36.39	0.0003637	55.18	36.39
235	260.000	261.000	RHS	Inner	1.000	1983.08	198.75	42.78	130	450	0.0002625	9.24	0.0004603	18.97	9.24
236	261.000	262.000	RHS	Outer	1.000	1823.93	368.41	42.73	130	450	0.0001850	38.70	0.0003592	58.38	38.70
237	261.000	262.000	LHS	Inner	1.000	3000.00	139.17	50.82	130	410	0.0002514	7.67	0.0004731	16.75	7.67
238	262.000	263.000	LHS	Outer	1.000	3000.00	367.92	50.82	130	410	0.0001572	47.67	0.0003459	69.28	47.67
239	261.000	262.000	RHS	Inner	1.000	1929.03	367.39	42.66	130	450	0.0001822	39.14	0.0003570	60.03	39.14
240	261.000	262.000	RHS	Outer	1.000	1860.42	369.78	42.69	130	450	0.0001833	39.44	0.0003577	59.50	39.44
241	262.000	263.000	LHS	Inner	1.000	3000.00	168.17	50.82	130	410	0.0002324	10.42	0.0004529	20.41	10.42
242	263.000	264.000	LHS	Outer	1.000	3000.00	367.58	50.78	130	410	0.0001572	47.67	0.0003461	69.09	47.67
243	262.000	263.000	RHS	Inner	1.000	1968.16	364.01	42.71	130	450	0.0001821	38.56	0.0003573	59.80	38.56
244	263.000	264.000	RHS	Outer	1.000	1844.98	366.50	42.73	130	450	0.0001850	38.32	0.0003595	58.16	38.32
245	263.000	264.000	LHS	Inner	1.000	3000.00	135.83	50.82	130	410	0.0002538	7.39	0.0004755	16.37	7.39
246	264.000	265.000	LHS	Outer	1.000	3000.00	351.04	50.82	130	410	0.0001615	42.92	0.0003528	63.34	42.92
247	263.000	264.000	RHS	Inner	1.000	1957.22	365.79	42.74	130	450	0.0001818	38.99	0.0003567	60.26	38.99
248	264.000	265.000	RHS	Outer	1.000	1793.03	365.99	42.76	130	450	0.0001868	37.81	0.0003612	56.93	37.81
249	264.000	265.000	LHS	Inner	1.000	3000.00	188.78	50.78	130	410	0.0002211	12.65	0.0004392	23.46	12.65
250	265.000	266.000	LHS	Outer	1.000	3000.00	309.55	50.78	130	410	0.0001734	32.55	0.0003712	50.30	32.55
251	264.000	265.000	RHS	Inner	1.000	1924.37	365.93	42.69	130	450	0.0001830	38.56	0.0003577	59.50	38.56
252	265.000	266.000	RHS	Outer	1.000	1807.93	368.40	42.74	130	450	0.0001854	38.66	0.0003597	58.02	38.66
253	265.000	266.000	LHS	Inner	1.000	3000.00	170.31	50.82	130	410	0.0002311	10.65	0.0004515	20.70	10.65
254	266.000	267.000	LHS	Outer	1.000	3000.00	324.73	50.82	130	410	0.0001689	36.05	0.0003641	54.91	36.05
255	265.000	266.000	RHS	Inner	1.000	1889.98	368.27	42.74	130	450	0.0001830	39.16	0.0003574	59.73	39.16
256	266.000	267.000	RHS	Outer	1.000	1794.87	332.63	81.95	150	455	0.0001791	44.50	0.0002576	263.58	44.50
257	266.000	267.000	LHS	Inner	1.000	2796.93	239.65	50.82	130	410	0.0002047	18.12	0.0004131	30.97	18.12
258	267.000	268.000	LHS	Outer	1.000	3000.00	367.77	50.78	130	410	0.0001572	47.67	0.0003461	69.09	47.67
259	266.000	267.000	RHS	Inner	1.000	1913.05	348.54	81.89	150	455	0.0001698	51.86	0.0002509	297.03	51.86
260	267.000	268.000	RHS	Outer	1.000	1793.03	267.93	81.97	150	455	0.0002038	26.95	0.0002767	190.58	26.95
261	267.000	268.000	LHS	Inner	1.000	3000.00	280.13	42.95	130	410	0.0001837	26.00	0.0004146	30.47	26.00
262	268.000	269.000	LHS	Outer	1.000	3000.00	328.89	50.78	130	410	0.0001676	37.15	0.0003624	56.08	37.15

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
263	267.000	268.000	RHS	Inner	1.000	1875.24	306.75	81.95	150	455	0.0001849	37.87	0.0002630	239.92	37.87
264	268.000	269.000	RHS	Outer	1.000	1746.51	340.98	82.01	150	455	0.0001780	46.66	0.0002564	269.22	46.66
265	268.000	269.000	LHS	Inner	1.000	3000.00	269.09	50.82	130	410	0.0001868	24.36	0.0003913	39.61	24.36
266	269.000	270.000	LHS	Outer	1.000	3000.00	367.76	50.05	150	412	0.0001399	75.02	0.0003142	107.11	75.02
267	268.000	269.000	RHS	Inner	1.000	1875.19	367.08	81.95	150	455	0.0001656	58.15	0.0002469	319.48	58.15
268	269.000	270.000	RHS	Outer	1.000	1749.42	253.29	81.92	150	455	0.0002126	23.35	0.0002827	172.92	23.35
269	269.000	270.000	LHS	Inner	1.000	3000.00	218.18	50.05	150	412	0.0001824	26.73	0.0003768	47.00	26.73
270	270.000	271.000	LHS	Outer	1.000	2442.20	171.86	30.01	230	420	0.0001478	72.22	0.0003512	64.66	64.66
271	269.000	270.000	RHS	Inner	1.000	1836.07	296.46	81.87	150	455	0.0001903	34.47	0.0002670	224.05	34.47
272	270.000	271.000	RHS	Outer	1.000	1635.22	306.84	81.95	150	455	0.0001951	34.54	0.0002688	217.33	34.54
273	270.000	271.000	LHS	Inner	1.000	2148.44	257.56	49.02	230	420	0.0001306	130.38	0.0002650	231.82	130.38
274	271.000	272.000	LHS	Outer	1.000	2423.26	94.01	29.86	230	420	0.0001781	35.20	0.0003906	39.93	35.20
275	270.000	271.000	RHS	Inner	1.000	1808.58	293.90	81.95	150	455	0.0001925	33.39	0.0002683	219.17	33.39
276	271.000	272.000	RHS	Outer	1.000	1945.98	239.02	81.95	150	455	0.0002093	22.65	0.0002821	174.59	22.65
277	271.000	272.000	LHS	Inner	1.000	2310.46	270.76	48.99	230	420	0.0001231	154.23	0.0002561	270.65	154.23
278	272.000	273.000	LHS	Outer	1.000	2430.82	115.95	29.91	230	420	0.0001680	44.05	0.0003800	45.23	44.05
279	271.000	272.000	RHS	Inner	1.000	1818.06	363.67	82.01	150	455	0.0001684	55.94	0.0002489	308.01	55.94
280	272.000	273.000	RHS	Outer	1.000	1895.40	277.89	82.01	150	455	0.0001950	30.51	0.0002709	209.79	30.51
281	272.000	273.000	LHS	Inner	1.000	2564.99	142.26	49.02	230	420	0.0001474	69.99	0.0002817	175.72	69.99
282	273.000	274.000	LHS	Outer	1.000	2155.63	167.48	49.02	230	420	0.0001552	66.44	0.0002915	150.48	66.44
283	272.000	273.000	RHS	Inner	1.000	1823.95	369.85	81.95	150	455	0.0001664	58.44	0.0002473	317.15	58.44
284	273.000	274.000	RHS	Outer	1.000	1976.75	353.44	81.95	150	455	0.0001663	54.68	0.0002482	311.97	54.68
285	273.000	274.000	LHS	Inner	1.000	2218.41	166.20	49.02	230	420	0.0001530	68.53	0.0002892	155.99	68.53
286	274.000	275.000	LHS	Outer	1.000	1841.17	142.12	49.02	230	420	0.0001803	42.43	0.0003146	106.50	42.43
287	272.000	273.000	RHS	Inner	1.000	1766.95	355.85	81.95	150	455	0.0001725	52.20	0.0002521	290.68	52.20
288	274.000	275.000	RHS	Outer	1.000	1969.73	369.39	81.95	150	455	0.0001620	60.73	0.0002444	334.57	60.73
289	274.000	275.000	LHS	Inner	1.000	955.88	90.61	49.02	230	420	0.0003100	9.02	0.0004054	33.73	9.02
290	275.000	276.000	LHS	Outer	1.000	1891.28	149.89	49.02	230	420	0.0001742	47.41	0.0003094	114.85	47.41
291	274.000	275.000	RHS	Inner	1.000	1774.80	240.93	81.92	150	455	0.0002172	21.22	0.0002862	163.54	21.22
292	275.000	276.000	RHS	Outer	1.000	2022.41	367.92	47.23	158	465	0.0001535	73.23	0.0002919	149.55	73.23
293	275.000	276.000	LHS	Inner	1.000	2378.06	151.47	48.99	230	420	0.0001515	67.11	0.0002869	161.74	67.11
294	276.000	277.000	LHS	Outer	1.000	2224.33	171.46	49.02	230	420	0.0001511	71.78	0.0002874	160.46	71.78
295	275.000	276.000	RHS	Inner	1.000	1750.93	365.74	47.23	162	470	0.0001582	73.66	0.0002916	150.25	73.66
296	276.000	277.000	RHS	Outer	1.000	1797.37	298.17	47.19	170	480	0.0001711	53.10	0.0002992	133.71	53.10
297	276.000	277.000	LHS	Inner	1.000	2445.37	144.90	41.84	230	420	0.0001527	63.55	0.0003103	113.35	63.55
298	277.000	278.000	LHS	Outer	1.000	1812.01	166.07	49.02	230	420	0.0001717	52.02	0.0003081	117.07	52.02
299	276.000	277.000	RHS	Inner	1.000	1790.45	369.33	47.19	170	480	0.0001492	90.76	0.0002739	199.58	90.76
300	277.000	278.000	RHS	Outer	1.000	2037.03	368.17	47.14	170	480	0.0001431	95.62	0.0002682	219.54	95.62
301	277.000	278.000	LHS	Inner	1.000	2146.75	193.82	38.81	230	420	0.0001494	77.32	0.0003168	103.18	77.32
302	278.000	279.000	LHS	Outer	1.000	2000.07	120.83	49.02	230	420	0.0001810	38.94	0.0003123	110.10	38.94
303	277.000	278.000	RHS	Inner	1.000	1731.20	369.97	47.19	170	480	0.0001508	89.61	0.0002753	195.02	89.61
304	278.000	279.000	RHS	Outer	1.000	2043.44	362.56	47.18	170	480	0.0001443	92.32	0.0002697	214.06	92.32
305	278.000	279.000	LHS	Inner	1.000	1917.67	200.94	38.44	230	420	0.0001563	71.43	0.0003261	90.50	71.43
306	279.000	280.000	LHS	Outer	1.000	1954.30	166.86	49.02	211	430	0.0001811	39.63	0.0003216	96.38	39.63

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
307	278.000	279.000	RHS	Inner	1.000	1740.39	363.57	47.23	170	480	0.0001522	86.05	0.0002770	189.65	86.05
308	279.000	280.000	RHS	Outer	1.000	2006.13	367.39	47.23	170	480	0.0001440	94.54	0.0002689	216.96	94.54
309	279.000	280.000	LHS	Inner	1.000	2736.21	367.55	48.99	192	440	0.0001167	164.30	0.0002499	302.46	164.30
310	280.000	281.000	LHS	Outer	1.000	2983.85	324.98	68.83	135	470	0.0001608	43.85	0.0002673	222.91	43.85
311	279.000	280.000	RHS	Inner	1.000	1734.99	366.76	47.19	170	480	0.0001514	88.07	0.0002762	192.15	88.07
312	280.000	281.000	RHS	Outer	1.000	2057.38	369.49	47.14	170	480	0.0001422	97.17	0.0002673	222.91	97.17
313	280.000	281.000	LHS	Inner	1.000	2726.47	370.13	68.75	135	470	0.0001552	54.36	0.0002579	262.19	54.36
314	281.000	282.000	LHS	Outer	1.000	2998.24	348.02	68.80	135	470	0.0001545	51.01	0.0002603	251.41	51.01
315	280.000	281.000	RHS	Inner	1.000	1740.44	365.79	47.14	170	480	0.0001514	87.83	0.0002765	191.21	87.83
316	281.000	282.000	RHS	Outer	1.000	2108.97	367.13	47.20	170	480	0.0001416	96.71	0.0002667	225.19	96.71
317	281.000	282.000	LHS	Inner	1.000	2617.05	346.63	68.87	135	470	0.0001640	45.43	0.0002662	227.12	45.43
318	282.000	283.000	LHS	Outer	1.000	2883.84	367.99	68.76	135	470	0.0001522	55.91	0.0002563	269.70	55.91
319	281.000	282.000	RHS	Inner	1.000	1709.74	367.85	47.19	170	480	0.0001518	88.27	0.0002765	191.21	88.27
320	282.000	283.000	RHS	Outer	1.000	2121.06	368.27	47.23	170	480	0.0001410	97.84	0.0002660	227.89	97.84
321	282.000	283.000	LHS	Inner	1.000	2555.06	339.87	68.83	135	470	0.0001676	42.61	0.0002694	215.14	42.61
322	283.000	284.000	LHS	Outer	1.000	2801.50	275.76	68.78	135	470	0.0001806	29.46	0.0002867	162.25	29.46
323	282.000	283.000	RHS	Inner	1.000	1512.17	253.81	47.14	170	480	0.0002016	32.51	0.0003288	87.18	32.51
324	283.000	284.000	RHS	Outer	1.000	2154.80	368.27	47.14	170	480	0.0001402	98.69	0.0002654	230.24	98.69
325	283.000	284.000	LHS	Inner	1.000	2525.23	267.48	68.78	135	470	0.0001925	25.11	0.0002948	143.00	25.11
326	284.000	285.000	LHS	Outer	1.000	2711.08	285.36	68.87	135	470	0.0001801	30.62	0.0002847	167.48	30.62
327	283.000	284.000	RHS	Inner	1.000	1153.64	217.06	47.23	170	480	0.0002455	19.04	0.0003651	54.23	19.04
328	284.000	285.000	RHS	Outer	1.000	2136.17	365.58	47.23	170	480	0.0001413	96.45	0.0002665	225.96	96.45
329	284.000	285.000	LHS	Inner	1.000	2504.58	366.64	68.83	135	470	0.0001615	50.07	0.0002622	243.26	50.07
330	285.000	286.000	LHS	Outer	1.000	2767.48	252.91	68.83	135	470	0.0001898	24.53	0.0002956	141.25	24.53
331	284.000	285.000	RHS	Inner	1.000	1649.14	219.89	47.23	170	480	0.0002118	24.92	0.0003405	74.40	24.92
332	285.000	286.000	RHS	Outer	1.000	2084.18	302.91	47.19	176	498	0.0001526	73.02	0.0002710	209.44	73.02
333	285.000	286.000	LHS	Inner	1.000	2498.02	353.23	68.87	135	470	0.0001653	45.84	0.0002662	227.12	45.84
334	286.000	287.000	LHS	Outer	1.000	2692.27	367.18	68.75	135	470	0.0001568	52.80	0.0002593	255.84	52.80
335	285.000	286.000	RHS	Inner	1.000	1518.00	201.72	47.19	176	498	0.0002226	22.04	0.0003340	81.19	22.04
336	286.000	287.000	RHS	Outer	1.000	1794.72	268.00	101.73	180	510	0.0001713	52.92	0.0001921	996.76	52.92
337	286.000	287.000	LHS	Inner	1.000	2196.30	111.56	68.78	135	470	0.0003090	4.49	0.0003739	48.68	4.49
338	287.000	288.000	LHS	Outer	1.000	2175.39	136.46	68.83	135	470	0.0002853	6.17	0.0003626	55.94	6.17
339	286.000	287.000	RHS	Inner	1.000	1855.66	169.37	101.37	180	510	0.0002113	22.74	0.0002097	669.87	22.74
340	287.000	288.000	RHS	Outer	1.000	1676.37	279.22	101.89	180	510	0.0001723	54.84	0.0001922	994.41	54.84
341	287.000	288.000	LHS	Inner	1.000	2442.52	361.07	68.78	135	470	0.0001646	47.51	0.0002649	232.22	47.51
342	288.000	289.000	LHS	Outer	1.000	2277.34	169.30	68.87	135	470	0.0002534	9.41	0.0003431	71.88	9.41
343	287.000	288.000	RHS	Inner	1.000	1473.06	180.16	93.74	180	510	0.0002313	19.48	0.0002287	452.08	19.48
344	288.000	289.000	RHS	Outer	1.000	1546.84	232.21	101.89	180	510	0.0001978	34.34	0.0002043	753.97	34.34
345	288.000	289.000	LHS	Inner	1.000	2409.21	369.27	68.78	135	470	0.0001631	49.81	0.0002631	239.51	49.81
346	289.000	290.000	LHS	Outer	1.000	2548.86	323.80	68.78	135	470	0.0001725	38.17	0.0002747	196.95	38.17
347	288.000	289.000	RHS	Inner	1.000	1144.73	199.20	101.89	180	510	0.0002453	19.22	0.0002230	506.88	19.22
348	289.000	290.000	RHS	Outer	1.000	1344.69	208.45	101.86	180	510	0.0002232	24.19	0.0002147	601.99	24.19
349	289.000	290.000	LHS	Inner	1.000	2379.69	366.55	68.75	135	470	0.0001646	48.57	0.0002644	234.21	48.57
350	290.000	291.000	LHS	Outer	1.000	2105.82	241.24	68.78	135	470	0.0002208	17.20	0.0003144	106.80	17.20

S.No.	Chainage		Side (LHS/RHS)	Lane	Length (Km)	15th Percentile E Value			Existing Crust Thickness (mm)		Fatigue Strain (mm)	Fatigue Residual Life (MSA)	Rutting Strain (mm)	Rutting Residual Life (MSA)	Remaining Life (MSA) as per 90% Reliability
	From	To				Bituminous Layer	Granular Layer	Subgrade	Bituminous Layers	Granular Layer					
351	289.000	290.000	RHS	Inner	1.000	1590.13	163.63	100.98	180	510	0.0002328	17.79	0.0002184	557.12	17.79
352	290.000	291.000	RHS	Outer	1.000	2020.25	250.90	101.89	180	510	0.0001681	51.47	0.0001908	1027.92	51.47
353	290.000	291.000	LHS	Inner	1.000	2346.28	344.72	68.71	135	470	0.0001719	41.53	0.0002716	207.35	41.53
354	291.000	292.000	LHS	Outer	1.000	2434.36	365.91	68.76	135	470	0.0001634	49.02	0.0002637	237.05	49.02
355	290.000	291.000	RHS	Inner	1.000	1399.23	265.82	101.82	180	510	0.0001908	43.04	0.0002011	809.92	43.04
356	291.000	292.000	RHS	Outer	1.000	2284.35	247.78	82.84	180	510	0.0001601	56.03	0.0002092	677.16	56.03
357	291.000	292.000	LHS	Inner	1.000	2293.31	369.71	68.87	135	470	0.0001661	48.39	0.0002647	233.01	48.39
358	292.000	292.300	LHS	Outer	0.300	2435.40	369.13	68.72	135	470	0.0001626	49.94	0.0002628	240.75	49.94
359	291.000	292.000	RHS	Inner	1.000	1683.04	268.02	101.89	180	510	0.0001761	50.21	0.0001942	948.82	50.21
360	292.000	292.300	RHS	Outer	0.300	1862.12	199.19	101.77	180	510	0.0001959	30.43	0.0002037	764.09	30.43
361	292.000	292.300	LHS	Inner	0.300	2305.23	369.36	68.79	135	470	0.0001659	48.41	0.0002648	232.61	48.41
362	292.000	292.300	RHS	Inner	0.300	1692.60	311.22	101.89	180	510	0.0001610	70.82	0.0001862	1148.19	70.82

The **BFHL corridor (NH-34, Baharampore–Farakka)** pavement is structurally sound and capable of catering to design traffic demands over the short to medium term. However, **localized strengthening and periodic overlays** are recommended in lower-modulus sections to maintain uniform performance. Targeted rehabilitation instead of blanket overlay will be the **most cost-effective maintenance approach** for this stretch.

This evaluation reinforces that **targeted strengthening, rather than uniform overlays**, is the most cost-effective maintenance approach for this corridor**.**

5.5 Pavement Evaluation by Network Survey Vehicle

a) Introduction

The Network Survey Vehicle (NSV) survey was carried out in **April 2023** for the **Behrampur -Farakka** section of NH-12 (Chainage CH 202+510 to CH 292+140). The work was performed by IRSM using the Hawkeye 2000 Professional NSV system as part of Independent Engineer / O&M monitoring activities, in accordance with the relevant provisions of the Concession Agreement and the MoRTH / IRC guidance (IRC: SP:16-2019, ASTM E950, AASHTO PP-37).

The primary objectives were to: (i) quantify ride quality (IRI), (ii) measure rut depth and macro-texture, (iii) map visual pavement distresses and patching via high-resolution imagery, and (iv) capture asset inventory and geometry for maintenance prioritisation. The NSV data provides 1-km aggregated roughness tables and lane-wise profiles used for network level decision making.

b) Project Corridor

The surveyed corridor is the **Behrampur → Farakka** stretch (CH 202+510 to CH 292+140), covering **89.68 km** (four lanes; 358.71 lane-km) of NH-12 under BFHL. The corridor traverses largely flat to gently rolling terrain with seasonal high rainfall and predominantly clayey to silty subgrade soils — conditions that influence texture, rutting and localized pavement deterioration. Survey coverage included both inner & outer lanes for both directions at 1-km reporting intervals (1-km aggregated outputs).

c) Instrumentation & Methodology

Instrument: **Hawkeye 2000 Professional NSV** (multi-laser digital profiler + DGPS + panoramic imaging + Gipsi-Trac geometry).

Working parameters and procedures:

- Digital profiler (11 laser configuration) recorded longitudinal profiles, bump integrator, rut profile and sensor-measured texture at highway speeds.
- Video / still imagery captured lane wise defects (images sampled typically every 5–10 m).
- DGPS referenced all data; DMI used for high-accuracy distance.
- Processing: Hawkeye Processing Toolkit; outputs validated and converted into 1-km aggregated tables (IRI, bump integrator, rut depth, speed, co-ordinates).
- Standards: IRC: SP:16-2019, ASTM E950, AASHTO PP-37. Survey limitations (lighting, wet pavements, GPS coverage, fine cracks <3 mm visibility) were recorded and accounted for during QA/QC.

d) NSV Results and Analysis

The NSV data collected for the **Behrampur–Farakka section of NH-12** were processed and analysed using the **Hawkeye Processing Toolkit** in accordance with **IRC: SP:16-2019**, **ASTM E950**, and **AASHTO PP-37** guidelines. The analysis focused on evaluating pavement surface characteristics, particularly **International Roughness Index (IRI)**, **bump integrator values**, and **vehicle speed consistency**, to assess ride quality and surface evenness of both carriageways. The 1-km interval results for each lane were aggregated to determine the overall functional condition of the corridor. This section summarises the key findings of the NSV survey, highlighting lane-wise roughness trends, directional variations, and sections requiring attention for maintenance or rectification.

Roughness Summary – Main Carriageway (MCW)

The International Roughness Index (IRI) was measured at 1 km intervals for each lane and direction. Typical ranges and aggregate statistics derived from the IRSM dataset are summarized below.

Exhibit 25 Roughness Summary Behrampur to Farakka - Inner Lane

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
202.51-203	2.17	1518.34	53.4	24.12902153	88.21241078
203-204	2.28	1612.23	49.4	24.13468252	88.20464169
204-205	2.67	1908.06	44.9	24.1406388	88.19741096
205-206	3.35	2471.9	53.5	24.14695213	88.19040063
206-207	4.31	3281.43	38.2	24.15340499	88.18342335
207-208	2.84	2067.03	49.0	24.15981163	88.17651936
208-209	2.84	2056.75	54.5	24.16616243	88.16954398
209-210	3.84	2875.78	54.8	24.17243466	88.16248518
210-211	3.39	2510.13	53.7	24.17862532	88.15547217
211-212	3.05	2220.47	53.5	24.18498443	88.14836732
212-213	3.53	2641.91	48.2	24.19113849	88.14119565
213-214	3.88	2910.59	53.6	24.19731032	88.13389186
214-215	4.24	3215.91	52.8	24.20353332	88.12677115
215-216	4.66	3570.12	55.1	24.20984301	88.11974711
216-217	3.88	2906.84	54.0	24.21636302	88.11295455
217-218	2.78	1994.55	47.0	24.22297120	88.10625916
218-219	2.56	1829.11	45.5	24.22958174	88.09956552

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
219-220	2.64	1892.27	52.0	24.23622462	88.09291751
220-221	3.11	2291.76	55.1	24.24291776	88.08632398
221-222	2.78	2010.31	56.3	24.24963207	88.07975800
222-223	2.67	1912.09	51.7	24.25661798	88.07341769
223-224	3.96	2975.92	52.3	24.26384777	88.06753389
224-225	3.32	2437.82	50.7	24.27108931	88.06167930
225-226	2.73	1968.05	46.4	24.27801874	88.05584826
226-227	3.68	2738.78	49.2	24.28422298	88.04838350
227-228	5.12	3976.15	50.8	24.29048155	88.04145227
228-229	3.54	2629.78	54.6	24.29697531	88.03462142
229-230	3.45	2583.59	49.3	24.30498271	88.03020808
230-231	3.18	2343.47	52.0	24.31361012	88.02768310
231-232	2.99	2210.67	50.7	24.32240298	88.02508394
232-233	3.52	2606.91	49.6	24.33094937	88.02784790
233-234	3.17	2322.23	52.4	24.33968198	88.03026112
234-235	2.87	2072.08	54.1	24.34842126	88.03271768
235-236	4.02	3065.13	46.3	24.35705966	88.03551865
236-237	3.24	2388.72	54.2	24.36558534	88.03872861
237-238	3.95	2988.61	43.2	24.37464708	88.04204187
238-239	3.42	2520.38	52.1	24.38345530	88.04080797
239-240	4.72	3630.79	56.0	24.39179406	88.03864494
240-241	6.08	4820.77	48.9	24.40047836	88.03638398
241-242	3.58	2679.51	52.4	24.40933929	88.03409490
242-243	4.76	3674.55	54.1	24.41827796	88.03391697
243-244	4.96	3821.33	52.9	24.42717238	88.03483435
244-245	4.42	3385.08	46.2	24.43624214	88.03574998
245-246	4.31	3275.26	55.2	24.44522403	88.03669298
246-247	5.79	4588.82	40.7	24.45403047	88.03741887
247-248	3.57	2671.53	44.3	24.46315760	88.03641005
248-249	3.59	2694.42	48.9	24.47206093	88.03480522

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
249-250	4.78	3691.56	48.9	24.48076500	88.03382940
250-251	3.95	3022.40	42.1	24.48911533	88.03410748
251-252	5.19	4086.30	44.4	24.49765709	88.03094089
252-253	4.19	3187.02	47.3	24.50608529	88.03091833
253-254	4.00	3039.76	43.6	24.51420851	88.03475010
254-255	3.44	2585.30	44.3	24.52293368	88.03752649
255-256	4.52	3477.81	47.4	24.52967693	88.03217639
256-257	3.85	2905.86	49.5	24.53688356	88.02889328
257-258	3.93	3005.99	45.5	24.54391512	88.03463090
258-259	3.74	2794.08	55.7	24.54991440	88.02767674
259-260	5.09	3951.76	49.2	24.55618390	88.02080015
260-261	4.37	3324.46	43.4	24.56454664	88.01968031
261-262	4.20	3188.53	46.8	24.57342683	88.01868663
262-263	3.84	2895.62	51.9	24.58250357	88.01784883
263-264	4.15	3148.50	47.8	24.59148310	88.01697284
264-265	3.93	2969.65	50.5	24.59905695	88.01217449
265-266	3.07	2240.80	54.1	24.60657421	88.00675928
266-267	3.00	2192.26	51.8	24.61427722	88.00163958
267-268	3.74	2807.65	53.9	24.62191532	87.99657336
268-269	3.79	2837.79	50.9	24.62969289	87.99139079
269-270	4.14	3143.17	45.7	24.63428461	87.98335626
270-271	4.51	3458.11	46.2	24.63601888	87.97377904
271-272	4.16	3159.78	44.0	24.63785347	87.96402124
272-273	2.11	1478.75	52.2	24.64185396	87.95544521
273-274	2.76	2002.24	43.7	24.64789690	87.94825504
274-275	3.35	2467.97	45.7	24.65571821	87.94340242
275-276	3.41	2517.41	38.8	24.66401417	87.93996667
276-277	2.95	2148.27	47.9	24.67011286	87.93274458
277-278	3.18	2342.32	43.0	24.67747607	87.92704596
278-279	4.67	3608.67	53.9	24.68551909	87.92283538

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
279-280	2.85	2078.86	52.4	24.69452198	87.92232029
280-281	2.43	1742.33	52.1	24.70274643	87.91891469
281-282	3.15	2322.30	53.9	24.71156270	87.91728786
282-283	2.16	1514.70	52.0	24.72050997	87.91605673
283-284	2.28	1607.10	39.9	24.72946840	87.91495362
284-285	2.36	1685.50	53.6	24.73845798	87.91418446
285-286	2.72	1946.13	46.1	24.74746535	87.91362044
286-287	3.11	2279.17	40.6	24.75647383	87.91311257
287-288	3.86	2925.95	37.6	24.76555506	87.91232710
288-289	3.45	2581.13	55.1	24.77409507	87.91455218
289-290	3.69	2800.04	49.5	24.78267537	87.91587398
290-291	4.11	3088.62	53.1	24.79154957	87.91609196
291-292	3.50	2583.32	42.8	24.79982209	87.91956684
292-292.14	4.15	3150.43	22.6	24.80055495	87.92069281

Exhibit 26 Roughness Summary Berhampore to Farakka - Outer Lane

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
202.51-203	1.82	1237.28	49.9	24.12901903	88.21234538
203-204	2.63	1889.22	49.8	24.13468559	88.20457893
204-205	2.52	1803.63	52.7	24.14064028	88.19734702
205-206	2.92	2119.37	54.1	24.14651419	88.19082999
206-207	3.69	2742.73	40.6	24.15337665	88.18338495
207-208	2.86	2100.66	50.8	24.15978798	88.17648170
208-209	2.85	2068.58	54.5	24.16614288	88.16951660
209-210	3.53	2621.64	55.1	24.17240593	88.16244916
210-211	3.29	2422.45	56.1	24.17859753	88.15544161
211-212	2.87	2076.53	56.1	24.18495322	88.14833961
212-213	3.25	2392.81	48.1	24.19117161	88.14109009
213-214	3.87	2902.58	55.9	24.19728382	88.13386176

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
214-215	3.21	2353.81	57.5	24.20349871	88.12673542
215-216	4.13	3115.77	54.5	24.20980924	88.11971438
216-217	3.57	2676.53	55.3	24.21633854	88.11293194
217-218	2.77	1995.03	53.4	24.22293327	88.10622691
218-219	2.22	1566.04	57.8	24.22954962	88.09954095
219-220	2.29	1610.98	53.7	24.23618852	88.09288834
220-221	2.94	2153.66	56.5	24.24288303	88.08629404
221-222	2.28	1602.53	58.0	24.24960076	88.07973009
222-223	2.32	1625.08	52.6	24.25658652	88.07338520
223-224	3.59	2670.41	53.4	24.26381385	88.06749919
224-225	2.80	2020.43	50.5	24.27105885	88.06164577
225-226	2.50	1774.63	57.4	24.27798307	88.05581714
226-227	2.56	1820.91	53.3	24.28418682	88.04835447
227-228	3.62	2688.68	53.1	24.29044407	88.04141844
228-229	3.46	2584.23	50.6	24.29693726	88.03458974
229-230	3.00	2185.53	47.2	24.30494190	88.03017089
230-231	3.23	2363.89	54.0	24.31365622	88.02762315
231-232	2.16	1500.83	54.7	24.32236007	88.02504388
232-233	2.64	1883.07	52.7	24.33091578	88.02779765
233-234	2.92	2119.68	52.5	24.33973195	88.03023167
234-235	2.56	1826.62	55.3	24.34846223	88.03268667
235-236	2.94	2143.14	52.5	24.35709352	88.03550028
236-237	2.12	1478.73	56.6	24.36561939	88.03870955
237-238	3.10	2249.75	50.0	24.37467692	88.04202468
238-239	3.05	2218.18	52.8	24.38286633	88.04091275
239-240	4.52	3460.08	56.0	24.39172935	88.03860887
240-241	5.02	3907.52	47.3	24.40041848	88.03636142
241-242	3.13	2275.45	52.4	24.40928109	88.03406788
242-243	4.30	3284.35	53.6	24.41830543	88.03387849
243-244	3.40	2518.20	54.7	24.42719855	88.03479559

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
244-245	3.33	2479.22	51.7	24.43625813	88.03571601
245-246	3.40	2522.07	55.5	24.44523984	88.03665852
246-247	3.45	2567.13	43.9	24.45413031	88.03739182
247-248	2.73	1981.95	49.0	24.46307602	88.03638884
248-249	2.29	1611.92	52.4	24.47197403	88.03478225
249-250	2.94	2125.97	56.2	24.48076681	88.03380805
250-251	3.68	2784.05	51.9	24.48903205	88.03408324
251-252	3.52	2614.62	54.4	24.49766186	88.03089059
252-253	3.38	2505.98	46.4	24.50610070	88.03090209
253-254	2.93	2130.26	50.0	24.51422070	88.03473477
254-255	2.43	1722.20	52.0	24.52286310	88.03751207
255-256	4.40	3393.66	48.9	24.52961971	88.03217699
256-257	3.96	3004.94	50.7	24.53681208	88.02881555
257-258	4.19	3199.45	51.4	24.54393301	88.03458410
258-259	3.25	2399.17	54.6	24.54991026	88.02759635
259-260	4.38	3334.39	54.0	24.55611446	88.02077531
260-261	2.99	2169.40	44.8	24.56438941	88.01967807
261-262	3.09	2261.63	54.3	24.57344524	88.01864177
262-263	2.48	1760.05	51.8	24.58243113	88.01782054
263-264	2.87	2090.30	50.7	24.59140543	88.01693053
264-265	3.03	2214.70	55.5	24.59899645	88.01217372
265-266	2.05	1417.21	53.2	24.60650364	88.00674720
266-267	2.00	1381.01	53.5	24.61421251	88.00162488
267-268	2.86	2064.66	53.4	24.62193622	87.99652966
268-269	3.42	2524.06	48.7	24.62970387	87.99133590
269-270	3.43	2538.09	43.0	24.63424288	87.98337054
270-271	3.01	2183.89	47.7	24.63600159	87.97369499
271-272	3.17	2318.20	51.2	24.63783147	87.96403689
272-273	1.67	1131.32	56.4	24.64179199	87.95544185
273-274	2.30	1625.10	47.7	24.64783865	87.94825554

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
274-275	2.40	1708.13	49.1	24.65573212	87.94334528
275-276	2.81	2020.55	39.5	24.66408203	87.93985050
276-277	2.31	1632.70	51.3	24.67010741	87.93269445
277-278	2.47	1760.36	52.2	24.67746141	87.92698614
278-279	3.79	2828.37	51.6	24.68551045	87.92278795
279-280	2.80	2046.01	49.9	24.69452150	87.92227772
280-281	2.24	1575.02	49.7	24.70265755	87.91891742
281-282	2.52	1806.34	55.7	24.71155252	87.91724130
282-283	1.79	1220.64	50.0	24.72048475	87.91601311
283-284	1.93	1327.24	55.1	24.72944570	87.91491689
284-285	2.19	1533.23	55.6	24.73843544	87.91413764
285-286	2.70	1940.86	54.9	24.74743749	87.91357429
286-287	2.47	1760.77	50.7	24.75653295	87.91305015
287-288	3.66	2778.38	48.0	24.76552667	87.91228231
288-289	2.48	1766.63	47.5	24.77413949	87.91456889
289-290	3.13	2290.42	38.0	24.78262883	87.91583885
290-291	3.81	2834.44	45.8	24.79149142	87.91603283
291-292	2.48	1754.05	49.1	24.79983879	87.91956130
292-292.14	3.67	2739.26	36.6	24.80055408	87.92070051

Exhibit 27 Roughness Summary Farakka to Berhampore - Inner Lane

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
292.14-292	2.77	1991.92	25.8	24.79987744	87.91976402
292-291	3.45	2549.41	46.0	24.79177656	87.91622454
291-290	2.51	1785.79	53.3	24.78291518	87.91585143
290-289	3.06	2216.22	48.0	24.77432421	87.91472917
289-288	3.01	2202.97	55.8	24.76582178	87.91237799
288-287	2.62	1873.79	56.5	24.75674453	87.91316206
287-286	2.41	1702.26	51.8	24.74765311	87.91369195

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
286-285	2.95	2148.03	54.8	24.73865767	87.91431929
285-284	2.15	1501.99	56.9	24.72966403	87.91501202
284-283	1.94	1337.35	55.7	24.72070710	87.91610772
283-282	1.99	1376.05	51.4	24.71176437	87.91734440
282-281	2.37	1672.61	57.2	24.70294178	87.91889746
281-280	2.53	1794.68	51.7	24.69473328	87.92237957
280-279	2.96	2148.43	55.2	24.68572408	87.92289143
279-278	2.68	1924.84	54.2	24.67774371	87.92695539
278-277	2.15	1505.77	52.9	24.67038587	87.93265703
277-276	2.14	1490.20	54.6	24.66436011	87.93980957
276-275	2.23	1558.18	44.4	24.65593436	87.94342666
275-274	2.23	1558.35	44.5	24.64815324	87.94814234
274-273	2.65	1891.89	47.0	24.64210450	87.95532727
273-272	2.32	1635.65	50.7	24.63804074	87.96385039
272-271	2.21	1547.63	43.8	24.63623212	87.97351531
271-270	1.99	1368.19	49.6	24.63444722	87.98328934
270-269	2.76	2001.02	50.3	24.62996134	87.99133225
269-268	2.24	1563.65	48.3	24.62226434	87.99647513
268-267	2.78	2035.92	55.5	24.61454363	88.00158107
267-266	1.63	1098.64	52.2	24.60676056	88.00675690
266-265	1.73	1174.04	54.6	24.59923644	88.01215958
265-264	1.76	1198.98	55.8	24.59167443	88.01703957
264-263	1.82	1250.14	53.7	24.58269100	88.01791561
263-262	1.54	1029.00	59.2	24.57370264	88.01874457
262-261	2.15	1515.10	45.3	24.56474650	88.01986753
261-260	3.52	2619.71	44.3	24.55635645	88.02085349
260-259	2.87	2067.92	56.5	24.55016693	88.02749977
259-258	3.03	2221.16	54.0	24.54417745	88.03469151
258-257	3.73	2791.04	50.0	24.53701404	88.02908300
257-256	3.21	2370.54	55.7	24.52985966	88.03204198

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
256-255	2.79	2010.64	56.2	24.52319764	88.03762121
255-254	2.34	1654.00	55.2	24.51445059	88.03491111
254-253	2.63	1968.50	51.4	24.50620965	88.03109967
253-252	3.48	2582.07	48.9	24.49782080	88.03098678
252-251	2.39	1715.01	47.9	24.48927942	88.03415862
251-250	3.41	2537.70	54.3	24.48088222	88.03400624
250-249	4.89	3774.80	51.2	24.47239281	88.03483317
249-248	2.07	1430.77	46.9	24.46331418	88.03645182
248-247	2.34	1649.82	53.5	24.45445405	88.03749058
247-246	3.04	2240.74	48.9	24.44545773	88.03680279
246-245	3.32	2449.88	50.9	24.43647571	88.03585485
245-244	2.23	1576.79	50.2	24.42749685	88.03494542
244-243	3.22	2389.95	51.3	24.41851303	88.03401663
243-242	3.41	2524.07	54.0	24.40955600	88.03412370
242-241	3.38	2499.01	48.4	24.40069293	88.03643347
241-240	3.89	2913.16	49.6	24.39192237	88.03869975
240-239	3.65	2720.31	51.6	24.38314467	88.04097594
239-238	3.15	2294.49	50.4	24.37475961	88.04219765
238-237	3.23	2373.28	51.4	24.36578957	88.03888924
237-236	2.61	1874.77	54.1	24.35725469	88.03570179
236-235	3.96	3007.14	50.4	24.34863021	88.03287051
235-234	2.78	2013.92	52.8	24.33990157	88.03040596
234-233	2.84	2048.57	51.7	24.33116409	88.02801074
233-232	3.68	2773.10	53.7	24.32263005	88.02516063
232-231	3.35	2484.35	56.4	24.31391296	88.02768836
231-230	4.05	3069.69	56.6	24.30520355	88.03023784
230-229	3.48	2569.73	44.5	24.29722395	88.03450178
229-228	4.00	3014.64	51.8	24.29071710	88.04132774
228-227	2.68	1925.76	48.4	24.28438010	88.04830921
227-226	2.91	2114.95	51.4	24.27842189	88.05562763

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
226-225	4.41	3349.46	54.1	24.27127475	88.06163434
225-224	4.95	3825.87	47.9	24.26404222	88.06749414
224-223	3.73	2792.89	53.5	24.25681524	88.07338229
223-222	2.33	1639.54	51.4	24.24988169	88.07963744
222-221	2.85	2083.95	55.4	24.24316902	88.08621485
221-220	2.43	1720.54	57.0	24.23647064	88.09280473
220-219	2.85	2058.81	51.4	24.22977139	88.09952883
219-218	2.98	2187.18	54.0	24.22316487	88.10622587
218-217	3.59	2675.82	50.4	24.21655369	88.11291754
217-216	4.47	3419.26	53.5	24.21002002	88.11968920
216-215	3.39	2496.21	55.0	24.20371178	88.12671850
215-214	3.97	2981.82	54.4	24.19749190	88.13384415
214-213	4.75	3666.79	53.5	24.19138183	88.14107581
213-212	3.79	2840.49	48.2	24.18522470	88.14825466
212-211	4.42	3357.12	52.6	24.17893175	88.15530053
211-210	4.55	3470.34	54.9	24.17266971	88.16237804
210-209	4.13	3136.30	55.8	24.16640822	88.16945002
209-208	4.03	3033.37	56.2	24.15998752	88.17649389
208-207	5.64	4420.33	50.8	24.15357479	88.18340781
207-206	5.10	3930.67	39.3	24.14673302	88.19082531
206-205	4.07	3071.13	52.3	24.14085517	88.19734754
205-204	4.56	3485.00	50.0	24.13482441	88.20464454
204-203	4.46	3396.16	49.6	24.12921561	88.21234304
203-202.51	3.92	2943.71	48.8	24.12649243	88.21608305

Exhibit 28 Roughness Summary Farakka to Berhampore - Outer Lane

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
292.14-292	2.47	1738.67	31.9	24.79981654	87.91978022
292-291	2.92	2101.45	41.5	24.79171085	87.91625209

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
291-290	2.03	1405.13	51.6	24.78293158	87.91587222
290-289	2.87	2068.66	49.6	24.77434620	87.91475463
289-288	2.65	1895.86	52.2	24.76573987	87.91242839
288-287	2.59	1855.10	52.7	24.75665804	87.91321470
287-286	2.33	1640.45	51.3	24.74764956	87.91372527
286-285	2.66	1919.88	51.9	24.73865306	87.91436391
285-284	2.08	1450.73	51.2	24.72965217	87.91505030
284-283	1.80	1226.50	48.8	24.72069549	87.91614917
283-282	1.73	1175.89	51.2	24.71175909	87.91737544
282-281	2.26	1585.72	56.3	24.70292843	87.91893706
281-280	2.13	1477.99	51.3	24.69462152	87.92242807
280-279	2.24	1569.19	53.9	24.68561256	87.92294235
279-278	2.50	1782.84	50.8	24.67771771	87.92699033
278-277	1.93	1326.70	50.2	24.67029284	87.93275861
277-276	1.97	1367.96	55.0	24.66431009	87.93982328
276-275	2.04	1409.96	43.5	24.65589737	87.94343986
275-274	1.99	1367.29	52.4	24.64812487	87.94817304
274-273	2.37	1680.00	49.4	24.64207818	87.95536824
273-272	1.87	1284.38	55.5	24.63802890	87.96389437
272-271	2.00	1384.26	48.6	24.63617657	87.97355033
271-270	1.85	1265.24	52.4	24.63442649	87.98323020
270-269	2.45	1739.90	46.1	24.62985852	87.99142831
269-268	1.98	1366.43	49.3	24.62215687	87.99655937
268-267	2.47	1768.67	56.2	24.61444143	88.00167412
267-266	1.47	977.86	54.8	24.60681206	88.00675239
266-265	1.72	1167.09	55.7	24.59925825	88.01212405
265-264	1.75	1181.11	53.9	24.59164571	88.01707818
264-263	1.84	1255.68	56.2	24.58266203	88.01795612
263-262	1.59	1066.99	53.0	24.57367580	88.01878296
262-261	2.12	1486.35	51.6	24.56471410	88.01983901

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
261-260	3.32	2450.71	46.4	24.55633781	88.02088984
260-259	2.61	1864.61	55.5	24.55015311	88.02753970
259-258	2.49	1775.26	56.2	24.54416678	88.03473161
258-257	3.40	2500.32	50.1	24.53692974	88.02909549
257-256	2.60	1865.37	55.0	24.52985803	88.03210461
256-255	2.24	1573.87	51.9	24.52309370	88.03766816
255-254	2.28	1607.51	51.6	24.51434510	88.03493507
254-253	1.99	1383.16	52.5	24.50618774	88.03115082
253-252	3.17	2326.25	50.1	24.49780966	88.03102459
252-251	2.10	1483.50	55.3	24.48926486	88.03419120
251-250	2.85	2070.59	56.6	24.48086910	88.03405701
250-249	3.17	2309.67	55.1	24.47229276	88.03489358
249-248	1.74	1175.46	55.8	24.46330009	88.03649496
248-247	2.06	1421.66	51.2	24.45434780	88.03753165
247-246	2.65	1902.45	40.6	24.44535898	88.03684036
246-245	2.63	1878.17	54.3	24.43637780	88.03589332
245-244	1.90	1310.17	52.9	24.42748818	88.03499529
244-243	2.37	1675.85	56.7	24.41841482	88.03405873
243-242	3.19	2337.93	55.9	24.40956946	88.03417447
242-241	3.06	2227.70	54.3	24.40069867	88.03644517
241-240	3.65	2705.68	53.1	24.39193283	88.03874136
240-239	2.74	1970.68	56.3	24.38315578	88.04102191
239-238	2.83	2038.56	53.1	24.37433271	88.04207964
238-237	2.77	1990.20	53.7	24.36578785	88.03893038
237-236	2.18	1524.13	57.4	24.35724998	88.03574172
236-235	3.14	2302.69	50.9	24.34862886	88.03290891
235-234	2.36	1667.80	53.0	24.33981046	88.03042853
234-233	2.69	1940.56	55.2	24.33106993	88.02802575
233-232	3.33	2471.89	52.1	24.32261750	88.02517131
232-231	2.37	1669.07	57.5	24.31381845	88.02775405

Chainage (km)	IRI Average (m/km)	Bump Int (mm/km)	Speed (km/h)	Latitude (deg)	Longitude (deg)
231-230	3.34	2446.35	57.4	24.30511231	88.03030306
230-229	3.51	2602.72	51.4	24.29728236	88.03446661
229-228	2.92	2115.21	57.3	24.29079519	88.04130260
228-227	2.67	1912.77	54.0	24.28438647	88.04834976
227-226	2.79	2002.19	52.6	24.27828401	88.05579073
226-225	3.55	2626.44	54.1	24.27128579	88.06168392
225-224	4.37	3340.81	52.3	24.26404470	88.06754039
224-223	3.05	2220.94	56.3	24.25681551	88.07342116
223-222	2.51	1782.87	50.5	24.24988800	88.07968108
222-221	2.50	1778.07	57.4	24.24317468	88.08625920
221-220	2.30	1617.65	58.1	24.23647474	88.09285076
220-219	2.53	1800.53	51.5	24.22983221	88.09951239
219-218	2.81	2030.79	53.3	24.22321234	88.10619757
218-217	3.38	2495.93	49.2	24.21661140	88.11290043
217-216	3.97	2967.37	50.6	24.21007709	88.11967868
216-215	3.45	2552.70	51.3	24.20376540	88.12670901
215-214	4.31	3280.28	53.6	24.19747567	88.13390103
214-213	3.97	2986.23	52.4	24.19141595	88.14109754
213-212	3.71	2780.56	49.8	24.18517980	88.14832544
212-211	3.84	2863.78	54.6	24.17889468	88.15537759
211-210	4.10	3093.02	56.0	24.17264098	88.16245568
210-209	3.43	2541.64	57.8	24.16637310	88.16952096
209-208	3.57	2649.84	55.8	24.16001769	88.17649253
208-207	5.05	3901.91	50.8	24.15360124	88.18339421
207-206	4.59	3500.12	42.4	24.14674460	88.19083271
206-205	3.27	2396.97	55.7	24.14086535	88.19735411
205-204	3.80	2850.12	48.5	24.13481453	88.20462968
204-203	3.36	2474.15	53.7	24.12922852	88.21234394
203-202.51	2.62	1870.22	50.7	24.12650611	88.21603373

e) Summary Interpretation

- The NSV survey indicates that the **BFHL corridor remains in Fair to Satisfactory functional condition** overall.
- **Main carriageways:** Ride quality is uniform throughout with limited rough spots; no widespread distress detected from roughness data.
- **Maintenance Recommendation:** Localized mill & overlay treatment for chainages with IRI > 4.5 m/km to restore surface evenness.

5.6 Pavement Evaluation by Test-Pit Survey

a) Introduction

Test-pit investigations and laboratory testing were carried out in **May 2023** along the Behrampur–Farakka section (NH-34) to assess the in-situ condition and material properties of the pavement crust, granular layers and subgrade. Sampling and testing included sieve analysis (percent passing), Atterberg limits, Modified Proctor (MDD/OMC), CBR (soaked), specific gravity, water absorption and aggregate impact value (where applicable). Results are used to validate design assumptions (CBR / layer composition) and to identify chainages requiring remedial strengthening.

b) Project Road / Coverage

Investigations covered representative test pits at identified chainages between **205+900** and **290+170** (both LHS & RHS where available). Test pits were selected across the corridor to capture variability in pavement composition and subgrade soils; coordinates are provided where recorded.

c) Methodology

- Test pits/excavations and sampling followed IS practice and project quality procedures.
- Laboratory tests followed IS:2720 series (sieve analysis, Atterberg limits, Modified Proctor, CBR), aggregate tests as per relevant IS codes and MoRTH guidelines.
- Results were correlated with chainage and geo-coordinates and tabulated for each test location. Any non-conformance to MoRTH/IRC gradation limits is recorded in the table.

d) Test-Pit Results and Analysis

The following chainage-wise test-pit results summarise the in-situ and laboratory findings from the May 2023 investigations. Test pits were excavated, samples collected and tested under IS:2720 procedures to characterise pavement crust, granular material and subgrade soils. The tables that follow present measured layer thicknesses, sieve analyses, Atterberg limits, Proctor/CBR results and other material properties that are required to validate structural capacity and determine localized strengthening needs.

5.6.1 Subgrade Layer Test Results

Below exhibit summarises the subgrade soil classification, particle size distribution, Atterberg limits, Proctor characteristics, field density and soaked CBR values measured at the test pits. These parameters determine the supporting stiffness and moisture sensitivity of the foundation. Pay particular attention to locations with high fines and low 4-day soaked CBR — such chainages typically require subgrade improvement (stabilisation or replacement) prior to any structural overlay.

Exhibit 29 Subgrade Layer Test Results Summary

S.No	Existing Road	Existing Chainage (Km.)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-Pt-IV)						Gravel content %	Sand content %	Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	NH-34	205+900	LHS	ML	100.0	97.6	94.2	93.1	90.7	89.2	5.8	5.0	89.2	27	NP	NP	1.89	10.3	1.70	9.0	6.0	8.3	89.9
2	NH-34	210+000	RHS	GM-GC	87.4	74.9	61.7	56.3	38.1	31.0	38.3	30.7	31.0	30	23	7	2.05	9.5	1.89	11.0	14.5	16.7	92.2
3	NH-34	215+000	LHS	SM	100.0	99.1	97.8	97.3	94.0	38.7	2.2	59.1	38.7	21	NP	NP	2.03	8.8	1.84	14.0	13.3	0.0	90.6
4	NH-34	220+000	RHS	SM	100.0	99.5	98.2	97.8	94.3	49.7	1.8	48.5	49.7	23	NP	NP	1.97	9.1	1.88	5.0	8.7	0.0	95.4
5	NH-34	224+400	LHS	CL	100.0	99.0	98.3	97.4	94.6	88.8	1.7	9.5	88.8	33	21	12	1.91	10.7	1.78	12.0	6.5	20.0	93.2
6	NH-34	231+980	RHS	ML	100.0	98.4	96.0	94.8	85.4	51.3	4.0	44.7	51.3	23	NP	NP	2.02	9.0	1.95	8.0	11.4	11.1	96.5
7	NH-34	235+000	LHS	ML	100.0	98.9	96.2	94.7	88.4	61.4	3.8	34.8	61.4	24	NP	NP	1.97	9.1	1.82	7.0	10.9	10.0	92.4
8	NH-34	240+000	RHS	ML	100.0	100.0	99.7	99.5	86.9	50.4	0.3	49.3	50.4	23	NP	NP	2.02	9.5	1.87	8.0	10.7	12.5	92.6
9	NH-34	245+000	LHS	SC	97.4	88.5	66.7	55.1	33.7	31.2	33.3	35.5	31.2	31	22	9	2.07	10.3	1.94	6.0	14.0	22.2	93.7
10	NH-34	251+550	RHS	SM	100.0	98.1	96.0	94.7	81.3	48.4	4.0	47.6	48.4	23	NP	NP	2.09	9.7	1.94	8.0	9.6	12.5	92.8
11	NH-34	254+000	LHS	SC	100.0	95.8	82.6	70.5	42.6	38.9	17.4	43.7	38.9	35	21	14	1.99	10.9	1.78	7.0	10.7	25.2	89.4

S.No	Existing Road	Existing Chainage (Km.)	Side (LHS / RHS)	Soil Classification as per IS: 1498	Gradation: Percent by weight passing through the Sieve (IS:2720-Pt-IV)						Gravel content %	Sand content %	Clay & silt content %	Atterberg Limits [IS :2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density		4-Days Soaked CBR at MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
					19.0 mm	10.0 mm	4.75 mm	2.0 mm	425 microns	75 microns				Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)	Max. dry density (gm/cc)	OMC (%)	Field Dry Density (gm/cc)	FMC (%)			
12	NH-34	261+900	RHS	CL	100.0	99.5	98.3	97.5	95.7	94.5	1.7	3.8	94.5	34	18	16	1.87	12.3	1.82	8.0	5.1	30.0	97.3
13	NH-34	264+800	LHS	CL	100.0	96.9	89.9	85.4	75.6	70.0	10.1	19.9	70.0	27	15	12	1.93	11.5	1.85	7.0	6.4	20.0	95.9
14	NH-34	270+200	RHS	SM	100.0	98.6	97.4	97.0	80.2	22.3	2.6	75.1	22.3	21	NP	NP	1.94	9.4	1.84	7.0	12.4	0.0	94.8
15	NH-34	274+700	LHS	CL	100.0	95.4	81.3	74.0	56.6	50.9	18.7	30.4	50.9	33	18	15	1.90	12.6	1.80	7.0	6.1	33.3	94.7
16	NH-34	280+750	RHS	CI	99.0	92.4	82.1	76.6	65.2	62.1	17.9	20.0	62.1	45	26	19	1.89	13.9	1.73	8.0	5.8	36.2	91.5
17	NH-34	284+700	LHS	ML	100.0	99.8	99.2	98.4	95.8	81.8	0.8	17.4	81.8	26	NP	NP	1.97	9.3	1.81	7.0	9.7	10.0	91.9
18	NH-34	290+170	RHS	SM	90.0	89.1	87.8	87.0	81.9	18.7	12.2	69.1	18.7	24	NP	NP	2.05	8.9	1.99	7.0	16.9	0.0	97.1

5.6.2

5.6.3 Granular Layer Test Results

Below exhibit presents the laboratory sieve analyses and related properties of granular materials recovered from WMM and GSB layers. Each row reports percent passing at standard IS sieve sizes, Atterberg limits where relevant, specific gravity, water absorption and aggregate impact values. Use this table to verify compliance with MoRTH gradation limits, identify coarse/fine biases and to assess whether existing granular layers will provide the designed support and compaction characteristics for overlays.

Exhibit 30 Granular Layer Test Results Summary

S.No	Chainage (km)	Side (LHS/ RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												Gradation Conformation as per MoRTH 5th Revision	Atterberg Limits			Specific Gravity	Water Absorption (%)	Aggregate Impact Value (%)
				75.0	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
1	205+900	LHS	WMM	100.0	100.0	100.0	73.1	60.3	24.1	21.5	10.9	8.3	5.1	4.6	2.9	Not confirming to WMM gradation	21	NP	NP	2.821	1.10	18.3
2	210+000	RHS	WMM	100.0	100.0	100.0	79.2	68.4	55.2	47.3	38.2	26.3	16.4	10.5	1.2	Confirming to WMM gradation	19	NP	NP	2.798	1.05	15.2
3	215+000	LHS	GSB	100.0	97.7	97.7	80.0	72.1	51.2	49.2	34.8	25.7	11.8	9.5	0.5	0.425mm IS sieve material coarser side in GSB grade-I and 53.0mm IS sieve material coarser side in GSB grade-IV	25	NP	NP	2.803	1.71	17.8
4	220+000	RHS	GSB	100.0	93.7	86.8	60.2	50.2	29.6	27.1	17.8	13.2	6.9	6.1	2.5	53.0mm IS sieve material coarser side in GSB grade-III & IV	22	NP	NP	2.723	1.87	16.2
5	224+400	LHS	WMM	100.0	100.0	100.0	96.4	82.3	59.4	46.1	24.7	18.3	10.5	7.3	2.2	22.4mm IS sieve material finer side and 4.75mm IS sieve material coarser	23	NP	NP	2.812	1.55	16.7
6	231+980	RHS	WMM	100.0	100.0	94.7	76.2	59.4	48.2	40.6	33.3	21.6	18.2	12.3	2.3	45.0mm, 22.4mm IS sieves material coarser side in	20	NP	NP	2.822	1.68	14.8
7	235+000	LHS	GSB	100.0	100.0	96.7	58.5	45.0	12.8	10.3	6.2	2.1	1.3	0.5	0.1	4.75mm IS sieve material coarser side in	21	NP	NP	2.794	1.83	16.7

S.No	Chainage (km)	Side (LHS/ RHS)	Type of Sample	Cumulative Percentage of Passing through IS Sieve (mm)												Gradation Conformation as per MoRTH 5th Revision	Atterberg Limits			Specific Gravity	Water Absorption (%)	Aggregate Impact Value (%)
				75.0	53.0	45.0	26.5	22.4	11.2	9.5	4.75	2.36	0.600	0.425	0.075		Liquid Limit (LL) %	Plastic Limit (PL) %	Plasticity Index (PI)			
																GSB grade-III & IV						
8	240+000	RHS	GSB	100.0	100.0	97.4	75.1	63.7	45.4	43.5	31.2	21.8	9.4	6.8	1.0	Confirming to GSB grade-IV	24	NP	NP	2.802	1.56	17.5
9	245+000	LHS	WMM	100.0	100.0	98.1	81.5	76.1	50.3	47.2	31.8	22.2	9.9	8.2	0.4	Confirming to WMM gradation	23	NP	NP	2.805	1.53	14.3
10	251+550	RHS	WMM	100.0	100.0	91.9	34.6	33.2	17.7	16.7	13.6	12.4	10.5	10.2	9.1	Not confirming to WMM gradation	23	NP	NP	2.754	1.85	16.2
11	254+000	LHS	GSB	100.0	100.0	100.0	76.2	65.4	51.3	42.7	31.4	26.2	20.5	16.2	2.3	Confirming to GSB grade-IV	20	NP	NP	2.778	1.45	16.3
12	261+900	RHS	GSB	100.0	100.0	98.7	78.3	70.7	49.6	47.9	36.3	24.7	12.8	11.1	6.2	0.075mm IS sieve material finer side in GSB grade-I	23	NP	NP	2.773	2.07	18.2
13	264+800	LHS	WMM	100.0	100.0	100.0	75.4	62.3	39.4	30.5	24.6	17.5	12.3	8.5	1.2	11.2mm, 4.75mm IS sieves material coarser side in WMM gradation	23	NP	NP	2.786	1.34	15.1
14	270+200	RHS	GSB	100.0	94.7	89.2	74.7	66.8	48.4	39.2	24.6	18.5	14.2	10.3	1.8	53.0mm IS sieve material coarser side in GSB grade-III & IV	19	NP	NP	2.783	1.85	16.7
15	274+700	LHS	GSB	100.0	100.0	100.0	49.2	40.5	35.2	30.6	23.8	17.6	12.7	7.6	2.1	26.5mm IS I & IV	20	NP	NP	2.781	1.67	15.5
16	280+750	RHS	GSB	100.0	100.0	100.0	66.3	59.7	46.3	25.1	9.6	7.3	5.4	3.2	1.6	4.75mm IS sieve material coarser side in GSB grade-III & IV	21	NP	NP	2.801	1.75	16.2
17	284+700	LHS	WMM	100.0	100.0	97.8	71.6	61.7	31.7	29.9	17.2	11.7	5.9	5.0	1.4	Not confirming to WMM gradation	22	NP	NP	2.765	1.73	18.0
18	290+170	RHS	WMM	100.0	100.0	100.0	88.0	76.4	48.3	45.7	30.4	19.4	7.7	6.9	3.1	0.600mm IS sieve material WMM gradation	20	NP	NP	2.793	1.29	16.5

5.6.4 Pavement Composition Layer Test Results

This exhibit lists the measured pavement layer thicknesses observed at each test pit (bituminous surfacing, DBM/BC equivalent, WMM and GSB). These field-measured crust values are intended to be cross-checked against design drawings and to reconcile any discrepancy between as-built crust and the crust assumed in pavement design or FWD back-calculation. The composition table is essential to determine if additional overlay thickness is required and to prioritise full-depth repair versus surface treatments.

Exhibit 31 Pavement Composition Layer Test Results Summary

S. No.	Location (Km.)	Side (LHS/ RHS)	CO-ORDINATES		Pavement Composition (mm)			
			LATITUDE	LONGITUDE	Bituminuous layer	WMM	GSB	Total Thickness
1	2	3	4	5	4	5	6	7
1	205+900	LHS	24°08'27.5"N	88°11'48.0"E	220	190	210	620
2	210+000	RHS	24°10'34.7"N	88°10'10.3"E	210	290	210	710
3	215+000	LHS	24°12'03.8"N	88°07'46.6"E	170	190	220	580
4	220+000	RHS	24°13'56.0"N	88°05'43.5"E	200	230	240	670
5	224+400	LHS	24°16'13.4"N	88°03'39.3"E	180	230	190	600
6	231+980	RHS	24°18'18.2"N	88°01'47.7"E	110	280	240	630
7	235+000	LHS	24°21'03.6"N	88°02'02.5"E	180	220	240	640
8	240+000	RHS	24°23'34.8"N	88°02'21.2"E	150	190	290	630
9	245+000	LHS	24°26'11.4"N	88°02'10.9"E	170	240	220	630
10	251+550	RHS	24°30'03.3"N	88°01'52.6"E	150	250	230	630
11	254+000	LHS	24°30'59.6"N	88°02'04.7"E	230	220	230	680
12	261+900	RHS	24°34'21.9"N	88°01'10.7"E	130	200	250	580
13	264+800	LHS	24°35'54.0"N	88°00'35.4"E	130	220	190	540
14	270+200	RHS	24°38'03.7"N	87°58'58.5"E	150	125	330	605
15	274+700	LHS	24°39'08.1"N	87°56'39.7"E	230	180	240	650
16	280+750	RHS	24°41'41.9"N	87°55'19.2"E	170	270	210	650
17	284+700	LHS	24°44'24.6"N	87°55'04.8"E	135	210	260	605
18	290+170	RHS	24°46'53.8"N	87°54'45.0"E	180	260	250	690

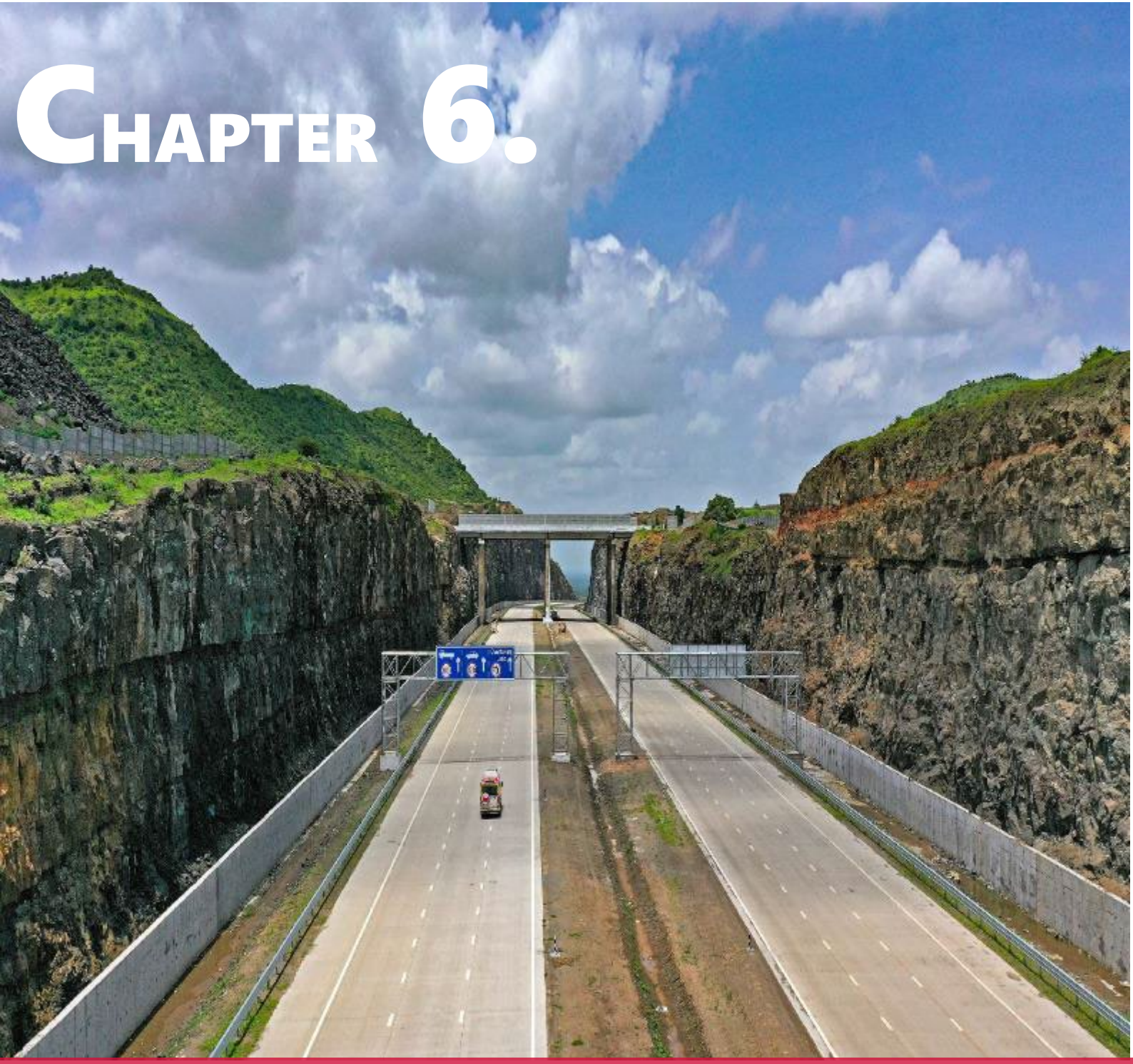
The combined interpretation of granular, pavement-composition and subgrade test data provide the material basis for the FWD and NSV observations; it enables chainage-wise diagnosis of distress mechanisms (e.g., structural weakness, poor gradation, moisture-sensitive subgrade) and supports targeted maintenance strategies rather than blanket treatment.

5.7 Major Maintenance of Pavement

All pavements require maintenance. Stresses from traffic, weather, and moisture change effects on the Surface. Regardless of the reason, without maintenance, pavement deteriorates at a fast pace. An asphalt pavement is an essential asset which must always be maintained. Allowing the pavement to have minor problems will grow into major ones. No road user likes to hit potholes or step into a puddle of water. Sun, rain, and wind age the pavement. Friction from tires rolling wears away the asphalt glues and line stripping. Sunlight oxidizes and draws all the essential oils which results in the pavement breaking away. Water enters the lower layers of the pavement through cracks damaging the foundation which leads to potholes and failure. The summary of required overlay thickness in LHS direction as per FWD (MCW)

Major Maintenance details discussed at **Chapter 6**

Chapter 6.



Cost Estimate

Chapter 6. COST ESTIMATE

Based on the assessment carried out in above chapters, various costs were worked out by Knight Frank. The costs are divided into following categories

- Routine Maintenance
- Major Maintenance Cost

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and Escalation.

6.1 Assumptions

The cost estimates are based on the following assumptions:

Following assumptions are considered for unit rates of various items while estimating the cost –

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard data book. The input rates for MoRTH standard data book were adopted as below
   a) **Manpower and labor** – As per applicable minimum wages published by Ministry of Labour & Employment, Government of India
   b) **Bitumen** – Bitumen rates are considered to be sourced from IOCL Haldia Refinery. The distance (to- from) from the midpoint of Project Highway is considered as 550 kms. VG-30 and VG-40 grades of bitumen are considered in our cost estimate.

☛ ***Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.***

Therefore, Bitumen prices are considered as per the client's forecast. Current published of bitumen are considered for unit rates calculation for FY26 and FY27. Average 10 years of price of bitumen are considered for unit rates calculation for FY28 and onwards, since bitumen prices have been range bound over the last five-six years.

c) **Sand and Aggregate** are sourced from the nearest quarry located on project highway.

d) **Cement** is procured from the nearest local market.

e) **Machinery Hire charges** of Plant and Machinery for various items of works have been considered from J&K SOR 2022 and some rates are considered from MORT&H Standard Data Book 2001-2002. Escalation has been considered on MORT&H Plant and Machinery rates to arrive at the present rates of 2024-25.

f) **Material Rates** are obtained from SOR of J&K, PWD 2021-22.

g) Some of the rates are based on Consultant's experience on similar ongoing projects in adjacent locations.

h) **Overheads and profits** have been considered based on MORT&H Standard Data Book. Applicable taxes have been considered in the Rate Analysis.

i) **Goods and Service Tax (GST)** is considered as 18% as per the latest Government Guidelines.

Exhibit 32: Adopted Unit Rates for Key items

S.nos	Items Description	Unit	Rates (₹)
1	Bituminous Concrete	Cum	10,210
2	DBM	Cum	9,220
3	Milling	Cum	100
4	Tack Coat	Sqm	15
5	Road Marking	Sqm	485
6	Earthen Shoulder	Cum	330
7	Kerb Raising	Rm	350
8	Kerb Painting	Sqm	130
9	Micro Surfacing	Sqm	165

- *The above unit rates are excluding GST.
- The unit rate of each item includes 10 % overhead for road works, 15 % overhead for structure works and 10 % contractor's profit.
- Details of components considered in rate analysis & quantification are presented in below **Exhibit 33.**

Exhibit 33: Major components detail for Key items

Sr. No.	Particular	Source	Reference
1	Rate Analysis	MORTH	Standard Data Books published by MORTH
2	**Material**		
A	Aggregate Rates	Nearby Project Corridor	As per Local Market Rates
B	ATMS, TMS cost		As per Vendor offer.
C	Cement	As provided in Local market	As per Local Market Rates
3	Equipment hire cost	Nearby project location	Standard Data Books published by MORTH
4	Labour	As per minimum wages	As per minimum wages

6.2 Routine Operation & Maintenance (O& M) Cost

Operations and Routine Maintenance work required as per the CA. During the concession period, the Concessionaire is fully responsible for Operation & Maintenance of Project Highway. Schedule K elaborates the requirements of various service factor desirable level and acceptable level during O & M period along with time if any parameter level of service beyond acceptable limit.

The CA Stipulates that the Concessionaire shall Operate and Maintain the Project Highway in accordance with Article 17 – Operation & Maintenance & Schedule –K Maintenance Requirements of Concession Agreement. The obligation of Concessionaire as per Article 17 is as follows:

- permitting safe, smooth, and uninterrupted flow of traffic on the Project Highway during normal operating conditions; collecting and appropriating the Fee.
- minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with the emergency services of the State.
- carrying out periodic preventive maintenance of the Project Highway.
- undertaking routine maintenance including prompt repairs too, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices.
- undertaking major maintenance such as replacement of panels in rigid pavement and associated activities
- preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the Project Highway
- preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Project Highway
- protection of the environment and provision of equipment and materials therefore
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media, and other agencies; and
- Complying with Safety Requirements in accordance with Article 18.

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operating cost. The estimates are projected based on best industry practices and are compared with the operation cost in the vicinity of the project area. Same has been divided into following major head

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS/HTMS/System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

6.2.1 O & M Strategy

Important Operations and maintenance work have been outsourced by the SPV. Details of important work orders outsourced are listed below **Exhibit 34**

Exhibit 34: Work outsourcing for Operations and Maintenance work.

Sn	Activity	Strategy
1	Routine Maintenance	In-house
2	Preventive Maintenance	In-house
3	Management and Supervision Staff	In-house
4	Security	Outsource
5	Corridor Management	Outsource

6.2.2 Routine Maintenance

Routine and Preventive maintenance encompasses work that is performed in reaction to an event, season, or overall deterioration of the transportation asset. This work requires regularity and reoccurring in nature. Routine and Preventive Maintenance is essential to maintain the condition of the highway asset or to respond to specific conditions or events that restore the highway system to a functional state of operation.

Total Routine Maintenance cost estimated by Knight Frank is ₹52.53 Crore for the balance concession period of 17 years. The routine and preventive maintenance covers maintenance of the following assets:

- Cleaning of Main Carriageway, service road, bridge deck
- Pruning of median plantation, watering
- Maintenance of Avenue Plantation
- Cleaning of debris from carriageway and shoulder
- Plantation and Landscaping
- ROW Cleaning
- Cleaning of all road asset, Toll Plaza
- Tunnel, MEP & Slope Protection

The average cost for Routine Maintenance is ₹25,450/ km/ month including GST. Based on our previous projects experience & based on the thumb rule method routine maintenance costs are reasonable.

Exhibit 35: Routine Maintenance Cost

Sr. No.	Item Description	As per Knight Frank	Remarks
1)	Routine Maintenance Cost (₹-Crore) (17 Years Concession Period)	52.23	
2)	Routine Maintenance Cost Per Year (₹-Crore)	3.07	
3)	Routine Maintenance Cost Per Km/Year (₹-Lakh)	3.05	

Above cost is including of GST

6.2.3 Preventive Maintenance

Total Preventive maintenance cost considered is ₹32.52 Crore for balance concession period of 17 years & following items considered for preventive maintenance work:

- Repair cost of pavement as and when pavement distress occurred.
- Repair of road Kerb, crash barrier, metal beam crash barrier and guard rail
- Repair of faded road marking
- Fixing of damaged sign boards, KM stones
- Shoulder maintenance
- Repair and maintenance of structure – bearing, expansion joint.
- Repair of crossroad junction
- Maintenance of Truck lay-bys

Average cost considered for Preventive Maintenance is ₹ 15,847/km/ month including GST. Based on our previous projects' experience & based on thumb rule method, preventive maintenance cost is reasonable.

Exhibit 36: Preventive maintenance Cost

Sr. No.	Item Description	As per KF	Remarks
1	Preventive Maintenance Cost (₹-Crore) (17 Years Concession Period)	32.52	
2	Preventive Maintenance Cost Per Year (₹-Crore)	1.91	
3	Preventive Maintenance Cost Per Km/Year (₹-Lakh)	1.90	

Above cost is including of GST

6.3 Highway Lighting

Electricity charge and maintenance cost of highway lighting is calculated as follows:

a) Each lighting post has counted from site and consider having LED light will be operated for 12 hours a day round the year.
b) Lighting post at median / separator are having with two halogen/LED lamp and service road shall be with single lamp only.
c) Tunnel & MEP OPEX

The O & M Cost estimated towards highway lighting is ₹2.07 Crore per year including GST.

6.4 Corridor Management

The following equipment along with operation manpower is required to provide as per Concession agreement.

a) 2 nos. of Crane
b) 4 nos. of route patrol vehicle
c) 2 nos. of Ambulance

O & M Cost estimated towards incident management with operation manpower is ₹1.07 Crore per year including GST.

6.5 Manpower Cost

The requirement of manpower is worked out to function all activity at project road for compliance of CA requirement, toll collection and security of asset. Requirement of manpower is classified into following broad division:

a) Management, Administration/HR and Supervision Staff: in-house manpower (**Cost considered towards SPV Manpower is ₹56 Lakh per year)**
b) Toll Operation Manpower: outsource/In-house for providing 24-hour uninterrupted traffic flow at toll plaza and collection of tolls. Due to Nationwide implementation of Hybrid-ETC System, it is expected drop in toll collection manpower. However, where collection of overloading is expected, manpower for toll collection is not possible at this stage. The company is expecting revenue from overloading in this asset therefore curtailment of toll collectors is not expected. (**Cost considered towards SPV 3rd Party Manpower is ₹5.51 crore per year)**

The cost of manpower is estimated as ₹5.56 crore per year.

6.6 Office Expenses

Cost towards operation of office, insurance premium, professional fees for carrying out traffic, asset condition survey etc., IE fees, AMC for equipment installed at office, communication charge, conveyance cost etc. are considered under Office Expenses. **The cost considered regarding office expenses & operation are ₹5.16 crore per year which is bifurcated as follows.**

- ***₹2.59 crore per year for Independent Engineer (IE)/Authority Engineer (AE) and professional fees covering legal, arbitration, and audit certification during the O&M period***
- ***Actual cost of insurance policy: ₹1.36 crore per year (inclusive of 18% GST)***
- ***Survey and investigation charges: ₹0.23 crore per year (inclusive of 18% GST)***

6.7 Major Maintenance

As mentioned in earlier chapter, Currently, the Project Highway is maintained by existing Annuity Concessionaire.

Based on RI & FWD Test results, SPV team made 03 MM cycles for the overlay of projects. Following items were considered during each MM cycle based on the ground requirements.

A. Flexible Pavement

- Overlay of 30-40 mm BC on MCW based on ground conditions and Test results.
- Overlay of 30 mm BC on service road considered.

6.8 Major Maintenance items

Based on detailed highway inventory carried out during site investigation and data provided by the concessionaire following items considered during major maintenance work

- Bituminous concrete for MCW using VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Bituminous concrete for Service Road using VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Micro surfacing
- Road Marking
- Kerb Raising
- Earthen Shoulder
- Kerb Painting

6.9 Major Maintenance Cycles & Cost

Major maintenance works to be considered in 03 cycles up to FY2041. A total Cost of ₹395.36 crore (Without Escalation) considered for major maintenance work Upto end of Concession period. Major maintenance Strategy is shown in **Exhibit 37. Detailed Cost Estimate attached as Annexure A.**

Exhibit 37: Major Maintenance Cycles & Cost (with GST)

Major Maintenance Strategy & Cost Details for BFHL Project				
Cycle	**Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle 1	**FY 2031**	**A) Main Carriageway:** 50% 30mm BC Overlay with VG 40 50% 40mm BC Overlay with VG 40 65% 50mm DBM Rehabilitation with VG 40	175.65	
MM Cycle 2	**FY 2037**	**A) Main Carriageway:** 100% 40mm BC Overlay with VG 40 10% 50mm DBM Rehabilitation with VG40 Kerb raising -100%	136.11	
MM Cycle 3	**FY 2041**	**A) Main Carriageway:** 100% 30mm BC Overlay with VG 40 10% 50mm DBM Rehabilitation with VG40	83.60	
Total MMR Cost (₹-Crore) with GST			**395.36**	

*** Above cost is without escalation.**

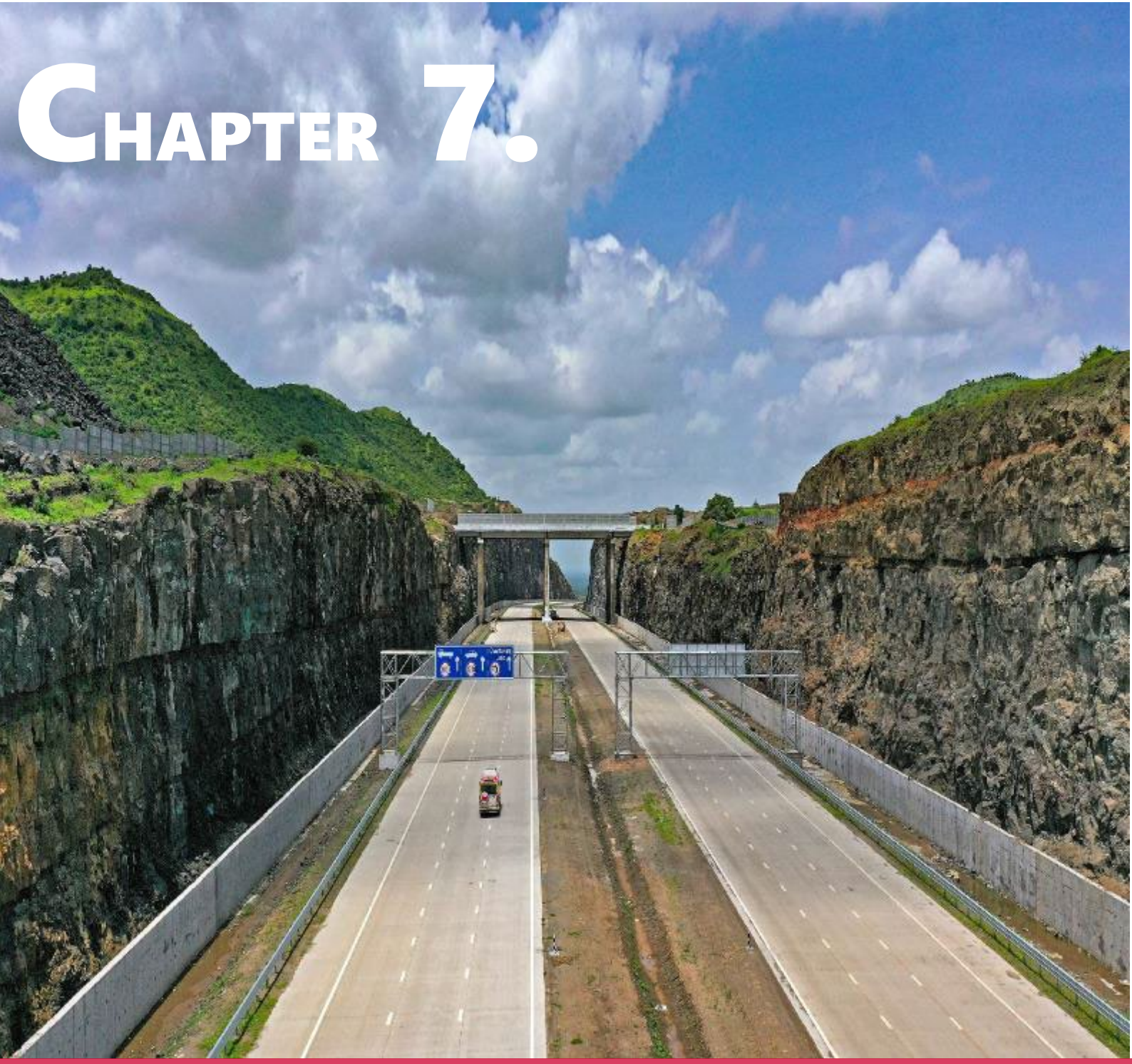
6.10 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period as below.

Exhibit 38: Summary O & M Cost for Remaining Concession Period

Summary of Cost (₹-Crore)																		
S.nos	**Type/Year of Expenses**	**FY 2025***	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**	**FY 2034**	**FY 2035**	**FY 2036**	**FY 2037**	**FY 2038**	**FY 2039**	**FY 2040**	**FY 2041**	**Total Cost**
1	**Routine O & M Cost**																		
1.01	**Preventive Maintenance**	0.46	1.51	1.72	1.53	1.63	1.59	1.70	1.94	1.94	2.11	2.34	2.34	2.34	2.34	2.34	2.34	2.34	**32.52**
1.02	**Routine Maintenance**	1.05	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	**52.23**
1.03	**Highway Lighting**	0.68	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	**33.81**
1.04	**Corridor Management**	0.35	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	**17.58**
1.05	**AMC cost Toll Plaza**	0.19	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	**9.33**
1.06	**SPV Manpower Cost+OH**	2.00	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	**99.41**
1.07	**Transportation Cost**	0.08	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	**3.85**
1.08	**Other Office Operation Cost**	1.70	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	**84.35**
1.09	**Sub Total of O & M Cost**	**6.51**	**19.92**	**20.13**	**19.94**	**20.04**	**19.99**	**20.11**	**20.35**	**20.35**	**20.52**	**20.75**	**20.75**	**20.75**	**20.75**	**20.75**	**20.75**	**20.75**	**333.09**
2	**Major Maintenance Cost**	0.00	0.00	0.00	0.00	0.00	0.00	**175.65**	0.00	0.00	0.00	0.00	0.00	**136.11**	0.00	0.00	0.00	**83.60**	**395.36**
3	Periodic Cost of TMS/HTMS Replacement	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Total Cost	**6.51**	**19.92**	**20.13**	**19.94**	**20.04**	**19.99**	**195.76**	**20.35**	**20.35**	**20.52**	**20.75**	**20.75**	**156.86**	**20.75**	**20.75**	**20.75**	**104.35**	**728.45**

Chapter 7.



Project Photographs

Chapter 7. PROJECT PHOTOGRAPHS

Chandermore Toll Plaza

Shibpur Toll Plaza

Chandermore Toll Plaza

Main Carriageway

Main Carriageway

ROB

Toll Approach Road

Concrete Crash Barrier

Anti-Glare Device in Median

Berhampore Bypass

Annexure- A

(Major Maintenance Cost)

Major Maintenance Strategy & Cost Details for BFHL Project				
Cycle	**Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle 1	**FY31**	**A) Main Carriageway:** 50% 30mm BC Overlay with PMB 50% 40mm BC Overlay with PMB 65% 50mm DBM Rehabilitation with PMB	175.65	
MM Cycle 2	**FY37**	**A) Main Carriageway:** 100% 40mm BC Overlay with PMB 10% 50mm DBM Rehabilitation with PMB Kerb raising -100%	136.11	
MM Cycle 3	**FY41**	**A) Main Carriageway:** 100% 30mm BC Overlay with VG 40 10% 50mm DBM Rehabilitation with VG40	83.60	
Total MMR Cost (₹-Crore) with GST			**395.36**	

A. Periodic Maintenance Cycle -01 (FY2031)						
S.no	**Description**	**Unit**	**Quantity**	**Rate**	**Amount (₹-Lakh)**	**Remarks**
A)	**Flexible Pavement (Main Carriageway)**					
1	Overlay (BC)	Cum	65,010	11,742	7,633	50% 30mm BC Overlay with PMB 50% 40mm BC Overlay with PMB
2	Tack Coat	Sqm	25,65,039	15	385	
3	DBM Rehabilitation	Cum	45,994	10,603	4,877	50mm DBM Rehabilitation 65% PMB
4	Milling	Sqm	9,19,876	100	920	Milling at structure & DBM location
5	Road Marking	Sqm	71,981	485	349	100%
6	Earthen Shoulder	Cum	11,796	330	39	50% Considered
7	Kerb Painting	Sqm	73,722	130	96	100%
8	Road Studs	Nos	78,637	195	153	100% considered
9	Kerb raising	Rm	0	350	0	
Total Flexible Cost (MCW)					**14,452**	
Total Periodic Maintenance Cost					**14,452**	
Contigencies (3%)					**3.0%**	
Total Periodic Maintenance Cost (₹-Lakh)					**14,885**	
Total Periodic Maintenance Cost (₹-Crore)					**148.85**	
Total Periodic Maintenance Cost (₹-Crore) with GST					**175.65**	

B. Periodic Maintenance Cycle -02 (FY 2037)						
S.no	**Description**	**Unit**	**Quantity**	**Rate**	**Amount (₹-Lakh)**	**Remarks**
A)	**Flexible Pavement (Main Carriageway)**					
1	Overlay (BC)	Cum	74,298	11,742	8,724	100% 40mm BC Overlay with PMB
2	Tack Coat	Sqm	19,92,537	15	299	
3	DBM Rehabilitation	Cum	6,755	10,603	716	10% 50mm DBM Rehabilitation with PMB
4	Milling	Sqm	1,35,095	100	135	Milling at structure & DBM location
5	Road Marking	Sqm	71,981	485	349	100% considered
6	Earthen Shoulder	Cum	11,796	330	39	50% Considered
7	Kerb Painting	Sqm	73,722	130	96	100% considered
8	Road Studs	Nos	78,637	195	153	100% considered
9	Kerb raising	Rm	1,96,593	350	688	100% considered
Total Flexible Cost (MCW)					**11,199**	
Total Periodic Maintenance Cost					**11,199**	
Contigencies (3%)					**3.0%**	
Total Periodic Maintenance Cost (₹-Lakh)					**11,535**	
Total Periodic Maintenance Cost (₹-Crore)					**115.35**	
Total Periodic Maintenance Cost (₹-Crore) with GST					**136.11**	

C. Periodic Maintenance Cycle -03 (FY 2041)						
S.no	**Description**	**Unit**	**Quantity**	**Rate**	**Amount (₹-Lakh)**	**Remarks**
A)	**Flexible Pavement (Main Carriageway)**					
1	Overlay (BC)	Cum	55,723	9,393	5,234	100% 30mm BC Overlay with VG 40
2	Tack Coat	Sqm	19,92,537	15	299	
3	DBM Rehabilitation	Cum	6,755	8,482	573	10% 50mm DBM Rehabilitation with VG40
4	Milling	Sqm	1,35,095	100	135	Milling at structure & DBM location
5	Road Marking	Sqm	71,981	485	349	100% considered
6	Earthen Shoulder	Cum	11,796	330	39	50% Considered
7	Kerb Painting	Sqm	73,722	130	96	100% considered
8	Road Studs	Nos	78,637	195	153	100% considered
9	Kerb raising	Rm	0	350	0	
Total Flexible Cost (MCW)					**6,878**	
Total Periodic Maintenance Cost					**6,878**	
Contigencies (3%)					**3.0%**	
Total Periodic Maintenance Cost (₹-Lakh)					**7,085**	
Total Periodic Maintenance Cost (₹-Crore)					**70.85**	
Total Periodic Maintenance Cost (₹-Crore) with GST					**83.60**	

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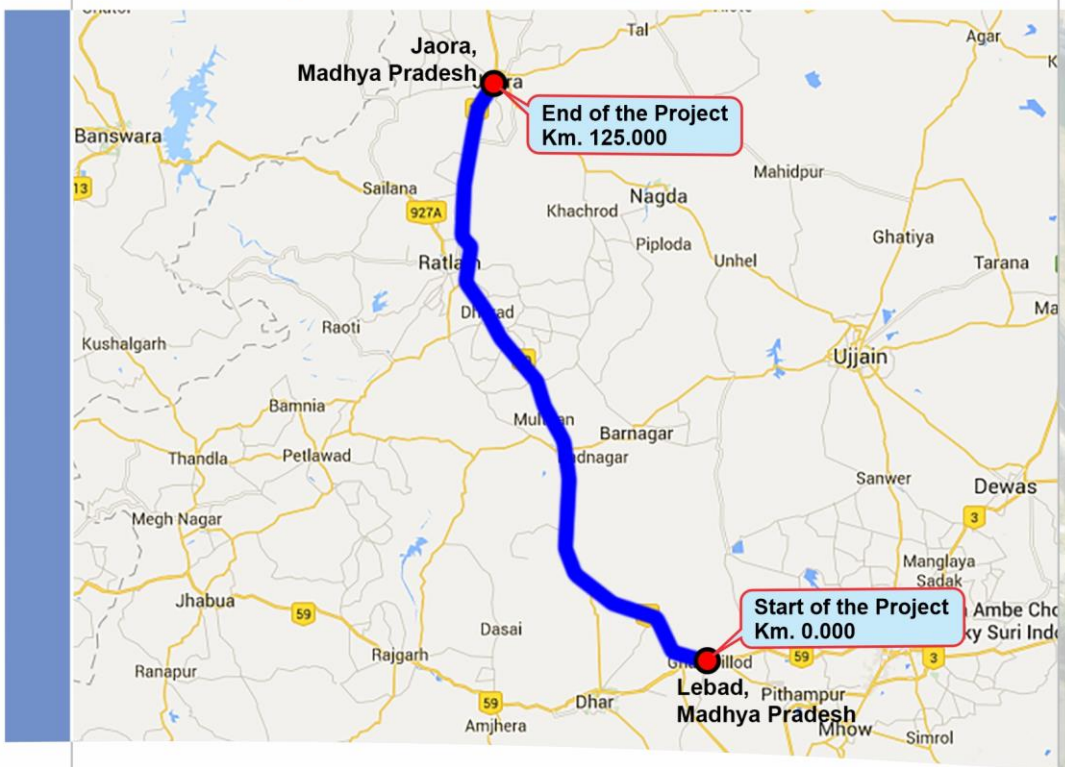

Technical Due Diligence of Lebad-Jaora Road Project (SH-31) from Km. 0+000 to Km. 125+000 in the State of Madhya Pradesh on BOT Basis

Final Report

January 2026

Submitted to:

CUBE HIGHWAYS
FUND ADVISORS
(Investment Manager of the Cube Highways Trust)

Submitted by:

FP Project Management
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R0	Final Report	02-Jan-2026	STP / VKS	RMW	SMA

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Scope of Work 1
1.3 Our Approach Philosophy 2
1.3.1 Composition of Team 2
1.3.2 Site Visit and Data Collection 2
1.3.3 Data Analysis 3
1.4 Structure of the Report 3
2 Project Description 4
2.1 Introduction 4
2.2 Location 4
2.3 Climate 5
2.4 Terrain 5
2.5 Abutting Land Use 5
2.6 Right of Way 6
2.7 Existing Utilities 6
2.8 Development as per Schedule-B 6
3 Condition Assessment of Project Road 7
3.1 Pavement 7
3.1.1 Pavement Condition Survey 7
3.2 Service Road / Slip Road 9
3.3 Major / Minor Junctions 9
3.4 Condition Survey of Structure 11
3.4.1 Major Bridge 12
3.4.2 Rail Over Bridge 13
3.4.3 Minor Bridge 15
3.4.4 Underpass 20
3.5 Condition Survey of Culverts 21
3.6 Drainage 23
3.7 Slope Protection 23
3.8 Road Furniture 23
3.9 Avenue Plantation and Median Plantation 29
3.10 Toll Plaza 30
3.10.1 Lane Equipment 31
3.10.2 RFID ETC Transceiver 32
3.10.3 Lane Controller with Industrial PC 32

3.10.4 Automatic Vehicle Classification (AVC) Sensors 33
3.10.5 Automatic Lane Barrier 33
3.10.6 Lane Traffic Light (LTL) and User Fare Display (UFD) 33
3.10.7 Incident Capture Camera (AVC Camera) 34
3.10.8 License Plate Image Capture Camera (LPIC) 34
3.10.9 Over Head Lane Signal (OHLS) 34
3.10.10 Toll Booth Equipment 35
3.11 Plaza Equipment 36
3.11.1 TMS Server 36
3.11.2 55" LED screen for CCTV monitoring 36
3.11.3 Workstations in Control Room, POS room 37
3.12 Administrative, Operation and Maintenance Base Camp 37
3.13 Truck Lay-bye 38
3.14 Toilet Block 39
3.15 Bus Bays and Passenger Shelters 40
3.16 Balance Work Status 40
3.17 Operation and Maintenance 41
3.17.1 O&M Contract 41
3.17.2 Operation 41
3.17.3 Routine Maintenance 41
4 Pavement Investigation and Assessment 42
4.1 General 42
4.2 Axle Load and VDF 42
4.3 Design Traffic 42
4.4 Network Survey Vehicles (NSV) Survey 43
4.5 Structural Investigations 43
4.6 Ongoing Major Maintenance 43
4.7 Periodic Maintenance Strategy 45
5 Cost Estimates 47
5.1 General 47
5.2 Rate Assumption 47
5.3 Balance Works Cost 48
5.4 Routine O&M Cost 48
5.5 Major Maintenance Cost 50
5.6 Periodic Replacement of TMS / ATMS System 50
5.7 Escalation Assumption 50
5.8 Summary of Cost 51

Annexures 53
Annexure-I Routine Maintenance Cost 54
Annexure-II Major Maintenance Cost 59

List of Tables

Table 2-1 Details of Scope of Work 6
Table 3-1 Details of Summary for Structures 11
Table 3-2 Condition Survey of Major Bridges 12
Table 3-3 Condition Survey of Rail Over Bridge (ROB) 13
Table 3-4 Condition Survey of Minor Bridges 15
Table 3-5 Condition Survey of Underpass 20
Table 3-6 Details of Summary for Toll Plaza Items 30
Table 3-7 Details of Truck Lay-bye 38
Table 4-1 Vehicle Damage Factor (VDF) 42
Table 4-2 MSA Calculation 42
Table 4-3 Major Maintenance Cycle 46
Table 5-1 Bitumen Rates - Ex- MI Supply excluding discount and GST 47
Table 5-2 Summary of Unit Rates 48
Table 5-3 Summary of Operation Cost 49
Table 5-4 Escalation 50

List of Figures

Figure 2-1 Location Map 5
Figure 2-2 Start & End of Project Road 5
Figure 3-1 Photographs of Pavement Condition (MCW) 7
Figure 3-2 Photographs of Service Road 9
Figure 3-3 Photographs of Major Junctions 10
Figure 3-4 Photographs of Minor Junctions 10
Figure 3-5 Photographs of Major Bridge 12
Figure 3-6 Photographs of Rail Over Bridge (ROB) 14
Figure 3-7 Photographs of Minor Bridges 17
Figure 3-8 Photographs of Underpasses 21
Figure 3-9 Photographs of Culverts 22
Figure 3-10 Photographs of Drainage 23
Figure 3-11 Photographs of Slope Protection and Chute Drain 23
Figure 3-12 Photographs of Pavement Marking 24
Figure 3-13 Photographs of Road Studs 25
Figure 3-14 Photographs of Traffic Signages 25
Figure 3-15 Photographs of Street Light 27
Figure 3-16 Photographs of MBCB / RCC Crash Barrier 27
Figure 3-17 Photographs of Delineators 28
Figure 3-18 Photographs of Pedestrian Guard Rail 28
Figure 3-19 Photographs of Road Land Boundary 29
Figure 3-20 Photographs of Avenue Plantation and Median Plantation 30
Figure 3-21 Photographs of Toll Plaza 31
Figure 3-22 Photographs of O&M Centre, Admin Building 37
Figure 3-23 Photographs of Truck Lay-Bye 39
Figure 3-24 Photographs of Toilet Block 40
Figure 3-25 Photographs of Bus Bays 40

Figure 4-1 Photographs of Pavement Condition before rectification 44
Figure 4-2 Photographs of Pavement Condition after rectification 45

1 INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt. Ltd. (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InVIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an Infrastructure Investment Trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt. Ltd. has appointed **M/s. FP Project Management Consultancy Services Private Limited** (hereinafter referred as "Technical Consultant" or "FPPM") to carry out Technical Due Diligence of 4-Laning of Lebad-Jaora Section of SH-31 from km.0+000 to km.124+150, in the State of Madhya Pradesh. (hereinafter referred as "Project Road"). The project road has been developed on Build, Operate and Transfer (BOT) basis.

M/s. Western MP Infrastructure and Toll Roads Pvt. Ltd. (hereinafter referred as "Concessionaire") is a special purpose vehicle (SPV) for tolling, operation, maintenance, and transfer of Lebad-Jaora Section of SH-31 (from km. 0+000 to km.124+150) on BOT Basis. The project was awarded to Concessionaire on 10th July 2007 with a concession period of 25 years including construction period by Authority (MPRDC). The length of project road is 124.150 km with two toll plazas at km. 41+500 and at km. 79+000.

The Appointed Date of the project was 25th February 2008. The Concession Period of the Project Road is 25 years commencing from the Appointed Date including a construction period. The project has received Final Completion Certificate on 30th October 2010 for Homogeneous Section-I (km. 0+000 to km. 66+250) and on 29th August 2011 for Homogeneous Section-II (km. 66+250 to km. 124+150) by completing all the works as mentioned in the Technical Schedules of Concession Agreement. Due to the demonetization, Covid-19 and variation in traffic growth, the concession period is extended upto 27th April 2038.

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and field investigations. Same is presented in this report.

1.2 Scope of Work

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below:

- A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets
- Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, As-built drawings, O&M manual, COD / PCOD certificate, punch list, previous major maintenance etc.
- Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, axle load, material investigations etc.
- Formulation of future major maintenance strategy
- Estimation of any initial expenses to be incurred due to deficiencies observed in diligence
- Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period

- Estimation of Annual Operation expenses along with Systems cost (TMS / HTMS) till the end of concession period
- Review of balance work cost for project road including estimation of quantities and item rates (if any).

1.3 Our Approach Philosophy

1.3.1 Composition of Team

Our team consists of well-qualified Engineers and other professionals, whose experience covers all the skills and specializations required for undertaking such assignments. All the team personnel proposed are our regular employees and have a long and stable working relationship with our firm.

The Team Leader coordinates the activities between all the key staff who work closely together. The key staff is assisted by various support staff, who report to the respective key staff in their field of expertise. The Team Leader is the point of contact for Client on Technical Study.

The technical study includes review of all the available documents namely:

a) Concession Agreement including Technical Schedules
b) O&M Contract, work order and their provisions
c) Quality of construction based on available data, design, and drawings
d) Documents on historical expenditure on operation and maintenance
e) O&M cost schedule for the concession period
f) Review of Completion / Provisional Completion along with punch list items
g) Review of recent pavement surveys conducted
h) Correspondence regarding scope of works and during O&M
i) Recent O&M Report submitted to Authority
j) Toll operation manual / ATMS related documents

The review of above documents is the first step towards accomplishment of the task. This gives a complete idea of the project and is used as input data for preparation of report after necessary analysis.

1.3.2 Site Visit and Data Collection

A team of experts from various streams has carried out the preliminary site visit to understand the assessment of project assets mainly condition of the pavement and structures.

- The site visit is undertaken for detailed reconnaissance and visual pavement condition assessment.
- The condition assessment of major structures by visual inspection
- The information like material sources and the probable cost is collected for the purpose of cost estimate.

The detailed design / drawings viz. Plan & L-sections, drainage design, structure design, layout drawings for project facilities like toll plaza, bus bay, truck lay-byes, highway lighting facilities etc. are studied. Also, design / drawing and provision pertaining to road furniture are studied.

The information on availability of material in the vicinity is gathered. It has direct impact on cost of maintenance work and balance work.

The basic approach for preparation of cost estimates for operation and maintenance is as per the practice of State PWD / MORT&H in respect of highways and structures.

1.3.3 Data Analysis

Based on the study of the available information and preliminary site visits, the consultants share their preliminary observations with the Client based on the evaluation of the technical data and reports provided by the Client.

1.4 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

The site visit and inspection were carried out between the periods from **7th October 2025 to 10th October 2025**.

The report is organized with the following chapters for easy understandings of various issues.

Chapter 1 **Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies.

Chapter 2 **Project Description:** The chapter describes existing project features, overview of project development.

Chapter 3 **Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit.

Chapter 4 **Pavement Investigation and Assessment:** The chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance.

Chapter 5 **Cost Estimates:** The chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period.

2 PROJECT DESCRIPTION

2.1 Introduction

Madhya Pradesh Road Development Corporation (MPRDC) signed the Concession Agreement with **M/s Western MP Infrastructure and Toll Roads Pvt. Ltd.**, a company promoted by **ESSEL Infra Projects Limited** or a Special Purpose Vehicle (SPV) formed for implementing the project on 30th August 2007. The Appointed date of the Project Road was set as 18th March 2008. Subsequently, the project was acquired by Cube Highways and Infrastructure V Pvt. Ltd. (CH-V) from ESSEL Infra Projects Limited.

The project has been developed through BOT basis with concession period of 25 years from the Appointed date including construction period of 2 years. The Concessionaire received Provisional Completion Certificate for Homogenous section-I (From km.0+000 to km.66+250) on 24th November 2009 and completion certificate on 30th October 2010 and for Homogeneous section-II (From km.66+250 to km.124+150) Concessionaire received provisional Completion certificate on 4th June 2011 and Completion Certificate on 29th August 2011. The Project Road is currently under Operation and Maintenance stage.

2.2 Location

The Lebad Jaora Road (SH-31) starts from junction point with NH-59 near Lebad village (Design Chainage km. 0+000) and after traversing though Western part of Madhya Pradesh terminates at Jaora (Design Chainage km.124+150). The total project length is 124.150 kms.

The Location Map of the Project Road is presented below:

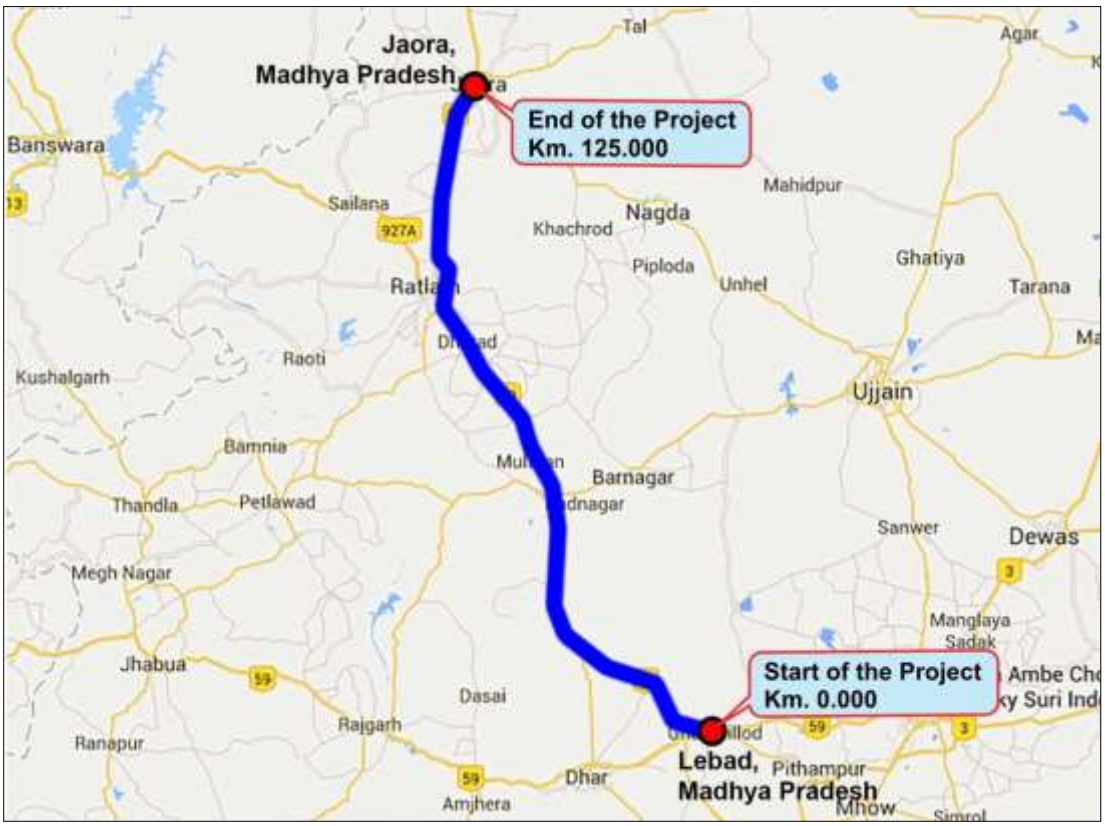


Figure 2-1 Location Map

The photographs taken during the site visit are presented below.

Figure 2-2 Start & End of Project Road

Start of Project at km. 0+000

End of Project at km.124+150

End of Project Road at km.124+150

2.3 Climate

The Project area has a subtropical climate with three main seasons: a warm, dry winter from mid-November to February, a hot, dry summer from March to May with May being the hottest month, and a rainy monsoon season from June to October. May can reach temperatures around 40°C, while winter temperatures range from roughly 10-25°C.

2.4 Terrain

This section of National Highway traverses through plain terrain.

2.5 Abutting Land Use

The project road traverses through a combination of inhabited areas and agricultural lands.

2.6 Right of Way

The width of existing Right of Way (RoW) for the Project Road varies from 32 m to 35 m.

2.7 Existing Utilities

During widening of the Project Road, various affected utility services located along the Project Road were shifted to the PROW. The different types of utilities found along the road include, electrical poles, telephone poles, OFC Cables, etc.

2.8 Development as per Schedule-B

The Project Road from Lebad (km. 00+000) to Jaora (km.124+150) has been developed as a four-lane divided carriageway with median width varying between 1.5 m to 4.5 m, service road and other arrangements. The Project Road passes through rural as well as built-up sections.

As per Article 2 of Concession Agreement, the scope of project defined in Schedule-A and Schedule-B, (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

a) Construction of the project on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of project facilities as specified in Schedule-C and in conformity with the Specification and Standards set forth in Schedule-D.

b) Tolling, operation, management, maintenance, and transfer of the Project Road subject to and in accordance with the provisions of this Agreement.

c) Performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

Following is the Scope of Work as per Schedule-B of Concession Agreement.

Table 2-1 Details of Scope of Work

Sr. No.	Type of Structure	Unit	Scope	Remark
1	Construction and O&M of Main Carriageway	km.	124.150	
2	Construction of Service Road	km.	14.840	each Side
3	Major Bridge	Nos.	02	
4	Minor Bridge	Nos.	34	
5	Pipe Culvert	Nos.	124	
6	Slab/Box/arch Culvert	Nos.	61	
8	Underpasses	Nos.	06	
9	Rail Over Bridge	Nos	03	

3 CONDITION ASSESSMENT OF PROJECT ROAD

3.1 Pavement

The Project Road is four lane divided carriageway and generally has paved carriageway of 8.75 m with earthen shoulder of 1.0 m on either side. The project road has median width of 4.5 m and 1.5 m throughout its length.
The entire stretch of Project Road including service road is constructed with flexible pavement. The pavement type for the Toll Plaza is rigid pavement.

3.1.1 Pavement Condition Survey

Pavement condition survey was carried out from **7th October 2025 to 10th October 2025**. through visual inspection for the entire project length. From the visual inspection, it is found that the average pavement condition of the Project Road is found to be Good.

Some of the photographs taken during the site visit are presented as below.

Figure 3-1 Photographs of Pavement Condition (MCW)

Pavement Condition at km. 7+000 (RHS)

Pavement Condition at km. 11+000 (LHS)

Pavement Condition at km. 35+000 (LHS)

Pavement Condition at km. 62+000 (RHS)

Pavement Condition at km. 80+000 (RHS)

Pavement Condition at km. 100+000 (LHS)

Miling and repairing work is progress for BC overlay at km. 105+000 (RHS)

Pavement Condition at km. 111+000 (LHS)

Pavement Condition at km. 115+000 (LHS)

Pavement Condition at km. 119+000 (RHS)

3.2 Service Road / Slip Road

The service road of width 5.5 m is constructed in built-up area and adjoining underpass locations. The Project Road has total service road length of 14.840 km. The photographs taken during the site visit are presented below.

Figure 3-2 Photographs of Service Road

Service Road at km. 0+000

Service Road at km. 83+100

Service Road at km. 51+750

Service Road at km. 67+200

3.3 Major / Minor Junctions

There are 8 Nos. of Major junctions and 56 Nos. of Minor junctions along Project Road.

The photographs taken during site visit is presented as below:

Figure 3-3 Photographs of Major Junctions

Major Junction at km. 1+000

Major Junction at km. 98+000

Figure 3-4 Photographs of Minor Junctions

Y-Junction at km. 105+000

T-Junction at km. 29+200 LHS

Junction at km. 60+100

Junction at km. 11+200 LHS

3.4 Condition Survey of Structure

The inventory of structures including major bridges, minor bridges, ROB's, underpasses and culverts is presented in table as below:

Table 3-1 Details of Summary for Structures

Type of Structure	Total Number of Structures
Major Structures:	
Road Over Bridge (ROB)	03
Grade Separator	00
Major Bridges (MJB)	02
Minor Bridges (MNB)	34
Underpass (UP)	06
Culverts:	
Pipe Culverts	124
Slab/Box Culverts	61
Total	**185**

The detailed condition survey of structures was carried out by visual inspection. The observations and findings are presented in table below:

3.4.1 Major Bridge

Table 3-2 Condition Survey of Major Bridges

Sr. No.	Chainage	Span Arrangement (no. x m)	Total Width (m)	Type of Structures	FPPM Remarks
1	11.000	7x10.40	7.15 + 7.50	RCC Box	The overall structural condition of the bridge is very good. Expansion joints, pavement, footpath is well maintained. Vegetation present on return wall need to be removed.
2	25.900	5x13.60	7.10 + 7.50	RCC Box	Major bridge is in sound condition. Minor scouring is observed in the foundation. Pavement, expansion joints, footpath is in good condition.

Figure 3-5 Photographs of Major Bridge

View of MJB at km. 25+900

Pavement condition of MJB

Sub-structure condition of MJB

Abutment condition of MJB at km. 25+900

View of MJB at km. 11+000

Pavement condition of MJB

Abutment condition of MJB at km. 11+000

Sub-structure condition of MJB

3.4.2 Rail Over Bridge

Table 3-3 Condition Survey of Rail Over Bridge (ROB)

Sr. No.	Chainage	Location	Span Arrangement	FPPM Remarks
1	91+620	Ratlam	18.00+36.00+18.00	Overall structure is in good condition. Settlement of the RE Wall at A1 RHS side needs to be rectified.
2	96+875	Ratlam	20.00+20.00+35.00 +20.00+20.00	Structure is in sound condition. Expansion joints, footpath is well maintained. Vegetation present on the structure part need to be removed.
3	106+500	Namli	18.00+36.00+18.00	Structure is found in good condition. MM Work activities are in progress.

Figure 3-6 Photographs of Rail Over Bridge (ROB)

ROB at km. 91+620 RHS

ROB at km. 91+620 Pavement & Exp. Joint condition

ROB at km. 91+620

ROB at km. 91+620 RE Wall condition

View of ROB at km. 96+875 RHS

ROB Condition at km. 96+875

Abutment & RE Wall Condition

Pavement, footpath & Exp. Joint condition of ROB at km. 96+875

View of ROB at km. 106+500 RHS

View of ROB at km. 106+500 LHS

Pavement, footpath & Exp. Joint condition of ROB at km. 106+500 RHS

MM Work in progress at km. 106+500

3.4.3 Minor Bridge

Table 3-4 Condition Survey of Minor Bridges

Sr. No.	Chainage	Span Arrangement (no. x m)	Total Width (m)	Type of structures	Nature of Crossing	Direction of Flow	FPPM Remarks
1	1.735	2x9.3+2x8.7	8.60	RCC	Mohihi River	L to R	Structure is in good condition. Pavement is in good condition.
2	3.500	1x10.00	8.50	RCC	Nalla	L to R	Overall condition of the structure is good.
3	9.285	1x10.00	8.50	RCC	Nalla	L to R	Overall condition of the structure is good. Vegetation removal is necessary.
4	11.125	4x9.00	7.10	Arch	Nalla	L to R	Superstructure, substructure is in good condition.
5	17.280	9x3.00	7.10	Arch	Nalla	R to L	Structure is in good condition. Waterway cleaning is necessary.
6	21.985	3x9.0	8.60	RCC	Nalla	L to R	Structure is in good condition. Waterway cleaning is necessary.
7	25.245	2x13.0	8.40	RCC	Chamala Nalah	L to R	Structure is in good condition. Waterway cleaning is necessary.

Sr. No.	Chainage	Span Arrangement (no. x m)	Total Width (m)	Type of structures	Nature of Crossing	Direction of Flow	FPPM Remarks
8	28.675	2x6.75	8.40	RCC	Nalah	L to R	Structure is in good condition. Waterway cleaning is necessary.
9	29.020	3x10.00	8.50			L to R	Superstructure, substructure is in good condition.
10	34.105	3x15.00	8.40	RCC	Nalla	L to R	Superstructure, substructure is in good condition. Minor vegetation observed on the abutments.
11	34.705	1x10.00	8.50	RCC	Nalah	L to R	Overall condition of the structure is good.
12	35.080	2x10.00	8.40	RCC	Nalah	L to R	Structure is in good condition. Pavement is in good condition.
13	40.700	2x12.00	8.40	RCC	Nalah	L to R	Structure is in good condition. Pavement is in good condition.
14	43.055	4x2.30	8.60	Stone Arch	Nalla	L to R	Structure is in good condition. Waterway cleaning is necessary.
15	50.595	2x12.00	8.40	RCC	River	L to R	Overall condition of the structure is good.
16	54.000	1x10.00	8.50	RCC	Nalah	L to R	Superstructure, substructure is in good condition. Minor vegetation observed on the abutments.
17	61.490	1x9.30	7.20	Stone Arch	Nalla	R to L	Overall condition of the structure is good.
18	64.065	1x9.70	7.10	Stone Arch	Nalla	R to L	Overall condition of the structure is good.
19	68.695	2x12.00	8.45	RCC	Rattagiri River	R to L	Superstructure, substructure is in good condition. Minor vegetation observed on the abutments.
20	75.345	2x12.00	8.40	RCC	Nallah	R to L	Structure is in good condition. Waterway cleaning is necessary.
21	77.710	2x4.80	6.75	Stone	Nallah	R to L	Structure is in good condition. Waterway cleaning is necessary.
22	79.610	2x4.00	7.40	Stone Arch	Nallah	R to L	Overall condition of the structure is good.
23	82.910	4x7.00	6.40	Stone Arch	Nallah	R to L	Structure is in good condition. Waterway cleaning is necessary.
24	86.400	2x10.00	8.40	RCC	Nalla	R to L	Superstructure, substructure is in good condition. Minor vegetation observed on the abutments.
25	93.500	1x8.60	10.10	RCC	Nalah	R to L	Structure is in good condition. Waterway cleaning is necessary.
26	94.745	1x6.70	9.90	RCC	Nalla	R to L	Structure is in good condition. Waterway cleaning

Sr. No.	Chainage	Span Arrangement (no. x m)	Total Width (m)	Type of structures	Nature of Crossing	Direction of Flow	FPPM Remarks
							is necessary.
27	99.145 / 99.080	2x5.30	7.10	RCC	Nalla	L to R	Overall condition of the structure is good.
28	103.325	4x8.85	6.55	Stone Arch	Nalla	L to R	Superstructure, substructure & Pavement is in good condition. Minor vegetation observed.
29	108.695	4x2.50	7.15	Stone Arch	Nalla	L to R	Overall condition of the structure is good.
30	112.750	5x4.50	6.40	Stone Arch	Ganga bata	L to R	Superstructure, substructure & Pavement is in good condition. Minor vegetation observed.
31	113.175	3x3.30	9.50	RCC	Nalah	R to L	Overall condition of the structure is good.
32	115.600	8x4.30	6.50	Stone Arch	Maleri	R to L	Overall condition of the structure is good.
33	117.750	6x8.20	6.90	Stone Arch	Nalah	L to R	Superstructure, substructure & Pavement is in good condition.
34	118.495	3x5.30	7.25	Stone Arch	Nalah	L to R	Superstructure, substructure & Pavement is in good condition. Minor vegetation observed.

Figure 3-7 Photographs of Minor Bridges

Minor Bridge at km. 1+735

Minor Bridge at km. 3+500

Minor Bridge at km. 9+285

Minor Bridge at km. 11+125

Minor Bridge at km. 21+965

Minor Bridge at km. 28+675

Minor Bridge at km. 29+050

Minor Bridge at km. 34+105

Minor Bridge at km. 34+700

Minor Bridge at km. 35+070

Minor Bridge at km. 40+700

Minor Bridge at km. 43+055

Minor Bridge at km. 50+595

Minor Bridge at km. 54+000

Minor Bridge at km. 64+065

Minor Bridge at km. 68+600

Minor Bridge at km. 75+345

Minor Bridge at km. 77+710

Minor Bridge at km. 118+495

Minor Bridge at km. 117+750

Minor Bridge at km. 115+600

Minor Bridge at km. 113+175

Minor Bridge at km. 112+750

Minor Bridge at km. 99+080

3.4.4 Underpass

Table 3-5 Condition Survey of Underpass

Sr. No.	Chainage	Location	Span Arrangement	Type of Structure	FPPM Remarks
1	10+200	Sandalpur Town	1x7.00	RCC Box	Overall structural condition of the underpasses are found Satisfactory. Pavement is in good condition.
2	28+250	Nagda Town	1x7.00	RCC Box	
3	51+750	Badnawar Town	1x7.00	RCC Box	
4	64+000	Satrunda Junction	1x7.00	RCC Box	
5	81+500	Dharad	1x5.00	RCC Box	
6	113+150	Mewasa	1x5.00	RCC Box	

Figure 3-8 Photographs of Underpasses

Underpass at km. 64+000

Underpass at km. 51+750

Underpass at km. 81+500

Underpass at km. 113+150

3.5 Condition Survey of Culverts

The cross-drainage structure includes hume pipe culverts and slab culverts at various locations. There are 124 Nos. of Hume Pipe culverts, 61 Nos. of Slab/Box culverts along the Project Road. The height of culvert varies from 1.0 m to 3.0 m from bed level. During the condition survey of structure, these culverts were inspected on sample basis.

The project involves strengthening and widening of existing road to four lane divided carriageway. The culverts beneath existing alignment are either widened or reconstructed. The structural condition of culverts is generally found in sound condition. The quality of surface concrete of box culverts is satisfactory. The RCC parapet, crash barrier or RCC railing has been provided at culvert locations, which is maintained properly.

In most of culverts, the waterway is clear. However, near to urban area and some location is found blocked due to debris, drainage water or bushes, tree growth, which will be removed by the Annuity Concessionaire.

Figure 3-9 Photographs of Culverts

HP Culvert at km. 7+055

HP Culvert at km. 13+250

HP Culvert at km. 22+950

Box Culvert at km. 28+600

Box Culvert at km. 63+970

Box Culvert at km. 45+900

Box Culvert at km. 71+750

HP Culvert at km. 109+780

3.6 Drainage

RCC drain is constructed in built-up area and locations where service roads are provided. Earthen drain is provided in rural area. The photographs taken during site visit is presented as below.

Figure 3-10 Photographs of Drainage

RCC Drain at km. 0+200 (LHS)

RCC Drain at km. 83+000 (RHS)

3.7 Slope Protection

Slope protection for high embankment is done with stone pitching and turfing. Few of the slope protection and chute drains are damaged which will be rectified by the Concessionaire during maintenance work. The photographs taken during site visit is presented as below.

Figure 3-11 Photographs of Slope Protection and Chute Drain

Slope Protection at km. 3+500

Slope Protection at km. 91+600 (ROB)

3.8 Road Furniture

The Concessionaire has provided road furniture along the Project Road as per the Standards and Specifications mentioned in Schedule-C.

Pavement Marking

Pavement marking for the Project Road is done as per the design standards indicated in section 12 of Schedule-D. Some of the photographs of road marking are presented below.

Figure 3-12 Photographs of Pavement Marking

Road Marking at km. 48+050 (RHS)

Road Marking at km. 60+050 (RHS)

Road Marking at km. 98+050 (RHS)

Road marking, kerb painting at median opening location at km. 91+500

Road Studs

Road studs for the Project Road have been provided as per the design standards indicated in section 12 of Schedule-D. Road studs has been fixed at junction and zebra crossings. At few locations the roads were found missing.

Some of the photographs of road studs are presented below.

Figure 3-13 Photographs of Road Studs

Road Studs at km. 63+380

Road Studs at km. 99+000 (RHS)

Traffic Signage / Median Kerb painting / KM Stone

Traffic signs include roadside signs, overhead signs, kerb mounted signs and median signs along the Project Road. The design for the traffic signs along the Project Road is done as per the design standards indicated in section 11 of Schedule-D.

The height, lateral clearance, location, and installation are as per relevant clauses of Schedule 'D'. Overhead sign has been installed ahead of major intersections, toll plazas, start / end of Project Road and urban areas as per detailed design requirements.

Kilometre stones, vertical post of sign boards, chevron boards are properly placed. Median kerb painting is completed by the Concessionaire.

Some of the photographs of sign boards are presented below.

Figure 3-14 Photographs of Traffic Signages

Cantilever sign board at km. 118+000

Gantry sign board at km. 99+500

Cantilever sign board at km. 86+000

Signage at km. 80+000

Kilometre stone at km. 122+000

Kilometre stone at km. 100+000

Highway Lighting

Highway lighting is provided at underpasses, toll plaza, ROBs and built-up locations. High mast lighting is provided at toll plaza location. Highway lighting is also provided at approaches of underpass. Some of the photographs of highway lighting are presented below.

Figure 3-15 Photographs of Street Light

Street Lighting at km. 40+625

High Mast at km. 80+350 (TP-2)

Crash Barriers

Metal beam crash barriers are provided at bridge approaches, locations of high embankment and sharp curves. All the crash barriers provided by the Concessionaire are maintained at site. Some of the photographs of metal beam crash barriers are presented below.

Figure 3-16 Photographs of MBCB / RCC Crash Barrier

MBCB at km. 80+000

Crash barrier at km. 12+000

Delineators

The traffic delineators are seen in median on curve portion and at median openings along the Project Road. Some of the photographs of delineators are presented below.

Figure 3-17 Photographs of Delineators

Delineators at km. 3+500

Delineators at km. 75+350

Pedestrian Guard Rail

The pedestrian guard rails are provided in between Main Carriageway and Service Road. It is being maintained by the Concessionaire. Some of the photographs of pedestrian guard rails are presented below.

Figure 3-18 Photographs of Pedestrian Guard Rail

Pedestrian Guard Rail at km. 52+500

Pedestrian Guard Rail at km. 00+100 (LHS)

Pedestrian guard rail at km. 60+100 (BHS)

Pedestrian guard rail at km. 90+075 (RHS)

Road Land Boundary

Some of the Road land boundary pillars are seen along the Project Road.

Figure 3-19 Photographs of Road Land Boundary

Boundary pillar at km. 11+125

Boundary pillar at km. 85+900 (LHS)

3.9 Avenue Plantation and Median Plantation

Avenue plantations and median plantations are done along the project length as per IRC specification except built-up locations. Some of the photographs of avenue plantation and median plantation are presented below.

Figure 3-20 Photographs of Avenue Plantation and Median Plantation

Avenue Plantation at km. 22+950

Median Plantation at km. 22+950

Median Plantation at km. 53+950

Median Plantation at km. 110+950

3.10 Toll Plaza

As per Concession Agreement, there are two no. of toll plazas at km. 41+500 (Chokala) and at km. 79+000 (Chikliya) with the following infrastructure.

Table 3-6 Details of Summary for Toll Plaza Items

Sr. No.	Particulars	Details
1	Toll Plaza Chainage	km. 41+500 and km. 79+000
2	Number of Tolling Lanes	8 lanes for toll operation plus 2 lanes for Class-I Vehicles.
3	Weigh in Motion Facility (Number of Lanes)	Yes
4	No. of ETC Lanes	in each direction
5	Number of Toll Booths	8 singles
6	Canopy	Present
7	Administrative Building	Present at TP-1 Porta cabin for TP-2
8	Parking cum Toilet Block	Present
9	Availability of Tunnel or Elevated Walkway	Tunnel/Yes

Sr. No.	Particulars	Details
	for Movement between Toll Lanes and Administrative Building	
10	Availability of Static Weigh Bridge	Yes
11	Availability of Loading/Unloading Facility for Overloaded Vehicles	No
12	Storage facility for Overloaded Material	No
13	High mast Light	Yes
14	Streetlight	Yes
15	Low mast Light	No
16	User Fee Boards	Yes
17	Cantilever/Gantry Boards	Yes
18	Automatic boom barrier	Yes

Figure 3-21 Photographs of Toll Plaza

Toll Plaza-1 at km. 41+500

Toll Plaza-2 at km. 79+000

3.10.1 Lane Equipment

Following are the lane hardware and equipment installed at toll plaza.

1. RFID ETC Transceiver

2. Lane Controller with Industrial PC
3. AVC Sensors
4. Automatic Lane Barrier (ALB)
5. Lane Traffic Light and user fare display
6. Incident Capture Camera
7. Overhead Lane Signals
8. Traffic Lights
9. Toll Booth Equipment

3.10.2 RFID ETC Transceiver

RFID ETC Transceiver reads tags installed on the windshield of vehicles and mounted on a pole at about 6 m height. Handheld RFID readers are provided (1 no. in each direction) in case a tag is not detected by the fixed reader.

3.10.3 Lane Controller with Industrial PC

Toll Lane Controller is located within the Electronic Enclosure placed inside each toll booth which are connected to the common server and are capable of independent storage of data at km. 41+500 and at km. 79+000 is located inside the Tunnel.

Lane Controller in Tunnel at TP

3.10.4 Automatic Vehicle Classification (AVC) Sensors

The AVC equipment comprises of a pair of height sensor poles, axle sensors and inductive loops. The height detector has a high sensing resolution and detects height when object blocks the path. The presence of vehicle is detected by inductive loop. The loop sensors embedded on the pavement trigger the AVC height sensors located on parallel pillars.

3.10.5 Automatic Lane Barrier

Boom barriers installed on all lanes are in working condition and have a working time of 0.6 - 0.9 s. Automatic Lane Barrier is used to allow only authorized vehicles to pass through the lane. The barrier is activated only on generation of user fee receipt or other relevant vehicle processing activity. A torque motor powers the barrier for raising and lowering the boom. The motor can be blocked at any position without causing any damage. In the event of power failure, the boom is automatically raised. The boom weight is exactly balanced by built-in springs.

ALB at TP

3.10.6 Lane Traffic Light (LTL) and User Fare Display (UFD)

Lane Traffic Light (LTL) is used to instruct vehicles to stop or pass through the lane. The LTL is RED when the toll collector is expecting the vehicle at the booth. After the transaction is done; the LTL turns Green to instruct the vehicle to pass through the lane. The User Fare Display is a part of electronic toll collection equipment located at the toll booth. It is a mini variable message sign (VMS) made of Light Emitting Diodes (LED). The user fare display is used to display the toll fare that is due and that must be paid by the motorist and the classification of vehicle selected by the collector.

LTL at TP

3.10.7 Incident Capture Camera (AVC Camera)

The incident capture camera is installed on island of the booth to capture the image of the vehicle from the back side. The AVC triggers the Image capture system.

3.10.8 License Plate Image Capture Camera (LPIC)

License Plate Image capture camera is installed on a 3 m pole facing incoming vehicle to capture the image of the vehicle number plate.

LPIC at TP

3.10.9 Over Head Lane Signal (OHLS)

The **Overhead Lane Signal (OHLS)** for lane “Open” and “Close” sign consists of a pair of “GREEN” (arrow) and “RED” (cross) lights. The OHLS is located at the vehicle approaching side of the canopy to show the drivers whether the lane is open or closed.

Overhead Lane Signal at Toll Plaza

3.10.10 Toll Booth Equipment

Toll Booth Hardware / Equipment provided are:

- Toll Collector Display (Operator Monitor)
- Customized Industrial Keyboard
- Receipt Printer
- Intercom Slave unit
- Bar code reader
- Violation Light and alarm
- Manual Booth Control (MBC)
- Booth Camera

The operator monitor termed as Toll Collector Display (TCD) is located on the toll collector's desk. It is the system's interface to the toll collector, to display the status of transactions and status of the lane peripherals.

The keyboard on the toll terminal is a programmable keyboard for Registration of toll operations and is customized for different vehicle types and type of ticket.

Thermal printers are installed at the toll booths to print tickets. Intercom slave unit facilitates communication with the master unit located in the control room.

Violation system has an alarm switch which is triggered whenever there is a violation such as run-through happening on the lane. When there is an emergency, a foot switch pressed by the booth operator alerts the control room.

Booth Camera is provided on the inside roof corner of the booth to provide surveillance through CCTV screen located in the control room. Manual Booth Controller is used to release exempt vehicles.

3.11 Plaza Equipment

3.11.1 TMS Server

Plaza Server is provided in a hot standby configuration and provided with port non-POE network switch and Port PoE switch. Internet connectivity is available through one lease line (Airtel) and Jio Wi-Fi module. Firewall with Sophos antivirus is provided.

3.11.2 55” LED screen for CCTV monitoring

55” LED screen for CCTV monitoring installed at the toll plaza admin block provides view of all the toll booths, important zones within the plaza where cash transactions take place (server room, control room, cash up).

The toll plaza manager is able to observe the activities at the toll lanes and toll booth. When the toll collector calls up on the intercom, the manager is able to comprehend the situation at the lane by a zoomed view of the particular lane.

3.11.3 Workstations in Control Room, POS room

Workstations are available in control room (lane monitoring, administration, and audit), cash room and PoS.

3.12 Administrative, Operation and Maintenance Base Camp

Traffic Aid Post and Medical Aid Post are in the scope of Concessionaire. Photographs taken during the site visit are presented below.

Figure 3-22 Photographs of O&M Centre, Admin Building

Toll Plaza Administrative Building at km. 41+500

Ambulance at km. 41+500

Crane & Animal Rescue Vehicle at O&M Centre

Ambulance at TP-2 at km. 80+000

Patrolling Vehicle

In-house nursery at O&M Centre km. 41+500

3.13 Truck Lay-bye

The following are the truck lay-bye locations.

Table 3-7 Details of Truck Lay-bye

Sr. No.	Chainage	Remark
1	24+200	Near Makhri Junction
2	27+500	-
3	60+250	Before Satmunda Junction
4	81+600	Near Ratlam
5	121+000	Near Jaora

Photographs taken during the site visit are presented below.

Figure 3-23 Photographs of Truck Lay-Bye

Truck Lay-Bye at km. 121+000 (LHS)

Truck Lay-Bye at km. 60+250 (RHS)

Truck Lay-Bye at km. 27+500 (LHS)

Truck Lay-Bye at km. 81+600

3.14 Toilet Block

There are Toilet blocks provided at Truck lay-bye and maintenance of the same is in Concessionaire's scope.

Photographs taken during the site visit are presented below.

Figure 3-24 Photographs of Toilet Block

Toilet Block at km. 81+900 (RHS)

Toilet Block at km. 121+000 (LHS)

3.15 Bus Bays and Passenger Shelters

There are 44 Nos. of bus bays / passenger shelters along the Project Road. Some of the photographs of the bus bays are presented below.

Figure 3-25 Photographs of Bus Bays

Passenger Shelter at km. 83+500

Bus Bay & Passenger Shelter at km. 124+600

3.16 Balance Work Status

The project has received Final Completion Certificate on 30th October 2010 for Homogeneous Section-I (km. 0+000 to km. 66+250) and on 29th August 2011 for Homogeneous Section-II (km. 66+250 to km. 124+150) by completing all the works as mentioned in the Technical Schedules of Concession Agreement. There are no balance works to be executed as per Concession Agreement.

3.17 Operation and Maintenance

3.17.1 O&M Contract

As per Clause 18.1 of the Concession Agreement, the Concessionaire shall operate and maintain the Project Road by itself, or through O&M Contractors and if required, modify, repair, or otherwise make improvements to the Project Road to comply with Specifications and Standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems, More Specifically.

The Concessionaire has outsourced for carrying out the activities related to operation and maintenance of the Project Road including toll operation services, security services.

3.17.2 Operation

Operation cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, and other miscellaneous expenses. The Concessionaire has provided the expenses occurred towards operation expenses for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area.

The Operation Cost is presented in the subsequent chapter.

3.17.3 Routine Maintenance

The Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey.

Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

Currently, the Project Road is maintained by Concessionaire.

The Routine Maintenance Cost is presented in the subsequent chapter.

4 PAVEMENT INVESTIGATION AND ASSESSMENT

4.1 General

Presently, the pavement of the Project Road is being maintained by the Concessionaire as per Scope of work laid down in concession agreement. The Concessionaire has received Final Completion Certificate for Homogenous Section-I on 30th October 2010 and for Homogeneous Section-II on 29th August 2011.

The Project is currently under the Operation and Maintenance stage. The Concession Period of the project is 25 years from the Appointed Date including Construction Period. For operation and maintenance purposes, the Project Road is divided into two homogenous sections viz **HS-1** (66.250 km, from km. 0+000 to km.66+250) and **HS-2** (57.900 kms, from km.66+250 to km.124+150).

4.2 Axle Load and VDF

The Concessionaire has conducted the axle Load Survey on Project Road at both Toll Plazas in November 2022. The summary of Vehicle Damage Factor (VDF) calculated as provided by the Concessionaire is tabulated below.

Table 4-1 Vehicle Damage Factor (VDF)

Vehicle Category	Vehicle Damage Factor (VDF)			
	TP-1		TP-2	
	LHS	RHS	LHS	RHS
Bus	0.867	1.582	0.892	1.774
LCV	0.845	0.983	0.639	0.872
2-Axle	2.473	2.825	2.413	2.233
3-Axle	3.743	5.137	4.138	3.792
MAV	7.256	12.955	6.832	11.173

4.3 Design Traffic

Traffic in Million Standard Axles (MSA) for the homogeneous section based on the historical traffic data as provided by the Concessionaire, current traffic has been used for future projections and the estimated design MSA is computed and presented in subsequent table.

For the estimation of design MSA, Actual Traffic Growth Rates as provided by the Concessionaire were used.

Table 4-2 MSA Calculation

TP-1					
Year	MSA (LHS)	Cumulative MSA (LHS)	MSA (RHS)	Cumulative MSA (RHS)	Remarks
FY23	2.39	**2.39**	3.81	**3.81**	
FY24	2.49	**4.88**	3.98	**7.79**	
FY25	2.60	**7.48**	4.15	**11.94**	MM-1
FY26	2.70	**10.18**	4.32	**16.26**	
FY27	2.81	**12.99**	4.50	**20.76**	
FY28	2.92	**15.91**	4.69	**25.45**	
FY29	3.03	**18.94**	4.87	**30.32**	

TP-1					
Year	**MSA (LHS)**	**Cumulative MSA (LHS)**	**MSA (RHS)**	**Cumulative MSA (RHS)**	**Remarks**
FY30	3.15	**22.09**	5.05	**35.37**	
FY31	3.27	**25.36**	5.25	**40.62**	MM-2
FY32	3.39	**28.75**	5.46	**46.08**	
FY33	3.52	**32.27**	5.67	**51.75**	
FY34	3.64	**35.91**	5.88	**57.63**	
FY35	3.77	**39.68**	6.09	**63.72**	
FY36	3.91	**43.59**	6.32	**70.04**	
FY37	4.05	**47.64**	6.55	**76.59**	
FY38	4.20	**51.84**	6.80	**83.39**	MM-3 Handover

TP-2					
Year	**MSA (LHS)**	**Cumulative MSA (LHS)**	**MSA (RHS)**	**Cumulative MSA (RHS)**	**Remarks**
FY23	2.45	**2.45**	3.90	**3.90**	
FY24	2.56	**5.01**	4.07	**7.97**	
FY25	2.67	**7.68**	4.25	**12.22**	MM-1
FY26	2.77	**10.45**	4.42	**16.64**	
FY27	2.89	**13.34**	4.60	**21.24**	
FY28	3.00	**16.34**	4.80	**26.04**	
FY29	3.12	**19.46**	4.98	**31.02**	
FY30	3.23	**22.69**	5.18	**36.20**	
FY31	3.36	**26.05**	5.38	**41.58**	MM-2
FY32	3.49	**29.54**	5.59	**47.17**	
FY33	3.62	**33.16**	5.82	**52.99**	
FY34	3.75	**36.91**	6.03	**59.02**	
FY35	3.89	**40.80**	6.26	**65.28**	
FY36	4.03	**44.83**	6.49	**71.77**	
FY37	4.18	**49.01**	6.74	**78.51**	
FY38	4.33	**53.34**	6.99	**85.50**	MM-3 Handover

4.4 Network Survey Vehicles (NSV) Survey

The Concessionaire has provided NSV survey data conducted in November 2022. Currently Major Maintenance Cycle-1 is in progress, in which Concessionaire has already completed BC Overlay in the 100.00 km length out of 124.150 km. Hence, the previously conducted NSV survey data cannot be considered for pavement condition verification.

4.5 Structural Investigations

The Concessionaire has provided FWD test data conducted in November 2022. Currently Major Maintenance Cycle-1 is in progress, in which Concessionaire has already completed BC Overlay in the 100.00 km length out of 124.150 km. Hence, the previously conducted FWD test data cannot be considered for pavement condition verification.

4.6 Ongoing Major Maintenance

The Project Highway includes certain sections that had experienced repetitive failures in the past. During the acquisition of the asset by Cube Highways and Infrastructure V Pvt.

Ltd. (CH-V) from the erstwhile promoter, it was identified that these failures were primarily attributable to weak underlying pavement layers, necessitating rehabilitation. Accordingly, post-acquisition, Cube Highways and Infrastructure V Pvt. Ltd. (CH-V) developed a detailed rectification methodology under the major maintenance program. In several sections, the entire bituminous layer was rehabilitated, while in some section's rehabilitation was carried out starting from the GSB and WMM layers. As a result, the affected stretches have been substantially improved, and the overall pavement condition of the asset has significantly enhanced. This intervention is expected to reduce the likelihood of recurring pavement distress in the future.

Figure 4-1 Photographs of Pavement Condition before rectification

Figure 4-2 Photographs of Pavement Condition after rectification

4.7 Periodic Maintenance Strategy

Unlike the old Concession Agreements where periodicity and threshold limits were clearly described for the major maintenance, the Concession Agreement of this project does not specify the periodicity or the threshold limits for carrying out the full-length major maintenance. Schedule-K of the Concession Agreement specifies the threshold limits and the timelines for carrying out repairs to the distresses during the operation period.

The maintenance thus can be carried out as and when required basis and to the compliance of Schedule-K requirement to maintain the road in serviceable condition. Only improvement to Riding Quality is expected if the roughness value exceeds 3000 mm/km.

Any newly laid pavement is not expected to exhibit any distress for at least 5 to 6 years, provided that proper routine maintenance is carried out. Routine maintenance activities would be sufficient to meet the performance standards specified in Schedule-K. Accordingly, major maintenance is planned every 6th or 7th year for flexible pavement, counted from the date of the last overlay (FY 2026) until the end of the concession period.

The Concessionaire is presently undertaking the first Major Maintenance work of the Project Highway, which involves laying a 40 mm thick BC overlay along the entire project length. As of now, approximately 110.00 km of BC overlay has been completed, and the remaining 14.15 km overlay work is in progress and work will be completed within a one to two month. So that we do not consider the cost of first Major Maintenance in the Costing Part.

The table below shows the major / periodic maintenance cycle throughout the balance concession period for the Project Road.

Table 4-3 Major Maintenance Cycle

Sr. No.	Year	Main Carriageway	Service Road
1	FY 2026	MM Work is in progress	-
2	FY 2027-FY2030	-	-
3	FY 2031-FY 2032	BC (PMB) overlay of 30 mm for 50% length, 40 mm for 30% length & 50 mm for 20% length Milling & DBM of 50 mm for 12.5% length	BC overlay of 30 mm for 100% length
4	FY 2033-FY 2037	-	-
5	FY 2038	BC (VG-40) overlay of 30 mm for 100% length and Milling & DBM of 50 mm for 12.5% length	BC overlay of 30 mm for 100% length

The projected cost for periodic / major maintenance is presented in the subsequent chapter.

5 COST ESTIMATES

5.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories.

I. Balance Works Cost
II. Routine O&M Cost
III. Major Maintenance Cost
IV. Periodic Replacement of TMS / ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and escalation.

5.2 Rate Assumption

Following assumptions are considered for unit rates of various items while estimating the cost:

- Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard Data Book 2019. The input rates for MoRTH standard data book were adopted as below:

- **Manpower and labour:** As per applicable minimum wages published by Ministry of Labour & Employment, Government of India.

- **Bitumen:** Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.

  Therefore, bitumen prices are considered as per the forecast of Client. Current published of bitumen are considered for unit rates calculation for FY 2026. Average 10 years of price of bitumen are considered for unit rates calculation for FY 2028 and onwards, since bitumen prices have been range bound over the last five-six years.

  Polymer cost and modification cost are provided by the client to work out BC rate with PMB.

  Following rates of bitumen are considered.

Table 5-1 Bitumen Rates - Ex- MI Supply excluding discount and GST

Refineries	Grade	Rate for FY 26 - FY 27 (Rs. / MT)	Rate for FY 28 onwards (Rs. / MT)
Mathura	VG10	37822	30988
Mathura	VG30	39122	32069
Mathura	VG40	41022	33648
Haldia	VG10	39322	31244
Haldia	VG30	40122	31890
Haldia	VG40	42022	33425
Koyali	VG10	38722	30760
Koyali	VG30	40022	31810

Refineries	Grade	Rate for FY 26 - FY 27 (Rs. / MT)	Rate for FY 28 onwards (Rs. / MT)
Koyali	VG40	42702	33974
Chennai	VG10	36872	30942
Chennai	VG30	35672	29623
Chennai	VG40	38872	32541

- **Sand and Aggregate:** Market rates are considered from the quarry located nearest to Project Road.
- **Cement:** Market rates are considered from the nearest local market.
- **Steel :** Rate of steel is taken from Tata Tiscon.
- **Machinery Hire charges:** Hire charges for the machinery are considered in accordance with applicable PWD SOR.
- **Actual Rates of items as per work order:** The rates of road marking, road stud, kerb raising, micro surfacing, milling, aggregate rates etc. are considered as per the work order shared by the client.
- Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines.

Summary of Unit Rates worked out using Standard Data Book adopted for major items is given below:

Table 5-2 Summary of Unit Rates

Sr. No.	Item Description	Unit	Rates (Rs.) (FY 2028 onwards)
1	Dense Bituminous Macadam (VG-40)	Cum	7463
2	Bituminous Concrete (PMB)	Cum	10517
3	Bituminous Concrete (VG-40)	Cum	8657
4	Bituminous Concrete (VG-30)	Cum	8382
5	Milling	Sqm	80
6	Micro-surfacing	Sqm	155
7	Kerb Re-laying	Rmt	316
8	Road Marking	Sqm	525
9	Road Studs	Nos.	247

5.3 Balance Works Cost

As discussed in the previous chapter, there are no balance works to be executed as per CA. Hence, balance work cost is **NIL**.

5.4 Routine O&M Cost

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance, and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have made

from the expenses of similar type of projects to arrive at the operation cost. The estimates are projected based on best industry practices and are compared with the operating cost in the vicinity of the project area. Same has been divided into following major heads:

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Toll Security Services
4. Incident Management Services
5. Electricity and Diesel Charges
6. TMS / HTMS / System Expenses
7. Office Operating Expenses
8. Vehicle Running Expenses
9. Professional Fees Expense
10. Community Development
11. Communication Expenses
12. Conveyance Expenses
13. Insurance Expense
14. IE Fees
15. Horticulture & ROW Maintenance
16. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or “wear-and-tear”. Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

The Routine Operation and Maintenance cost (Routine O&M) is presented below. The detailed working of routine maintenance (Sr. No. 15 of below table) is presented in **Annexure-I**.

Table 5-3 Summary of Operation Cost

Sr. No.	Particulars	Amount (FY 2026 to FY 2038)
1	Salary and Welfare Expenses	2,76,00,000
2	Tolling Operations Services	6,08,48,314
3	Toll Security Services	1,02,74,383
4	Incident Management & Emergency Services	3,35,67,812
5	Electricity and Diesel Charges	1,15,85,948
6	TMS/HTMS/System Expenses	52,92,704
7	Office Operating Expenses	62,07,500
8	Vehicle Running Expenses	33,60,000
9	Professional Fees Expense	62,07,500
10	Community Development	18,62,250
11	Communication Expenses	14,89,800
12	Conveyance Expenses	37,24,500
13	Insurance Expense	1,86,22,500

Sr. No.	Particulars	Amount (FY 2026 to FY 2038)
14	IE Fees	86,90,500
15	Routine Maintenance Cost (Project Highway)	4,78,13,981
16	Horticulture & ROW Maintenance	2,68,16,400
17	Miscellaneous including Contingency at 5%	99,66,686
	Total Cost with GST (Rs)	**28,39,30,778**
	Total Cost with GST (Cr)	28.39
	Per km Cost (Lakh)	**22.87**

5.5 Major Maintenance Cost

The summary of Major Maintenance Cost (Base year cost) is provided as below. The detailed working of the same is presented in **Annexure-II**.

Sr. No.	Year	Major Maintenance Cost (Cr.)	Remark
1	FY 2031-32	143.95	-
2	FY 2038	116.71	-
Total Cost (Cr.)		**260.66**	

5.6 Periodic Replacement of TMS / ATMS System

Every 7 years, replacement of cost of major TMS / ATMS system is considered. The same is provided as below.

Sr. No.	Year	ATMS O&M / Replacement Cost (Cr.)	Remarks
1	FY 2026	4.42	
2	FY 2031	4.42	
3	FY 2037	4.42	
Total Cost (Cr.)		**13.26**	

5.7 Escalation Assumption

Following escalation has been considered for the O&M cost as provided by Client.

Table 5-4 Escalation

Year	Growth Rate	Cumulative Factor
Mar-26	5.00%	1.000
Mar-27	5.00%	1.050
Mar-28	5.00%	1.103
Mar-29	5.00%	1.158
Mar-30	5.00%	1.216
Mar-31	5.00%	1.276
Mar-32	5.00%	1.340
Mar-33	5.00%	1.407
Mar-34	5.00%	1.477
Mar-35	5.00%	1.551
Mar-36	5.00%	1.629
Mar-37	5.00%	1.710
Mar-38	5.00%	1.796

5.8 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summarised yearly for remaining concession period along with escalation as mentioned in the above clause.

Escalated O&M Cost (in INR Cr)

Sr. No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38
1	Routine O&M Cost													
1.01	Salary and Welfare Expense	2.76	2.90	3.04	3.20	3.35	3.52	3.70	3.88	4.08	4.28	4.50	4.72	4.96
1.02	Tolling Operations Services	6.08	6.39	6.71	7.04	7.40	7.77	8.15	8.56	8.99	9.44	9.91	10.41	10.93
1.03	Toll Security Services	1.03	1.08	1.13	1.19	1.25	1.31	1.38	1.45	1.52	1.59	1.67	1.76	1.85
1.04	Incident Management Services	3.36	3.52	3.70	3.89	4.08	4.28	4.50	4.72	4.96	5.21	5.47	5.74	6.03
1.05	Electricity and Diesel Charges	1.16	1.22	1.28	1.34	1.41	1.48	1.55	1.63	1.71	1.80	1.89	1.98	2.08
1.06	TMS/HTMS/System Expenses	0.50	0.56	0.65	0.72	0.54	0.64	0.67	0.70	0.79	0.91	1.02	0.76	0.90
1.07	Office Operating Expenses	0.62	0.65	0.68	0.72	0.75	0.79	0.83	0.87	0.92	0.96	1.01	1.06	1.11
1.08	Vehicle Running Expenses	0.34	0.35	0.37	0.39	0.41	0.43	0.45	0.47	0.50	0.52	0.55	0.57	0.60
1.09	Professional Fees Expense	0.62	0.65	0.68	0.72	0.75	0.79	0.83	0.87	0.92	0.96	1.01	1.06	1.11
1.10	Community Development	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.28	0.29	0.30	0.32	0.33
1.11	Communication Expenses	0.15	0.16	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.27
1.12	Conveyance Expenses	0.37	0.39	0.41	0.43	0.45	0.48	0.50	0.52	0.55	0.58	0.61	0.64	0.67
1.13	Insurance Expense	1.86	1.96	2.05	2.16	2.26	2.38	2.50	2.62	2.75	2.89	3.03	3.19	3.34
1.14	IE Fees	0.87	0.91	0.96	1.01	1.06	1.11	1.16	1.22	1.28	1.35	1.42	1.49	1.56
1.15	Routine Maintenance Cost	4.78	5.02	5.27	5.54	5.81	6.10	6.41	6.73	7.06	7.42	7.79	8.18	8.59
1.17	Miscellaneous and Contingency	1.00	1.05	1.10	1.16	1.21	1.27	1.33	1.40	1.47	1.55	1.63	1.70	1.79
	Subtotal of O&M Cost	25.68	27.00	28.41	29.88	31.15	32.77	38.01	39.91	41.96	44.14	46.41	48.41	50.93
2	Major Maintenance Cost	-	-	-	-	-	91.86	96.45	-	-	-	-	-	209.59
3	Periodic Cost of TMS/HTMS Replacement	4.42	-	-	-	-	5.64	-	-	-	-	7.20	-	-
4	Initial Improvement work Cost & DG Cost	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Balance Works Cost	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Cost	**30.10**	**27.00**	**28.41**	**29.88**	**31.15**	**130.28**	**134.46**	**39.91**	**41.96**	**44.14**	**53.61**	**48.41**	**260.52**

ANNEXURES

ANNEXURE-I ROUTINE MAINTENANCE COST

Routine Maintenance Cost	
Ordinary Repair Cost for Flexible (with GST)	**4,78,13,981**
(Inclusive of GST)	**= 3.85 lakhs per km**

CONVERSION FACTORS										
National Highways / State Highways										
Reference cost taken for Two / four lane (7.0m or 14.0m) with 1.5m wide shoulders										
(Refer Chapter 6.17 of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 45)										
Sr. No.	**Description for Flexible Pavement**		**Factor**	**Normal** More than 4500 CVD **2,19,810**	**Urban** More than 4500 CVD **2,56,956**	**Hilly** More than 4500 CVD **3,32,463**	**Project Length (km)**		**Per Year Project Maintenance Cost**	
							Normal	**Urban**	**Normal**	**Urban**
1	Four-lane with divided carriageway	Without paved shoulder	1.53	336310.00	393142.00	508669.00	-	-	-	-
		Paved shoulder	1.70	373678.00	436825.00	565188.00	116.73	-	4,36,19,432.94	-
2	Four-lane with divided carriageway and service lane on either side	Without paved shoulder	2.00	439621.00	513912.00	664927.00	-	-	-	-
		Paved shoulder	2.20	483583.00	565303.00	731420.00	-	7.42	-	41,94,548.26
						TOTAL		**124.150**		**4,78,13,981**

Ordinary Repairs

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0m or 14.0m) of NH / SH per Year (Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
1	**Maintenance of Carriageway & Paved Shoulders (1.5m wide); B.T. Surface**			
	i) Pot holes repair (50 mm deep)	100 % Pot hole free	As & when required	1.00%
	Volume (cum)			5.00
	Rs/m^3			9145
	Cost in Rupees			45,725
	ii) Patch repair	100 % Patch less	As & when required	1.00%
	Area (sqm)			100
	Rs/m^2			366
	Cost in Rupees			36,580
	iii) Sealing (Crack)			
	a) Wider than 3 mm	100 % Crack Less	As & when required	0.50%
	Area (sqm)			50
	Rs/m^2			45
	Cost in Rupees			2,247
	b) Width less than 3 mm	75 % Crack Less	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			39
	Cost in Rupees			2,946
	iv) Repair of ruts and undulations			
	a) Greater than 20 mm	75%	As & when required	1.00%
	Area (sqm)			75
	Rs/m^2			366
	Cost in Rupees			27,435
	v) Road marking	33%	Once in 7th year & @	4093

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0m or 14.0m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
			Repaired location	
	SUB TOTAL			**1,19,026**
2	**Maintenance of earthen Shoulders:**			
	i) Renewal of earthen shoulders	80%	Once in a Year	6809
	ii) Jungle Clearance	100%	Twice in a Year	2234
	iii) Kuccha Drain Maintenance	100%	Twice in a Year	1197
	SUB TOTAL			**10,240**
3	**Maintenance of Cross Drainage works:**			
	i) Cleaning of culvert bed	100%	Once in a Year	3016
	ii) Repair of floors	100%	Once in a Year	5458
	iii) Repair of parapets	100%	As & when required	2275
	SUB TOTAL			**10,749**
4	**Maintenance of Minor & Major Bridges:**			
	i) Cleaning and removal of dirt & vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Substructure and Retaining wall etc.	100%	As & when required	59,846
	ii) Spot painting & protective Coating required on Bearing and greasing of Bearings, railing, structural members, Expansion joints			
	iii) Repair of minor washouts, erosion scour and animal holes			
	iv) Sealing Cracks with Cement/ Epoxy Mortar			
	v) Replacement & Correction of safety barriers, Guard rails and damaged members			
	SUB TOTAL			**59,846**
5	**Miscellaneous Items:**			
	i) Turfing and Arboriculture		Once in a Year	2660
	ii) Maintenance of gang hut store, sheds, animal & debries		Once in a Year	3990

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0m or 14.0m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per km. as per Traffic Intensity**
				More than 4500 CVD
				BT Surface
1	**2**	**3**	**4**	**5**
	removal			
	iii) Lettering, Painting of Km stones & kerbs, sign boards, hectometer stone etc.		Once in a Year	3990
	iv) Replacement and providing additional retro reflective signage	20%	Covering Total Network in 4-5 Years	7979
	v) Providing first aid kits, Umbrella, Safety Jackets, Vardi etc.		Once in a Year	1330
	vi) Traffic Census		Once in a Year	0
	vii) Provision for roughness measurement		Twice in a Year	0
	SUB TOTAL			**19,949**
	GRAND TOTAL (Normal)			**2,19,810**
6	**Additional Cost required for Urban Area**			
	i) Renewal of Center Line, Edge Marking, Kerb Marking/ Zebra crossing etc. in City Portion	40%	Once in three years with thermoplastic paint	4961
	ii)Repairs to footpath	100%	As & when required	5320
	iii) ROB/ Fly-over Railings & repair	100%	As & when required	5320
	iv) Street Lighting	0%	As & when required	0
	v) Encroachment Removal Squad	100%	As & when required	8245
	vi) Repair of divider/ Railing in City portion	100%	As & when required	10639
	vii) Provision for maintenance of pedestrian underpass	100%	As & when required	2660
	SUB TOTAL			**37,145**
	GRAND TOTAL (Urban)			**2,56,956**
7	**Additional Cost required for Hilly Areas (Zone VI)**			
	i) Repairs to Retaining wall / Breast Walls	100%	As & when required	20214
	ii) Removal of Slip or Snow Clearance, Repairs to Drains	100%	As & when required	27396

Details of Ordinary Repair in Rs. For one km. of Two lane (7.0m or 14.0m) of NH / SH per Year				
(Refer Annex. XXIV-E of REPORT OF THE COMMITTEE ON NORMS FOR MAINTENANCE OF ROADS IN INDIA, Page 112-113)				
Sr. No.	**Activity**	**Performance Standard Level of Maintenance**	**Frequency**	**Cost Per km. as per Traffic Intensity** **More than 4500 CVD** **BT Surface**
1	**2**	**3**	**4**	**5**
	iii) Road Marking	33%	Once in three years with thermoplastic paint	65043
	SUB TOTAL			**1,12,653**
	GRAND TOTAL (Hilly)			**3,32,463**

ANNEXURE-II MAJOR MAINTENANCE COST

Major Maintenance Cost (FY 2031-32)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						24,68,770	13	3,26,86,510
	For BC	Sqm	1	1	21,44,292.50		21,44,293	21,44,293		
	For Misc. Location	Sqm	1	1	1,07,214.63		1,07,215	1,07,215		
	For DBM	Sqm	1	1	17,38,100.00		2,17,263	2,17,263		
2	BC with PMB 30 mm 50% length	Cum	1	1	22,51,507	0.03	33,773	33,773	10,517	35,51,88,533
	BC with PMB 40 mm 30% length	Cum	1	1	22,51,507	0.04	27,018	27,018	10,517	28,41,50,826
	BC with PMB 50 mm 20% length	Cum	1	1	22,51,507	0.05	22,515	22,515	10,517	23,67,92,355
3	DBM with 50 mm	Cum	1	1	2,17,263	0.05	10,863	10,863	7,463	8,10,72,588
4	Milling	Sqm	1	1	2,17,263	-	2,17,263	2,17,263	80	1,73,81,000
	Rectification work of MCW									
	Dismantling of Flexible Pavement-Bituminous	Cum	1	1,250	8.75	0.20	2,188	2,188	496	10,85,875
	Dismantling of Flexible Pavement-Granular	Cum	1	1,250	8.75	0.45	4,922	4,922	66	3,25,336
	Subgrade	Cum	1	1,250	8.75	0.30	3,281	3,281	245	8,02,922
	GSB	Cum	1	1,250	8.75	0.23	2,516	2,516	1,862	46,84,748
	WMM	Cum	1	1,250	8.75	0.25	2,734	2,734	2,361	64,55,504
	DBM	Cum	1	1,250	8.75	0.20	2,188	2,188	7,463	1,63,25,531
	BC with PMB	Cum	1	1,250	8.75	0.04	438	438	10,517	46,01,214
	Tack coat	Sqm	1	1,250	8.75		10,938	10,938	13	1,44,813
	Prime coat	Sqm	1	1,250	8.75		10,938	10,938	45	4,86,719
	Rectification work of SR									
	Dismantling of Flexible Pavement	Cum	1	260	8.75	0.25	569	569	496	2,82,328
	GSB	Cum	1	260	8.75	0.30	683	683	1,862	12,70,992
	WMM	Cum	1	260	8.75	0.30	683	683	2,361	16,11,294
	BC	Cum	1	260	8.75	0.03	68	68	8,657	5,90,856
	Prime coat	Sqm	1	260	8.75		2,275	2,275	45	1,01,238
	Tack coat	Sqm	1	260	8.75		2,275	2275	13	30,121
	Service Road									
1	Tack coat	Sqm	2	7,420	5.50		81,620	81,620	13	10,80,649
2	BC with 30 mm	Cum	2	7,420	5.50	0.03	2,449	2,449	8,657	2,11,98,093
4	Micro surfacing	Sqm	2	7,420	5.50		-	-	80	-
	Structures (incl. FVR, Viaduct, VUP, PUP and									

Major Maintenance Cost (FY 2031-32)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	bridges)									
3	Tack coat	Sqm	1	1	28,332.5		28,333	28,333	13	3,75,122
4	Wearing Coat BC with 40 mm	Cum	1	1	28,332.5	0.04	1,133	1,133	10,517	1,19,18,984
5	Milling of Ex. Wearing Coat	Sqm	1	1	28,332.5		28,333	28,333	80	22,66,600
6	Painting of Crash Barrier	Sqm	4	1,133		1.12	5,055	5,055	102	5,15,561
	Other Works									
7	Raising of Road Kerb	Rmt	2	1,24,150			-	-	316	-
8	Replacement of Road Stud									
	Normal Road Stud	Nos	2	15,175			30,350	30,350	247	74,96,450
9	Painting of Kerb	Sqm	2	1,24,150	0.375		93,113	93,113	102	94,97,475
10	Road Marking on BC	Sqm					1,06,060	1,06,060	525	5,56,81,408
	MCW									
	a) Median & Edge line	Sqm	4	1,30,358	0.15		78,215			
	b) Lane line	Sqm	2	43,018	0.10		8,604			
	Service Road									
	a) Edge line	Sqm	4	7,420	0.10		2,968			
	b) Lane line	Sqm	-	2,449	0.10		-			
	Junction crossing	Sqm					4,489			
11	Filling of Earthen shoulder	Cum					23,346	23,346	245	57,12,766
	MCW		1	2,33,460	1.00	0.10	23,346			
12	Miscellaneous	5%								5,80,90,720
Total Major Maintenance Cost (Rs.)										**1,21,99,05,130**
Total Major Maintenance Cost with GST (Rs.)										**1,43,94,88,054**
Total Major Maintenance Cost with GST (Cr.)										**143.95**
Per km Cost (lakh)										**115.95**
Escalation Factor for Major Maintenance Cost (FY 2031-32)										**1.28**
Total Escalated Cost for Major Maintenance Cost (FY 2031-32) (Cr.)										**165.44**

Major Maintenance Cost (FY 2038)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	Main Carriageway - Flexible Pavement									
1	Tack coat	Sqm						24,68,770	13	3,26,86,510
	For BC	Sqm	1	1	21,44,292.50		21,44,293	21,44,293		
	For Misc. Location	Sqm	1	1	1,07,214.63		1,07,215	1,07,215		
	For DBM	Sqm	1	1	17,38,100.00		2,17,263	2,17,263		
2	BC with 30 mm	Cum	1	1	22,51,507	0.03	67,545	67,545	8,657	58,47,54,451
3	DBM with 50 mm	Cum	1	1	2,17,263	0.05	10,863	10,863	7,463	8,10,72,588
4	Milling	Sqm	1	1	2,17,263	-	2,17,263	2,17,263	80	1,73,81,000
	Rectification work of MCW									
	Dismantling of Flexible Pavement-Bituminous	Cum	1	1,250	8.75	0.20	2,188	2,188	496	10,85,875
	Dismantling of Flexible Pavement-Granular	Cum	1	1,250	8.75	0.45	4,922	4,922	66	3,25,336
	Subgrade	Cum	1	1,250	8.75	0.30	3,281	3,281	245	8,02,922
	GSB	Cum	1	1,250	8.75	0.23	2,516	2,516	1,862	46,84,748
	WMM	Cum	1	1,250	8.75	0.25	2,734	2,734	2,361	64,55,504
	DBM	Cum	1	1,250	8.75	0.20	2,188	2,188	7,463	1,63,25,531
	BC	Cum	1	1,250	8.75	0.04	438	438	8,657	37,87,538
	Tack coat	Sqm	1	1,250	8.75		10,938	10,938	13	1,44,813
	Prime coat	Sqm	1	1,250	8.75		10,938	10,938	45	4,86,719
	Service Road									
1	Tack coat	Sqm	2	7,420	5.50		81,620	81,620	13	10,80,649
2	BC with 30 mm	Cum	2	7,420	5.50	0.03	2,449	2,449	8,657	2,11,98,093
4	Micro surfacing	Sqm	2	7,420	5.50		-	-	80	-
	Structures (incl. FVR, Viaduct, VUP, PUP and bridges)									
3	Tack coat	Sqm	1	1	28,332.5		28,333	28,333	13	3,75,122
4	Wearing Coat BC with 40 mm	Cum	1	1	28,332.5	0.04	1,133	1,133	8,657	98,11,239
5	Milling of Ex. Wearing Coat	Sqm	1	1	28,332.5		28,333	28,333	80	22,66,600
6	Painting of Crash Barrier	Sqm	4	1,133		1.12	5,055	5,055	102	5,15,561
	Other Works									
7	Raising of Road Kerb	Rmt	2	1,24,150			2,48,300	2,48,300	316	7,85,24,875
8	Replacement of Road Stud									
	Normal Road Stud	Nos	2	15,175			30,350	30,350	247	74,96,450
9	Painting of Kerb	Sqm	2	1,24,150		0.375	93,113	93,113	102	94,97,475
10	Road Marking on BC	Sqm					1,05,678	1,05,678	525	5,54,81,073

Major Maintenance Cost (FY 2038)										
Sr. No.	**Description**	**Unit**	**No.**	**Length (m)**	**Width (m)**	**Depth (m)**	**Quantity**	**Total Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
	MCW									
	a) Median & Edge line	Sqm	4	1,30,358	0.15		78,215			
	b) Lane line	Sqm	2	43,018	0.10		8,604			
	Service Road									
	a) Edge line	Sqm	4	7,420	0.10		2,968			
	b) Lane line	Sqm	-	2,449	0.10		-			
	Junction crossing	Sqm					6,285			
11	Filling of Earthen shoulder	Cum					23,346	23,346	245	57,12,766
	MCW		2	1,16,730	1.00	0.10	23,346			
12	Miscellaneous	5%								4,70,97,672
Total Major Maintenance Cost (Rs.)										**98,90,51,109**
Total Major Maintenance Cost with GST (Rs.)										**1,16,70,80,308**
Total Major Maintenance Cost with GST (Cr.)										**116.71**
Per km Cost (lakh)										**94.01**
Escalation Factor for Major Maintenance Cost (FY 2038)										**1.80**
Total Escalated Cost for Major Maintenance Cost (FY 2038) (Cr.)										**176.46**

TECHNICAL DUE DILIGENCE REPORT

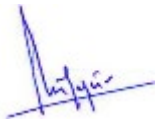
CHENANI- NASHRI TUNNEL SECTION ON NH-1A IN THE UNION TERRITORY OF J&K

PREPARED FOR

CUBE HIGHWAYS TRUST

PREPARED BY

Knight Frank

Rev. No.	Effective Date	Revision Description	Checked and Approval Record		
			Activity	**Name**	**Signature**
R0	**01.11.2025**	Draft DD Report of Chenani- Nashri Tunnel Section	Prepared By	Aashif Ahmed	
R1	**16.11.2025**		Reviewed by	Maj Gen K T Gajria	
R2	**18.11.2025**	Final DD Report of Chenani- Nashri Tunnel Section	Approved By	Rajeev Vijay	

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This report has been prepared, based on the inputs provided by the Client. Every effort is made to submit realistic details as available, statistics and information obtained/furnished at site by Client during our interaction at various levels.

In preparing this report, Knight Frank relied, in whole or in part, on data and information provided by the Client which information has not been independently verified by Knight Frank and which Knight Frank has assumed to be accurate, complete, reliable, and current. Therefore, while Knight Frank has utilized its best efforts in preparing this report, Knight Frank does not warrant or guarantee the conclusions set forth in this report which are dependent or based upon data, information, or statements supplied by third parties or the client.

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TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION 11

1.1 Background 11
1.2 Scope of Work 11
1.3 Approach 12
1.4 Methodology 12
1.5 Study 12
1.6 Structure of the Report 13

CHAPTER 2. PROJECT DESCRIPTION 15

2.1 Project Location and Description 15
2.2 Terrain 17
2.3 Climate 17
2.4 Development as per Schedule B 17
2.5 Administrative details of the Project 20
2.6 Salient Features of Project 22
2.7 Project Completion Certificate and PCOD & FCOD 32
2.8 Extension of Time 32
2.9 Penalty 32
2.10 Change of Scope 32
2.11 Approvals & Permits 32
2.12 Power Availability of Project 33
2.13 Special Features of Project 35

CHAPTER 3. REVIEW OF PROJECT AGREEMENTS 38

3.1 Review of Concession Agreement 38
3.2 Review of Supplementary Agreements 43

CHAPTER 4. CONDITION ASSESSMENT OF PROJECT ROAD 47

4.1 General 47
4.2 Pavement 49
4.3 Assessment of Highway 50
4.4 Assessment of Structures 53
4.5 Assessment of Road Furniture & Project Facilities 55
4.6 Assessment of Tunnels 57
4.7 Assessment of Tunnel MEP System 62
4.8 Assessment of Tunnel FIREFIGHTING SYSTEM 67
4.9 Assessment of TUNNEL VENTILATION SYSTEM 69
4.10 Assessment of Toll Plaza 72

CHAPTER 5. PAVEMENT INVESTIGATION & ASSESSMENT 75

5.1 General 75
5.2 Objectives 76
5.3 Review of Pavement Design 76
5.4 Bump Integrator (BI) test 79
5.5 Major Maintenance of Pavement 82

CHAPTER 6. COST ESTIMATES 84

6.1 General 84
6.2 Rate Assumption 84
6.3 Immediate Repair Cost 87
6.4 Routine Operation & Maintenance (O& M) Cost 89
6.5 O & M Strategy 91
6.6 Manpower cost 91
6.7 Vehicle Maintenance Cost 93
6.8 Civil work cost 94
6.9 Electrical and Mechanical (E & M) Cost 96
6.10 Toll Plaza TMS Cost 98
6.11 Office Expenses 98
6.12 Major Maintenance Cost 99
6.13 Major Maintenance items 99
6.14 Major Maintenance items 100
6.15 Summary of Cost 102

104

CHAPTER 7. PROJECT PHOTOGRAPHS 105

LIST OF EXHIBITS

EXHIBIT 1 SCOPE OF TDD SERVICES 11
EXHIBIT 2 STRUCTURE OF THE REPORT 13
EXHIBIT 3 PROJECT LOCATION MAP 16
EXHIBIT 4 ROADWAY AND GEOMETRIC 19
EXHIBIT 5 ADMINISTRATIVE DETAILS OF PROJECT 20
EXHIBIT 6 SALIENT FEATURES OF PROJECT 22
EXHIBIT 7 TUNNEL LAYOUT 28
EXHIBIT 8 TUNNEL TYPICAL CROSS SECTION 29
EXHIBIT 9 TYPICAL CROSS SECTION OF ESCAPE TUNNEL (DURING CONSTRUCTION AND OPERATIVE STAGE) 30
EXHIBIT 10 VEHICULAR CROSS PASSAGE LONGITUDINAL PROFILE 31
EXHIBIT 11 POWER DETAILS OF PROJECT 33
EXHIBIT 12 KEY TERMS OF CONCESSION AGREEMENT 38
EXHIBIT 13: KEY OBLIGATIONS OF PARTIES 39
EXHIBIT 14: KEY FINANCIAL COVENANTS DETAIL 40
EXHIBIT 15: KEY TERMS OF DAMAGES/ PENALTY 41
EXHIBIT 16: SUMMARY OF SUPPLEMENTARY AGREEMENTS 44
EXHIBIT 17 EXISTING VS SCHEDULE B 48
EXHIBIT 18 RIGID PAVEMENT (TOLL PLAZA / TUNNEL SECTION) 49
EXHIBIT 19 SERVICE ROAD PAVEMENT (APPROACH ROAD) 49
EXHIBIT 20 DETAILS OF STRUCTURES 53
EXHIBIT 21 DETAILS OF ROAD FURNITURE'S ITEMS 55
EXHIBIT 22 DETAILS OF PROJECT FACILITIES 56
EXHIBIT 23: DETAILS OF TUNNEL 57
EXHIBIT 24: SUMMARY OF TUNNEL SYSTEMS 60
EXHIBIT 25: MAIN TUNNEL ILLUMINANCE LEVELS (IN CANDELA PER SQUARE METER, CD/M^2) 62
EXHIBIT 26: VENTILATION SYSTEM CONFIGURATION 69
EXHIBIT 27: LIST OF MAJOR VENTILATION SYSTEM EQUIPMENT 70
EXHIBIT 28: MAINTENANCE AND INSPECTION PRACTICES 70
EXHIBIT 29 DETAILS OF TOLL PLAZA 72
EXHIBIT 30 ADOPTED COMPOSITION – MAIN CARRIAGEWAY: 77
EXHIBIT 31 ADOPTED COMPOSITION - TUNNEL AND TOLL PLAZA 77
EXHIBIT 32 ADOPTED COMPOSITION - ESCAPE & CROSS PASSAGE: 78
EXHIBIT 33 MAXIMUM PERMISSIBLE VALUES OF ROUGHNESS (MM/KM) FOR ROAD SURFACE 81

EXHIBIT 34 SUMMARY OF BI TEST RESULTS 81
EXHIBIT 35 ADOPTED UNIT RATES FOR KEY ITEMS 86
EXHIBIT 36 MAJOR COMPONENTS DETAIL FOR KEY ITEMS 86
EXHIBIT 37 IMMEDIATE REPAIR COST 87
EXHIBIT 38 O & M STRATEGY 91
EXHIBIT 39 MANPOWER COST 92
EXHIBIT 40 VEHICLE MAINTENANCE COST 93
EXHIBIT 41 CIVIL WORK COST (₹-CRORE) 95
EXHIBIT 42 DETAILS OF TOTAL E & M COST (₹-CRORE) 96
EXHIBIT 43 BREAKUP OF YEARLY E & M COST (₹-CRORE) 97
EXHIBIT 44 MAJOR MAINTENANCE CYCLES & COST 100
EXHIBIT 45 SUMMARY OF COST (₹-CRORE) 103

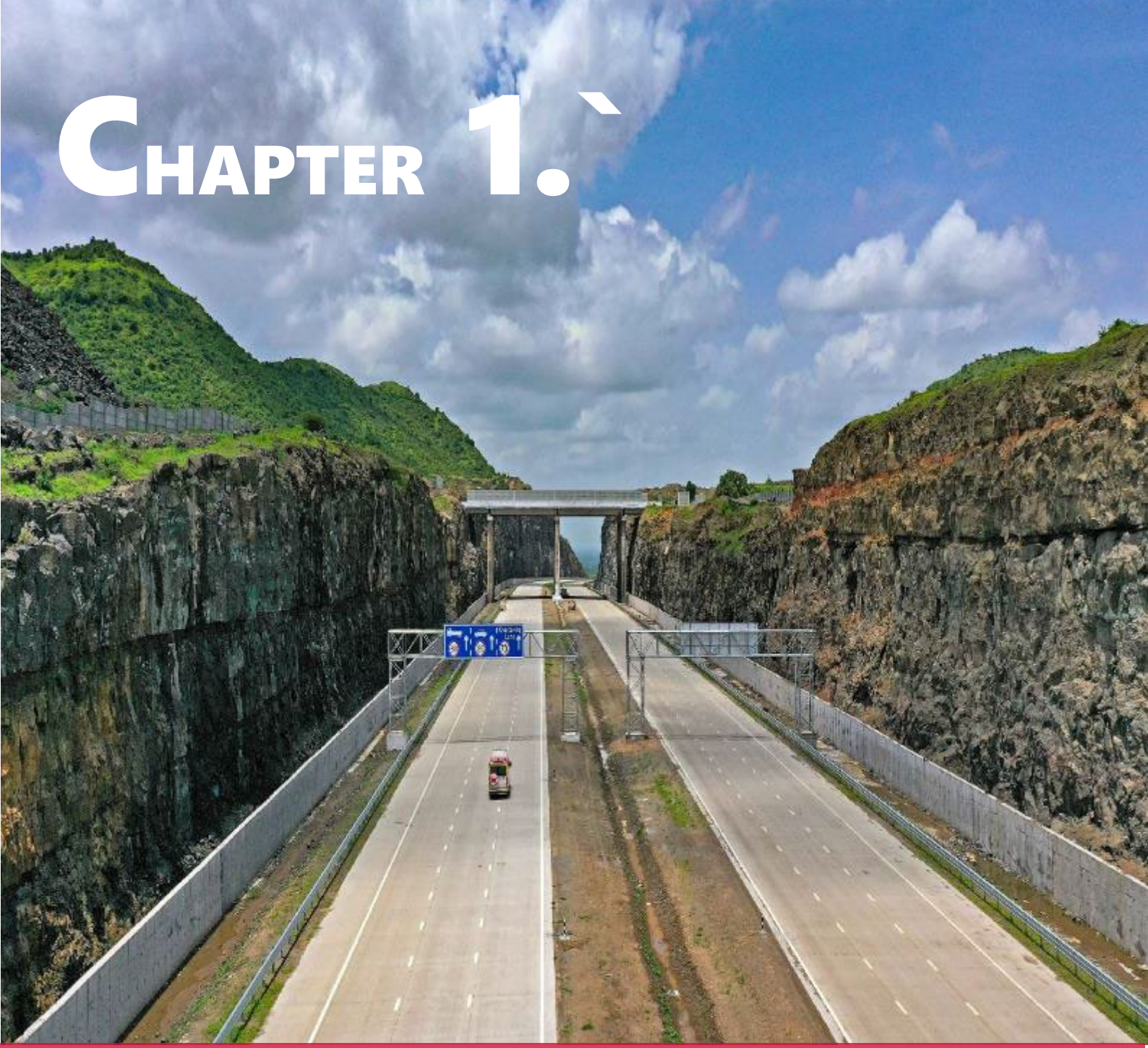
ACRONYMS AND ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SPV	**M/s Chenani Nashri Tunnelway Limited**	**NHAI**	**National Highway Authority of India**
AMC	Annual Maintenance Contract	MM	Major Maintenance
ATMS	Advanced Traffic Management System	MS	Milestone
BC	Bituminous Concrete	NCR	Non-Compliance Report
BOQ	Bill of Quantities	NOC	No Objection Certificate
BHS	Both hand Side	NMS	Network Management System
BI	Bump Indicator	NSV	Network Survey Vehicle
CA	Concession Agreement	OFC	Optical Fibre Cable
CAPEX	Capital Expenditure	OPEX	Operation Expenditure
COD	Commercial Operations Date	O&M	Operation and Maintenance
COS	Change of Scope	PCC	Plain Cement concrete
CUP	Cattle Under Pass	PCI	Pavement condition Index
DBM	Dense Bituminous Macadam	PCR	Pavement condition rating
DG	Diesel Generator	PCU	Passenger Car Unit
DLC	Dry Lean Concrete	PCOD	Provisional Completion Certificate
DLP	Defect liability period	PQC	Pavement Quality Concrete

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
DPR	Detailed Project Report	PUP	Pedestrian Under Pass
ECB	Emergency Call Box	POP	Pedestrian Over pass
ESAL	Equivalent Standard Axle Load	PMB	Polymer Modified Bitumen
EPC	Engineering Procurement & Construction	QA/QC	Quality Assurance/Quality Control
ETC	Electronic Toll Collection	RCC	Reinforced Cement Concrete
FOB	Foot Over Bridge	RAP	Reclaimed Asphalt Concrete
FO	Flyover	RFQ	Request for Qualification
FRL	Formation Road Level	RHS	Right Hand Side
FWD	Falling Weight Deflectometer	RM	Routine Maintenance
GAD	General Arrangement Drawing	RMS	Radio Mobile System
GFC	Good for Construction	ROB	Road Over Bridge
GSB	Granular Subbase	ROW	Right of Way
GST	Goods & Service Tax	SR	Service Road
HT	High Tension		
IPC	Interim Payment Certification	SPV	Special Purpose Vehicle
IRC	Indian Roads Congress	SOR	Schedule of Rates
INR	Indian Rupees	SAN	Storage Area Network
ITM	Integrated Traffic Management	TMS	Toll Management System

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
KVA	Kilo-Volt-Ampere	TOR	Terms of reference
LA	Land acquisition	BOT	Build Operate & Transfer
LHS	Left hand side	TLB	Truck lay bay
LCV	Light Commercial Vehicle	VUP	Vehicular Under Pass
LVUP	Low height Vehicular under pass	VDF	Vehicle Damage Factor
LED	Light Emitting Diode	VIDS	Video Incident Detection System
LIU	Light Interface Units	VMS	Variable Message Sign
MIS	Management Information System	WIP	Work in Progress
MSA	Million Standard Axles	WIM	Weigh in motion
MAV	Multi Axle Vehicle	WMM	Wet mix macadam

Chapter 1.`



Introduction

Chapter 1. INTRODUCTION

1.1 Background

Cube Highways Fund Advisors Pvt Ltd (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InVIT Regulations. Cube Highways Fund Advisors Pvt Ltd has appointed M/s Knight Frank India (KFI) (hereinafter referred as "Technical Consultant" or "KFI") to carry out Technical Due Diligence of **Rehabilitation, Strengthening, and Four Lanning of Chenani to Nashri section of NH-1A from Km 89+00 to Km 130+00 (New Alignment) of NH-1A including 9 Km long tunnel (2 Lane) with parallel escape tunnel,** was conceptualized in the Union Territory of Jammu & Kashmir. This project was structured on a DBFOT (Annuity) model.

1.2 Scope of Work

Exhibit 1 Scope of TDD Services

S. No	Terms of Reference
1.	A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
2.	Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, as built drawings, O&M manual, COD/PCOD certificate, Punch list, previous major maintenance etc.
3.	Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle Load, material investigations etc.
4.	Formulation of future major maintenance Strategy.
5.	Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
6.	Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period
7.	Estimation of Annual Operation expenses along with Systems cost (TMS/HTMS) till the end of concession period.

S. No	Terms of Reference
8.	Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Approach

Approach followed for this Due Diligence study is to understand the requirement of the client and terms of reference set forth. Our aim is that the study report should assist the clients in achieving their objectives.

1.4 Methodology

Methodology adopted is broadly outlined as under:

- Objectives of the client were identified from discussions and terms of reference spelt out for the study.
- Available data was collated and analysed by desk study.
- Requirements were identified to augment information/ data as available.
- Detailed List of data required was sent to Mapple team from time to time
- Personal discussions were carried out with Clients by senior executives from KF to explain data requirements.
- Extensive interaction was made by KF with Clients and data was collected.
- Information to be gathered from Client head office & team were listed
- Relevant documents regarding project highway, including CA Agreement and other documents were collected and the provisions studied in detail.
- All data as collected was duly collated and arranged in the order as required for preparation of the report.

1.5 Study

- Data collected from all sources was duly collated and disseminated to concerned experts in KF.
- Project documents such as CA Agreement, O&M Costing details, O&M Manual etc were studied in detail.

- The data made available was analysed, and comments formulated for inclusion in the report.

1.6 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

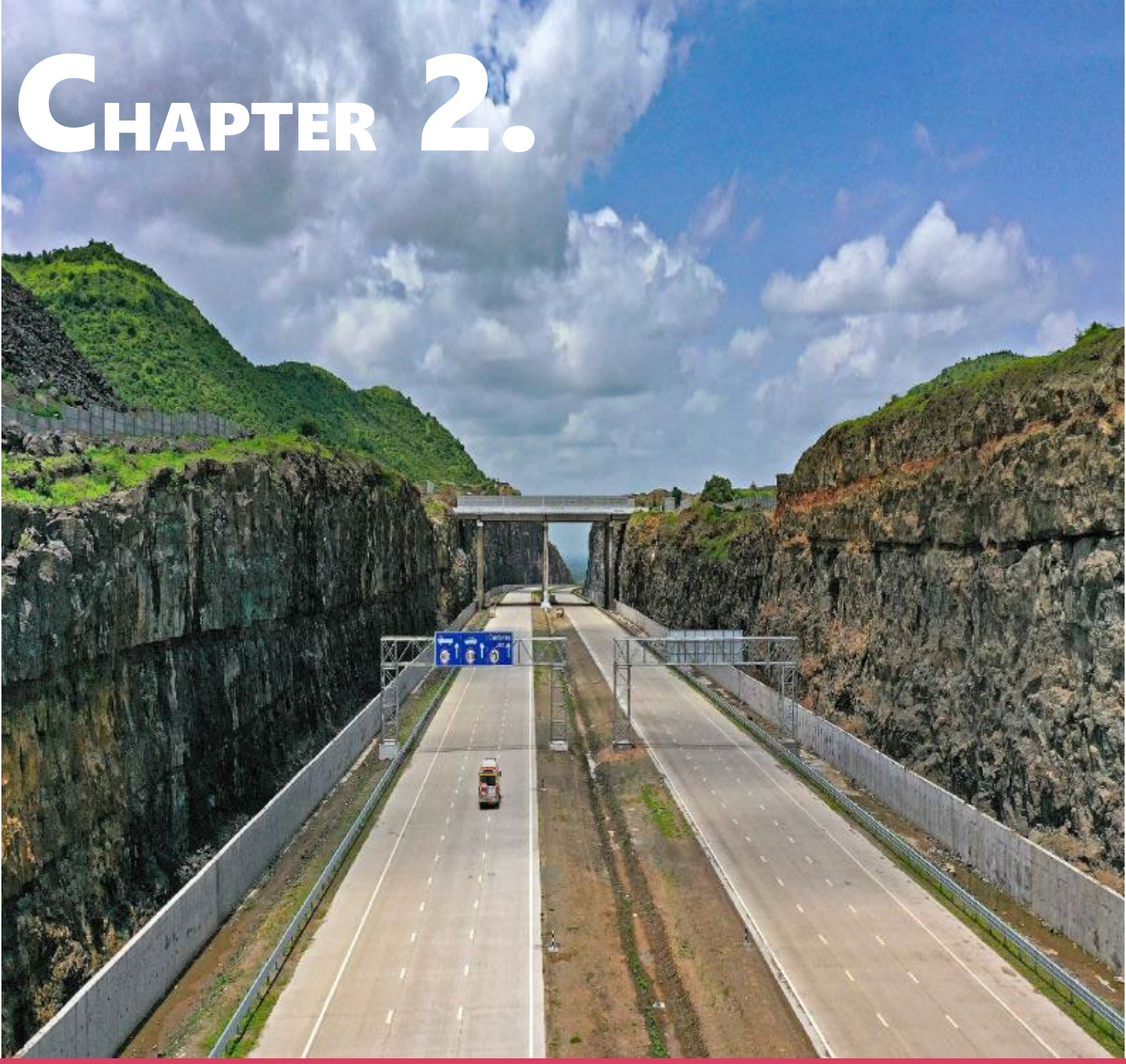
The site visit and inspection were carried out between the periods from 08th October 2025 to 10th October 2025.

The report is organized with the following chapters for easy understanding of various issues –

Exhibit 2 Structure of the Report

S.nos	Chapter	Description
1	**Chapter 1**	**Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**
2	**Chapter 2**	**Project Description:** The chapter describes existing project features, overview of project development.
3	**Chapter 3**	**Review of Agreements:** The chapter describes review of CA, Supplementary, State Support Agreement, Settlement Agreement & Various O & M Agreements.
4	**Chapter 4**	**Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**
5	**Chapter 5**	**Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance
6	**Chapter 6**	**Cost Estimates**: This chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period

Chapter 2.



Project Description

Chapter 2. PROJECT DESCRIPTION

2.1 Project Location and Description

This asset is a **DBFOT (Annuity)** project involving the **construction, operation, and maintenance of the Chenani–Nashri Section** of **National Highway-44 (formerly NH-1A)** in the **Union Territory of Jammu & Kashmir**. The project stretch extends from **Km 89.00 (Chenani)** to **Km 130.00 (Nashri)**, traversing through the **Udhampur and Ramban districts** of the Jammu region.

The project includes the **Dr. Syama Prasad Mookerjee Tunnel (Chenani–Nashri Tunnel)**—India's first and longest **bi-directional road tunnel**—having a **main tunnel of 9.00 km length** and a **parallel escape tunnel**, interconnected by **cross passages every 300 meters** for emergency evacuation. The tunnel passes beneath the **Patnitop hill range** on the lower Himalayas, providing an all-weather, safe, and shorter alternative to the earlier steep and accident-prone mountainous route over **Patnitop, Kud, and Batote**.

This modern infrastructure project has reduced the distance between **Chenani and Nashri by approximately 31 km** and shortened the overall travel time between **Jammu and Srinagar by nearly two hours**, ensuring **uninterrupted connectivity throughout the year**. Situated at an elevation of about **1,200 meters**, the tunnel bypasses areas that were previously prone to **landslides, snow accumulation, and prolonged traffic disruptions** during winter months.

The tunnel is equipped with advanced **Mechanical, Electrical, and Electronic (MEE)** systems, including:

- A **transverse ventilation system** with jet fans and axial fans to maintain air quality,
- **29 cross passages** at regular intervals,
- **CCTV-based surveillance**, **SCADA-controlled operations**, and **fire detection & suppression systems**, and
- Reliable **power supply and backup arrangements** for round-the-clock tunnel operation.

Constructed using the **New Austrian Tunnelling Method (NATM)**, the project represents a major milestone in India's highway engineering, enhancing both transportation efficiency and strategic connectivity across the Himalayan corridor.

Following a competitive bidding process, the contract was awarded by the **National Highways Authority of India (NHAI)** to **M/s IL&FS Transportation Networks Limited (ITNL)**. To implement the project, ITNL incorporated a **Special Purpose Vehicle (SPV)** named **M/s Chenani Nashri Tunnelway Limited (CNTL)**.

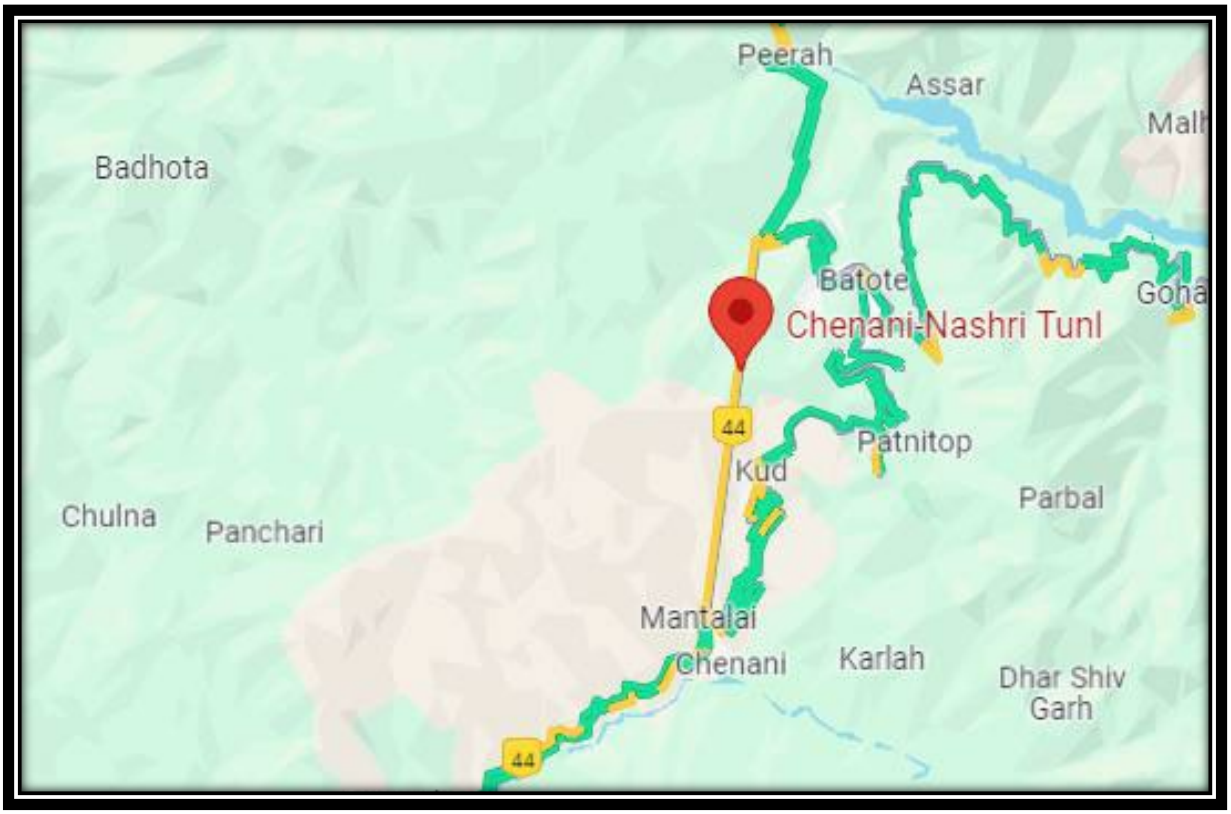
The **Concession Agreement** was signed on **29 May 2010**.

The project achieved **Provisional Completion (PCOD)** on **08 March 2017**, and the **Completion Certificate** was issued on **22 February 2017**. The tunnel was **inaugurated on 2 April 2017** by the **Hon'ble Prime Minister of India**. The project is presently under the **Operation and Maintenance (O&M) phase**.

The **current proposed acquisition** of the project is by ***M/s Cube Highways and Infrastructure V Pte. Ltd.***

Accordingly, Technical Consultant has undertaken the work of assessment of operation and maintenance (O&M) cost based on site inspections and flied investigations. Same is presented in this report.

Exhibit 3 Project Location Map



2.2 Terrain

The **Chenani–Nashri Tunnel** traverses the **lower Himalayan region**, passing beneath the **Patnitop hill range** along the **Pir Panjal foothills** of the Jammu region. The terrain along the project corridor is **mountainous and geologically complex**, characterized by steep slopes, deep gorges, and highly variable geological formations.

Overall, the **terrain and geological setting** of the Chenani–Nashri Tunnel presented challenging conditions for design and construction, necessitating continuous **geotechnical monitoring**, **instrumentation**, and **adaptive tunnelling methods** to ensure stability and safety during excavation and long-term operation

2.3 Climate

The **Chenani–Nashri project corridor**, located in the **lower Himalayan zone of Jammu & Kashmir**, experiences a **temperate to cold mountain climate**, with marked variations between the southern (Chenani) and northern (Nashri) ends of the alignment due to elevation and topographic differences.

Winters, extending from **December to March**, are generally **cold and humid**, with temperatures ranging between **2°C and 10°C** in the lower reaches and occasionally dropping to **near freezing (0°C)** in higher areas near Nashri. Light to moderate **snowfall** occurs on the upper slopes and ridges surrounding the tunnel alignment, while **fog, frost, and low visibility** are frequent during early mornings and late evenings.

Summers, lasting from **May to August**, are **mild and moderately warm**, with daytime temperatures typically ranging from **18°C to 28°C**, and nighttime temperatures remaining around **12°C to 18°C**. These months provide the most favorable conditions for maintenance and inspection works along the corridor.

2.4 Development as per Schedule B

As per **Schedule B (Development of the Project Highway)** of the Concession Agreement for the **Chenani–Nashri Section of NH-1A (Km 89.00 to Km 130.00, new alignment)**, the Concessionaire shall undertake the **design, engineering, construction, development, operation and maintenance** of the project on a **DBFOT (Annuity)** basis in the State of Jammu & Kashmir.

The project involves the **four-laning of the Chenani–Nashri section**, including construction of a **9 km long two-lane tunnel with a parallel escape tunnel**, along with approaches and associated infrastructure. The scope of development includes:

- **Main Carriageway:** Four-lane divided highway with appropriate pavement composition and geometric standards.
- **Tunnels:** Construction of the main tunnel (2-lane) and a parallel escape tunnel, both to be provided with ventilation, lighting, drainage and fire-safety systems as per Schedule D.
- **Approach Roads:** Approach road to the **South Portal (~1.3 km)** and to the **North Portal (~0.6 km)** including slope cuttings, embankments and protection works.
- **Structures:** Two minor bridges (one of 40 m span and one of 50 m span), 11 culverts, pedestrian/vehicular underpasses, and other associated structures.
- **Ancillary Facilities:** Toll plazas at both ends of the tunnel, rest areas, truck lay-bys, bus-bays, roadside furniture, pedestrian facilities, landscaping and tree plantation, and facilities for wayside amenities.
- **Safety and Support Systems:** Highway lighting, traffic aid posts, medical aid posts, vehicle rescue posts, highway traffic management and telecom systems.
- **Right of Way:** As per Schedule B (Clause 4.7), the ROW shall generally be **60 m**, **90 m at toll-plaza locations**, and **45 m in forest areas**.
- **Environmental Works:** Tree plantation, slope protection, and other measures in accordance with the Environmental Management Plan.

All works are to be executed in conformity with the **Manual of Specifications and Standards for Four-Laning of Highways (IRC:SP-84-2009)** and the **technical specifications provided in Schedule-D**.

2.4.1 Roadway and Geometric

Exhibit 4 Roadway and Geometric

Component	Chainage (Km)	Description	Specifications
Four-Lane Main Highway	**Km 89.00 – Km 130.00**	Four-lane section of NH-44 between Chenani and Nashri, including approach roads and interchanges	
Main Tunnel (Dr. Syama Prasad Mookerjee Tunnel)	Within Km 96.00 – Km 105.00 (approx.)	**Bi-directional road tunnel (Main Tunnel)** connecting Chenani and Nashri, bypassing Patnitop	**Length:** 9.00 km (Main Tunnel) **Carriageway:** 2 lanes (7.5 m) **Design Speed:** 50–80 km/h **Vertical Clearance:** 5.5 m
Escape Tunnel	Parallel to main tunnel alignment	**Escape tunnel** for emergency evacuation, connected to main tunnel via cross passages	**Length:** 9.00 km (parallel to main tunnel) **Cross Passages:** 29 Nos. at 300 m intervals
Approach Roads		About 1.3 km of road approaching the South tunnel portal and about 0.6 km of road approaching the North tunnel portal (involves slope cuttings and embankments).	Flexible pavement with granular sub-base, DBM, and BC layers
Bridges / Viaducts			**Total 2 Bridge, 40m single span bridge** approaching the South portal of the tunnel.

Component	Chainage (Km)	Description	Specifications
			50m single span bridge approaching the North portal of the tunnel.
Cross Passages & Egress System	Along tunnel alignment	Cross passages linking main and escape tunnels	29 cross passages spaced at ~300 m intervals

The total project length is approximately **10.9 km**, comprising the **Chenani–Nashri twin-tube tunnel of 9.0 km**, along with about **1.3 km of approach road on the southern side (Chenani portal)** and **0.6 km of approach road on the northern side (Nashri portal)**, involving slope cuttings, embankments, and protective structures.

2.5 Administrative details of the Project

The Concession stands granted to operate the road from the Appointed date for the concession period with the obligation on concessionaire to maintain the road in the same period. Administrative details of projects are as at **Exhibit 5** below.

Exhibit 5 Administrative Details of Project

Feature	Description (as per TDD Report – Chenani–Nashri)
Project Name	Construction, Operation and Maintenance of Chenani–Nashri Section of NH-44 including 9.0 km Bi-directional Tunnel with Parallel Escape Tunnel in the Union Territory of Jammu & Kashmir on DBFOT (Annuity) Basis
Mode of Execution (BOT Toll / BOT Annuity)	BOT (Annuity)
Scheme / Phase	Operation, Maintenance and Transfer
No. of Lanes / Configuration	2-Lane Bi-directional Tunnel with Parallel Escape Tunnel
Length of the Project (in Km)	Approx. 10.9 km (including 9.0 km tunnel and 1.9 km approach roads)
Total Project Cost (in ₹ Crore)	3720 Cr

Feature	Description (as per TDD Report – Chenani–Nashri)
Annuity (Bi-annually)	₹317.52 crore
NH No. (New / Old)	NH-44 (Old NH-1A)
Concessionaire / SPV	M/s Chenani Nashri Tunnelway Limited (CNTL)
Parent Company	M/s IL&FS Transportation Networks Limited (ITNL)
EPC Contractor	Leighton India Pvt. Ltd. (Leighton)
Independent Engineer (O&M Phase)	Segmental Consulting & Infrastructure Advisory Pvt. Ltd in association with Segmental Consulting & Infrastructure Advisory Pvt. Ltd
Date of Award of Work (LOA)	03-05-2010
Date of Signing of Concession Agreement	28-Jun-2010
Appointed Date	23 May 2011
Concession Period	20 Years (including Construction period)
Construction Period	1825 days (05 Years)
Provisional Completion (PCOD) Date	08-Mar-2017
Final Completion / Completion Certificate Date	22-Feb-2018
End Date of Concession Period	Year 2031
No. of Toll Plazas (Number and Location)	02

2.6 Salient Features of Project

Salient features of the project are covered at **Exhibit 6** below.

Exhibit 6 Salient Features of Project

Sl. No.	Particulars	As per Schedule-B	As Built
1	**Project Road Start**	Km 89+000 at Chenani	Km 89+000 at Chenani (South Portal)
2	**Project Road End**	Km 130+000 at Nashri	Km 130+000 at Nashri (North Portal)
3	**Project Length**	10.89 km (New Alignment)	Approx. 10.9 km (9.0 km Tunnel + 1.9 km Approaches)
4	**Rigid Pavement**	Rigid pavement throughout tunnel	Rigid Pavement throughout stretch
	Tunnel		
1	**Tunnel**	Main Tunnel – 9.0 km (bi-directional, 2-lane) Parallel Escape Tunnel – 9.0 km	Same – Main Tunnel (9.0 km bi-directional) and Escape Tunnel (9.0 km service/emergency). Both constructed using NATM under DBFO (Annuity) model.
2	**Length (Excavation) (Portal to Portal)**	9.0 km	9.002 km from Km 89+000 (Chenani Portal) to Km 98+002 (Nashri Portal); excavation carried out by NATM (Drill & Blast – Top Heading, Bench and Invert Sequence).
3	**Tunnel Details**	Bi-directional tunnel with cross passages @ 300 m intervals;	**Main Tunnel –** 9.35 m carriageway + 1.2 m footpath on each side (total

Sl. No.	Particulars	As per Schedule-B	As Built
		vertical clearance 5.0 m (min); constructed using NATM.	≈ 11.75 m width); vertical clearance – 5.0 m. **Escape Tunnel –** 5.0 m width × 2.5 m vertical clearance. Constructed using **New Austrian Tunnelling Method (NATM)** with **lattice girders**, **rock bolts (4–5 m long, 25 mm dia)**, and **shotcrete lining (150–250 mm thick)**, followed by **RCC final lining (300 mm thick, M30 grade concrete)** and **PVC waterproofing membrane** between primary and final linings.
4	**Cross Passages**	29 Nos. @ 300 m spacing	29 Nos. • (22 Pedestrian – 4.5 m × 2.5 m; • 7 Vehicular – 7.5 m × 4.5 m). • Vehicular Cross Passages located approximately every 1.2 km (CP-4, 8, 12, 16, 20, 24, 28).
5	**Functional Cross Section**	○ Main Tunnel – 9.35 m carriageway + 1.2 m footpath each side (total ≈	Same as design – Main Tunnel (9.35 m carriageway + 1.2 m footpath each side), Escape Tunnel (5.0 m × 2.5 m). Cross Passages as

Sl. No.	Particulars	As per Schedule-B	As Built
		11.75 m); vertical clearance 5.0 m ○ Escape Tunnel – 5.0 m width × 2.5 m clearance ○ Cross Passage – 7.5 m width × 4.5 m height (vehicular type)	executed: Pedestrian (≈ 2.5 m × 2.5 m) and Vehicular (≈ 7.5 m × 4.5 m).
6	**Firefighting and SCADA System**	Equipped with SCADA, ventilation, fire detection & suppression, communication and CCTV systems (Appx B-III).	SCADA-based integrated system operational: • 84 Jet Fans + 8 Axial Fans for longitudinal ventilation • Fire Hydrants every 60 m and Fire Niches every 150 m • SOS call boxes and CCTV coverage every 60 m • FM rebroadcast and PA system fully functional.
Structures			
1	**Minor Bridges**	02 Nos. (at South & North Portals)	**2 Nos. (PSC Box Girder Bridges):** • **Bridge B-1 @ Km 89+750 (South Portal)** – 1 × 40 m span PSC Box Girder with RCC Box Abutments on open foundation. • **Bridge B-2 @ Km 99+530 (North Portal)** – 1 × 50 m span PSC Box Girder with RCC Box Abutments on open foundation. Deck width ≈ 9.5

Sl. No.	Particulars	As per Schedule-B	As Built
			m (2-lane carriageway + crash barriers each side).
2	**Underpasses (PUP / CUP)**	02 Nos. (as per Appx B-I)	**2 Nos.:** • **Pedestrian Underpass (PUP) @ Km 89+620 (South Approach)** – RCC box type structure, clear span 4.0 m × 3.0 m. • **Cattle Underpass (CUP) @ Km 99+620 (North Approach)** – RCC box type structure, clear span 6.0 m × 4.0 m.
3	**Culverts**	11 Nos. (10 Box + 1 Pipe Culvert)	**11 Nos.:** • **South Approach (Km 89+100 – Km 89+900)** – 6 Box Culverts (4 m × 3 m RCC sections). • **North Approach (Km 129+000 – Km 129+900)** – 4 Box Culverts + 1 Pipe Culvert (900 mm dia RCC pipe). All with RCC headwalls and wing walls.
Misc.			
1	**Toll Plaza**	2 Nos. (one at each portal)	2 Nos. – South @ Km 89+420 and North @ Km 129+720 (6 + 2 lanes each; for northbound and southbound traffic).

Sl. No.	Particulars	As per Schedule-B	As Built
2	**Drainage Pipe in Main Tunnel**	RCC longitudinal drains on both walls	9.0 km length (4 Nos. – 2 each side of both tubes) of 450 mm dia RCC pipes with collection sumps and automatic pumping at both portals.
3	**Drainage Pipe in Escape Tunnel**	Provided along length for stormwater and seepage drainage	9.0 km length (2 Nos. lines) of 350 mm dia RCC pipes with gravity outlet to portal sumps and cross-link to main tunnel drain system.
4	**Drainage Pipe in Cross Passages**	Inter-connecting main and escape tunnels	29 Nos. RCC links (200–250 mm dia) provided through each cross passage on both ends for seepage and fire-water collection.
5	**Slope Protection Works – Valley Side (South Portal)**	Retaining / gabion walls as per design	Executed ≈ 1,520 m (Gabion crib walls and shotcrete with rock bolts @ 2 m grid).
6	**Slope Protection Works – Hill Side (North Portal)**	Retaining walls and anchored shotcrete as per design	Executed ≈ 1,750 m (RCC retaining walls with anchors and wire-mesh shotcrete facing).
7	**Lay Bays / Truck Lay Byes**	Every ≈ 1.2 km both sides (≈ 14 Nos.)	15 Nos. provided (7 each direction inside tunnel + 1 at South portal); avg length ≈ 40 m each with signage and lighting.
8	**Fire-Fighting Niches**	At 150 m intervals each side	59 Nos. operational (30 south tube + 29 north tube) equipped with hydrant, hose

Sl. No.	Particulars	As per Schedule-B	As Built
			reel and extinguisher; linked to SCADA pressure monitoring.
9	**Vehicular Emergency Exits**	Every ≈ 1.2 km (Appx B-I)	7 Nos. Vehicular Cross Passages (@ CP-4, 8, 12, 16, 20, 24 & 28) clear opening ≈ 7.5 m × 4.5 m.
10	**Pedestrian Emergency Exits / Cross Passages**	At ≈ 300 m intervals (Appx B-I)	22 Nos. Pedestrian Cross Passages (≈ 4.5 m × 2.5 m) between main and escape tunnels.
11	**Ventilation Buildings**	2 Nos. (one at each portal)	2 Nos. – South & North Portals; house axial fans, air shafts and HV panels for jet-fan system.
12	**Tunnel Control Centre (Building)**	2 Nos. (one at each portal)	1 Main Integrated Control Centre (South Portal) with Fire Pump House & Switch Yard; North Portal building houses Ventilation and Power Control equipment.
13	**Toll Plaza Buildings**	At each toll location	Constructed at both portals with Weigh-in-Motion system, Server Room and ITCS facilities.

Exhibit 7 Tunnel Layout

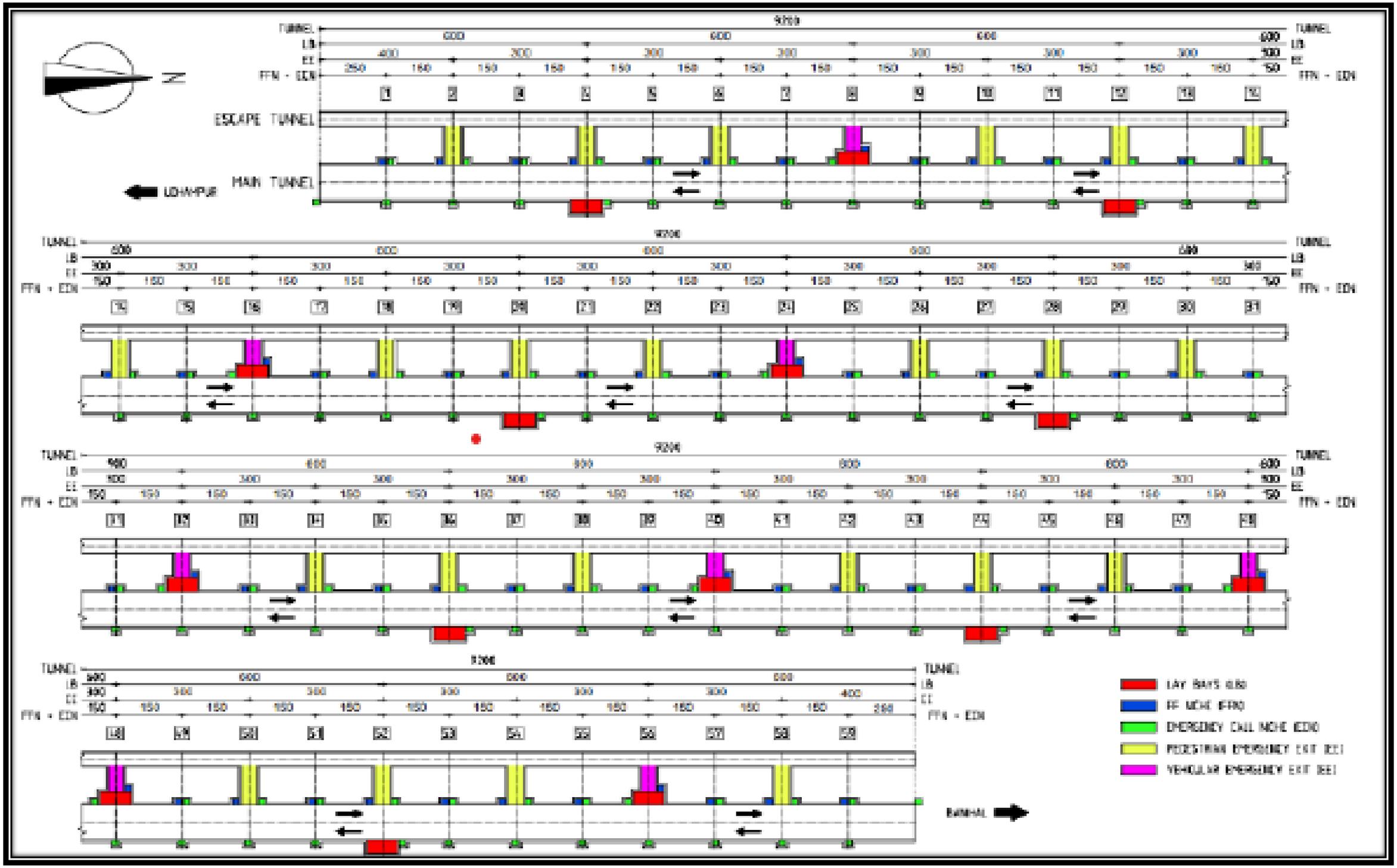


Exhibit 8 Tunnel Typical Cross Section

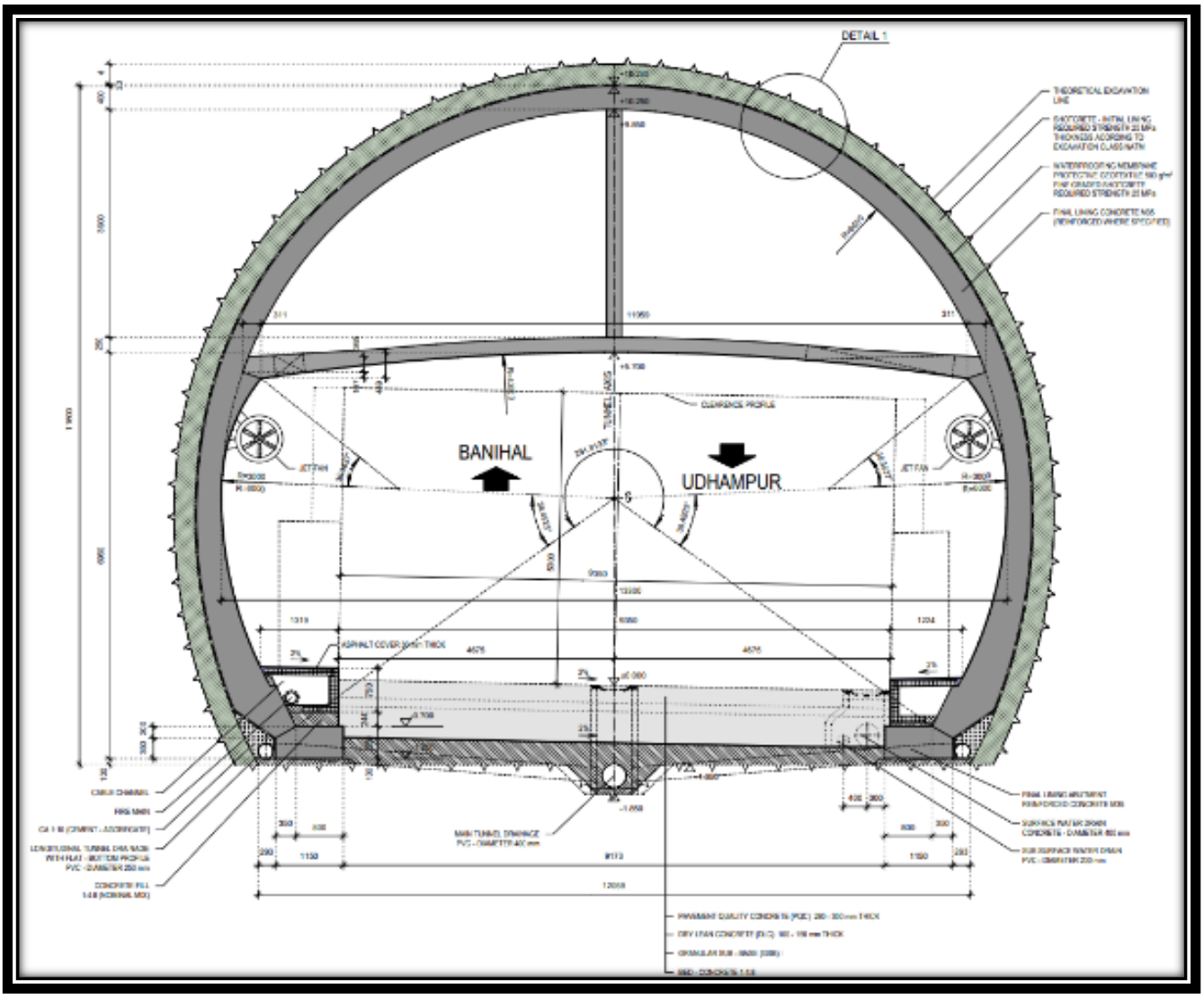


Exhibit 9 Typical Cross Section of Escape Tunnel (during construction and operative stage)

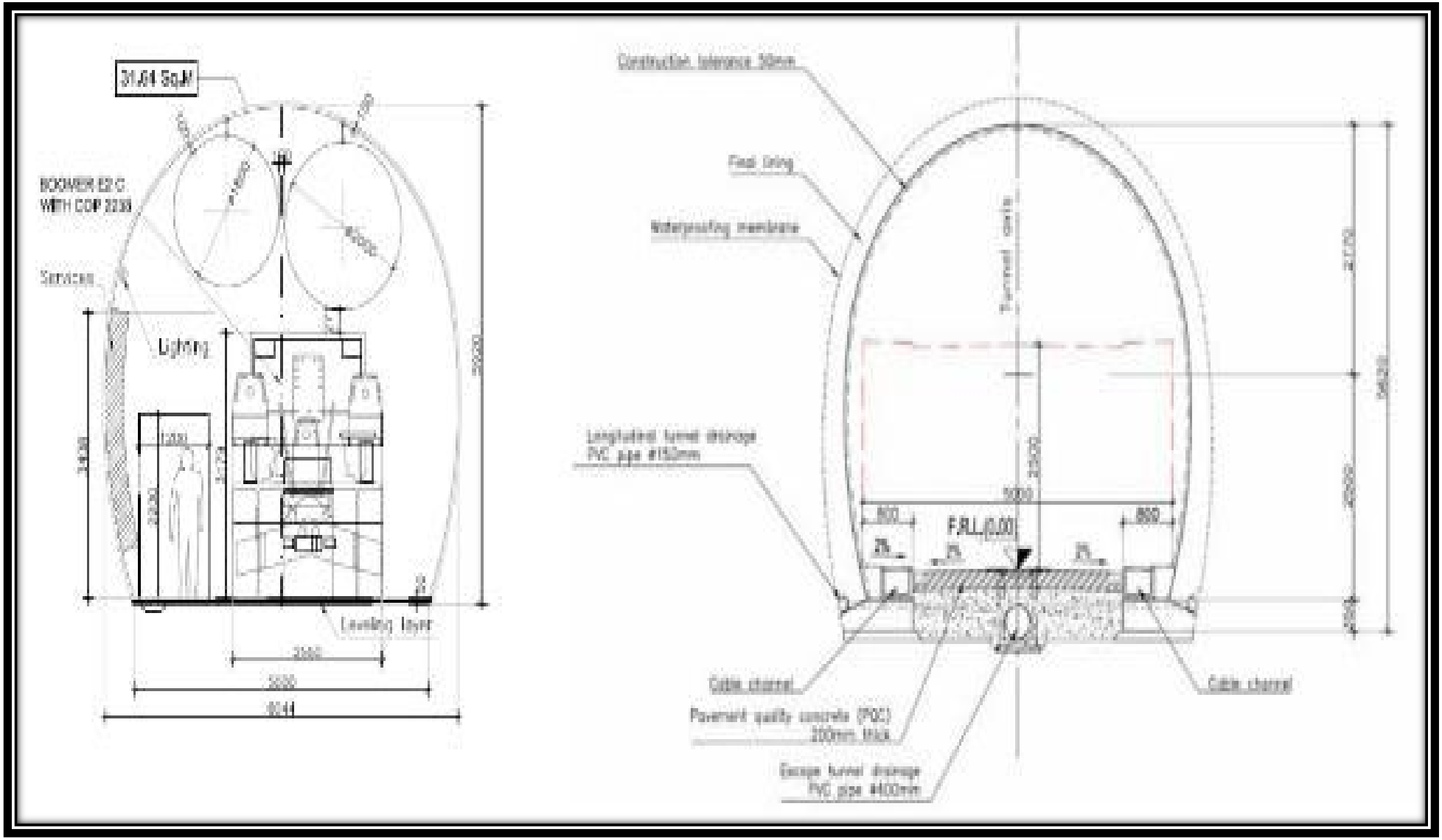
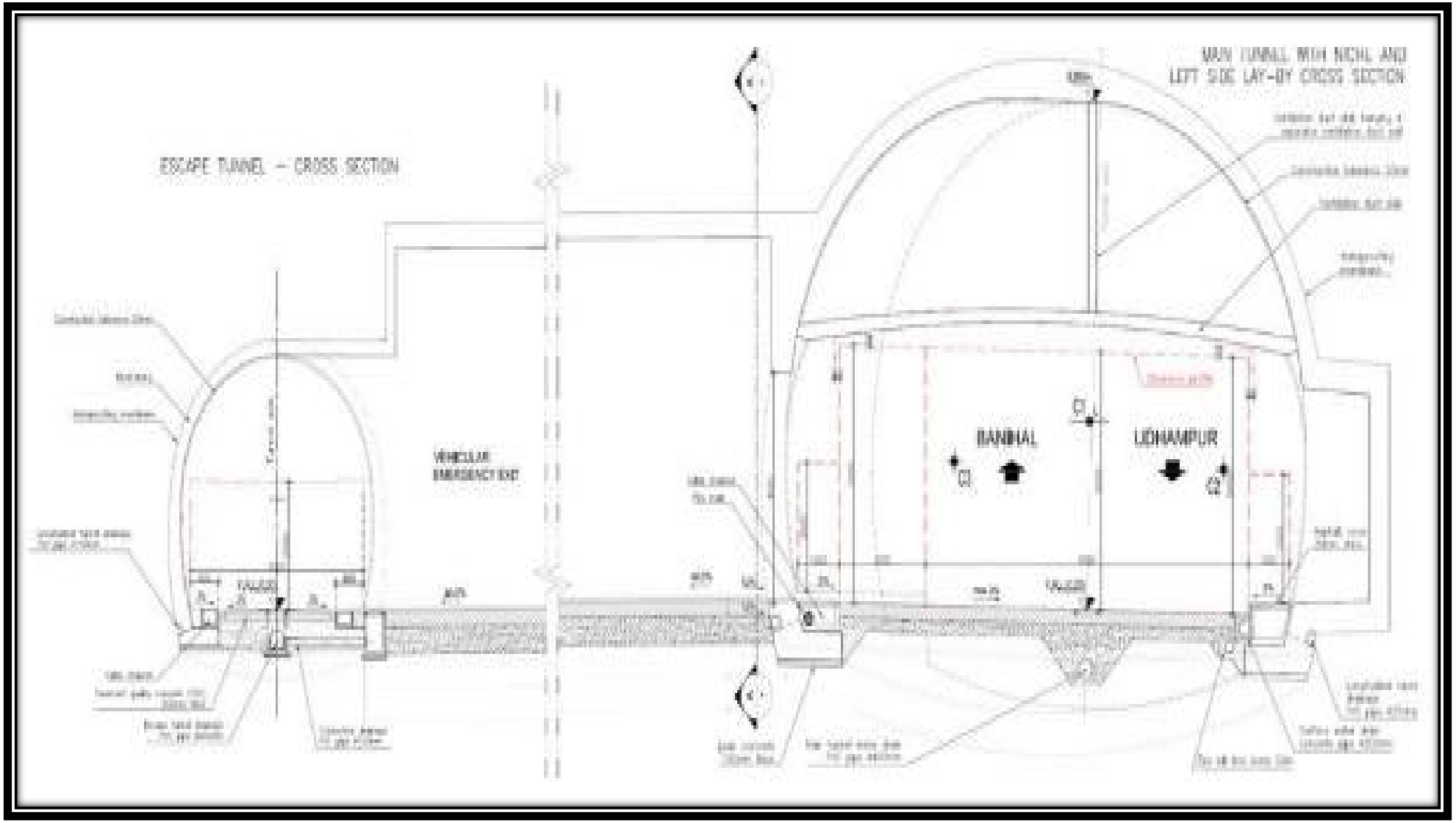


Exhibit 10 Vehicular Cross Passage Longitudinal profile



2.7 Project Completion Certificate and PCOD & FCOD

A. Partial Commercial Operation Date (PCOD):

- **PCOD issued: 08 March 2017.**

B. Final Commercial Operation Date (COD):

- **Project received COD (Completion): 22 Feb 2018.**

2.8 Extension of Time

There is no extension of time for the concession period on the project

2.9 Penalty

There is no penalty on project as of now.

2.10 Change of Scope

There is no Change of Scope on project.

2.11 Approvals & Permits

Since Project is in O & M stage therefore all necessary approvals required are in place with concessionaire.

2.12 Power Availability of Project

Exhibit 11 Power Details of Project

Location	DPR Status	33 KV Line	33/11 KV Sub-station	Remarks
North Portal		33 kV incoming power line taken from Udhampur Grid; supply through overhead / pipe-enclosed 11 kV cables from switchyard to portal sub-station	33/11 kV AIS switchyard (10 MVA transformer installed) with 6 × 250 kVAR capacitor banks (1500 kVAR total)	Switchyard and equipment found OK as per design;
South Portal		132/11 kV GIS switchyard near portal (10 MVA transformer); outgoing 11 kV feed to Sub-station-1 and tunnel systems	Sub-station-1 comprises 5 × 1250 kVA + 1 × 750 kVA transformers for ventilation and tunnel loads; 125 kVA auxiliary transformer and 40 kVA DG set provided for stand-by	6 × 250 kVAR capacitor banks (1500 kVAR total) installed; water-logging in 11 kV trench observed — make-up air grill and continuous exhaust fan operation recommended
Present Power Availability				
North Portal		11 kV dedicated line from switchyard feeding tunnel equipment		In use for tunnel operation till permanent system augmentation (if any)
South Portal		11 kV power feed from GIS switchyard to Sub-station-1		In use for tunnel equipment operation; no augmentation noted in TDD Report

☛ Both the North and South Portals are presently operating through their respective permanent power systems. The **North Portal** is fed through a **33/11 kV AIS switchyard (10 MVA)**, and the **South Portal** is supplied from a **132/11 kV GIS switchyard (10 MVA)** with dedicated 11 kV feeders to tunnel substations. The power infrastructure, including transformers and capacitor banks, was found **operational and generally in accordance with design provisions**,.

2.13 Special Features of Project

The Chenani–Nashri Tunnel is part of the four-laning of NH-1A from Km 89+000 to Km 130+000 and provides **uninterrupted all-weather connectivity** between Chenani and Nashri. The tunnel system consists of a **main tunnel (two-lane, 9 km)** and a **parallel escape tunnel (9 km)** interconnected by **29 cross-passages**—22 pedestrian and 7 vehicular—for evacuation and maintenance.

Each tunnel tube ensures safe and continuous traffic movement and is supported by comprehensive civil, mechanical, electrical and safety installations.

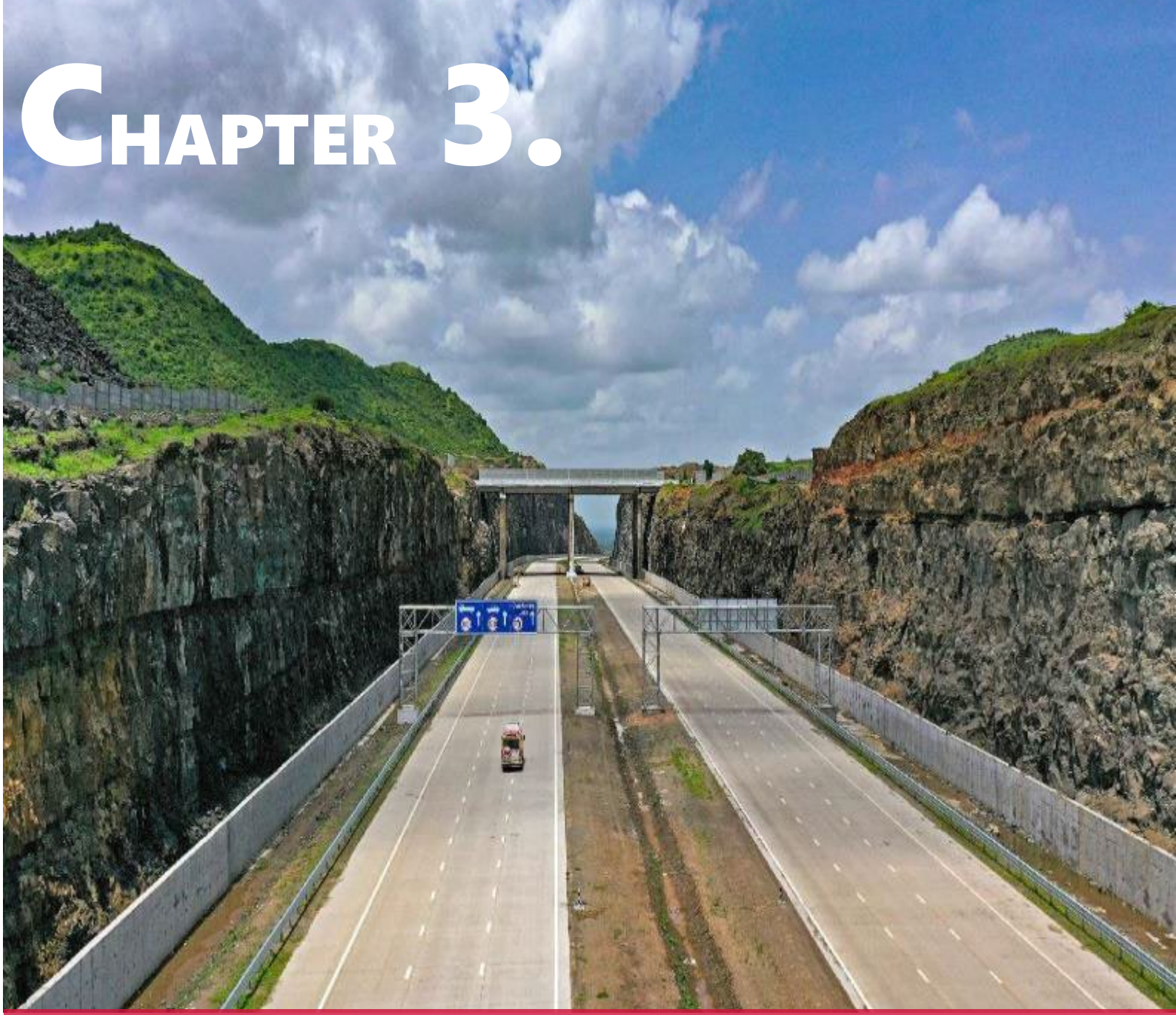
1. **Traffic Management and Control System-** An Integrated Tunnel Control System (ITCS) is installed at both portals for centralized supervision of all tunnel services, including lighting, ventilation, power, communication and safety equipment. The system is functional and monitored from the Control Room (South Portal) and Server Room (North Portal).
2. **Ventilation System Control** – The tunnel is equipped with a longitudinal ventilation system using jet fans to maintain air quality and visibility under normal and emergency conditions. The ventilation fans are controlled through the ITCS.
3. **Power Supply and Distribution Monitoring** – Power is supplied through a 132/11 kV GIS switchyard (10 MVA) at the South Portal and a 33/11 kV AIS switchyard (10 MVA) at the North Portal, feeding multiple sub-stations for tunnel lighting, ventilation and control systems. Both switchyards were found operational and in accordance with design requirements.
4. **Communication and Surveillance System-** The tunnel is provided with a CCTV network covering the main and escape tunnels and both portals. Monitoring is carried out from the Control Room through the ITCS. The system was functional and supported incident monitoring and recording.
5. **Fire Alarm and Fire-Fighting System-** Fire alarm panels and fire pump rooms are installed at both portals. These systems to be operational and recommended improvements in ventilation of panel rooms and periodic maintenance of fire-water connections.
6. **Emergency and Control Facilities-** Each portal houses Control and Server Rooms integrating tunnel operations, with communication links to escape passages and sub-stations. Fire pump rooms and ventilation buildings are also provided at both ends.

7. **Safety Structures and Access Control-** Rigid height restriction barriers are installed at both portals to prevent entry of over-height vehicles. Cross-passages enable safe evacuation and maintenance access throughout the tunnel length.

KF View:

The Chenani–Nashri Tunnel is equipped with a robust and integrated system encompassing traffic management, surveillance, power, ventilation, fire safety, and communication facilities. These systems are seamlessly interconnected through an Intelligent Tunnel Control System (ITCS), ensuring centralized monitoring and swift response to any operational or emergency condition. Designed with built-in redundancy, automation, and real-time data integration, the tunnel's infrastructure ensures safe, reliable, and uninterrupted operations—enhancing user safety, comfort, and overall travel experience.

Chapter 3.



Review of Project Agreements

Chapter 3. REVIEW OF PROJECT AGREEMENTS

3.1 Review of Concession Agreement

The Concession Agreement was executed between the National Highways Authority of India (NHAI) and Chenani Nashri Tunnelway Limited (CNTL) on 28 June 2010 for Four-Laning of the Chenani–Nashri Section of NH-1A from Km 89.000 to Km 130.000 (New Alignment), including a 9 km long two-lane main tunnel with a parallel escape tunnel, in the State of Jammu & Kashmir, on a DBFOT (Annuity) basis under NHDP Phase-II.

Exhibit 12 Key Terms of Concession Agreement

Particulars	Description
Date of Agreement	28 June 2010 (following LOA dated 03 May 2010)
Appointed Date	23 May 2011
Employer / Authority	National Highways Authority of India (NHAI)
Concessionaire	Chenani Nashri Tunnelway Limited (CNTL), promoted by IL&FS Transportation Networks Limited
Concession Period	20 years (including 5 years construction) – *Article 3.1.1*
Project Scope	Four-laning of NH-1A including a **9.0 km main tunnel**, **9.0 km escape tunnel**, **two minor bridges (40m & 50m)**, and **approach roads of 1.3 km (South) and 0.6 km (North)**
Total Project Cost (TPC)	₹3,720 crore
Construction Period	1825 days (5 years) from Appointed Date – *Schedule G*
Scheduled Completion Date	22 May 2016
Annuity Payment	₹317.52 crore per half year (Article 27.1.1; Schedule M)
Annuity Start	6 months post-COD; biannual payments throughout concession period
Performance Security	As per Article 9; Bank Guarantee valid till one year from Appointed Date; replenishable if encashed
Escrow Account	Required prior to Appointed Date; deposits include Financial Package, Annuity inflows, insurance, and receipts (Article 31; Schedule S)

Particulars	Description
Financial Close	Within 180 days of CA signing; extension allowed with damages under Article 10
Termination / Force Majeure	Articles 34–36 define natural, indirect, and political events and related relief/compensation
Dispute Resolution	Conciliation → Arbitration under Arbitration and Conciliation Act, 1996 (Article 44)
Governing Law & Jurisdiction	Governed by Indian Law; Delhi courts have jurisdiction (Article 47)

3.1.1 Obligations of the Authority & Concessionaire

Exhibit 13: Key Obligations of Parties

Authority	Concessionaire
Provide Right of Way (ROW) free from encumbrances (Article 4)	Design, engineer, finance, construct, operate, and maintain the Project Highway (Article 3)
Assist in obtaining clearances and statutory approvals	Achieve Financial Close within 180 days and furnish Performance Security
Pay fixed biannual annuity of ₹317.52 crore after COD	Operate and maintain the highway in accordance with Schedule K (Maintenance Requirements)
Support in shifting of utilities, traffic management, and emergency services	Comply with Safety Requirements (Article 18)
No levy of additional taxes or tolls (traffic risk borne by NHAI)	Ensure uninterrupted traffic and hand over assets to NHAI at end of Concession Period
Coordinate with Independent Engineer for monitoring	Bear all project risks, costs, and liabilities except those allocated to NHAI

3.1.2 Financial Provisions and Settlements:

The Agreement (Articles **27, 29, 31, 32, 33, 41** and **Schedule R**) establishes comprehensive financial safeguards to ensure disciplined cash flow management and protection of lender interests. **The detailed covenants are presented in the exhibit below.**

Exhibit 14: Key Financial covenants detail

Aspect	Details
Escrow Account	All inflows—Financial Package, Annuities, insurance proceeds, etc.—to be deposited; withdrawals prioritized for statutory dues, O&M, debt servicing, reserves, and equity returns.
Annuity Payments	Fixed ₹317.52 crore every six months; begins 6 months after COD; maximum two payments per year. Payments credited directly to the Escrow Account, constituting full discharge of NHAI's obligation.
Revenue Model	No toll rights to Concessionaire; revenue independent of traffic volume.
Change in Law	Compensation on NPV basis if legislation/regulation alters project cost or revenue.
Insurance	Mandatory for construction, third-party, O&M, and Force Majeure events, naming NHAI and lenders as co-insureds.
Substitution Rights	Lenders empowered to substitute Concessionaire in case of persistent default.
Equity Lock-In	Minimum 51% equity holding during construction + 2 years post-COD.

3.1.3 Delay Damages and Penalties under the Concession Agreement

Exhibit 15: Key Terms of Damages/ Penalty

Clause / Article	Situation	Damages / Penalty	Remarks
Article 4.2	Delay by Authority in providing ROW beyond 90 days	₹50 per day per 1,000 sq.m. of delayed land	Payable to Concessionaire
Article 10.3	Delay in achieving Financial Close beyond 180 days	0.1% of Performance Security per day (extendable)	Max 20% of PS
Article 15.2	Delay in achieving COD beyond Scheduled Completion	0.1% of Performance Security per day until COD	Authority may terminate if delay >270 days
Article 17.7.3	Delay in reopening lanes post-maintenance	0.1% of Average Daily Annuity per 250 m/day	As per Schedule K
Article 35	Breach of Agreement	Direct cost compensation only	Excludes consequential losses

3.1.4 Legal and Operational Framework:

- **Force Majeure (Article 34)**: Covers natural, political, and indirect events. Relief through time extension and limited cost compensation (no indirect losses).
- **Compensation for Breach (Article 35)**: Pre-estimated damages applicable to both parties; duty to mitigate losses.
- **Termination (Articles 36–37)**: Triggered by default or Force Majeure; compensation governed by Schedule P.
- **Divestment of Rights (Article 39)**: Concessionaire to hand over assets free of encumbrance, including records, clearances, and designs.
- **Defects Liability (Article 40)**: Concessionaire responsible for defects discovered post-termination for one year from transfer date.

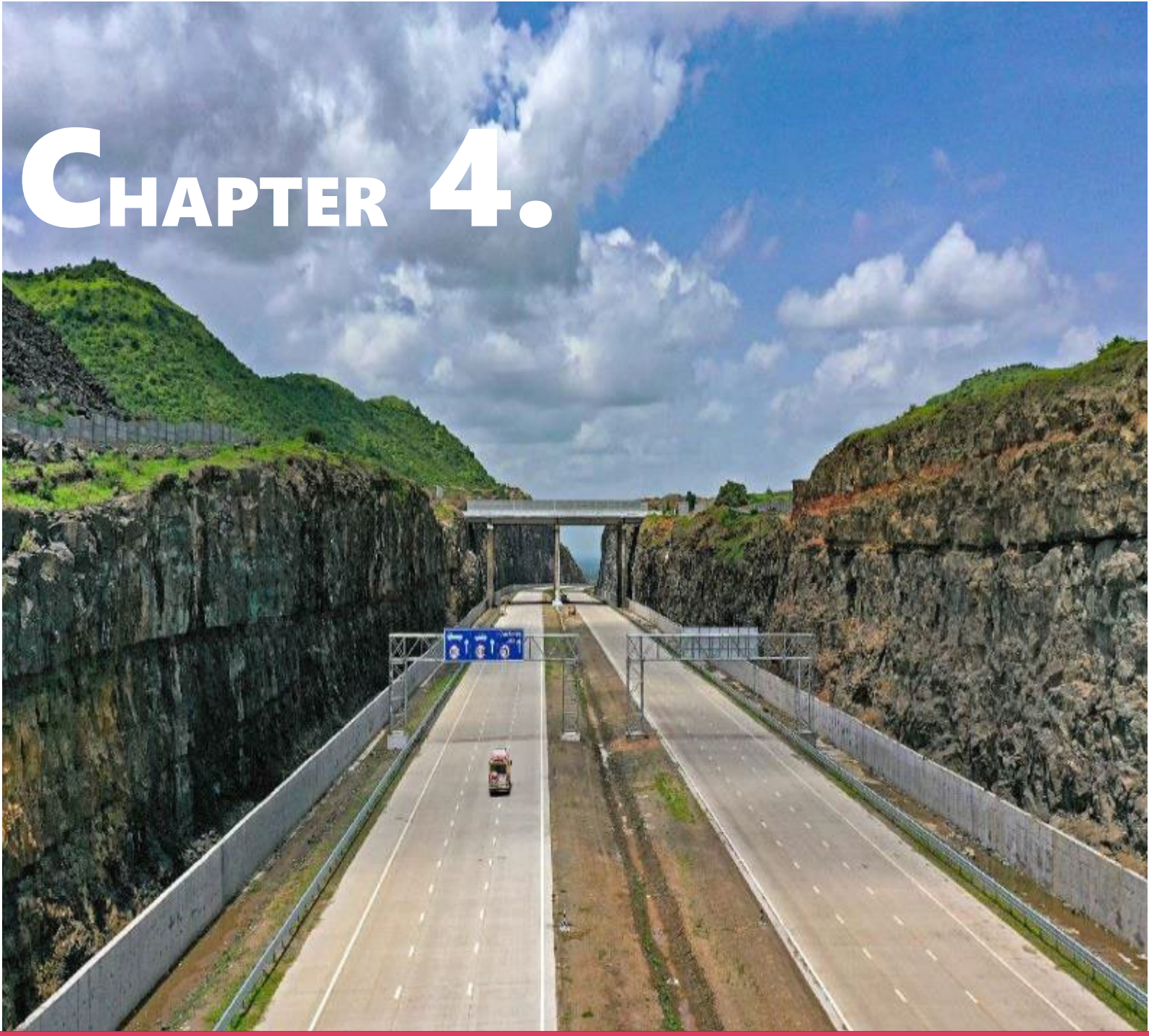
3.2 Review of Supplementary Agreements

The Concession Agreement dated **28 June 2010** between **NHAI** and **Chenani Nashri Tunnelway Limited (CNTL)** was subsequently modified through **four Supplementary Agreements**, addressing changes in financial provisions, annuity schedule, power supply cost sharing, and technological upgrades. These amendments were aimed at strengthening lender assurance, clarifying financial obligations, and enhancing operational systems

Exhibit 16: Summary of Supplementary Agreements

Date	Parties	Purpose / Context	Key Terms / Amendments
19 May 2011	NHAI & Chenani Nashri Tunnelway Ltd.	*First Supplementary Concession Agreement – Termination Provisions (Force Majeure)*	• Amended **Article 34.9** to define clear termination payment formulas during Force Majeure events. • Introduced distinctions for Non-Political, Indirect Political, and Political events. • Non-Political FM: payout = **90% of Debt Due – Insurance Cover**. • Revised **Article 37.3** (Termination Payment) and **Article 47.5** (Delayed Payments). • Inserted new definitions for *G-Sec Yield* and *Spread* under **Article 48**.
28 December 2012	NHAI & Chenani Nashri Tunnelway Ltd.	*Second Supplementary Concession Agreement – Annuity Schedule Revision*	• Substituted **Schedule M – Annuity Payment Schedule**. • Fixed **biannual annuity = ₹317.52 crore**, commencing **June 2016**, continuing till **December 2030**. • Confirmed applicability of Article 27 for schedule adjustments linked to actual COD. • Clarified that all other provisions of CA and first supplementary remain unchanged.
3 January 2017	NHAI & Chenani Nashri Tunnelway Ltd.	*Third Supplementary Agreement – Permanent Power Supply Settlement*	• Resolved dispute on **HV transmission line and permanent power supply** to both portals. • Concessionaire to bear **50% of total cost**, NHAI to bear remaining 50%. • Both parties discharged all future claims on this issue.

Date	Parties	Purpose / Context	Key Terms / Amendments
			• Agreement constituted a **full and final amicable settlement** regarding power infrastructure responsibility.
12 April 2018	NHAI & Chenani Nashri Tunnelway Ltd.	*Fourth Supplementary Agreement – Implementation of Hybrid ETC System*	• Incorporated Government directive for **Hybrid Electronic Toll Collection (ETC)** across all lanes. • Defined scope: installation, integration, testing, commissioning, and 5-year O&M of Hybrid ETC system. • Specified **Service Level Agreements** (uptime ≥ 99%) and penalties for downtime. • Set out payment milestones and O&M obligations (Annexure D). • Confirmed that this modification is a **Change of Scope**, without altering main CA obligations.



Chapter 4.

Condition Assessment of Project Road

Chapter 4. CONDITION ASSESSMENT OF PROJECT ROAD

4.1 General

This chapter presents a detailed assessment of the existing condition of the **Chenani–Nashri Project Highway** in accordance with the provisions of the **Concession Agreement** and relevant **IRC guidelines**. The objective of this assessment is to evaluate the current condition and performance of the **pavement, tunnel structures, viaducts, toll plaza facilities, drainage systems, safety installations, and other highway assets**. The observations are based on **site inspections, maintenance records, and interaction with the Concessionaire's O&M team**.

This section presents the findings of the **condition assessment of the Chenani–Nashri Section of NH-44 (Km 89+000 to Km 130+000)** in the **Union Territory of Jammu & Kashmir**. The assessment has been prepared based on **field observations recorded during site inspections conducted on 09 October 2025**, and the review of available **O&M documentation and maintenance performance data** provided by the Concessionaire.

The analysis integrates the results of the **visual condition survey**, inspection of **tunnel systems, structures, and appurtenances**, and the review of operational performance to provide a comprehensive understanding of the **current structural and functional condition** of the project highway and its associated infrastructure.

The **project corridor lies in a mountainous and geotechnically sensitive zone of the lower Himalayas**, characterized by steep slopes, sharp curves, and exposure to adverse weather conditions. The alignment commences near **Chenani (Km 89+000)** and terminates near **Nashri (Km 130+000)**, passing through the **Dr. Syama Prasad Mookerjee Tunnel (Chenani–Nashri Tunnel)**—a **bi-directional tunnel of 9.0 km length with a parallel escape tunnel**. The project forms a vital part of **NH-44**, ensuring **all-weather connectivity between Jammu and Srinagar**.

The purpose of this condition assessment is to determine the **current structural health, operational performance, and serviceability** of the project assets. The study consolidates information from **field inspections, maintenance records, and operational data**, providing a **holistic appraisal of the pavement system, tunnel structures, drainage, and associated highway facilities**.

Exhibit 17 Existing Vs Schedule B

Sl. No.	Particulars	As per Schedule–B	As Built & Deviations Settled in Supplementary Agreement
1	Project Road Start	Km 89+000 at Chenani	Km 89+000 at Chenani
2	Project Road End	Km 130+000 at Nashri	Km 130+000 at Nashri
3	Project Length	10.9 km	Approx. 10.9 km (including 9.0 km tunnel and 1.9 km approach roads)
4	Tunnel	Bi-directional tunnel with parallel escape tunnel of 9.0 km length	Main Tunnel – 9.0 km Escape Tunnel – 9.0 km (parallel alignment)

The primary objectives of this assessment are to:

- Document the **on-ground physical condition of the pavement, structures, and roadside facilities** based on the **site inspection (09 October 2025)**.
- Identify **stretches requiring overlay, rehabilitation, or other maintenance interventions** to restore performance levels.
- Evaluate the **functionality of drainage, signage, tolling, and traffic management systems**.
- Verify **compliance with Operation and Maintenance (O&M) standards** as prescribed by **IRC codes** and the **Concession Agreement**.

This assessment has been carried out in accordance with the following key references:

- **IRC:115-2014** – *Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements using FWD Technique*
- **IRC:117-2014** – *Guidelines for Structural Evaluation of Rigid Pavements*
- **IRC:37-2018** – *Guidelines for the Design of Flexible Pavements*
- **IRC:SP:35-2015** – *Code of Practice for Inspection and Maintenance of Bridges*
- **IRC:83-2019 (Part I & II)** – *Guidelines for Design and Condition Assessment of Bridge Components*
- **IRC:SP:16 and IRC:SP:83** – *Guidelines for Maintenance of Highways and Toll Facilities*

4.2 Pavement

The proposed pavement design for the **Chenani–Nashri Section (Km 89 to Km 130)** follows **IRC:37-2012** and **IRC:58-2015** standards for flexible and rigid pavements respectively.

Exhibit 18 Rigid Pavement (Toll Plaza / Tunnel Section)

S. No.	Layer	Material Description	Thickness (mm)
1	Pavement Quality Concrete (PQC)	M-40 grade concrete	300
2	Dry Lean Concrete (DLC)	M-10 grade concrete	150
3	Granular Sub-base (GSB)	Granular layer	150
	Total Thickness		**600 mm**
	Reinforcement Details		

Exhibit 19 Service Road Pavement (Approach Road)

S. No.	Layer	Material Description	Thickness (mm)
1	Bituminous Concrete (BC)	Surface course using VG-30 bitumen	40
2	Dense Bituminous Macadam (DBM)	Binder course	75
3	Wet Mix Macadam (WMM)	Granular base	250
4	Granular Sub-base (GSB)	Granular sub-base material	200
	Total Crust Thickness		**550 mm**

4.3 Assessment of Highway

Knight Frank has undertaken an independent technical due diligence and assessment of the **Chenani–Nashri Project Highway**, covering all operational and structural assets developed under the DBFOT (Annuity) framework. The assessment was conducted in accordance with the provisions of the **Concession Agreement**, the **O&M Manual**, and relevant **IRC and MoRTH guidelines**.

The objective of this assessment is to evaluate the **physical condition, functionality, and maintenance adequacy** of all key asset categories — including **pavement, tunnel systems, drainage infrastructure, safety installations, electrical and mechanical systems**, and **ancillary facilities**. The observations are based on **visual field inspections**, review of **maintenance logs and records**, and discussions with the **Concessionaire's O&M personnel**.

The inspection covered the **main bi-directional tunnel (9.0 km)**, **parallel escape tunnel**, and **approach roads** measuring approximately **1.3 km (Chenani side)** and **0.6 km (Nashri side)**. The assessment was performed with the objective of confirming asset condition, operational efficiency, and compliance with the requirements stipulated under the Concession Agreement.

Overall, the **project assets were found to be in satisfactory operational condition**, with the core tunnel systems, pavement, and ancillary installations functioning as intended. Minor deficiencies, such as localized corrosion, worn pavement markings, and occasional lighting outages, were observed and can be addressed through **routine and preventive maintenance interventions**.

a) Approach and Access Roads

The entire project stretch consists of **rigid pavement (PQC)** along both approaches and within the tunnel.

b) Tunnel Lighting and Electrical Systems

The tunnel is equipped with **normal, threshold, and emergency lighting systems**, all integrated through the **SCADA-based control and monitoring system**. Lighting levels were observed to be uniform throughout the main tunnel. Emergency lighting and illuminated signage were functional at the time of inspection.

c) Safety Installations – Crash Barriers and Signage

Metal-beam crash barriers and parapet railings are provided on approach embankments and bridge decks.

Traffic signage, VMS boards, and delineators were in place, though a few reflective studs require replacement.

d) Drainage

A **composite drainage network** exists throughout the **main and escape tunnels**, designed to efficiently manage stormwater runoff and groundwater infiltration. The system comprises **longitudinal side drains**, **perforated pipes** behind the tunnel lining, **cross-drain connections**, and **sump pits with automatic pumping arrangements** provided at both portals to ensure uninterrupted operation.

As per site records and inspection findings, the drainage system includes:

- **Drainage pipes in Main Tunnel:** 9.0 km (4 nos.)
- **Drainage pipes in Escape Tunnel:** 9.0 km (2 nos.)
- **Drainage pipes in Cross Passages:** 29 nos. (at both ends)

e) Lay-bys

The project includes **15 lay-bys** provided at regular intervals within the **main tunnel** to facilitate emergency stoppage, breakdown handling, and inspection activities. These lay-bys are paved and equipped with **reflective signage, lighting, and emergency communication facilities** to ensure user safety during vehicle halts inside the tunnel.

f) Slope protection

Comprehensive **slope protection measures** have been implemented along both the **hill side and valley side** of the Chenani–Nashri project alignment to ensure slope stability and prevent erosion or rockfall near the tunnel approaches. Protection works extend over approximately **1,520 meters on the valley side** and **1,750 meters on the hill side**, covering critical cut slopes and embankment sections near both the **Chenani (South) and Nashri (North) portals**.

KF View:

The Chenani–Nashri Project Highway, including the twin-tube tunnel and approach roads, is observed to be in satisfactory operational and structural condition. All major systems—comprising pavement works, tunnel ventilation, lighting, power supply, drainage, communication, and safety installations were found functional and generally well-maintained. The Intelligent Tunnel Control System (ITCS) effectively supports centralized monitoring and ensures seamless coordination of mechanical, electrical, and safety subsystems.

Minor deficiencies, such as localized corrosion, faded pavement markings, missing blinkers, and a few loose crash barrier sections, were noted during inspection. These are non-critical in nature and can be addressed through routine preventive maintenance. The slope protection, drainage, and emergency facilities are functioning as intended, contributing to the stability and safety of the overall infrastructure.

With regular upkeep, timely inspections, and adherence to the prescribed O&M protocols, the project assets are expected to continue performing efficiently, ensuring safe, reliable, and uninterrupted passage for users through the Chenani–Nashri corridor.

4.4 Assessment of Structures

A **visual condition survey** of all structural components within the **Chenani–Nashri project** was carried out by the **Knight Frank team** in coordination with the **Concessionaire's O&M staff**, with the objective of identifying and documenting any structural deterioration, material distress, or functional deficiency that could affect long-term safety and serviceability.

The **Chenani–Nashri alignment** (Km 89+000 to Km 130+000) primarily consists of a **bi-directional main tunnel (9.0 km)** and a **parallel escape tunnel**, supported by **approach viaducts, underpasses, culverts, and ancillary structures**

Exhibit 20 Details of Structures

Sl. No.	Type of Structure	Quantity (Nos.)	Remarks / Description
1	**Minor Bridges**	02 Nos.	RCC deck slab type bridges; structural condition satisfactory, minor joint cleaning required.
2	**Underpasses**	02 Nos.	RCC box-type structures; no visible structural distress, parapet repair recommended at isolated locations.
3	**Box Culverts**	10 Nos.	RCC box culverts; all functional, minor silt removal and outlet cleaning required.
4	**Pipe Culverts**	01 No.	—

The inspection revealed that the overall condition of the project assets is **functionally satisfactory**, with **major structures, tunnels, and ancillary facilities in operational condition**, while a few **localized deficiencies** such as damaged gratings, faded signages, non-functional tunnel lights, open hydrant cabinets, and minor surface cracks were observed at specific chainages. Routine **maintenance, cleaning, repainting, and rectification** activities were found to be ongoing under the scope of the concessionaire.

KF View:

Based on the visual condition survey, all major structural assets within the Chenani–Nashri Project Highway—including bridges, underpasses, culverts, and tunnel structures are in satisfactory functional and structural condition, with no evidence of significant distress or stability concerns. The minor issues observed,

such as damaged gratings, faded signage, non-functional tunnel lights, open hydrant cabinets, and superficial surface cracks, are localized in nature and do not pose any immediate risk to operational safety or serviceability. These can be effectively addressed through the ongoing routine and preventive maintenance activities undertaken by the Concessionaire.

The overall inspection findings confirm that the structural systems, drainage components, and ancillary installations are performing as intended and remain compliant with the design and safety requirements stipulated under the Concession Agreement. With continued adherence to scheduled maintenance, the project assets are expected to retain their structural integrity, operational reliability, and long-term service performance.

4.5 Assessment of Road Furniture & Project Facilities

The inspection of road furniture and project facilities under the **Chenani–Nashri Project (NH-44, Km 89+000 to Km 130+000)** covered key operational elements such as **signages, pavement markings, drainage gratings, SOS boxes, fire hydrant cabinets, lighting systems, and ventilation installations**. The inspection was undertaken to assess their current functionality, physical condition, and compliance with operational safety standards as defined in the **Concession Agreement** and **IRC:67 / IRC:99** guidelines.

Overall, the **road furniture and tunnel facilities were found to be in satisfactory condition**, with the majority of installations functional. Minor deficiencies were observed in **lighting, reflective elements, and signage visibility**, which can be resolved through routine O&M activities carried out by the **O&M Contractor**

Exhibit 21 Details of Road Furniture's Items

S. No.	Facility / Item	Location / Chainage (Km)
1	**Hazard Markers & Chevron Signs**	Approach sections & portal areas
2	**Sign Boards (Informative / Regulatory / Cautionary)**	Portals, toll plazas & tunnel entry zones
3	**Metal Beam Crash Barriers**	Hillside and valley-side approaches
4	**Road Studs / Cat Eyes**	Inside tunnel and viaduct
5	**Drainage Gratings**	Near tunnel portals
6	**SOS Boxes**	Inside main tunnel
7	**Fire Hydrant Cabinets**	Inside main tunnel
8	**Lighting System**	Tunnels and toll plazas
9	**Ventilation Jet Fans**	Inside main tunnel
10	**Bridge / Structure Name Boards**	Approach structures
11	**Medical Aid Post**	Toll plaza complexes
12	**Rumble Strips / Pavement Markings**	Tunnel approaches

4.5.1 Project Facilities

Project facilities include **ventilation buildings, lay-bys, drainage systems, and tunnel support structures**. These were found in operational state with periodic maintenance activities.

Exhibit 22 Details of Project Facilities

Facility	Chainage (Km)	Condition / Observation
Ventilation Building – South Portal		
Ventilation Building – North Portal		
Total lay bays 14 (South and North Portal)		
Drainage System	Entire corridor	

KF View:

Based on the site inspection, Knight Frank is of the opinion that the road furniture and project facilities under the Chenani–Nashri Tunnel Project are in satisfactory operational condition, with most installations found functional and compliant with relevant IRC:67 and IRC:99 standards. The signages, crash barriers, drainage gratings, lighting systems, and ventilation facilities are generally well-maintained and performing as intended.

Minor deficiencies such as faded pavement markings, reduced signage reflectivity, and isolated lighting outages were noted; however, these are non-critical and can be addressed through routine operation and maintenance activities undertaken by the Concessionaire. The ventilation buildings, lay-bys, and drainage systems were observed to be operational and maintained periodically, supporting the overall safety and serviceability of the project highway.

4.6 Assessment of Tunnels

The **Chenani–Nashri Tunnel Project** (NH-44, Km 89+000 to Km 130+000) passes through the **lower Himalayan range**, characterized by **complex geological and geotechnical conditions** consisting of alternating layers of **sandstone, shale, siltstone, and dolomitic limestone**. The tunnel alignment traverses the **Patnitop hill range** and connects the **Chenani (South Portal)** to the **Nashri (North Portal)**, bypassing the older, snow-prone and landslide-affected section of NH-44.

The project features a **bi-directional main tunnel of 9.0 km length**, accompanied by a **parallel escape tunnel** connected by **29 cross passages** provided at intervals of approximately **300 meters**. The tunnel has been constructed using the **New Austrian Tunnelling Method (NATM)**, adopting appropriate primary and final support systems such as **rock bolts, lattice girders, and shotcrete** depending on the encountered ground class.

The tunnel is equipped with **mechanical, electrical, and electronic (MEE)** systems, including **ventilation, lighting, fire detection and suppression, drainage, and SCADA-based monitoring and control systems** in compliance with **MoRTH** and **IRC:SP:91-2010** standards.

An overview of the tunnel details for the project is provided below.

Exhibit 23: Details of Tunnel

Tunnel No.	Section	Portal Location	Chainage (Km)	Length (m)
Main Tunnel	Chenani – Nashri	South Portal: Km 96+000 North Portal: Km 105+000	Km 96+000 to Km 105+000	9,000
Escape Tunnel	Parallel alignment	South Portal: Km 96+000 North Portal: Km 105+000	Km 96+000 to Km 105+000	9,000

- **Cross Passages:** 29 Nos. at 300 m intervals
- **Fire Hydrant System:** Installed at regular intervals along both tunnels
- **Drainage System:** Longitudinal drains and sump pumps at both portals
- **Ventilation System:** Jet fans and axial fans operational; cleaning required

4.6.1 Tunnel Drainage

During our site visit, A **composite drainage network** exists throughout the **main and escape tunnels**, designed to efficiently manage stormwater runoff and groundwater infiltration. The system comprises **longitudinal side drains**, **perforated pipes** behind the tunnel lining, **cross-drain connections**, and **sump pits with automatic pumping arrangements** provided at both portals to ensure uninterrupted operation.

As per site records and inspection findings, the drainage system includes:

- **Drainage pipes in Main Tunnel:** 9.0 km (4 nos.)
- **Drainage pipes in Escape Tunnel:** 9.0 km (2 nos.)
- **Drainage pipes in Cross Passages:** 29 nos. (at both ends)

4.6.2 Power Supply & Substations in Tunnels:

Each tunnel portal of the **Chenani–Nashri Tunnel Project** is served by a dedicated **33/11 kV electrical substation**, ensuring reliable power supply to the **tunnel systems, control rooms, and ancillary buildings**.

The substations are located at the **Chenani (South Portal)** and **Nashri (North Portal)** and receive primary power supply from the **Jammu & Kashmir Power Development Department (JKPDD)**.

A **redundant power feed arrangement** exists between both portals through a **looped HT cable system**, allowing either end to support the entire tunnel load in case of power failure at one portal.

Uninterrupted Power Supply (UPS) units provide conditioned power to the **Tunnel Management System (TMS)**, emergency lighting, and critical communication equipment, while **diesel generators (DG sets)** supply backup power during utility outages.

Key power assets and configuration observed / provided:

- **Substation – South Portal (Chenani):** Receives 11 kV supply from JKPDD; feeds tunnel lighting, ventilation, TMS, and fire systems.
- **Substation – North Portal (Nashri):** Receives 11 kV independent feeder from JKPDD; supplies ventilation fans, control room, and firefighting systems.
- **DG Sets:** Installed at both portals for backup operation
- **Ventilation Power Panels:** Installed within ventilation buildings for distribution to jet fans and tunnel lighting.

- **Variable Frequency Drives (VFDs):** Provided for jet-fan control.
- **Transformers:** MV/LV transformers located within each portal's ventilation building.
- **Power Distribution Cables:** 11 kV cables routed through conduits below the tunnel carriageway, looped between substations for redundancy.
- **UPS Systems:** Installed for emergency lighting, SCADA, and TMS.

All major **tunnel electrical and mechanical subsystems** are integrated into the **SCADA-based Central Control Room** located at each portal.

The system supports **real-time monitoring, control, and fault diagnostics** of ventilation, lighting, firefighting, and drainage systems.

The control room is equipped with **operator consoles, display monitors, alarm annunciation systems**, and **server–client interfaces** that log operational data, alarms, and maintenance records. Routine operations are continuously monitored by designated control personnel under the O&M contractor's supervision.

System Redundancy and Reliability

- Dual-circuit 11 kV HT cable network ensures redundant power supply between portals.
- Each tunnel substation can be fed from either end, maintaining supply continuity during fault conditions.
- DG systems are designed to support critical and emergency loads only, while utility redundancy and cable looping remain the primary reliability mechanisms.

4.6.3 Tunnel Ventilation System and Safety Features

The **Chenani–Nashri Tunnel** is equipped with a **longitudinal ventilation system**, designed to maintain safe **air quality, temperature, and visibility** throughout both the **main and escape tunnels**.

The system operates through **axial jet fans** installed at regular intervals along the tunnel crown, which induce air movement and control the concentration of vehicular exhaust gases. The system is integrated with **air quality sensors** and is controlled through a **centralized SCADA system** located at the **South Portal control building**.

The ventilation system also incorporates **emergency cross passages** between the main and escape tunnels at approximately **300 m intervals**, allowing for safe evacuation and smoke segregation during emergencies.

Fire safety provisions include a **hydrant network**, **emergency extinguishers**, **CCTV surveillance**, and a **Public Address (PA) system** linked with the **Tunnel Management and SCADA systems**. The drainage system comprises **longitudinal drains** with **collection sumps and submersible pumps** at both portals to manage seepage and stormwater effectively.

Exhibit 24: Summary of Tunnel Systems

Component	Description / Quantity (Verified)	Status / Observation (From TDD & MPR)
Number of Tunnels	2 (Main + Escape parallel configuration)	Operational
Total Tunnel Length	9.0 km each tube / Main Tunnel 9.0 km	Functional
Ventilation Type	Fully transverse system with supply & exhaust fans at both portals	Operational; one supply fan at each portal has bearing heating issue (stand-by available)
Jet Fans	8 Nos. (4 at South portal + 4 at North portal)	Functional; require periodic cleaning and balancing
Cross Passages	29 Nos. at ≈ 300 m intervals	Operational and accessible
Substations	2 portal substations (Chenani & Nashri) + 4 cross-passage substations (CP-08, CP-16, CP-24, CP-29)	Active; supplying tunnel and MEP loads
Fire Hydrant Network	Installed along main and escape tunnels; hydrant posts and hose reels provided	Functional; 2–3 hose reels missing; fire-pump room valves rusted and gauges defective
Drainage Sumps & Pumps	Sumps with submersible pumps at both portals	Operational; routine desilting in progress
SCADA / Control Room	Central SCADA control rooms at South and North portals	Fully operational; monitors ventilation, lighting, fire and drainage systems

KF View:

The Chenani–Nashri Tunnel Project (NH-44, Km 89+000 to Km 130+000) demonstrates a robust design and operational framework, developed to withstand complex Himalayan geological conditions while ensuring safe and reliable connectivity between Chenani and Nashri. The project's civil, mechanical, electrical, and electronic systems have been implemented in accordance with MoRTH and IRC:SP:91-2010 standards, with key functional subsystems ventilation, lighting, drainage, power, and fire safety—integrated through a centralized SCADA-based Intelligent Tunnel Management and Control System.

The visual inspection and system verification confirm that all major tunnel installations, including the ventilation system, drainage network, fire hydrant and suppression systems, power distribution substations, and cross passages, are operational and performing as intended. The twin 33/11 kV substations at the South (Chenani) and North (Nashri) portals, along with looped HT cable redundancy and DG backup arrangements, ensure a high level of power reliability and operational continuity. The longitudinal ventilation system supported by jet fans and axial fans effectively maintains air quality and smoke control under both normal and emergency conditions.

Minor deficiencies such as localized bearing heating in one supply fan, rusted fire valve components, missing hose reels, and the need for periodic cleaning of jet fans and sump desilting were observed. These are maintenance-related in nature and do not affect the overall operational integrity or safety of the tunnel system. Routine maintenance activities were found ongoing under the Concessionaire's O&M scope.

Overall, the tunnel infrastructure, electrical-mechanical systems, and integrated control framework are assessed to be in satisfactory condition, with adequate redundancy, automation, and real-time monitoring capabilities to ensure uninterrupted operation, user safety, and long-term service performance of the Chenani–Nashri Tunnel.

4.7 Assessment of Tunnel MEP System

4.7.1 Main Tunnel

The main tunnel, extending **9 km between the Chenani and Nashri portals**, is a **unidirectional carriageway** connected to a parallel escape tunnel through **29 cross-passages** provided at regular intervals. The tunnel is equipped with **SOS boxes, a public address system, tunnel lighting, fire hydrant posts, jet fans, and supply and exhaust air terminals** installed along its entire length to ensure safe and efficient operation under both normal and emergency conditions.

a) Main Tunnel Lighting System

The **main tunnel lighting system**, comprising **metal halide luminaires**, is installed along the tunnel crown at intervals of approximately **15 meters**, in accordance with the approved design specifications. In addition, **18 W LED lights** are provided along both **side walkways** at 15-meter spacing to facilitate safe access to all **electro-mechanical (E&M) equipment** installed adjacent to the walkway.

Power supply cables are routed through **dedicated trenches beneath the pavement**, ensuring protection and ease of maintenance. **Daylight sensors** are installed near both portals to automatically regulate lighting levels during daytime operation.

Exhibit 25: Main Tunnel Illuminance levels (in candela per square meter, Cd/m^2)

Sr. No.	Location	North Side (Cd/m^2)	South Side (Cd/m^2)
1	Outside Portal	1232	1029
2	Threshold Zone	59.2	138
3	Transition Zone	11	5
4	Exit Zone	2.79	2.22

b) Main Tunnel Security and Surveillance System

The **surveillance system** within the main tunnel comprises **128 fixed CCTV cameras** installed throughout its length, supplemented by **two PTZ (Pan–Tilt–Zoom) cameras** positioned at the entrances of the **South and North portals** for enhanced monitoring coverage. Additionally, **one rotary camera** is installed at the **South Portal near the toll plaza** to oversee traffic movement and portal operations.

SOS boxes are installed at **75-meter intervals** along the main tunnel in a **zig-zag configuration**, alternately placed on the right and left sidewalls, ensuring quick access for motorists during emergencies. The **Public Address (PA) system** is integrated with the surveillance network, enabling

announcements during emergencies or in case of any abnormal conditions detected through the monitoring system. **Speakers** are installed at **75-meter spacing** along both tunnel walls to provide clear and uniform audio coverage.

c) Main Tunnel Communication System

The **VHF communication system** within the main tunnel is facilitated through **leaky feeder cables** installed along its entire length, enabling reliable radio communication between the control room and tunnel personnel. In addition, a total of **five GSM communication antennas**, supported by **signal boosters**, are installed inside the tunnel to ensure uninterrupted mobile network coverage. The **first GSM antenna** is located approximately **1 km from the South Portal entrance**, with subsequent antennas positioned at regular intervals to maintain consistent signal strength throughout the tunnel

d) Main Tunnel Fire Alarm System

In the **main tunnel**, a **Linear Heat Sensing (LHS) cable** runs continuously along the entire length on the **left-hand side (LHS)**. The system is divided into **four detection zones**, each designed to precisely identify and indicate the location of any fire incident within the tunnel. The **LHS fire detection system** is integrated with the **SCADA-based control system**, and its functionality was verified during a **mock drill**, confirming that the system is **operating efficiently and providing accurate zone-based fire alerts**.

e) Main Tunnel Cable Tray, Surface Drainage & Trench

Overhead lighting cable trays are installed along the **main tunnel**, with **tap-offs to the substations** provided at intermediate locations as per design. The **power distribution cables** are routed through **dedicated trenches** beneath the tunnel pavement for protection and ease of maintenance. **Surface drainage channels** are also provided along the tunnel to manage water ingress effectively.

The **main fire hydrant pipeline** runs continuously from the **South Portal to the North Portal** within the same trench. An **isolation valve** is installed between **Cross Passage 14 (CP14)** and **Cross Passage 15 (CP15)**, effectively dividing the hydrant network into two operational sections:

- **Section 1:** CP1 to CP14 – supplied from the **South Portal fire pump room**.
- **Section 2:** CP15 to CP29 – supplied from the **North Portal fire pump room**.

In the event of a **pump failure at either portal**, the **entire hydrant network** can be operated from the **functional fire pump room** by opening the isolation valve, thereby ensuring **system redundancy and uninterrupted firefighting capability** throughout the tunnel.

f) Main Tunnel Ventilation System

The **main tunnel** operates on a **fully transverse ventilation system** designed to maintain optimal air quality, visibility, and temperature conditions throughout its **9 km length**. For effective ventilation control, the tunnel is divided into **two sections of approximately 4.5 km each**.

Fresh air is supplied through **motorized supply dampers** located along the **left sidewall** (when approaching from the South Portal), while **stale air is exhausted** through **motorized exhaust dampers** positioned along the **right sidewall**. A total of **14 sensors**—comprising **Carbon Monoxide (CO)** and **Opacity sensors**—are installed along both tunnel walls (7 on each side) to continuously monitor air quality and visibility parameters.

All **motorized dampers and sensors** are integrated with the **Central Control Centre** through the SCADA-based **Tunnel Management System**. Based on real-time sensor feedback, operators can automatically or manually regulate **damper operations** and adjust the **supply and exhaust fan speeds** to maintain safe ventilation conditions.

Additionally, **four jet fans** are installed at each portal entrance to provide supplementary air circulation and assist in **smoke extraction during fire or emergency scenarios** within the first **600 meters** of the main tunnel. Details are at **Para 4.9**

4.7.2 Escape Tunnel

The **escape tunnel**, running parallel to the **main tunnel** for a length of approximately **9 km**, extends between the **South and North portals**. It is connected to the main tunnel through **29 cross passages** provided at regular intervals to facilitate safe evacuation and maintenance access. The escape tunnel is equipped with **lighting fixtures, ventilation fans**, and **11 kV power cable trays**, ensuring adequate illumination, air circulation, and reliable power distribution along its entire length. **LED lighting** is installed along the **centerline of the escape tunnel ceiling** at intervals of approximately **15 meters**, ensuring uniform illumination throughout the tunnel length.

a) Security And Surveillance System

There is no provision for CCTV inside escape tunnel as per current design.

b) Communication System

VHF communication within the escape tunnel is currently facilitated through a network of antennas installed along its length, ensuring reliable two-way communication during operations and emergencies.

c) Cable Tray

11 kV HT cables run continuously from the South Portal to the North Portal through the escape tunnel, forming a looped power supply network. The three intermediate substations located at Cross Passages 8, 16, and 24 are interconnected within this loop, ensuring redundancy and reliable power distribution along the tunnel alignment.

d) Escape Tunnel Ventilation System

Escape tunnel is equipped with two axial fans at both ends.

4.7.3 Cross Passage

The **main tunnel** and the **escape tunnel** are interconnected through **29 cross passages** provided at regular intervals of approximately **300 meters** along the tunnel length. The cross passages are arranged in a sequence comprising **pedestrian passages every 300 meters** and **vehicular passages every 1,200 meters** from each portal, resulting in **22 pedestrian** and **7 vehicular cross passages** in total.

Each cross passage houses a **Low Voltage (LV) room** equipped with a standardized configuration of electrical and communication systems, including:

- **1 No. Lighting Distribution Panel**
- **1 No. Normal Lighting Control Panel**
- **1 No. Emergency Switchboard**
- **1 No. 20 kVA UPS**
- **1 No. 2 kVA UPS with battery bank**
- **Communication network switches**
- **Fire Alarm Panel**
- **Programmable Logic Controller (PLC)**

The **20 kVA UPS** supports approximately **50% of the tunnel lighting load**, ensuring illumination during power interruptions, while the **2 kVA UPS** provides **uninterrupted backup power to the SCADA system** for continuous monitoring and control.

a) Substation-02 (CP-08)

An electrical substation is located at Cross Passage 8 (CP-08), equipped with two dry-type transformers of 250 kVA capacity each, configured in working and standby mode to ensure uninterrupted power supply. This substation caters to the electrical load requirements of equipment installed between Cross Passages 04 and 11.

b) Substation-04 (CP-24)

Similarly, another **electrical substation** is installed at **Cross Passage 16 (CP-16)**, also equipped with **two 250 kVA dry-type transformers** arranged in **working and standby configuration**. This substation supplies power to the systems and equipment serving the section between **Cross Passages 12 and 19**.

4.8 Assessment of Tunnel FIREFIGHTING SYSTEM

The firefighting system installed in the Chenani–Nashri Tunnel comprises a **hydrant-based fire suppression network** supported by **portal-side fire pump houses**, distributed **hydrant points within the tunnel**, firefighting equipment in **SOS niches / Cross Passages**, and portable extinguishers positioned at strategic locations.

Firefighting pump rooms are located at **both the South Portal and North Portal**, each pump room catering to the fire water demand for its respective tunnel section. The system includes a network of **hydrant posts and hose reel cabinets** located inside the main tunnel at designated firefighting niche points. Additionally, **foam fire cylinders (30 L)** are installed at cross passages for initial response.

Each Fire Pump House is equipped with the following:

- **One (1) Main Hydrant Pump** – Electric motor driven
- **One (1) Standby Diesel Engine Hydrant Pump** – Automatically starts in case of power failure or main pump failure
- **One (1) Jockey Pump** – Maintains system pressure during normal standby mode
- **Fire Water Storage Tanks** – Provided at **both portals** with level monitoring instrumentation
- **Hydrant Line with Pressure Transmitter and Flow Switch**
- **Local Control Panels and Safety Interlocks**

Hydrant posts, hose reels, nozzles, and extinguishers are provided along the tunnel and inside the **Cross Passages (CP-1 to CP-29)** for accessible emergency use. Foam-type extinguishers are available at each CP firefighting box.

Equipment	Quantity / Location
Main Hydrant Pumps (Electric)	**2 Nos.** (1 at each portal)
Standby Diesel Engine Pumps	**2 Nos.** (1 at each portal)
Jockey Pumps	**2 Nos.** (1 at each portal)
Hydrant Posts / Hose Reel Points	Installed along tunnel & portal-side firefighting rooms
Foam Fire Cylinders (30 L)	Available at **each Cross Passage (CP-1 to CP-29)**

Equipment	Quantity / Location
Fire Water Storage Tanks	**Provided at both portals**, with level monitoring arrangement

Knight Frank reviewed the maintenance approach adopted by the Concessionaire for the firefighting system. The site O&M team follows the below preventive maintenance schedule:

- **Hydrant System Inspection** – Conducted periodically to check operating pressure, valve functionality, and leak conditions
- **Functional Testing of Hydrant Pumps** – Performed as per O&M routine schedule and during emergency drills
- **Fire Extinguishers** – Inspected at defined intervals and replaced/refilled as required
- **Fire Alarm & Detection System (Heat/Smoke Sensors, Alarm Panels)** – Tested as per SOP and manufacturer guidelines
- **Emergency Lighting and Exit Signage** – Tested periodically to ensure illumination during power loss
- **General Maintenance & Record Keeping** – Followed in accordance with the approved Maintenance Manual and SOPs

KF View:

Based on the site inspection and review of maintenance practices, Knight Frank is of the opinion that the firefighting installations—including hydrant networks, pump houses, storage tanks, and portable extinguishers—are fit for purpose and are being maintained in accordance with acceptable operational standards. However, Knight Frank recommends certain targeted measures to further strengthen system reliability, such as conducting regular diesel engine pump tests under load conditions, maintaining documented monthly pump performance and inspection logs, and performing an annual comprehensive functional test of the entire firefighting network to ensure sustained readiness and mitigate potential operational risks.

4.9 Assessment of TUNNEL VENTILATION SYSTEM

The Chenani–Nashri Tunnel utilizes a **longitudinal ventilation system** designed to maintain safe air quality, visibility, and smoke management conditions under both normal traffic operation and emergency scenarios. The system is operated through a **centralized SCADA and control room** located at the Tunnel Control Centre.

Ventilation is achieved primarily through:

- **Axial Supply and Extract Fans** installed in **Ventilation Buildings** at both portals, and
- **Jet Fans (Banana Jet Fans)** installed inside the main tunnel to create longitudinal airflow and support smoke control during emergencies.

Air quality is continuously monitored using **CO sensors, Opacity sensors, Weather Stations, Air Velocity Sensors, Vibration and Bearing Temperature Sensors** integrated into the SCADA system. **MSD (Motorized Smoke Dampers)** and **PRD (Pressure Relief Dampers)** located at Cross Passages further support compartmentalization and pressure balance between the **Main Tunnel and Escape Tunnel**.

Exhibit 26: Ventilation System Configuration

Component	South Portal	North Portal
Axial Fans (Supply & Extract)	**AXF-1 to AXF-4 (4 Nos.)**	**AXF-5 to AXF-8 (4 Nos.)**
Jet Fans (Banana Jet Fans)	Jet Fans 1–4 (4 Nos.)	Jet Fans 5–8 (4 Nos.)
Pressurization Fans for Escape Tunnel	1 No.	1 No.
VFD Panels & Fan Starters	Installed	Installed

☛ **KF View:** In operation, **half of the tunnel length is served from each portal**, ensuring directional airflow control based on prevailing traffic load, pollutant concentration, and incident response mode.

Exhibit 27: List of Major Ventilation System Equipment

S. No.	Equipment Description	Qty.	Remarks
1	**Axial Ventilation Fans** (Supply / Extract)	**8 Nos.** (4 South + 4 North)	Each reversible; controlled via VFD
2	**Jet Fans (Banana Type)**	**8 Nos.** (4 South + 4 North)	Forward/Reverse operation through starters
3	**Pressurization Fans for Escape Tunnel**	**2 Nos.** (1 South + 1 North)	Fitted with pressure switches
4	**Motorized Smoke Dampers (MSD)**	**SL-1 to SL-90**	Located along tunnel wall
5	**Pressure Relief Dampers (PRD)**	**CP-1 to CP-29**	Installed at each Cross Passage
6	**Air Quality Sensors (CO + Opacity + Weather + Air Velocity)**	Installed throughout tunnel	Integrated with SCADA
7	**VFD Panels and Electrical Control Panels**	At both portal Ventilation Buildings	Enables speed & direction control

Exhibit 28: Maintenance and Inspection Practices

Activity	Objective / Scope	Frequency
Fan & Motor Inspection	Check noise, vibration, motor temp, bearing & lubrication condition	As per O&M schedule / Monthly
Jet Fan Functional Test	Forward & reverse direction verification	Monthly / During drills
MSD / PRD Operation Check	Confirm opening/closing response through SCADA & manual override	Quarterly
Sensor Calibration (CO, Opacity, Velocity)	Ensure accurate air quality monitoring & alarm response	As per OEM / Semi-annually
Emergency Smoke Mode Simulation	Validate airflow reversal and extract mode under incident condition	As per SOP / Mock drills
Cleaning of Louvers, Air Deflectors, Shafts	Maintain airflow efficiency & reduce pressure loss	As required / Seasonal

KF View:

Based on the site inspection and review of operational records, Knight Frank is of the opinion that the tunnel ventilation system comprising two portal-based fan stations with eight axial fans, eight jet fans, and remotely operated dampers integrated through the SCADA control system is fit for purpose and performs as intended under both normal and emergency operating conditions. The system effectively maintains air quality, visibility, and pressure balance across the tunnel sections and cross passages.

To further enhance operational reliability and minimize risk, Knight Frank recommends implementing the following targeted maintenance measures:

- ***Conduct scheduled testing of VFD panels and motor insulation to ensure electrical integrity.***
- ***Continue vibration and bearing temperature monitoring of axial and jet fan motors.***
- ***Perform regular inspections of jet-fan anchorage, silencers, and mounting assemblies for structural stability.***
- ***Maintain periodic calibration of CO, opacity, and air velocity sensors to ensure accurate air quality feedback.***
- ***Carry out cross-pressure validation tests between the main and escape tunnels to confirm compartmentalization efficiency.***
- ***Conduct an annual full-load ventilation test and realistic fire-drill simulation with integrated SCADA control verification to assess system responsiveness under emergency conditions.***

Overall, the ventilation installation is operational, well-maintained, and performing in accordance with its design intent, providing a robust framework for tunnel safety, air quality management, and emergency smoke control.

4.10 Assessment of Toll Plaza

Two toll plazas are located at the **South Portal (Mada / Chenani side)** and **North Portal (Nashri side)** for user fee collection associated with the tunnel operation. Both toll plazas were **handed over under contract provisions** and are currently in operational condition. The plazas consist of toll booths, control rooms, administrative office/containers, server & network racks, electrical connections, CCTV surveillance, intercom systems, and user fee collection equipment.

From the field review and handover records, both toll plazas are **structurally stable** and **functional**, with routine civil and housekeeping maintenance observed.

Exhibit 29 Details of Toll Plaza

S. No.	Description	South Portal Toll Plaza (Chenani / Mada)	North Portal Toll Plaza (Nashri)
1	Location	South Portal (Mada / Chenani)	North Portal (Nashri)
2	Toll Plaza Name	**Mada Toll Plaza**	**Nashri Toll Plaza**
3	No. of Toll Lanes	**4 Lanes** (ETC + Manual mix)	**4 Lanes** (ETC + Manual mix)
4	Toll Booths	**4 Booths**	**4 Booths**
5	Static Weigh Bridge (SWB)	**1 No.** (Certified & Operational)	**1 No.** (Certified & Operational)
6	Administrative / Office Space	**1 Office Room + 1 Control Room**	**1 Office Room + 1 Control Room**
7	Server & Communication Room	**1 No.** (Rack, NVR, Switches, UPS Installed)	**1 No.** (Rack, NVR, Switches, UPS Installed)
8	Lane Tolling Equipment (TLC + AVC + RFID + Boom Barriers)	**4 Sets (1 per lane)**	**4 Sets (1 per lane)**
9	CCTV Cameras	**6–8 Cameras** (Booth + Lane + Plaza Coverage)	**6–8 Cameras** (Booth + Lane + Plaza Coverage)
10	High Mast / Plaza Lighting	**2 High Mast Poles + Approach Street Lighting**	**2 High Mast Poles + Approach Street Lighting**
11	Toilets / Staff Facilities	**1 Toilet Block**	**1 Toilet Block**

S. No.	Description	South Portal Toll Plaza (Chenani / Mada)	North Portal Toll Plaza (Nashri)
12	Firefighting Equipment	**Portable Fire Extinguishers (3–4 Nos. per plaza)**	**Portable Fire Extinguishers (3–4 Nos. per plaza)**
13	Medical & Breakdown Support	**Provided under Tunnel O&M Fleet (Ambulance + Crane + Patrol Vehicle)**	**Provided under Tunnel O&M Fleet (shared, not plaza-dedicated)**

KF View:

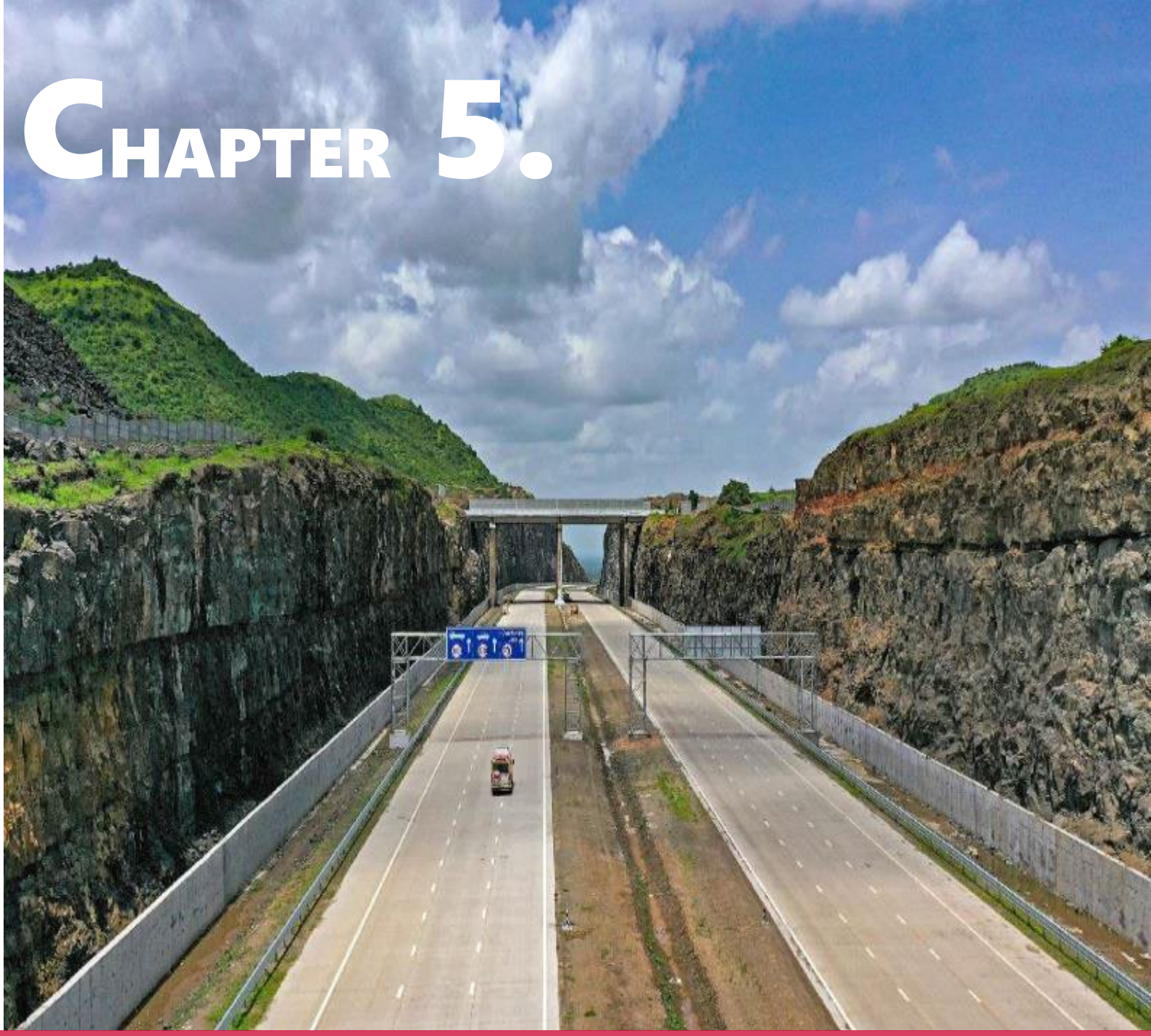
Knight Frank reviewed the two toll plazas located at the South Portal (Mada/Chenani) and North Portal (Nashri) during the site visit, in accordance with the provisions of the Concession Agreement. Both plazas are configured with 4 lanes, operating under a Hybrid Electronic Toll Collection (ETC + Manual) system.

Each plaza is equipped with toll booths, lane tolling equipment (TLC, AVC, RFID readers and boom barriers), CCTV surveillance, a control/server room, administrative office space, static weighbridge, lighting infrastructure, and toilet facilities. Fire extinguishers and basic safety arrangements are also provided.

Ambulance, breakdown crane, patrolling vehicle and emergency response support are part of the centralized Tunnel O&M Fleet and are not plaza-specific assets; however, they remain available to both plazas as required.

Based on the inspection, Knight Frank is of the view that the Mada and Nashri Toll Plazas are operational and in serviceable condition, with essential tolling, monitoring and support functions functioning satisfactorily.

Chapter 5.



Pavement Investigation & Assessment

Chapter 5. PAVEMENT INVESTIGATION & ASSESSMENT

5.1 General

The life of the Pavement has a co-relation with both its structural as well as Functional Condition. Inspecting and tracking of pavement condition, scheduling maintenance, and treating distress can have serious ramifications impinging on safety of road users and enhancing functional efficiency in end use of the Facility. It is therefore essential to carry out the assessment of the condition of the pavement on a given date taking into cognizance a variety of data to arrive at well-considered decisions and drawing up of the maintenance strategy and taking appropriate course of action to apply funds and resources in optimizing the desired levels of operations on the road assets. Condition data can include factors like roughness, specific distresses, rut depth, friction, and structural health.

Once measurements of road condition are available, they are interpreted in such a way that allows the decision-making process to occur in a logical fashion. This might involve converting multiple physical parameters into a single index, allowing different sections of a road network to be directly compared against one another etc.

Pavement performance under prevailing as well as projected traffic and environmental conditions is crucial as it has a direct bearing on the economic returns from the project developments. While an under-designed pavement will fail prematurely, imposing undesirable Cost Over runs on the Project. It is therefore necessary to ensure the pavement layer thicknesses; configurations and materials are adequately designed and require minimal maintenance under the anticipated traffic loading throughout the life cycle of the project.

To achieve this objective and thereby to predict the performance of any pavement structure, it is necessary to analyze material characteristics, traffic condition, present physical condition of the pavement layers, local environment, and its impacts. In addition, it is also necessary to presume what level of performance and what pavement conditions will be considered satisfactory to estimate the future operation and maintenance cost of the road.

Due to the variety of variables involved, it is essential to determine the exact level of pavement performance through the project life. But, based on the assessment of present condition of pavement, analysis of available survey data, traffic projections and estimations regarding the pavement life, future maintenance requirements can be estimated.

This part of the report deals with the Review of Pavement Design and provides insights on Design Life of the Pavement, Crust thickness, History of Overlays over the Existing Pavement Etc. for sound pavement performance through the project life.

The pavement design for the Chenani Nashri Section NH- has been carried out in accordance with the guidelines laid down in **IRC:37-2012**, **IRC:81-1997**, and **MoRTH Specifications (5th Revision)**. The design accounts for the heavy commercial vehicle traffic, high axle loading, subgrade strength, and environmental conditions prevalent in the mountainous terrain of Jammu & Kashmir.

5.2 Objectives

The project road passes through a high-altitude hilly region of the Pir Panjal range, characterized by steep gradients, low temperatures, and substantial rainfall and snowfall. The alignment includes open road sections, tunnels, viaducts, and approaches requiring both **flexible and rigid pavement designs**.

The objective of the pavement design is to ensure durability, structural strength, and riding comfort for the design life of the pavement, while minimizing maintenance requirements under varying climatic and loading conditions. The design life adopted for flexible pavement is **15 years**, and for rigid pavement (tunnel and toll plaza sections) is **30 years**.

5.3 Review of Pavement Design

A. Design CBR

As per the Pavement design report, the subgrade CBR of **10%** was adopted for all flexible and rigid pavement designs. This value was derived from field investigations and laboratory tests and is consistent with IRC 37:2012 requirements. The CBR has been used to compute the resilient modulus of subgrade and thereby establish the required layer thicknesses.

B. Design MSA

Traffic projections were computed using classified volume count and axle load data, incorporating vehicle damage factors (VDF), lane distribution and directional distribution factors as per **IRC:37-2001**.

The design traffic was determined from the base year 2013, and projected cumulative traffic loading for the tunnel section and approaches was calculated as per the traffic report. The Equivalent Million Standard Axles (MSA) are as follows:

- Base Year Traffic 2013 – 17 MSA
- 10 years – 22 MSA

- 15 years – 39 MSA
- 20 years – 59 MSA

Accordingly, the **flexible pavement** has been designed for a **15-year design life (39 MSA)** and the **rigid pavement** has been designed for a **30-year design life (>100 MSA cumulative loading)**.

C. Pavement Crust of Main Carriageway

The adopted pavement composition for the main carriageway, derived from IRC:37-2012 guidelines and IITPAVE analysis.

The crust thicknesses are as follows:

Exhibit 30 Adopted Composition – Main Carriageway:

Layer	Thickness	Remarks
Bituminous Concrete (BC)	40 mm	Surface Course, VG_30 grade bitumen
Dense Bituminous Macadam (DBM)	100 mm	Binder Course
Wet Mix Macadam (WMM)	250 mm	Base Layer
Granular Sub-Base (GSB)	200 mm	Sub-Base & Drainage Layer
Total Thickness	**590 mm**	**Adopted composition for the main carriageway (15 years, 39 MSA).**

Paved shoulders are to be constructed with the same crust as the main carriageway, as per **IRC SP:84-2014 Clause 5.10**

D. Rigid Pavement – Tunnel and Toll Plaza

Rigid pavements are proposed for the tunnel and toll plaza areas, designed as per **IRC:58-2015** for a **30-year design life**. These sections are expected to carry cumulative loading equivalent to >100 MSA.

The crust thicknesses are as follows:

Exhibit 31 Adopted Composition - Tunnel and Toll Plaza

Layer	Thickness	Remarks
Pavement Quality Concrete (PQC)	300 mm	Designed with dowel/tie bars, flexural strength governed by IRC:58
Dry Lean Concrete (DLC)	150 mm	Minimum cement content, strength as per IRC SP:49; extended 0.5 m beyond PQC

Granular Sub-Base (GSB – drainage)	150 mm	Designed with permeability ≥ 20 m/day
Total Thickness	**600 mm**	**Adequate for 30 years (>100 MSA cumulative traffic)**

E. Rigid Pavement – Escape Tunnel and Cross Passage Tunnel

Escape and cross-passage tunnel pavements are designed for emergency/occasional use. Design assumptions and adopted composition reported by the tunnel pavement design are:

- Design life = **30 years**; Equivalent traffic assumed ≈ **0.5 MSA (30 years)**; maximum single axle load = **8 t**; Load Safety Factor = **1.0**; effective k over 100 mm DLC = **38.9 kg/cm²/cm**.

The crust thicknesses are as follows:

Exhibit 32 Adopted Composition - Escape & Cross Passage:

Layer	Thickness	Remarks
Pavement Quality Concrete (PQC)	150 mm	Slab for escape/cross passage (no dowels/tie bars)
Dry Lean Concrete (DLC) / PCC M15	100 mm	Base layer
PCC (M10)	350 mm	Sub-base / bed layer
Total Thickness	**600 mm**	**Adopted composition for escape & cross-passage pavements.**

F. Overlay Design

At the stage, no overlay has been prescribed in the submitted design documents since the pavements are new. The need for future overlays will be determined from performance monitoring (deflection, roughness and distress surveys) during operation. The consultant indicates that overlays may be required in service depending on field performance; timing will be based on actual condition during maintenance.

5.4 BUMP INTEGRATOR (BI) TEST

5.4.1 Pavement Evaluation by Bump Integrator (BI) test

a) Introduction:

A Bump Integrator (BI) test was carried out to evaluate the riding quality and surface evenness of the pavement for the Chenani–Nashri Tunnel Project (CNTL), forming part of NH–44 (Old NH–1A).

The test was conducted to assess the **Unevenness Index (mm/km)** of the pavement surface, which directly reflects the ride comfort, construction quality, and long-term serviceability of the pavement structure.

The survey was conducted as part of the Operation & Maintenance (O&M) monitoring program to determine the condition of the **Pavement Quality Concrete (PQC)** sections and ensure compliance with **IRC: SP:16-2004** requirements.

The BI test results provide a benchmark for assessing pavement smoothness and serve as a reference for future periodic maintenance planning under the O&M regime.

b) Project Road

The evaluated corridor lies within Udhampur and Ramban districts in the Union Territory of Jammu & Kashmir, beginning near Chenani (Km 89+000) and terminating near Nashri (Km 130+000) along NH–44 (Old NH–1A).

The section comprises a **twin-tube tunnel system**—a **Main Tunnel (Km 89+900 to Km 98+900)** and a **parallel Escape Tunnel of equal length**, connected through **29 cross passages** at approximately **300 m intervals**.

The corridor traverses a **mountainous and high-rainfall zone of the Pir Panjal range**, experiencing steep gradients, sharp curves on approaches, and **harsh winter conditions with heavy precipitation and snow**.This stretch carries continuous heavy vehicular traffic, forming part of the strategic **four-laning of the Udhampur–Banihal section of NH–44**, designed for **all-weather operation and high-volume traffic movement** between Jammu and Srinagar.

c) Pavement Condition

The **Chenani–Nashri Tunnel Project (CNTL)** comprises a **rigid pavement system** throughout the main and escape tunnels as well as both approaches. The pavement consists of **Pavement Quality Concrete (PQC)** over **Dry Lean Concrete (DLC)** and **Granular Sub-base (GSB)** layers.

The overall surface condition is **excellent**, with the BI survey indicating an **average unevenness index of about 1,850 mm/km**, well within the "Good" range as per **IRC:SP:16-2004**. Visual inspection showed **no major distresses** such as cracking, scaling, or joint spalling, and **load transfer efficiency** across joints remains satisfactory.

The rigid pavement exhibits **uniform texture, high riding comfort, and adequate structural performance**, requiring only routine cleaning and joint maintenance under the ongoing O&M regime.

d) Bump Integrator (BI) Test

To assess the **surface evenness and riding quality** of the existing **rigid pavement (PQC)** along the **Chenani–Nashri Tunnel Project (CNTL)**, a **Bump Integrator (BI) survey** was carried out in accordance with **IRC: SP:16–2004** guidelines.

The test was conducted along the **main tunnel carriageway and approach roads** to determine the **Unevenness Index (mm/km)**, which reflects pavement smoothness and ride comfort.

The BI equipment, calibrated by **CRRI, New Delhi**, was towed over the pavement surface at a test speed of **32 ± 1 km/h**, with observations recorded at **100 m intervals** along both the left and right lanes.Raw bump counts were converted to **Calibrated Unevenness Index** values using the approved calibration equation.

The analysis revealed that the **average Unevenness Index was 1,850 mm/km**, classifying the pavement condition as **"Good"** per IRC:SP:16–2004 limits (<2200 mm/km). The results confirm that the **PQC pavement exhibits excellent smoothness, uniformity, and riding comfort**, with no corrective measures required other than routine cleaning and joint maintenance during the O&M phase.

5.4.1.1 BI Analysis

The **Bump Integrator (BI) test** was conducted to evaluate the surface evenness and riding quality of the rigid pavement (PQC) along the **Chenani–Nashri Tunnel Project (CNTL)** in accordance with **IRC:SP:16–2004** guidelines.

This analysis helps in determining the current functional condition of the pavement and identifying sections that may require surface improvement or corrective maintenance during the O&M period.

The **maximum permissible values of roughness** for various pavement surface types, as specified in **IRC:SP:16–2004**, are presented in the table below.

For **cement concrete pavements (PQC)**, an Unevenness Index of **less than 2200 mm/km** is classified as *Good*, **2200–3000 mm/km** as *Average*, and **greater than 3000 mm/km** as *Poor*.

Accordingly, the Chenani–Nashri Tunnel PQC pavement, with an **average unevenness index of 1,850 mm/km**, falls within the *Good* category, confirming its excellent surface evenness and riding comfort.

Exhibit 33 Maximum Permissible Values of Roughness (mm/km) for Road Surface

S. No.	Type of Surface	Good	Average	Poor
1	Surface Dressing	< 3500	3500 – 4500	> 4500
2	Open Graded Premix Carpet	< 3000	3000 – 4000	> 4000
3	Mix Seal Surfacing	< 3000	3000 – 4000	> 4000
4	Semi-Dense Bituminous Concrete	< 2500	2500 – 3500	> 3500
5	Bituminous Concrete	< 2000	2000 – 3000	> 3000
6	Cement Concrete (PQC)	< 2200	2200 – 3000	> 3000

The measured **Unevenness Index (mm/km)** across all sections confirmed that the pavement surface falls well within the *"Good"* category (<2200 mm/km), indicating excellent riding comfort and consistent construction quality throughout the tunnel length.

A summary of the chainage-wise results is presented below.

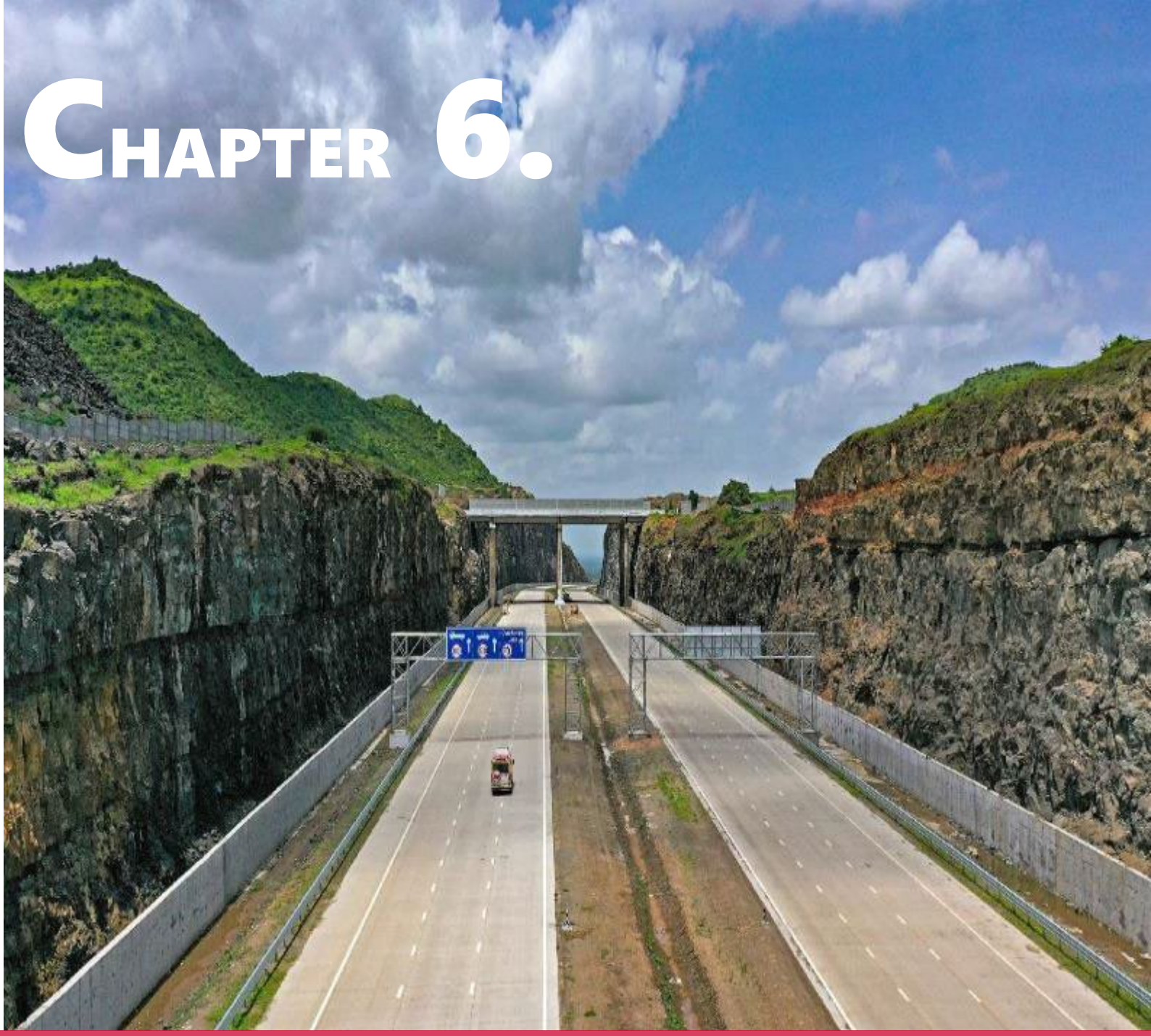
Exhibit 34 Summary of BI Test Results

Chainage (km)	Average Observed Bumps (cm)	Corrected Unevenness Index (mm/km)	Condition	Remarks
0.000 – 1.390	13 – 15	1,985 – 2,251	Good	Uniform PQC finish
1.390 – 3.790	9 – 13	1,452 – 1,985	Good	Smooth and consistent
3.790 – 6.190	9 – 11	1,452 – 1,718	Good	Even surface texture
6.190 – 8.790	9 – 12	1,452 – 1,851	Good	Excellent riding comfort
8.790 – 10.490	9 – 11	1,452 – 1,718	Good	Within permissible limit
10.490 – 10.990	12 – 16	2,118 – 2,451	Good	Slightly higher near toll plaza; acceptable

5.5 Major Maintenance of Pavement

The **periodic maintenance strategy** has been developed considering the **service life of rigid pavements**, **mechanical and electrical systems**, and the **specific climatic and topographical conditions** of the Chenani–Nashri corridor. The project alignment (Km 89+000 to Km 130+000) primarily consists of **rigid pavement** within the tunnel and on the approach sections at both portals. Maintenance interventions are planned through two defined **Maintenance Management (MM) Cycles**, aimed at sustaining pavement performance and structural integrity in accordance with the **serviceability criteria** prescribed under the Concession Agreement and applicable IRC standards. Based on the inspection findings and performance review, the **Concessionaire has formulated a major maintenance strategy**, the details of which are presented in **Chapter 6** of this report.

Chapter 6.



Cost Estimate

Chapter 6. COST ESTIMATES

6.1 General

Based on the assessment carried out in previous chapters, various costs were worked out. The costs are divided into following categories –

I. Routine O&M Cost
II. Major Maintenance Cost
III. Periodic Replacement of TMS/ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and Escalation.

6.2 Rate Assumption

The cost estimates are based on the following assumptions:

Following assumptions are considered for unit rates of various items while estimating the cost –

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard data book. The input rates for MoRTH standard data book were adopted as below
   a) **Manpower and labor** – As per applicable minimum wages published by Ministry of Labour & Employment, Government of India
   b) **Bitumen** – Bitumen rates are considered to be sourced from IOCL Panipat Refinery. The distance (to- from) from the midpoint of Project Highway is considered as 550 kms. VG-30 and VG-40 grades of bitumen are considered in our cost estimate.

☛ ***Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.***

Therefore, Bitumen prices are considered as per the client's forecast. Current published of bitumen are considered for unit rates calculation for FY24 and FY25. Average 10 years of price of bitumen are considered for unit rates calculation for FY26 and onwards, since bitumen prices have been range bound over the last five-six years.

c) **Sand and Aggregate** are sourced from the nearest quarry located on project highway.

d) **Cement** is procured from the nearest local market.

e) **Machinery Hire charges** of Plant and Machinery for various items of works have been considered from J&K SOR 2022 and some rates are considered from MORT&H Standard Data Book 2001-2002. Escalation has been considered on MORT&H Plant and Machinery rates to arrive at the present rates of 2024-25.

f) **Material Rates** are obtained from SOR of J&K, PWD 2021-22.

g) Some of the rates are based on Consultant's experience on similar ongoing projects in adjacent locations.

h) **Overheads and profits** have been considered based on MORT&H Standard Data Book. Applicable taxes have been considered in the Rate Analysis.

Goods and Service Tax (GST) is considered as 18% as per the latest Government Guidelines

Exhibit 35 Adopted Unit Rates for Key items

S.nos	Items Description	Unit	Rates (₹)
1	Slab replacement cost (PQC)-MCW	Cum	10,648
2	Dismantling of slab	Cum	2950
3	Joint Sealant Replacement/Repairs	Rm	234
4	PQC Taxing	Sqm	189
5	Micro surfacing	Sqm	224
6	Road Marking	Sqm	687
7	Road Studs	Nos.	215
8	Route & sealing	Rm	590
9	Cross Stitching	Rm	1770
10	Kerb painting	Sqm	118

- *The above unit rates are including GST.
- The unit rate of each item includes 10 % overhead for road works, 15 % overhead for structure works and 10 % contractor's profit.
- Details of components considered in rate analysis & quantification are presented in below **Exhibit 36**

Exhibit 36 Major Components Detail for Key items

Sr. No.	Particular	Source	Reference
1	Rate Analysis	MORTH	Standard Data Books published by MORTH
2	**Material**		
A	Aggregate Rates	Nearby Project Corridor	As per Local Market Rates
B	ATMS, TMS cost		As per Vendor offer.
C	Cement	As provided in Local market	As per Local Market Rates
3	Equipment hire cost	Nearby project location	Standard Data Books published by MORTH
4	Labour	As per minimum wages	As per minimum wages

6.3 Immediate Repair Cost

As informed during site visit, The following Bill of Quantities (BOQ) outlines the proposed scope of civil and structural works for the project, covering activities such as excavation, anchoring, concreting, gabion protection, drainage arrangements, micro piling, and slope stabilization measures. The rates and quantities have been derived based on current market benchmarks, standard specifications, and site requirements, with the total estimated cost amounting to approximately ₹4.39 Crores.

Exhibit 37 Immediate Repair Cost

Sl No	Description	Unit	Quantity	Rate	Amount (₹)
1	Earth work in bulk excavation by manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 m2 on plan) including disposal of excavated earth lead upto 50 meters and lift upto 1.5 m, as directed by Engineer-in-Charge.	m^3	1,860.00	1,060.67	19,72,853.47
2	SDA/SDR Bolts: Supply, drilling, installation and grouting of Φ32mm Self-drilling anchor (SDA) bolts of the specified length, 200kN minimum breaking load as per design drawings, technical specifications or as directed by engineer, with contractors men, material, consumables, plants, equipments, machineries, including all lead & lifts loading, unloading etc required for the complete job.	m	4,896.00	2,210.51	1,08,22,669.19
3	Rebars to warranty the stability of Gabion and shotcrete, with 32mm dia.of Fe 500 including drilling, installation and grouting as per approved drawings & specifications or as directed by Engineer.	m	1,460.00	2,210.51	32,27,348.25
4	Shotcreting with designed mix cement concrete of cube strength M30 including all material, labour, equipment etc required.	m^3	35.00	13,169.23	4,60,923.14
5	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work for **drainage scheme**, using cement content as per approved design mix, including pumping of concrete to site of laying, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-incharge.	m^3	244.00	10,170.78	24,81,669.71

Sl No	Description	Unit	Quantity	Rate	Amount (₹)
6	Reinforcement quantity in drainage scheme @ 300 by 300 and 12mm dia. of Fe 500 as reinforcement .	T	14.80	69,652.60	10,30,858.51
7	Supply and placement of welded wire mesh 100x100x4 as reinforcement of sprayed concrete for slope works as shown on design drawings, specifications or as directed by Engineer. Steel grade minimum Fe500.	T	1.80	90,098.01	1,62,176.42
8	Supply & placing of Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh Gabion Boxes of required size	m^3	1,777.00	3,853.79	68,48,187.51
9	Supplying & laying of drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc.	m^2	1,080.00	884.25	9,54,992.00
10	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	m^3	1,038.50	9,252.26	96,08,471.94
11	Providing and installation of perforated pipes. The pipes are protected by geotextile membrane as shown on design drawings, in technical specifications or as directed by the Engineer.	m	2,274.00	155.61	3,53,846.37
12	Micro piles 200mm dia	MT	3.69	1,21,539.92	4,48,704.34
13	Supplying and Laying of 3D Reinforced Geo composite made of polypropylene polymer made three-dimensional matrix of minimum mass per unit area 500 grams/sqm	m^2	4,845.00	714.53	34,61,897.85
14	Supply and spraying of High Performance-Flexible Growth Medium (HP-FGM) which is 100% biodegradable, composed of 100% recycled, thermally refined.	m^2	4,845.00	416.39	20,17,409.55
15	Filling empty cement bags with sand/ earth; including cost of sewing and strings; including cost of bags and excluding earth / sand	nos.	50.00	16.67	833.49
16	Sand for filling the cement bags	m^3	1.88	810.34	1,519.38
Total Immediate Repair Cost (₹-Crore)					**4.39**

6.4 Routine Operation & Maintenance (O& M) Cost

Operations and Routine Maintenance work required as per the CA. During the concession period, the Concessionaire is fully responsible for Operation & Maintenance of Project Highway. Schedule K elaborates the requirements of various service factor desirable level and acceptable level during O & M period along with time if any parameter level of service beyond acceptable limit.

The CA Stipulates that the Concessionaire shall Operate and Maintain the Project Highway in accordance with Article 17 – Operation & Maintenance & Schedule –K Maintenance Requirements of Concession Agreement. The obligation of Concessionaire as per Article 17 is as follows:

- permitting safe, smooth, and uninterrupted flow of traffic on the Project Highway during normal operating conditions; collecting and appropriating the Fee.
- minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with the emergency services of the State.
- carrying out periodic preventive maintenance of the Project Highway.
- undertaking routine maintenance including prompt repairs too, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices.
- undertaking major maintenance such as replacement of panels in rigid pavement and associated activities
- preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the Project Highway
- preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Project Highway
- protection of the environment and provision of equipment and materials therefore
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media, and other agencies; and
- Complying with Safety Requirements in accordance with Article 18.

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar type of projects to arrive at the operating cost. The estimates are projected based on best industry practices and are compared with the operation cost in the vicinity of the project area. Same has been divided into following major head

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS/HTMS/System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards

6.5 O & M Strategy

Important Operations and maintenance work have been outsourced by the SPV. Details of important works are listed below **Exhibit 38**

Exhibit 38 O & M Strategy

Sn	Activity	Strategy
1	Manpower	In-house
2	Civil work cost	In-house
3	Manpower for Electrical & Mechanical	Outsource
4	Agency for Toll Plaza (TMS)	Outsource
5	AMC for Electrical system	Outsource
6	ITMS AMC	Outsource
7	Rectification work for Electromechanical	Outsource

6.6 Manpower cost

Manpower costs have been estimated based on a combination of market benchmarks and historical contractual data, with appropriate price escalation factored in to reflect anticipated future cost increases. The manpower requirements are categorized into four primary segments:

1. **Project Office and Administration**: Covers expenses related to staff involved in overall project management, administrative duties, and associated benefits and overheads.
2. **Route Operations**: Includes salaries and benefits for frontline operational personnel such as toll operators, traffic controllers, and other essential staff ensuring uninterrupted tunnel functionality.
3. **Ancillary Services**: Encompasses costs for support roles like security staff, emergency response units, and other service teams vital to maintaining safety and operational readiness.
4. **Highway and Tunnel Maintenance and Repair**: Pertains to compensation for technical and maintenance staff responsible for routine upkeep, repairs, and general infrastructure support within the tunnel.

Total Manpower cost estimated by Knight Frank is ₹87 Crore for the balance concession period of 07 years.

Exhibit 39 Manpower Cost

Manpower Cost			
Year in Nos	**Years**	**Manpower**	**Remarks**
1	FY25	12.43	
2	FY26	12.4	
3	FY27	12.4	
4	FY28	12.4	
5	FY29	12.4	
6	FY30	12.4	
7	FY31	12.4	
Total Cost (₹- Crore)		**87**	

Detailed Manpower Costs covers following items cost

- **Project Office and Administration**: Costs are derived from prevailing market rates and past contractual terms, incorporating annual cost escalations.
- **Route Operations**: Calculated based on staffing requirements, specific roles, and associated employee benefits, ensuring adequate coverage for smooth tunnel operations.
- **Ancillary Services**: Includes estimated expenses for security and emergency response personnel, along with costs for necessary equipment and training.
- **Highway and Tunnel Maintenance and Repair Works**: Provides a thorough breakdown of costs for maintenance crews, factoring in labor, tools, and essential equipment required for upkeep and repairs.

6.7 Vehicle Maintenance Cost

Total Vehicle maintenance cost considered is ₹5.0 Crore for balance concession period. It is assumed that all required vehicles will be continuously available for the entire duration of the project. & following items considered for preventive maintenance work:

- **Maintenance Costs:** Assumed at 2.5% of the vehicle cost annually, accounting for regular upkeep and minor repair work.
- **Insurance Costs:** Estimated at 3% of the vehicle cost each year, ensuring coverage for accidents and associated liabilities.
- **Fuel Costs:** Projected based on typical fuel consumption patterns and prevailing fuel rates, with provisions for future price variability.
- **Price Escalation:** Incorporated across maintenance, insurance, and fuel components to reflect anticipated inflation and market shifts over the seven-year duration**.**

Details of Vehicle maintenance cost is tabulated in below **Exhibit 40.**

Exhibit 40 Vehicle Maintenance cost

Vehicle Maintenance Cost (₹-Crore)			
Year in Nos	**Years**	**Vehicles**	**Remarks**
1	FY25	0.71	
2	FY26	0.7	
3	FY27	0.7	
4	FY28	0.7	
5	FY29	0.7	
6	FY30	0.7	
7	FY31	0.7	
Total Cost (₹- Crore)		**5.0**	

Above cost is including of GST

Breakdown of Vehicle Maintenance Costs:

- **Routine Maintenance**: Includes yearly expenses for regular servicing, part replacements, and minor repairs.
- **Insurance Premiums**: Calculated annually based on the vehicle's value and the required coverage.
- **Fuel Expenses**: Projected based on average fuel consumption and anticipated price escalation over time.

6.8 Civil work cost

Total Civil work cost considered is ₹22.7 Crore for balance concession period.

The civil cost component encompasses essential maintenance and repair activities for the tunnel and related infrastructure. The key elements include:

- **Painting**: Tunnel walls up to 4-5 meters high will be painted, with 30% of the total area refreshed annually to maintain appearance and structural integrity.
- **Bitumen and Concreting**: Includes roof concreting and waterproofing for the pump house and portal building, using a 50 mm concrete layer.
- **Grouting**: Applied to 20% of the tunnel length for crack repairs, with 20 nipples per location and 0.5 kg of epoxy per nipple. For water seepage, grouting is done on 2% of the tunnel length under similar specifications.
- **Drain Cleaning**: 25% of surface and main drains will be cleaned each year to ensure effective drainage and prevent clogging.
- **Instrumentation**: Installation of 1,000 crack meters is planned, with a dedicated instrumentation engineer stationed on-site to oversee monitoring and maintenance.
- **Miscellaneous Costs**: 10% of total civil expenses are reserved for unforeseen requirements and minor repair works.

Following items considered for Civil work:

- **Painting**: Includes costs for paint materials, labor, and equipment required for scheduled annual painting works.
- **Bitumen and Concreting**: Detailed cost allocation for concrete materials, waterproofing compounds, and associated labor charges.
- **Grouting**: Covers expenses for epoxy/resin materials, labor, and tools used for crack and water seepage grouting activities.
- **Drain Cleaning**: Encompasses labor, machinery, and waste removal costs for routine cleaning of surface and main drainage systems.
- **Instrumentation**: Costs related to procurement and installation of crack meters, along with the salary of an on-site instrumentation engineer.
- **Miscellaneous**: Budget provision for unforeseen repairs and incidental civil maintenance requirements.

The below **Exhibit 41** presents a detailed breakdown of costs related to manpower, vehicle maintenance, and civil works. It outlines specific estimates for each component across the seven-year period from FY 2025 to FY 2031, providing a comprehensive overview of all expenses associated with the operation and maintenance of the tunnel.

Exhibit 41 Civil Work Cost (₹-Crore)

S.No.	Description	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total Cost
1	***Painting***	1,83,94,425				2,39,12,752.50			**4,23,07,178**
2	***Bitumen + concreting***	34,02,730							**34,02,730**
3	***Grouting***	61,30,789	65,59,944	70,19,140	75,10,480	80,36,214	85,98,749	92,00,661	**5,30,55,978**
4	***Cleaning of Drains***	26,77,185	28,64,588	30,65,109	32,79,667	35,09,243	37,54,890	40,17,733	**2,31,68,415**
5	***Instrumentation Engineer***	10,56,000	11,61,600	12,77,760	14,05,536	15,46,090	17,00,699	18,70,768	**1,00,18,453**
6	***Cracks Meter***	1,25,000	1,33,750	1,43,113	1,53,130	1,63,850	1,75,319	1,87,591	**10,81,753**
7	***Routine Maintenance***	39,60,000	41,58,000	43,65,900	45,84,195	48,13,405	50,54,075	53,06,779	**3,22,42,353**
8	***Preventive Maintenance***	52,80,000	55,44,000	58,21,200	61,12,260	64,17,873	67,38,767	70,75,705	**4,29,89,805**
Sub Total		**4,10,26,129.35**	**2,04,21,882.27**	**2,16,92,222.03**	**2,30,45,268.38**	**4,83,99,426.64**	**2,60,22,498.46**	**2,76,59,237.48**	**20,82,66,665**
10% Miscellaneous		**20,51,306.47**	**20,42,188**	**21,69,222**	**23,04,527**	**48,39,943**	**26,02,250**	**27,65,924**	**1,87,75,360**
Total Cost		**4,30,77,435.82**	**2,24,64,071**	**2,38,61,444**	**2,53,49,795**	**5,32,39,369**	**2,86,24,748**	**3,04,25,161**	**22,70,42,025**

Average Civil work Cost estimated is ₹3.2 Crore per year including GST.

6.9 Electrical and Mechanical (E & M) Cost

Total E & M Cost estimated is ₹28.7 crore for balance concession period including GST.

The following considerations have been made during calculation of E & M costs:

- **Component Replacement Costs:** Several parts of the Electrical & Mechanical (E&M) systems—particularly energy storage units—have defined operational lifespans and will require periodic replacement. These costs are essential to include in the Life Cycle Cost (LCC) analysis to accurately reflect future financial requirements.
- **Annual Maintenance for MEP Equipment:** Includes detailed costs for regular maintenance activities such as routine servicing, minor repairs, and replacement of worn-out components.
- **Annual Consumable Costs:** Covers frequently used items like lubricants, filters, lighting fixtures, and other expendables that are consumed during daily operations. These are non-repairable parts that must be replaced regularly.
- **Additional Electromechanical Works:** Accounts for costs related to enhancements necessary for ensuring effective functioning of the tunnel ventilation during fire incidents, protective measures for E&M systems, and fire safety provisions for critical areas like tunnel control rooms.
- **Annual Electricity Costs:** Reflects average yearly electricity expenses factored into the overall cost estimation.

Exhibit 42 Details of Total E & M Cost (₹-Crore)

Electrical & Mechanical Cost			
Year in Nos	**Years**	**Electrical & mechanical (₹-Crore)**	**Remarks**
1	FY26	4.1	
2	FY27	4.1	
3	FY28	4.1	
4	FY29	4.1	
5	FY30	4.1	
6	FY31	4.1	
7	FY32	4.1	
Total E & M Cost (₹- Crore)		**28.7**	

Exhibit 43 Breakup of Yearly E & M Cost (₹-Crore)

S.nos	Items	Monthly Cost (₹-crore)
1	O&M Reports	0.21
2	O&M of Tunnel Ventilation System	0.82
3	O&M of MEP & SCADA	1.64
4	Miscellaneous	0.41
5	Energy Cost	1.03
Total Annual Cost (Annually)		4.10

- **Tunnel Ventilation System:**

The tunnel ventilation system includes key components such as **Axial Flow Fans, Jet Fans, Dampers, and Attenuators**. Axial Flow Fans are primarily used for moving large volumes of air efficiently along the tunnel's length. Jet Fans are installed within the tunnel to provide longitudinal ventilation by pushing air in the direction of traffic flow. Dampers help regulate and control airflow by opening or closing specific ventilation pathways. Attenuators are used to reduce noise generated by the ventilation equipment, ensuring quieter and more efficient tunnel operations.

- **O & M of MEE & SCADA**

The tunnel's electrical and mechanical infrastructure comprises a range of essential components, including **Cable Trays**, **HV (High Voltage) Cables**, and **LV (Low Voltage) Cables** for power distribution. **Electrical Panels** and **Transformers** play a crucial role in regulating and managing electrical supply. Backup power is ensured through a **DG Set** and **UPS (Uninterruptible Power Supply)** systems.

For lighting and visibility, a robust **Lighting** setup is installed throughout the tunnel. **Fire Fighting Pipes**, **Pumps**, and **Valves** form the core of the fire suppression system, ensuring safety during emergencies. The HVAC system includes **HVAC Dampers**, **VRF (Variable Refrigerant Flow) units**, and **Extraction Fans** to manage air quality and temperature control. Additionally, **SCADA-PLC** systems provide automation and centralized monitoring of all tunnel operations, enhancing safety and efficiency.

The average Electrical & Mechanical (E&M) Cost as per calculation is ₹5.6 Crore per year, which seems reasonable as per industrial practice.

6.10 Toll Plaza TMS Cost

The total cost estimated towards Toll Plaza TMS is ₹1.1 Crore including GST.

The cost estimation for the **Agency for Toll Plaza TMS** spans from FY25 to FY31.

☛ ***Work Order/ Purchase order details not shared by Concessionaire however Knight frank considered for the Toll Plaza TMS is based on the Previous Tunnel Project experience.***

6.11 Office Expenses

Cost towards operation of office, insurance premium, professional fees for carrying out traffic, asset condition survey etc., IE fees, AMC for equipment installed at office, communication charge, conveyance cost etc. are considered under Office Expenses. **The cost considered regarding office expenses & operation are ₹7.02 crore per year which is bifurcated as follows.**

- ***₹2.28 crore per year for Independent Engineer (IE)/Authority Engineer (AE) and professional fees covering legal, arbitration, and audit certification during the O&M period***
- ***Actual cost of insurance policy: ₹3.72 crore per year (inclusive of 18% GST)***
- ***Survey and investigation charges: ₹0.32 crore per year (inclusive of 18% GST)***

6.12 Major Maintenance Cost

As mentioned in earlier chapter, Currently, the Project Highway is maintained by existing Annuity Concessionaire.

Based on RI test, SPV team made 02 MM cycles for the overlay of projects. Following items were considered during each MM cycle based on the ground requirements.

A. Rigid Pavement

- Dismantling for existing PQC
- Relaying of dismantled panels
- Grouting with cement mortar
- Replacement and relaying of joints
- Diamond grinding with texturing
- Route & Sealing
- Cross stitching
- Road Marking
- Road Studs
- Kerb Painting

6.13 Major Maintenance items

Based on detailed highway inventory carried out during site investigation and data provided by the concessionaire following items considered during major maintenance work

- Slab Replacement
- Slab Dismantling
- Joint Sealant Replacement/Repairs
- PQC Taxing
- Micro surfacing
- Route & Sealing
- Cross stitching
- Road Marking
- Road Studs
- Kerb Painting

6.14 Major Maintenance Cycle & Strategy

Major maintenance works to be considered in 02 cycles up to the year 2031. A total Cost of ₹23.43 crore (Without Escalation) considered for major maintenance work Upto end of Concession period. Major maintenance Strategy is shown in **Exhibit 44.**

Exhibit 44 Major Maintenance Cycles & Cost

Major Maintenance Strategy & Cost Details for CNTL Project				
Cycle	**Financial Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-01	(Year 2025-2026)	**A) Main Carriageway:** 01. Slab Replacement: 3% Area 02. Slab Dismantling: 3% Area 03. Joint Sealant Replacement/Repairs: 100% Length 04. PQC Taxing: 50% Area 05. Micro surfacing: 50% Area 06. Route & Sealing 10% length 07. Cross stitching 7% Length 08. Road Marking: 100% Length 09. Road Studs: 100% Length 10. Kerb Painting: 100% length 11. Misc: 5%	12.31	

Major Maintenance Strategy & Cost Details for CNTL Project				
Cycle	**Financial Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-02	(Year 2030-2031)	**A) Main Carriageway:** 01. Slab Replacement: 3% Area 02. Slab Dismantling: 3% Area 03. Joint Sealant Replacement/Repairs: 100% Length 04. PQC Taxing: 40% Area 05. Micro surfacing: 40% Area 06. Route & Sealing 10% length 07. Cross stitching: 5% Length 08. Road Marking: 100% Length 09. Road Studs: 100% Length 10. Kerb Painting: 100% length 11. Misc: 5%	11.12	
Total MMR Cost (₹-Crore) with GST			**23.43**	

Above cost is Without Escalation.

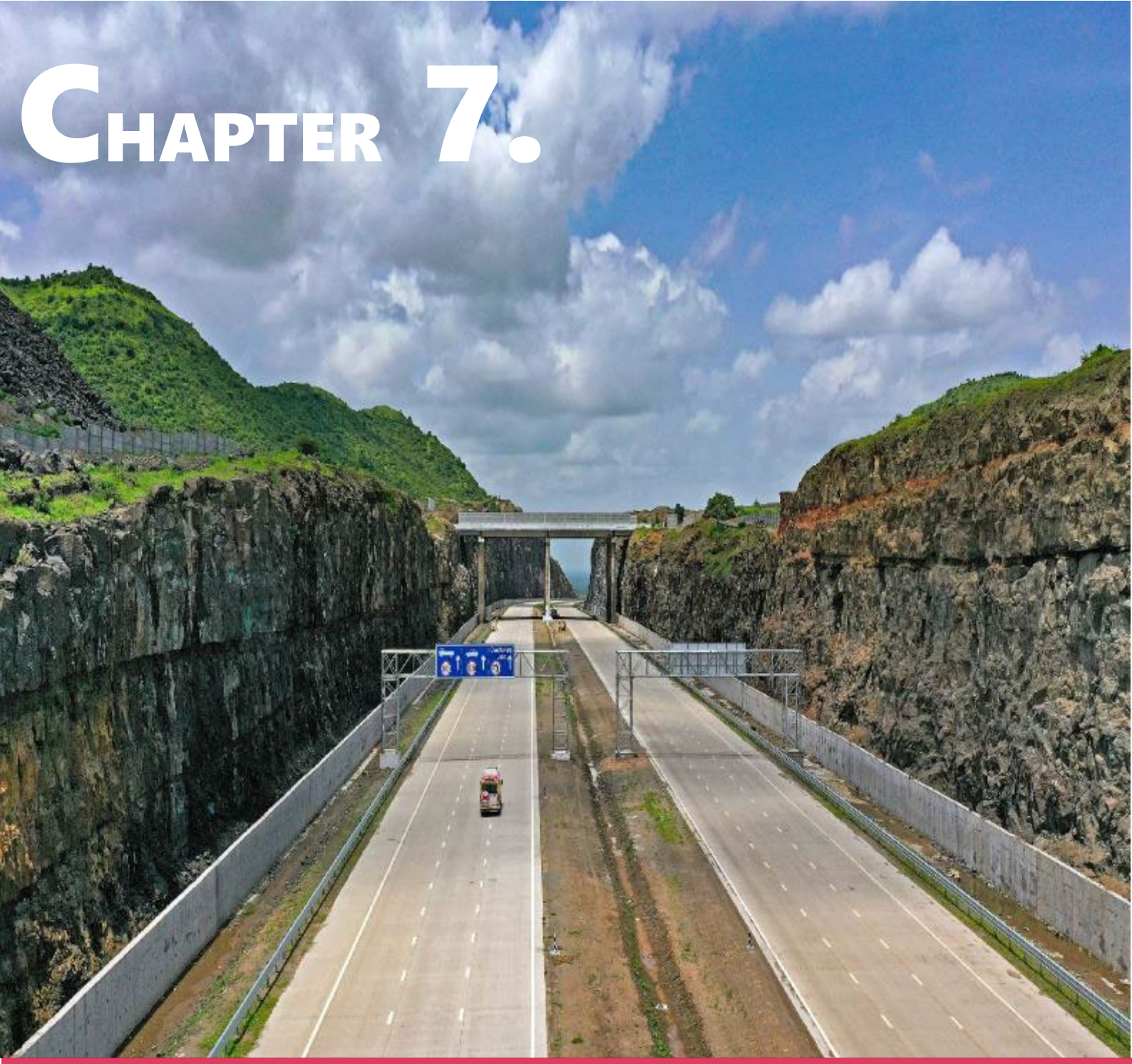
6.15 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period as below.

Exhibit 45 Summary of Cost (₹-Crore)-including GST

S.No.	Year of expense	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total Cost
1	**Immediate Repair Cost**	4.39							4.39
2	**Routine O&M Cost**								
2.1	Manpower	12.43	12.43	12.43	12.43	12.43	12.43	12.43	87.00
2.2	Vehicles	0.71	0.71	0.71	0.71	0.71	0.71	0.71	4.99
2.3	Civil	4.31	2.25	2.39	2.53	5.32	2.86	3.04	22.70
2.4	Electro & Mechanical	4.10	4.10	4.10	4.10	4.10	4.10	4.10	28.70
2.5	Agency for Toll Plaza TMS	0.15	0.15	0.15	0.15	0.15	0.15	0.15	1.05
2.6	AMC for Electrical system	0.50	0.50	0.50	0.50	0.50	0.50	0.50	3.50
2.7	ITMS AMC	5.00	5.00	5.00	5.00	5.00	5.00	5.00	35.00
2.8	Rectification work for Electromechanical	0.82	1.23	1.23	1.23	1.23	1.23	1.23	8.20
	Other Expenses	7.02	7.02	7.02	7.02	7.02	7.02	7.02	49.14
	Subtotal of O&M Cost	**35.04**	**33.39**	**33.53**	**33.68**	**36.46**	**34.00**	**34.18**	**240.28**
3	**Major Maintenance Cost**	**12.31**					**11.12**		**23.43**
4	Periodic Cost of TMS/HTMS Replacement								
	Total Cost	**51.73**	**33.39**	**33.53**	**33.68**	**36.46**	**45.12**	**34.18**	**268.09**

Chapter 7.



Project Photographs

Chapter 7. PROJECT PHOTOGRAPHS

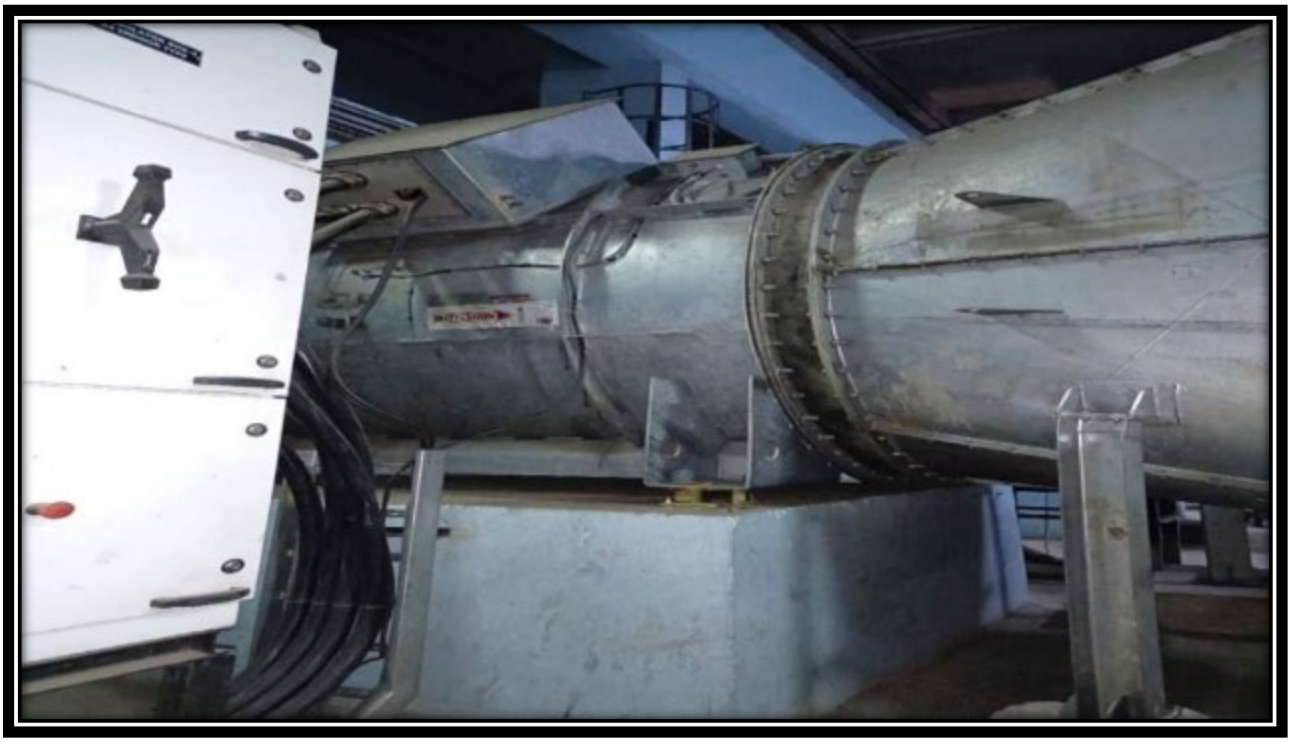
Entrance of Tunnel at Srinagar End

Pavement of Tunnel

Main Tunnel Southbound Carriageway

Jet FAN Inside Tunnel

Escape Tunnel



Ventilation FAN

Pump Room

South Portal Bridge

North Portal Bridge

Tunnel Ventilation Exhaust Duct

Video Wall in control Room

Escape tunnel Axial fan at entrance

Pump Room

Sound Attenuator at ventilation building

Annexure- A

(Major Maintenance Cost)

Major Maintenance Strategy & Cost Details for CNTL Project				
Cycle	**Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-01	**FY 2026**	**A) Main Carriageway:** 01. Slab Replacement : 3% Area 02. Slab Dismantling : 3% Area 03. Joint Sealant Replacement/Repairs : 100% Length 04.PQC Taxing : 50% Area 05. Microsurfacing : 50% Area 06. Route & Sealing 10% length 07. Cross stitching 7% Length 08. Road Marking : 100% Length 09. Road Studs : 100% Length 10. Kerb Painting : 100% length 11. Misc: 5%	12.31	
MM Cycle-02	**FY 2031**	**A) Main Carriageway:** 01. Slab Replacement : 3% Area 02. Slab Dismantling : 3% Area 03. Joint Sealant Replacement/Repairs : 100% Length 04.PQC Taxing : 40% Area 05. Microsurfacing : 40% Area 06. Route & Sealing 10% length 07. Cross stitching : 5% Length 08. Road Marking : 100% Length 09. Road Studs : 100% Length 10. Kerb Painting : 100% length 11. Misc: 5%	11.12	
Total MMR Cost (₹-Crore) with GST			**23.43**	**0.00**

A. Periodic Maintenance Cycle -01 (FY 2026)						
S.no	**Description**	**Unit**	**Quantity**	**Rate**	**Amount (₹-Lakh)**	**Remarks**
A	**Rigid Pavement**					
1	Slab replacement cost (PQC)-MCW	Cum	1849	9,024	167	3% Considered
2	Dismantling of slab	Cum	1849	2,500	46	3% Considered
3	Joint Sealenat Replacement/Repairs	Rm	104343	198	207	100% Considered
4	PQC Taxing	Sqm	102713	160	164	50% Considered
5	Microsurfacing	Sqm	102713	190	195	50% Considered
6	Route & sealing	Rm	5040	500	25	10% Considered
7	Cross Stitching	Rm	3528	1,500	53	7% Considered
8	Road Marking	Sqm	5,035	582	29	100% Considered
9	Road Studs	Nos.	4,920	182	9	100% Considered
10	Kerb painting	Sqm	7,613	100	8	100% Considered
11	Misc (Ravelling, Regrinding, Repairs, Crack Sealing) 5%	Ls			45	
Total Periodic Maintenance Cost					**948**	
Contigencies (10%)					**10.0%**	Hilly area consideration
Total Periodic Maintenance Cost (₹-Lakh)					**1,043**	
Total Periodic Maintenance Cost (₹-Crore)					**10.43**	
Total Periodic Maintenance Cost (₹-Crore) with GST					**12.31**	

B. Periodic Maintenance Cycle -02 (FY 2031)						
S.no	**Description**	**Unit**	**Quantity**	**Rate**	**Amount (₹-Lakh)**	**Remarks**
A	**Rigid Pavement**					
1	Slab replacement cost (PQC)-MCW	Cum	1849	9,024	167	3% Considered
2	Dismantling of slab	Cum	1849	2,500	46	3% Considered
3	Joint Sealenat Replacement/Repairs	Rm	104343	198	207	100% Considered
4	PQC Taxing	Sqm	82170	160	131	40% Considered
5	Microsurfacing	Sqm	82170	190	156	40% Considered
6	Route & sealing	Rm	5040	500	25	10% Considered
7	Cross Stitching	Rm	2520	1,500	38	5% Considered
8	Road Marking	Sqm	5,035	582	29	100% Considered
9	Road Studs	Nos.	4,920	182	9	100% Considered
10	Kerb painting	Sqm	7,613	100	8	100% Considered
11	Misc (Ravelling, Regrinding, Repairs, Crack Sealing) 5%	Ls			40	
Total Periodic Maintenance Cost					**857**	
Contigencies (10%)					**10.0%**	Hilly area consideration
Total Periodic Maintenance Cost (₹-Lakh)					**942**	
Total Periodic Maintenance Cost (₹-Crore)					**9.42**	
Total Periodic Maintenance Cost (₹-Crore) with GST					**11.12**	

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Technical Due Diligence Report

6-laning of Devanahalli to Hebbal Section of NH-7 km 534.720 to km 556.840 on BOT in the State of Karnataka (Total Length 22.12 km)

PREPARED FOR

CUBE HIGHWAYS TRUST

PREPARED BY

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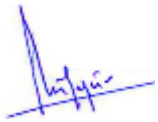
Rev. No.	Effective Date	Revision Description	Checked and Approval Record		
			Activity	**Name**	**Signature**
R0	31.10.2025	Draft DD Report of Devenhalli-Hebbal Section	Prepared By	Aashif Ahmed	
R1	16.11.2025		Reviewed by	Maj Gen K T Gajria	
R2	18.11.2025	Final DD Report of Devenhalli-Hebbal Section	Approved By	Rajeev Vijay	

Disclaimer

This report has been prepared, based on the inputs provided by the Client. Every effort is made to submit realistic details as available, statistics and information obtained/furnished at site by Client during our interaction at various levels.

In preparing this report, Knight Frank relied, in whole or in part, on data and information provided by the Client which information has not been independently verified by Knight Frank and which Knight Frank has assumed to be accurate, complete, reliable, and current. Therefore, while Knight Frank has utilized its best efforts in preparing this report, Knight Frank does not warrant or guarantee the conclusions set forth in this report which are dependent or based upon data, information, or statements supplied by third parties or the client.

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TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION AND SCOPE OF SERVICES 2

1.1 BACKGROUND 2
1.2 SCOPE OF SERVICES 2
1.3 APPROACH 3
1.4 METHODOLOGY 3
1.5 STUDY 3
1.6 STRUCTURE OF THE REPORT 4

CHAPTER 2. PROJECT DESCRIPTION 6

2.1 PROJECT ROAD 6
2.2 CLIMATE 8
2.3 TERRAIN 8
2.4 DEVELOPMENT AS PER SCHEDULE B 9
2.5 ADMINISTRATIVE DETAILS OF THE PROJECT 11
2.6 SALIENT FEATURES OF THE PROJECT 13
2.7 PROJECT COMPLETION CERTIFICATE AND PCOD & FCOD 16
2.8 EXTENSION OF TIME 16
2.9 PENALTY 17
2.10 APPROVALS & PERMITS 17

CHAPTER 3. REVIEW OF PROJECT AGREEMENTS 19

3.1 REVIEW OF CONCESSION AGREEMENT 19
3.2 REVIEW OF SUPPLEMENTARY AGREEMENT 24
3.3 REVIEW OF STATE SUPPORT AGREEMENT 27
3.4 REVIEW OF SETTLEMENT AGREEMENT 30

CHAPTER 4. CONDITION ASSESMENT OF PROJECT ROAD 34

4.1 GENERAL 34
4.2 PAVEMENT COMPOSITION 35
4.3 ASSESSMENT OF HIGHWAY 37
4.4 ASSESSMENT OF STRUCTURES 40

CHAPTER 5. REVIEW OF PAVEMENT CONDITION & DESIGN 43

5.1 PAVEMENT CONDITION 43
5.2 OBJECTIVES 44
5.3 REVIEW OF PAVEMENT DESIGN 44
5.4 PAVEMENT EVALUATION BY FALLING WEIGHT DEFLECTOMETER (FWD) TECHNIQUE 46
5.5 PAVEMENT EVALUATION BY NETWORK SURVEY VEHICLE 54
5.6 MATERIAL INVESTIGATION 64

5.7 Major Maintenance of Pavement 68

CHAPTER 6. COST ESTIMATE 70

6.1 Assumptions 70
6.2 Immediate Repair cost 73
6.3 Routine Operation & Maintenance (O& M) Cost 74
6.4 Highway Lighting 78
6.5 Corridor Management 78
6.6 Manpower Cost 78
6.7 Office Expenses 79
6.8 Major Maintenance 80
6.9 Major Maintenance items 80
6.10 Major Maintenance Cycles & Cost 81
6.11 Summary of Cost 82

CHAPTER 7. PROJECT PHOTOGRAPHS 85

LIST OF EXHIBITS

EXHIBIT 1 SCOPE OF TDD SERVICES 2
EXHIBIT 2 STRUCTURE OF THE REPORT 4
EXHIBIT 3 KEY LOCATION MAP 7
EXHIBIT 4: ROADWAY AND GEOMETRIC 10
EXHIBIT 5: ADMINISTRATIVE DETAILS OF PROJECT 11
EXHIBIT 6: SALIENT FEATURES OF PROJECT 13
EXHIBIT 7: KEY TERMS OF CONCESSION AGREEMENT 19
EXHIBIT 8: KEY OBLIGATIONS OF PARTIES 20
EXHIBIT 9: KEY FINANCIAL COVENANTS DETAIL 21
EXHIBIT 10: KEY TERMS OF DAMAGES/ PENALTY 22
EXHIBIT 11: SUMMARY OF SUPPLEMENTARY AGREEMENTS 24
EXHIBIT 12: KEY TERMS OF THE STATE SUPPORT AGREEMENT 27
EXHIBIT 13: KEY ASPECTS OF SETTLEMENT AGREEMENT 30
EXHIBIT 14: PAVEMENT COMPOSITION-MAIN CARRIAGEWAY 35
EXHIBIT 15: PAVEMENT COMPOSITION -SERVICE ROAD 36
EXHIBIT 16: DETAILS OF TRAFFIC MSA 45
EXHIBIT 17 PAVEMENT DESIGN COMPOSITION OF MAIN CARRIAGEWAY 45
EXHIBIT 18: PAVEMENT COMPOSITION -SERVICE ROAD 46
EXHIBIT 19: MODULE RANGE 48
EXHIBIT 20: MODULE RANGE 48
EXHIBIT 21 REMAINING LIFE OF THE EXISTING PAVEMENT. 49
EXHIBIT 22 ROUGHNESS SUMMARY OF MCW 57
EXHIBIT 23 RUTTING SUMMARY OF MAIN CARRIAGEWAY (MCW) 57
EXHIBIT 24 PAVEMENT DISTRESS QUANTIFICATION (%) – MAIN CARRIAGEWAY 58
EXHIBIT 25 ROUGHNESS SUMMARY OF SERVICE ROADS 60
EXHIBIT 26 RUTTING SUMMARY OF SERVICE ROADS 60
EXHIBIT 27 PAVEMENT DISTRESS QUANTIFICATION (%) – SERVICE ROADS 61
EXHIBIT 28 TEST RESULTS OF SUBGRADE 66
EXHIBIT 29 TEST RESULTS OF GRANULAR LAYERS 66
EXHIBIT 30 TEST RESULTS OF BITUMINOUS LAYERS 67
EXHIBIT 31: ADOPTED UNIT RATES FOR KEY ITEMS 72
EXHIBIT 32: MAJOR COMPONENTS DETAIL FOR KEY ITEMS. 72
EXHIBIT 33: IMMEDIATE REPAIR COST 73
EXHIBIT 34: WORK OUTSOURCING FOR OPERATIONS AND MAINTENANCE WORK 76

EXHIBIT 35: ROUTINE MAINTENANCE COST 77
EXHIBIT 36: PREVENTIVE MAINTENANCE COST 77
EXHIBIT 37: MAJOR MAINTENANCE CYCLES & COST 81
EXHIBIT 38: SUMMARY O & M COST FOR REMAINING CONCESSION PERIOD 83

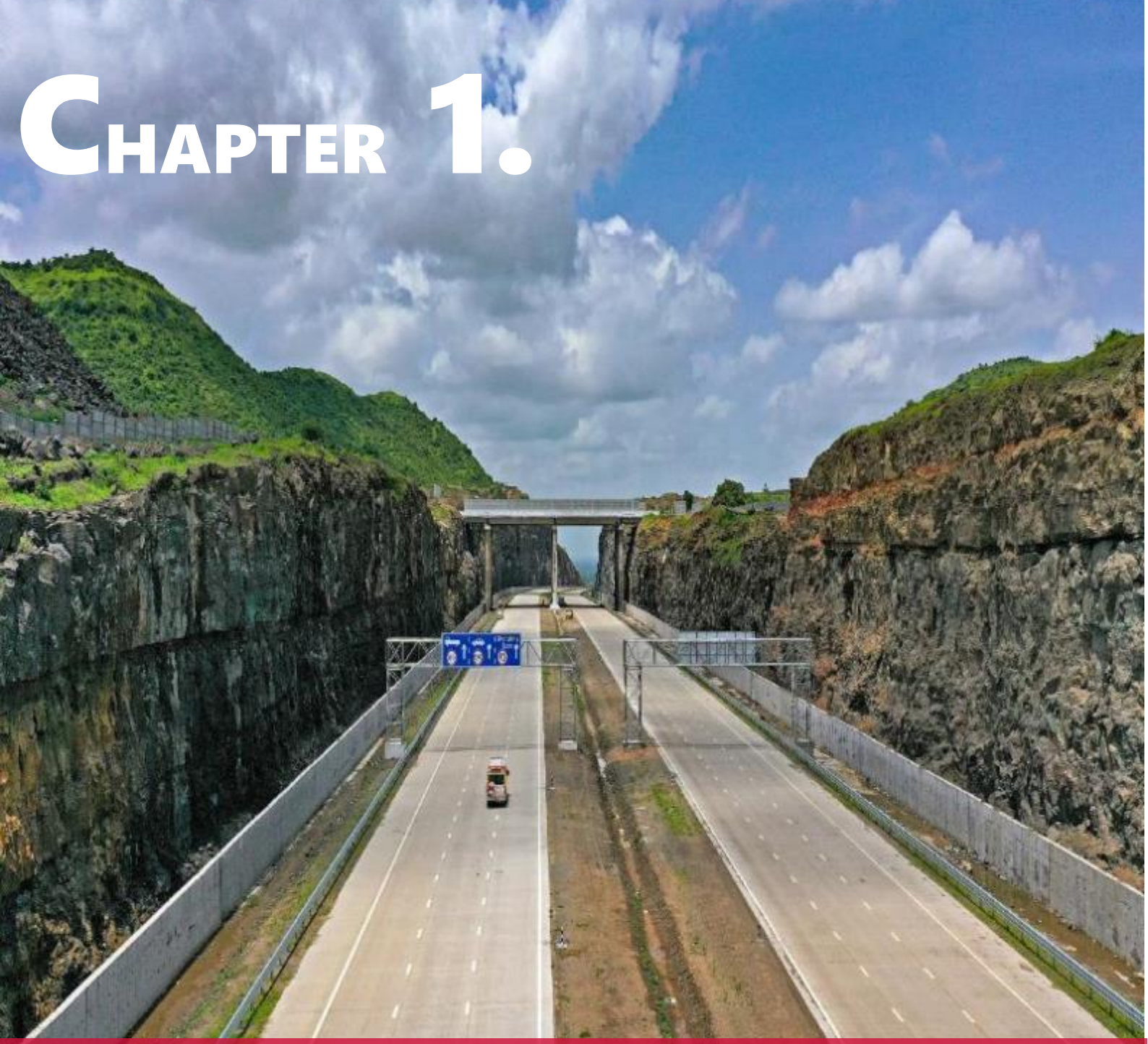
ACRONYMS AND ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SPV	**M/s Athaang Devanahalli Tollway Private Limited (ADTPL)**	**NHAI**	**National Highway Authority of India**
AMC	Annual Maintenance Contract	MM	Major Maintenance
ATMS	Advanced Traffic Management System	MS	Milestone
BC	Bituminous Concrete	NCR	Non-Compliance Report
BOQ	Bill of Quantities	NOC	No Objection Certificate
BHS	Both hand Side	NMS	Network Management System
BI	Bump Indicator	NSV	Network Survey Vehicle
CA	Concession Agreement	OFC	Optical Fibre Cable
CAPEX	Capital Expenditure	OPEX	Operation Expenditure
COD	Commercial Operations Date	O&M	Operation and Maintenance
COS	Change of Scope	PCC	Plain Cement concrete
CUP	Cattle Under Pass	PCI	Pavement condition Index
DBM	Dense Bituminous Macadam	PCR	Pavement condition rating
DG	Diesel Generator	PCU	Passenger Car Unit
DLC	Dry Lean Concrete	PCOD	Provisional Completion Certificate
DLP	Defect liability period	PQC	Pavement Quality Concrete

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
DPR	Detailed Project Report	PUP	Pedestrian Under Pass
ECB	Emergency Call Box	POP	Pedestrian Over pass
ESAL	Equivalent Standard Axle Load	PMB	Polymer Modified Bitumen
EPC	Engineering Procurement & Construction	QA/QC	Quality Assurance/Quality Control
ETC	Electronic Toll Collection	RCC	Reinforced Cement Concrete
FOB	Foot Over Bridge	RAP	Reclaimed Asphalt Concrete
FO	Flyover	RFQ	Request for Qualification
FRL	Formation Road Level	RHS	Right Hand Side
FWD	Falling Weight Deflectometer	RM	Routine Maintenance
GAD	General Arrangement Drawing	RMS	Radio Mobile System
GFC	Good for Construction	ROB	Road Over Bridge
GSB	Granular Subbase	ROW	Right of Way
GST	Goods & Service Tax	SR	Service Road
IPC	Interim Payment Certification	SPV	Special Purpose Vehicle
IRC	Indian Roads Congress	SOR	Schedule of Rates
INR	Indian Rupees	SAN	Storage Area Network
ITM	Integrated Traffic Management	TMS	Toll Management System
KVA	Kilo-Volt-Ampere	TOR	Terms of reference

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
LA	Land acquisition	BOT	Build Operate & Transfer
LHS	Left hand side	TLB	Truck lay bay
LCV	Light Commercial Vehicle	VUP	Vehicular Under Pass
LVUP	Low height Vehicular under pass	VDF	Vehicle Damage Factor
LED	Light Emitting Diode	VIDS	Video Incident Detection System
LIU	Light Interface Units	VMS	Variable Message Sign
MIS	Management Information System	WIP	Work in Progress
MSA	Million Standard Axles	WIM	Weigh in motion
MAV	Multi Axle Vehicle	WMM	Wet mix macadam

Chapter 1.



Introduction and Scope of Services

Chapter 1. INTRODUCTION AND SCOPE OF SERVICES

1.1 BACKGROUND

Cube Highways Fund Advisors Pvt Ltd (hereinafter referred as "the Client") is the Investment Manager of the Cube Highways Trust ("Trust" or "InvIT"). The Trust is registered with Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InvIT Regulations. Cube Highways Fund Advisors Pvt Ltd has appointed **M/s Knight Frank India (KFI)** (hereinafter referred as "Technical Consultant" or "KFI") to carry out Technical Due Diligence of **Upgradation, Operation and Maintenance of Hyderabad–Bangalore Section of NH-7 from Km 534.720 to Km 556.840** in the State of Karnataka under **NHDP Phase-VII**, on a **Design, Build, Finance, Operate and Transfer (DBFOT) – Toll** basis.

1.2 SCOPE OF SERVICES

The detailed scope of work for conducting the technical due diligence of Project Road is presented as below –

Exhibit 1 Scope of TDD Services

S. No	Terms of Reference
1	A reconnaissance of the Project Road to understand the current condition of the pavement, structures, road furniture, toll plaza and other highway assets.
2	Review and assessment of important technical documents like CA, pavement design report, O&M report, DPR, as built drawings, O&M manual, COD/PCOD certificate, Punch list, previous major maintenance etc.
3	Review of recent pavement investigations and surveys conducted on Project Road like FWD, NSV, Axle Load, material investigations etc.
4	Formulation of future major maintenance Strategy.
5	Estimation of any initial expenses to be incurred due to deficiencies observed in diligence.
6	Estimation of Routine Maintenance and Major Maintenance forecast for remaining concession period

S. No	Terms of Reference
7	Estimation of Annual Operation expenses along with Systems cost (TMS/HTMS) till the end of concession period.
8	Review of balance work cost for Project Road including estimation of quantities and item rates

1.3 Approach

Approach followed for this Due Diligence study is to understand the requirement of the client and terms of reference set forth. Our aim is that the study report should assist the clients in achieving their objectives.

1.4 Methodology

Methodology adopted is broadly outlined as under:

- Objectives of the client were identified from discussions and terms of reference spelt out for the study.
- Available data was collated and analysed by desk study.
- Requirements were identified to augment information/ data as available.
- Detailed List of data required was sent to Concessioner team from time to time
- Personal discussions were carried out with Clients by senior executives from KF to explain data requirements.
- Extensive interaction was made by KF with Clients and data was collected.
- Information to be gathered from Client head office & team were listed
- Relevant documents regarding project highway, including CA Agreement and other documents were collected and the provisions studied in detail.
- All data as collected was duly collated and arranged in the order as required for preparation of the report.

1.5 Study

- Data collected from all sources was duly collated and disseminated to concerned experts in KF.
- Project documents such as CA Agreement, O&M Costing details, O&M Manual etc were studied in detail.
- The data made available was analysed, and comments formulated for inclusion in the report.

1.6 Structure of the Report

This report has been prepared based on the information, reports and documents made available to us by the Company. We have also referred to publicly available reports, literature etc. and have made our best efforts to check the authenticity of the information available, analyse the same as per the best engineering / industry practices.

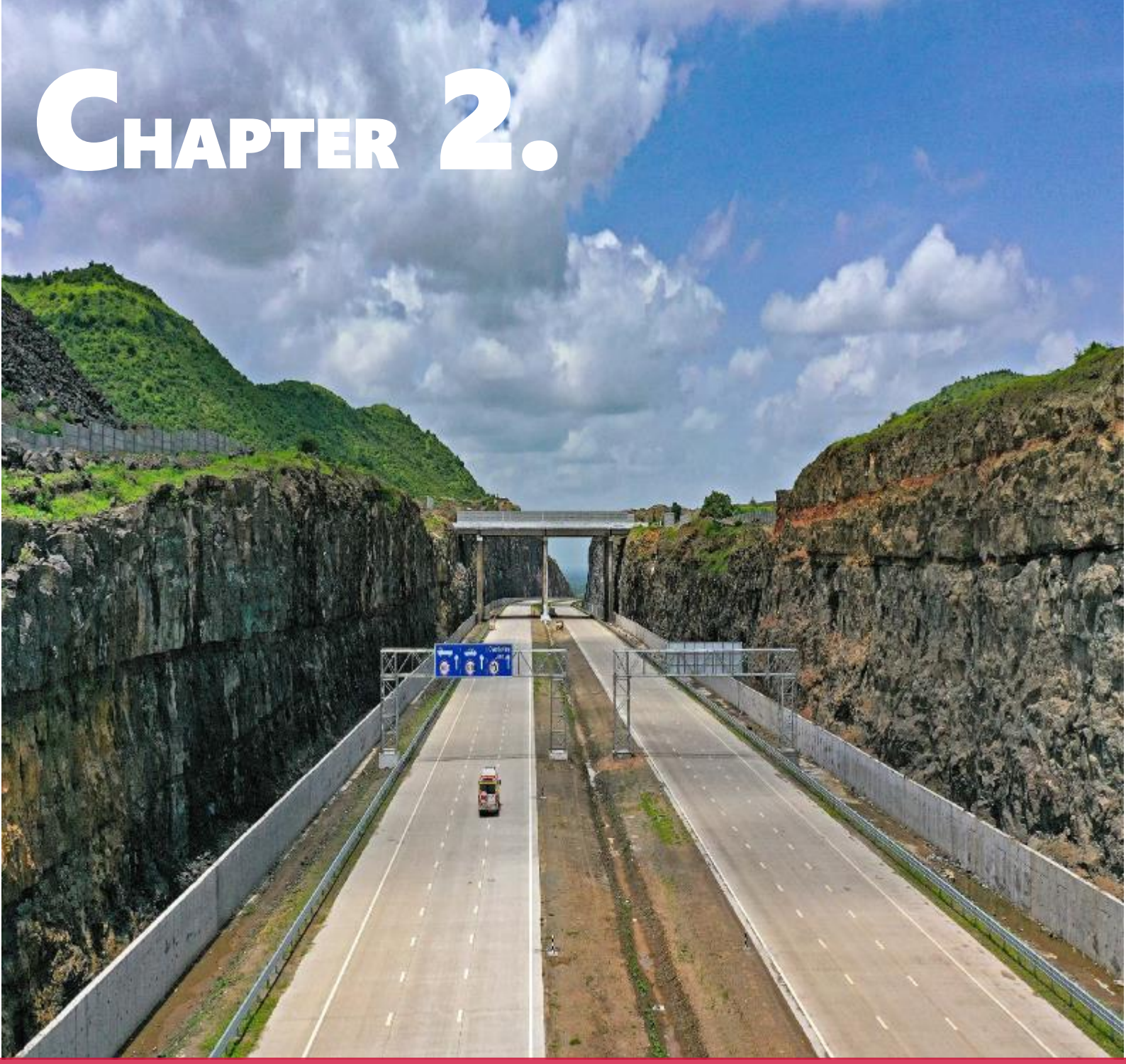
The site visit and inspection were carried out between the periods from 08th October 2025 to 10th October 2025.

The report is organized with the following chapters for easy understanding of various issues –

Exhibit 2 Structure of the Report

S.nos	Chapter	Description
1	**Chapter 1**	**Introduction:** The chapter gives an overview of the project background, detailed scope of work, approach, and methodology for due diligence studies**.**
2	**Chapter 2**	**Project Description:** The chapter describes existing project features, overview of project development.
3	**Chapter 3**	**Review of Agreements:** The chapter describes review of CA, Supplementary, State Support Agreement, Settlement Agreement & Various O & M Agreements.
4	**Chapter 4**	**Condition Assessment of Project Road:** The chapter presents the details and condition of various essential features of the Project Road based on site visit**.**
5	**Chapter 5**	**Pavement Investigation and Assessment:** This chapter describes the summary of pavement surveys and investigations carried out on Project Road along with the requirement of pavement maintenance
6	**Chapter 6**	**Cost Estimates**: This chapter summarizes the forecasting of O&M and major maintenance cost over the remaining concession period

Chapter 2.



Project Description

Chapter 2. PROJECT DESCRIPTION

2.1 Project Road

This asset is a **BOT (Toll)** project developed under **NHDP Phase–VII**, involving the *upgradation, operation and maintenance* of a six-lane urban stretch from **Devanahalli to Hebbal**, covering **Km 534.720 to Km 556.840** of **NH–7 (presently NH–44)** in the **State of Karnataka**. The project corridor is located within the **Bengaluru Urban District**, traversing rapidly developing suburban and urban areas such as **Devanahalli, Vidyanagar, Yelahanka, Kogilu Cross, and Hebbal**, and forms the principal approach road connecting the **Kempegowda International Airport (KIA)** to the city of Bengaluru.

The alignment of the project highway commences at **Km 534.720 near the Devanahalli trumpet interchange**, located approximately 5 km southwest of KIA, and extends southward through **Yelahanka Air Force Station**, **Vidyanagar**, and **Yelahanka Satellite Town**, terminating at **Km 556.840 near Hebbal interchange**, where it connects with the **Outer Ring Road (ORR)** and integrates with the urban arterial network of Bengaluru city. The corridor thus acts as a critical gateway linking **NH–44 (Srinagar–Kanyakumari Corridor)** with the central business district and airport access road, enabling seamless regional mobility for passenger and freight traffic.

The project highway is a **six-lane divided carriageway** with **10.0 m wide paved service roads** on both sides, separated by a raised median. It includes **two major interchanges**—the **Trumpet Interchange at Km 536.500**, providing a direct link to the airport access road, and the **Hebbal Interchange at Km 556.500**, which connects with ORR. The stretch is also equipped with **two Railway Over/Under Bridges (ROB/RUB)** at Km 539.910 and Km 550.770 respectively, **five minor bridges**, and **seventeen culverts**, along with two pedestrian/vehicular underpasses. The total length of service roads on both sides is approximately **22.12 km**, ensuring smooth segregation of local and through traffic. The Right of Way (ROW) varies between **45 m and 60 m**, depending on location and urban constraints.

Situated within the Bengaluru Metropolitan Region, the corridor passes through an area characterized by high vehicular density, major residential townships, and institutional developments. The project alignment lies parallel to the **Yelahanka–Chikkaballapur railway line** and is flanked by major establishments such as **Air Force Station Yelahanka**, **Vidyanagar Township**, and several industrial and commercial clusters. The proximity of the corridor to **Bengaluru International**

Airport, along with its integration into the **Outer Ring Road (ORR)** and **NH–44**, enhances its strategic importance as a high-traffic mobility corridor for both regional and urban transport.

The **Devanahalli–Hebbal (DH) Section of NH-44** achieved **Provisional Completion (PCOD)** on **1st May 2014**, permitting commencement of toll operations across the full project length (Km 534.720 to Km 556.840), and subsequently received the **Final Completion Certificate (COD)** on **22nd October 2014** from the Independent Engineer. The project is presently under the **Operations and Maintenance (O&M) phase**, being managed by **Athaang Devanahalli Tollway Pvt. Ltd.** under the supervision of **NHAI PIU–Bengaluru**.

As part of the project facilities, comprehensive **Intelligent Transportation Systems (ITS)** and **traffic management features** have been implemented, including **Electronic Toll Collection (ETC) systems, CCTV surveillance, Weigh-in-Motion (WIM) devices, Variable Message Signs (VMS), and Emergency Call Boxes (ECBs)**. These systems support efficient toll operations and enhance commuter safety along the corridor. Additionally, the stretch has been provided with adequate **drainage facilities, pedestrian subways, utility ducts, signage, crash barriers, and illumination systems** as per MoRTH standards and the specifications outlined in Schedule–D of the Concession Agreement.

The Project Location Map is shown below in **Exhibit** 3

Exhibit 3 Key Location Map

2.2 Climate

The Devanahalli–Hebbal project corridor lies in the **southern part of the Deccan Plateau**, within the **Bengaluru Urban District** of Karnataka, and experiences a **tropical savanna climate** characterized by moderate temperatures and distinct wet and dry seasons. Owing to its elevation of approximately **900 meters above mean sea level**, the region enjoys relatively mild weather conditions throughout the year. Summers, from **March to May**, are warm but not extreme, with average daytime temperatures ranging between **30°C and 35°C**, and cooler nights averaging around **20°C**. The **south-west monsoon**, extending from **June to October**, brings most of the annual rainfall, which averages between **850 mm and 950 mm**, while occasional showers from the **north-east monsoon** occur during October and November. Winters, from **December to February**, are pleasant, with daytime temperatures averaging **25°C to 28°C** and minimums around **14°C to 17°C**. Humidity remains moderate, typically between **55% and 75%**, and the region experiences gentle winds predominantly from the **south-west during summer** and the **north-east during winter**. Owing to its balanced climate, the corridor remains operational throughout the year, with only minor disruptions during short monsoon spells, primarily due to localised waterlogging in low-lying areas.

2.3 Terrain

The project stretch lies within the **Deccan plateau** region, characterized by **gently undulating terrain** with ground elevations ranging between **850 m and 910 m above MSL**. The corridor alignment passes through **urban and semi-urban areas** with moderately rolling topography and isolated granite outcrops typical of the Bengaluru geological formation.

The subgrade generally comprises **red lateritic soils** and **weathered granite**, underlain by **hard rock** at moderate depth. The geological investigations during design indicated that the sub-strata consist mainly of **gneissic and granitic formations**, suitable for heavy-duty pavement foundations and bridge sub-structures.

No significant geological hazards such as landslides or subsidence are reported. Drainage patterns are governed by minor seasonal nallas and man-made storm-water channels alongside service roads. As the section is urban, the terrain constraints mainly relate to **limited right-of-way (ROW)** and **adjacent developments**, requiring elevated structures and underpasses to ensure safe, grade-separated crossings.

2.4 Development as per Schedule B

As per **Schedule B (Upgradation of the Project Highway)** of the **Concession Agreement** for the **Devanahalli–Hebbal Section of NH-7 (Km 534.720 to Km 556.840)** in the State of Karnataka, the Concessionaire is required to undertake the **design, engineering, construction, and upgradation** of the existing facility into a six-lane divided highway, along with service roads, grade separators, and associated infrastructure works. The development works, to be executed as per MoRTH and IRC standards, include the following major components:

- **Main Carriageway:** Six-lane divided highway (2 × 3 lanes) with paved shoulders and median, conforming to design speed and geometric standards of urban expressways.
- **Service Roads:** Construction of 10 m wide (including paved shoulders) service roads on both sides along the entire stretch for local traffic segregation.
- **Grade Separators and Interchanges:** Two major interchanges—the *Trumpet Interchange* at Km 536.500 providing access to Kempegowda International Airport, and the *Hebbal Interchange* at Km 556.500 connecting to the Outer Ring Road and city network.
- **Railway Over/Under Bridges:** One **ROB** at Km 539.910 (Yelahanka) and one **RUB** at Km 550.770 (Yelahanka Bypass) constructed in RCC box and T-beam configuration.
- **Minor Bridges and Culverts:** Construction and rehabilitation of **five minor bridges** and **seventeen culverts** as per design requirements for adequate cross-drainage.
- **Underpasses and Subways:** Provision of **two vehicular underpasses** at Km 550.170 and Km 550.335 to facilitate local connectivity and safe pedestrian/vehicular movement.
- **Drainage Works:** Longitudinal and cross-drainage systems for efficient storm-water discharge, including side drains, catch-pits, and pipe culverts.
- **Roadside and Safety Works:** Installation of crash barriers, metal beam guardrails, road markings, overhead signage, boundary stones, and delineators in accordance with IRC 67 and IRC 119.
- **Ancillary Facilities:** Toll plazas, traffic aid posts, bus bays, lighting systems, communication and surveillance equipment, and landscaping in the median and ROW.
- **Mechanical & Electrical Systems:** Provision of illumination, high-mast lighting at junctions, toll management and ITS systems including CCTV, VMS, WIM, and emergency call boxes.
- **Environmental Works:** Avenue plantation, horticulture development, and environmental protection structures as per the approved Environmental Management Plan.

All works are to be executed in conformity with the **Manual of Specifications and Standards for Six-Laning of Highways (IRC: SP-87-2019)** and the technical provisions outlined in **Schedule D** of the Concession Agreement.

2.4.1 Roadway and Geometric

The **total project length is 22.12 km**, comprising **six-lane divided carriageway, service roads, interchanges, and structures**, developed to provide high-speed, all-weather connectivity between **Kempegowda International Airport** and **central Bengaluru**, forming an integral link of the **NH-44 North–South Corridor**. The detailed roadway and its geometry shown in below **Exhibit 4.**

Exhibit 4: Roadway and Geometric

Component	Chainage (km)	Description	Specifications
Six-Lane Main Carriageway	534.720 – 556.840	Six-lane divided highway between Devanahalli and Hebbal	2 × 3.5 m lanes + 2 × 1.5 m paved shoulders + 3.0 m median
Service Roads (Both Sides)	534.720 – 556.840	Continuous service roads for local traffic	10 m width (including paved shoulders)
Trumpet Interchange	536.500	Grade-separated interchange for airport connectivity	Loop ramp design with elevated flyover
Railway Over Bridge (ROB)	539.910	Crossing over Yelahanka–Chikkaballapur railway line	1 × 21 m T-beam span
Railway Under Bridge (RUB)	550.770	Yelahanka Bypass underpass	2 × 10 m × 5 m RCC box
Hebbal Interchange	556.500	Terminal interchange connecting NH-7 with ORR & city roads	Multi-ramp grade-separator structure
Minor Bridges (5 Nos.)	Various locations	RCC box and T-beam structures	Span 3 m – 21 m
Culverts (17 Nos.)	Various locations	Pipe & RCC box culverts	1 m – 3 m diam./span

Component	Chainage (km)	Description	Specifications
Vehicular Underpasses (2 Nos.)	550.170 & 550.335	RCC box type underpasses	Span 10 m × 5 m (avg.)

2.5 Administrative details of the Project

The Concession stands granted to operate the road from the Appointed Date for the concession period, with the obligation on the Concessionaire to maintain the project highway during the entire Operation & Maintenance (O&M) phase.

Exhibit 5: Administrative Details of Project

S. No	Feature	Description
1	**Project Name**	Upgradation, Operation, and Maintenance of the Devanahalli to Hebbal Section from Km **534.720 to Km 556.840** of NH-7 (now NH-44) under **NHDP Phase-VII** on **DBFOT (Toll)** basis in Karnataka.
2	**Employer / Authority**	National Highways Authority of India (NHAI)
3	**No. of Lanes / Configuration**	6-lane divided carriageway with **10 m service roads** on both sides, 2 ROB/RUBs, 2 VUPs, 2 PUPs, and elevated section (3.722 km).
4	**Length of the Project**	**22.12 km**
5	**Total Project Cost**	₹ 680 crore
6	**Concessionaire**	**M/s Athaang Devanahalli Tollway Private Limited (ADTPL)**
7	**EPC Contractor**	**Navayuga Engineering Company Limited (NECL)**
8	**Independent Engineer (O&M Phase)**	***M/s L.N. Malviya Infra Projects Pvt. Ltd.,*** *in association with* ***M/s Infratech Civil Solutions Pvt. Ltd.***
9	**Date of Award of Work (LOA)**	08-Feb-10
10	**Date of Signing of Concession Agreement**	30-Apr-10
11	**Appointed Date**	**25 April 2011 (NHAI Letter No. PIU-BLR/NDTPL/2011-12/12).**
12	**Concession Period**	**20 years (**inclusive of construction period

S. No	Feature	Description
13	**Construction Period**	**730 Days**
14	**Approved Extension of Time (EOT)**	**Extended to 31 January 2014 (439 days) with no penalty.** ***(Ref: NHAI EC Minutes & COD Letter, 2014).***
15	**Provisional Completion PCOD**	**01 May 2014** (certified by Independent Engineer vide LBG letter 01.05.2014)
16	**COD Date**	**22-Oct-14**
17	End of Concession Period	• **Scheduled: 24 April 2031** • **Revised Date: 17 January 2032, as per the Settlement Agreement dated 24 March 2025**
18	**Toll Operation Commencement**	From **01 May 2014** (post-PCOD approval)
19	**Project Highway Section**	Km 534.720 (Devanahalli) to Km 556.840 (Hebbal)
20	**No. of Toll Plazas (Number and Location)**	**Two Toll Plaza** · **Toll Plaza 536.500** · **Toll Plaza 538.000**

2.6 Salient Features of the Project

Salient features of the projects are covered at below

Exhibit 6: Salient Features of Project

Sl. No.	Component / Feature	Details/Nos.	Description / Remarks
A. Main Carriageway & General			
1	Project Start Point	Km 534+720	Start near Devanahalli Trumpet Interchange – beginning of six-laning.
2	Project End Point	Km 556+860	Ends at Hebbal Interchange connecting to Outer Ring Road.
3	Total Project Length	22.12 km	
4	Road Configuration	6-lane divided (2×3) + 10 m service roads (both sides)	Flexible pavement with BC (50 mm) + DBM (80 mm) + WMM + GSB layers.
5	Design Speed	100 km/h (rural), 80 km/h (urban)	Conforms to IRC:86 & IRC: SP-87 standards.
6	Right of Way (ROW)	45 – 60 m	As per Schedule-A drawings and land records.
7	Service Roads	Km 534+700 – Km 556+850	Discontinuous only near interchanges and structures.
B. Major Interchanges & Grade Separations			
8	Trumpet Interchange (Airport Access)	Km 536+460 – 537+050	3-level loop interchange linking KIA access road and NH-44.
9	Hebbal Interchange (Terminal)	Km 556+480 – 556+860	Multi-ramp flyover integrating NH-44 with Bengaluru ORR and arterial roads.
10	Elevated Section	Km 548+150 – 551+940	3.72 km long elevated corridor with 127 piers and 1,483 segments.
C. Railway Bridges (ROB / RUB)			
11	ROB – Yelahanka	Km 539+925	1×21 m RCC T-beam bridge over Yelahanka–Chikkaballapur railway line.
12	RUB – Yelahanka Bypass	Km 550+775	2×10 m×5 m RCC box underpass under railway embankment.
D. Minor Bridges (5 Nos.)			
13	MB-1	Km 540+190	1×10 m RCC box.
14	MB-2	Km 540+515	1×9 m RCC box.
15	MB-3	Km 549+470	1×12 m RCC T-beam.
16	MB-4	Km 550+940	1×15 m RCC box.

Sl. No.	Component / Feature	Details/Nos.	Description / Remarks
17	MB-5	Km 555+825	1×9 m RCC T-beam – all verified by IE (May 2025).
E. Vehicular Underpasses (VUPs)			
18	VUP-1	Km 550+165	10 m×5 m RCC box providing local access.
19	VUP-2	Km 550+330	Same dimensions; located near service road intersection.
F. Culverts & Cross-Drainage Works			
20	Culverts	(17 Nos.)	RCC box and Hume pipe culverts (1–3 m span).
21	Longitudinal Drainage	Both carriageways and service roads	Connected to BBMP municipal storm system.
G. Toll Plazas & Facilities			
22	TP-1 – Yelahanka Plaza	Km 539+905	10 lanes (8 manual + 2 ETC); control building, WIM, ECBs, and canopy.
23	***TP-2 – Kogilu Cross Plaza***	***Km 550+775***	***10 lanes constructed; non-operational for tolling per NHAI directive (Dec 2014); used as ITS & SCADA centre.***
H. Project Facilities			
24	Bus Bays / Lay-bys	As per Schedule-B	
25	Delineators (Nos)	22	
26	Raised Pavement Markers (ROW Studs) (Nos)	7706	
27	Variable Message Sign Boards (Nos)	2	
28	Meteorological Data Station (MDS) (Nos)	1	
29	ATCC (Nos)	2	
30	Emergency Call Boxes (ECB) (Nos)	20	
31	Video Cameras (CCTV) (Nos)	11	
32	Pedestrian Guard Rails between MCW & Service	2336	

Sl. No.	Component / Feature	Details/Nos.	Description / Remarks
	Road below Elevated Highway (Nos)		
33	Speed Breakers (Nos)	32	
34	Drain (RCC-Line)	18.2	
35	Drain (RCC-Unlined)	23.06	
36	Median Drain (km)	17.49	
37	Median Opening (nos)	11	
38	Median Plantation (kms)	47.28	
39	Avenue Plantation (Kms)	15.69	
40	Sign Boards	Total Nos.: 484	
41	Solar Blinker	35	
42	Highway Lighting		
43	Single Arm	1180	
44	Double Arm	439	
45	High mast Lighting	13	
46	Pedestrian Guard Rail (PGR)	Total 3.4 Kms	
47	Footpath	0.12 Kms	
48	Gantry Boards	Cantilever Over Head: 3 Half Width Over Head: 2 Full Width Over Head: 5	

2.7 Project Completion Certificate and PCOD & FCOD

A. <u>Partial Commercial Operation Date (PCOD):</u>

- As per the Concession Agreement, the scheduled completion date for the project was **31 January 2014** after approval of **Extension of Time (EOT)** for 439 days by **NHAI Executive Committee**.
- The **Independent Engineer (Louis Berger Group Inc.)** issued the **Provisional Completion Certificate (PCOD)** on **01 May 2014**, certifying that the project stretch from **Km 534.720 to Km 556.840** was complete in all respects and safe for commercial operation.
- Based on this certification, the **NHAI** permitted commencement of tolling and operation of the entire 22.12 km section from **01 May 2014**.

B. <u>Final Commercial Operation Date (COD):</u>

- After completion of all punch list and ancillary works identified during the PCOD stage, the **Independent Engineer** issued the **Final Completion Certificate (COD)** on **22 October 2014**.
- The **NHAI** approved this as the **Final Commercial Operation Date (FCOD)**, marking the formal completion of the **Devanahalli–Hebbal Section of NH-44 (old NH-7)**.
- The project continues under normal operations and maintenance, with tolling activities managed by **Athaang Devanahalli Tollway Pvt. Ltd.** (formerly NDTPL) under NHAI's supervision.

2.8 Extension of Time

An **Extension of Time (EOT)** of **439 days** was originally approved by **NHAI** to compensate for delays caused by land acquisition, utility shifting, and local access constraints during construction. This extended the *Scheduled Completion Date* from **18 November 2012** to **31 January 2014**, while the **Concession Period** of **20 years (from 25 April 2011 to 24 April 2031)** remained unchanged.

Further, as per the **Settlement Agreement dated 24 March 2025**, **NHAI granted an additional 267-day** extension to the **Concession Period** on account of **COVID-19 Force Majeure events** — *171 days (FY 2020)* and *96 days (FY 2021)* — formally approved by **Regional Office, NHAI Bengaluru**.

Accordingly, the revised **Concession End Date** is extended to approximately **17 January 2032**, without altering the operational obligations or revenue share structure.

2.9 Penalty

As per the *Settlement Agreement (2025)*, there are **no active penalties or liquidated damages** applicable as of date.

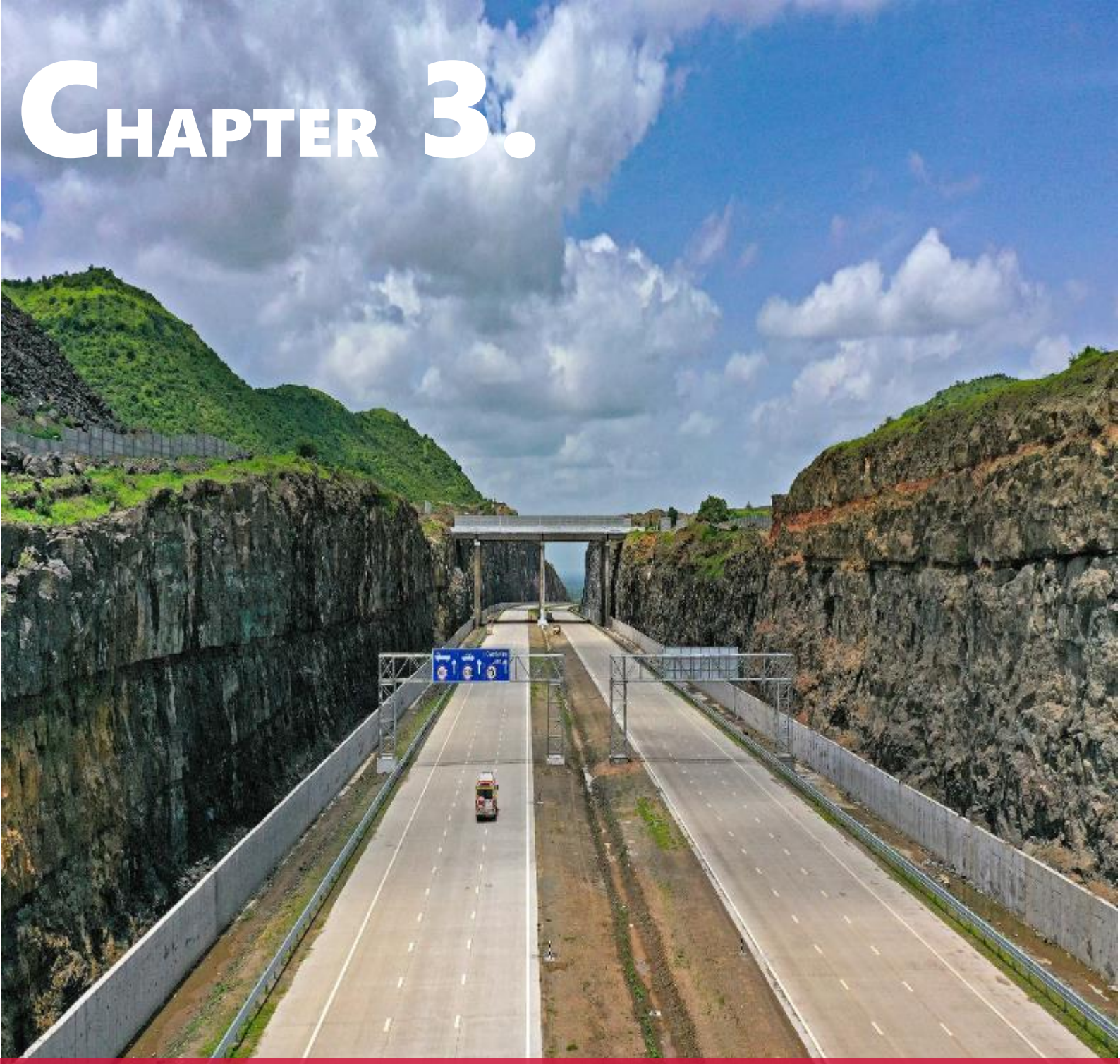
All earlier disputes and counterclaims between **NHAI** and **M/s Athaang Devanahalli Tollway Pvt. Ltd.** (formerly NDTPL) were **settled mutually**, with a **full and final settlement amount of ₹31.52 crore** agreed and paid.

Notably, **maintenance damages (₹1.01 crore for Dec 2023)** were **waived off**, and **no additional penalties** have been imposed under the O&M phase. Thus, the project currently stands in **full contractual compliance**, **with no pending financial penalties or disputes under adjudication.**

2.10 Approvals & Permits

Since Project is in O & M stage therefore all necessary approvals required are in place with concessionaire.

Chapter 3.



Review of Project Agreement

Chapter 3. Review of Project Agreements

3.1 Review of Concession Agreement

Concession Agreement was executed on **30th April 2010** between:

- **National Highways Authority of India (NHAI)**, (hereinafter referred to as the "Authority"); and **Navayuga Devanahalli Tollway Private Limited**, (hereinafter referred to as the "Concessionaire").

The Agreement relates to the **Upgradation, Operation and Maintenance of Hyderabad–Bangalore Section of NH-7 from Km 534.720 to Km 556.840** in the State of Karnataka under **NHDP Phase-VII**, on a **Design, Build, Finance, Operate and Transfer (DBFOT) – Toll** basis.

Exhibit 7: Key Terms of Concession Agreement

Parameter	Details
Date of Agreement	30 April 2010
Appointed Date	Declared by NHAI after fulfilment of Conditions Precedent – 25 April 2011 (as later notified)
Authority / Employer	National Highways Authority of India (NHAI), Ministry of Road Transport & Highways, Government of India
Concessionaire	M/s Navayuga Devanahalli Tollway Private Limited (NDTPL)
Project Scope	Upgradation of NH-7 (22.12 km) including construction of 6-lane elevated highway, flyovers, underpasses, service roads and associated facilities
Length of Project	22.12 km (From Km 534.720 to Km 556.840 of NH-7 in Karnataka)
Concession Period	20 years from Appointed Date
Project Cost	Approx. ₹220 crore (as per bid documents)
Construction Period	730 days (2 years) from commencement of upgradation
Scheduled Completion (COD)	Upon issue of Completion Certificate by Independent Engineer
Performance Security	₹13.60 crore (Bank Guarantee – SBI)
Toll Collection / Revenue Source	User Fee to be collected as per Fee Notification (Schedule R)
Right of Way (ROW)	80 m ROW along the corridor; 134 m at toll plaza location

Parameter	Details
Change in Scope	Permitted under Article 16 with approval of Authority and Independent Engineer
Force Majeure & Relief	Defined under Article 34 (Natural, Indirect Political, and Political Events)
Dispute Resolution	Arbitration under the Arbitration and Conciliation Act 1996 – Venue: New Delhi
Governing Law & Jurisdiction	Laws of India; Courts at New Delhi

3.1.1 Obligations of the Authority & Concessionaire

Exhibit 8: Key Obligations of Parties

Authority	Concessionaire
Provide ROW for the Project Highway free from encumbrances before Appointed Date (Clause 10.3)	Design, engineer, finance, construct, operate and maintain the Project Highway on DBFOT (Toll) basis
Facilitate and assist in obtaining statutory approvals and permits (Clause 6.1)	Achieve Financial Close within 180 days of signing and furnish Performance Security (Article 24)
Permit collection of toll fee in accordance with Schedule R post COD	Maintain the Project Highway as per Specifications and O&M Requirements (Schedule K)
Provide police and administrative assistance for traffic management and security (Article 20)	Comply with Safety Requirements (Article 18 and Schedule L) and Environmental Management Plan
Ensure no Competing or Additional Tollway is developed during the Concession Period (Article 6.3)	Ensure timely completion of Project Milestones (Schedule G) and Scheduled COD within 2 years of Appointed Date
Review and monitor performance through Independent Engineer (Articles 13 & 23)	Hand back the Project Highway free of encumbrances to NHAI at the end of the Concession Period (Article 38)

Authority	Concessionaire
Facilitate land acquisition for toll plaza and project facilities	Bear all project risks, costs and liabilities except those expressly allocated to NHAI under the Agreement

3.1.2 Financial Covenants

The Concession Agreement (Articles 26–33; Schedules R & S) establishes a defined financial structure to ensure transparency and protect lender interests. **The detailed covenants are presented in the exhibit below.**

Exhibit 9: Key Financial covenants detail

Aspect	Details
Escrow Mechanism	All project revenues (toll fee, insurance proceeds, and other receipts) to be credited to an Escrow Account (Article 31 & Schedule S). Withdrawals in priority: (i) statutory dues, (ii) O&M, (iii) debt service, (iv) reserves, (v) equity.
Toll Collection & Fee Notification	User Fee rates governed by Schedule R and MoRTH Fee Rules (2008 & subsequent amendments). Fee to commence from COD.
Financial Close	To be achieved within 180 days of CA signing (extendable with damages under Article 4.3).
Equity Lock-in & Change in Ownership	Lead member (Navayuga Group) to retain ≥ 51% shareholding during construction and two years post COD (Article 5.3).
Insurance	Comprehensive insurance cover for construction and O&M phases, with benefits assigned to lenders and Authority (Article 32).
Substitution Rights	Defined under Schedule V – Lenders empowered to substitute Concessionaire in case of default.
Accounting & Audit	Audited annual accounts and certified traffic reports to be furnished to Authority and Lenders (Article 33).

3.1.3 Delay Damages and Penalties under the Concession Agreement

Exhibit 10: Key Terms of Damages/ Penalty

Clause / Article	Situation	Damages / Penalty	Remarks
Article 4.3	Delay in achieving Financial Close within 180 days of CA signing	0.1% of Performance Security per day (extendable up to 120 days) – further extension at 0.2% per day; max 20% of Performance Security	Weekly advance payment for extension
Article 12.4	Delay in achieving Scheduled Completion Date (730 days from commencement)	0.1% of Performance Security per day until COD is achieved	If delay exceeds 270 days, Authority may terminate
Article 17.7	Delay in re-opening lanes post repair / maintenance	0.1% of Average Daily Toll Revenue per lane per day	Requires Independent Engineer's approval
Article 35	Compensation for Breach of Agreement	Direct costs incurred by non-defaulting party (excluding indirect losses)	Both parties must mitigate loss
Article 36–37	Termination for default	Termination payments as per event type (Concessionaire / Authority / Force Majeure)	Payable in accordance with Article 37.3

3.1.4 Legal and Operational Framework:

- **Force Majeure Events:**

Classified as Natural, Indirect Political, and Political Events (Article 34). Entitlement includes time extension and relief from performance obligations; compensation limited to direct costs.

- **Compensation for Breach of Agreement**

Article 35 specifies mutual compensation principles based on actual loss; damages are pre-estimated, not penalties.

- **Termination and Divestment:**

Articles 37–38 govern termination events and asset hand-back. Concessionaire to transfer project assets, records and facilities to NHAI free of encumbrances upon expiry or termination.

- **Defects Liability after Termination**

Concessionaire liable for any defects detected within one year from termination / transfer date (Article 39).

- **Dispute Resolution and Governing Law:**

Disputes to be resolved through arbitration (Article 44); governed by laws of India with jurisdiction at Delhi.

3.2 Review of Supplementary Agreement

The Concession Agreement dated **30th April 2010** between **National Highways Authority of India (NHAI)** and **Navayuga Devanahalli Tollway Private Limited (NDTPL)** was subsequently amended through **two Supplementary Agreements**. The first, dated **30th April 2014**, regularised project delays and toll suspension events, finalised the Appointed Date, and extended construction timelines without penalty. The second, executed later under the **Hybrid ETC and toll management scope**, introduced technology and system-based enhancements to toll operations through a *Change of Scope* arrangement. Together, these amendments resolved time-related and operational uncertainties, ensured equitable treatment of Force Majeure and State Defaults, and modernised the project's toll collection system.

Exhibit 11: Summary of Supplementary Agreements

Date	Parties	Purpose / Context	Key Terms / Amendments
30.04.2014	NHAI & Navayuga Devanahalli Tollway Pvt. Ltd.	Supplementary to CA dated 30.04.2010 (addressing project delays and toll disruption)	• Fixed **Appointed Date** as 25.04.2011 (binding for all contract purposes). • Confirmed **Commencement of Upgradation** as 19.11.2010 and **Scheduled Completion** as 18.11.2012. • Extended **Construction Period by 439 days** up to 31.01.2014 **without penalty or damages**. • Recognised **Force Majeure Event** of 152 days (court stay) and **State Default** of 311 days (public protest / law & order). • Directed assessment of **revenue loss**: ₹13.69 crore (Force Majeure) and ₹24.71 crore (State Default).

Date	Parties	Purpose / Context	Key Terms / Amendments
			• Declared **no extension of Concession Period** (remains 20 years from Appointed Date). • Concessionaire **waived all claims** for interest or escalation on the delayed period. • Specified that toll revision applies from the date of **Provisional Completion Certificate**. • Stated that all other terms of the CA remain unchanged.
2018 (Hybrid ETC Supplementary)	NHAI & Navayuga Devanahalli Tollway Pvt. Ltd.	Supplementary arrangement introducing **Hybrid Electronic Toll Collection (ETC)** system and integration of automation under Change of Scope	• Introduced **Hybrid ETC System** combining RFID-based automatic and manual lanes, as per NHAI guidelines. • Defined scope for **installation, operation and maintenance** of ETC equipment including lane controllers, RFID readers, and central server integration. • Costs treated as **Change of Scope Works** under Article 16; reimbursable by NHAI upon verification. • **O&M of ETC system for 5 years**, with annual escalation as per CA formula.

Date	Parties	Purpose / Context	Key Terms / Amendments
			• Concessionaire to ensure **interoperability and system uptime** as per MoRTH/NHAI standards. • Upon completion of the Concession Period, all ETC hardware and software assets to be **handed over to NHAI**. • Ensured compliance with **security, data sharing, and audit protocols**. • No change to overall concession period or revenue rights structure.

3.3 Review of State Support Agreement

State Support Agreement (SSA) was executed on **19th April 2010** between:

- **The Governor of Karnataka** (hereinafter referred to as the *"State Government"*); and
- **The President of India**, represented by the **National Highways Authority of India (NHAI)**, Ministry of Road Transport & Highways (hereinafter referred to as the *"Authority"*).

This Agreement provides the framework for support from the **Government of Karnataka** to ensure smooth implementation and operation of the **Hyderabad–Bangalore Section (Km 534.720 to Km 556.840)** of NH-7 under the **DBFOT (Toll)** Concession Agreement executed between NHAI and **Navayuga Devanahalli Tollway Private Limited (NDTPL)**.

Exhibit 12: Key Terms of the State Support Agreement

Parameter	Details
Date of Agreement	30th April 2010
Parties	The Governor of Karnataka (State Government) & The President of India (Authority – represented by NHAI)
Purpose	To define and formalize the role of the State Government in providing administrative, security, and operational support for the implementation and long-term operation of the Devanahalli Tollway Project under NHDP Phase-VII.
Support by State Government	• Provide unhindered **Right of Way (ROW)** and access to the project site. • Facilitate and expedite **land acquisition, resettlement, and rehabilitation** as required for the project. • Assist the Concessionaire and NHAI in obtaining **statutory permits and clearances**. • Support **shifting of utilities** and removal of encroachments in coordination with local bodies. • Ensure no **local barriers, levies, or restrictions** that impede traffic or toll operations. • Provide **police assistance, traffic regulation, and emergency response** support. • Facilitate provision of **medical aid posts** and ensure availability of local administrative assistance.

Parameter	Details
Restriction on Competing Roads	The State Government shall **not construct, permit, or support any competing road** or alternate facility that may divert traffic or reduce toll revenue during the Concession Period, except those notified in advance to NHAI.
Restriction on Additional Tollways	No additional toll facility shall be introduced or operated along or adjacent to the Project Highway except as approved by the Authority under the Concession Agreement.
Restriction on Local Taxes / Tolls	The State Government shall **not levy or collect any local toll, cess, or tax** on vehicles using the Project Highway. All toll collection rights rest solely with the Concessionaire as per the Concession Agreement.
State Obligations in Case of Force Majeure or Default	In the event of any law-and-order disruption, protest, or State-level restriction resulting in suspension of toll collection or delayed works, the State Government shall take corrective measures and cooperate with NHAI to restore normalcy. Revenue losses attributable to State actions or inactions shall be compensated as per Clauses 4 & 5 of this Agreement.
Substitution of Concessionaire	The State acknowledges the rights of **lenders and the Authority** to substitute the Concessionaire in the event of persistent default, in accordance with the Substitution Agreement under Schedule-V of the Concession Agreement.
Obligations of the Authority (NHAI)	• Ensure the Concessionaire complies with all applicable laws, permits, and project standards. • Keep the State informed of major construction activities, safety measures, and toll operations. • Coordinate with the State Police, PWD, and local administration for enforcement of traffic discipline and safety.
State Default	Failure by the State or its agencies to fulfil obligations (such as delay in land transfer, non-assistance, or imposition of taxes) and failure to cure within **60 days of notice** constitutes a **State Default**. Such default is treated as a breach under the Concession Agreement, attracting compensation.

Parameter	Details
Compensation & Termination Payments	For any State Default or attributable delay causing project loss, NHAI and/or the Concessionaire shall be compensated by the State Government. Payment to be made within **60 days** of determination, failing which interest at **Bank Rate + 3%** applies.
Duration	Effective from the date of signing and continues until termination or expiry of the Concession Agreement, including all associated project obligations.
Indemnity	Both the State Government and NHAI mutually indemnify each other against losses or claims arising from their respective breaches or defaults under this Agreement.
Dispute Resolution	Disputes first to be resolved through **conciliation** under the *Arbitration and Conciliation Act, 1996*; failing which arbitration shall be conducted under **ICADR Rules, New Delhi**.
Governing Law & Jurisdiction	Governed by the **laws of India**; jurisdiction vested in **Courts at New Delhi**.
Miscellaneous	• Waiver of sovereign immunity by the State Government for enforcement of contractual obligations. • Agreement binding on successors and assigns. • All notices and communications to be in writing in English. • Agreement forms part of the Concession documentation package between NHAI, the Concessionaire, and the Government of Karnataka.

3.4 Review of Settlement Agreement

Settlement Agreement was executed on **24th March 2025** at **NHAI Headquarters, New Delhi**, between:

- **National Highways Authority of India (NHAI)** (the "Authority"); and **Athaang Devanahalli Tollways Pvt. Ltd.** (the "Concessionaire"), formerly known as **Essel Devanahalli Tollway Pvt. Ltd.** and **Navayuga Devanahalli Tollway Pvt. Ltd.**

This Settlement Agreement was concluded under **Section 73 of the Arbitration and Conciliation Act, 1996**, following conciliation proceedings conducted by the **Conciliation Committee of Independent Experts (CCIE-1)**. It records the full and final settlement of disputes arising under the **Concession Agreement dated 30.04.2010** for the upgradation and operation of the Hyderabad–Bangalore Section of NH-7 (Km 534.720 to Km 556.840) in Karnataka.

Exhibit 13: Key Aspects of Settlement Agreement

Parameter	Details
Date of Agreement	24th March 2025
Parties	National Highways Authority of India (NHAI) & Athaang Devanahalli Tollways Pvt. Ltd. (Concessionaire)
Legal Basis	Settlement under Section 73 of Arbitration and Conciliation Act, 1996 (Conciliation Outcome under CCIE-1)
Project Reference	Concession Agreement dated 30th April 2010 for upgradation of Hyderabad–Bangalore Section of NH-7 (Km 534.720 to Km 556.840)
Trigger for Settlement	Disputes arising from delay in maintenance, COVID-19 Force Majeure period, and financial counterclaims pending before the Sole Arbitrator and Delhi High Court (OMP (Comm) No. 370/2024).
Conciliation Proceedings	Conducted by CCIE-1 (Conciliation Committee of Independent Experts) through four meetings held on **23.12.2024**, **24.12.2024**, **06.01.2025**, and **27.02.2025**.
Concessionaire's Claims	₹393 Cr + 316 days extension of Concession Period (COVID-19 Force Majeure, revenue leakage, damages, etc.)

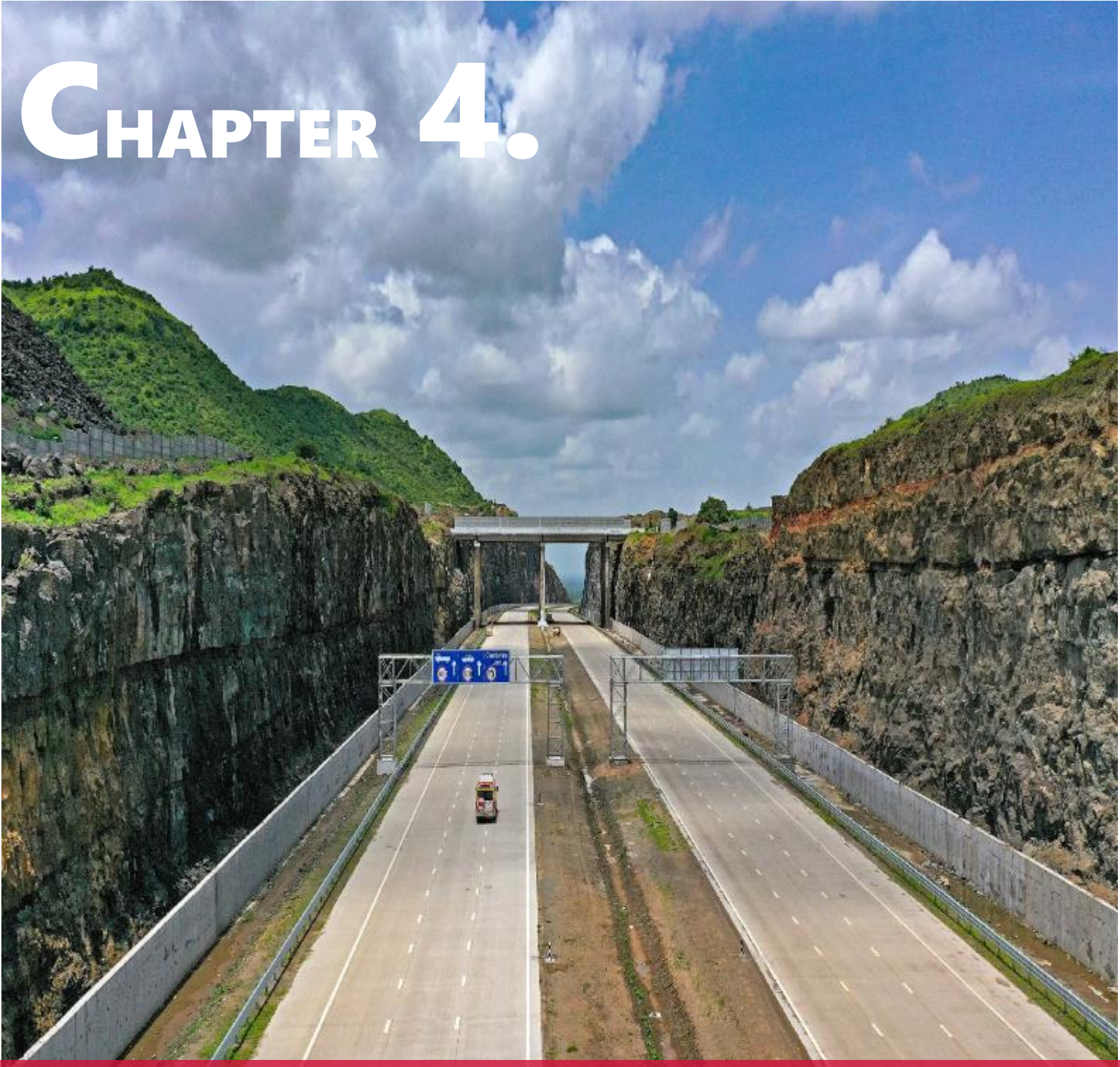
Parameter	Details
Authority's Counterclaims	₹145.14 Cr (damages for maintenance delays, interest, descoping recovery, and fee shortfall)
Final Settlement	Extension of **267 days in Concession Period** and payment of **₹31.52 Cr by Concessionaire to NHAI** as full and final settlement.
Break-Up of Settlement	**Concessionaire's Claims:** • Extension in Concession Period: 267 days granted (vs. 316 days claimed). • Cost Compensation (COVID-19 FM): Nil. • Revenue Leakage: Nil. **NHAI Counterclaims:** • Maintenance Delay Damages: ₹24.7 Cr. • De-scoping of Punch List: ₹75.9 Cr (adjusted). • Interest in FASTag Fee Remittance: ₹1.53 Cr. • Maintenance Damages (Dec 2023): Nil. **Total Agreed Recovery:** ₹31.52 Cr (after ₹25.71 Cr previously recovered per Delhi High Court order).
Extension of Concession Period	267 days (171 days for 2020 + 96 days for 2021) due to COVID-19 Force Majeure Event.
Effective Date	From date of signing of the Settlement Agreement (24 March 2025).
NHAI Obligations	• Grant extension of 267 days in concession period. • Issue confirmation letter within 30 days. • Withdraw related legal and arbitration cases.
Concessionaire Obligations	• Pay ₹31.52 Cr to NHAI within 30 days of signing. • Withdraw all arbitration and court proceedings (including OMP (Comm) No. 370/2024). • Waive all current and future claims.
Finality of Settlement	Full and final settlement of all claims, counterclaims, and disputes under the Concession Agreement. No residual claims, demands, or litigation permitted.
Other Provisions	• No objection to NHAI's independent VOP works near Sadihalli Gate. • No claims or interest permissible post-settlement. • Both parties to bear their own negotiation costs.

Parameter	Details
Authentication	Settlement authenticated by **CCIE-1 Members – Shri Pradeep Kumar** and **Shri Y.S. Malik** on **24.03.2025** as fair, voluntary, and in public interest.
Governing Law & Jurisdiction	Laws of India; Courts at Delhi.

Knight Frank reviewed and noted that Settlement Agreement marks the **amicable closure of all ongoing disputes** between the **National Highways Authority of India (NHAI)** and **Athaang Devanahalli Tollways Pvt. Ltd.**, arising from the original **Concession Agreement (30 April 2010)** and its **Supplementary Contracts**. The settlement provides a **267-day extension in the Concession Period** to account for **COVID-19 Force Majeure impacts**, in line with NHAI's **uniform pandemic relief policy** applicable across national highway projects**.**

Concessionaire's monetary claims amounting to ₹393 crore were fully waived, while the **Authority's counterclaims were rationalised to ₹31.52 crore**, resulting in a **balanced and equitable resolution**. Both parties mutually agreed to **withdraw all pending arbitration and court proceedings**, thereby ensuring **complete discharge of legal liabilities** and removal of long-term contingent exposures.

Chapter 4.



Condition Assessment of Project Road

Chapter 4. CONDITION ASSESMENT OF PROJECT ROAD

4.1 General

This chapter presents a detailed assessment of the existing condition of the **Devanahalli–Hebbal Section of NH-44 (Old NH-7)** in accordance with the provisions of the **Concession Agreement** and relevant **IRC guidelines**. The objective of this assessment is to evaluate the current condition and performance of the pavement, structures, interchanges, toll plazas, service roads, drainage systems, safety installations, and other highway assets.

The observations are based on **site inspections**, **operation and maintenance (O&M) records**, **instrumental surveys**, and **interaction with the Concessionaire's O&M team**. The assessment covers the **Hyderabad–Bangalore Section from Km 534+720 to Km 556+840**, located in the State of **Karnataka**.

The findings are derived from multiple data sources — the **Falling Weight Deflectometer (FWD) survey** conducted by *Indian Road Survey & Management Pvt. Ltd. (IRSM)* in **March 2024**, the **Network Survey Vehicle (NSV) survey** carried out in **May 2024**, the **core sampling and material investigation** undertaken by *Eclat Engineering Consultants* in **March 2024**, and the **visual inspections** completed during **May 2025**.

The integration of these datasets — **pavement deflection (FWD)**, **surface condition and roughness (NSV)**, and **material characterization (laboratory testing)** — provides a comprehensive and reliable representation of the current structural and functional condition of the project highway and its associated facilities.

The **project corridor** traverses a mix of **peri-urban and urban zones** north of Bengaluru, with multiple interchanges, grade-separated structures, and a 3.72 km elevated section near Yelahanka. The alignment begins near **Devanahalli Trumpet Interchange (Km 534+720)** and terminates at **Hebbal Interchange (Km 556+840)**, connecting **Kempegowda International Airport**, **Yelahanka**, and **Bengaluru city limits**. The section serves as a **critical urban approach link** on NH-44, carrying high volumes of passenger and freight traffic.

This assessment has been carried out in accordance with the following key references:

- **IRC:115-2014** – Guidelines for Structural Evaluation and Strengthening of Flexible Pavements using FWD Technique
- **IRC:37-2018** – Guidelines for the Design of Flexible Pavements
- **IRC: SP:16-2019** – Code of Practice for Inspection and Maintenance of Highways
- **IRC: SP:35-2015** – Code of Practice for Inspection and Maintenance of Bridges
- **IRC:83-2019 (Part I & II)** – Guidelines for Design and Condition Assessment of Bridge Components
- **IRC: SP:84-2019** – Guidelines for Operation, Maintenance and Tolling of Highway Projects

4.2 Pavement Composition

The pavement has been designed in accordance with IRC:37-2001. Pavement Design has been carried out adopting 23 years design life (as per clause 4.4.2 Schedule D) including the construction period of 3 years with a structural overlay in 0th Year. CMSA for 20 years is 115 and for service road with 10 CMSA has been adopted.

As mentioned in Pavement Design Report, design consultants summarized the calculated design traffic for the next 23 years for BT and Base and subbase layer respectively.

Pavement Configuration for Project is given in **Exhibit 14**

Exhibit 14: Pavement Composition-Main Carriageway

S. No	Design MSA	Adopted Thickness (mm)
Flexible Pavement		
1	**Adopted MSA – 10**	
2	BC in mm	50
3	DBM in mm	135
4	WMM in mm	250
5	GSB in mm	200
Rigid Pavement		
	PQC	**DLC**
1	340	150
Overlay Works		
Based on the BBD Test Result Concessionaire Proposed Overlay of 50 mm thickness with DBM of 50 mm thickness on Main Carriageway & 50 mm BC thickness for Service Road.		

As per Approved Pavement Design Report the service road has been designed for 10 MSA & CBR-10%. The Pavement layer adopted for service road as given below:

Exhibit 15: Pavement Composition -Service Road

S. No	Design MSA	
	Adopted MSA – 10 years	**25**
1	BC in mm	40
2	DBM in mm	50
3	WMM in mm	250
4	GSB in mm	200

4.3 Assessment of Highway

Knight Frank carried out a detailed review and assessment of the **Devanahalli–Hebbal Section of NH-44 (Old NH-7)**, covering all key highway assets such as **main carriageway, service roads, interchanges, bridges and underpasses, signages, safety barriers, drainage, lighting systems, and roadside facilities**.

The assessment was undertaken through comprehensive **visual inspections** along the entire 22.12 km project corridor, supplemented by a detailed review of **instrumental survey reports (FWD and NSV), O&M documentation, and maintenance records** shared by the Concessionaire and NHAI.

The objective of this exercise was to evaluate the **existing physical condition, functionality, and maintenance needs** of each asset class. Based on the site observations and survey data, a **maintenance strategy** has been developed focusing on **routine, preventive, and periodic maintenance** to ensure long-term serviceability and performance of the project assets.

Further, the **pavement condition** was assessed through a combination of **visual inspection**, **Network Survey Vehicle (NSV) survey (May 2024)**, and **Falling Weight Deflectometer (FWD) testing (March 2024)**, providing a comprehensive understanding of the surface condition, structural strength, and functional performance of the pavement system.

Overall, the review indicates that the **project highway assets are in good and serviceable condition**, with all major components performing satisfactorily. Minor deficiencies observed during inspection are limited to faded markings, vegetation in drains, and localised safety-barrier adjustments, which can be effectively addressed through routine maintenance actions under the O&M plan.

a) Service Road/Slip:

As per **Schedule-B of the Concession Agreement**, service roads have been provided continuously along both sides of the project highway from **Km 534+720 to Km 556+840**, with minor discontinuities near structures and interchanges.

The **total service road length is 22.12 km** (11.06 km on each side), comprising a **10 m wide flexible pavement section (including paved shoulders)**. The service roads provide uninterrupted local connectivity and access to abutting properties.

b) Highway Lighting:

Lighting has been installed at all **interchanges, toll plazas, and urban sections** in accordance with **Schedule-C (Project Facilities)** of the Concession Agreement.

The system includes **2,986 LED street luminaires** along the corridor and **18 high-mast towers** at interchanges and toll plazas. The lighting network is **SCADA-integrated for remote operation and monitoring**, ensuring uniform illumination levels.

c) Drainage:

In accordance with **Clause 2.2 and Schedule-B**, an integrated **surface and subsurface drainage system** has been constructed along the main carriageway and service roads. The system consists of approximately **30.54 km of median drains**, **9.41 km of covered RCC side drains**, and **56.58 km of longitudinal toe drains**, connected to municipal outlets and natural drains.

d) Metal Beam & Wire Rope Safety Barrier:

Crash barriers have been provided in accordance with **Schedule-D (Specifications & Standards)** and **IRC: 119-2015**.

The corridor includes **21.00 km of W-beam barriers**, **12.29 km of Brifen wire-rope barriers**, and **31.59 km of RCC crash barriers** along embankments, medians, and elevated approaches.

e) Bus Bays /Bus Shelters & Truck Lay Byes:

As provided in **Schedule-B and Schedule-C**, **bus bays and truck lay-bys** have been constructed at regular intervals on both sides of the highway.

A total of **28 bus bays** is available, each with paved approaches and adequate signage. **13 truck lay-bys** are provided along the stretch for heavy-vehicle parking.

f) Major/Minor Junctions

The project comprises **28 intersections**, including **13 major** and **15 minor junctions**, developed as per **Schedule-B layout drawings**.

g) Traffic Signs Boards:

The highway is equipped with **regulatory, warning, and Informatory signages** in compliance with **IRC: 67-2012** and **Schedule-D standards**.

The network includes approximately **1,873 roadside signboards**, **15 overhead gantry signs**, and **19 cantilever signs**.

h) Plantation and Landscaping

As specified under **Environmental Management Plan (EMP)** and **Schedule-B**, median and avenue plantations have been developed throughout the corridor.

Around **1.20 lakh saplings** have been planted, with an estimated **75 % survival rate** as per O&M records (May 2025).

i) Median & Median Opening:

The median width varies between **1.5 m and 4.0 m**, constructed with **CC kerbs, crash barriers, and delineators**, as detailed in **Schedule-B and D**.

A total of **46 median openings** exists along the corridor, provided in accordance with NHAI and local-authority requirements.

Each opening is equipped with **markings, blinkers, and signage**; however, a few require **replacement of missing blinkers and faded markings** to meet current safety norms.

KF View:

Overall, the review indicates that the project highway assets are in good and serviceable condition, with all major components functioning satisfactorily. The minor deficiencies observed during inspection—such as faded road markings, vegetation growth in drains, and localized adjustments to safety barriers can be effectively rectified through routine maintenance under the existing O&M plan.

4.4 Assessment of Structures

A visual condition survey of all bridge and culvert structures was carried out jointly by the Knight Frank (KF) team and the Concessionaire, with the objective of identifying and quantifying structural deterioration arising from various factors such as dead load, live load, wind load, and physical or chemical influences exerted by the environment. In addition to examining damages caused by unpredictable natural events or vehicular collisions, the inspection also aimed to detect or monitor the impact of any construction-related imperfections that may affect long-term performance. Such periodic inspections play an important role in enhancing the service life and safety of both existing and newly built bridge structures.

Knight Frank reviewed the structural condition assessment of bridges and culverts along the **Devanahalli–Hebbal Section of NH-44 (Km 534+720 to Km 556+840)** during the Operation & Maintenance phase, based on visual inspection and findings from the Concessionaire's inspection records verified against Schedule B of the Concession Agreement. The assessment encompassed all major and minor bridges, as well as underpasses along both the left-hand and right-hand carriageways of the corridor.

The objective of the inspection was to evaluate the structural integrity, durability, and functional safety of bridge assets through a systematic visual examination, supplemented by limited Non-Destructive Testing (NDT) wherever required. The assessment methodology adhered to the provisions of **IRC: SP:35-2015 (Code of Practice for Inspection and Maintenance of Bridges)** and **IRC: 83-2019 (Part I & II)** pertaining to bridge design and inspection standards.

A total of **26 structures** were covered under this assessment, comprising:

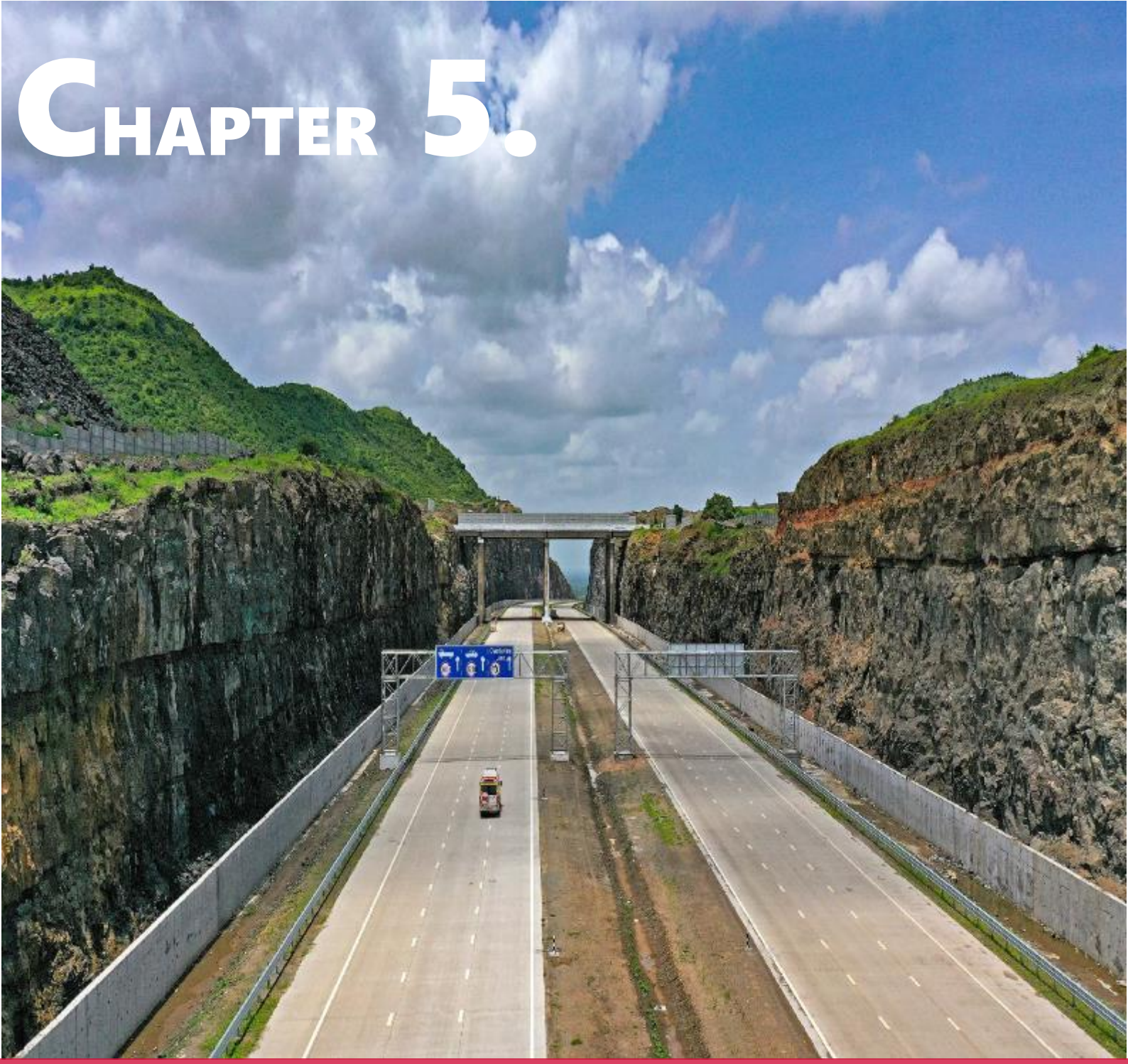
- **0 Major Bridges** – None provided in this section
- **5 Minor Bridges** – RCC Box / RCC T-Beam Type
- **2 Vehicular Underpasses** – RCC Box Type
- **17 Culverts** – RCC Box and RCC Pipe Type (1 m – 3 m span)
- **2 Grade Separators / Interchanges** – Trumpet Interchange (at Km 536+500) and Hebbal Interchange (at Km 556+500)
- **1 Elevated Section (3.72 km)** – PSC Segmental Viaduct with 127 piers and 1,483 segments
- **1 Railway Over Bridge (ROB)** – Yelahanka ROB (1 × 21 m PSC T-Beam Bridge)
- **1 Railway Underpass (RUB)** – Yelahanka Bypass RUB (2 × 10 m × 5 m RCC Box)

Most bridges are of **RCC Box, RCC T-Beam, or PSC Segmental Viaduct** construction, supported by **reinforced concrete abutments and piers with open foundations and stone-pitched protection works**. The **superstructure and substructure elements were generally found to be structurally sound and stable**, with **no significant distress or deformation observed** during inspection.

KF View:

Overall, the inspection findings indicate that the bridge and structure assets are in sound structural condition, with no major distress or deterioration observed in the primary load-bearing components. Minor issues such as localized surface cracks, drainage outlet blockages, and faded markings were noted, which can be addressed through routine maintenance and periodic cleaning under the ongoing O&M plan. The observed condition suggests that the structures are structurally stable and functionally serviceable, ensuring continued safe operation of the project highway.

Chapter 5.



Review of Pavement Condition & Design

Chapter 5. REVIEW OF PAVEMENT CONDITION & DESIGN

5.1 Pavement Condition

The life of the Pavement has a co-relation with both its structural as well as Functional Condition. Inspecting and tracking of pavement condition, scheduling maintenance, and treating distress can have serious ramifications impinging on safety of road users and enhancing functional efficiency in end use of the Facility. It is therefore essential to carry out the assessment of the condition of the pavement on a given date taking into cognizance a variety of data to arrive at well-considered decisions and drawing up of the maintenance strategy and taking appropriate course of action to apply funds and resources in optimizing the desired levels of operations on the road assets. Condition data can include factors like roughness, specific distresses, friction, and overall structural health.

Once measurements of road condition are available, they are interpreted in such a way that allows the decision-making process to occur in a logical fashion. This might involve converting multiple physical parameters into a single index, allowing different sections of a road network to be directly compared against one another etc.

Pavement performance under prevailing environmental conditions is crucial as it has a direct bearing on the economic returns from the project development. While an under-designed pavement will fail prematurely, imposing undesirable Cost Over runs on the Project. It is therefore necessary to ensure the pavement layer thicknesses; configurations and materials are adequately designed and require minimal maintenance under the anticipated traffic loading throughout the life cycle of the project.

To achieve this objective and thereby to predict the performance of any pavement structure, it is necessary to analyze material characteristics, traffic condition, present physical condition of the pavement layers, local environment, and its impacts.

Due to the variety of variables involved, it is essential to determine the exact level of pavement performance through the project life. But, based on the assessment of present condition of pavement, analysis of available survey data, and estimations regarding the pavement life, future maintenance requirements can be estimated.

This part of the report deals with the details of the series of field investigations and analysis carried out to find out the present condition of pavement as well as to determine the future maintenance requirements for sound pavement performance throughout the project life.

5.2 Objectives

- Collect data regarding physical conditions of pavement.
- Prepare a plan for rectification as required for damaged/poor sections in consonance with requirements of the CA.
- Project maintenance requirement in physical and monetary terms over the life cycle of the project road.

5.3 Review of Pavement Design

A. Design Period

As per the **IRC:SP:84-2014** and **IRC:37-2012** guidelines, the **pavement has been designed for 23 years**, including a **construction period of 3 years**, with a **structural overlay at Year 0** (commissioning), the **Concessionaire—M/s Navayuga Devanahalli Tollway Pvt. Ltd. (NDTPL)**—adopted a **20-year design life** for functional performance flexible pavement to ensure durability and minimize overlay frequency. The design provides for full structural strength over the concession period and aligns with the performance standards outlined in **Schedule–K of the Concession Agreement**.

B. Design CBR

As per the **Pavement Design Report prepared by M/s Sheladia Associates Inc. in May 2011**, a **soaked CBR value of 10%** was adopted for the design of the pavement for the **Devanahalli–Hebbal Section of NH-7 (NH-44)**. This value was determined from laboratory tests conducted on borrow area soils available along the project corridor and was used in accordance with **IRC:37-2001** guidelines. The report specifies that any in-situ subgrade with a CBR lower than 10% must be replaced with approved borrow soil compacted to 97% of MDD (Heavy Compaction). The adopted CBR formed the basis for designing a total flexible pavement thickness of **635 mm** (BC 50 mm, DBM 135 mm, WMM 250 mm, and GSB 200 mm) adequate for a design traffic of **115 MSA** over a **23-year design life**.

C. Design MSA

As per the Pavement Design Report prepared by M/s Sheladia Associates Inc. (May 2011), the pavement for the Devanahalli–Hebbal Section of NH-7 (NH-44) was designed for a cumulative traffic loading of 115 (MSA) over a 23-year design life (including 3 years of construction and 20 years of operation). The design traffic was derived using classified traffic counts, axle load data, and Vehicle Damage Factor (VDF) in accordance with IRC:37-2001. For the main carriageway, a design MSA of

115 was adopted, while 10 MSA was considered for the service roads, corresponding to their lower traffic exposure. These MSA values governed the determination of pavement layer thicknesses and material specifications to ensure adequate structural performance throughout the concession period.

Exhibit 16: Details of Traffic MSA

Section	Design Traffic (MSA)	Design Life (Years)
Main Carriageway	115	23 (3 construction + 20 operation)
Service Roads	10	10

D. Pavement Crust of Main Carriageway

The adopted pavement crust for the main six-lane divided carriageway (Km 534.720 – Km 556.840) meets the requirements of IRC:37-2012 and MoRTH 5th Revision.

The crust thicknesses are as follows:

Exhibit 17 Pavement Design Composition of Main Carriageway

S. No	Design MSA	As built drawings
Flexible Pavement		
Adopted MSA - 115 (20-year +3-year Construction Period)		
1	BC in mm	50
2	DBM in mm	135
3	WMM in mm	250
4	GSB in mm	200
Rigid Pavement		
Designed for >100 MSA (30 years)		
	PQC	**DLC**
1	300	150
Overlay Works		

The **same crust thickness** has been provided in both directions (Bengaluru-bound and Airport-bound), ensuring uniformity of performance despite minor variations in directional traffic volume.

E. For Service Road/Slip Road

The service roads along both carriageways have been designed for 10 MSA traffic and 10% subgrade CBR, suitable for local and low-speed access. The Pavement layer adopted for service road as given below:

Exhibit 18: Pavement Composition -Service Road

S. No	Design MSA	
Adopted MSA – 10 years (10- year life)		
Adopted MSA – 10 (10-year life)		
1	BC in mm	40
2	DBM in mm	50
3	WMM in mm	250
4	GSB in mm	200

5.4 Pavement Evaluation by Falling Weight Deflectometer (FWD) Technique

FWD surveys were carried out to determine the present condition of pavement as well as finding out the future maintenance requirements.

a) Introduction:

The Falling Weight Deflectometer (FWD) survey was conducted in 2024 for the **Devanahalli Hebbal section of NH-7**, covering chainage **Km 534+720 to Km 556+840**. The primary objective of this exercise was to evaluate the **structural strength of the in-service pavement**, determine the **moduli of individual pavement layers**, and estimate the **remaining life of the pavement** with respect to **fatigue and rutting criteria**. This evaluation was carried out as per the provisions of **IRC:115-2014** "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer". The survey results form a critical input for deciding the **overlay requirements** and **long-term maintenance strategy** of the project highway.

b) Project Road

The **Devanahalli–Hebbal section of NH-7** forms a crucial part of the north–south corridor connecting Kempegowda International Airport and the city of Bengaluru, serving as a major approach route for regional and urban traffic. The project alignment comprises three distinct segments:

1. **Section I: Devanahalli to Yelahanka (Km 534+720 to Km 543+500) –** Semi-urban stretch carrying significant airport-bound and mixed local traffic.
2. **Section II: Yelahanka to Hebbal (Km 543+500 to Km 556+840)** – Urban corridor with dense traffic flow and multiple interchanges and access points.
3. **Section III: Service Roads and Ramps** – Auxiliary lanes facilitating access to adjoining developments and urban areas.

The section passes through predominantly plain terrain, with localized undulations and high traffic intensity influenced by urban expansion, leading to continuous stress on pavement layers and impacting overall performance.

c) Falling Weight Deflectometer

The FWD survey was carried out using **SWECO PRI 2100 Falling Weight Deflectometer (FWD)** operated by **Indian Road Survey & Management Pvt. Ltd. (IRSM)** with the following parameters: **Load Applied:** Equivalent to **40 kN impulse load (±10%)**, representing a **standard 80 kN axle load**.

- **Deflection Measurement:** Recorded at **nine radial offsets** – 0, 200, 300, 450, 600, 900, 1200, 1500, and 1800 mm – from the load center to capture the complete deflection bowl.
- **Survey Spacing:** Conducted at **regular intervals (approximately 250–500 m)** along both **main carriageways and service roads** between **Km 534+720 and Km 556+840**.
- **Temperature Correction:** All **bituminous layer moduli** corrected to a reference temperature of **35°C** using procedures outlined in **IRC:115-2014**.
- **Seasonal Correction:** Since the survey was conducted in **March 2024 (summer season)**, corresponding **seasonal correction factors** were applied to **granular and subgrade moduli** as per IRC:115-2014.
- **Back-calculation Software: KGPBACK** (Genetic Algorithm-based) used for determining layer moduli; **IITPAVE** used for analyzing **fatigue and rutting performance** and evaluating **remaining pavement life**.

5.4.1.1 FWD Analysis

The FWD data collected for the **Devanahalli–Hebbal section of NH-7** was analyzed in accordance with the procedures outlined in **IRC:115-2014** for *"Structural Evaluation and Strengthening of Flexible*

Road Pavements Using Falling Weight Deflectometer". The analysis considered the indicative modulus ranges for in-service pavements as suggested in the code.

Exhibit 19: Module Range

Description	Range
Subgrade Modulus	5 CBR to 20 CBR
Granular Layer Modulus	100 MPa to 500 MPa
Bituminous Layers –Thick without distress	750 MPa to 3000 MPa
Bituminous Layers in distressed condition	400 MPa to 1500 MPa

The above ranges serve as reference values; however, final modulus ranges were refined based on **pavement age, surface condition, traffic intensity, and performance observations** made during the survey. Considering the field condition of the Devanahalli–Hebbal corridor, the following working ranges were adopted for analysis:

Exhibit 20: Module Range

Layer	Bituminous Layers	Granular Layer Modulus	Subgrade
Modulus Value (MPa)	750-3000	100-500	50-75

Bituminous layer moduli obtained through back-calculation using **KGPBACK** were corrected to a **standard temperature of 35 °C**, while **granular and subgrade moduli** were adjusted for **seasonal effects**, considering that the FWD survey was performed in **March 2024 (summer season)**. Accordingly, **summer correction factors** were applied as per **Equations 7–9 of IRC:115-2014**. Subsequently, the **remaining life** of the pavement and **overlay requirements** (considering **VG-40 mix** for design traffic exceeding 20 MSA) were evaluated in accordance with **IRC:115- 2014** and **IRC:37-2018**. The results, including temperature- and season-corrected modulus values, fatigue, and rutting life estimates, are summarized in the subsequent tables.

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Exhibit 21 Remaining life of the existing pavement.

S.No.	Chainage start	Chainage End	15% on Km wise			Avg Thickness		Sections	Remaining Life - 90% reliability			
									Strain from IITPave		Actual Performance	
			E1 Temp Adj	E2 Summer	E3 Summer	H1	H2		Vertical strain at bottom, epZ	Tangential strain at top, epT	Fatigue in Bt Layer, Nf (MSA)	Rutting in Sub grade, N (MSA)
1	534+750	535+750	3669.55	366.21	68.87	320	500	1	0.0001089	0.00005381	2597.96	13066.10
2	536+002	536+751	3622.45	362.18	68.82	320	500	2	0.0001097	0.00005443	2512.29	12639.63
3	537+000	537+748	3614.07	367.77	68.82	320	500	3	0.0001094	0.00005419	2560.91	12797.53
4	538+246	538+754	1773.44	367.82	68.64	320	500	4	0.000136	0.00007748	1170.67	4770.83
5	539+000	539+755	1941.24	369.02	68.87	320	500	5	0.0001323	0.00007431	1274.90	5406.34
6	540+000	540+749	2669.32	365.09	68.87	320	500	6	0.0001208	0.00006403	1733.37	8164.93
7	541+001	542+000	1871.54	60.21	68.83	320	500	7	0.0001509	0.0001359	125.66	2977.80
8	542+750	543+752	816.42	59.85	266.96	320	500	8	0.00006635	0.0002342	30.72	123520.46
9	544+000	544+754	748.38	60.21	161.77	315	500	9	0.0001091	0.000257	23.05	12957.85
10	545+001	545+750	2947.75	364.26	76.95	300	500	10	0.0001192	0.00006594	1420.48	8673.72
11	546+000	546+750	2951.38	368.31	76.99	300	500	11	0.0001188	0.00006559	1448.67	8806.92
12	547+000	547+750	1048.77	137.12	77.08	300	500	12	0.0001909	0.0001725	81.49	1025.48
13	548+000	548+999	1622.74	278.72	77.08	300	500	13	0.0001508	0.0001005	459.08	2986.76
14	550+000	550+749	2936.98	367.01	76.99	320	420	14	0.0001276	0.00006186	1826.83	6369.77
15	551+000	551+228	1657.65	290.74	77.08	320	420	15	0.0001614	0.00009126	656.04	2195.06
16	552+000	552+749	3120.61	370.42	76.95	320	420	16	0.0001247	0.00005966	1997.01	7069.51
17	552+999	553+749	3094.62	365.02	76.99	320	420	17	0.0001254	0.00006027	1933.29	6892.35
18	554+001	554+728	3081.17	367.19	76.99	320	420	18	0.0001254	0.00006027	1940.50	6892.35
19	555+031	556+000	2124.18	247.92	76.96	320	420	19	0.0001527	0.00008575	676.34	2821.94
20	556+779	556+779	3013.33	367.85	77.08	320	420	20	0.0001263	0.00006095	1893.28	6672.47
21	534+872	535+873	2587.17	367.23	68.83	320	500	21	0.0001217	0.00006489	1690.23	7894.73
22	536+125	536+874	2576.36	367.44	68.82	320	500	22	0.0001219	0.00006502	1683.13	7836.17
23	537+125	537+625	2558.39	368.77	68.87	320	500	23	0.000122	0.00006514	1681.12	7807.10
24	538+371	538+872	4101.86	366.51	68.87	320	500	24	0.0001048	0.00005045	3035.67	15549.17
25	539+129	539+862	4007.32	368.68	68.87	320	500	25	0.0001055	0.00005103	2962.04	15086.88
26	540+126	540+877	1235.24	105.86	58.57	320	500	26	0.000204	0.0001591	97.05	759.01

S.No.	Chainage start	Chainage End	15% on Km wise			Avg Thickness		Sections	Remaining Life - 90% reliability			
									Strain from IITPave		Actual Performance	
			E1 Temp Adj	E2 Summer	E3 Summer	H1	H2		Vertical strain at bottom, epZ	Tangential strain at top, epT	Fatigue in Bt Layer, Nf (MSA)	Rutting in Sub grade, N (MSA)
27	541+126	542+107	2991.95	307.49	68.8	320	500	27	0.0001211	0.00006447	1531.10	8073.62
28	542+877	543+872	2648.82	267.54	68.8	320	500	28	0.0001295	0.00007273	1062.96	5956.92
29	544+126	544+881	1071.36	61.57	64.5	315	500	29	0.0002018	0.0002077	38.86	797.26
30	545+124	545+878	4100.78	369.41	76.99	300	500	30	0.000107	0.00005458	2235.74	14151.48
31	546+131	546+879	2287.12	238.14	76.99	300	500	31	0.0001405	0.00008972	532.47	4116.22
32	547+124	547+875	977.01	61.98	76.86	300	500	32	0.0001938	0.0002355	25.79	957.73
33	548+128	549+123	1086.41	116.72	76.82	300	500	33	0.0001912	0.0001799	67.15	1018.21
34	549+873	551+127	2815.39	299.56	77.08	320	420	34	0.0001342	0.00006831	1287.72	5067.89
35	552+125	552+873	2928.94	365.22	76.95	320	420	35	0.0001278	0.00006207	1807.13	6324.70
36	553+126	553+879	2961.17	367.7	76.95	320	420	36	0.0001272	0.00006154	1851.05	6461.09
37	554+125	554+873	2951.71	368.08	77.03	320	420	37	0.0001273	0.00006162	1846.75	6438.11
38	555+125	555+872	3470.9	365.61	77.03	320	420	38	0.0001203	0.00005652	2250.43	8319.91
39	556+840	556+840	3516.09	370.95	77.08	320	420	39	0.0001194	0.00005582	2336.26	8608.05
40	534+750	535+748	3171.47	365	68.8	320	500	40	0.0001144	0.00005844	2134.47	10450.40
41	535+999	536+750	3233.82	365.01	68.69	320	500	41	0.0001137	0.00005783	2186.74	10745.28
42	537+000	537+754	3185.68	369.02	68.87	320	500	42	0.0001139	0.00005804	2183.91	10660.01
43	538+254	538+747	2966.56	365.21	68.81	320	500	43	0.0001168	0.00006057	1966.00	9511.60
44	539+000	539+749	2951.16	366.15	68.87	320	500	44	0.0001169	0.00006067	1962.13	9474.77
45	540+000	540+750	2996.59	364.46	68.78	320	500	45	0.0001165	0.0000603	1983.33	9623.15
46	541+000	541+995	1413.83	146.14	68.8	320	500	46	0.0001733	0.0001303	188.06	1589.93
47	542+757	543+751	2620.05	362.06	68.83	320	500	47	0.0001217	0.00006488	1673.10	7894.73
48	544+001	544+750	930.95	61.29	68.64	315	500	48	0.0002029	0.0002281	30.43	777.85
49	545+000	545+748	2719.12	369.62	77.08	300	500	49	0.0001216	0.00006833	1325.04	7924.21
50	546+000	546+748	4094.35	369.32	76.99	300	500	50	0.000107	0.00005463	2230.78	14151.48
51	547+000	547+746	1459.64	65.04	72.85	300	500	51	0.0001749	0.0001766	56.08	1525.05
52	548+000	549+000	1340.02	87.74	76.37	300	500	52	0.0001789	0.000173	65.36	1376.45
53	550+000	550+750	3848.96	366.16	76.99	320	420	53	0.0001158	0.00005325	2597.78	9889.71

S.No.	Chainage start	Chainage End	15% on Km wise			Avg Thickness		Sections	Remaining Life - 90% reliability			
									Strain from IITPave		Actual Performance	
			E1 Temp Adj	E2 Summer	E3 Summer	H1	H2		Vertical strain at bottom, epZ	Tangential strain at top, epT	Fatigue in Bt Layer, Nf (MSA)	Rutting in Sub grade, N (MSA)
54	551+000	551+230	3989.39	366.94	77.08	320	420	54	0.0001141	0.00005211	2740.77	10575.56
55	552+000	552+750	3687.74	368.31	77.03	320	420	55	0.0001175	0.00005447	2467.20	9257.39
56	553+002	553+752	3676.79	367.31	77.03	320	420	56	0.0001177	0.00005461	2448.90	9186.28
57	554+000	554+751	3719.63	367.89	77.03	320	420	57	0.0001171	0.00005422	2493.34	9401.62
58	555+020	556+000	2179.11	236.98	76.99	320	420	58	0.0001522	0.00008592	656.68	2864.22
59	534+750	535+750	3605.13	365.94	68.83	300	530	59	0.0001119	0.00005886	1860.62	11551.49
60	536+000	536+745	3618.8	368.47	68.74	300	530	60	0.0001117	0.00005859	1888.09	11645.56
61	537+000	537+750	3610.95	369.89	68.82	300	530	61	0.0001116	0.00005857	1894.11	11692.95
62	538+299	538+999	3607.98	368.15	68.78	300	530	62	0.0001118	0.0000587	1879.16	11598.41
63	539+254	539+748	2343.76	365.21	68.87	300	530	63	0.000127	0.00007382	1113.70	6507.35
64	540+000	540+750	3575.9	368.59	68.73	300	530	64	0.0001122	0.00005897	1860.04	11412.12
65	541+000	542+000	3604.05	367.21	68.83	296	530	65	0.0001135	0.00005986	1743.04	10831.39
66	542+753	543+752	3169.49	366.97	71.86	280	530	66	0.0001222	0.00006887	1127.42	7749.33
67	544+000	544+753	1171.09	73.64	71.62	280	530	67	0.0002002	0.0002204	28.59	826.55
68	545+000	545+745	3494.68	368.22	71.73	280	530	68	0.0001189	0.00006525	1279.62	8773.38
69	546+000	546+751	3552.82	367.53	71.69	280	530	69	0.0001183	0.00006471	1303.17	8976.94
70	547+000	547+749	1324.28	100.78	71.59	280	530	70	0.0001935	0.0001849	50.97	964.48
71	548+000	549+001	2573.56	245.12	71.62	280	530	71	0.000143	0.00009084	458.75	3799.90
72	550+000	550+751	3162.21	368.34	71.78	280	530	72	0.0001222	0.00006885	1130.92	7749.33
73	551+000	551+221	1761.74	238.88	71.79	280	530	73	0.0001601	0.000113	271.24	2277.04
74	552+002	552+999	3058.05	367.53	71.78	280	530	74	0.0001235	0.00007015	1082.06	7386.33
75	553+252	553+998	3035.16	368.92	71.78	280	530	75	0.0001237	0.00007031	1079.42	7332.34
76	554+252	554+749	3095.77	367.21	71.8	280	530	76	0.0001231	0.00006972	1096.71	7495.77
77	555+013	556+000	3200.84	366.97	71.78	280	530	77	0.000122	0.00006851	1141.01	7807.10
78	556+720	556+720	2991.06	370.68	71.86	280	530	78	0.0001239	0.00007069	1070.32	7278.83
79	534+873	535+874	2581.38	366.81	68.78	300	530	79	0.0001235	0.00007024	1244.33	7386.33
80	536+125	536+871	2601.76	367.48	68.74	300	530	80	0.0001232	0.00006991	1258.85	7468.22

S.No.	Chainage start	Chainage End	15% on Km wise			Avg Thickness		Sections	Remaining Life - 90% reliability			
									Strain from IITPave		Actual Performance	
			E1 Temp Adj	E2 Summer	E3 Summer	H1	H2		Vertical strain at bottom, epZ	Tangential strain at top, epT	Fatigue in Bt Layer, Nf (MSA)	Rutting in Sub grade, N (MSA)
81	537+125	537+860	2524.04	366.71	68.87	300	530	81	0.0001243	0.00007104	1213.76	7173.24
82	538+369	538+875	2934.22	370.32	68.75	300	530	82	0.0001188	0.0000655	1463.70	8806.92
83	539+129	539+872	2923.88	366.6	68.87	300	530	83	0.0001191	0.0000659	1433.76	8706.79
84	540+125	540+866	3190.13	368.23	68.82	300	530	84	0.000116	0.0000628	1605.29	9812.64
85	541+121	542+101	2320.12	254.1	68.71	296	530	85	0.0001413	0.00008843	556.48	4011.62
86	542+873	543+880	2157.04	243.58	71.83	280	530	86	0.0001506	0.0001006	358.63	3004.79
87	544+125	544+877	842.33	60.37	67.44	280	530	87	0.0002303	0.0002913	12.80	438.01
88	545+128	545+874	3278.46	367.87	71.64	280	530	88	0.0001212	0.00006758	1178.95	8043.47
89	546+124	546+879	1976.6	198.81	71.73	280	530	89	0.0001605	0.0001144	234.36	2251.42
90	547+124	547+873	1056.91	121.24	66.7	280	530	90	0.0002142	0.0001987	46.70	608.39
91	548+124	549+123	2232.79	259.22	71.83	280	530	91	0.0001471	0.00009619	414.55	3342.82
92	549+871	551+121	2713.46	287.96	71.69	280	530	92	0.000136	0.00008282	628.20	4770.83
93	552+130	552+870	2984.38	367.29	71.82	280	530	93	0.0001244	0.00007106	1050.81	7147.13
94	553+124	553+878	2843.75	368.88	71.82	280	530	94	0.0001259	0.00007272	1000.95	6769.12
95	554+128	554+874	2940.93	367.91	71.73	280	530	95	0.0001249	0.00007156	1035.42	7018.33
96	555+122	555+872	3396.53	370.02	71.82	280	530	96	0.0001196	0.00006613	1244.56	8542.98
97	556+840	556+840	3389.25	370.42	71.86	280	530	97	0.0001196	0.00006618	1243.18	8542.98
98	534+748	535+751	3271.13	366.09	68.78	300	530	98	0.0001154	0.0000621	1641.31	10046.08
99	536+000	536+748	3181.11	369.29	68.78	300	530	99	0.0001161	0.00006282	1607.19	9774.38
100	537+000	537+749	3292.5	369.56	68.87	300	530	100	0.0001148	0.00006164	1680.11	10286.33
101	538+287	538+751	3223.53	367.66	68.87	300	530	101	0.0001157	0.00006248	1623.01	9928.52
102	539+000	539+754	3324.39	368.47	68.82	300	530	102	0.0001146	0.0000614	1691.81	10367.97
103	540+000	540+752	3427.3	369.76	68.82	300	530	103	0.0001134	0.00006029	1769.56	10874.77
104	541+001	542+000	3107.17	295.53	68.83	296	530	104	0.000125	0.00007072	1034.36	6992.91
105	542+754	543+751	3022.51	365.78	71.79	280	530	105	0.000124	0.00007072	1059.05	7252.26
106	543+999	544+752	895.86	59.85	66.83	280	530	106	0.0002272	0.0002806	14.05	465.77
107	545+000	545+746	3481.81	368.88	71.82	280	530	107	0.0001189	0.00006533	1277.56	8773.38

S.No.	Chainage start	Chainage End	15% on Km wise			Avg Thickness		Sections	Remaining Life - 90% reliability			
									Strain from IITPave		Actual Performance	
			E1 Temp Adj	E2 Summer	E3 Summer	H1	H2		Vertical strain at bottom, epZ	Tangential strain at top, epT	Fatigue in Bt Layer, Nf (MSA)	Rutting in Sub grade, N (MSA)
108	545+999	546+750	3644.37	369.14	71.78	280	530	108	0.0001173	0.00006369	1356.46	9329.16
109	547+000	547+748	1112.6	75.14	62.79	280	530	109	0.0002237	0.000228	26.18	499.73
110	548+001	549+000	1522.22	106.02	71.86	280	530	110	0.0001844	0.0001664	68.19	1199.88
111	550+000	550+752	3582.53	367.17	71.78	280	530	111	0.000118	0.00006443	1315.95	9080.87
112	551+000	551+230	3716.81	369.48	71.86	280	530	112	0.0001165	0.00006297	1394.16	9623.15
113	551+999	552+750	3107.5	370.66	71.78	280	530	113	0.0001227	0.0000693	1119.18	7607.19
114	552+999	553+752	3090.25	368.27	71.68	280	530	114	0.0001232	0.0000697	1099.61	7468.22
115	554+002	554+745	3062.18	369.65	71.73	280	530	115	0.0001233	0.00006992	1094.71	7440.80
116	555+040	556+000	2871.57	300.84	71.86	280	530	116	0.0001323	0.00007886	724.21	5406.34

The FWD survey results for the **Devanahalli–Hebbal corridor** demonstrate that the pavement is structurally sound and capable of sustaining present and near-term traffic loads. Most sections exhibit **fatigue and rutting lives well above the design MSA**, confirming that the pavement remains in good condition with adequate residual life.

Localized variations in deflection and modulus values, mainly near **service roads and interchange areas**, indicate limited zones of reduced stiffness requiring **targeted overlay or strengthening.**

Overall, the evaluation supports that **selective maintenance and rehabilitation**, rather than full-length overlaying, is the most **cost-effective strategy** for ensuring long-term serviceability of this corridor.

5.5 Pavement Evaluation by Network Survey Vehicle

5.5.1 Introduction:

The **Network Survey Vehicle (NSV) survey** was conducted in **March 2024** for the **Devanahalli–Hebbal section of NH-7**, covering chainage **Km 534+720 to Km 556+840**. This activity was undertaken as part of the **Independent Engineer's Services** during the O&M period, in accordance with the provisions of the **Concession Agreement** and relevant guidelines of **IRC: SP:16–2019** and **MoRTH Circular No. 11041/218/2007-Admn.**

The primary objective of the survey was to assess the **functional condition of the pavement and roadside assets** through automated measurements of **roughness, rutting, texture depth, and visual distress parameters**, along with capturing **road inventory, geometry, and high-resolution digital imagery**. The survey covered both **main carriageways and service roads** of the project stretch.

5.5.2 Project Corridor

The inspected section forms a vital part of the **North–South Corridor**, connecting **Kempegowda International Airport at Devanahalli** with **Hebbal Junction** in Bengaluru city. The **Devanahalli–Hebbal stretch of NH-7**, from **Km 534+720 to Km 556+840**, comprises a **6-lane divided carriageway with paved shoulders** and **service roads** on both sides for partial lengths. The corridor serves as a critical urban and regional link, carrying high volumes of **airport-bound, commuter, and commercial traffic**.

The alignment traverses **predominantly plain terrain** interspersed with **flyovers, vehicular underpasses (VUPs), pedestrian underpasses (PUPs), culverts, and grade-separated junctions**. The route also includes **toll plazas, slip roads, and multiple intersections** catering to mixed urban land use. The section experiences **intense traffic flow**, periodic congestion, and localized surface wear due to frequent braking and lane changes.

Being a **high-speed access-controlled corridor** integrated with urban infrastructure and metro development works, the NSV survey was essential for systematically evaluating **pavement surface condition, functional performance, and asset inventory** under operational conditions.

5.5.3 Instrumentation & Methodology

Instrument: *Hawkeye 2000 Professional Network Survey Vehicle (NSV)*, a fully integrated, vehicle-mounted system equipped with a **multi-laser digital profiler**, **high-resolution imaging cameras**, **Differential GPS (DGPS)**, and a **Gipsi-Trac geometry unit** for capturing pavement and asset data in real time.

Working Range: The system allows **simultaneous collection of longitudinal and transverse profiles**, **texture depth**, **rut depth**, **roughness**, and **pavement imagery** at highway speeds up to **100 km/h**, enabling safe, non-intrusive survey across the entire project corridor.

Supporting Equipment: Onboard **Digital Laser Profiler (11 lasers)**, **distance measuring instrument (DMI)**, **inertial accelerometers**, and **panoramic imaging system** with four synchronized cameras for lane-wise pavement and roadside asset coverage.

Inspection Standard: Data collection and analysis were carried out in accordance with **IRC: SP:16-2019 (Guidelines for Surface Evenness of Highway Pavements)**, **ASTM E950**, and **AASHTO PP-37**, as adopted by **MoRTH** for NSV-based condition monitoring.

Procedure:

- Automated measurement of **roughness (IRI)**, **rutting**, and **macro-texture** along each lane of both carriageways and service roads.
- Video-based **visual condition mapping** of pavement distresses such as cracking, potholes, patching, and raveling.
- Simultaneous **DGPS referencing** spatial accuracy and geo-tagging of all image data.
- Data validation, cross-checking, and **post-processing through Hawkeye Processing Toolkit** to ensure consistency and reliability of recorded parameters.
- All observations and results were compiled for **ride quality evaluation, asset inventory updating, and maintenance prioritization** of the Devanahalli–Hebbal section.

5.5.4 NSV Results and Analysis

The **Network Survey Vehicle (NSV)** survey for the **Devanahalli–Hebbal section of NH-7 (Km 534+720 – Km 556+840)** was conducted using IRSM's *Hawkeye 2000 Professional System*. The survey evaluated the pavement's functional condition by measuring **roughness,**

rutting, surface texture, and visible distresses. Analysis was carried out in accordance with **IRC: SP:16-2019**, **ASTM E950**, and **AASHTO PP-37** guidelines.

5.5.5 Roughness Summary – Main Carriageway (MCW)

The International Roughness Index (IRI) values were analyzed for both directions and all lanes of the main carriageway. The results show that almost the entire section falls within the *good* category (< 2.2 m/km), indicating excellent ride quality with only isolated roughness observed near interchange and ramp areas. For detail refer below Exhibit for Roughness Summary of MCW

Exhibit 22 Roughness Summary of MCW

Sl. No.	Roughness (mm/km)	Length (m) – Devanahalli → Hebbal			Length (m) – Hebbal → Devanahalli			Percentage – Devanahalli → Hebbal			Percentage – Hebbal → Devanahalli		
		Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane
1	< 2200	21290	21350	21290	20280	21350	21280	96%	100%	96%	92%	100%	96%
2	2200 – 2400	0	0	0	1000	0	0	0%	0%	0%	4%	0%	0%
3	> 2400	840	0	840	850	0	850	4%	0%	4%	4%	0%	4%

5.5.6 Rutting Summary – Main Carriageway (MCW)

Rutting depth was analyzed to assess deformation under repetitive traffic loading. The entire mainline registered rut depths below 10 mm, confirming a sound structural condition and uniform load distribution with negligible plastic flow. *(Ref.: Table 2 – IRSM Report p. 43)*

Exhibit 23 Rutting Summary of Main Carriageway (MCW)

Sl. No.	Rutting (mm)	Length (m) – Devanahalli → Hebbal			Length (m) – Hebbal → Devanahalli			Percentage – Devanahalli → Hebbal			Percentage – Hebbal → Devanahalli		
		Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane	Inner Lane	Centre Lane	Outer Lane
1	< 10	22130	21290	22130	22130	21350	21280	100%	99.7%	100%	100%	100%	96%
2	> 10	0	60	0	0	0	850	0%	0.3%	0%	0%	0%	4%

5.5.7 Pavement Distress Quantification – Main Carriageway

Visual distress mapping captured through synchronized high-resolution cameras identified localized cracking, ravelling, and patching. The table below quantifies the percentage of area affected by each distress type and severity across lanes of both carriageways. *(Ref.: Tables 3 & 4 – IRSM Report pp. 50–53)*

Exhibit 24 Pavement Distress Quantification (%) – Main Carriageway

Distress and Severity	Unit	Distress Quantity – LHS			Distress Quantity – RHS		
		Inner	Centre	Outer	Inner	Centre	Outer
Longitudinal Cracks							
Low (< 3 mm)	%	0	0	0	0	0	0
Medium (3–6 mm)	%	3.63	3.33	2.75	2.40	4.80	3.00
High (> 6 mm)	%	3.00	0	0	0	0	0
Total	%	6.63	3.33	2.75	2.40	4.80	3.00
Transverse Cracks							
Low (< 3 mm)	%	0	0	0	0	0	0
Medium (3–6 mm)	%	0	0	3	1.43	5	2
High (> 6 mm)	%	0	0	0	0	0	0
Total	%	0	0	3	1.43	5	2
Alligator Cracks							
Low (< 3 mm)	%	0	0	0	0	0	0

Distress and Severity	Unit	Distress Quantity – LHS			Distress Quantity – RHS		
		Inner	Centre	Outer	Inner	Centre	Outer
Medium (3–6 mm)	%	34.24	6.40	19.85	15.00	12.33	10.00
High (> 6 mm)	%	56.67	0	33	0	0	0
Total	%	90.91	6.40	52.85	15.00	12.33	10.00
Ravelling							
Low	%	4.17	5.30	4.13	4.33	8.00	5.00
Medium	%	0	0	0	0	0	0
High	%	0	0	0	0	0	0
Total	%	4.17	5.30	4.13	4.33	8.00	5.00
Potholes							
Low	%	15	0	0	0	0	0
Medium	%	0	0	0	0	0	0
High	%	0	0	0	0	0	0
Total	%	15	0	0	0	0	0

5.5.8 Roughness Summary – Service Roads

Service-road surface profiles exhibit higher variability due to braking, turning, and local access traffic. Still, the majority of sections maintain roughness within acceptable limits, with only 10 % of the length exceeding 2.4 m/km. *(Ref.: Table 5 – IRSM Report p. 54)*

Exhibit 25 Roughness Summary of Service Roads

Sl. No.	Roughness (mm/km)	Length (m) – *Devanahalli → Hebbal*		Length (m) – *Hebbal → Devanahalli*		Percentage – Devanahalli → Hebbal		Percentage – Hebbal → Devanahalli	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane	Inner Lane	Outer Lane	Inner Lane	Outer Lane
1	< 2000	4290	4000	14460	11820	24%	21%	74%	60%
2	2000 – 2400	3620	6860	3110	5770	20%	35%	16%	30%
3	> 2400	10020	8490	2000	2000	56%	44%	10%	10%

5.5.9 Rutting Summary – Service Roads

Rutting on service roads was within safe limits, with the majority of test points recording rut depths below 10 mm. Slight deformation in isolated stretches near intersections is attributed to frequent acceleration and braking. *(Ref.: Table 6 – IRSM Report p. 59)*

Exhibit 26 Rutting Summary of Service Roads

Sl. No.	Rutting (mm)	Length (m) – *Devanahalli → Hebbal*		Length (m) – *Hebbal → Devanahalli*		Percentage – Devanahalli → Hebbal		Percentage – Hebbal → Devanahalli	
		Inner Lane	Outer Lane	Inner Lane	Outer Lane	Inner Lane	Outer Lane	Inner Lane	Outer Lane
1	< 10	16230	19350	19570	19590	91%	100%	100%	100%
2	> 10	1700	0	0	0	9%	0%	0%	0%

5.5.10 Pavement Distress Quantification – Service Roads

Distress mapping on the service roads showed moderate levels of cracking and patching, with some sections affected by ravelling and potholes, particularly near entry/exit ramps. Overall, the surface remains serviceable with routine maintenance. *(Ref.: Table 7 – IRSM Report pp. 64–65)*

Exhibit 27 Pavement Distress Quantification (%) – Service Roads

Distress and Severity	Unit	Distress Quantity – LHS		Distress Quantity – RHS	
		Inner	Outer	Inner	Outer
Longitudinal Cracks					
Low (< 3 mm)	%	0	0	0	0
Medium (3–6 mm)	%	2.63	2	2.8	0
High (> 6 mm)	%	0	0	0	0
Total	%	2.63	2	2.8	0
Transverse Cracks					
Low (< 3 mm)	%	0	0	0	0
Medium (3–6 mm)	%	1.64	5.16	3.5	3
High (> 6 mm)	%	2	3	0	0
Total	%	3.64	8.16	3.5	3
Alligator Cracks					
Low (< 3 mm)	%	0	0	0	0
Medium (3–6 mm)	%	18.98	21.73	32.27	21.69

Distress and Severity	Unit	Distress Quantity – LHS		Distress Quantity – RHS	
		Inner	Outer	Inner	Outer
High (> 6 mm)	%	0	0	0	0
Total	%	18.98	21.73	32.27	21.69
Ravelling					
Low	%	4.22	16.79	5.48	15.28
Medium	%	0	0	0	0
High	%	0	0	0	0
Total	%	4.22	16.79	5.48	15.28
Potholes					
Low	%	23.67	7.7	0	3
Medium	%	0	0	0	0
High	%	0	0	0	0
Total	%	23.67	7.7	0	3
Patching					
Low	%	32.18	36.77	32.5	15.63
Medium	%	0	0	0	0
High	%	0	0	0	0
Total	%	32.18	36.77	32.5	15.63
Depressions					

Distress and Severity	Unit	Distress Quantity – LHS		Distress Quantity – RHS	
		Inner	Outer	Inner	Outer
Low	%	0	0	0	0
Medium	%	0	0	0	0
High	%	0	0	0	0
Total	%	0	0	0	0

Summary Interpretation

- ***NSV data indicate that the Devanahalli–Hebbal corridor remains in Good to Satisfactory functional condition.***
- ***Main carriageway sections exhibit excellent ride quality, with negligible rutting and only minor localized surface cracking.***
- ***Service roads show slightly higher roughness and minor distress, which is typical for urban access lanes. Overall, the pavement is structurally sound and serviceable, requiring only localized surface maintenance to ensure continued optimal performance and durability.***

5.6 Material Investigation

5.6.1 Introduction

The **Material Investigation Survey** was carried out in **March 2024** for the **Devanahalli–Hebbal section of NH-7**, covering chainage **Km 534+720 to Km 556+840** in the **state of Karnataka**. This investigation was undertaken as part of the **Independent Engineer's routine O&M monitoring**, in accordance with the provisions of the **Concession Agreement** and relevant **MoRTH and IRC specifications** for pavement evaluation.

The primary objective of the study was to determine the **engineering characteristics of existing pavement layers**, including **bituminous, granular, and subgrade materials**, through a combination of field sampling and laboratory testing. The investigation aimed to establish the current material quality, gradation conformity, compaction status, and strength parameters (CBR and MDD) to assess the adequacy of the existing crust and subgrade for future performance and overlay planning.

The work was executed by ECLAT Engineering Consultants, Hyderabad, under the direction of Cube Highways and Transport Assets Advisors Private Limited. Field investigations were carried out between 22 March 2024 and 23 March 2024, involving subgrade test pits, granular layer sampling, and bituminous core extraction at selected locations along both carriageways. Testing and analysis were performed in accordance with IS 2720 series, IS 2386, and MoRTH (5th Revision) guidelines.

5.6.2 Project Corridor

The investigated section forms a vital part of the **North–South Corridor**, connecting **Kempegowda International Airport at Devanahalli** with **Hebbal Junction** in **Bengaluru city**. The **Devanahalli–Hebbal stretch of NH-7 (Km 534+720 to Km 556+840)** comprises a **six-lane divided carriageway with paved shoulders** and **service roads** at major access locations.

The alignment passes through **plain terrain** with **flyovers, underpasses, culverts, and junctions**, catering to heavy **airport-bound and commuter traffic**. The pavement is **flexible**, consisting of **bituminous surfacing over granular and subgrade layers**. Material investigations were undertaken to evaluate **layer composition, gradation, and strength characteristics** for assessing the existing pavement condition and maintenance planning.

5.6.3 Field Investigation and Testing Methodology

The **field investigation** was carried out by **ECLAT Engineering Consultants** between **22 and 23 March 2024** to assess the condition and quality of the **existing pavement layers**. The study involved **subgrade test pits**, **granular layer sampling**, and **bituminous core extraction** at selected representative locations (**Km 537+300 RHS** and **Km 550+700 LHS**).

All sampling and testing were conducted as per **MoRTH (5th Revision)** and **relevant IS standards**, including **IS 2720**, **IS 2386**, and **ASTM D2172**. Tests included determination of **in-situ density**, **moisture content**, **CBR**, **gradation**, **Atterberg limits**, **specific gravity**, **water absorption**, and **aggregate impact value**. Bituminous cores were tested for **binder content**, **gradation**, and **bulk specific gravity**.

The results obtained from field and laboratory testing were used to evaluate the **strength, compaction, and structural adequacy** of the existing pavement materials for the **Devanahalli–Hebbal corridor**.

5.6.4 Material Investigation – Tests and Results

The material investigation program for the Devanahalli–Hebbal section of NH-7 (Km 534+720 to Km 556+840) was undertaken to evaluate the engineering properties of the existing pavement layers, including subgrade soil, granular base/sub-base, and bituminous surfacing materials. The field and laboratory investigations were carried out by ECLAT Engineering Consultants during March 2024 in accordance with MoRTH (5th Revision) and relevant IS codes.

Representative samples were collected through test pits and core cutting at selected locations along both carriageways. The testing program covered classification, strength, compaction, gradation, and binder properties, providing essential input for assessing the structural adequacy and performance of the existing pavement. The detailed test results for each layer are presented in Exhibits below.

A. Subgrade Test Results

Subgrade investigations were carried out to determine the **strength and classification** of in-situ soils along the Devanahalli–Hebbal section of NH-7. Test pits were excavated at **Km 537+300 (RHS)** and **Km 550+700 (LHS)**, and samples were tested for **moisture content, density, CBR, and plasticity characteristics** in accordance with **IS 2720 (Part 2, 4, 5, 8, 16, 29, 40)** and **IS 1498**.

The results confirm that the subgrade soils are **predominantly sandy–clayey** with moderate plasticity and satisfactory strength parameters, suitable for flexible pavement support.

Exhibit 28 Test Results of Subgrade

S. No.	Existing Chainage (Km.)	Side (LHS/RHS)	Soil Classification (as per IS:1498)	Gravel Content (%)	Sand Content (%)	Clay & Silt Content (%)	Atterberg Limits [IS:2720-Pt-V]			Modified Proctor Test (IS:2720-Pt-VIII)		Field Density	4-Day Soaked CBR at MDD (%)	Free Swell Index (%)	Degree of Compaction (%)
							LL (%)	PL (%)	PI	MDD (g/cc)	OMC (%)	FDD (g/cc)	FMC (%)		
1	537+300	RHS	SC	1.6	49.2	49.2	37	22	15	1.91	12.6	1.71	7.5	9.7	30.0
2	550+700	LHS	SM-SC	6.1	49.2	44.7	26	19	7	1.96	11.1	1.94	6.5	11.9	11.1

B. Granular Test Results

Granular materials were sampled from the **WMM and GSB layers** at test pits corresponding to **Km 537+300 (RHS)** and **Km 550+700 (LHS)**. Samples were tested for **gradation, Atterberg limits, specific gravity, water absorption, and aggregate impact value (AIV)** as per **IS 2386 (Part 3 & 4)**, **IS 2720**, and **MoRTH Table 400-1 / 400-13**.

The results confirm that the existing materials generally **conform to MoRTH graduation requirements**, with all samples showing **acceptable plasticity, impact value, and absorption characteristics**.

Exhibit 29 Test Results of Granular Layers

S. No.	Chainage (Km)	Side (LHS/RHS)	Type of Sample	Gradation Conformation (as per MoRTH 5th Rev.)	Atterberg Limits			Specific Gravity	Water Absorption (%)	Aggregate Impact Value (%)
					LL (%)	PL (%)	PI			
1	537+300	RHS	WMM	4.75 mm IS sieve material coarser side in WMM gradation	22	NP	NP	2.634	0.18	25.0
2	537+300	RHS	GSB	0.425 mm IS sieve material coarser side in GSB Grade-I	25	NP	NP	2.612	0.57	25.1
3	550+700	LHS	WMM	Confirming to WMM gradation	21	NP	NP	2.623	0.26	27.3
4	550+700	LHS	GSB	0.425 mm IS sieve material coarser side in GSB Grade-I & 4.75 mm IS sieve material finer side in GSB Grade-III & IV	23	NP	NP	2.625	0.38	28.9

C. Bituminous Test Results

Bituminous cores were extracted at **Km 536+300 (LHS)**, **Km 539+400 (RHS)**, **Km 545+500 (LHS)**, and **Km 548+100 (RHS)** using a **10 cm core cutter**. Tests were conducted on both **BC and DBM layers** for **bitumen content, specific gravity, and gradation conformance** as per **MoRTH Tables 500-10 & 500-17** and **ASTM D2172**.

The results indicate that all mixes fall within acceptable MoRTH gradation bands, with **binder content ranging from 4.25–5.36%** and **bulk specific gravity between 2.29–2.41**.

Exhibit 30 Test Results of Bituminous Layers

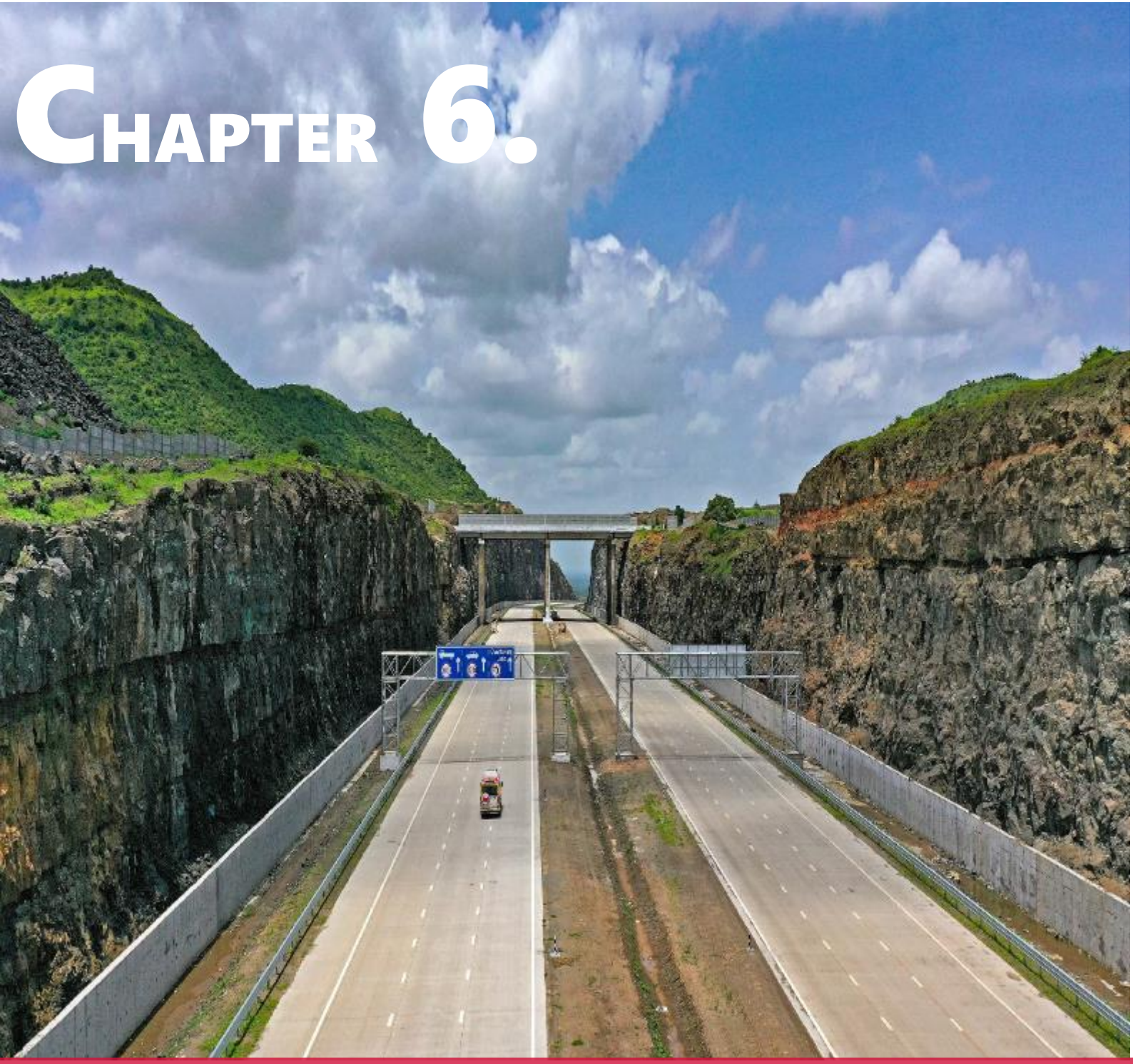
S. No.	Location (Km)	Side (LHS/RHS)	Lane	Type of Material Tested	Source of Sample	Bitumen Content (%)	Bulk Specific Gravity	Gradation Conforming to MoRTH (5th Rev.)
1	536+300	LHS	Outer	DBM	Core	4.52	2.41	26.5 mm, 13.2 mm IS sieves material finer side in DBM Grade-I & 19.0 mm, 13.2 mm IS sieves material finer side in DBM Grade-II
2	536+300	LHS	Outer	BC	Core	5.29	2.29	0.600 mm, 0.300 mm IS sieves material coarser side in BC Grade-II & 13.2 mm, 9.5 mm IS sieves material finer side in BC Grade-I
3	539+400	RHS	Inner	DBM	Core	4.58	2.37	Confirming to DBM Grade-II
4	539+400	RHS	Inner	BC	Core	—	—	Testing not conducted due to pulverized core
5	545+500	LHS	Inner	BC	Core	5.12	2.34	0.600 mm IS sieve material coarser side in BC Grade-II
6	545+500	LHS	Inner	DBM	Core	4.38	2.32	4.75 mm, 2.36 mm IS sieves material coarser side in DBM Grade-II
7	548+100	RHS	Inner	BC	Core	5.36	2.33	0.300 mm IS sieve material coarser side in BC Grade-II
8	548+100	RHS	Inner	DBM	Core	4.25	2.35	4.75 mm, 2.36 mm IS sieves material coarser side in DBM Grade-II

5.7 Major Maintenance of Pavement

All pavements require maintenance. Stresses from traffic, weather, and moisture change effects on the Surface. Regardless of the reason, without maintenance, pavement deteriorates at a fast pace. An asphalt pavement is an essential asset which must always be maintained. Allowing the pavement to have minor problems will grow into major ones. No road user likes to hit potholes or step into a puddle of water. Sun, rain, and wind age the pavement. Friction from tires rolling wears away the asphalt glues and line stripping. Sunlight oxidizes and draws all the essential oils which results in the pavement breaking away. Water enters the lower layers of the pavement through cracks damaging the foundation which leads to potholes and failure.

Major Maintenance details discussed at **Chapter 6**

Chapter 6.



Cost Estimate

Chapter 6. COST ESTIMATE

Based on the assessment carried out in above chapters, various costs were worked out by Knight Frank. The costs are divided into following categories.

- Routine Maintenance
- Major Maintenance Cost
- Periodic Replacement of TMS/ATMS system

Costs for different category are detailed out in subsequent sections along with the assumptions considered for rate and Escalation.

6.1 Assumptions

The cost estimates are based on the following assumptions:

Following assumptions are considered for unit rates of various items while estimating the cost –

1. Unit rates of different items (BC, DBM, Concrete, Road markings etc.) are calculated as per the MoRTH Standard data book. The input rates for MoRTH standard data book were adopted as below.
   a) **Manpower and labour** – As per applicable minimum wages published by Ministry of Labour & Employment, Government of India
   b) **Bitumen** – Bitumen rates are sourced from CPCL Chennai Refinery. The distance (to- from) from the midpoint of Project Highway is considered as 350 kms. VG-30 and VG-40 grades of bitumen are considered in our cost estimate.

☛ ***Concessionaire has long term contract with IOCL for the procurement of bitumen and related products. Same discounts are considered on bitumen procurement for this analysis. Furthermore, we also understand that bitumen prices are primarily dependent on crude oil price and market demand and hence are likely to be very volatile and difficult to predict at this stage.***

Therefore, Bitumen prices are considered as per the client's forecast. Current published of bitumen are considered for unit rates calculation for FY26 and FY27. Average 10 years of price of bitumen are considered for unit rates calculation for FY28 and onwards, since bitumen prices have been range bound over the last five-six years.

c) **Sand and Aggregate** are sourced from the nearest quarry located on project highway.

d) **Cement** is procured from the nearest local market.

e) **Machinery Hire charges** of Plant and Machinery for various items of works have been considered from Karnataka SOR 2022 and some rates are considered from MORT&H Standard Data Book 2001-2002. Escalation has been considered on MORT&H Plant and Machinery rates to arrive at the present rates of 2024-25.

f) **Material Rates** are obtained from SOR of Karnataka, KPWD 2022.

g) Some of the rates are based on Consultant's experience on similar ongoing projects in adjacent locations.

h) **Overheads and profits** have been considered based on MORT&H Standard Data Book. Applicable taxes have been considered in the Rate Analysis.

i) **Goods and Service Tax (GST)** is considered as 18% as per the latest Government Guidelines.

Exhibit 31: Adopted Unit Rates for Key items

S.nos	Items Description	Unit	Rates (₹)
1	Bituminous Concrete	Cum	13,350
	DBM	Cum	9,550
2	Milling	Cum	100
3	Tack Coat	Sqm	15
4	Road Marking	Sqm	550
5	Earthen Shoulder	Cum	330
6	Kerb Raising	Rm	300
7	Kerb Painting	Sqm	130

- *The above unit rates are excluding GST.
- The unit rate of each item includes 10 % overhead for road works, 15 % overhead for structure works and 10 % contractor's profit.
- Details of components considered in rate analysis & quantification are presented in below **Exhibit 32.**

Exhibit 32: Major components detail for Key items.

Sr. No.	Particular	Source	Reference
1	Rate Analysis	MORTH	Standard Data Books published by MORTH
2	**Material**		
A	Aggregate Rates	Nearby Project Corridor	As per Local Market Rates
B	ATMS, TMS cost		As per Vendor offer.
C	Cement	As provided in Local market	As per Local Market Rates
3	Equipment hire cost	Nearby project location	Standard Data Books published by MORTH
4	Labour	As per minimum wages	As per minimum wages

6.2 Immediate Repair cost

As informed during site visit, The following schedule outlines the proposed scope of immediate civil and structural works to be undertaken across bridge structures, including expansion joint replacement, drainage spout installation, bearing replacement, and essential structural repair activities. All works shall be executed as per approved drawings, relevant IRC/MORTH specifications, and manufacturer's guidelines to ensure compliance with quality and safety standards.

Exhibit 33: Immediate Repair Cost

S.nos	Items	Amount (₹)	Amount (₹-Crore)
A	**Expansion Joints @ structures**	4040122.5	0.40
B	**Drainage Spouts @ Structures**	11041866	1.10
C	**Bearings @ structures**	52937238	5.29
D	**Structural Repairs**	168253719	16.83
Total Immediate Repair Cost		**236272946**	**23.63**

6.3 Routine Operation & Maintenance (O& M) Cost

Operations and Routine Maintenance work required as per the CA. During the concession period, the Concessionaire is fully responsible for Operation & Maintenance of Project Highway. Schedule K elaborates the requirements of various service factor desirable level and acceptable level during O & M period along with time if any parameter level of service beyond acceptable limit.

The CA Stipulates that the Concessionaire shall Operate and Maintain the Project Highway in accordance with Article 17 – Operation & Maintenance & Schedule –K Maintenance Requirements of Concession Agreement. The obligation of Concessionaire as per Article 17 is as follows:

- permitting safe, smooth, and uninterrupted flow of traffic on the Project Highway during normal operating conditions; collecting and appropriating the Fee.
- minimizing disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with the emergency services of the State.
- carrying out periodic preventive maintenance of the Project Highway.
- undertaking routine maintenance including prompt repairs too, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices.
- undertaking major maintenance such as replacement of panels in rigid pavement and associated activities
- preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the Project Highway
- preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Project Highway
- protection of the environment and provision of equipment and materials therefore
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media, and other agencies; and
- Complying with Safety Requirements in accordance with Article 18.

Routine O&M cost is comprised of manpower cost, toll operation cost, power and electricity cost, office operating expenses, vehicle running expenses, administrative expenses, horticulture and ROW maintenance, routine maintenance and other miscellaneous expenses. The Concessionaire has provided the major agreements towards operation and maintenance for past years. Necessary assumptions have been made from the expenses of similar types of projects to arrive at the operating cost. The estimates are projected based on best industry practices and are compared with the operation cost in the vicinity of the project area. Same has been divided into following major head.

1. Salary and Welfare Expenses
2. Tolling Operations Services
3. Incident Management Services
4. Electricity and Diesel Charges
5. TMS/HTMS/System Expenses
6. Office Operating Expenses
7. Vehicle Running Expenses
8. Professional Fees Expense
9. Insurance Expense
10. IE Fees
11. Horticulture & ROW Maintenance
12. Routine Maintenance Cost

In above, the Routine Maintenance cost is derived based on the Ministry of Road Transport and Highways - Report of the Committee on Norms for Maintenance of Roads in India (published by Indian Road Congress New Delhi 2001) along with actual pavement condition assessed during condition survey. Maintenance cost constitutes the routine, day-to-day maintenance activities for project assets, including road pavement, shoulders, embankment, drainage, structures, plantations, roadside furniture, traffic signs, traffic safety devices etc. Past data has been used to assess maintenance costs due to normal usage or "wear-and-tear". Likely costs of maintenance of structures are assessed based on their present condition and vintage, in combination with well-established guidelines and thumb rules given in Indian codes and standards.

6.3.1 O & M Strategy

Important Operations and maintenance work have been outsourced by the SPV. Details of important work orders outsourced are listed below **Exhibit 34**

Exhibit 34: Work outsourcing for Operations and Maintenance work.

Sn	Activity	Strategy
1	Routine Maintenance	In-house
2	Preventive Maintenance	In-house
3	Management and Supervision Staff	In-house
4	Security	Outsource
5	Corridor Management	Outsource

6.3.2 Routine Maintenance

Routine and Preventive maintenance encompasses work that is performed in reaction to an event, season, or overall deterioration of the transportation asset. This work requires regularity and reoccurring in nature. Routine and Preventive Maintenance is essential to maintain the condition of the highway asset or to respond to specific conditions or events that restore the highway system to a functional state of operation.

Total Routine Maintenance cost estimated by Knight Frank is ₹10.66 Crore for the balance concession period of 07 years. The routine and preventive maintenance covers maintenance of the following assets:

- Cleaning of Main Carriageway, service road, bridge deck
- Pruning of median plantation, watering
- Maintenance of Avenue Plantation
- Cleaning of debris from carriageway and shoulder
- Plantation and Landscaping
- ROW Cleaning
- Cleaning of all road asset, Toll Plaza
- Tunnel, MEP & Slope Protection

The average cost for Routine Maintenance is ₹57,362/ km/ month including GST. Based on our previous projects experience & based on the thumb rule method routine maintenance costs are reasonable.

Exhibit 35: Routine Maintenance Cost

Sr. No.	Item Description	As per Knight Frank	Remarks
1)	Routine Maintenance Cost (₹-Crore) (07 Years Concession Period)	8.61	
2)	Routine Maintenance Cost Per Year (₹-Crore)	1.78	
3)	Routine Maintenance Cost Per Km/Year (₹-Lakh)	8.03	

Above cost is including of GST

6.3.3 Preventive Maintenance

Total Preventive maintenance cost considered is ₹7.60 Crore for balance concession period of 07 years & following items considered for preventive maintenance work:

- Repair cost of pavement as and when pavement distress occurred.
- Repair of road Kerb, crash barrier, metal beam crash barrier and guard rail
- Repair of faded road marking
- Fixing of damaged sign boards, KM stones
- Shoulder maintenance
- Repair and maintenance of structure – bearing, expansion joint.
- Repair of crossroad junction
- Maintenance of Truck lay-bys

Average cost considered for Preventive Maintenance is ₹40,897/km/ month including GST. Based on our previous projects' experience & based on thumb rule method, preventive maintenance cost is reasonable.

Exhibit 36: Preventive maintenance Cost

Sr. No.	Item Description	As per KF	Remarks
1	Preventive Maintenance Cost (₹-Crore) (07 Years Concession Period)	7.60	
2	Preventive Maintenance Cost Per Year (₹-Crore)	1.27	
3	Preventive Maintenance Cost Per Km/Year (₹-Lakh)	5.73	

Above cost is including of GST

6.4 Highway Lighting

Electricity charge and maintenance cost of highway lighting is calculated as follows:

a) Each lighting post has counted from site and consider having LED light will be operated for 12 hours a day round the year.
b) Lighting post at median / separator are having with two halogen/LED lamp and service road shall be with single lamp only.
c) Tunnel & MEP OPEX

The O & M Cost estimated towards highway lighting is ₹2.19 Crore per year including GST.

6.5 Corridor Management

The following equipment along with operation manpower is required to provide as per Concession agreement.

a) 1 no. of Crane
b) 2 nos. of route patrol vehicle
c) 1 no. of Ambulance

O & M Cost estimated towards incident management with operation manpower is ₹57.60 Lakh per year including GST.

6.6 Manpower Cost

The requirement of manpower is worked out to function all activity at project road for compliance of CA requirement, toll collection and security of asset. Requirement of manpower is classified into following broad division:

a) Management, Administration/HR and Supervision Staff: in-house manpower (**Cost considered towards SPV Manpower is ₹56.85 Lakh per year)**
b) Toll Operation Manpower: outsource/In-house for providing 24-hour uninterrupted traffic flow at toll plaza and collection of tolls. Due to Nationwide implementation of Hybrid-ETC System, it is expected drop in toll collection manpower. However, where collection of overloading is expected, manpower for toll collection is not possible at this stage. The company is expecting revenue from overloading in this asset therefore curtailment of toll collectors is not expected. (**Cost considered towards SPV 3rd Party Manpower is ₹4.78 crore per year)**

The cost of manpower is estimated as ₹6.08 crore per year.

6.7 Office Expenses

Cost towards operation of office, insurance premium, professional fees for carrying out traffic, asset condition survey etc., IE fees, AMC for equipment installed at office, communication charge, conveyance cost etc. are considered under Office Expenses. **The cost considered regarding office expenses & operation are ₹3.91 crore per year which is bifurcated as follows.**

- ***₹1.71 crore per year for Independent Engineer (IE)/Authority Engineer (AE) and professional fees covering legal, arbitration, and audit certification during the O&M period***
- ***Actual cost of insurance policy: ₹1.36 crore per year (inclusive of 18% GST)***
- ***Survey and investigation charges: ₹0.145 crore per year (inclusive of 18% GST)***

6.8 Major Maintenance

As mentioned in earlier chapter, Currently, the Project Highway is maintained by existing Annuity Concessionaire.

Based on RI & FWD Test results, SPV team made 01 MM cycles for the overlay of projects. Following items were considered during each MM cycle based on the ground requirements.

A. Flexible Pavement

- Overlay of PMB & 40 mm BC on MCW based on ground conditions and Test results.
- Overlay of 30 mm BC on service road considered.

B. Replacement of Wearing Coat on structures

6.9 Major Maintenance items

Based on detailed highway inventory carried out during site investigation and data provided by the concessionaire following items considered during major maintenance work

- Bituminous concrete for MCW using PMB/VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Bituminous concrete for Service Road using VG-40
- Dense Bituminous Macadam for MCW using VG-40
- Micro surfacing

6.10 Major Maintenance Cycles & Cost

Major maintenance works to be considered in 01 cycles up to the FY2029. A total Cost of ₹65.70 crore (Without Escalation) considered for major maintenance work Upto end of Concession period. Major maintenance Strategy is shown in **Exhibit 37. Detailed Cost Estimate attached as Annexure A.**

Exhibit 37: Major Maintenance Cycles & Cost

Major Maintenance Strategy & Cost Details for DH Project				
Cycle	**Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-01	**FY 2029**	**A) Main Carriageway:** 01. 40 mm BC overlay with PMB: 100% Length 02. 30 mm BC inlay with PMB: at Structures 03.50mm DBM Rehabilitation VG40: 5% Area **B) Service Road:** 01. 30 mm BC Overlay with VG40: 50% length 02. Microsurfacing: 50% length	65.70	
Total MMR Cost (₹-Crore) with GST			**65.70**	

*** Above cost is without escalation.**

6.11 Summary of Cost

Different O&M cost have been worked out based on the investigations and assessment on Project Road. Cost for each of the category has already discussed in previous sections. Since the forecasting has been carried out for remaining concession period, the cost is summaries yearly for remaining concession period as below.

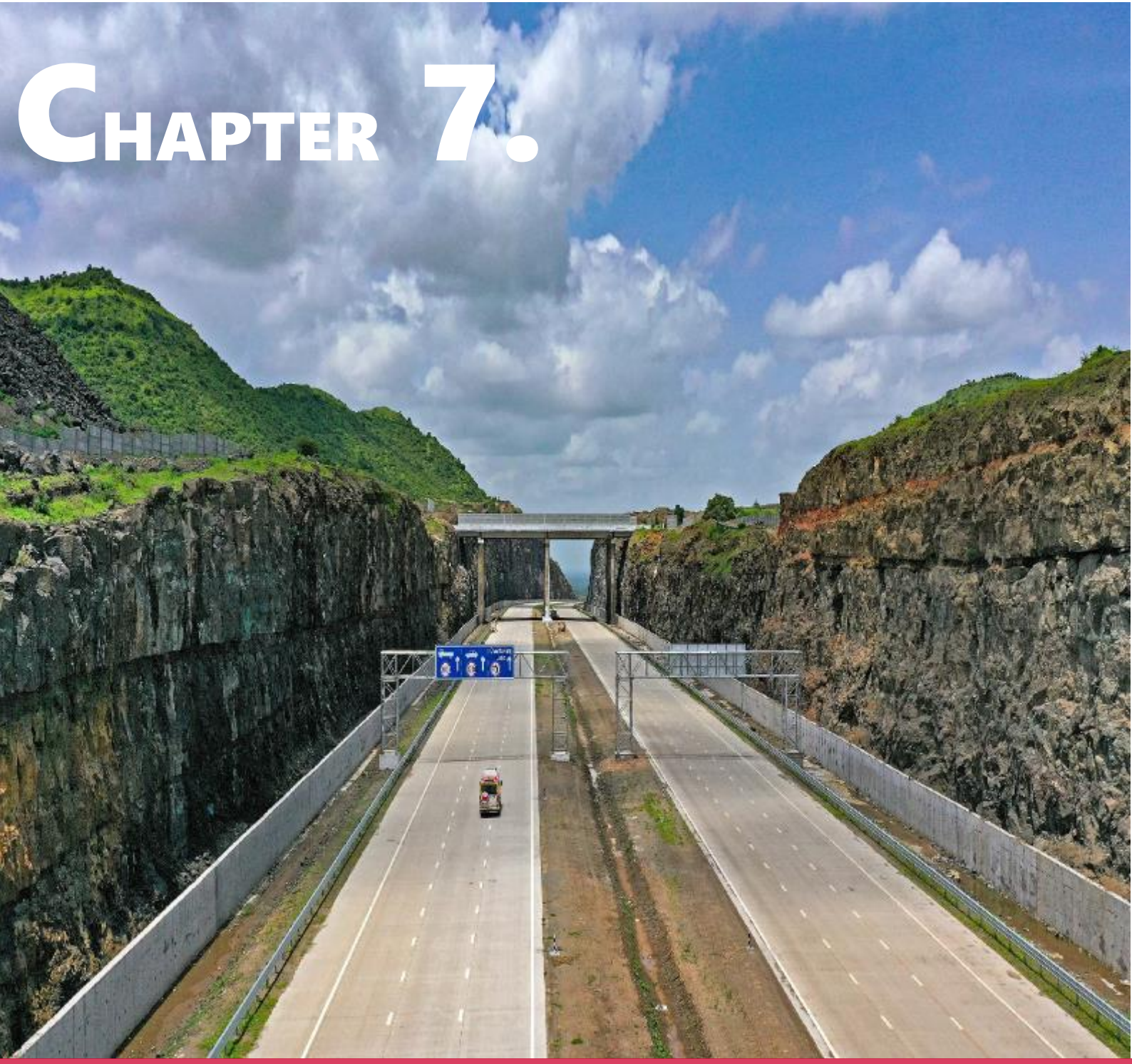
Exhibit 38: Summary O & M Cost for Remaining Concession Period

Summary of Cost (₹-Crore)									
S.nos	**Type/Year of Expenses**	**FY 2026***	**FY 2027**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**FY 2032****	**Total Cost**
1	**Immediate Repair Cost**	**23.63**							**23.63**
2	**Routine O & M Cost**								
2.01	Preventive Maintenance	0.34	1.05	1.23	1.23	1.35	1.31	1.08	**7.60**
2.02	Routine Maintenance	0.57	1.74	1.74	1.74	1.74	1.74	1.39	**10.66**
2.03	Highway Lighting	0.72	2.19	2.19	2.19	2.19	2.19	1.75	**13.44**
2.04	Corridor Management	0.19	0.58	0.58	0.58	0.58	0.58	0.46	**3.53**
2.05	AMC cost Toll Plaza	0.16	0.48	0.48	0.48	0.48	0.48	0.38	**2.94**
2.06	SPV Manpower Cost+OH	2.00	6.09	6.09	6.09	6.09	6.09	4.85	**37.30**
2.07	Transportation Cost	0.01	0.03	0.03	0.03	0.03	0.03	0.02	**0.16**
2.08	Other Office Operation Cost	1.29	3.92	3.92	3.92	3.92	3.92	3.12	**24.00**
	Sub Total of O & M Cost	**5.28**	**16.07**	**16.26**	**16.25**	**16.37**	**16.34**	**13.06**	**99.62**
3	**Major Maintenance Cost**	0.00	0.00	0.00	**65.70**	0.00	0.00	0.00	**65.70**
4	**Periodic Cost of TMS/HTMS Replacement**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0
	Total Cost	**28.91**	**16.07**	**16.26**	**81.95**	**16.37**	**16.34**	**13.06**	**188.95**

**For the Period from 1st December 2025 to 31st March 2026*

*** For the Period from 1st April 2031 to 17th January 2032*

Chapter 7.



Project Photographs

Chapter 7. PROJECT PHOTOGRAPHS

Toll Plaza -01 @ KM 538.000

Pavement at Toll Plaza-01 @ 538.000

Toll Plaza -02 @ KM 536.500

Pavement at Toll Plaza, Main Carriageway & Service Road

Balance Service Road Completed at Site

5.5 M Service Road Flyover

Road Under Elevated Section

Road Under Elevated Section

Main Carriageway

Main Carriageway

Service Road

Service Road

Highway Lighting

Metal beam crash barrier

Edge concrete crash barrier

Concrete crash barrier with footpath

Median Opening

Main Carriageway

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Annexure- A

(Major Maintenance Cost)

Major Maintenance Strategy & Cost Details for DH Project				
Cycle	**Year**	**Strategy**	**KF Cost (₹-Crore)**	**Remarks**
MM Cycle-01	**(Year 2028-2029)**	**A) Main Carriageway:** 01. 40 mm BC overlay with PMB : 100% Length 02. 30 mm BC inlay with PMB : at Structures 03.50mm DBM Rehabilitation VG40 : 5% Area **B) Service Road:** 01. 30 mm BC Overlay with VG40 : 50% length 02. Microsurfacing : 50% length	65.70	
Total MMR Cost (₹-Crore) with GST			**65.70**	

A. Periodic Maintenance Cycle -01 (Year 2028-2029)						
S.no	**Description**	**Unit**	**Quantity**	**Rate**	**Amount (₹-Lakh)**	**Remarks**
A)	**Flexible Pavement (Main Carriageway)**					
1	Overlay (BC)	Cum	26,316	13,350	3,513	40 mm BC with PMB 100% 30 mm BC on Structure with PMB 100%
2	Tack Coat	Sqm	7,22,731	15	108	
3	DBM Rectification	Cum	1,721	9,550	164	50mm DBM Rehabilitation 5%
4	Milling	Sqm	1,45,033	100	145	Milling at structure & DBM location
4	Road Marking	Sqm	32,799	550	180	100%
5	Earthen Shoulder	Cum	488	330	2	
6	Kerb Painting	Sqm	16,590	130	22	100%
7	Kerb raising	Rm	44,240	300	133	
Total Flexible Cost (MCW+SR)					**4,267**	
B)	**Flexible Pavement (Service Road)**					
1	Overlay (BC)	Cum	6,025	10,350	624	30 mm on 50% length
2	Tack Coat	Sqm	2,00,820	15	30	50%
3	Microsurfacing	Sqm	2,00,820	190	382	50%
Total Flexible Cost (Service Road)					**1,035**	
Total Periodic Maintenance Cost					**5,302**	
Contigencies (5%)					**5.0%**	
Total Periodic Maintenance Cost (₹-Lakh)					**5,568**	
Total Periodic Maintenance Cost (₹-Crore)					**55.68**	
Total Periodic Maintenance Cost (₹-Crore) with GST					**65.70**	

ANNEXURE C – TRAFFIC REPORTS

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Final Report
October 2025

Project Transit: Traffic Due Diligence Kotwa-Muzaffarpur Tollway Limited

Cube Highways Fund Advisors Private Limited
Our ref: 23741310

steer

Final Report
October 2025

Project Transit: Traffic Due Diligence Kotwa-Muzaffarpur Tollway Limited

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Our ref: 23741310

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Table of Contents

Disclaimer		**v**
Glossary Items		**i**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Key economic activities	7
	Alternate Routes	9
3	**Traffic Description**	**10**
	Introduction	10
	Historical trends	11
	Key findings of the TVC data analysis	17
	Key findings of origin-destination analysis	18
	Conclusions	29
4	**Socio economic context and traffic growth**	**31**
	Introduction	31
	Population growth	31
	Economic Indicators	32
	Economic growth	35
	Forecasts for growth drivers	37
5	**FY26 base year AADT and Traffic Growth Analysis**	**40**
	FY26 base year AADT estimates	40
	Estimation of background elasticities	42
	Overview	42
6	**Forecast: Network overlays and forecasts**	**46**
	Introduction	46
	Analysis of potential network/developmental impacts	46
	Revenue forecasting assumptions	49
	Traffic and Revenue forecasts	51
	Target revenues and modification of concession period	53
	Upside and Downside cases	54
	Summary Outlook	57

Figures

Figure 2.1: Asset location in the regional network context 4
Figure 2.2: Asset Context 5
Figure 2.3: Typical cross-sections and toll plazas on the Asset 6
Figure 3.1: Ticket-segmentation for CJV at TP1 15
Figure 3.2: Ticket-segmentation for MAV at TP1 15
Figure 3.3: Comparison between TVC and TMS total daily traffic data on TP1 Parsoni Khem 17
Figure 3.4: Comparison between vehicle shares from TVC and TMS WADTs 18
Figure 3.5: Zonal influence at TP1 Parsoni Khem 20
Figure 3.6: Zonal influence at Sahebganj (Open OD) 21
Figure 3.7: Zonal influence at Benipur (Open OD) 21
Figure 3.8: Internal-external distribution at TP1 Parsoni Khem 22
Figure 3.9: Internal-external distribution at Sahebganj 23
Figure 3.10: Internal-external distribution at Benipur 23
Figure 3.11: Commodity distribution at TP1 Parsoni Khem (Total) 25
Figure 3.12: Commodity distribution at Sahebganj (Total) 26
Figure 3.13: Commodity distribution at Benipur (Total) 26
Figure 3.14: Trip length distribution TP1 Parsoni Khem 27
Figure 3.15: Trip length distribution at Sahebganj 28
Figure 3.16: Trip length distribution at Benipur 28
Figure 4.1: Annual growth – Index of Industrial Production 33
Figure 4.2: Car Ownership in India per 1,000 population 34
Figure 4.3: Per Capita Income 34
Figure 4.4: Government final consumption expenditure 35
Figure 4.5: Month on Month IIP performance 36
Figure 4.6: Industrial components of GVA 36
Figure 4.7: Evolution of Bihar's state GDP and National GDP 37
Figure 4.8: GDP-GSDP forecast 39
Figure 5.1: FY26 base Estimation methodology 41
Figure 6.1: Proposed Alignment of Gorakhpur Siliguri Expressway 47

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Summary of Concession 6
Table 2.2: Single toll rates on the Asset (INR), applicable April 2025 7
Table 3.1: PCU factors 10
Table 3.2: Traffic Levels at TP1 Parsoni Khem 11
Table 3.3: Tollable Traffic Levels at TP1 Parsoni Khem 11

Table 3.4: Total Revenue (INR Crores) by vehicle type at TP1 Parsoni Khem, and AADC (average annual daily collection in lakhs) 13
Table 3.5: Typical ticket types sold at NHAI plazas 13
Table 3.6: Ticket-segmentation for LCV, Bus, 2A and 3A Categories at TP1 Parsoni Khem 16
Table 3.7: Data collection schedule 16
Table 3.8: ADT from TVC counts 17
Table 3.9: sample rates for OD data 19
Table 3.10: Zone aggregations for zonal influence analysis 19
Table 3.11: Commodity categories 24
Table 3.12: Average trip length (in km) at TP1 Parsoni Khem 27
Table 3.13: Average trip length (in km) at Sahebganj 28
Table 3.14: Average trip length (in km) at Benipur 29
Table 4.1: CAGR of population in India 31
Table 4.2: Population Growth in India (2012 – 2024) 32
Table 5.1: Adopted SCF for the Asset, FY23 and FY24 average 41
Table 5.2: Adopted base estimates AADT: TP1: Parsoni Khem 42
Table 5.3: Identified growth drivers to model traffic growth 43
Table 5.4: Passenger and Commercial growth with normalised FY22 44
Table 5.5: Elasticity recommendations for the Asset (Kotwa- Muzaffarpur) 44
Table 6.1: Toll & Time Comparison between Asset and Alternate 47
Table 6.2 Impact of Gorakhpur Siliguri Expressway 48
Table 6.3: Impact of 6 laning LOS improvement 48
Table 6.4: Trip factors at TP1 Parsoni Khem 49
Table 6.5: Toll segmentation FY26 onwards, TP1 Parsoni Khem 50
Table 6.6: Annual pass compensation for CJVs (in Crore) 50
Table 6.7: WPI growth forecast assumptions 51
Table 6.8: FY25 Revenue reconciliation summary (INR Lakhs) 51
Table 6.9: Traffic forecast (with impacts) for TP1 Parsoni Khem 51
Table 6.10: Traffic CAGR (%) for TP1 Parsoni Khem 52
Table 6.11: Revenue forecast (with impacts) for TP1 Parsoni Khem (INR crores) including Annual Pass Compensation revenue for CJVs 52
Table 6.12: Revenue growth CAGR (%) for TP1 Parsoni Khem 53
Table 6.13: Target Revenues for Extension 1 53
Table 6.14: Target Revenues for Extension 2 54
Table 6.15: Summary of Macro-economic Assumptions for upside and downside cases 54
Table 6.16: Summary of impacts on the Assets 55
Table 6.17: Summary of impacts on the Assets 55

Appendices

A Top 10 OD pairs

B Detailed Forecasts

C Data Collection Exercise

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
Km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit: it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor
SH	State Highway

Acronym	Meaning
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Kotwa - Muzaffarpur Tollway Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Kotwa-Muzaffarpur consists of a single toll road section. For this report, we hereafter call the toll plaza on the Asset as TP1.

- Kotwa-Muzaffarpur Tollway Limited: KMTL: TP1 – Parsoni Khem

Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Oct'20 and Sept'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable.
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by a survey agency appointed by Steer. The latest surveys were undertaken in 2025 at the TP.
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis conducted by Steer based on Generalised Journey Cost spreadsheet-based analysis

Scope of work	Data source
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research and Steer's in-house experience of working in the vicinity of the Asset
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on toll notification published by National Highway Authority of India (NHAI); and latest Wholesale Price Index (WPI) trends as shared by the client

Our approach

1.3 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.4 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data starting October 2020 to September 2025
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous studies related to traffic and revenue
  - Steer-commissioned OD surveys on 23rd Jan 2025 on the Asset and an additional survey on the 24 Jan 2025 on the SH74 (alternate route) to validate any change in growth drivers and travel patterns.
  - Steer-commissioned three-day TVC survey between 23rd January and 25th Jan 2025 as a part of study.
- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by the toll plaza and subsequently matched it to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.5 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against the six months of actual traffic (Apr-Sept) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.

- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future.
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.6 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic trends on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of India, the corridor and region/state containing the Asset, along with our approach and results on estimating background along with our key forecasting assumptions,
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases

2 The Asset

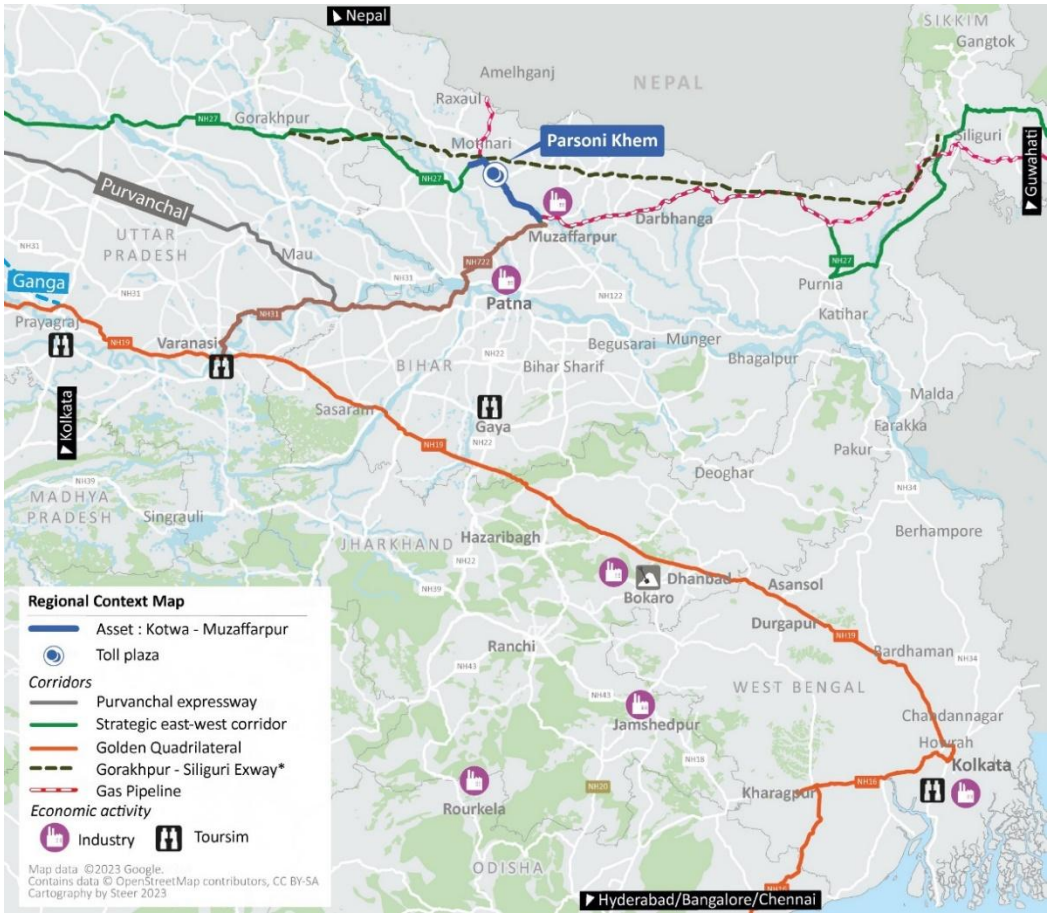
Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of Bihar, connecting the cities of Muzaffarpur and Kotwa in the north-west part of Bihar. Figure 2.2 below shows the regional road network in which the Asset is located.

Figure 2.1: Asset location in the regional network context



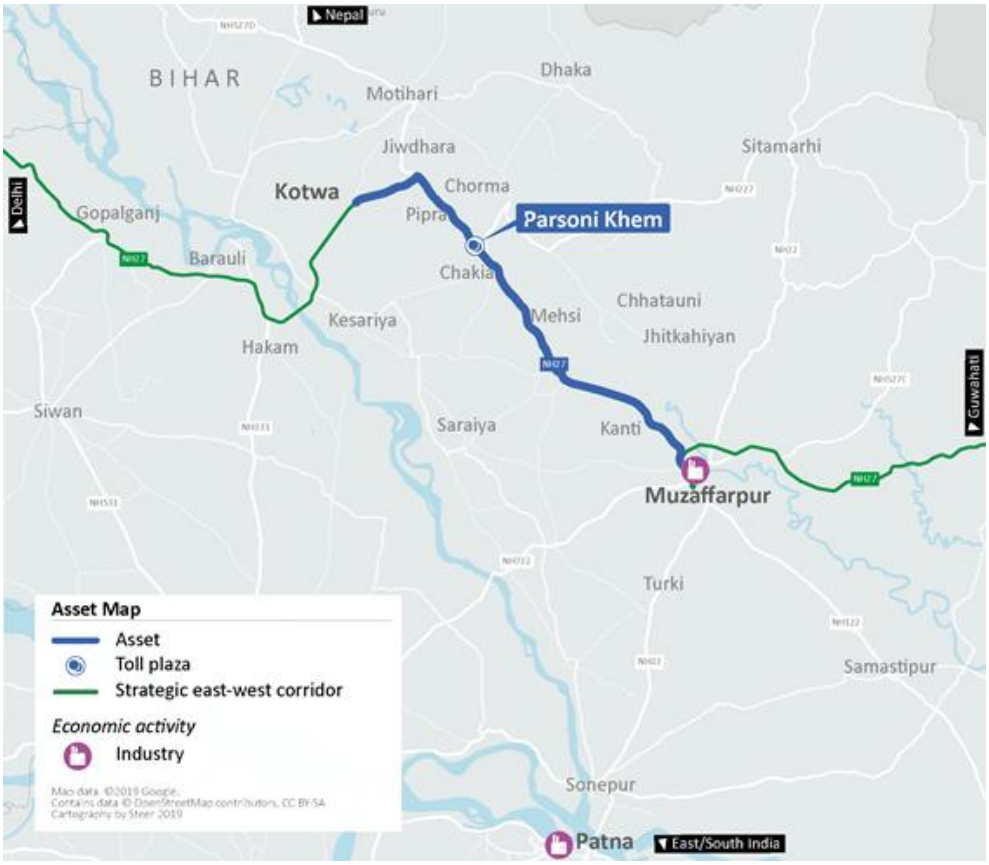
Source: Steer cartography using OpenStreetMap data

2.3 This Asset primarily caters to three different types of strategic movements:

- **Short distance** trips made by cars for local movement between places such as Muzaffarpur, Motihari, Chakia, Motipur and other local destinations mostly for work related purpose.
- **Medium-distance** trips made by light and heavy goods vehicles covering places such as Patna in the southern part of the state and Raxaul near the India-Nepal border thereby catering to the heavy movement of trucks between the two countries for trade purpose.
- **Long-distance** trips made by heavy goods vehicles to provide the east-west connectivity between states such as Uttar Pradesh, Uttarakhand and Delhi, and West Bengal and North-eastern states. The Asset also caters to movement of trucks to countries such as Nepal, Bangladesh and Bhutan.

2.4 The Asset is an 80 km toll road which forms part of the NH 27 in Bihar. It is a four-lane road with one toll plaza, namely, Parsoni Khem (TP1) at Km 467.700 (closer to Kotwa). Figure 2.2 below provides a closer view of the Asset in the context of its immediate surroundings. The Asset lies between the East Champaran and Muzaffarpur districts with Motihari, Chakia, Madhuban, Motipur, Kanti and Muzaffarpur being some of the key settlements along the Asset stretch. It is also located near other traffic generators such as Bettiah, Gopalganj, Patna and Raxual.

Figure 2.2: Asset Context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.5 The toll plaza on the Asset has been operational since December 2012 and the client took over the operations in October 2020. There are still 26 years left from April 2025 in the concession period which ends in FY51. Table 2.1 below presents a summary of the Asset.

Table 2.1: Summary of Concession

Particulars	Details
State	Bihar
Highway and lane configuration	NH 27, four lane
Toll plazas	TP1: Parsoni Khem
Length (km) as per concession agreement, applicable	TP1: 80 km
Commencement of operations	TP1: December 2012
Operated by Client since	October 2020
Concession period	30 years
Last year of concession	FY51

Source: Client data

Figure 2.3 below shows a typical cross-section of the Asset and its toll plazas.

Figure 2.3: Typical cross-sections and toll plazas on the Asset

Source: Steer site visit

Table 2.2: Single toll rates on the Asset (INR), applicable April 2025

Type of Vehicle	Single Journey Fee
	TP1 Parsoni Khem
CJV	130
LCV	210
Bus/Truck	440
3A	480
HCM/EME/MAV	690
OSV	840

Source: NHAI Revision of User Fee Rate w.e.f 01 Apr'25

2.6 Apart from single tickets, the typical NHAI ticket categories like return, monthly, local personal and local commercial passes are also available on the Asset.

Key economic activities

2.7 Bihar's economic progress hinges on agriculture, which serves as its fundamental pillar. This sector employs a significant 77% of the workforce and contributes approximately 24.84% to the State's Domestic Product. An estimated 77% of Bihar's population is engaged in agricultural production, a figure considerably higher than the national average. In 2011-12, agriculture, including forestry and fishing, accounted for nearly 24.84% of the state's GDP[1].

2.8 Muzaffarpur situated on one end of the Asset is considered the commercial hub of north Bihar. It is majorly an agriculture and food processing led region with rice as the main crop grown followed by maize. It is also famous for its Lichi and Mangoes which are supplied all over the country. Some of the key large-scale industries in the region includes a thermal power plant in Kanti and Indian Drug Pharmaceutical Limited long with other medium to small scale industries producing biscuits, cloths, flours etc. There is also a food park in Muzaffarpur along with several chemical factories[2].

2.9 In 2025, Bihar Chief Minister Shri. Nitish Kumar laid the foundation stone for development projects worth ₹574.16 crore in Muzaffarpur. These include a Railway Over Bridge (ROB)-cum-approach road between Ramdayalu Nagar and Muzaffarpur railway station (₹167.68 crore), a road from Muzaffarpur-Pusa Road to Chandwara bridge approach (₹120.93 crore) and widening and strengthening of roads such as Chandni Chowk to Bakhri (₹89.77 crore). The initiative also included social welfare measures like increasing pension amounts and incentives for ASHA workers, and support for self-help groups under the Jeevika program.[3]

2.10 In addition to this, In May 2025, the Bihar State Investment Promotion Board approved 18 new industrial units in Muzaffarpur under the Bihar Industrial Policy 2025. These units, located in Bela and Motipur BIADA zones, span sectors such as bakery and food

[1] **Agriculture Department**

[2] As verified during Steer's site visit in 2025

[3] **Muzaffarpur ROB**

processing, plastic bottle manufacturing, organic food products, furniture production, and amusement parks. The projects are expected to generate approximately 10,000 jobs and provide market access to local farmers, especially those engaged in organic agriculture.[4]

2.11 East Champaran district located on the other end of the Asset is largely an agricultural area with presence of small-scale industries like fisheries industry, agro-based industry, and the pearl industry at Mehsi located about 20 km away from the toll plaza. The town of Raxaul, situated about 60 km from Kotwa is India's gateway to Nepal as it's the only point in India which is connected to Nepal through railways. In April 2023, Muzaffarpur got state's second ethanol plant at Motipur in the Muzaffarpur district with a daily production capacity of 110 kl from Maize/Rice.[5]

2.12 Gas Supply is one of the key economic activities of Bihar where the state is witnessing with increased construction of gas and oil infrastructure. In April 2023[6], the remaining portion of Baruni Guwahati Natural Gas Pipeline commissioned by GAIL got completed which connects to six districts of Bihar and further connecting to Assam in north-east. The project was under Pradhan Mantri Urja Ganga (PMUG) with about 729km. With the start of supply the north-eastern states will now be connected to national grid meeting the fuel demand in the region.

2.13 With increasing focus of the government as of 2024 the state with announced with several infrastructure investment which in-turn create positive impact on the traffic performance with increasing demand. In May 2024[7,] 109km Indian Oil Corporation (IOC) LPG pipeline between Muzaffarnagar- Motihari for the benefit of providing cleaner fuel access in the state and also to bordering countries like Nepal. For the same the construction of IOC bottling plant and storage terminal is announced at Motihari. The pipeline would serve 8 districts of North Bihar i.e. East Champaran, West Champaran, Gopalganj, Siwan, Muzaffarpur, Sheohar, Sitamarhi and Madhubani.

2.14 Also to cater the demand of petrol and kerosene in Nepal[89], the Motihari pipeline is announced by Indian Oil Corporation and Nepal Oil Corporation to get extended to Amlekhganj depot which is at Bihar- Nepal border. This is South Asia's first cross border petroleum project pipeline. The infrastructure construction of this ongoing is nearly completed and expected to be commissioned in next few months with its supply to Nepal.

2.15 In 2024 it was announced that the prime minister of India, Shri. Narendra Modi is set to launch initiatives worth ₹4,027 crore in the petroleum and natural sector. This project

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[4] **Industrial revolution in Muzaffarpur**

[5] **Nitish Kumar opens Bihar's 2nd ethanol unit at Motipur in Muzaffarpur | Patna News - Times of India (indiatimes.com)**

[6] **Bihar portion of the Barauni-Guwahati Natural Gas Pipeline Project completed - CGDIndia**

[7] **PM to inaugurate Muzaffarpur - Motihari LPG pipeline (indianchemicalnews.com)**

[8] **Construction of Motihari-Amlekhganj petroleum pipeline reaches final stage - myRepublica - The New York Times Partner, Latest news of Nepal in English, Latest News Articles (nagariknetwork.com)**

[9] **Motihari-Amlekhgunj Pipeline - Drishti IAS**

includes setting up a City Gas Distribution (CGD) network across five districts in Bihar — Darbhanga, Madhubani, Supaul, Sitamarhi, and Sheohar worth ₹3,638 crores by Bharat petroleum corporation limited (BPCL). This initiative aims at expanding the cities piped natural gas supplies to households and factories alike. In addition, ₹389 crore Bitumen Manufacturing Unit will be set up at Indian Oil's Barauni Refinery to reduce reliance on imported bitumen and meet its rising demand caused by infrastructure developments such as the Bharatmala Pariyojna[10].

Alternate Routes

2.16 SH74 acts as an alternate connection between Muzaffarpur and NH27. SH74 is state highway with towns and villages on-route. Providing an attractive alternate option in terms of shorter distance and improved speeds. Vehicles travelling from UP and west towards Northeastern parts of the country such as Siliguri, Assam, Guwahati, etc. may use this alternate route to save time and toll, which they would have to otherwise pay if the use the Asset. In order the use this route, vehicles travelling from UP and east towards Darbhanga and west may enter the alternate route from Rampur Khajuria and travel down, parallel to the Asset where they make the decision at Kesariya to exit from Chakia or exit from Motipur by travelling from Sahebganj.

2.17 As a part of Bharatmala Pariyaojna, 568 km long greenfield Gorakhpur Siliguri Expressway has been approved in 2025[11]. The expressway besides reducing travel time to six hours will boost the inter-state tourism and industrialisation between Uttar Pradesh, Bihar, and West Bengal. The expressway will pass through Gorakhpur in Uttar Pradesh, Gopalganj, Champaran, Kotwa and Muzaffarpur in Bihar and Siliguri in West Bengal. Since the alignment of the expressway runs parallel to the Asset, we believe once operational, trips moving from Uttar Pradesh, Bihar towards West Bengal/Northeast will have an alternate option to use the expressway and impact the traffic moving on the Asset.

2.18 The exact share of such traffic assumed to shift due to alternate routes is presented in detail in Chapter 6 of the report.

[10] **PM Modi Clean Fuel Initiatives: PM Modi to launch ₹4,027 cr clean fuel, infrastructure projects in Bihar, ET EnergyWorld**

[11] **Centre approves Gorakhpur-Siliguri 6-lane expressway | Patna News - The Times of India**

3 Traffic Description

Introduction

3.1 This chapter outlines the current traffic and revenues on the Asset, as well as Steer's analysis of origin-destination (OD) data as also traffic count data. This covers data which was collected as a part of this study and data that was provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, and the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year Monthly Average Daily Traffic (MADT) is established. This data is typically provided by the Client and independently analysed and validated by us using Traffic Volume Count (TVC) information.

PCU Factor assumption for reporting

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines[12] for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in Table 3.1 below.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV/Mini LCV	1.0
LCV	1.5
Bus/2A/3A	3.0
MAV*	3.5
OSV	4.5

Source: Steer analysis, * Based on Rigid-Trailer split

[12] IRC 064: Guidelines for Capacity of Roads in Rural Areas (First Revision)

Historical trends

3.5 Table 3.2 and Table 3.3 below present traffic and tollable traffic data for the asset between October 2020 and September 2025. Long-term historical data is unavailable since tolling commenced in October 2020. Additionally, the available data for FY21 and FY22 was significantly impacted by COVID-19-related restrictions. Consequently, traffic volumes began to stabilize from FY23 onwards.

Table 3.2: Traffic Levels at TP1 Parsoni Khem

Vehicle Category	FY21*	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23 FY25
CJV	3,791	4,118	3,978	4,229	4,489	4,708	6.2%
LCV	629	483	491	468	386	388	(11.4%)
Bus	660	439	397	361	489	530	11.1%
2A	1,058	1,042	1,105	1,121	1,190	1,265	3.8%
3A	1,061	1,083	1,081	1,072	1,005	951	(3.6%)
MAV	2,428	2,349	2,346	2,394	2,468	2,423	2.6%
OSV	-	-	2	2	1	1	-
Total	**9,627**	**9,514**	**9,401**	**9,648**	**10,029**	**10,266**	**3.3%**
PCU	**21,570**	**20,801**	**20,731**	**21,031**	**21,812**	**22,058**	**2.6%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25

Table 3.3: Tollable Traffic Levels at TP1 Parsoni Khem

Vehicle Category	FY21*	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23 FY25
CJV	3,356	3,299	3,555	3,746	4,026	4,169	6.4%
LCV	623	476	485	460	374	372	(12.2%)
Bus	640	520	394	359	483	522	10.7%
2A	1,051	998	1,097	1,114	1,182	1,257	3.8%
3A	1,085	1,026	1,075	1,071	1,038	947	(1.7%)
MAV	2,495	2,292	2,342	2,392	2,428	2,419	1.8%
OSV	2	2	2	2	1	1	
Tollable AADT	**9,251**	**8,612**	**8,949**	**9,141**	**9,532**	**9,686**	**3.2%**
Tollable PCU	**21,183**	**19,022**	**20,191**	**20,447**	**21,636**	**21,809**	**2.5%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25; Tollable AADT excludes exemptions and violations

3.6 Between FY23 and FY25, total traffic grew at a rate of 2.6% CAGR indicating moderate traffic growth. In FY26YTD, growth of 1.6% was seen at a total PCU level which was driven by an increase in 2A, CJVs and Buses.

3.7 3As experienced a consistent decline since FY23, primarily due to an industry-wide shift of axle configurations towards MAVs. The reduction in 3A volume is a result of the

declining demand for 3A vehicles, which are being replaced by 2A and MAV's. MAVs offer higher tonnage capacity making them more cost-effective for transporters. While the increase in 2A volume reflects the growing preference for these vehicles due to favourable changes in the legal permissible loads for 2As and their suitability for e-commerce-related freight, particularly high-value, low-volume goods over medium to long distances. This is consistent with our discussion with various transporters and OEMs across the country who are favouring 2A and 5A vehicles for commodity movement due to better unit economics.

3.8 Furthermore, effective May 2024, minibuses previously tolled as LCVs have been reclassified under the bus category. This reclassification is based on a passenger count system, replacing the earlier gross vehicle weight-based classification. Travel patterns in FY25 and FY26YTD remain largely consistent.

3.9 As of FY25, nearly 46% of vehicles on the Asset are cars, which are predominantly used for local travel by commuters between Motihari, Bettiah, Muzaffarpur, Patna and other local destinations along the Asset for purposes such as work, education and medical.

3.10 Commercial vehicle on the Asset constitutes ~45% to the total traffic (2A, 3A and MAV) on the plaza as of FY25, owing to the strategic location of the Asset as a facilitator of east-west movement between northern and eastern parts of India. The Asset provides connectivity between industrial cities of Uttar Pradesh, Uttarakhand, Punjab, Haryana and West Bengal, Bihar and north-eastern states along with providing connectivity with Nepal border at Raxaul, Bihar.

3.11 Historically, as mentioned in paragraph 3.9 above, CJVs have the highest share of ~46% in FY25 and are followed by MAVs, which have a share of around 25% in traffic as of FY26YTD but contribute to approximately half of the revenue generated on the Asset.

3.12 The Asset has seen growth between FY23-25 at a CAGR of 2.6%. FY22 saw negative growth as compared to FY21 on account of the COVID 19 pandemic. FY24 and have exhibited subdued growth at 1.4%.

3.13 The Asset has experienced subdued growth in the goods vehicle category, due to several factors including reduced trade with Nepal due to ongoing economic and political changes in Nepal. Additionally, the near completion of the Motihari - Amlekhganj pipeline, connecting Bihar to Nepal, has resulted in a shift of petroleum and oil transportation from road to pipeline, contributing to a decline in goods traffic[13].

3.14 In FY25, overall traffic growth was further impacted during Q1 of FY25 due to nationwide general elections. Moreover, the broader economic slowdown in Bihar, particularly in the manufacturing and construction sectors, has also contributed to the decline in 2A, 3A and MAVs. The cancellation of multiple infrastructure projects by the Bihar government has further exacerbated the slowdown in traffic volumes[14].

[13] **Motihari-Amlekhganj Petroleum Pipeline Project: Preparations to bring petrol thru pipeline in three months**

[14] **Bihar govt. cancels tenders worth ₹3,600 crore floated during Mahagathbandhan regime**

Historical Revenue

3.15 Table 3.4 shows the revenue (in INR Crores) and AADC (in INR Lakhs) by each vehicle type at the toll plaza between FY21 to FY26YTD.

Table 3.4: Total Revenue (INR Crores) by vehicle type at TP1 Parsoni Khem, and AADC (average annual daily collection in lakhs)

FY	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY21*	5.4	1.5	3.3	5.6	6.4	21.7	0.0	**44.0**	**26**	-
FY22	10.4	2.4	6.0	12.1	13.7	45.8	0.0	**90.4**	**25**	**(3.8%)**
FY23	12.3	2.8	4.8	14.6	16.0	51.8	0.1	**102.2**	**28**	**12.0%**
FY24	13.9	2.8	4.6	15.7	16.7	55.6	0.1	**109.4**	**30**	**7.1%**
FY25	15.1	2.4	6.1	17.0	16.2	58.4	0.0	**115.3**	**32**	**5.7%**
FY26YTD	8.0	1.3	3.5	9.4	8.0	30.0	0.0	**60.0**	**33**	**4.6%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD is data for 06 months from Apr'25 to Sept'25.

3.16 MAVs are the highest revenue contributor on the Asset with approximately 51% share followed by 3As at approximately 15% in FY25. CJVs which have the highest share in traffic, contributing to approximately 13% in terms of revenue in FY25. The average daily revenue collected at the toll plaza has been approx. INR 31.2 lakhs in FY25 compared to approx. INR 29.9 lakhs in FY24. The Asset reported an AADC of ~INR 33 Lakhs in FY26YTD. The plaza observed a ~5% % in FY26YTD for AADC.

Toll Frequencies

3.1 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the client. The most common ticket categories observed on a typical National Highway are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these passes instead of evading toll.

3.2 The following are the types of tickets being sold at the plazas of the Asset.

Table 3.5: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows for a return journey within a day with a 50% discount on the return trip.
Monthly Pass	Discounted single entry ticket for users who undertake multiple trips within a month can buy the monthly pass.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza

Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.3 Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For some Assets, the Exemption and violations are at time reported together.

3.4 Generally, over the period the shares of single/return/monthly tickets tend to stabilise within 2-3 years of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns.

3.5 Further, FY21 was impacted due to the mandatory implementation of FASTag as a mode of payment, where users were now paying via an online payment system instead of cash payments at the toll plaza. Additionally, in FY22 traffic and travel patterns were impacted by the second wave of COVID-19 in Q1 and Q2. With FY21 and FY22 being impacted these external events, the segmentation began to stabilise from FY23 onwards and reached steady state starting FY24.

Introduction of Annual pass for CJVs

3.6 The National Highway Authority of India launched the “The FASTag Annual Pass” on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.7 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

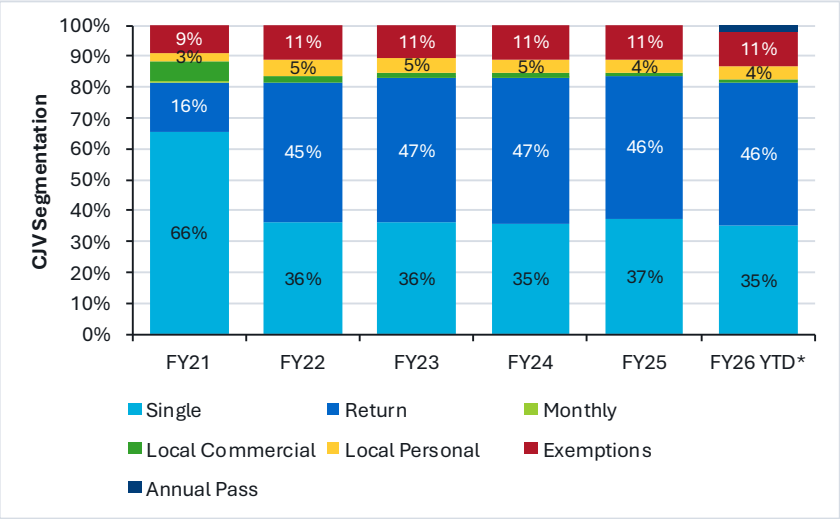
The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll roads

Share of traffic by payment type

3.8 Figure 3.1 and Figure 3.2 below show ticket segmentation for CJV and MAV categories, between FY21 to FY26YTD for the Asset.

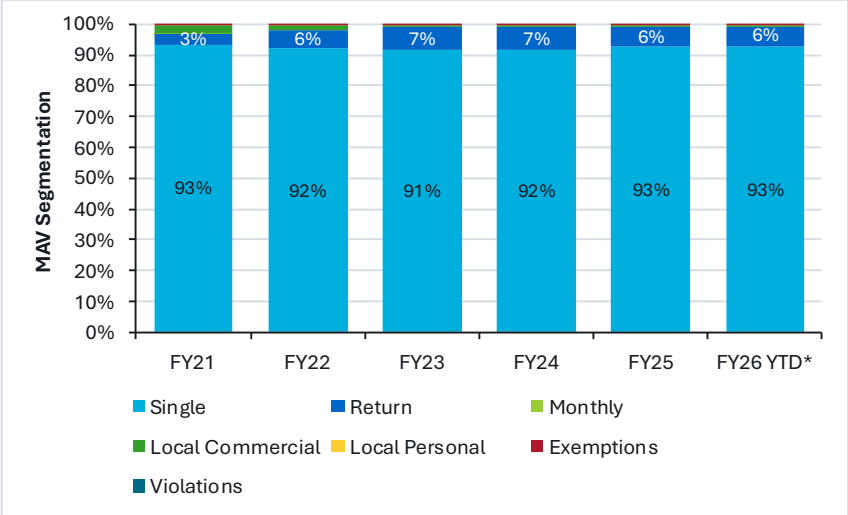
Figure 3.1: Ticket-segmentation for CJV at TP1



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26 YTD* considers 05 months of reported data Apr-Aug'25

3.9 As shown in Figure 3.1 above, ticket segmentation in FY26YTD is consistent with FY25 and FY24 trends, indicating a stabilisation in segmentation trends. In FY26YTD, about 35% of the CJVs paid for single journeys with the remainder ticket-share comprising of return tickets, local passes, and exemptions. Highest share of 47% return trips in CJV category can be attributed to CJVs doing short distance trips within 100kms between Motihari, Chakia, Madhuban, Motipur, Kanti and Muzaffarpur for employment, and educational purposes. Share of local personal and exemptions in FY26YTD is 4% and 11% consistent with trends in FY24.

Figure 3.2: Ticket-segmentation for MAV at TP1



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD includes 05 months of reported revenue Apr- Aug'25

3.10 In FY26YTD, MAV category has been observed to have high share of ~93% single tickets which is aligned to the observation of MAVs doing medium to long distance trips on the Asset between North- East states, Bangladesh, Nepal and West Bengal. As discussed and validated from the OD data. A slight increase in return tickets post-FY21 is visible due to

implementation of FASTag, allowing trucks to avail return journey discounts, if they return within 24 hrs.

3.11 Table 3.6 below depicts the FY26YTD segmentation for LCV, Bus, 2A, 3A and OSV category for the Parsoni Khem toll plaza.

Table 3.6: Ticket-segmentation for LCV, Bus, 2A and 3A Categories at TP1 Parsoni Khem

Ticket Category	LCV	Bus	2A	3A	OSV
Single	52%	32%	73%	87%	98%
Return	42%	63%	23%	9%	1%
Local commercial	2%	4%	3%	3%	-
Violation	-	-	-	-	-
Exemption	3%	2%	1%	0.1%	0.2%

Source: Steer analysis of Client data; FY26YTD includes 06 months Apr- Sept'25

3.12 The share of return in LCV/Bus is higher compared to 2 Axle trucks attributing to the fact that they make shorter distance local trips while 2A having higher average trip length has higher share of single trips. This has been discussed in detail in the subsequent sections.

Data Collection exercise

3.13 As mentioned previously, to validate and inform various inputs used in our earlier forecasting, we undertook OD data collection on the Asset in this study, comprising the surveys listed in the table below. While TVC surveys were commissioned by Steer by contracting a third party in the study of our earlier commission. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data is comprehensive; where collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.7: Data collection schedule

TP	3-day videography-based TVC			1-day OD survey			
	Start date	End date	Time (hrs)	Start date	Start time	End Date	End time
TP1 Parsoni Khem	23 Jan 2025	25 Jan 2025	0000-2359	23rd Jan 2025	0800 hours	24th Jan 2025	0800 hours
SH-74	23 Jan 2025	25 Jan 2025	0000-2359	24th Jan 2025	0800 hours	24th Jan 2025	0800 hours

Source: Steer analysis

3.14 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, to fully understand the impact of this weekly fluctuation on the Asset, we collected three-day counts at the toll plaza and the alternate route mentioned in the table above.

Key findings of the TVC data analysis

WADT estimates

3.15 Taking an average of the three-day TVC counts (23rd Jan – 25th Jan 2025, 0000-2359), we obtained the following average daily traffic (ADT). This ADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Table 3.8: ADT from TVC counts

Location	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
Parsoni Khem	3,278	800	777	537	951	1,078	2,611	3	**10,035**
SH74 (Alternate Route)	1,209	516	255	131	128	86	704	0	**3,029**

Source: Steer analysis of TVC data

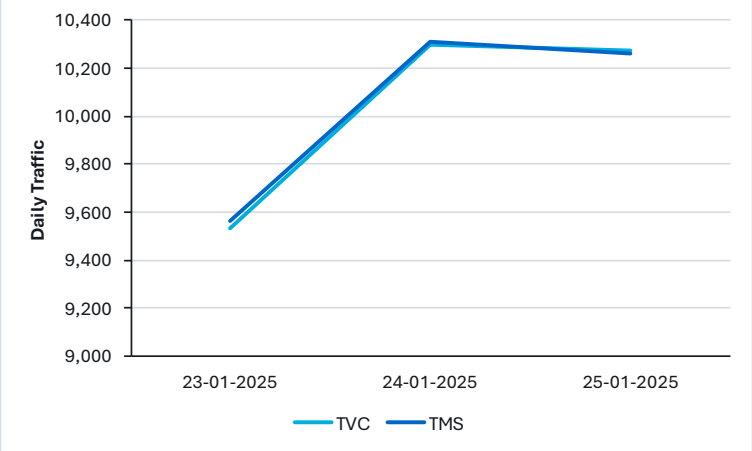
TVC v/s TMS analysis

3.16 As we use the TMS data to estimate the base year MADT, we have used our TVC data to validate the TMS data for those days, as provided by the Client.

3.17 Figure 3.3 below show the comparison between the daily traffic observed by TVC and TMS for the two toll plazas.

Parsoni Khem

Figure 3.3: Comparison between TVC and TMS total daily traffic data on TP1 Parsoni Khem

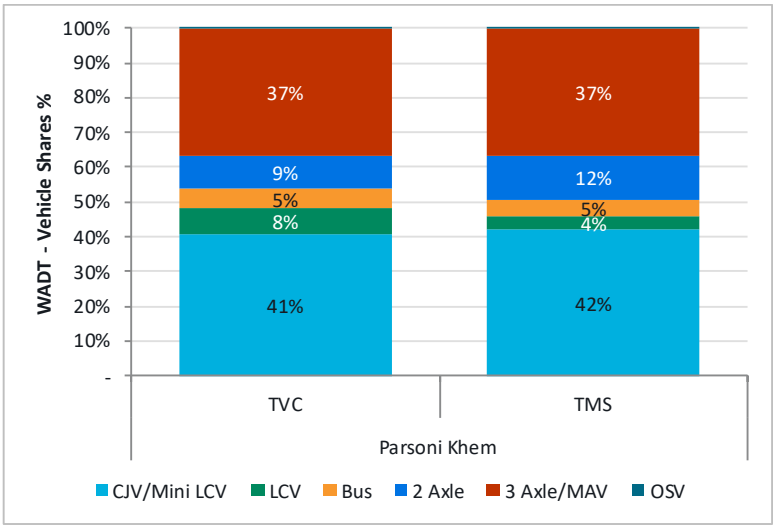


Source: Steer analysis of TVC and Client TMS data

3.18 Figure 3.3 shows that the total WADT count as provided by TMS data is 0.1% higher than those reported by the TVC data. This difference is mainly on account of the difference in the data for LCVs Buses and 2A categories, which could be attributed to common misclassification of vehicle categories due to their similar look and size.

3.19 Figure 3.4 compares the shares of vehicle types as observed through the TVC and TMS data. As can be seen, whilst the share of LCVs is higher in TVC data, share of mini-LCVs and CJVs is lower, and 2 axle trucks are lower too by approx. 2%. These differences can be attributed to misclassification of vehicle categories. The overall difference in TVC-TMS data is within 0.5%, which indicates that TMS data to be within our confidence zone.

Figure 3.4: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.20 Considering the smaller variation between the TVC and TMS data for the largest revenue generator 3A+MAVs, and an overall match in the traffic volumes, TVC-TMS analysis gives us the confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

Key findings of origin-destination analysis

Overview

3.21 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. We have analysed the regional drivers of demand based on the following analyses:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.22 While zonal analysis and the list of top OD pairs help to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts

3.23 OD surveys were conducted at two locations along the alternate route SH74—Sahebganj and Benipur—to assess the volume and nature of traffic using this corridor. The objective

was to identify the extent to which traffic that would otherwise use the Asset is instead traversing the toll-free SH74, which also offers shorter travel time.

Sample rates

3.24 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples by the TVC count observed on the same date for each vehicle category at the toll plaza. Table 3.9 below presents the sample rates for goods and passenger category at the toll plaza. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3.9: sample rates for OD data

Vehicle type	TP1 Parsoni Khem
Passenger (CJV+Bus)	57%
Goods (LCV+2A+3A+MAV)	76%

Source: Steer analysis of OD data

Zone Categories

3.25 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in Table 3.10 below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Asset being studied.

Table 3.10: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of State	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Delhi	Delhi NCR
North India	Uttarakhand, Haryana, Punjab, Jammu and Kashmir
Central India	Madhya Pradesh, Chhattisgarh
West India	Gujarat and Maharashtra
South India	Tamil Nadu, Karnataka, Kerala, Andhra Pradesh
East & Northeast India	West Bengal, Orissa, Jharkhand and Northeast Indian states
Outside India	Nepal, Bhutan, and Bangladesh

Source: Steer analysis

Zonal influence

TP1 Parsoni Khem

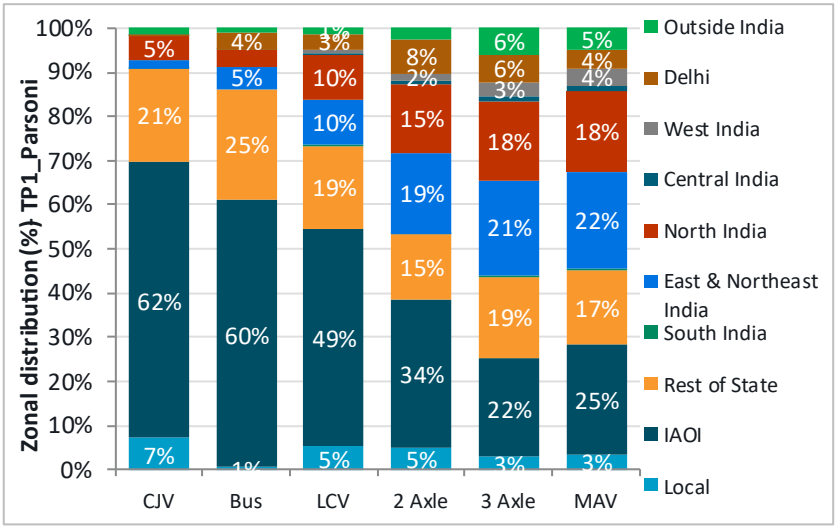
3.26 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence at each toll plaza of each Asset,

based on zonal aggregation listed in the previous sub-section.[15] it should be noted that zonal influence is analysed on trips ends and not overall trips. E.g., 31% local share in Cars as shown in Figure 3.5 below means 31% of the Cars using the Asset have either originated or destined locally i.e within 20kms of the Asset radius.

3.27 As can be seen from the figure below, local and IAOI make more than 25% trip share across all vehicle categories wherein zones such as Motiput, Madhuban, Kotwa etc. have the greatest influence across all vehicle categories. The influence of local and IAOI is 55% in LCVs as compared to ~39% for 2 Axles and 25% for 3 Axles, signifying that LCVs generally cater to local demand and travel shorter trip lengths as compared to 2 Axles and 3 Axles. Local, IAOI and Rest of the State trips are observed in the highest percentage in the CJV category – accounting for 91% of all trips. This analysis is further supported by the result of the top 10 OD pairs as given in the appendices which shows that the majority of the trips originate and end in local and IAOI areas for passenger traffic whereas for the goods traffic, places such as Nepal, Assam, West Bengal and Uttar Pradesh feature at the top of the OD pair list.

3.28 Outside Bihar, it is seen that places in North India such as Delhi, Kanpur, Gorakhpur, and parts of Rajasthan, and those in East & Northeast India like Siliguri, Guwahati, Kolkata and Assam have a significant influence of around 40% on the heavy goods traffic thereby highlighting that the Asset plays an integral part in catering to the long-distance movement of traffic. There is also an influence of 6% and 5% for 3A and MAVs respectively from areas outside the country such as Nepal and Bangladesh signifying the importance of the Asset in international trade as well.

Figure 3.5: Zonal influence at TP1 Parsoni Khem

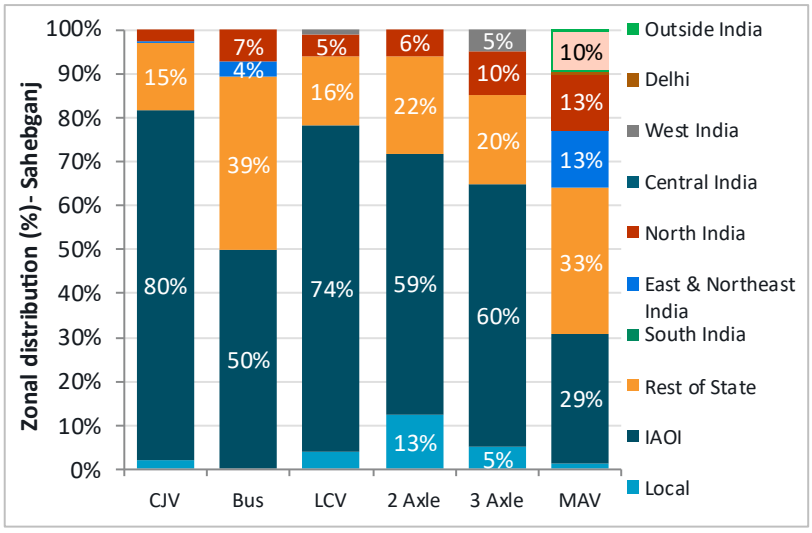


Source: Steer analysis of OD data

[15] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad would be 50% since one end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

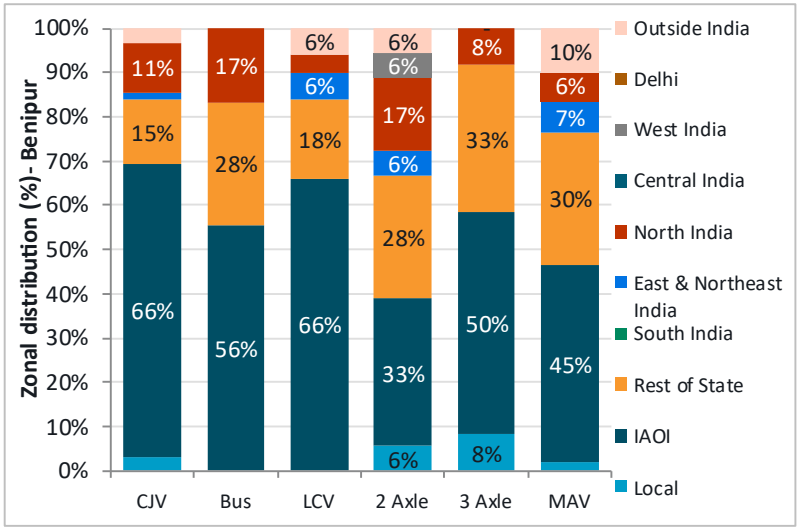
SH74 (Alternate Route)

Figure 3.6: Zonal influence at Sahebganj (Open OD)



Source: Steer analysis of OD data

Figure 3.7: Zonal influence at Benipur (Open OD)



Source: Steer analysis of OD data

3.29 As can be observed in Figure 3.6 and Figure 3.7 the zonal distribution analysis reveals that both Sahebganj and Benipur are dominated by IAOI zones, especially in commercial vehicle categories like LCVs, 3-Axles and MAVs. However, Sahebganj shows a stronger concentration of IAOI traffic, while Benipur sees a more diverse mix, including higher shares from North India and Delhi. Local traffic is minimal at both locations. Both plazas register notable movement from the "Rest of State" and around 10% of MAV traffic from Outside India, indicating cross-border trade with Nepal for POL goods.

3.30 Further analysis of the open OD data reveals that for 3-axle vehicles and MAVs, top origins and destinations on Sahebganj include Patna, parts of East Champaran, West Bengal, Nepal, as well as cities in Uttar Pradesh and Jharkhand. Meanwhile, Benipur sees traffic primarily between East Champaran, Patna, Jharkhand, and Nepal. This travel pattern

suggests that State Highway 74 (SH74) draws a significant portion of traffic from our Asset due to the absence of toll plazas and the superior road quality.

Internal External analysis

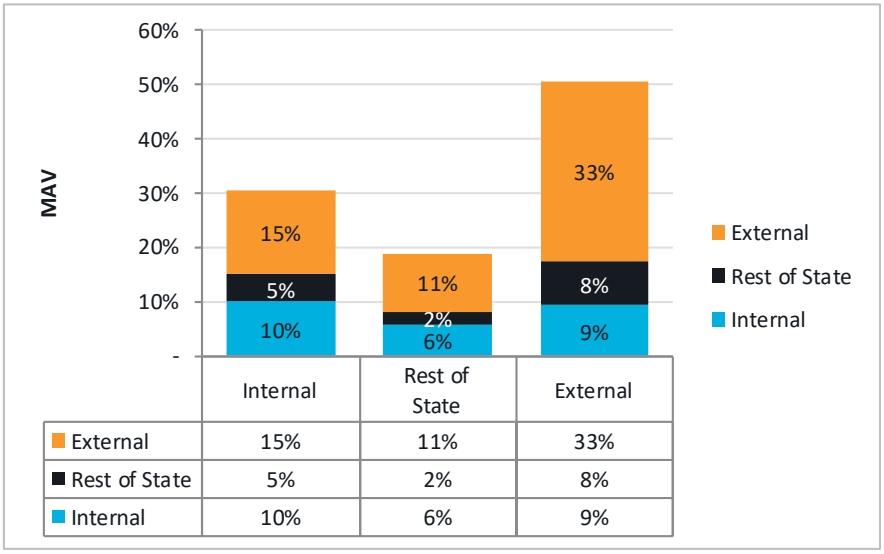
TP1 Parsoni Khem

3.31 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). Rest of State here represents areas within the state which are neither local nor IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e. lying on the Asset, while 'External' zones are areas lying outside the state.

3.32 Figure 3.8 shows the distribution of trips based for MAV. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation.

3.33 The long-distance nature of the MAV traffic is reflected in this analysis as around 33% of the trips for MAV are originating and ending in areas lying outside the state. Overall, 51% of MAVs plying on the Asset have at least one of the trips ends outside state.

Figure 3.8: Internal-external distribution at TP1 Parsoni Khem

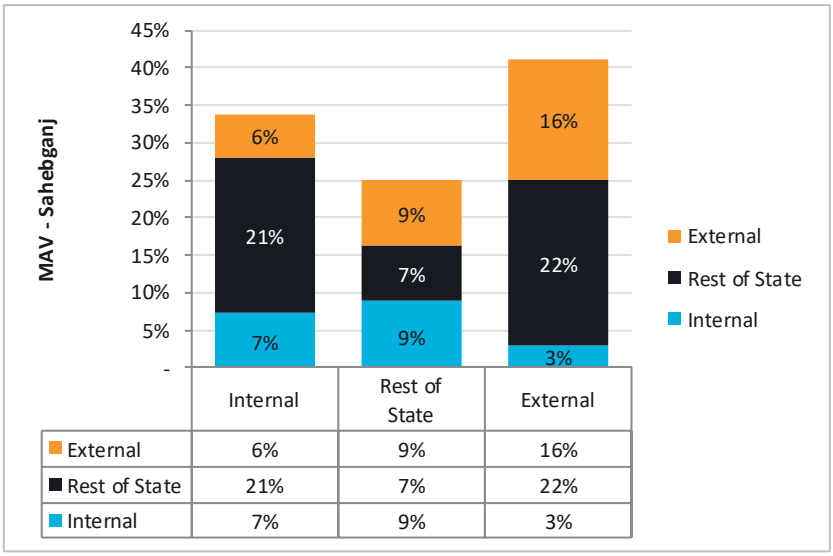


	Internal	Rest of State	External
External	15%	11%	33%
Rest of State	5%	2%	8%
Internal	10%	6%	9%

Source: Steer analysis of OD data

SH74 (Alternate Route)

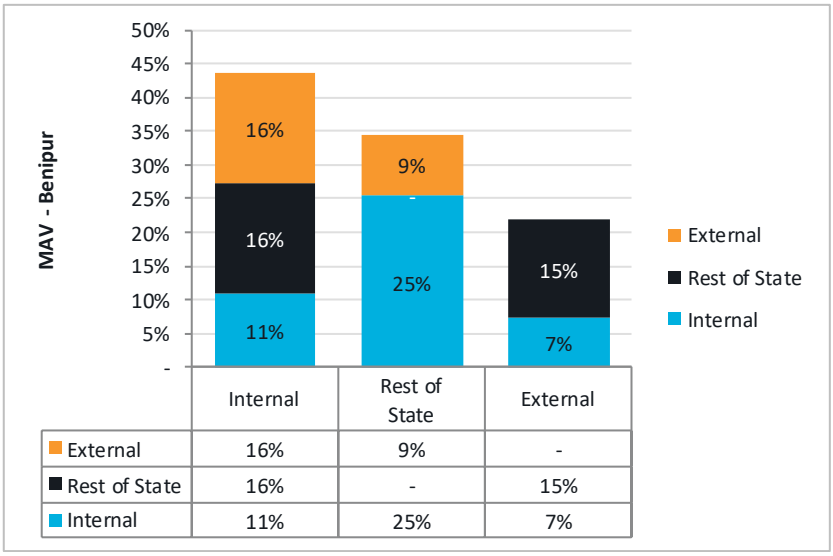
Figure 3.9: Internal-external distribution at Sahebganj



	Internal	Rest of State	External
External	6%	9%	16%
Rest of State	21%	7%	22%
Internal	7%	9%	3%

Source: Steer analysis of OD data

Figure 3.10: Internal-external distribution at Benipur



	Internal	Rest of State	External
External	16%	9%	-
Rest of State	16%	-	15%
Internal	11%	25%	7%

Source: Steer analysis of OD data

3.34 Figure 3.9 and Figure 3.10 illustrate the distribution of MAV trips from alternate OD sites. This analysis highlights the long-distance nature of MAV traffic, with approximately 41% of trips originating or ending externally at Sahebganj. Conversely, Benipur plaza experiences more internal and intra-state trips, suggesting shorter trip lengths.

Commodity distribution

3.35 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the table below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3.11: Commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, ghoat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood, Cork & Wood Products, Furniture	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, Household items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

Source: Steer Analysis

TP1 Parsoni Khem

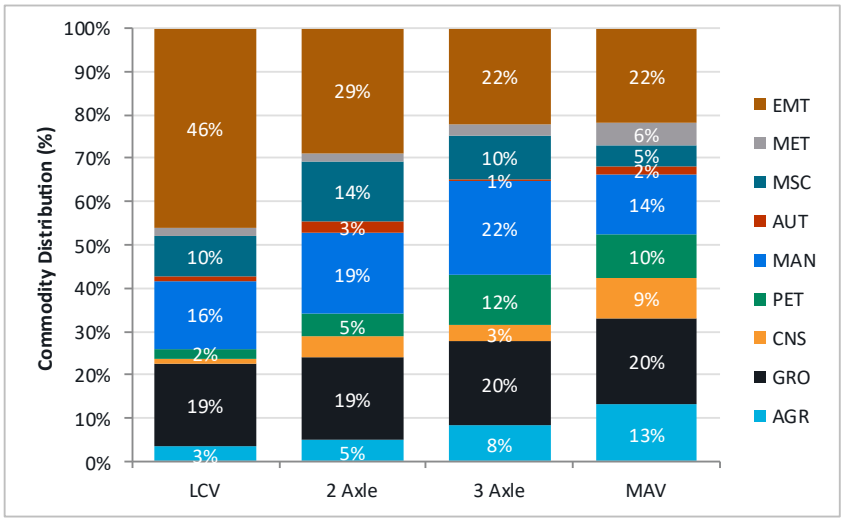
3.36 Figure 3.11 presents the commodity distribution for goods vehicles at the toll plaza, at a total level.

3.37 Agricultural and grocery items such as rice, wheat, maize, and sugarcane are the top commodity category carried by both 3A and MAV traffic with combined share of 28% and 33% respectively. Both the ends of the Asset being heavy agri -based with the dominance of commodities such as rice and sugar. This was followed by 10% of the MAV's and 12%

of the 3A vehicles transporting petroleum products like oil, gas, and petrol. This is due to the presence of the Barauni refinery near the Asset. Manufacturing items (such as clothes, paper and rubber) too are observed in notable quantity in both 3A's and MAVs, account for approx. 22% and 14% vehicle split respectively.

3.38 The light goods vehicle shows a similar mix of commodities with agricultural and grocery items having ~22% share, followed by manufacturing and miscellaneous goods. Many industries are in Muzaffarpur contribute to the high share of manufacturing and finished commodities carried on the Asset.

Figure 3.11: Commodity distribution at TP1 Parsoni Khem (Total)



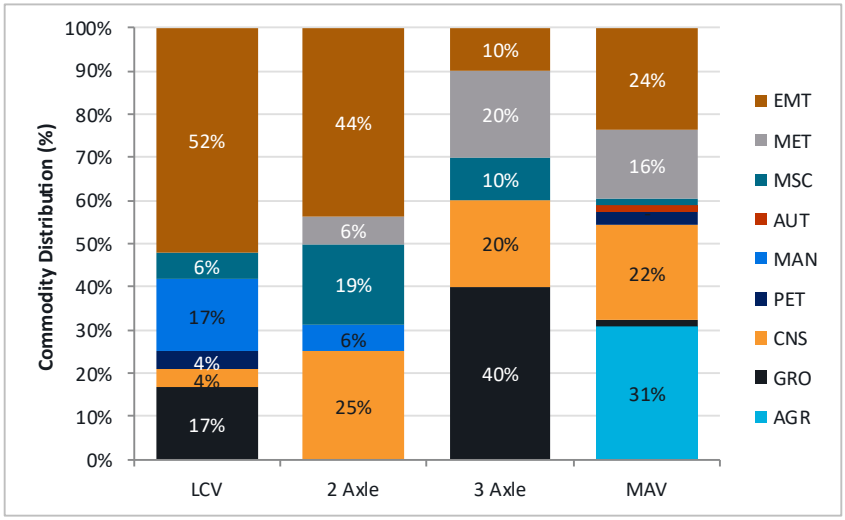
Source: Steer analysis of OD data

SH74 (Alternate Route)

3.39 The distribution of commodities transported by 3-Axle and MAV vehicles at the alternate route points—Sahebganj and Benipur—reveals distinct trends. At Sahebganj, 3-Axle trucks predominantly carry Grocery items (40%), followed by Construction materials (20%), Metals (20%) and Miscellaneous goods (10%). In contrast, MAVs at the same location exhibit a more diverse cargo mix, with Agricultural products (31%), Construction materials (22%) and Metals (16%) making up the bulk of their loads.

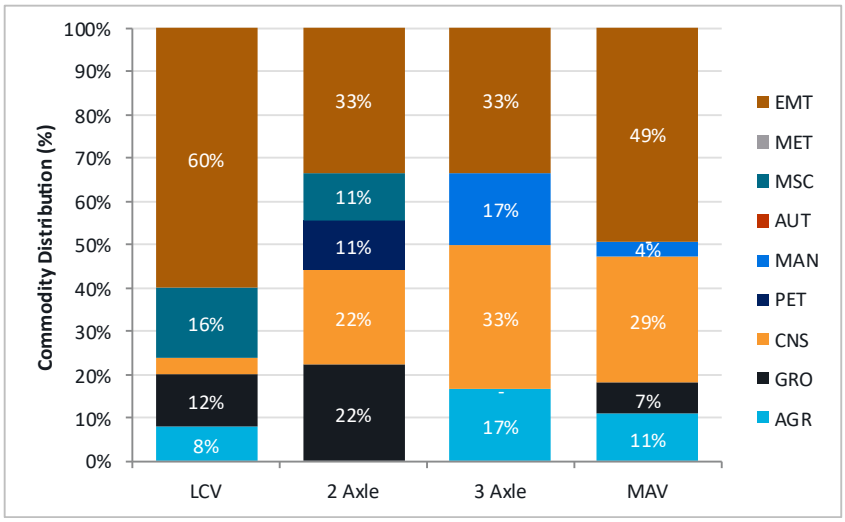
3.40 Benipur, on the other hand, shows a stronger emphasis on Construction materials, which account for the largest share for both 3-Axles (33%) and MAVs (29%). 3-Axles also carry significant proportions of Manufactured goods (17%) and Agricultural products (17%).

Figure 3.12: Commodity distribution at Sahebganj (Total)



Source: Steer analysis of OD data

Figure 3.13: Commodity distribution at Benipur (Total)



Source: Steer analysis of OD data

Trip length analysis

3.41 Trip-length distribution provides the distance-based profile of various vehicle types. This aids in validating the assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For the ease of interpretation, we have categorised distances into 5 groups:

- Local (0-100km)
- Short distance (100-300 km)
- Medium-distance (300-500 km)
- Long-distance (500-1000 km) and
- Very-long-distance (+1,000 km)

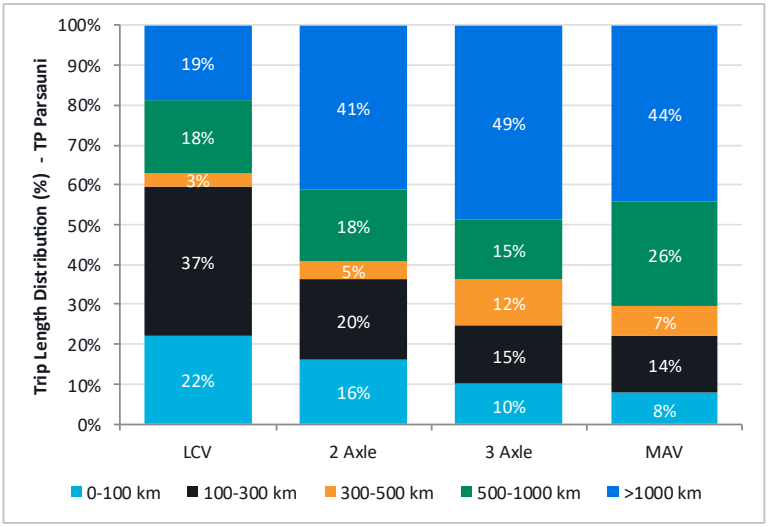
3.42 The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs[16].

TP1 Parsoni Khem

3.43 Supporting the observations made in zonal & internal-external analysis in the previous sections, Figure 3.14 below highlights that about 59% of LCVs travel shorter distances up to 300 kms, contributing to within state movements on the Asset. In case of LCVs around 37% of category travel less than 300 but more than 100 kms catering to the local demand carrying agricultural and groceries. It can be seen that as the number of axles increase, the distances travelled also increase.

3.44 As established by the internal-external analysis and the zonal distribution analysis above, the Asset caters to the long-distance movement for a significant proportion of commercial traffic evidenced by 64% of 3A trips and 70% of MAV trips travelling north of 500kms. These trips primarily move from North India (Delhi NCR, Punjab, Haryana, Rajasthan and UP) towards Bihar, West Bengal and north-eastern states.

Figure 3.14: Trip length distribution TP1 Parsoni Khem



Source: Steer analysis of OD data

Table 3.12: Average trip length (in km) at TP1 Parsoni Khem

	LCV	2 Axle	3 Axle	MAV
Average trip length Km	530	888	1,051	1,031

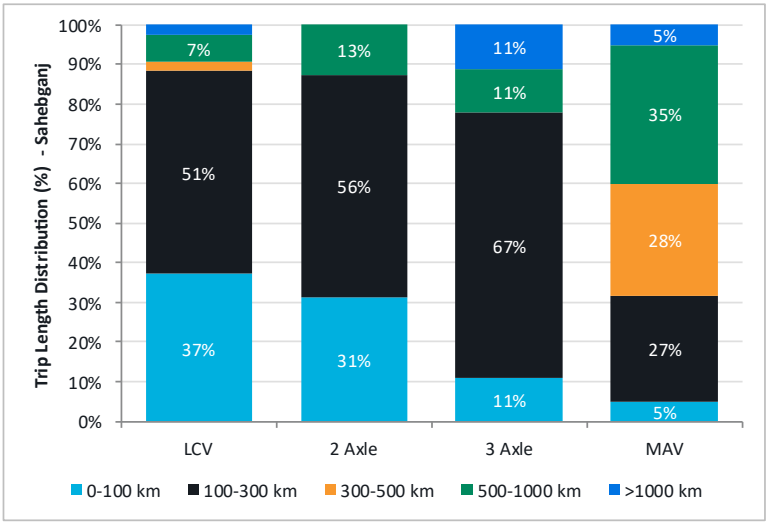
Source: Steer Analysis of OD data

[16] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc

SH74 (Alternate Route)

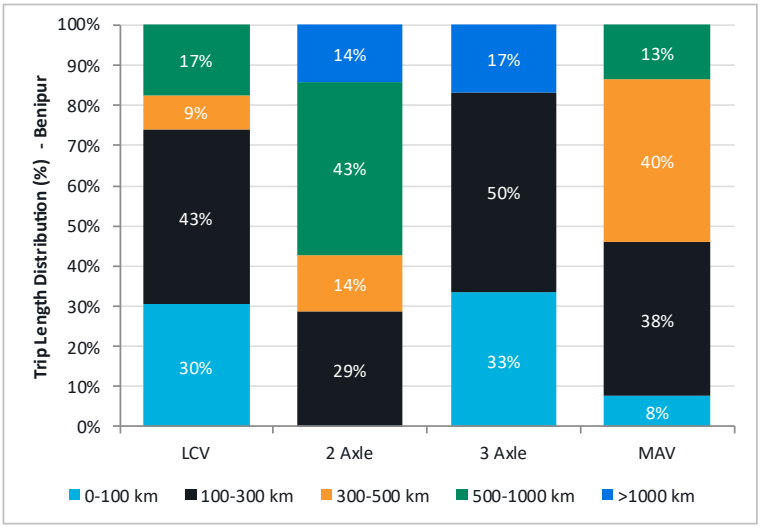
3.45 The trip length distribution shows that Sahebganj mainly serves short to medium hauls for 3-Axles (67% in 100–300 km) and a balanced mix for MAVs, with 35% in 500–1000 km and 28% in 300–500 km ranges. In contrast, Benipur supports longer-distance travel, with MAVs at Benipur have a strong long-haul profile, with 40% in 300–500 km and 8% above 1000 km, indicating more through and extended regional movement. These validate the alternate routes usage for long distance traffic movement for commercial vehicles.

Figure 3.15: Trip length distribution at Sahebganj



Source: Steer analysis of OD data

Figure 3.16: Trip length distribution at Benipur



Source: Steer analysis of OD data

Table 3.13: Average trip length (in km) at Sahebganj

	LCV	2 Axle	3 Axle	MAV
Average trip length Km	210	198	397	447

Source: Steer Analysis of OD data

Table 3.14: Average trip length (in km) at Benipur

	LCV	2 Axle	3 Axle	MAV
Average trip length Km	208	522	285	265

Source: Steer Analysis of OD data

Conclusions

3.46 In summary, as per the traffic volume data in FY26YTD, CJVs contribute to the highest share in traffic around 45% followed by MAVs with approx. 25% share and 3As with an average of approx. 11% share, rest of the volumes are contributed by LCV, Bus and 2As. Even though CJVs make up for the highest share in traffic, MAVs are the biggest revenue contributor.

3.47 The TVC-TMS analysis highlights minor variation between the two datasets wherein at the total level, TVC is approximately 0.1% lower than the TMS data wherein the differences in LCV, CJV/MLCVs and 2A's contribute to the delta, which could be due to mis-categorisation of Mini LCV and LCV with Mini LCV's getting counted into CJV's. However, the difference is minor for the larger revenue generating categories (3A, MAV, and OSV combined) at (0.5%).

3.48 The zonal influence analysis examines the contribution of different zones to vehicle trips. Local and IAOI zones account for over 25% of trips across all vehicle categories, with Motiput, Madhuban, and Kotwa having the highest influence. Among commercial vehicles, LCVs show the strongest local influence at 55%, compared to ~39% for 2 Axles and 25% for 3 Axles. CJV traffic has the highest local and IAOI share at 91%.

3.49 For heavy goods vehicles (3As and MAVs), zones within Bihar account for about 44-45% of all trips on the Asset. Apart from these trips, it is observed that zones in Northern India (including Gorakhpur, Delhi NCR, parts of Rajasthan etc) and Northeast India (Assam, Guwahati and Siliguri) have significant influence, establishing the Asset as a key corridor facilitating east-west movements between north and northeast parts of the country.

3.50 Internal external analysis reflects the long-distance nature of traffic on the Asset with approximately 33% of all trips either originating and ending in zones outside Bihar. Overall, 51% of MAVs plying on the Asset have at least one of the trips ends outside state.

3.51 Commodity distribution reveals that agricultural and grocery items (rice, wheat, maize, sugarcane) dominate 3A and MAV traffic, with a 28% and 33% share, respectively, due to strong agricultural activity at both ends of the Asset. Petroleum products (oil, gas, petrol) account for 10% of MAV and 12% of 3A traffic, influenced by the nearby Barauni refinery. Manufacturing goods (clothes, paper, rubber) also have a notable presence, making up 22% of 3A and 14% of MAV traffic. Light goods vehicles (LGVs) follow a similar pattern, with agricultural and grocery items (~22%) leading, followed by manufacturing and miscellaneous goods, supported by Muzaffarpur's industrial base.

3.52 Our analysis indicates that the alternate route SH74 carries commercial traffic moving between Uttar Pradesh, Patna, Nepal, Jharkhand, and other parts of eastern India. The route competes directly with the Asset due to the absence of toll plazas and the superior road quality of the alternate.

3.53 Analysing the vehicle share on the Asset and understanding the OD analysis, CJVs make up for the highest share of traffic and significantly contributed to the local traffic share, however the largest contribution to the revenue share is made by MAV and 3A traffic, wherein agriculture and groceries are the top commodity category transported on the Asset by both the heavy and light goods vehicles.

4 Socio economic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the roads are in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions in the region where the Asset is located and the country. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Asset.

4.2 In turn, the change in the relative competitive position of the Asset (and thus of the traffic capture they can achieve) derives from how the relative offer for the roads changes, i.e. the service offered, and the tolls charged on the project roads, in comparison to that on competing roads; and whether any competing road facilities are planned.

4.3 In this chapter, we have assessed the trends of the above growth drivers, as indicators of the socio-economic conditions in the regions surrounding the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in the Bihar state, where the Asset is located.

National level

4.5 The total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth.

State level

4.6 The Table 4.2 shows the evolution of population in Bihar state compared to that of the country. Overall, as can be seen, the trend observed at the country level is also noticeable at the state level, namely, a move towards urban agglomeration with the growth in rural population being slower than that of urban population. Further, the population of Bihar has grown at a higher rate than the country average between 2012-2024.

Table 4.2: Population Growth in India (2012 – 2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Bihar	105.1	127.9	1.7%
India	1,210	1,395	1.2%

Source: Ministry of Statistics and Program Implementation estimates

4.7 Due to the complexities of the patterns in which urbanisation takes place, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide a socio-economic context of the trend in the region in which the Asset is located.

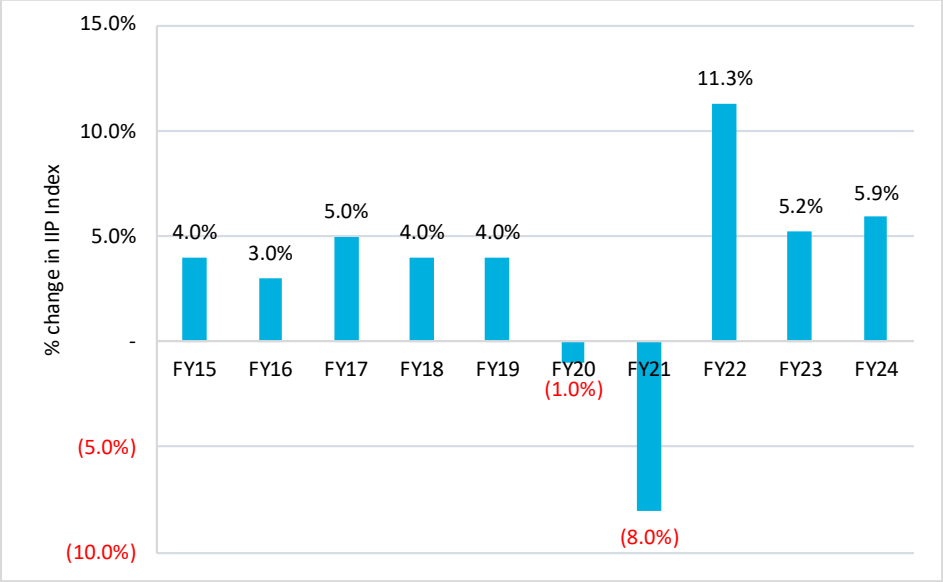
Economic Indicators

Industrial Production

4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors in which IIP constituents fall.

4.9 As can be seen in Figure 4.1 below, at an annual level, the IIP was growing on an average of 4% between FY15-19, before being hit by liquidity crisis and overall economic slowdown in FY20. Post that, the IIP shrank by over 8% in FY21, due to a decline in economic activities in the wake of global lockdowns introduced to curb coronavirus pandemic. However, with the gradual opening of economy and rebound observed in demand, the IIP grew over 5% in FY23 and 6% in FY24.

Figure 4.1: Annual growth – Index of Industrial Production



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.10 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We, however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle ownership

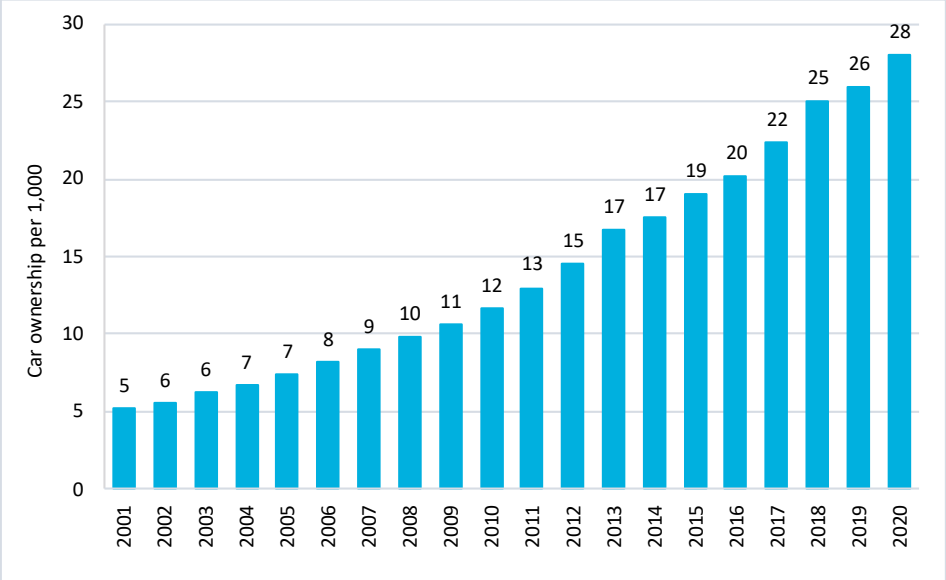
4.11 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[17]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4.2 below, between 2007-17, number of cars per 1,000 people has more than doubled.

4.12 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[18]

[17] **India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto**

[18] **https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf**

Figure 4.2: Car Ownership in India per 1,000 population

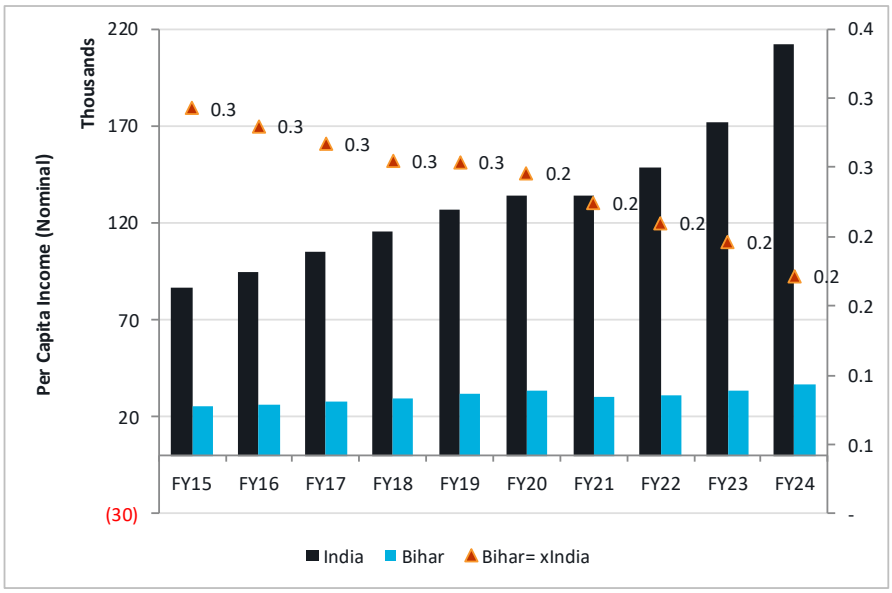


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.13 The per capita income of the state where the Asset lies, i.e., Bihar is lower compared to the national average. Thus, the state is at a very early stage of consumption curve. Going forward, we therefore expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

Figure 4.3: Per Capita Income



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.14 Given the difficulty in obtaining granular district level PCI data, it is not advisable to use this as a growth driver in our forecasts. Additionally, long-term forecasts for PCI are not available from official sources and we therefore refrain from using it to forecast traffic growth.

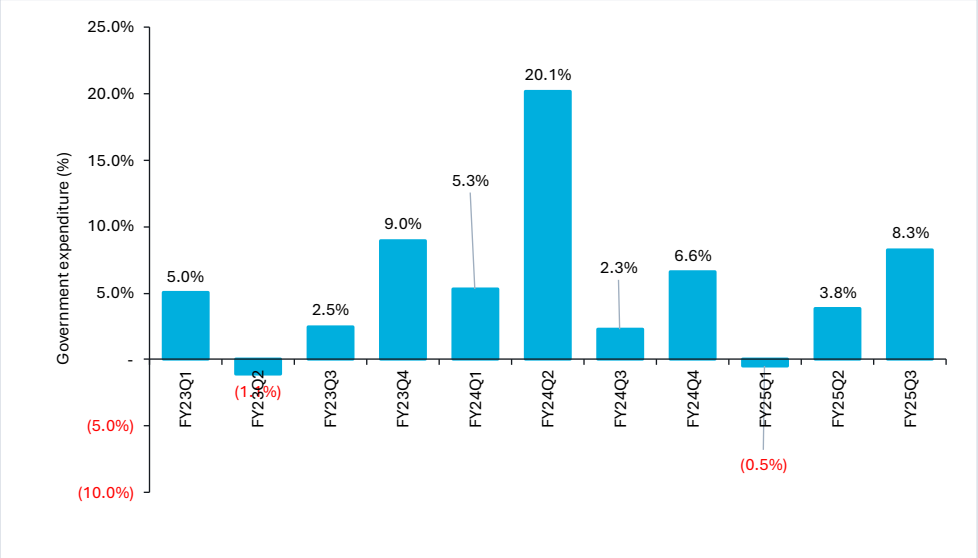
Economic growth

India's Performance

4.15 India's economic performance has shown signs of recovery in the recent months despite a slowdown experienced in H1FY25, as the latest Second Advance Estimates (SAE) released show the GDP growth in FY25 to be 6.5% - which is lower than the 9.2% growth observed in FY24 [19]

4.16 Figure 4.4 below shows that India's economic performance in Q3 of FY25 has shown signs of recovery with latest SAE estimates for FY25 GDP growth registered at 6.5% relative to 9.2% recorded in FY24. This deceleration can be attributed to a downturn in industrial output – specially manufacturing, electricity, and mining (as shown in Figure 4.6 below) – along with a decline in government capital expenditure in FY25 (presented in Figure 4.4 below). Contributing factors also include the impact of the 2024 general elections on central infrastructure spending, state-level fiscal constraints and rising global uncertainties such as Russia-Ukraine war and Gaza-Israel conflict which have had impact on global supply chains.

Figure 4.4: Government final consumption expenditure

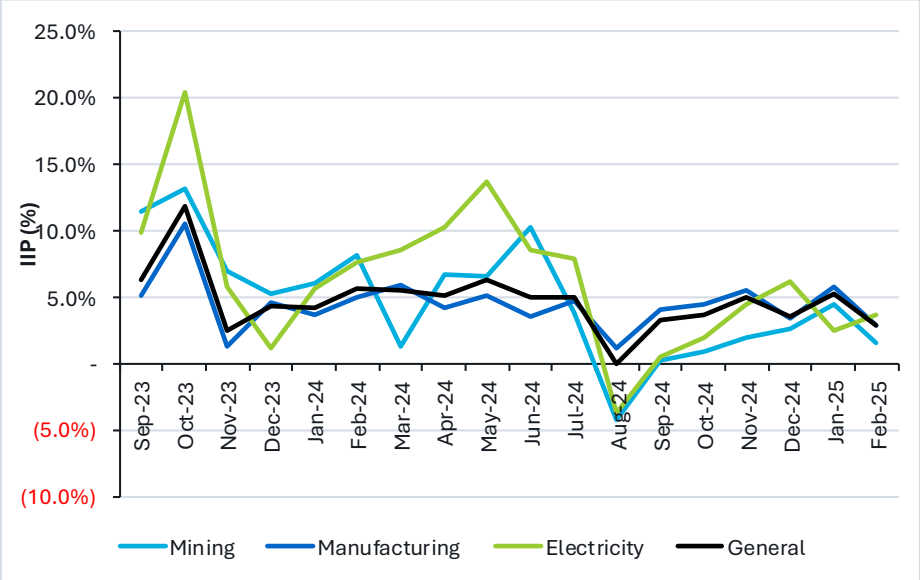


Source: Steer Analysis of MOSPI Data

4.17 Weaker industrial activity, as reflected in lower IIP (Figure 4.5) and GVA contribution (Figure 4.6), directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. At the same time, muted government capex had an influence on both construction-linked activity and industrial output which impacted the commercial traffic growth carrying construction material and industrial goods. Export oriented corridors across the country have also seen muted traffic performance in FY25 due to global supply chain disruptions and the Red-Sea crisis, with exported commodities like manufactured goods, marble, and ceramics experiencing declines as well.

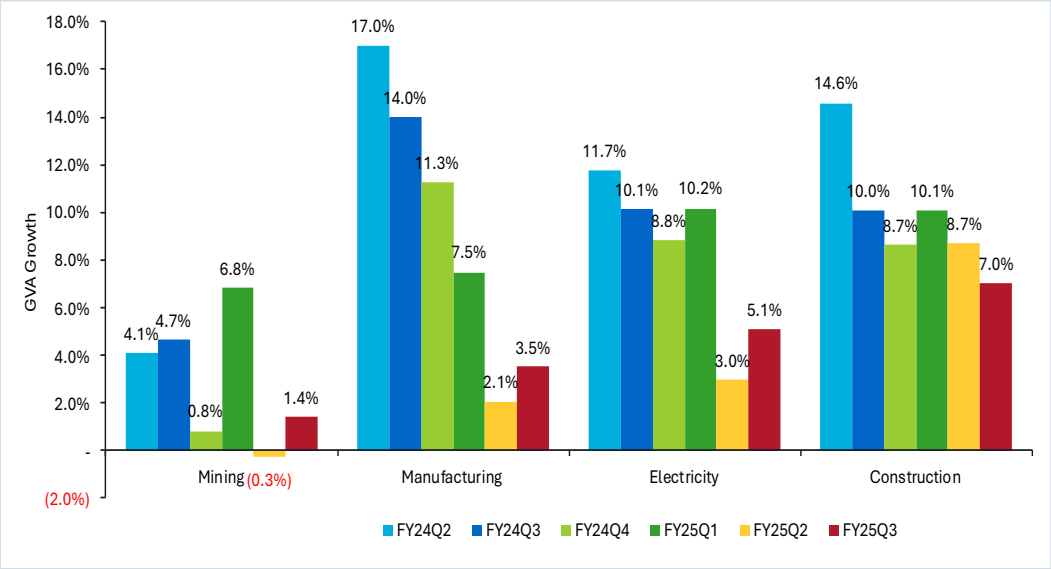
[19] Press Release: SAE of Annual GDP FY25 (Press Information Bureau)

Figure 4.5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

Figure 4.6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

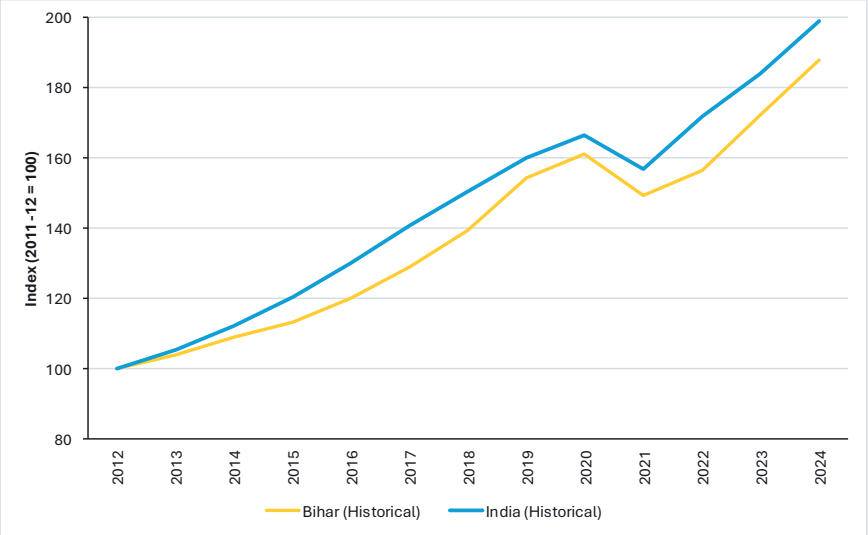
GDP and GSDP Growth

4.18 Over the period FY12-FY24, the Indian economic has grown at a CAGR of approx. 6% aided by growth in the tertiary sector which grew at a CAGR of approx. 6.9% over the same period. The economic performance of Bihar has been weaker than the country during the same period. Bihar's GSDP CAGR was 5.4% between FY12-24. Bihar approximately contributes 2.7% to the India's GDP. Between 2012 and 2024, Bihar's GSDP grew steadily, nearly doubling in real terms. The state saw consistent growth until 2018–19, peaking at approx. 10.9%, before slowing due to the pandemic, with a contraction of 7.4% in FY21. A strong recovery followed, with growth rebounding to over 9% in FY23 and FY24.

4.19 Bihar is largely an agrarian state, with around 77% of population dependent upon agriculture as a livelihood[1]. The state is one of the largest producers of vegetables and fruits in the country, especially, sugarcane, banana, mango, and eggplant.

4.20 Figure 4.7 below illustrates the evolution of Bihar's GSDP during FY12-FY24.

Figure 4.7: Evolution of Bihar's state GDP and National GDP



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.21 The official historical GDP and GSDP data for India are released by the Ministry of Statistics and Program Implementation (MoSPI). The GDP forecasts for India are available from various reliable sources such as Oxford Economics and Consensus Economics[20], but state-specific GSDP forecasts are not published by any such sources. To derive state GSDP forecasts, we rely on past trends of the relationship between GDP and GSDP and develop GSDP forecasts as a function of our assumed GDP forecasts[21].

4.22 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.23 Following the discussion in Chapter 4 on the nature of economic activity in the state of Bihar, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth on the Asset.

4.24 We have based our forecasts of Bihar GSDP using forecasts of GDP as provided by the Client.

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[20] **Consensus Economics - Economic Forecasts and Indicators**

[21] Assuming that the historical long-term relationship between GSDP and GDP sustains over the short-term, we project future growth in GSDP as a function of our GDP growth forecast. We taper the relationship of GSDP growth to converge to GDP growth gradually over the long-term.

National GDP

4.25 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[22]

4.26 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 (as per the SAE) before slowing down to 6.5% in FY25 due to several domestic and external factors.

4.27 Figure 4.8 below shows client provided GDP projections for India. The forecast projects the Indian GDP to grow at 6.5% between FY25-FY27[23] and gradually tapering down to 5.2% by FY50. The India GDP growth forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[24] in the short term.

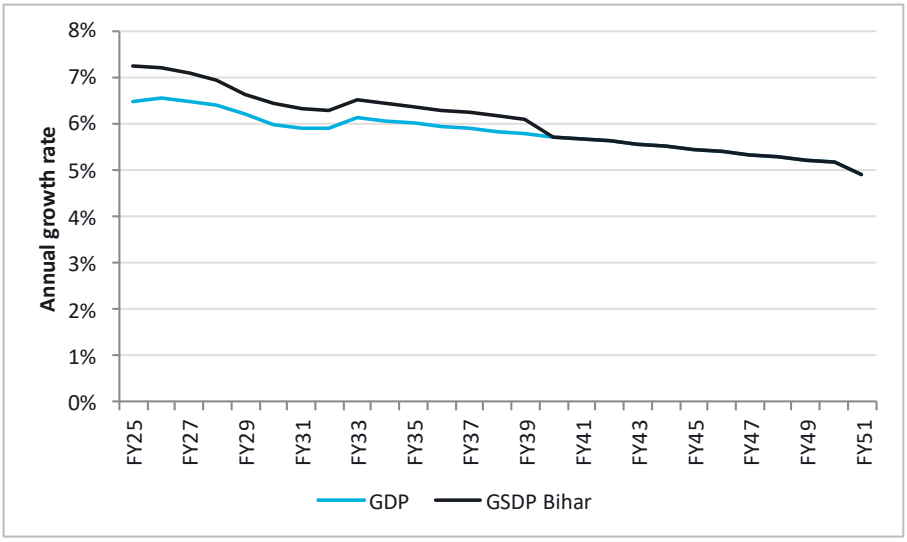
4.28 We expect Bihar's GSDP to grow faster than India's overall GDP, driven by its low base, rising infrastructure investments, and growth in construction and services sectors. Government focus on rural development and improving connectivity is also expected to boost economic activity in the state.

[22] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[23] Based on Asia Pacific Consensus Forecasts (December 2024)

[24] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

Figure 4.8: GDP-GSDP forecast



Source: GDP forecast provided by the Client

4.29 By comparing historical trends of regional GSDP growth with the national GDP growth we have established GSDP projections for each state. We assumed that as the Indian economy grows, the states which have historically grown at a faster pace will, over 10 years, see a slowdown in GSDP growth, tending to the national average, whereas the states that have grown slower than the national GDP will begin to pick-up. The GDP-GSDP gap would converge by 2040.

5 FY26 base year AADT and Traffic Growth Analysis

Introduction

5.1 In this section, we present our approach, assumptions, and estimates for base year AADT and background traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 While comprehensive historical data on the asset is not available, we have access to six years of records. Despite some inconsistencies, this dataset provides a reasonable foundation for analysis. As a result, statistical methods to estimate background growth relationships could not be applied. Instead, we conducted a benchmarking exercise, supported by trip length and origin-destination (OD) analysis, to derive elasticity estimates. These are discussed in detail below.

FY26 base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

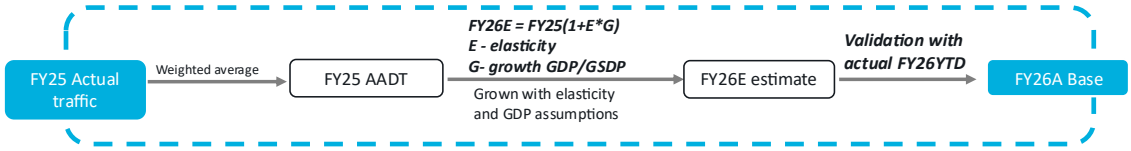
5.5 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilized information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

Methodology

5.6 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at estimated FY26 (FY26E).

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April 2025 to September 2025) of FY26 (FY26YTD). The Adopted FY26 AADT (FY26A) is derived by making necessary adjustments to FY25E to reflect the outturn traffic in FY26YTD (adjusted for seasonality). The methodology is represented using the below schematic in Figure 5.1:

Figure 5.1: FY26 base Estimation methodology



Source: Steer Analysis

5.8 The two key inputs to estimate the base year FY26 traffic are FY25 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.9 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.10 To normalize for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.11 Historical traffic data was available for all toll vehicle categories starting October 2020 up-to September 2025. Therefore, in absence of longer-term historical data for the Asset where FY21 and FY22 are COVID-19 impacted years, we assume FY23 onwards to be normal years, thus average FY23-FY24 seasonality is considered for FY26 base year estimation.

5.12 Table 5.1 below presents the average of FY23 and FY24 SCF used to estimate the AADT for the Asset.

Table 5.1: Adopted SCF for the Asset, FY23 and FY24 average

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.05	0.89	0.93	1.08	1.12	1.19	1.11	0.89	0.91	1.11	0.91	0.94
LCV	0.97	0.93	0.95	1.05	1.09	1.04	1.05	0.97	0.95	1.12	1.12	0.87
Bus	0.98	0.90	0.86	0.93	1.10	1.06	1.09	0.96	1.02	1.21	1.03	0.98
2A	1.00	0.99	1.00	0.98	1.08	1.05	1.01	1.00	1.00	1.12	0.90	0.92
3A	0.96	1.00	1.06	1.14	1.07	0.96	0.99	0.97	0.95	1.06	0.92	0.96
MAV	0.98	0.95	1.08	1.15	1.09	1.06	0.97	0.90	0.86	1.04	0.99	1.02

Source: Steer analysis of Client shared data

Adopted base estimates

5.13 Based on the above methodology and inputs, the adopted base for the toll plaza has been shown below:

Table 5.2: Adopted base estimates AADT: TP1: Parsoni Khem

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	4,489	4,708	4,893	9.0%
LCV	386	388	387	0.4%
Bus	489	530	510	4.3%
2A	1,190	1,265	1,283	7.8%
3A	1,005	951	976	(2.9%)
MAV	2,468	2,423	2,555	3.5%
OSV	1	1	1	-
Total	**10,029**	**10,266**	**10,606**	**5.8%**
PCU	**21,812**	**22,058**	**22,777**	**4.4%**

Source: Steer analysis: FY25 actual full year, FY26YTD includes 06 months (Apr-Sept) of FY26, FY26A is adopted base for FY26

5.14 Table 5.1 indicates a total PCU growth of 4.4% in FY26, primarily driven by an increase in CJV traffic and a 7.8% rise in 2A vehicle volumes. The growth in traffic in 2A is linked to increased LPG and petroleum activity in the region, as discussed in Chapter 2 of this report.

5.15 The MAV traffic has regained traction in FY26 compared to FY25 which exhibited flat growth largely due to the economic slowdown in Bihar, particularly in the manufacturing and construction sectors. Additionally, recent announcements of road and oil-related infrastructure investments in the state are likely to drive future demand for construction materials and petroleum transport, fostering healthy long-term growth on the asset.

Estimation of background elasticities

Overview

5.16 For brownfield Asset, where sufficient historical traffic evolution is available, it is common practice to use regression model analysis to determine the relationship, expressed as elasticity, between traffic growth and key socioeconomic drivers. This relationship is then applied to assumptions of future socio-economic evolution to estimate future traffic growth.

5.17 As for the Asset under consideration, a historical trend was not available since the Asset started tolling by the client in Oct-2020 and both FY21 and FY22 have been affected by Covid19 related disruptions. Therefore, we undertook a benchmarking exercise in order to estimate our forecast elasticities, Sources used included historical vehicle wise traffic growth on the Asset, outputs from the analysis of the OD data (refer chapter 3 for Commodity and trip length analysis) collected on the toll plaza. We have also undertaken a regional benchmarking against Asset having similar traffic profiles, which gives us reasonable confidence in the relationships proposed.

5.18 In terms of selection of growth drivers for vehicle types, in general we have assumed GSDP as the key driving factor for the CJVs and Buses given this traffic is generally driven by the local economies of the cities and state containing the Asset. The heavier commercial vehicles such as generally travel long-distance, and the underlying growth is governed by the general economies of several states or nation as whole.

5.19 Given the nascent stage of India's logistics sector, characterized by a highly fragmented trucking industry (95% of operators owning fewer than five trucks) and low car ownership rates (30-35 per 1000 people), the forecast elasticities are projected to remain constant throughout the concession period. This assumption is grounded in historical trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away.

5.20 Table 5.3 below presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.3: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP Bihar
Car		100%
LCV		100%
Bus		100%
2A	100%	
3A	100%	
MAV	100%	

Source: Steer Analysis

5.21 Further to developing estimates for FY26 AADT, the Asset has operational history between FY22 and FY25, proving us four years of traffic growth on the Asset. Table 5.4 below summarises the volume growth across each of the vehicle categories. For this comparison we have normalised the FY22 AADT for COVID19 by adopting seasonally corrected H2FY22 as the FY22 normalised (FY22N).

Table 5.4: Passenger and Commercial growth with normalised FY22

	FY22N	FY23	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	4,118	3,978	4,229	4,489	4,893	4.4%
LCV	483	491	468	386	387	(5.4%)
Bus	439	397	361	489	510	3.8%
2A	1,042	1,105	1,121	1,190	1,283	5.3%
3A	1,083	1,081	1,072	1,005	976	(2.6%)
MAV	2,349	2,346	2,394	2,468	2,555	2.1%
Total	**9,516**	**9,401**	**9,633**	**10,029**	**10,606**	**2.7%**
PCUs	**20,810**	**20,730**	**21,014**	**21,812**	**22,777**	**2.3%**
Passenger	**4,557**	**4,375**	**4,575**	**4,978**	**5,404**	**4.4%**
Commercial	**4,474**	**4,532**	**4,587**	**4,663**	**4,814**	**1.8%**

Source: Steer Analysis; Note; Passenger includes CJV and Bus traffic whereas Commercial includes 2A/3A/MAV traffic

5.22 The Asset is growing at 2.3% from FY22N to FY26 at the PCU level. Passenger traffic, which includes CJV and buses, is projected based on the state's GSDP, as the growth is driven by the regional local economy.

5.23 Meanwhile, commercial traffic (2A/3A/MAV) is growing in relation to GDP, as the asset lies on the NH52 corridor, which primarily facilitates north-east movement between UP and north India and East India and Bihar. Any growth observed on the asset is influenced by regions along this north-east route. 2A have registered a healthy CAGR of 5% whereas MAV traffic has registered a rebound in FY26 after a flatline performance in FY25.

5.24 The sections below detail out the reasoning for selection of respective growth driver(s) for each vehicle category.

5.25 In recent historical traffic performance across national highway corridors, a notable trend has emerged: there is a noticeable shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in FY26 performance as well. Because of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

Table 5.5: Elasticity recommendations for the Asset (Kotwa- Muzaffarpur)

Vehicle Category	Growth Driver	Elasticity	Comments
CJV	GSDP Bihar	1.0	CJV cater to local movement between Motihari, Muzaffarpur, Kotwa, and Patna. Around 92% of the trips have one end of their trip in Bihar. Strong traffic growth is benchmarked to reference Asset
Mini-LCV	GSDP Bihar	0.6	MLCV on this Asset has witnessed a growth with increasing demand for Local and IAOI

Vehicle Category	Growth Driver	Elasticity	Comments
			movements withing 300km. Therefore, elasticity of 0.6 is assumed.
Buses	GSDP Bihar	0.3	Buses tend to grow as the intercity connections improve. With Bihar being a state, which is growing, buses tend to play an important role linking key cities in the state. However, the volume of bus remains similar in last few years. Over half of the trips are within 100-300 km. Therefore, 0.3 elasticity is assumed.
LCV	GSDP Bihar	0.4	2A in this region and country have started doing long- medium distance movement. 2A growth is closer to that MAV growth as the goods being transported on this corridor are travelling long distance and carrying manufacturing, petrol, LPG, kerosene or agriculture, which are more efficient to move using heavy trucks.
2A	GDP	0.8	
3A	GDP	0.2	3A/MAV: Agri products and petroleum/gas are the prime commodities carried from northern parts of the country to northeast and eastern states and to bordering countries. A significant portion of heavy truck movement dependent upon Muzaffarpur/Motihari industries as well. The Asset also caters to movements in regions outside India, such as Nepal, Bangladesh and Bhutan which represent 10% of 3A/MAV shares. With same toll rates applicable and benefit of carrying additional tonnage in the region and countrywide a shift from 3A to higher category MAV is observed.
MAV	GDP	0.9	

Source: Steer Assumptions

6 Forecast: Network overlays and forecasts

Introduction

6.1 Following the discussion on our forecast of background growth rates in the previous chapter, this chapter first covers the potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years.

Analysis of potential network/developmental impacts

6.2 This section details the impacts, which we believe would affect traffic on the Asset during the concession period. As discussed in previous Chapters, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

Proposed Gorakhpur Siliguri Expressway

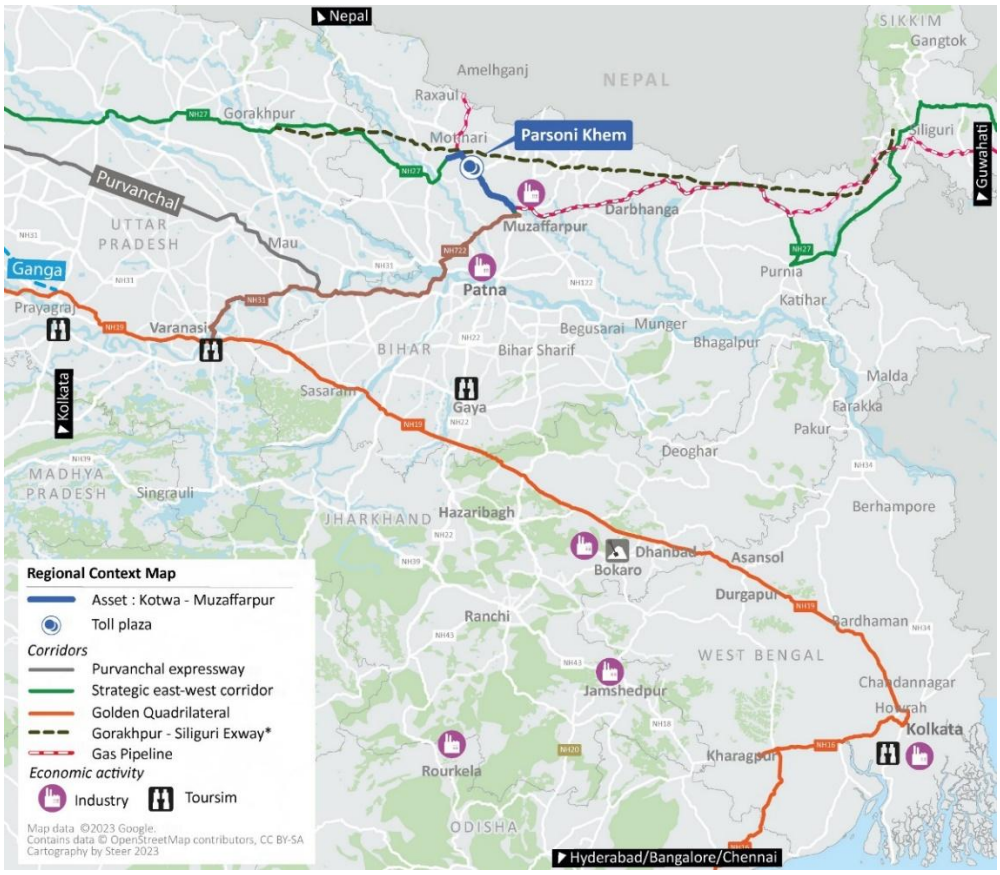
6.3 The central government has approved the Gorakhpur-Siliguri six-lane greenfield expressway project, a 568-km high-speed route. This expressway will traverse through 313 villages across 39 blocks in eight districts of Bihar, covering a total of 417km within the state. The project includes the construction of several bridges over major rivers like Gandak, Bagmati, and Kosi. The estimated cost of the project is ₹38,645 crore, with Bihar contributing ₹27,552 crore[25]. The project is currently in the Detailed Project Report (DPR) and land acquisition stage[26], with no officially announced timeline for completion. Given the early stage of project development, the scale of the proposed 560+ km alignment, and the inherent challenges associated with large-scale greenfield infrastructure—including inter-state coordination, environmental clearances, and land acquisition complexities—Steer has adopted a conservative completion estimate of 2035. This assumption reflects our qualitative understanding of typical timelines for similar expressway projects.

[25] **Centre approves Gorakhpur-Siliguri 6-lane expressway | Patna News - The Times of India**

[26] **Construction of Gorakhpur-Siliguri Expressway will start soon |** गोरखपुर-सिलीगुड़ी एक्सप्रेस-वे का जल्द शुरू होगा निर्माण: **3** जिलों के **115** गांवों की जमीन का होगा अधिग्रहण**, 32** हजार करोड़ आएगी लागत - **Gorakhpur News | Dainik Bhaskar**

6.4 The proposed alignment of the expressway runs parallel to the Asset, and will affect trips moving from UP, Bihar towards West Bengal/Northeast will have an option to travel via Asset or the expressway. This greenfield expressway will lead to attractiveness of the traffic traversing between these three states and North-east as it is going to cut down the travel time significantly, therefore the same have been considered as in scopes.

Figure 6.1: Proposed Alignment of Gorakhpur Siliguri Expressway



Source: Steer cartography using OpenStreetMap data

6.5 Table 6.1 below shows the comparison the key input toll and time comparison between route via Asset and the alternate:

Table 6.1: Toll & Time Comparison between Asset and Alternate

	Toll (INR)	
	Via Asset	*Via Expressway*
CJV	970	1,313
LCV	1,552	2,084
2A	3,252	4,419
3A	3,553	4,836
MAV	5,096	6,948

Source: Steer analysis

Table 6.2 Impact of Gorakhpur Siliguri Expressway

Vehicle category	FY35	FY36 onwards
Staging	*80%*	*100%*
2A	(8.8%)	(11.0%)
3A	(10.5%)	(13.2%)
MAV	(6.6%)	(8.3%)

Source: Steer analysis, Full impact will be applicable from FY36, while impact will be applicable in a phased manner from FY35.

6 laning LOS improvement

6.6 As per the concession agreement as soon as the Asset hits 40,000 PCU's the Asset is eligible for capacity augmentation. The PCU level need to be maintained above the 40,000 levels for three consecutive years and two years will be earmarked for DPR preparation. After that a three-year period is factored in for construction, during which 75% toll rates will be applicable in all 3 years of construction period. After the construction is over the toll rates will be calculated as normal, as they should have been in that year.

6.7 On the Asset, it is expected based on our forecasts that traffic volumes will go beyond the 40,000 PCUs mark in FY40, thus breaching the capacity requirements set out in the concession agreement, thus leading to capacity augmentation on the Asset. We expect the level of service on the Asset to improve post capacity augmentation. To calculate this impact, we have employed a GJC based approach.

6.8 A comparison of generalised journey costs (GJC) estimates how different elements of cost and time affect traffic. This comparison was done for both light and heavy vehicles. Lower GJCs correspond to higher induced traffic. Based on Steer's studies and research in India, we have found that for every 1% reduction in the GJCs, the traffic increases by a factor of 0.3. We then applied the difference of GJCs to the elasticity of 0.3 to get net influence on the traffic.

6.9 The improvement in travel costs or GJC is translated into the impact on that share of local + IAOI OD movements using a linear inverse relationship. Therefore, the GJC influence is applied on the corresponding shares of traffic, which were extracted from OD data.

6.10 Table 6.3 below shows the extent of the LOS impact.

Table 6.3: Impact of 6 laning LOS improvement

Vehicle category	FY48 onwards
Staging	*100%*
CJV	1.8%
LCV	1.3%
2A	1.1%
3A	0.6%
MAV	0.6%

Source: Steer analysis

Revenue forecasting assumptions

6.11 To forecast the revenues for a particular financial year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While "trip factors" provide the conversion factor to the former, i.e., traffic (trips) to tickets sold, "toll segmentation" provides the latter i.e., the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Trip factors

6.12 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and listed in Table 6.4 below:

Table 6.4: Trip factors at TP1 Parsoni Khem

Forecast	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	45	45	50	45	74	45
Local commercial	1	1	1	1	1	1
Local Personal	15	-	-	-	-	-

Source: Steer analysis of Client TMS data

Toll segmentation

6.13 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles[27].

6.14 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
%CJV using Annual pass	5.5%	8.6%	10.1%

6.15 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of

[27] Finalization-Concessionaire-Annual-Pass-Facility-on-NHs-01092025.pdf

March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.16 In FY26, the share of CJVs using the Annual Pass is projected at **9%** (on an annual basis) with a March 2026 estimate of around 21%, which from FY27, expected to stabilize at March'26 levels.

6.17 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Sept) as discussed in the earlier sections, can be considered a normal period.

Table 6.5: Toll segmentation FY26 onwards, TP1 Parsoni Khem

Ticket type	CJV FY26	CJV FY27	MLCV	Bus	LCV	2A	3A	MAV
Single	32%	27%	36%	32%	52%	73%	87%	93%
Return	42%	35%	47%	63%	42%	23%	9%	6%
Monthly	-	-	-	-	-	-	-	-
Local commercial	1%	1%	1%	4%	1%	3%	3%	1%
Local personal	4%	4%	4%	-	-	-	-	-
Exemptions	12%	12%	11%	2%	4%	1%	0%	0%
Annual Pass	**9%**	**21%**	**-**	**-**	**-**	**-**	**-**	**-**

Source: Steer analysis of Client TMS data; ticket segmentation for all vehicle categories other than CJVs are from FY26 onwards

6.18 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.6 presents the Annual pass compensation computed for the toll plaza.

Table 6.6: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY28	FY33	FY38	FY43	FY51
Parsoni Khem	1.4	4.1	7.2	12.2	20.1	44.1

Source: Steer Analysis

Toll evolution

6.19 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation. These are rounded up to the nearest five decimals to estimate the final toll rate charged to users.

6.20 We have used actual toll rates from the FY25 toll notifications and FY26 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in the table below. These forecasts provided by the Client expect the Indian WPI to grow at an average of 4.2% between FY25-FY51. The WPI

forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client.

Table 6.7: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: FY27 onwards WPI as per client inputs

Revenue reconciliation

6.21 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a monthly level for the Asset. To reconcile we have used the FY26YTD segmentation, FY26YTD AADT and compared it with the reported revenue for the year. The exercise was undertaken at an annual level. The comparison, as shown in the table below, depicts the modelled revenue vs the reported revenue difference, and the difference lies within 1%, this gives us the confidence in the assumptions around segmentation and trip factors for future forecast purposes.

Table 6.8: FY25 Revenue reconciliation summary (INR Lakhs)

Asset	Modelled	Actual	Difference (%)
	FY26YTD	FY26YTD	
TP1-Parsoni Khem	28.47	28.48	0.01%

Source: Steer comparison between modelled and reported revenue, FY26

Traffic and Revenue forecasts

6.22 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the concession length of the Asset. The table below presents the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix B presents the AADT and revenues for the concession period.

Table 6.9: Traffic forecast (with impacts) for TP1 Parsoni Khem

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	3,933	4,502	6,146	8,339	11,015	16,917
Mini LCV	960	1,042	1,259	1,515	1,794	2,302

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
Bus	510	532	585	643	700	793
LCV	387	409	465	526	589	706
2A	1,283	1,418	1,793	2,014	2,514	3,541
3A	976	1,002	1,063	980	1,036	1,135
MAV	2,555	2,891	3,781	4,501	5,772	8,418
OSV	1	1	2	2	3	4
AADT	**10,606**	**11,797**	**15,094**	**18,519**	**23,422**	**33,816**
PCU's	**22,777**	**25,191**	**31,741**	**37,401**	**46,767**	**66,328**

Source: Steer analysis

Table 6.10: Traffic CAGR (%) for TP1 Parsoni Khem

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	7.0%	6.4%	6.3%	5.7%	6.0%
Mini LCV	4.2%	3.9%	3.8%	3.4%	3.6%
Bus	2.1%	1.9%	1.9%	1.7%	1.8%
LCV	2.8%	2.6%	2.5%	2.3%	2.4%
2A	5.2%	4.8%	2.3%	4.5%	4.1%
3A	1.3%	1.2%	(1.6%)	1.1%	0.6%
MAV	6.4%	5.5%	3.5%	5.1%	4.9%
OSV	6.4%	6.0%	5.9%	5.7%	5.7%
AADT	**5.5%**	**5.1%**	**4.2%**	**4.8%**	**4.7%**
PCU's	**5.2%**	**4.7%**	**3.3%**	**4.6%**	**4.4%**

Source: Steer analysis

Table 6.11: Revenue forecast (with impacts) for TP1 Parsoni Khem (INR crores) including Annual Pass Compensation revenue for CJVs

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	13.6	16.8	29.4	49.7	81.9	179.8
Mini LCV	3.3	3.9	6.0	9.0	13.4	24.5
Bus	6.6	7.6	10.4	14.3	19.5	31.7
LCV	2.5	2.9	4.1	5.9	8.2	14.1
2A	18.9	22.9	36.4	51.0	79.3	160.9
3A	16.4	18.3	24.5	28.1	37.3	58.6
MAV	63.0	77.8	127.8	190.0	305.5	638.3
OSV	0.0	0.0	0.1	0.1	0.2	0.4
Total revenue	**124.4**	**150.1**	**238.8**	**348.1**	**545.3**	**1,108.3**

Source: Steer analysis

Table 6.12: Revenue growth CAGR (%) for TP1 Parsoni Khem

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	11.2%	11.8%	11.1%	10.5%	10.9%
Mini LCV	8.3%	9.1%	8.4%	8.1%	8.3%
Bus	6.8%	6.7%	6.5%	6.3%	6.5%
LCV	7.4%	7.4%	7.1%	7.0%	7.1%
2A	10.0%	9.7%	7.0%	9.2%	8.9%
3A	5.6%	6.1%	2.7%	5.8%	5.2%
MAV	11.1%	10.5%	8.3%	10.0%	9.7%
OSV	11.2%	10.9%	10.8%	10.5%	10.6%
Total revenue	**8.9%**	**9.7%**	**7.7%**	**9.4%**	**9.0%**

Source: Steer analysis

6.23 As presented in the tables above, traffic CAGRs (PCUs) for the traffic forecast (with impacts) on the Asset over the concession period is around 4.4% and corresponding revenue CAGR is around 9.1%. This growth is majorly driven by:

6.24 CJVs, as discussed in the historical section, this Asset has an even mix of CJVs and MAVs. The CJVs on the Asset are expected to grow with increasing per capita income levels of the region and are expected to grow at a healthy rate for a longer period, given the low car ownership levels in the state.

6.25 While MAV carrying heavy Agri commodities rice, maize and wheat as expect with the increased production in Agri industries as explained in Chapter 2, MAVs will witness a healthy growth on this Asset in long term as well.

Target revenues and modification of concession period

6.26 As per the concession agreement, the target revenue for TP1 should be 14.2 Cr for the month of March 2030 first calculation of target revenue and 23.12Cr for the month of March 2040 for the second calculation of target revenue. The traffic sampling will be undertaken for a continuous period of seven days during anytime within 15 days prior to the date on the specified year, previous year and following year. The average thereof will be deemed as 'actual revenue.'

6.27 If the target revenue falls short or exceeds by 20% and 30% for extensions 1 and 2 respectively, the concession period shall be deemed to be modified using the laid-out conditions in the concession agreement. The table below presents the summary of the analysis.

Table 6.13: Target Revenues for Extension 1

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2029	2030	2031		
KM	Mar-30	14.22	14.80	16.25	17.79	16.28	15%

Source: Steer analysis

Table 6.14: Target Revenues for Extension 2

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2039	2040	2041		
KM	Mar-40	23.12	34.08	37.24	40.69	37.34	62%

Source: Steer analysis

6.28 We have used the average AADT forecast for target year, previous year and following year as a proxy for 'actual traffic.' We have applied seasonality of March month to adjust for seasonal trends and arrive at March traffic from AADT traffic, which is then segmented according to the forecast toll segmentation and trip factors and multiplied with respective estimated toll rates to get to a monthly revenue collection.

6.29 As seen from the table above, the target revenue forecast for the Asset is higher than the Concession Agreement target revenue by a rounded 15% for target date 1 and 62% for target date 2. As the difference lies below the permitted threshold 30% for target date 1 and above 30% for target level 2 respectively, a change in the length of the concession is expected. As per the Concession Agreement, for every 1% excess target revenue, the concession period shall be decreased by 1.5%, with a capping at 20%. Therefore, for the excess traffic on these toll plazas, the concession period, originally 30 years, is expected to reduce by five years from FY51, potentially changing the concession period to end by FY46 instead of FY51.

Upside and Downside cases

Upside and Downside scenario assumptions

6.30 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.31 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.32 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.15: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year

WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.33 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.34 The upside case impacts included in forecasts are summarised in below.

Table 6.16: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
6 laning LOS improvement	FY45	+25% of base case	CJV: 2.3% LCV: 1.7% 2A: 1.3% 3A: 0.8% MAV: 0.7%
Gorakhpur Siliguri Expressway	FY36 (80%) FY37 (100%)		2A: (8.2%) 3A: (9.9%) MAV: (6.2%)

Source: Steer analysis of OD data

Impacts-Downside Case

6.35 The downside case impacts included in forecasts are summarised in below.

Table 6.17: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
6 laning LOS improvement	-	-25% of base case	*No Impact*
Gorakhpur Siliguri Expressway	FY33 (80%) FY34 (100%)		2A: (13.7%) 3A: (16.5%) MAV: (10.4%)

Source: Steer analysis of OD data

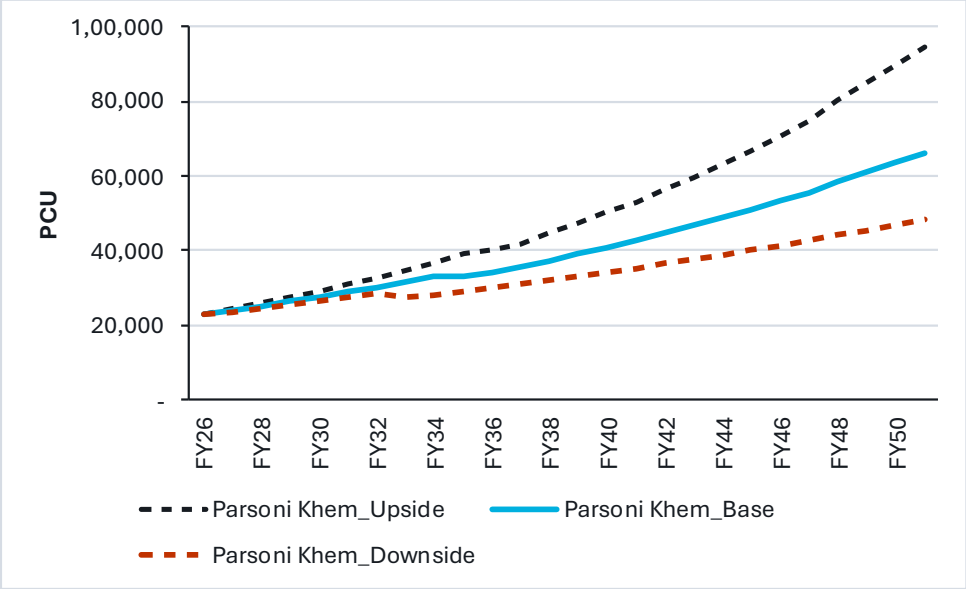
6.36 Based on the above assumptions for upside and downside scenarios, the following table summarizes the upside potential and downside risks associated with the PCU and the revenue for Parsoni Khem toll plaza at the end of the concession i.e. FY51.

Table 6.18: Upside potential and Downside PCU scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Parsoni Khem	42.6%	(27.5%)

Source: Steer Analysis

Figure 6.2: Long term PCU forecasts for Parsoni Khem TP including upside and downside scenario



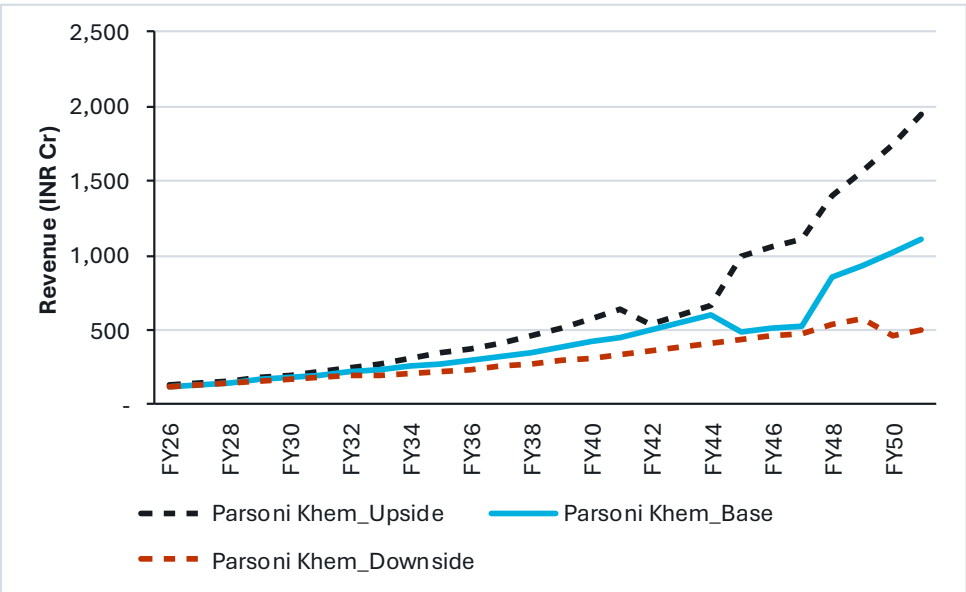
Source: Steer Analysis

Table 6.19: Upside potential and Downside Revenue scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Parsoni Khem	75.5%	(55.3%)

Source: Steer Analysis

Figure 6.3: Long term Revenue forecasts for Parsoni Khem TP including upside and downside scenario



Source: Steer Analysis

6.37 Revenue projections exhibit variability in both the upside and downside cases, driven by fluctuations in macro-economic factors such as WPI, GDP/GSDP, elasticities and the network impacts.

Summary Outlook

6.38 Passenger movement on the Asset is largely local in nature, connecting the cities of Motihari, Patna, Muzaffarpur to West and East Champaran, Chakia and other nearby towns. Cars are expected to see a healthy growth on the Asset following the overall behavioural shift of users away from public transport.

6.39 The Asset benefits from its strategic location, facilitating the east-west movement of goods from Uttar Pradesh and the Delhi NCR region towards Bihar, West Bengal, and the northeastern states. Additionally, the proximity of the Nepal border near Raxaul serves as a key destination for a substantial share of traffic using the Asset. The 3A/MAV traffic on the Asset predominantly caters to long-haul routes, with approximately 70% of users covering distances exceeding 500 km.

6.40 This segment of traffic is expected to exhibit a relatively muted growth trend in the near term, particularly given the prevailing economic slowdown in Bihar projected to continue until FY27. Beyond FY27, it is anticipated that the regional economic conditions will improve, leading to a gradual normalization of economic activity and corresponding traffic growth on the Asset.

6.41 Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by Client, feedback from Client meetings and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarised below.

6.42 Overall, we see a positive outlook for the region and the Asset in the longer term, given that it serves major urban centres of Delhi NCR, Lucknow, Patna all the way to East and North-East India along with bordering countries for major commodities. The underlying growth drivers of the corridor are strong and are expected to deliver long term sustained growth.

Appendices

A Top 10 OD Pairs

A.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1 Parsoni Khem

Table A.1: CJV, Bus and Mini Bus top 10 OD pair shares at TP1 Parsoni Khem

	OD Pair	Share
1.	Muzaffarpur-Motihari	17.15%
2.	Patna-Motihari	15.11%
3.	East Champaran-Motihari	5.72%
4.	Muzaffarpur-Bettiah	5.34%
5.	Patna-Bettiah	4.58%
6.	Muzaffarpur-Uttar Pradesh	2.73%
7.	Patna-Raxaul	2.57%
8.	Muzaffarpur-Raxaul	2.16%
9.	Muzaffarpur-Gopalganj	2.08%
10.	East Champaran-Pipra	1.89%

Source: Steer analysis of OD data

Table A.2: 3A and MAV top 10 OD pair shares at TP1 Parsoni Khem

	OD Pair	Share
1.	Assam-Uttar Pradesh	3.96%
2.	Barauni-Nepal	3.69%
3.	Muzaffarpur-Motihari	3.65%
4.	Assam-NCT of Delhi	3.41%
5.	Uttar Pradesh-West Bengal	3.02%
6.	Muzaffarpur-Uttar Pradesh	2.94%
7.	Patna-Motihari	2.71%
8.	Assam-Gujarat	2.47%
9.	West Bengal-Nepal	2.24%
10.	NCT of Delhi-West Bengal	1.88%

Source: Steer analysis of OD data

Sahebganj (SH74)

Table A.3: CJV, Bus and Mini Bus top 10 OD pair shares at Sahebganj (SH74)

	OD Pair	Share
1.	Muzaffarpur-East Champaran	33.63%
2.	East Champaran-Patna	13.27%
3.	Patna-Bettiah	6.19%
4.	Muzaffarpur-Gopalganj	6.19%
5.	Muzaffarpur-Motihari	5.31%
6.	East Champaran-Vaishali	4.42%
7.	Lala Chhapra-Bettiah	2.65%
8.	East Champaran-Motipur	2.65%
9.	Patna-Uttar Pradesh	2.65%
10.	Vaishali-Bettiah	2.65%

Source: Steer analysis of OD data

Table A.4: 3A and MAV top 10 OD pair shares at Sahebganj (SH74)

	OD Pair	Share
1.	East Champaran-Patna	7.69%
2.	West Bengal-Nepal	6.41%
3.	Patna-Uttar Pradesh	5.13%
4.	Jharkhand-Nepal	3.85%
5.	Vaishali-Uttar Pradesh	3.85%
6.	Muzaffarpur-East Champaran	3.85%
7.	Lakhisarai-Uttar Pradesh	3.85%
8.	Patna-Nepal	2.56%
9.	Vaishali-Bettiah	2.56%
10.	Bettiah-Jharkhand	2.56%

Source: Steer analysis of OD data

Benipur (SH74)

Table A.5: CJV, Bus and Mini Bus top 10 OD pair shares at Benipur (SH74)

	OD Pair	Share
1.	East Champaran-Patna	17.50%
2.	East Champaran-Uttar Pradesh	12.50%
3.	Muzaffarpur-Motihari	10.00%
4.	East Champaran-Motihari	7.50%

5.	Muzaffarpur-East Champaran	7.50%
6.	Muzaffarpur-Gopalganj	5.00%
7.	East Champaran-Bettiah	5.00%
8.	Jharkhand-Nepal	2.50%
9.	East Champaran-Khagaria	2.50%
10.	Vaishali-Motihari	2.50%

Source: Steer analysis of OD data

Table A.6: 3A and MAV top 10 OD pair shares at Benipur (SH74)

	OD Pair	Share
1.	East Champaran-Patna	13.11%
2.	East Champaran-Jharkhand	8.20%
3.	Patna-Nepal	4.92%
4.	Aurangabad-Bettiah	3.28%
5.	Gopalganj-Patna	3.28%
6.	Vaishali-Nepal	3.28%
7.	Jehanabad-Nepal	3.28%
8.	Patna-Motihari	3.28%
9.	Patna-Bettiah	1.64%
10.	East Champaran-Nepal	1.64%

Source: Steer analysis of OD data

B Detailed Forecasts

B.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

B.2 This section presents the detailed traffic forecasts for the forecast period until FY51, year of expected close of the concession. The following two tables show the traffic growth rates and AADT, respectively.

Table B.1: Traffic Forecast (with impacts) over horizon years at TP1 Parsoni Khem

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY26	3,933	960	510	387	1,283	976	2,555	**10,606**	**22,777**
FY27	4,211	1,001	521	398	1,349	989	2,719	**11,189**	**23,959**
FY28	4,502	1,042	532	409	1,418	1,002	2,891	**11,797**	**25,191**
FY29	4,799	1,083	542	420	1,488	1,014	3,060	**12,408**	**26,420**
FY30	5,106	1,125	553	431	1,559	1,026	3,232	**13,033**	**27,674**
FY31	5,428	1,167	563	442	1,633	1,038	3,404	**13,676**	**28,945**
FY32	5,769	1,212	574	453	1,710	1,051	3,584	**14,353**	**30,282**
FY33	6,146	1,259	585	465	1,793	1,063	3,781	**15,094**	**31,741**
FY34	6,542	1,308	596	477	1,880	1,076	3,988	**15,868**	**33,264**
FY35	6,958	1,358	608	489	1,797	974	3,924	**16,110**	**33,006**
FY36	7,396	1,409	619	501	1,837	957	4,061	**16,782**	**34,098**
FY37	7,856	1,461	631	513	1,924	968	4,276	**17,632**	**35,716**
FY38	8,339	1,515	643	526	2,014	980	4,501	**18,519**	**37,401**
FY39	8,845	1,571	654	539	2,107	991	4,735	**19,444**	**39,154**
FY40	9,351	1,624	665	551	2,203	1,002	4,979	**20,379**	**40,949**
FY41	9,881	1,680	677	564	2,303	1,014	5,233	**21,354**	**42,815**
FY42	10,435	1,736	688	576	2,407	1,025	5,497	**22,368**	**44,753**
FY43	11,015	1,794	700	589	2,514	1,036	5,772	**23,422**	**46,767**
FY44	11,620	1,853	711	602	2,624	1,048	6,057	**24,519**	**48,857**
FY45	12,253	1,914	723	615	2,738	1,059	6,354	**25,659**	**51,025**

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY46	12,912	1,976	734	628	2,856	1,071	6,662	**26,842**	**53,273**
FY47	13,600	2,039	746	642	2,978	1,082	6,981	**28,071**	**55,604**
FY48	14,575	2,103	758	664	3,141	1,101	7,359	**29,705**	**58,589**
FY49	15,335	2,169	770	678	3,272	1,113	7,704	**31,044**	**61,114**
FY50	16,126	2,236	782	692	3,407	1,124	8,062	**32,432**	**63,728**
FY51	16,917	2,302	793	706	3,541	1,135	8,418	**33,816**	**66,328**

Source: Steer Analysis

Table B.2: Forecasts (with impacts) for AADT growth rates (%) at TP1 Parsoni Khem

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	AADT	PCUs
FY26	9.0%	9.0%	4.3%	0.4%	7.8%	(2.9%)	3.5%	-	5.8%	4.4%
FY27	7.1%	4.2%	2.1%	2.8%	5.2%	1.3%	6.4%	-	5.5%	5.2%
FY28	6.9%	4.1%	2.1%	2.8%	5.1%	1.3%	6.3%	-	5.4%	5.1%
FY29	6.6%	4.0%	2.0%	2.6%	4.9%	1.2%	5.8%	-	5.2%	4.9%
FY30	6.4%	3.8%	1.9%	2.6%	4.8%	1.2%	5.7%	-	5.0%	4.7%
FY31	6.3%	3.8%	1.9%	2.5%	4.7%	1.2%	5.3%	-	4.9%	4.6%
FY32	6.3%	3.8%	1.9%	2.5%	4.7%	1.2%	5.3%	-	5.0%	4.6%
FY33	6.5%	3.9%	2.0%	2.6%	4.9%	1.2%	5.5%	-	5.2%	4.8%
FY34	6.4%	3.9%	1.9%	2.6%	4.8%	1.2%	5.5%	-	5.1%	4.8%
FY35	6.4%	3.8%	1.9%	2.5%	(4.4%)	(9.5%)	(1.6%)	-	1.5%	(0.8%)
FY36	6.3%	3.8%	1.9%	2.5%	2.2%	(1.8%)	3.5%	-	4.2%	3.3%
FY37	6.2%	3.7%	1.9%	2.5%	4.7%	1.2%	5.3%	-	5.1%	4.7%
FY38	6.1%	3.7%	1.8%	2.5%	4.7%	1.2%	5.3%	-	5.0%	4.7%
FY39	6.1%	3.6%	1.8%	2.4%	4.6%	1.2%	5.2%	-	5.0%	4.7%
FY40	5.7%	3.4%	1.7%	2.3%	4.6%	1.1%	5.2%	-	4.8%	4.6%
FY41	5.7%	3.4%	1.7%	2.3%	4.5%	1.1%	5.1%	-	4.8%	4.6%
FY42	5.6%	3.4%	1.7%	2.2%	4.5%	1.1%	5.0%	-	4.7%	4.5%
FY43	5.6%	3.3%	1.7%	2.2%	4.4%	1.1%	5.0%	-	4.7%	4.5%
FY44	5.5%	3.3%	1.6%	2.2%	4.4%	1.1%	4.9%	-	4.7%	4.5%
FY45	5.4%	3.3%	1.6%	2.2%	4.4%	1.1%	4.9%	-	4.6%	4.4%
FY46	5.4%	3.2%	1.6%	2.2%	4.3%	1.1%	4.8%	-	4.6%	4.4%
FY47	5.3%	3.2%	1.6%	2.1%	4.3%	1.1%	4.8%	-	4.6%	4.4%

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	AADT	PCUs
FY48	7.2%	3.2%	1.6%	3.5%	5.5%	1.8%	5.4%	-	5.8%	5.4%
FY49	5.2%	3.1%	1.6%	2.1%	4.2%	1.0%	4.7%	-	4.5%	4.3%
FY50	5.2%	3.1%	1.5%	2.1%	4.1%	1.0%	4.6%	-	4.5%	4.3%
FY51	4.9%	2.9%	1.5%	2.0%	3.9%	1.0%	4.4%	-	4.3%	4.1%

Source: Steer Analysis

Revenue forecasts

Table B.3: Revenue forecast (INR Crores), for TP1 Parsoni Khem including the annual pass compensation

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	Total
FY26	14	3	7	3	19	16	63		**124**
FY27	15	4	7	3	21	17	70		**136**
FY28	17	4	8	3	23	18	78		**150**
FY29	19	4	8	3	25	20	86		**166**
FY30	21	5	9	3	28	21	96		**182**
FY31	24	5	9	4	30	22	105		**199**
FY32	26	5	10	4	33	23	116		**218**
FY33	29	6	10	4	36	25	128		**239**
FY34	32	6	11	4	40	26	141		**261**
FY35	36	7	12	5	40	25	145		**269**
FY36	40	8	13	5	43	25	157		**291**
FY37	45	8	13	5	46	27	173		**318**
FY38	50	9	14	6	51	28	190		**348**
FY39	55	10	15	6	56	30	209		**381**
FY40	61	11	16	7	61	32	230		**418**
FY41	67	11	17	7	66	33	253		**455**
FY42	74	12	18	8	73	35	278		**498**
FY43	82	13	19	8	79	37	305		**545**
FY44	90	14	21	9	87	40	336		**596**
FY45	80	12	17	7	71	31	275		**493**
FY46	86	12	17	7	74	32	288		**516**
FY47	92	12	17	7	77	32	302		**540**
FY48	136	20	26	12	125	50	488		**856**

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	Total
FY49	149	21	28	12	136	53	535		**933**
FY50	163	23	30	13	148	55	585		**1,018**
FY51	180	24	32	14	161	59	638		**1,108**

Source: Steer Analysis

C Data Collection Exercise

C.1 To validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

3 days TVC count

Table C.1: 3-day TVC counts at TP1 Parsoni Khem

Date	Source	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
23-01-2025	TVC	2,987	746	785	514	856	1,024	2,618	3	9,533
24-01-2025	TVC	3,481	825	752	520	955	1,138	2,624	1	10,296
25-01-2025	TVC	3,366	829	794	577	1,041	1,072	2,591	5	10,275

Source: Steer Analysis

Table C.2: WADT TVC vs TMS

Toll plaza	Source	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
TP1	TVC	3,278	800	777	537	951	1,078	2,611	3	10,035
	TMS	4,237	-	375	481	1,240	1,073	2,639	1	10,045

Source: Steer Analysis

Table C.3: 3-day TVC counts at SH74

Date	Source	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
23-01-2025	TVC	1,218	520	274	123	116	90	752	-	3,093
24-01-2025	TVC	1,211	533	255	134	132	93	697	-	3,055
25-01-2025	TVC	1,198	494	236	135	136	76	664	1	2,940

Source: Steer Analysis

Zone List

Table C.3: Zone list used for OD analysis

Zone No	Zone name	State of zone
1	Sitamarhi	Bihar
2	Sheohar	Bihar
3	Samastipur	Bihar
4	Muzaffarpur	Bihar
5	Gopalganj	Bihar
6	East Champaran	Bihar
7	darbhanga	Bihar
8	west champaran	Bihar
9	Araria	Bihar
10	Aurangabad	Bihar
11	Banka	Bihar
12	Begusarai	Bihar
13	Bhagalpur	Bihar
14	Bhojpur	Bihar
15	Buxar	Bihar
16	Gaya	Bihar
17	Jamui	Bihar
18	Kaimur (bhabua)	Bihar
19	Katihar	Bihar
20	Khagaria	Bihar
21	Kishanganj	Bihar
22	Lakhisarai	Bihar
23	Madhepura	Bihar
24	Madhubani	Bihar
25	Munger	Bihar
26	Nalanda	Bihar
27	Nawada	Bihar
28	Patna	Bihar
29	Purnia	Bihar
30	Rohtas	Bihar
31	Saharsa	Bihar
32	Saran (chhapra)	Bihar
33	Sheikhpura	Bihar
34	Siwan	Bihar
35	Supaul	Bihar

Zone No	Zone name	State of zone
36	Vaishali	Bihar
37	Arwal	Bihar
38	Jehanabad	Bihar
39	Barauli	Bihar
40	Raxaul	Bihar
41	Lalganj	Bihar
43	Hussaini	Bihar
44	Barauni	Bihar
45	Lala Chhapra	Bihar
46	Turki	Bihar
47	Tikuliya	Bihar
48	Sahebganj	Bihar
49	Raniganj Mohalla	Bihar
50	Pipra Kothi	Bihar
51	Pipra	Bihar
52	phenhara	Bihar
53	Pasrampur	Bihar
54	Pakridayal	Bihar
55	Nauzamin	Bihar
56	Nankar Parsauni Khem	Bihar
57	Motipur	Bihar
58	Motihari	Bihar
59	Mirzapur	Bihar
60	Mehsi	Bihar
61	Matkan	Bihar
62	Math Parmeshwar	Bihar
63	Mahuawa	Bihar
64	Madhuban Bediban	Bihar
65	Madhuban	Bihar
66	Kundia	Bihar
67	Kunarpur	Bihar
68	Kuahi	Bihar
69	Kotwa	Bihar
70	Koir Gawan	Bihar
71	Khalilpur	Bihar
72	Kesariya	Bihar
73	Katha	Bihar

Zone No	Zone name	State of zone
74	Kanti	Bihar
75	Jiwdhara	Bihar
76	jasauli Patti	Bihar
77	Jahingara	Bihar
78	Harsher	Bihar
79	Hardiyabad	Bihar
80	Halimpur	Bihar
81	Gariba	Bihar
82	Dipau	Bihar
83	Dhobauliya	Bihar
84	Darmaha	Bihar
85	Damodarpur	Bihar
86	Chintamanpur	Bihar
87	Chand Saraia	Bihar
88	Chakia	Bihar
90	Chak Bara	Bihar
91	Chaita	Bihar
92	Bir Chhapra	Bihar
93	Bettiah	Bihar
94	Belwadih	Bihar
95	Bathna	Bihar
96	Baruraj	Bihar
97	Bardaha	Bihar
98	Baisaha	Bihar
99	Alaula	Bihar
100	Alakhbani	Bihar
101	Ahiraulia	Bihar
103	Ababkarpur	Bihar
107	Bodh gaya, Gaya	Bihar
108	Andaman & Nicobar Island	Andaman & Nicobar Island
109	Andhra Pradesh	Andhra Pradesh
110	Arunanchal Pradesh	Arunanchal Pradesh
111	Assam	Assam
112	Chandigarh	Chandigarh
113	Chhattisgarh	Chhattisgarh
114	Dadara & Nagar Havelli	Dadara & Nagar Havelli
115	Daman & Diu	Daman & Diu

Zone No	Zone name	State of zone
116	Goa	Goa
117	Gujarat	Gujarat
118	Haryana	Haryana
119	Himachal Pradesh	Himachal Pradesh
120	Jammu & Kashmir	Jammu & Kashmir
121	Jharkhand	Jharkhand
122	Karnataka	Karnataka
123	Kerala	Kerala
124	Lakshadweep	Lakshadweep
125	Madhya Pradesh	Madhya Pradesh
126	Maharashtra	Maharashtra
127	Manipur	Manipur
128	Meghalaya	Meghalaya
129	Mizoram	Mizoram
130	Nagaland	Nagaland
131	NCT of Delhi	NCT of Delhi
132	Puducherry	Puducherry
133	Punjab	Punjab
134	Rajasthan	Rajasthan
135	Sikkim	Sikkim
136	Tamil Nadu	Tamil Nadu
137	Telangana	Telangana
138	Tripura	Tripura
139	Uttar Pradesh	Uttar Pradesh
140	Uttarakhand	Uttarakhand
141	West Bengal	West Bengal
142	Malda	West Bengal
143	Behrampur	West Bengal
144	Sahibganj	West Bengal
145	Pakur	West Bengal
146	Odisha	Odisha
147	Nepal	Nepal
148	Bangladesh	Bangladesh
149	BHUTAN	BHUTAN

`Source: Steer analysis

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Cube Highways Fund Advisors Private Limited
Our ref: 23741310
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October 2025

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Contents

Disclaimer		**i**
Glossary Items		**iii**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this Report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Economic activities	7
	Alternate routes	9
3	**Traffic description**	**11**
	Introduction	11
	Historical Trends	12
	Data collection and validation	22
	Key findings of the TVC data analysis	23
	Key findings of origin-destination analysis	26
	Conclusions	37
4	**Socio-economic context**	**38**
	Introduction	38
	Population growth	38
	Economic Indicators	39
	Economic growth	42
	Forecasts for growth drivers	46
5	**FY26 base year AADT and traffic growth analysis**	**48**
	Introduction	48
	FY26 Base year AADT estimates	48
	Estimation of background elasticities	52
	Forecasts for background elasticities	57
6	**Forecast: Network overlays and forecasts**	**59**
	Introduction	59
	Analysis of network/developmental impacts	59
	Revenue forecasting assumptions	67
	Traffic and Revenue forecasts	71
	Upside and Downside cases	75
	Summary outlook	80

Figures

Figure 2-1: Asset location in India context 4
Figure 2-2: Asset context 5
Figure 2-3: Typical cross section of the Asset and toll plaza (Clockwise) 7
Figure 3-1: Ticket-segmentation for CJV at TP1 18
Figure 3-2: Ticket-segmentation for MAV at TP1 19
Figure 3-3: Ticket-segmentation for CJV at TP2 19
Figure 3-4: Ticket-segmentation for MAV at TP2 20
Figure 3-5: Ticket-segmentation for CJV at TP3 20
Figure 3-6: Ticket-segmentation for MAV at TP3 21
Figure 3-7: WADT at TP1, TP2 and TP3 24
Figure 3-8: Comparison between TVC and TMS daily traffic data on TP1 (2023) 24
Figure 3-9: Comparison between TVC and TMS daily traffic data on TP2 (2025) 25
Figure 3-10: Comparison between TVC and TMS daily traffic on TP3 (2023) 25
Figure 3-11 Comparison between vehicle shares from TVC and TMS WADTs 26
Figure 3-12: Zonal influence at TP1 (2023) 28
Figure 3-13: Zonal influence at TP2 (2025) 29
Figure 3-14: Zonal influence at TP3 (2023) 29
Figure 3-15 Internal-external distribution at TP1 (2023) 30
Figure 3-16: Internal-external distribution at TP2 (2025) 30
Figure 3-17: Internal-external distribution at TP3 (2023) 31
Figure 3-18: Commodity distribution at TP1 (Total) 33
Figure 3-19: Commodity distribution at TP2 (Total) 34
Figure 3-20: Commodity distribution at TP3 (Total) 34
Figure 3-21: Trip length distribution TP1 (2023) 35
Figure 3-22: Trip length distribution TP2 (2025) 36
Figure 3-23: Trip length distribution TP3 (2023) 36
Figure 4-1: Annual growth – Index of Industrial Production 40
Figure 4-2: Car Ownership in India per 1000 population 41
Figure 4-3: Per Capita Income 41
Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures 42
Figure 4-5: Month on Month IIP performance 43
Figure 4-6: Industrial components of GVA 43
Figure 4-7: Evolution of Andhra Pradesh's state GDP and national GDP 44
Figure 4-8: Sectoral contribution to Andhra Pradesh GSDP (FY24) 45
Figure 4-9: Sectoral contribution to Telangana GSDP (FY24) 46
Figure 4-10: GDP-GSDP forecast 47
Figure 5-1: FY26 Base Estimation methodology 49
Figure 5-2: Relationship between CJV traffic and AP-Telangana GSDP 53
Figure 5-3: Relationship between LCV and AP-Telangana GSDP 54

Figure 5-4: Relationship between Bus traffic and AP-Telangana GSDP 54
Figure 5-5: Relationship between 2A and India GDP 55
Figure 5-6: Relationship between 3A combined traffic and India's GDP 56
Figure 5-7: Relationship between MAV combined traffic and India's GDP 56
Figure 6-1: Alternate routes and Asset route shown against the regional network context 60
Figure 6-2: Impact due to Nagpur Vijayawada Expressway 62
Figure 6-3: Impact due to RRR 64
Figure 6-4: Impact of Amaravati Induced Demand 66
Figure 6-5: Upside and Downside Case PCU Forecasts - TP1 Madugulapally 78
Figure 6-6: Upside and Downside Case Revenue Forecasts - TP1 Madugulapally 78
Figure 6-7: Upside and Downside Case PCU Forecasts - TP2 Thummalacheruvu 79
Figure 6-8: Upside and Downside Case Revenue Forecasts - TP2 Thummalacheruvu 79
Figure 6-9: Upside and Downside Case PCU Forecasts - TP3 Elchuru 80
Figure 6-10: Upside and Downside Case Revenue Forecasts - TP3 Elchuru 80

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Summary of concession 6
Table 2.2: Single toll rates on NAMEPL (INR) – FY26 6
Table 3.1: PCU Factors 11
Table 3.2: Historical evolution in AADT by vehicle class at TP1 Madgulapally 12
Table 3.3: Historical evolution in Tollable AADT by vehicle class at TP1 Madgulapally 13
Table 3.4: Historical evolution in AADT by vehicle class at TP2 Tummalacheruvu 13
Table 3.5: Historical evolution in Tollable AADT by vehicle class at TP2 Tummalacheruvu 14
Table 3.6: Historical evolution in AADT by vehicle class at TP3 Elchuru 15
Table 3.7: Historical evolution in Tollable AADT by vehicle class at TP3 Elchuru 15
Table 3.8: Historical revenue evolution (in INR Crores) and AADC (in INR Lakhs) for the Asset 16
Table 3.9: Typical ticket types sold at plazas 17
Table 3.10: Ticket-segmentation for LCV, Bus, 2A, 3A and OSV Categories at TP1 21
Table 3.11: Ticket-segmentation for LCV, Bus, 2A, 3A and OSV Categories at TP2 22
Table 3.12: Ticket-segmentation for LCV, Bus, 2A, 3A and OSV Categories at TP3 22
Table 3.13: Data collection schedule 23
Table 3.14: Difference in vehicle counts when combined 26
Table 3.15: Sample rates for OD data 27
Table 3.16: Zone aggregations for zonal influence analysis 27
Table 3.17: Aggregate commodity categories 32
Table 4.1: CAGR of population in India 39
Table 4.2: Population Growth in India (2012 – 2024) 39
Table 5.1: SCF for TP1 Madgulapally 49
Table 5.2: SCF for TP2 Tummalacheruvu 49
Table 5.3: SCF for TP3 Elchuru 50

Table 5.4: Adopted AADT, TP1 Madgulapally	50
Table 5.5: Adopted AADT, TP2 Tummalacheruvu	51
Table 5.6: Adopted AADT, TP3 Elchuru	51
Table 5.7: Identified growth drivers to model traffic growth	52
Table 5.8: Derived elasticities from regression analysis and assumed forecast elasticities for background growth	57
Table 6.1: Impact due to greenfield Surat-Chennai expressway (Solapur/West)	61
Table 6.2: Impact due to Nagpur Vijayawada Expressway	62
Table 6.3: Impact due to RRR	65
Table 6.4: Impact due to Amaravati Induced Demand	67
Table 6.5: WPI growth forecast assumptions	68
Table 6.6: Toll segmentation for the forecast years for TP-1	68
Table 6.7: Toll segmentation for the forecast years for TP-2	68
Table 6.8: Toll segmentation for the forecast years for TP-3	69
Table 6.9: Trip factors for the forecast years at TP 1	69
Table 6.10: Trip factors for the forecast years at TP 2	69
Table 6.11: Trip factors for the forecast years at TP 3	70
Table 6.12: FY25 Revenue reconciliation summary (INR Lakhs)	70
Table 6.13: Traffic forecasts (with impacts) AADT forecast for TP-1 Madgulapally	71
Table 6.14: Traffic forecasts (with impacts) traffic CAGR (%) for TP-1 Madgulapally	71
Table 6.15: Revenue forecast (INR crores) for TP-1 Madgulapally	71
Table 6.16: Revenue forecast CAGR (%) for TP-1 Madgulapally	72
Table 6.17: Traffic forecasts (with impacts) AADT forecast for TP-2 Tummalacheruvu	72
Table 6.18: Traffic forecasts (with impacts) traffic CAGR (%) for TP-2 Tummalacheruvu	72
Table 6.19: Revenue forecast (INR crores) for TP-2 Tummalacheruvu	73
Table 6.20: Revenue forecast CAGR (%) for TP-2 Tummalacheruvu	73
Table 6.21: Traffic forecasts (with impacts) AADT forecast for TP-3 Elchuru	73
Table 6.22: Traffic forecasts (with impacts) traffic CAGR (%) for TP-3 Elchuru	74
Table 6.23: Revenue forecast (INR crores) for TP-3 Elchuru	74
Table 6.24: Revenue forecast CAGR (%) for TP-3 Elchuru	74
Table 6.25: Summary of Macro-economic Assumptions for upside and downside cases	75
Table 6.26: Summary of impacts on the Assets	76
Table 6.27: Summary of impacts on the Assets	76
Table 6.28: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY40	77

Appendices

A	**Detailed Forecasts**
B	**Top OD Pairs**
C	**Data Collection Exercise**

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
INR	Indian Rupees
km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March

Acronym	Meaning
RNP	Registered Number Plate
SCF	Seasonality Correction Factor
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on Narketpally-Addanki-Medarametla Expressway Ltd. (or 'NAMEL', hereafter called 'Asset'). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 9 project". This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset consists of a single stretch of toll road with three toll plazas. For the purpose of this report, we hereafter call the toll plazas present on the Asset as TP1, TP2 and TP3 respectively as:

- TP1 – Madgulapally
- TP2 – Thummalacheruvu
- TP3 – Elchuru

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Mar'14 and Sep'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable.
• Validation of revenue reported in FY25YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer in 2025. The latest surveys were undertaken in 2025 at TP2 Thummalacheruvu only.

Scope of work	Data source
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis conducted by Steer based on Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research and Steer's in-house experience of working in the vicinity of the Asset
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on latest toll notification published by the Government of Telangana – Roads and Buildings Department and latest actual Wholesale Price Index (WPI) trends as shared by the Client. • Assumptions of WPI forecasts and future tolling length changes provided by Client • Revenues estimated as a product of traffic forecasts and toll evolution

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis focused on two sets of issues, namely:

1. Understanding the traffic that is currently using the Asset; and
2. Identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data starting March 2014 to September 2025
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous studies related to traffic and revenue
  - Steer-commissioned OD surveys on TP2 on 22nd January 2025 and previously conducted surveys in 2023 on the Asset to validate any change in growth drivers and travel patterns.
  - Steer-commissioned three-day TVC survey between 23rd January and 25th January 2025 on TP2 and previously conducted surveys in 2023 as a part of study.
- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by the toll plaza and subsequently matched it to the reported revenue for FY26YTD using the prevailing toll rates and reported segmentation/toll-frequencies for FY26YTD, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against the ten months of actual traffic (Apr-Sep) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by Client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future.
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this Report

1.7 The report has been divided into six chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth;
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth; and
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases

2 The Asset

Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

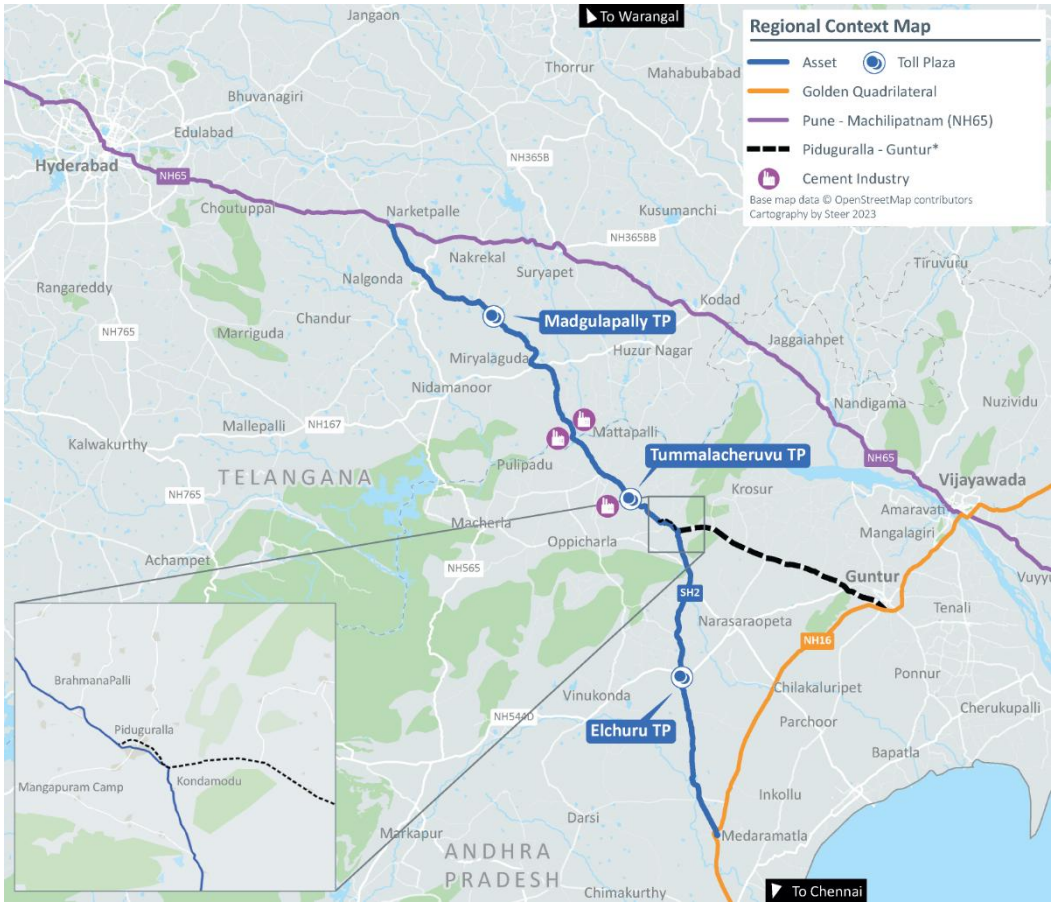
2.2 The Asset is an interstate route connecting southeastern Telangana with northern Andhra Pradesh. It connects the towns of Narketpally (Nalagonda district, Telangana) and Medarametla (Bapatla district, Andhra Pradesh). Figure 2-1 below shows the regional road network in which the Asset is located.

Figure 2-1: Asset location in India context

Source: Steer cartography using OpenStreetMap data

2.3 The Asset is a 212.5-km four-lane toll road which forms a part of the state highway SH-2 (New SH36 in Andhra Pradesh (AP)). There are three toll plazas, namely, Madgulapally (also spelled as "Madugulapally") (TP1), Tummalacheruvu (also spelled as "Thummalacheruvu") (TP2), and Elchuru (TP3) in the increasing order of their distance from Hyderabad. Figure 2-2 below provides a closer view of the Asset in the context of its immediate surroundings.

Figure 2-2: Asset context



Source: Steer cartography

2.4 The Asset caters to three different types of movements, by virtue of its strategic location on various corridors:

Long-distance

- NH44-SH2-NH16 long-distance corridor connecting North India (including Delhi, Haryana, Punjab, and Uttarakhand) with Chennai
- NH65-SH2-NH16 long-distance corridor connecting Mumbai with Chennai
- NH52-SH2-NH16 long distance corridor connecting Gujarat and Rajasthan with Chennai

Medium distance

- SH2-NH16 medium-distance corridor connecting Chennai/Hyderabad, and cement production sites
- SH2: Medium-distance corridor connecting Hyderabad with Vijayawada and Guntur.

Short distance

- SH2: Short-distance trips between Hyderabad and Rest of Telangana/Andhra Pradesh.

Concession and tolling details

2.5 The toll plazas have been operational since April 2014 (FY15), and the Client took over operations in FY19. The concession period runs until FY40. Table 2.2 below summarises key aspects of the concession.

Table 2.1: Summary of concession

	Particulars
State	Andhra Pradesh - Telangana
Highway and lane configuration	SH2 four-lane
Toll plazas	• TP1: Madgulapally (Madugulapally) • TP2: Tummalacheruvu (Thummalacheruvu) • TP3: Elchuru
Length (km) as per concession agreement, applicable	• TP1: 70.61Km • TP2: 63.88Km* • TP3: 69.32Km
Commencement of operations	TP1, TP2 & TP3: April 2014
Implementation of FASTag	TP1: August 2021, TP2 & TP3: October 2021
Operated by Client since	October 2018 (FY19)
Concession period	21 years
Last year of concession	FY40

Source: Concession agreement, FY25 toll notification; *excluding 5.79Km of net bypass length

2.6 Tolls on the Asset are collected for the following vehicle categories with rates as shown in Table 2.2 below. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling.

2.7 Table 2.2 below presents the Single toll rate charged at the toll plazas. Apart from single tickets, the typical NHAI ticket categories like return, monthly, local personal and local commercial passes are also available on the Asset. Tolls are revised every alternate year on this Asset.

Table 2.2: Single toll rates on NAMEPL (INR) – FY26

Type of Vehicle	TP1	TP2	TP3
CJV	77	77	76
LCV/ Minibus	154	153	152
Bus/Truck	309	307	303
3A/MAV	772	767	759

Type of Vehicle	TP1	TP2	TP3
HCM/EME/OSV	772	767	759

Source: Government of Telangana Roads and Buildings Department Revision of User Fee Rate;

2.8 On January 22, 2025, Steer conducted a site visit to the Assets to oversee ongoing traffic surveys and gain a comprehensive understanding of the adjacent transportation network. Figure 2.3 below illustrates the Assets' toll plazas as observed during the site visit, accompanied by a visual representation of the Assets' road infrastructure. The pictures displayed clockwise show TP2, TP3, TP1 and the Asset's road infrastructure.

Figure 2-3: Typical cross section of the Asset and toll plaza (Clockwise)

Source: Steer site visit

Economic activities

2.9 The Asset is located between Hyderabad and Vijayawada-Guntur region and Chennai region on the other side. Chennai, Hyderabad, and the Guntur–Vijayawada region are key economic centres in southern India, each with distinct industrial strengths.

2.10 Chennai has strategically cultivated a strong economic profile, moving beyond traditional perceptions to become a prime business destination in India. Its long-term industrial policy has fostered a significant economic powerhouse, particularly in the state of Tamil Nadu. The city benefits from a well-educated workforce, making it a major outsourcing hub for international banks and insurers, and has seen substantial growth in its electronics manufacturing sector. This robust development has also led to a relatively affluent population, making it a key testing ground for fast-moving consumer goods.

Chennai is also a major automobile manufacturing hub and excels in software services, hardware production, financial services, and port-based trade[1]. Guntur and Vijayawada, in Andhra Pradesh, are known for agriculture-driven commerce—especially chili exports—and have strong industrial bases in textiles, cement, and tobacco processing[2]. Hyderabad has emerged as a global centre for IT and pharmaceuticals, housing tech giants like Microsoft and Google, along with major pharma players such as Dr. Reddy's Laboratories and Aurobindo Pharma[3].

2.11 According to the Telangana Socio Economic Outlook 2024[4], the state is ranked 12th in country if terms of population, and 11th in terms of its area. Owing to various initiatives taken by the State government, the state's economy has shown steady growth since inception, which is expected to continue with news around the state and its neighbour (Andhra Pradesh) both anticipating extensive investment in healthcare, port infrastructure, last mile connectivity and private employment.

2.12 Amaravati, the planned capital of Andhra Pradesh, is witnessing renewed development momentum with the launch of a ₹65,000 crore capital city project aimed at transforming the region into a modern administrative and civic hub. The initiative includes the construction of the Legislative Assembly and High Court within 24 months, along with the Secretariat and other infrastructure in phased timelines. This revival, driven by the state government's renewed focus, aims to build a "people's capital" with robust amenities in housing, education, healthcare, and transport[5].

2.13 The Asset is characterised by cement factories situated along its alignment, in proximity to TP2 facilitating movement in both directions; towards Hyderabad, and towards Chennai/Guntur. Since their establishment, the India Cements plant and the Penna Cements plant supply cement for construction projects in the region, with the Asset providing critical access to nearby consumption centres such as Hyderabad, Piduguralla, Nalgonda, Addanki, Guntur as well as the demand generated by Krishnapatnam port in the south[6]. Additionally, in 2024, Shree Cement Limited, a prominent Indian cement manufacturer, commenced operations at its newly established integrated cement plant in Dachepalli village, Guntur district, Andhra Pradesh. This facility, completed six months ahead of its projected timeline with an investment exceeding Rs 2,500 crore, possesses an annual cement production capacity of 3 million tons[7].

2.14 Paddy farming is extensively laid out along the Asset route, predominantly found closer to TP1. The agricultural movement observed on the Asset majorly consists of rice being transported from rice mills on the Asset, from where they're moved to areas in Nalgonda,

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[1] **Chennai: open the door to India's markets**

[2] **Brief Industrial Profile of Guntur District**

[3] **Telangana: An act to follow - IndBiz | Economic Diplomacy Division | IndBiz | Economic Diplomacy Division**

[4] **tgdps.telangana.gov.in/seo-2024.pdf**

[5] **Andhra kicks off Rs 65,000 cr Amaravati capital city project, PM invited for ground-breaking event**

[6] Source: Steer Site visit in 2025 and earlier

[7] **Shree Cement inaugurates new plant in Guntur, to generate 2,000 jobs**

Miryalguda, Piduguralla, Guntur, etc. Apart from agriculture-linked traffic, the Asset also observes a significant share of manufacturing movement which includes automobiles from North India destined to Chennai/Krishnapatnam port, e-commerce products, and electronic appliances[8].

Alternate routes

2.15 Further to the previous section on the strategic network context of the Asset, this section provides details on alternate routes that have been considered in our network analysis (discussed in chapter 6).

2.16 The main competitor for long-distance traffic on the Asset is the under-construction 1,271 km four-six lane access-controlled Surat- Solapur- Chennai Expressway. The Indian government is rapidly progressing on the Surat-Solapur-Chennai (SCE) expressway project, which will pass through Nasik, Ahmednagar, Solapur, Kalaburgi, Kurnool, Kadappa, and Tirupati. The Surat-Solapur section will be a new greenfield alignment, while the rest will involve upgrading existing two-lane roads to four lanes. The upcoming expressway once operational[9] is expected to reduce the travel time between Surat and Chennai resulting in diversion of some long-distance traffic from the Asset, which is discussed in detail in Chapter 6.

2.17 The Hyderabad Regional Ring Road is a 330+ km long planned highway that will be outside the existing Outer Ring Road (ORR) that will connect various towns and growth centres around Hyderabad as a bypass route for through traffic crossing the region on long-distance routes. The RRR will enable long-distance vehicles to access southern regions without entering Hyderabad, saving time and avoiding congestion. It will allow traffic to enter the Asset from the north via the Pragnapur-Chottupal route, whereby traffic on NH44 will get direct access to Narketpalle without experiencing congestion along dense urban networks around Hyderabad. The Hyderabad Regional Ring Road (RRR) is currently under development[10] and is expected to benefit the Asset once completed and operational.

2.18 The existing 217 km segment between Hyderabad and Nandyal (NH167k) is being upgraded to a 4-lane section. This project is broken into three phases, with the middle section being a greenfield upgrade. Once completed, this segment will most likely provide vehicles starting in Hyderabad or north of it with alternative route to Chennai via Kurnool-Kadapa route. The incorporation of this impact has been taken alongside the impact of the HORR, the details of which are provided in Chapter 6 below.

2.19 Under the Bharatmala Pariyojna Project, the National Highways Authority of India (NHAI) is undertaking the development of the 457-kilometer Nagpur – Vijayawada Expressway as an Economic Corridor[11]. This project encompasses the widening of existing alignments and the creation of a new greenfield section connecting Warangal and Vijayawada in the state of Andhra Pradesh.

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[8] As understood during Steer's Site Visit in 2025 and earlier

[9] **Surat Chennai Expressway- Key Features, Route Map, and Cost**

[10] **Telangana sets ball rolling on Regional Ring Road**

[11] **NHAI.GOV.IN**

2.20 The above-mentioned network developments and their impacts have been discussed in detail in Chapter 6 of the report.

3 Traffic description

Introduction

3.1 This chapter outlines the current traffic and revenue trends on the Asset basis TMS traffic data provided by the Client, and analyses of origin-destination (OD) survey data as well as TVC traffic count data as collected by Steer commissioned surveys as part of this study.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as also the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year Monthly Average Daily Traffic (MADT) is established. This data is typically provided by the Client and independently analysed and validated by us using Traffic Volume Count (TVC) information.

PCU factor assumption

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'[12]. For MAVs, based on the discussion with the Client, we have referred to the rigid and trailer splits in the TVC counts for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5, as defined in IRC 64:1990[12]. The PCU factors used in our analyses are presented in Table 3.1 below.

Table 3.1: PCU Factors

Vehicle Category	PCU Factor
CJV	1.0
Mini LCV	1.0
LCV	1.5
Bus	3.0
2A	3.0
3A	3.0
MAV*	3.2
OSV	4.5

[12] IRC 064: Guidelines for Capacity of Roads in Rural Areas

Source: Steer analysis, * Rigid-Trailer PCU

Historical Trends

3.5 Between FY18-FY25, all three toll plazas on the Asset have observed robust traffic growth. This growth, primarily driven by CJVs, MAVs, and 2As, can be attributed to two key factors: heightened construction activity fuelled by capital expenditure (CAPEX) in Telangana[13] and Andhra Pradesh[14], leading to increased truck traffic; and a rise in passenger traffic across all three plazas due to the Asset's strategic location between developing urban centres such as the Hyderabad and Guntur/Vijayawada regions. The Asset observed decline in traffic volumes in FY21 due to the Impact of the COVID-19 Pandemic. However, recovery of traffic post FY21 was strong and has sustained since then, further adding to the robust growth observed on the Asset over the same period (FY18-25).

3.6 Additionally, we observe flat to marginal decline in LCV and 3A volumes on the Asset over the same period, which can be attributed to shifting axle preferences amongst long-distance commercial transporters - a trend we have consistently observed on multiple Assets across the country, and not unique to this asset

3.7 Table 3.2 and Table 3.3 below show the historical variation in total and tollable traffic volume at the Madgupally toll plaza (TP1).

Table 3.2: Historical evolution in AADT by vehicle class at TP1 Madgulapally

Vehicle Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	4,184	4,451	4,997	5,582	5,756	6,378	6,858	7,464	8,080	8.6%
LCV	692	749	613	593	623	605	616	633	653	(1.3%)
Bus	720	750	734	452	576	727	740	790	836	1.3%
2A	548	614	727	747	816	960	1,077	1,215	1,263	12.0%
3A	732	720	672	607	590	614	617	646	647	(1.8%)
MAV	1,086	1,265	1,319	1,212	1,374	1,572	1,647	1,784	1,990	7.3%
Total	**7,961**	**8,548**	**9,062**	**9,192**	**9,735**	**10,856**	**11,555**	**12,530**	**13,469**	**6.7%**
PCU	**14,702**	**15,880**	**16,546**	**15,775**	**17,041**	**19,232**	**20,364**	**22,083**	**23,678**	**6.0%**

Source: Steer analysis of Client data, FY26YTD includes data till September'25.

[13] Telangana scores 190 percent rise in capital expenditure in 2023-24 H1-Telangana Today

[14] Andhra Pradesh posts highest Capex increase among states for FY-26 | Vijayawada News - The Times of India

Table 3.3: Historical evolution in Tollable AADT by vehicle class at TP1 Madgulapally

Vehicle Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	3,442	3,594	4,117	4,785	4,946	5,513	5,914	6,436	6,953	9.4%
LCV	684	731	603	583	621	601	611	628	647	(1.2%)
Bus	719	744	709	424	575	727	740	790	836	1.4%
2A	542	603	717	726	813	959	1,075	1,212	1,261	12.2%
3A	725	708	661	591	590	614	614	642	643	(1.7%)
MAV	1,082	1,258	1,309	1,186	1,371	1,570	1,645	1,781	1,986	7.4%
Total	**7,195**	**7,638**	**8,117**	**8,295**	**8,916**	**9,984**	**10,598**	**11,490**	**12,326**	**6.9%**
PCU	**13,897**	**14,889**	**15,483**	**14,686**	**16,208**	**18,348**	**19,389**	**21,023**	**22,512**	**6.1%**

Source: Steer analysis of Client data, FY26YTD includes data till September'25.

3.8 As can be seen in Table 3.2 above, TP1 has witnessed a PCU CAGR of 6.0% from FY18-25. This growth is primarily driven by growth in CJVs, 2As, and MAVs. Negative growth observed in FY21 was caused by the onset of the COVID-19 pandemic, which was followed by a rapid recovery in FY22.

3.9 In FY25, CJVs constituted approximately 56% of the total traffic at TP1, followed by 3A+MAVs in total traffic (AADT), which represented approximately 21% of the traffic during the same period. The substantial volume of CJVs is primarily attributed to passenger movement from Guntur to Hyderabad and Dachepalli for purposes including employment, healthcare, and education. As seen in Table 3.2 above, CJVs have grown at a CAGR of 8.6% between FY18-25 indicating the increase of use of the Asset as a means of commute between key hubs such as Guntur, Chennai, Ongole and Hyderabad.

3.10 From FY18 to FY25, MAV and 2A volumes at TP1 grew at 7.2% and 11.9% per year (respectively). A significant portion of the commercial traffic on TP1 comprises manufactured goods, including automobile components and electronics, moving between Chennai-Hyderabad and between North India and the industrial hubs of near Chennai.

3.11 MAVs observed at TP1 also include those carrying cement from local cement plants between TP1 and TP2 and are destined for Hyderabad (and beyond). 2-Axle and MAV growth is further aided by a shift in preference from 3A trucks to MAVs and 2As, a trend observed at an Asset as well as national level due to the alternatives providing better economic value in goods transportation.

Table 3.4: Historical evolution in AADT by vehicle class at TP2 Tummalacheruvu

Vehicle Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY18-25
CJV	3,708	3,965	4,303	4,962	5,184	5,484	6,044	6,438	6,937	8.2%
LCV	571	609	525	506	536	547	582	615	619	1.1%
Bus	634	686	674	309	517	685	724	739	779	2.2%
2A	639	693	724	755	848	952	1,072	1,191	1,228	9.3%

Vehicle Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY18-25
3A	999	992	812	786	767	730	712	680	677	(5.3%)
MAV	1,972	2,260	1,899	1,855	2,073	2,334	2,494	2,528	2,700	3.6%
Total	**8,522**	**9,207**	**8,937**	**9,172**	**9,925**	**10,731**	**11,630**	**12,191**	**12,940**	**5.2%**
PCU	**17,701**	**19,244**	**17,809**	**17,218**	**19,031**	**20,887**	**22,444**	**23,296**	**24,577**	**4.0%**

Source: Steer analysis of Client data, FY26YTD includes data till September'25.

Table 3.5: Historical evolution in Tollable AADT by vehicle class at TP2 Tummalacheruvu

Vehicle Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	3,291	3,459	3,775	4,478	4,681	5,015	5,564	5,926	6,397	8.8%
LCV	562	596	510	503	528	532	568	600	604	0.9%
Bus	630	679	651	306	513	681	721	735	777	2.2%
2A	634	689	718	752	844	946	1,067	1,184	1,224	9.3%
3A	995	990	806	785	766	730	711	679	676	(5.3%)
MAV	1,970	2,258	1,894	1,853	2,070	2,331	2,492	2,526	2,697	3.6%
Total	**8,081**	**8,671**	**8,353**	**8,677**	**9,402**	**10,235**	**11,123**	**11,651**	**12,374**	**5.4%**
PCU	**17,227**	**18,667**	**17,135**	**16,704**	**18,480**	**20,358**	**21,906**	**22,723**	**23,980**	**4.0%**

Source: Steer analysis of Client data, FY26YTD includes data till September'25.

3.12 Similar to TP1, TP2 achieved a PCU CAGR of 4% between FY18 and FY25, with CJV, 2A, and MAV being key contributors to overall traffic growth at TP2. As observed at TP1, the COVID-19 pandemic also impacted traffic growth at TP2 in FY21, resulting in total traffic decline of 2.5% in FY21, followed by a robust recovery in FY22-FY23. Additionally, growth in 2A and MAV traffic at TP2 is also due to construction material demand (particularly, cement) in and around Hyderabad, Chennai, and the Guntur/Vijaywada wider region, leading to increased truck traffic, alongside passenger growth directed towards Chennai and Hyderabad.

3.13 In FY20, TP2 observed decline in traffic due to the ban on sand mining near the Krishna River[15], which previously formed a significant portion of the Asset's truck traffic. Since the ban, and stricter enforcement to curb illegal mining and movement of sand between Andhra Pradesh and Telangana, sand as a commodity observed on the Asset has diminished. Several Roads and Transport Authority (RTA) checkpoints are also stationed between TP1 and TP2 to prevent sand transit.

3.14 Despite the impact of the FY20 sand mining ban on commercial traffic growth on the Asset, TP2 continues to observe the highest truck volumes among the three toll plazas on the Asset, primarily due to its proximity to major existing cement manufacturing facilities, including India Cements and Penna Cements, and the development of new cement plants

[15] Govt. bans sandmining - The Hindu

in Hyderabad and near Guntur[16]. The regional industrial profile and continued capacity augmentation through new developments have collectively driven strong growth of commercial traffic on the Asset and at particularly at TP2, where MAVs have grown at an annual average rate of 3.6% per year from FY18 to FY25.

3.15 Table 3.6 and Table 3.7 below present the historical variation in traffic volume at the TP3:

Table 3.6: Historical evolution in AADT by vehicle class at TP3 Elchuru

Vehicle Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	1,576	1,771	1,978	2,469	2,518	2,857	3,101	3,330	3,626	11.3%
LCV	354	384	354	341	362	394	415	452	485	3.6%
Bus	282	322	319	145	241	342	385	395	425	4.9%
2A	443	494	534	575	649	755	821	931	977	11.2%
3A	689	723	633	551	562	587	569	570	602	(2.7%)
MAV	1,496	1,639	1,532	1,407	1,501	1,718	1,803	1,912	2,115	3.6%
Total	**4,840**	**5,333**	**5,352**	**5,487**	**5,833**	**6,654**	**7,093**	**7,590**	**8,231**	**6.6%**
PCU	**11,146**	**12,219**	**11,885**	**11,304**	**12,230**	**14,010**	**14,828**	**15,828**	**17,152**	**5.1%**

Source: Steer analysis of Client data, FY26YTD includes data till September'25.

Table 3.7: Historical evolution in Tollable AADT by vehicle class at TP3 Elchuru

Vehicle Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	1,452	1,639	1,843	2,361	2,394	3,252	2,964	3,183	3,454	11.9%
LCV	344	369	341	332	360	467	412	449	484	3.9%
Bus	275	315	314	127	233	390	358	368	400	4.2%
2A	439	489	529	555	644	893	816	925	973	11.2%
3A	674	718	628	536	559	698	566	567	601	(2.4%)
MAV	1,494	1,637	1,530	1,388	1,499	2,046	1,801	1,909	2,113	3.6%
Total	**4,679**	**5,167**	**5,186**	**5,299**	**5,690**	**7,747**	**6,917**	**7,402**	**8,025**	**6.8%**
PCU	**10,926**	**12,009**	**11,678**	**10,963**	**12,051**	**16,459**	**14,576**	**15,561**	**16,878**	**5.2%**

Source: Steer analysis of Client data, FY26YTD includes data till September'25.

3.16 When compared to TP1 and TP2, TP3 has historically observed lower traffic volumes. This is because a major portion of traffic originating from Hyderabad is bound for Guntur and appears only on TP1 and TP2; this is evidenced by our OD survey analysis outputs at TP1 and TP2 (refer to Appendix B) and based on our site visit observations. The Guntur bound traffic does not appear on TP3, as it diverts after appearing on TP2 from Pidgurulla via

[16] Shree Cement inaugurates three MTPA plant in Andhra Pradesh - The Economic Times

SH21 to reach Guntur, leading to relatively lower volumes that cross TP3 on their way further south.

3.17 TP3 saw volumes declines for commercial vehicles in FY20 because of the sand-mining prohibition, and again in FY21 due to the impact of the COVID-19 pandemic – similar to trends observed at TP1 and TP2. In FY22, traffic at TP3 rebounded as construction activity in the region recovered. Between FY18 and FY25, PCU growth at TP3 was 5.1% per year.

3.18 3A volumes at all three plazas on the Asset have declined over the period FY18-25. This reduction in 3A volumes can be attributed to transporters increasingly opting for 2A and MAV vehicles in place of 3As. MAVs offer a greater tonnage capacity, enhancing their cost-effectiveness for freight transport, while growth in 2A vehicle volumes reflect a rising preference for these vehicles, driven by favourable adjustments in legal permissible loads and their suitability for e-commerce-related freight, particularly for high-value, low-volume goods transported over medium to long distances. This trend aligns with insights gained from discussions with various transporters and OEMs nationwide, who are increasingly favouring 2A and MAV vehicles for commodity movement due to their superior unit economics.

Historical Revenue

3.19 Table 3.8 below presents the reported historical revenue of the Asset.

Table 3.8: Historical revenue evolution (in INR Crores) and AADC (in INR Lakhs) for the Asset

Asset	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY18-25
Annual Revenue (INR Crore)	158.3	186.8	180.6	144.5	198.1	254.4	268.9	301.2	167.4	9.63%
AADC (in lakhs)	43.4	51.2	49.9	41.8	54.3	69.7	73.5	82.5	91	9.61%
AADC Growth (%)	-	18.0%	(2.5%)	(16.2%)	29.9%	28.4%	5.5%	12.3%	10.3%	-

Source: Steer analysis of Client data, FY26YTD includes data till September'25.

3.20 With increase in traffic across plazas and vehicle categories, the Asset recorded an average daily collection of INR ~83 lakh in FY25, compared to INR ~75 lakhs in FY24. Overall, AADC of the Asset has grown at 9.6% per year between FY18 and FY25.

3.21 Every alternate year observes a greater jump in revenue than the year-on-year increases due to the tolling regime followed on the Asset, wherein toll rates on the Asset are revised once every two years.

Toll Frequencies

3.22 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the Client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt.

Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these category passes instead of evading toll.

3.23 Understanding the toll frequency gives insights into the nature of traffic. CJVs generally have higher shares of return passes or local monthly passes because they travel for short to medium distances, while heavy trucks mostly have single tickets since they travel long distance. However, this distribution varies from asset to asset or even toll plaza to toll plaza. An asset catering to short distance local traffic generally observes high share of return or other local monthly passes while another that caters more to strategic long-distance traffic generally observes high share of single ticket traffic.

3.24 Since the Asset is a state highway that runs between AP and TL states, the "Daily Pass" ticket is the equivalent of a "Return Journey" ticket charged at national highways. This ticket allows users to make more than two trips (within a 24-hour period) at the price of 1.5x of a Single Journey ticket and is thus different from the NHAI "Return" ticket which only permits a user to make two trips within the same time. The data collection and compilation on the Asset is done in such a way that all users who purchase a Daily Pass ticket but make more than two trips per day are classified as "Return 2". This category generates no additional revenue and was processed similarly to the "Return" ticket in our analysis. In this context, Table 3.9 below shows the different types of tickets being sold at all three plazas on the Asset, including the wider definition of the "Return" ticket.

Table 3.9: Typical ticket types sold at plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows the vehicle to cross the plaza twice (or more than twice) in a day at discounted rates.
Monthly Pass	Discounted ticket for all road users issued at toll plaza who intend to undertake multiple single trips using the toll plaza. 50 trips are allowed on a discounted rate to be used within 30 days of issue.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc

3.25 On the Asset, a user can buy the ticket for crossing all three plazas at one plaza, via cash. However, since FASTag was implemented on the Asset (starting August 2021 on TP1, and 26th October 2021 on TP2 and TP3) there was a change in how these ticket categories were being recorded via these two modes of payment.

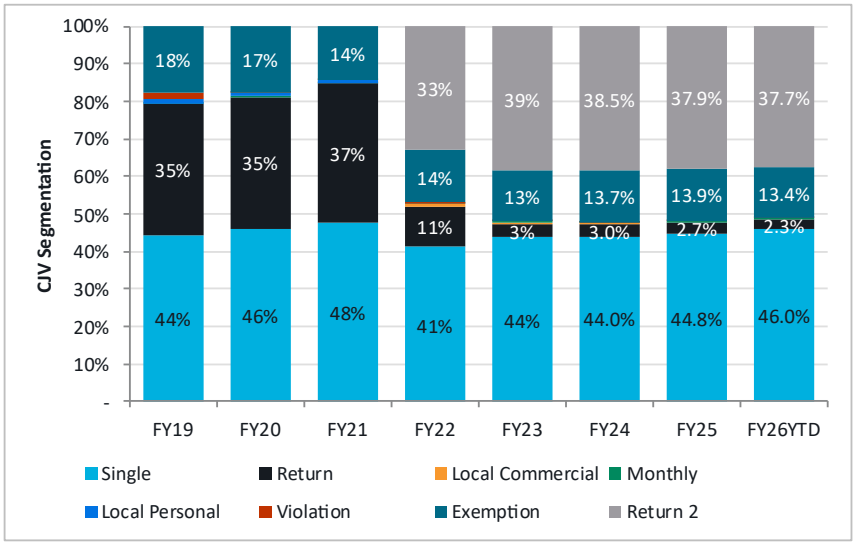
3.26 Generally, shares of single/return/monthly tickets tend to stabilise within 2-3 years of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns. During the calendar year 2021, for instance, two key events impacted the traffic patterns throughout the country: the COVID-19 pandemic, and FASTag implementation.

Share of traffic by payment type

3.27 As the Asset is a part of State highway which is under Andhra Pradesh Roads Development Corporation, FASTag is not mandatory on the Asset and separate lanes are provided for FASTag users. Across all three toll plazas, the Asset has 92-95% ETC penetration rate as of FY26YTD, with the remaining share of transactions still being facilitated via cash. This is because the Asset is a state-highway which does not mandate the use of FASTag for all vehicles.

3.28 Figure 3-1 through Figure 3-6 below show the toll segmentation for the historical years at all the toll plazas for CJVs and MAVs.

Figure 3-1: Ticket-segmentation for CJV at TP1



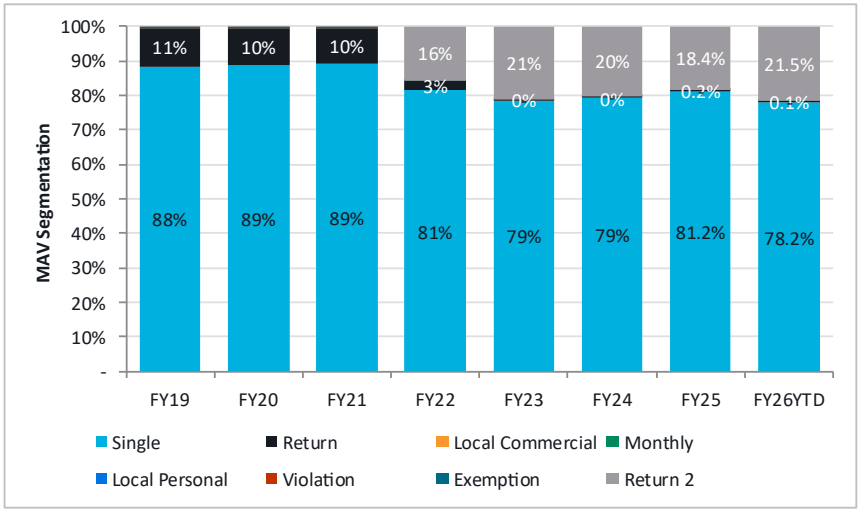
Source: Steer analysis of Client data, FY26YTD includes data till September'25.

3.29 From Figure 3-1 above, we see that ticket segmentation trends for CJVs at TP1 have stabilised post FY23. The ticket segmentation for CJVs in FY26YTD is characterised by a high share of Single and Return (including the "Return 2") tickets at approximately 46% and 40% (respectively). The high share of return tickets is dominated by a large share of short distance trips observed on the Asset at TP1 for CJVs[17]. A modest share of 13% of CJV trips at TP1 were Exemptions as of FY26YTD – stable since FY21 but lower than observed in FY19.

3.30 As shown in Figure 3-2 below, most MAVs crossing TP1 purchase single journey tickets (78% in FY26YTD) and the remainder (22%) purchase return tickets. This pattern is supported by the results of the OD analysis, which reveal a large share of long-distance travel and a corresponding share of short/medium distance traffic to locations such as Nalgonda, Miryalguda, and Pidugurulla, among others (see Figure 3-21).

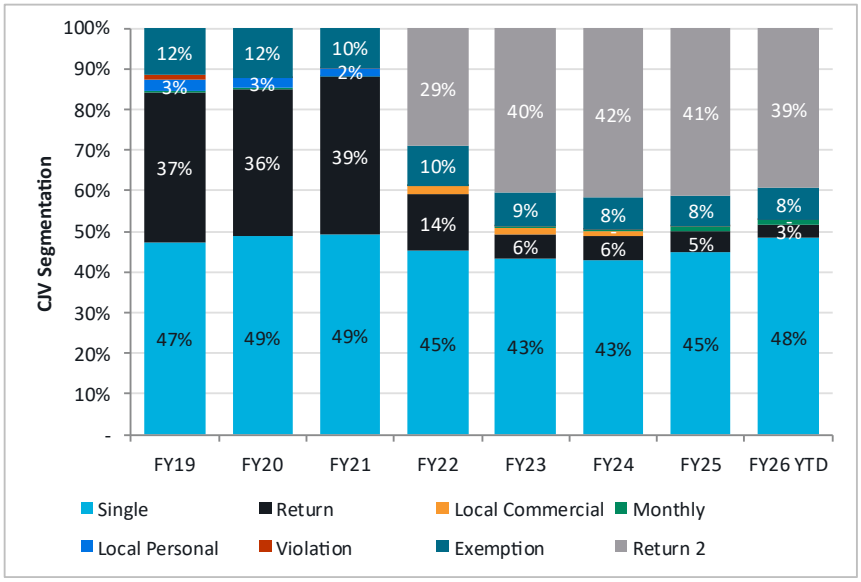
[17] Source: Steer Analysis of Origin-Destination Survey Data

Figure 3-2: Ticket-segmentation for MAV at TP1



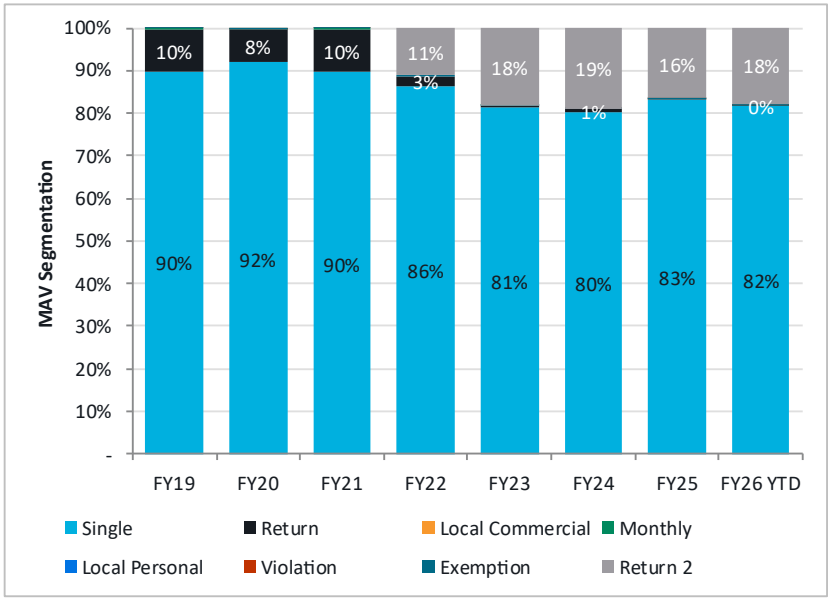
Source: Steer analysis of Client data, FY26YTD includes data till September'25.

Figure 3-3: Ticket-segmentation for CJV at TP2



Source: Steer analysis of Client data, FY26YTD includes data till September'25.

Figure 3-4: Ticket-segmentation for MAV at TP2

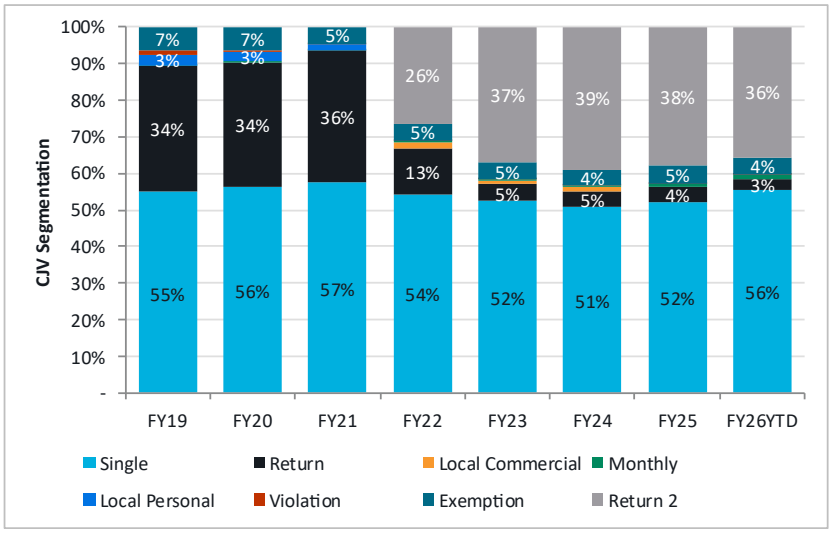


Source: Steer analysis of Client data, FY26YTD includes data till September'25.

3.31 As seen in Figure 3-3 above, CJVs on TP2 exhibit similar travel patterns as those at TP1. The share of CJV Exemptions at TP2 has reduced from 12% in FY19 to 8% as of FY26YTD. CJVs are characterised by an almost equal split between Single and Return Journey tickets. As mentioned before, the high share of return tickets is an indication of CJVs primarily making short distance trips[17], wherein 50% of CJVs are making trips shorter than 300 kms. Some of the commonly travelled hubs include Guntur, Hyderabad, Mirayalguda, Nalgonda and Dachepalli.

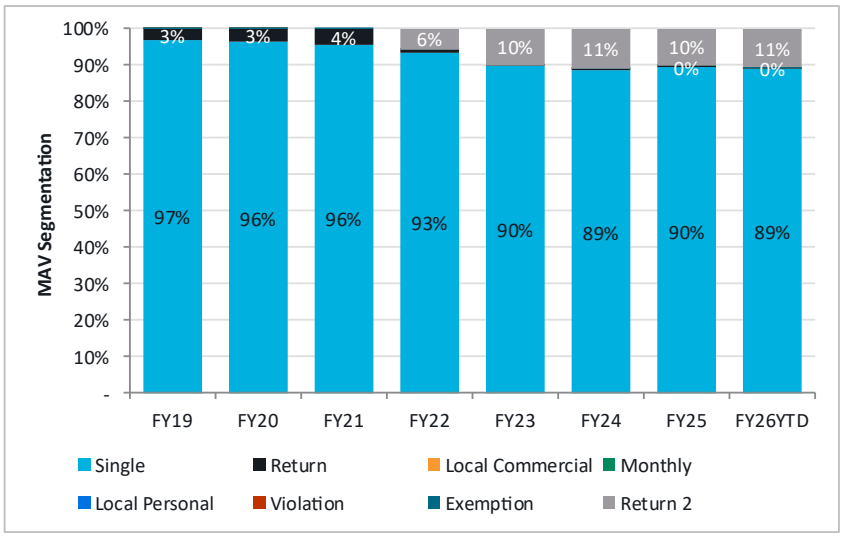
3.32 Most MAVs (83% in FY25) pay for single trips on TP2, with the balance purchasing return tickets. This pattern is corroborated by the results of the OD analysis, which reveal a substantial share of long-distance travel between hubs such as Chennai, Hyderabad, Mumbai, Delhi and Khammam, verifying the ticket segmentation trends determined from the Client's historical data (see Figure 3-22).

Figure 3-5: Ticket-segmentation for CJV at TP3



Source: Steer analysis of Client data; FY25YTD includes 10 months of reported revenue Apr-Jan'25

Figure 3-6: Ticket-segmentation for MAV at TP3



Source: Steer analysis of Client data, FY26YTD includes data till September'25.

3.33 On TP3, as of FY25, around 52% of CJV users paid for single tickets and approx. 41% bought return tickets. These shares have remained relatively steady over the years indicating that travel patterns of CJVs at TP3 appear to have stabilised by now.

3.34 For MAVs at TP3, the share of single tickets is the highest among all three toll plazas on the Asset, as most (if not all) of the MAV traffic on this plaza is through-traffic travelling from Hyderabad city to Ongole, Nellore, and onwards to Chennai. Because of the long-haul travel pattern of MAVs on this plaza, the single journey ticket share is relatively high for MAVs, ranging between 82% and 90%, as of FY25YTD.

3.35 Table 3.10, Table 3.11 and Table 3.12 below depicts the FY25 segmentation for LCV, Bus, 2A, 3A and OSV category for TP1, TP2 and TP3 respectively.

Table 3.10: Ticket-segmentation for LCV, Bus, 2A, 3A and OSV Categories at TP1

Ticket Type	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	46%	71%	37%	77%	84%	78%
Return	2%	1%	0%	0%	0%	0%
Local commercial	0%	0%	0%	0%	0%	0%
Monthly	0%	2%	32%	0%	0%	0%
Local personal	0%	0%	0%	0%	0%	0%
Violation	0%	0%	0%	0%	0%	0%
Exemption	13%	1%	0%	0%	0%	0%
Return 2	38%	26%	30%	22%	16%	21%

Source: Steer analysis of Client data, FY26YTD includes data till September'25

Table 3.11: Ticket-segmentation for LCV, Bus, 2A, 3A and OSV Categories at TP2

Ticket Type	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	48%	75%	39%	78%	83%	82%
Return	3%	1%	0%	0%	0%	0%
Local commercial	0%	0%	0%	0%	0%	0%
Monthly	1%	0%	30%	0%	1%	0%
Local personal	0%	0%	0%	0%	0%	0%
Violation	0%	0%	0%	0%	0%	0%
Exemption	8%	2%	0%	0%	0%	0%
Return 2	39%	22%	31%	21%	16%	18%

Source: Steer analysis of Client data, FY26YTD includes data till September'25

Table 3.12: Ticket-segmentation for LCV, Bus, 2A, 3A and OSV Categories at TP3

Ticket Type	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	56%	85%	43%	87%	82%	89%
Return	3%	0%	0%	1%	0%	0%
Local commercial	0%	0%	0%	0%	0%	0%
Monthly	1%	0%	22%	0%	0%	0%
Local personal	0%	0%	0%	0%	0%	0%
Violation	0%	0%	0%	0%	0%	0%
Exemption	4%	0%	5%	0%	0%	0%
Return 2	36%	15%	30%	12%	17%	11%

Source: Steer analysis of Client data, FY26YTD includes data till September'25

Data collection and validation

Overview

3.36 As mentioned previously, to validate and inform various inputs used in our earlier forecasting, we undertook OD data collection on the Asset in this study, comprising the surveys listed in Table 3.13 below. While TVC surveys were commissioned by Steer by contracting a third party in the study, OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data is comprehensive; where collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting. New OD surveys were conducted for TP2 in 2025.

Table 3.13: Data collection schedule

TP	3-day videography-based TVC			1-day OD survey
	Start date	End date	Time (hrs)	Survey Date
TP1	26th September 2023	28th September 2023	0000-2359	28th September 2023
TP2	22nd January 2025	24th January 2025	0000-2359	22nd January 2025
TP3	26th September 2023	28th September 2023	0000-2359	26th September 2023

Source: Steer analysis

3.37 In our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, to fully understand the impact of this weekly fluctuation on the Asset, we collected three-day counts at the toll plaza.

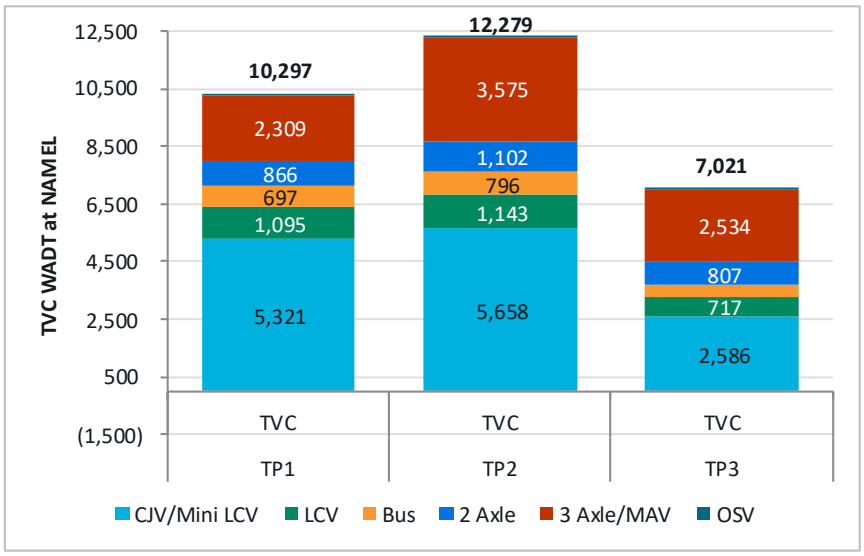
Key findings of the TVC data analysis

WADT estimates

3.38 Taking an average of the three-day TVC counts (22rd Jan – 24th Jan 2025 for TP2 and 26th Sep – 28th Sep 2023 for TP1 and TP3), we obtained estimates of weekly average daily traffic (WADT) by vehicle category for each of the three toll plazas on the Asset. This WADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

3.39 As shown in Figure 3-7 below, at TP1 and TP2, CJVs accounted for the largest share of all vehicles crossing the plazas, followed by MAVs and LCVs. In the case of TP3, both CJVs and MAVs accounted for almost equal shares of total traffic (between 2,500-2,600 vehicles each). As discussed previously, this difference in volumes between TP1, TP2, and TP3 is due to the Pidugurulla diversion that connects Hyderabad and Vijayawada-Guntur region through the Asset, and the cement plants near TP2.

Figure 3-7: WADT at TP1, TP2 and TP3



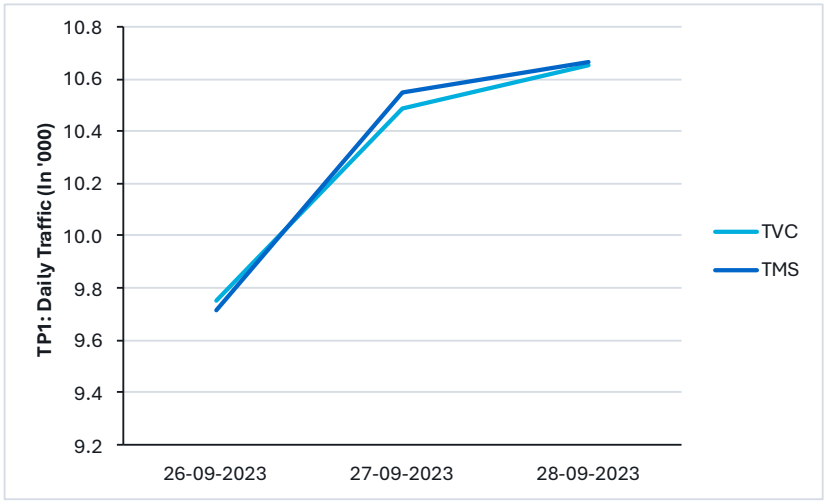
Source: Steer analysis of Steer-commissioned TVC data. TP2 TVC count reflects latest TVC count done in Jan 2025 and TP1 and TP3 counts reflect TVC counts done in Sep 2023.

TVC v/s TMS analysis

3.40 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those particular days, as supplied by the Client.

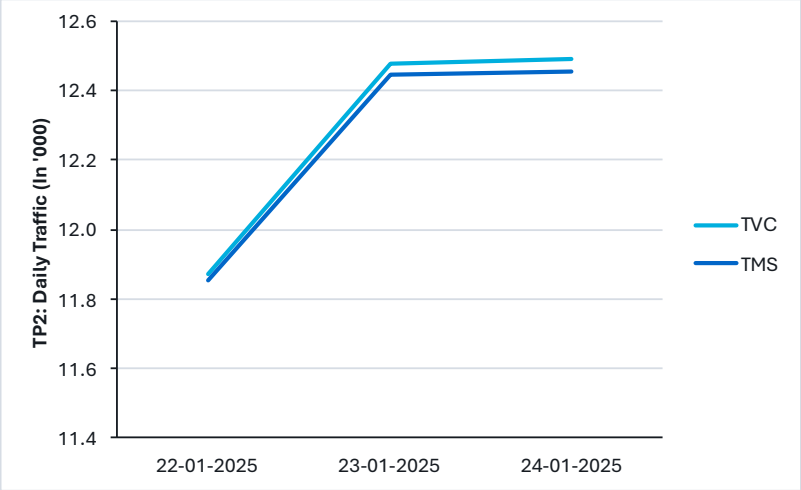
3.41 Figure 3-8, Figure 3-9 and Figure 3-10 below shows the comparison between daily volumes in tollable traffic derived from TVC and TMS data for all three toll plazas. This shows a good fit at the aggregate level at all the plazas with an absolute delta of 0.1% on TP1 and TP2, and 0.8% on TP3.

Figure 3-8: Comparison between TVC and TMS daily traffic data on TP1 (2023)



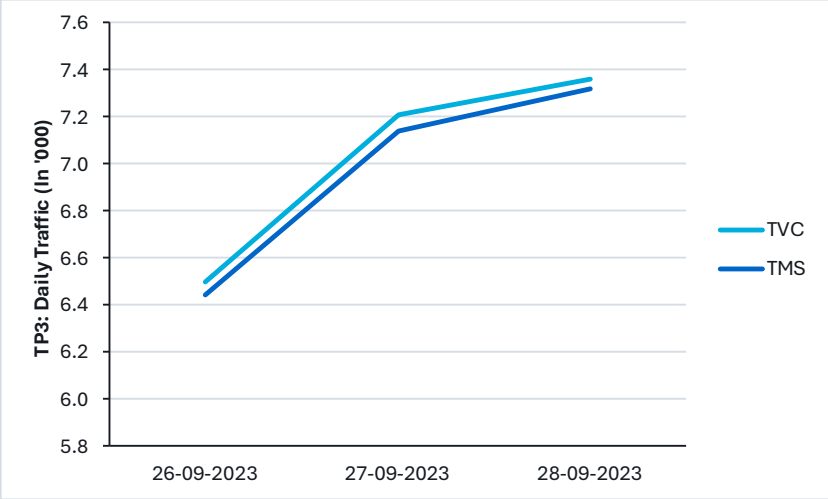
Source: Steer analysis of Steer-commissioned TVC and Client TMS data

Figure 3-9: Comparison between TVC and TMS daily traffic data on TP2 (2025)



Source: Steer analysis of TVC and client TMS data

Figure 3-10: Comparison between TVC and TMS daily traffic on TP3 (2023)

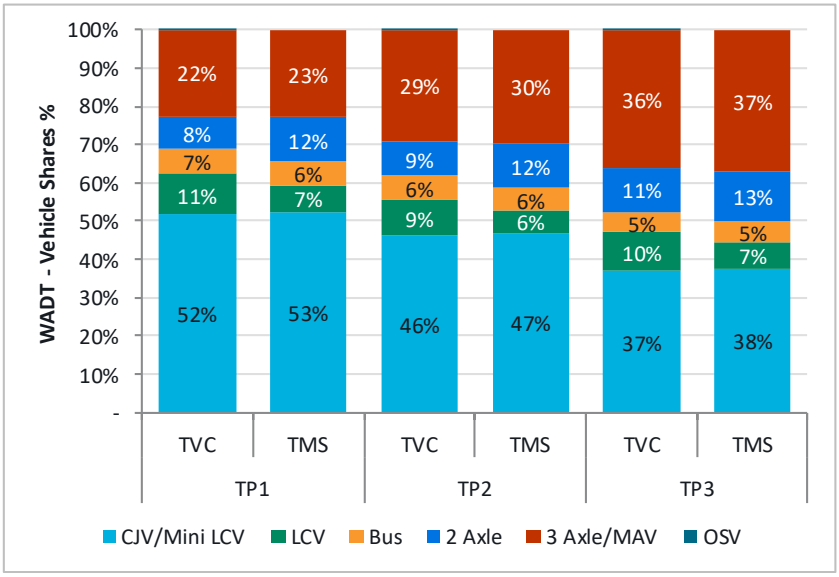


Source: Steer analysis of TVC and client TMS data

3.42 Figure 3-11 below compares the share of traffic by vehicle type at each toll plaza, as recorded between the TVC and TMS data. At aggregated levels (aggregated in such a way due to common misclassification between these groups), there is minimal variation between the TVC and TMS count data. In all cases, the TVC and TMS vehicle shares differ from each other by a small margin - between 0-0.5%.

3.43 There is common misclassification between the CJV and Mini LCV categories, and therefore, these have been combined in our analysis. Apart from classification issues, differences can be attributed to reporting system for exempted vehicles at the toll plazas, along with the technical differences between the two independent traffic counting systems.

Figure 3-11 Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and client TMS data

Table 3.14: Difference in vehicle counts when combined

Vehicle type	TP1 (2023)			TP2 (2025)			TP3 (2023)		
	TVC	TMS	TMS vs TVC (%)	TVC	TMS	TMS vs TVC (%)	TVC	TMS	TMS vs TVC (%)
CJV+LCV+2A+ Bus	7,979	7,953	**0.3%**	8,698	8,614	**1%**	4,483	4,400	**1.9%**
3A+MAV+OSV	2,318	2,356	**(1.6%)**	3,581	3,638	**(1.6%)**	2,538	2,566	**0.2%**
Total	**10,297**	**10,309**	**(0.1%)**	**12,279**	**12,252**	**0.1%**	**7,021**	**6,966**	**0.8%**

Source: Steer analysis of TVC and client TMS data; TP2 TVC counts reflect updated 2025 counts whereas TP1 and TP3 counts reflect 2023 TVC counts

3.44 Given an overall match in the traffic volumes, TVC-TMS analysis gives us the confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate. We therefore consider the Client TMS data to estimate the base year AADT.

Key findings of origin-destination analysis

Overview

3.45 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. The OD analysis presented here is based on data collected on behalf of the Client in September 2023 for TP1 and TP3 and based on latest data collected in January 2025 for TP2.

3.46 We have analysed the regional drivers of demand based on the following OD analyses on the data as provided by the Client:

- Zonal influence
- Commodity distribution

- Top OD pairs
- Trip length distribution

3.47 While top OD pairs and zonal influence help us understand 'where' people and goods travel, the commodity distribution sheds light on 'which' goods are transported. Trip length distribution analysis further indicates 'how far' vehicles and people travel. This set of analyses is generally used to estimate the key drivers of traffic and aids the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.48 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples by the TVC counts observed on the same date for each vehicle category at the toll plaza. Table 3.15 below presents the sample rates for goods and passenger category at the toll plaza. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3.15: Sample rates for OD data

Vehicle Category	TP1 (2023)	TP2 (2025)	TP3 (2023)
Passenger (CJV+Bus)	27%	47%	26%
Goods (LCV+2A+3A+MAV)	58%	54%	67%

Source: Steer analysis of OD data

Zone categories

3.49 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in the Table 3.16 below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Assets being studied.

Table 3.16: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
Immediate area of influence (IAOI)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of Telangana	Rest of the cities/Districts in Telangana other than Local/IAOI
Rest of Andhra Pradesh	Rest of the cities/Districts in Andhra Pradesh other than Local/IAOI
Rest of South India	Tamil Nadu, Karnataka, Kerala, Puducherry
West India	Maharashtra, Gujarat, Rajasthan
North India	Jammu & Kashmir, Punjab, Himachal Pradesh, Haryana, Delhi, Uttar Pradesh, Uttarakhand
Central India	Madhya Pradesh, Chhattisgarh
East & Northeast India	Bhar, Jharkhand, Odisha, West Bengal, Northeast Indian states
Outside India	Nepal, Bhutan

Source: Steer analysis

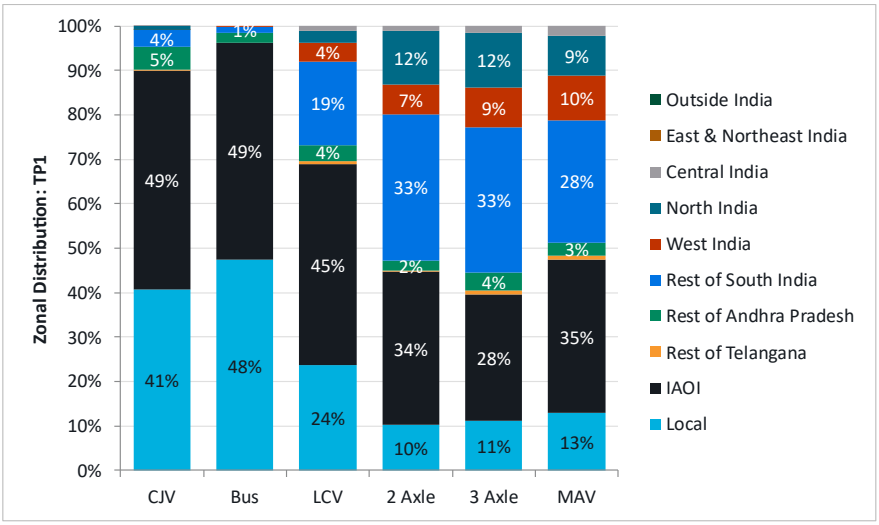
Zonal influence

3.50 The zonal influence is the contribution of a zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence at each toll plaza of the Asset, aggregated based on zonal aggregation listed in Table 3.16 above. Please note that zonal influence is analysed on trip ends and not trips.

3.51 Figure 3-12, Figure 3-13 and Figure 3-14 below present the zonal influence by vehicle type at all three toll plazas on the Asset. At all the three toll plazas, the zone category with the highest influence is IAOI, across the vehicle categories.

3.52 At TP1, we see that unlike the other two plazas, local trips also have major influence, especially among CJV and Bus. This is because the TP1 (Madgulapally) is located near the major urban agglomeration of Hyderabad. The CJV traffic on the corridor caters to the local demand connecting key towns of Nalgonda, Miryalguda, Guntur, Pidugurlla, and others. Among the goods vehicles we see the Rest of South India accounts for a high share, with influence on MAV trips at 28% of all MAV trips crossing the plaza. This is because the Asset is a major access road to Chennai, which is a major port and manufacturing hub. 10% of MAV traffic is also influenced by West India. North India also shows significant influence – at 12% for both 2As and 3As observed at TP1.

Figure 3-12: Zonal influence at TP1 (2023)

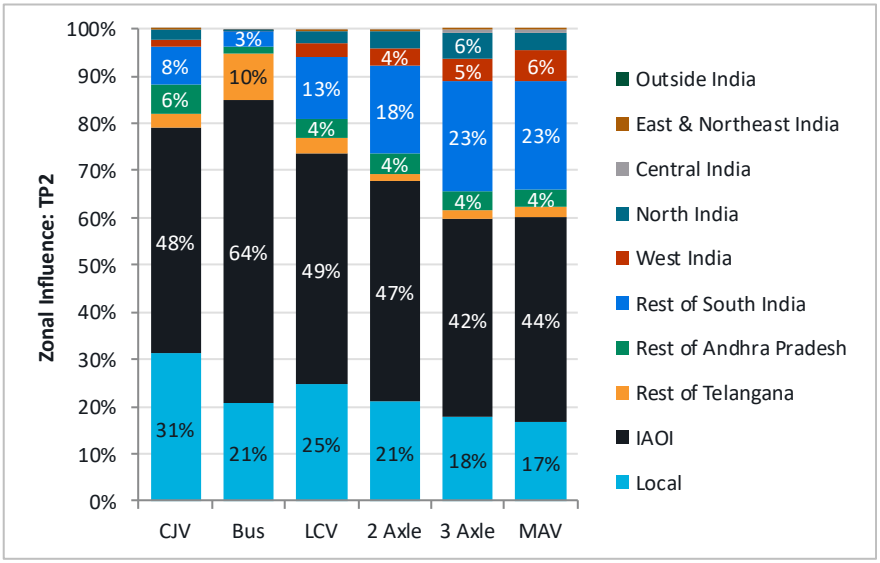


Source: Steer analysis of OD data

3.53 LCVs and 2A trucks serve a relatively more local market, connecting the industrial nodes on the Assets and regions of Pidgurulla, Addanki, and Miryalguda, the same is also validated through the high zonal influence of the state in these categories.

3.54 At TP2, both IAOI and Rest of Andhra Pradesh have a high influence. This is because the toll plaza is located near several cement plants, which generate significant truck volumes appearing on the Asset. These cement plants cater to demand from both distant centres like Chennai, as well as centres in rest of the state like Guntur. 4% of the MAV traffic is influenced by the Rest of Andhra Pradesh, whereas the Rest of South India shows an influence of 23% on all MAV trips observed at TP2.

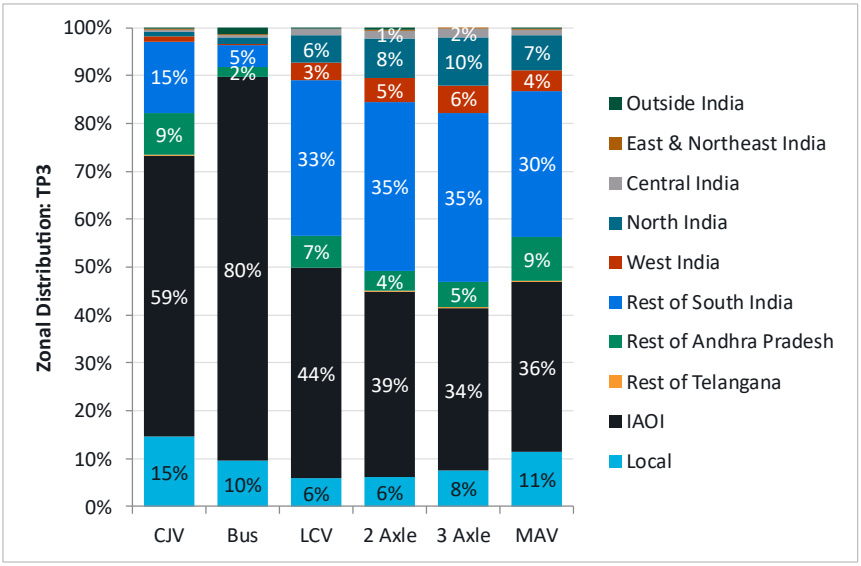
Figure 3-13: Zonal influence at TP2 (2025)



Source: Steer analysis of OD data

3.55 The zonal distribution at TP3 is somewhat similar to that of TP1. The Rest of South India influence ranges from 30-35% among goods vehicles, which is primarily dominated by Tamil Nadu, with trips going towards Chennai. The Rest of Andhra Pradesh's influence on MAV trips at TP3 is at 9%.

Figure 3-14: Zonal influence at TP3 (2023)



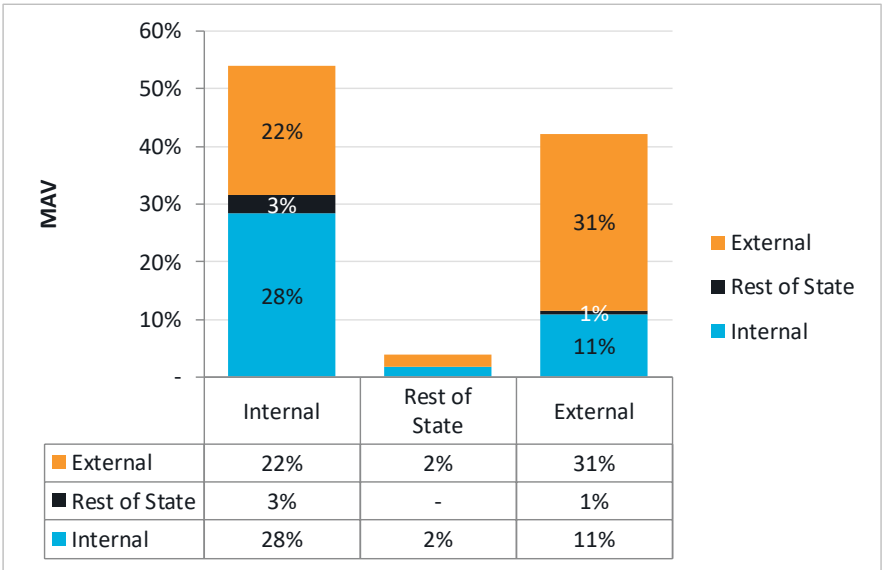
Source: Steer analysis of OD data

Internal-External analysis

3.56 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e., local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). RoS here represents areas within the state (Telangana and Andhra Pradesh for the Asset under consideration) which are neither local nor IAOI.

'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e., lying on the Asset, while 'External' zones are areas lying outside the state.

Figure 3-15 Internal-external distribution at TP1 (2023)

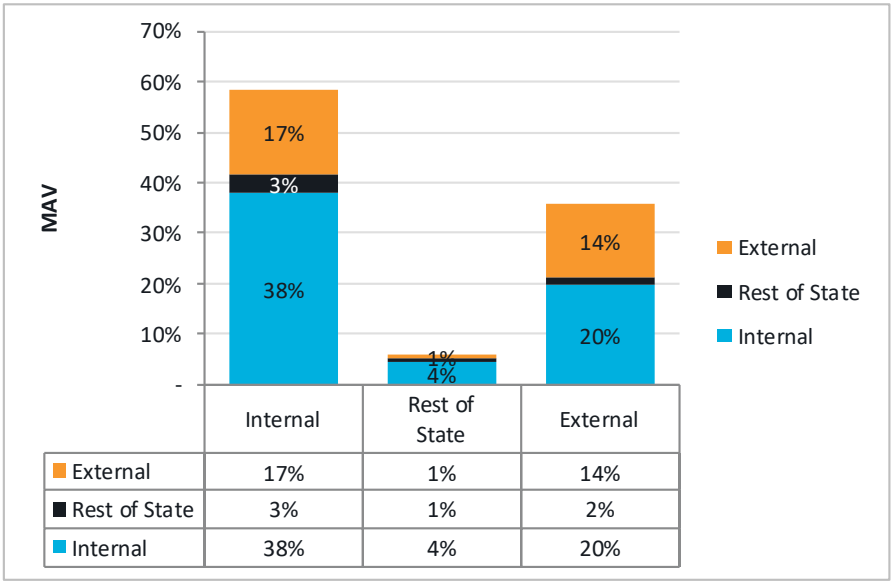


	Internal	Rest of State	External
External	22%	2%	31%
Rest of State	3%	-	1%
Internal	28%	2%	11%

Source: Steer analysis of OD data

3.57 Figure 3-15, Figure 3-16 and Figure 3-17 show the distribution of trips based on these categories specifically for MAV. Understandably, these reflect the observations made in the zonal influence analyses presented earlier, at a higher level of aggregation, but at a trip level.

Figure 3-16: Internal-external distribution at TP2 (2025)



	Internal	Rest of State	External
External	17%	1%	14%
Rest of State	3%	1%	2%
Internal	38%	4%	20%

Source: Steer analysis of OD data

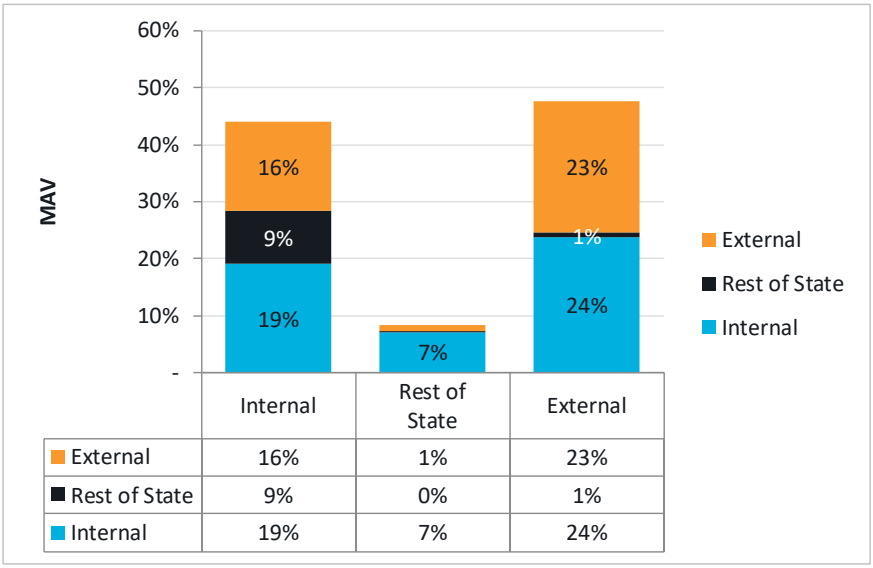
3.58 At TP1, we see that the external zone influenced trips form a majority, ~65% of MAV trips have at least one end lying in a zone External to the Asset. We also see that the highest share is of E-E trips (31%). This confirms our assertion that the Asset is a major route for

through-trips, connecting areas in both the north and west of the country with the southeastern regions like coastal Andhra Pradesh and Tamil Nadu.

3.59 TP2 sees the highest share of MAV trips between internal zones, i.e., I-I (38%). This is because these MAVs are largely influenced by the presence of several cement production units in the vicinity which supply to consumption centres like Hyderabad, Guntur etc. which are located within the "Internal" zones to the Asset.

3.60 At TP3 as well we see that the largest proportion of trips are influenced by External zones (~65%) among the MAVs. This reiterates that the Asset serves as a major route for through-traffic which travels long distances.

Figure 3-17: Internal-external distribution at TP3 (2023)



	Internal	Rest of State	External
External	16%	1%	23%
Rest of State	9%	0%	1%
Internal	19%	7%	24%

Source: Steer analysis of Client OD data

Commodity distribution

3.61 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in Table 3.17 below. The charts in the following sub-section present information in terms of these aggregate commodity categories.

Table 3.17: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane,Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, ghoat, cow,cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread,cool drinks, beer etc.)	GRO	
Fly ash	FAS	CNS
Sand	SND	
Bricks	BRC	
Granite	GRN	
Stone (kota stone, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids,Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Machinery / Spare parts	MAC	
Raw Wood,Cork & Wood Products, Furn	WUD	
Subadul wood	SBW	
Automobiles (Finished products, auto parts, Car/bike manufacturing)	AUT	AUT
Parcel and Courier including Delhivery, Amzon, flipkart etc	PAR	MSC
Miscellaneous (House hold items, any other commodties different then mentioned in list etc.)	MSC	
Container	CTR	
Passengers	PAS	
Scrap	SCR	
Coal	COAL	MET
Mining Minerals (Gypsum, Cobalt etc.)	MIN	
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	
Empty	EMT	EMT
Cement	CMT	CMT

Source: Steer analysis

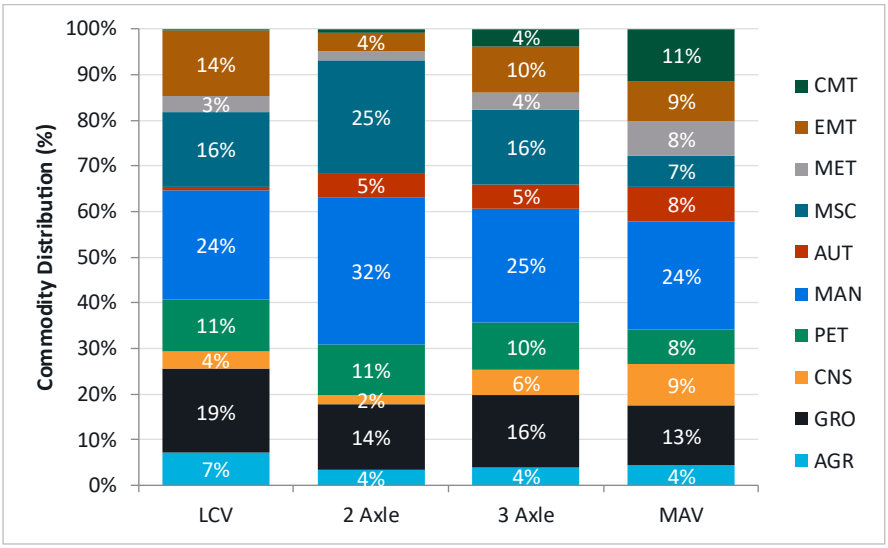
3.62 Figure 3-18, Figure 3-19 and Figure 3-20 below present the commodity distribution for goods vehicles at the three toll plazas.

3.63 At TP1, manufactured goods, specifically machine parts and electrical items, constituted the primary commodity transported by all goods vehicle categories. For Multi-Axle

Vehicles (MAVs), this was followed by cement (11%), and equally by automobiles, and metals and minerals (8% each).

3.64 Looking at the commodity distribution on TP1 by direction, we observe that only 7% of MAVs carry cement towards Addanki as compared to 18% carrying the same towards Nalgonda. This difference is attributable to the presence of cement plants located in the area between TP1 and TP2. Thus, the trucks carrying cement from the plants to areas such as Hyderabad appear at TP1 travelling towards Nalgonda.

Figure 3-18: Commodity distribution at TP1 (Total)



Source: Steer analysis of OD data

3.65 As also observed during our site visits, we see that manufactured products, agricultural and grocery items make up the top two aggregate categories at TP1. manufactured products and miscellaneous products form the top two categories at TP3. Groceries also find a consistently high share in the commodity distribution across the three toll plazas, especially at TP2 (ranging between 17% to 35% across vehicle categories).

3.66 The high share of manufactured products can be attributed to the presence of automobile parts manufacturing units in Sriperumbudur and other industries that have been setup in Telangana and AP. Presence of several warehouses for logistics companies and e-commerce ventures also increase the share of manufactured goods/miscellaneous categories.

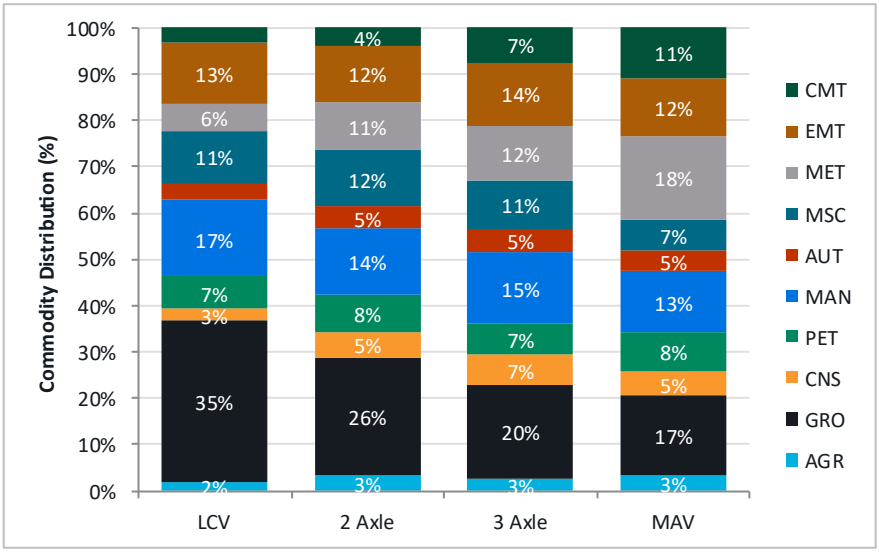
3.67 Cement shows a 11-18% share for MAVs across the three toll plazas on the Asset. Most of these cement carrying trucks originate in the areas surrounding TP2 which forms a local cement manufacturing cluster near the Asset. The robust demand for cement and associated construction materials in Andhra Pradesh and Telangana is a direct result of the region's development initiatives and extensive infrastructure development[18][19].

[18] Andhra Pradesh posts highest Capex increase among states for FY-26 | Vijayawada News - Times of India

[19] Telangana Budget 2025-26 Highlights: Rs 3.04 lakh crore outlay, mega master plan 2050 for industrial growth - India News | The Financial Express

3.68 At TP2 the key differences are a higher share of cement carrying MAVs going towards Addanki (16% compared to 5% towards Nalgonda) while metals show a reverse directionality (25% towards Nalgonda against 12% towards Addanki).

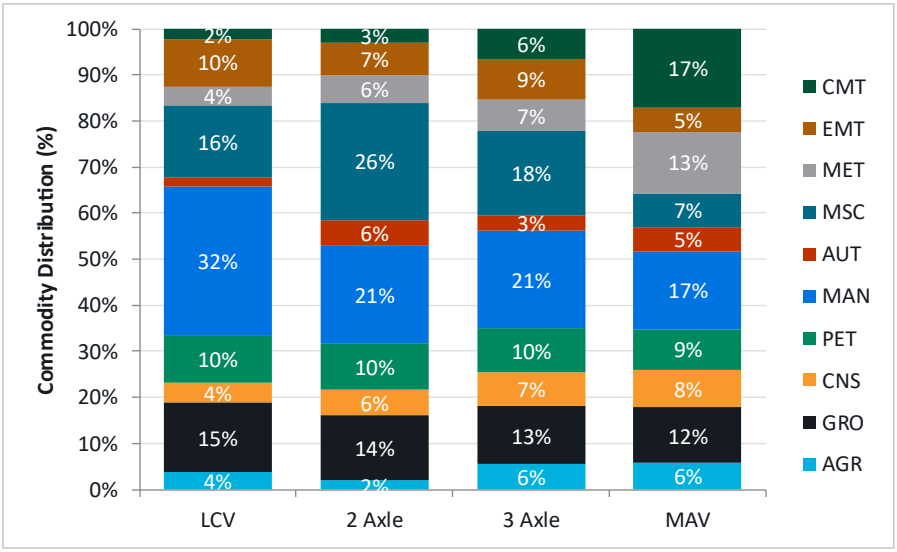
Figure 3-19: Commodity distribution at TP2 (Total)



Source: Steer analysis of OD data

3.69 A similar trend in differences exists at TP3, with mining materials accounting for higher share of total commodities that travel towards Nalgonda, and cement accounting for a higher share of total commodities travelling towards Chennai.

Figure 3-20: Commodity distribution at TP3 (Total)



Source: Steer analysis of OD data

Trip length analysis

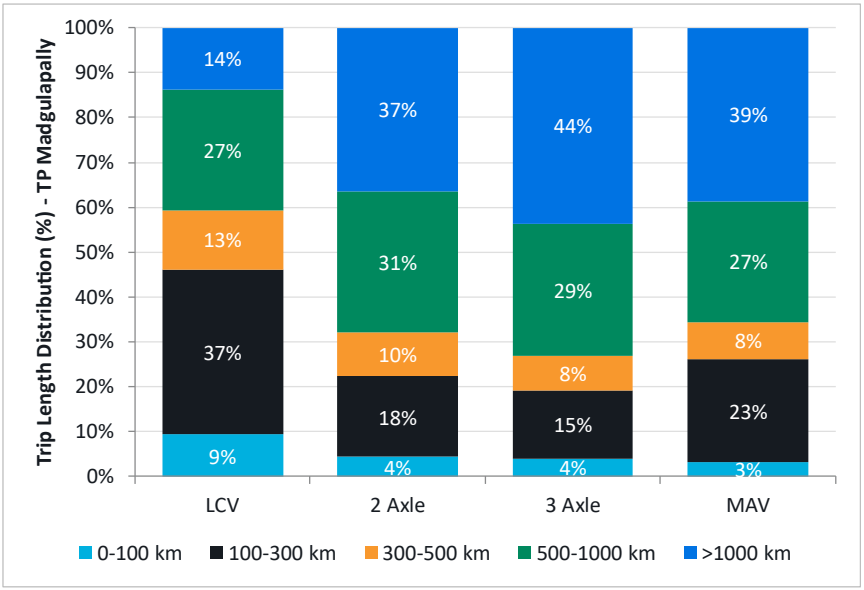
3.70 Trip-length distribution provides the distance-based trip profile of each vehicle category observed at each of the toll plazas on the Asset. This analysis aids in validating our assumptions on the share of macro-economic drivers for forecasting background traffic growth on the Asset, our analysis outputs from the zonal influence analysis, as well as the

toll segmentation analysis outputs from our historical traffic data analyses. The trip distances were derived as driving distances from Google Distance Matrix Tool[20] based on zonal coordinates for OD pairs. For the ease of interpretation, we have categorised distances into 5 groups:

- Local (0-100km)
- Short-distance (100-300 km)
- Medium-distance (300-500 km)
- Long-distance (500-1000 km) and
- Very-long-distance (+1,000 km)

3.71 As presented in Figure 3-21, Figure 3-22 and Figure 3-23 below, for LCVs, the largest share of trips at TP1 and TP2 are local or short-distance (45-55%). Whereas the largest share of TP3 LCV trips is of long-distance (500-1000km).

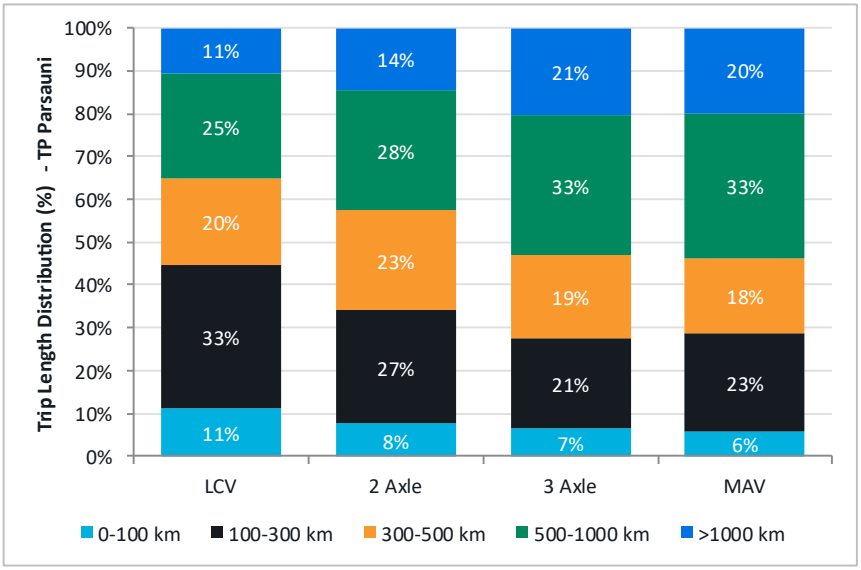
Figure 3-21: Trip length distribution TP1 (2023)



Source: Steer analysis of OD data

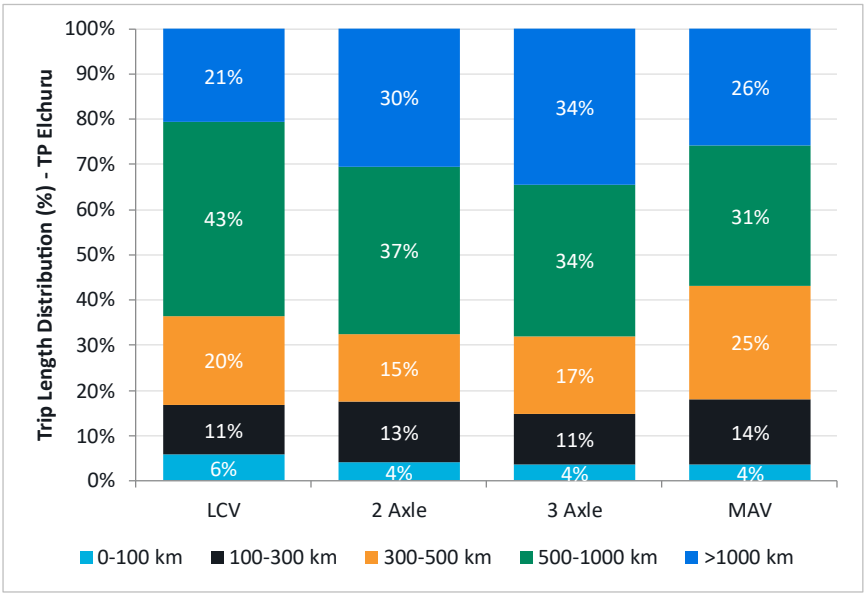
[20] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: https://developers.google.com/maps/documentation/distance-matrix/start. Travel distance and time information for driving under various scenarios can be extracted using macro-enabled Excel, R, etc.

Figure 3-22: Trip length distribution TP2 (2025)



Source: Steer analysis of OD data

Figure 3-23: Trip length distribution TP3 (2023)



Source: Steer analysis of OD data

3.72 Long-distance movement is observed at all three toll plazas, with MAVs accounting for a considerable share of trucks travelling over 500 km. Trips on TP1 and TP3 have a higher proportion of very long-distance (>1000km) trips. While TP2 also exhibits a significant proportion of long-distance Multi-Axle Vehicle (MAV) trips, this share is lower than at TP1 and TP3. This can be attributed to the influence of the Guntur/Vijayawada region, as well as the proximity of cement plants, which serve as frequent origins or destinations for trucks utilizing the Asset.

Conclusions

3.73 In summary, CJVs account for the largest share of traffic across all three toll plazas on the Asset, with TP1 and TP2 exhibiting the highest shares, while TP3 share of CJVs are similar to its share of MAVs. MAVs on the Asset account for significant share of total traffic observed at each of the three plazas as well ranging from 14% of total traffic at TP1 to 25% of total traffic at TP3.

3.74 Historically across the period FY18-FY25 the toll plazas have grown by the following CAGRs; TP1 at 6.0%, TP2 at 4.0% and TP3 at 5.1%. These strong growth trends can be attributed to regional industrial activities (primarily driven by the cement industry in proximity of the Asset) and strong urban-rural linkages supported by this corridor.

3.75 Ticket segmentation reveals that for CJVs, return tickets form a significant share, reflecting patterns of commuter and short-haul regional travel. For MAVs, single tickets are clearly dominant, making up nearly 70-75% of tickets issued, consistent with their use for long-distance goods movement.

3.76 TVC and TMS data correlation shows high system reliability, with variation within acceptable margins (mostly under 1%), reaffirming confidence in the tolling infrastructure and its capacity to capture accurate traffic volumes.

3.77 OD analysis indicates that TP1 and TP2 see a higher proportion of regional and short-distance trips by CJVs, highlighting their utility for local commuting. In contrast, TP3 has a higher incidence of long-distance freight, especially from Rest of South India and Central India, prominently carried by MAVs.

3.78 Manufactured products, cement, and agricultural goods emerge as the key commodities transported via the Asset, with cement particularly significant at TP2 and TP3 due to the Assets proximity to cement clusters as discussed in Chapter 2. The trip length analysis supports this—while LCVs show a larger share of sub-500 km trips, MAVs at all three toll plazas consistently dominate in the 500 km+ trip segment.

4 Socio-economic context

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the roads are in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions in the region where the Asset is located and the country. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Asset.

4.2 In turn, the change in the relative competitive position of the Asset (and thus of the traffic capture they can achieve) is a function of the relative costs, and benefits offered by the Asset to that of other competing roads. These costs and benefits can be in terms of actual monetary costs, time savings, or via other less tangible but important aspects suggest as the Asset's safety features and offered reliability in travel times.

4.3 In this chapter, we assess and present trends in the above socio-economic growth drivers that we believe influence the background traffic growth of the Asset. This includes an analysis of regional economic data trends relative to nationwide benchmarks. For the impact of competing roads (existing or planned) on the Asset, Chapter 6 presents a more detailed view on how we believe traffic growth on the Asset may be affected.

Population growth

4.4 For this study, we have analysed the key socioeconomic drivers of the background traffic demand in the states of Telangana and Andhra Pradesh, given that the Asset is located within, and is influenced by wider regional economic factors in both these states.

National level

4.5 The total population in India has grown at a CAGR of 1.5% between 2000 and 2015, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period[21].

[21] World Bank Data on Health Nutrition and Population

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.6 Table 4.2 below shows the evolution of population in Andhra Pradesh and Telangana compared to that of the country. As Table 4.2 shows, the populations of both Andhra Pradesh and Telangana have grown at a slower pace, compared to that of India. As of FY24, Andhra Pradesh holds a 3.8% share in India's population, while Telangana has a 2.7% share.

Table 4.2: Population Growth in India (2012 – 2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Andhra Pradesh	49.3	53.2	**0.7%**
Telangana	35.7	38.2	**0.6%**
India	1,210	1,395	**1.2%**

Source: Ministry of Statistics and Program Implementation estimates

4.7 Due to the complexities of the patterns in which urbanisation takes place, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide socio-economic context of population growth in the region where the Asset is located.

Economic Indicators

Industrial Production

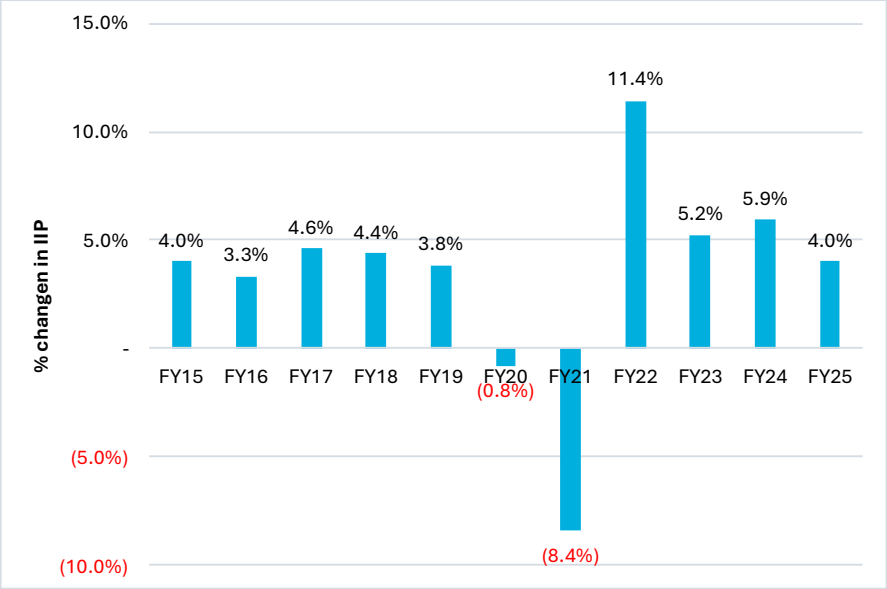
4.1 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.2 **Figure 4-1** below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

4.3 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like

power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. However, we do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Figure 4-1: Annual growth – Index of Industrial Production



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.4 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation. We, however, do not use it to forecast future travel demand growth since long-term forecasts for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle ownership

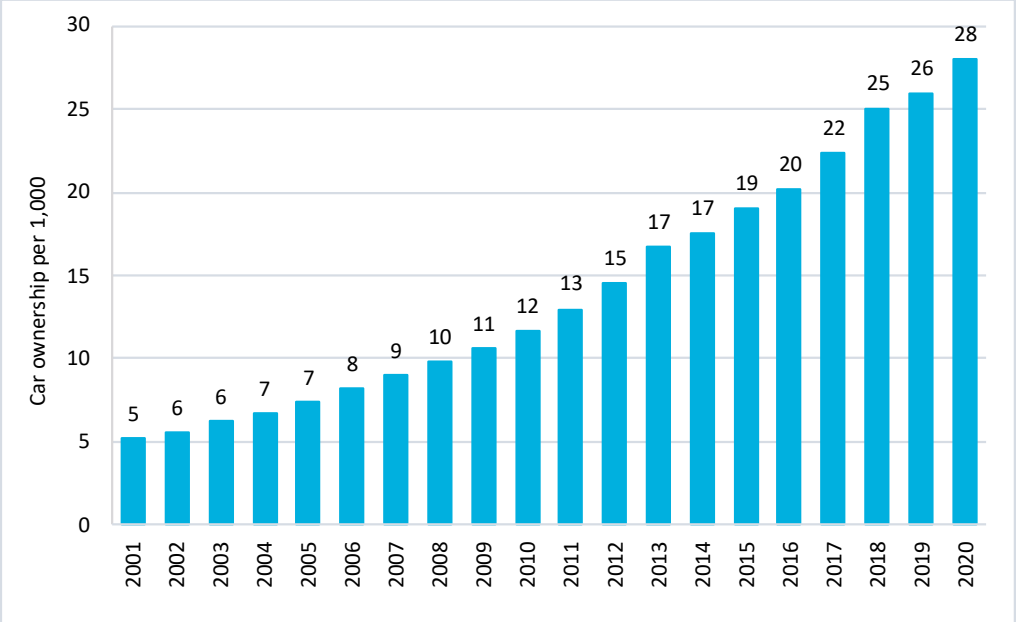
4.5 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[22]. However, this pattern is changing with increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled and increased at a CAGR of about 11%.

4.6 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering significant potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[23]

[22] **India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto**

[23] **https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf**

Figure 4-2: Car Ownership in India per 1000 population

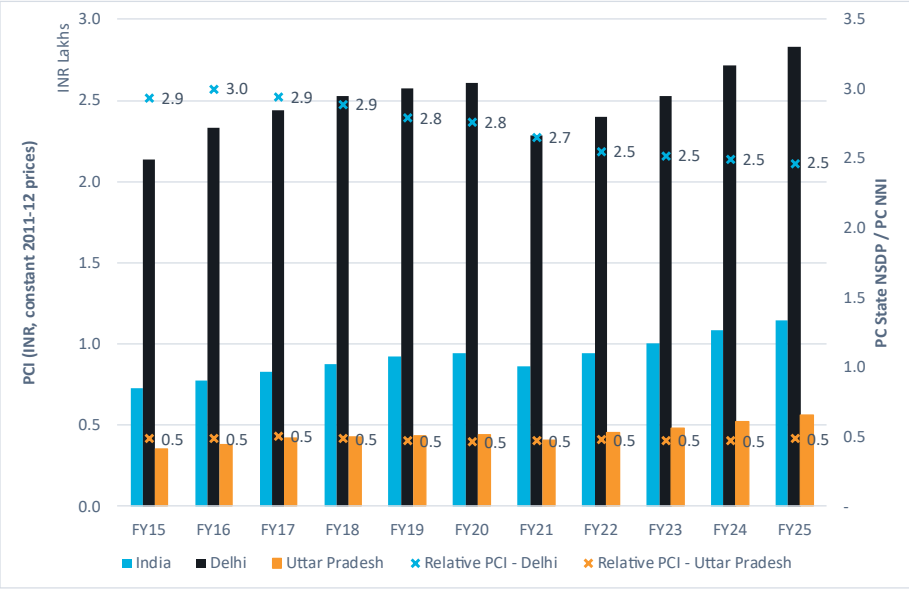


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.7 As per the latest data from MOSPI and as can be referred to in Figure 4-3, in FY25, Telangana's per capita income at current prices was ₹1,92,128, while Andhra Pradesh's was ₹ 1,41,609. In comparison, India's per capita income for the same period stood at ₹1,14,710. This indicates that Telangana's per capita income was approximately 67.5% higher than the national average, and Andhra Pradesh's was about 23.4% higher. These figures highlight the relatively stronger economic performance of both states compared to the national average, and their robust regional economic profiles.

Figure 4-3: Per Capita Income



Source: Steer Analysis of Ministry of Statistics and Program Implementation (MoSPI) Data

4.8 Given the difficulty in obtaining up-to-date district level PCI data for different states in India, we have not presented district level PCI data as part of our analysis above. Though per capita income is a statistically robust metric to base background traffic growth on, the unavailability of long-term forecasts of PCI precludes its use in forecasting future traffic growth. We therefore do not use PCI as a growth driver in our background traffic growth forecasts.

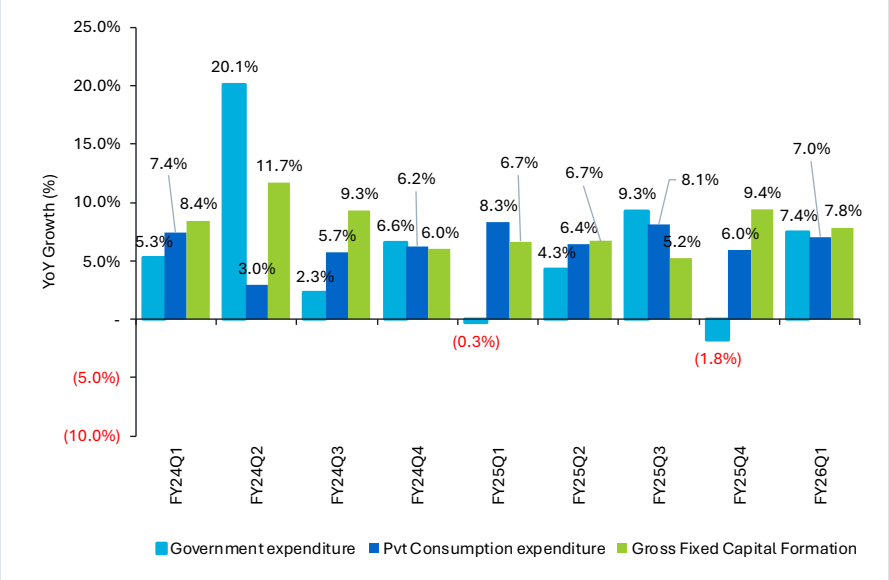
Economic growth

India's Performance

4.9 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[24].

4.10 In Figure 4-4 below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures



Source: Steer Analysis of MOSPI Data

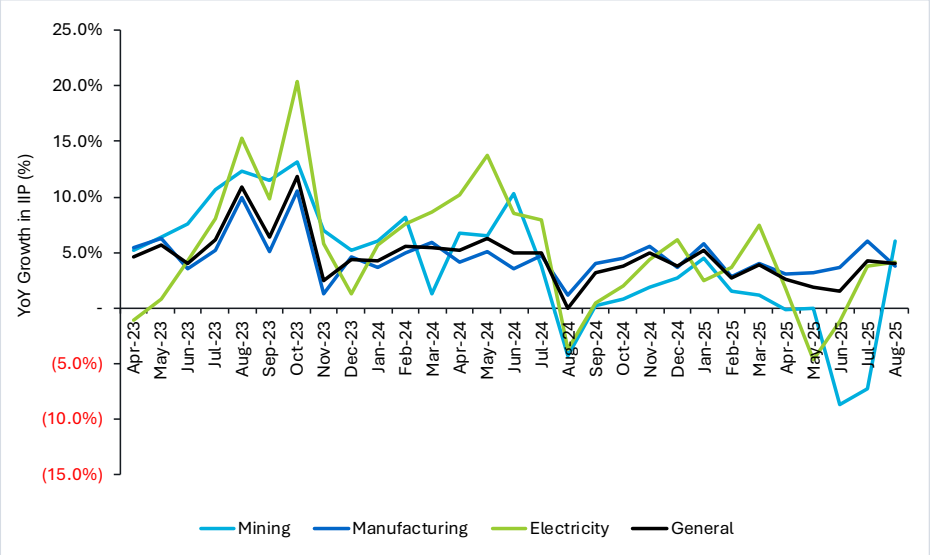
4.11 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.12 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In the chart below, we present growth

[24] Government of India, PIB Release Oct 1 '25

trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

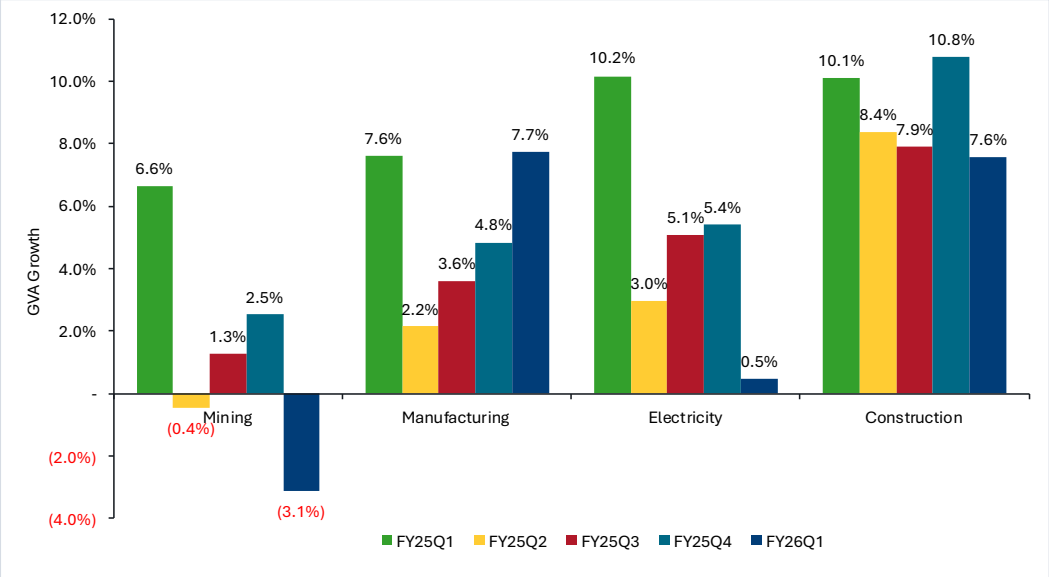
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.13 In addition to monthly trends in IIP, the chart below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. Generally, economic growth has remained resilient as of FY26YTD, but performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA

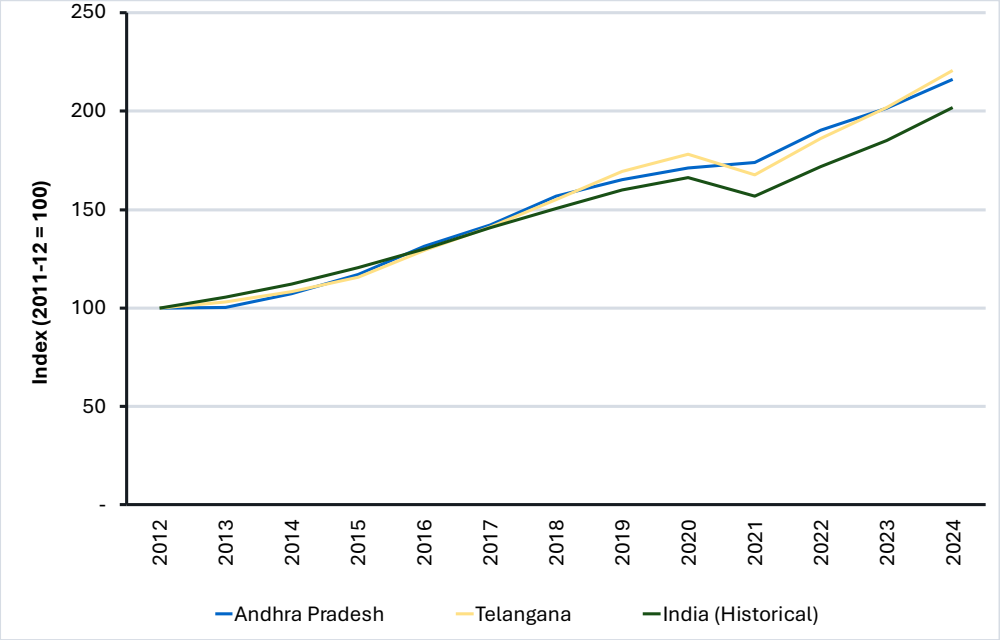


Source: Steer Analysis of MOSPI Data

GDP and GSDP Growth

4.14 The Indian economy has grown at a CAGR of 5.9% during FY12-24, aided by a strong growth in the services/tertiary sector. The economic performance of Andhra Pradesh and Telangana was weaker than the national average till FY15. However, as can be seen in Figure 4-7 below, GSDP growth of Andhra Pradesh and Telangana have outpaced national GDP growth since FY17. In FY19, Andhra Pradesh and Telangana showcased an impressive growth of 11.0% and 10.5% respectively, compared to 6.6% growth in GDP in the same period. Both the states contributed close to 4.7% and 4.5% each to the national GDP in FY24, highlighting their vital role as contributors to the country's total GDP.

Figure 4-7: Evolution of Andhra Pradesh's state GDP and national GDP



Source: Ministry of Statistics and Program Implementation (MoSPI); The years on the x-axis correspond to financial years (e.g., 2012 represents FY 2011-12).

Economic activity in the state

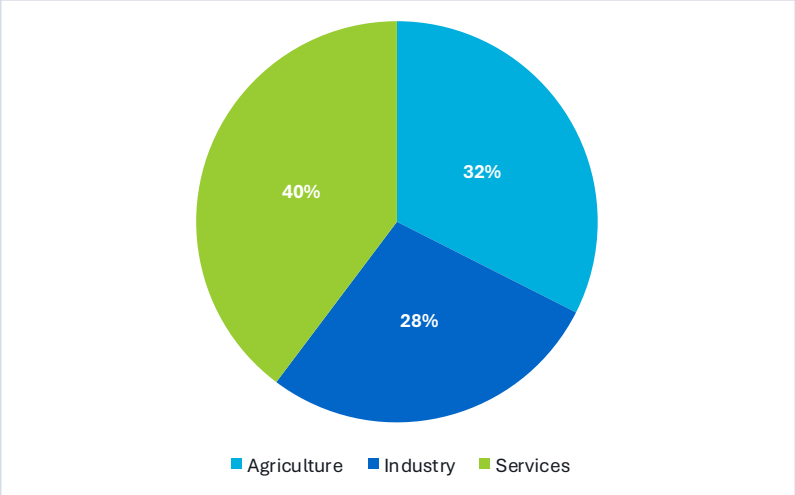
Andhra Pradesh

4.15 As seen in Figure 4-8 below, in terms of sectoral contribution to the state GSDP, the tertiary sector (40%) has the highest share followed by the primary (32%) and secondary (28%) in FY24. As per the Socio-Economic Survey 2024–25, the Gross State Domestic Product (GSDP) of Andhra Pradesh at current prices is estimated at ₹16.06 lakh crore for the year 2024–25, reflecting a robust growth rate of 12.94% over the previous year. This expansion has been driven by balanced growth across agriculture (₹5.19 lakh crore, 15.86% growth), industry (₹3.41 lakh crore, 6.71% growth), and services (₹6.11 lakh crore, 11.70% growth). The state's per capita income for 2024–25 is projected at ₹2,68,653,

significantly higher than the national average of ₹2,00,162, indicating improving living standards[25].

4.16 Andhra Pradesh has experienced rapid industrialization with the onset of major industries such as oil, petrochemical, construction (cement) and minerals sector. The state houses several cement plants such as Ramco Cements Limited, Ultratech Cement Limited, Zuari Cement Limited and Dalmia Cement (Bharat) Ltd. The state also has one of the major ports of India in the city of Visakhapatnam and two private ports in Krishnapatnam and Gangavaram. The city Vishakhapatnam also serves as a major industrial centre of the eastern coast, with several public sector undertakings (PSUs) set up. These include the Vishakhapatnam steel plant run by Rashtriya Ispat Nigam Limited (RINL), an oil refinery owned by Hindustan Petroleum, Hindustan Shipyards, as well as several defence industries as Vishakhapatnam serves as a major base for the Indian Navy.

Figure 4-8: Sectoral contribution to Andhra Pradesh GSDP (FY24)



Source: Steer Analysis of Ministry of Statistics and Program Implementation (MoSPI) Data

Telangana

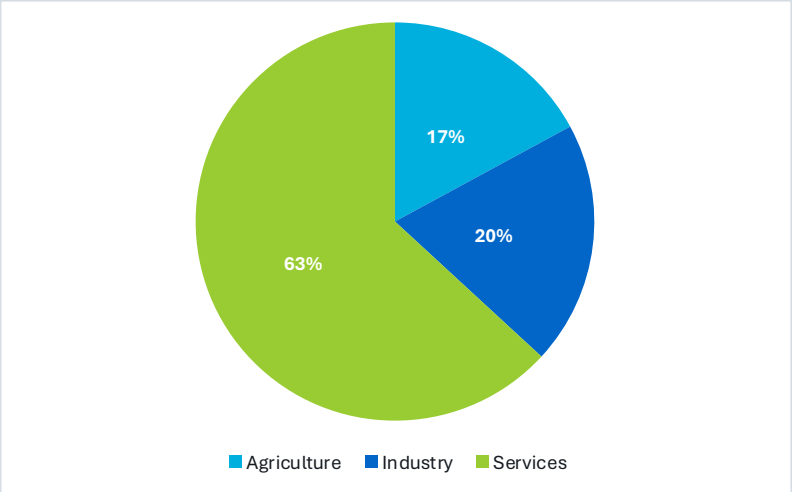
4.17 The state of Telangana was formed in June 2014 post the split of erstwhile Andhra Pradesh. The earlier capital city of the united state, Hyderabad, is now part of Telangana. The capital city of Hyderabad is considered a hub for information technology and pharmaceutical sectors. As seen in Figure 4-9 below, in terms of sectoral contribution to the state GSDP, the contribution of the services sector is highest (~63%) as of FY24.

4.18 In 2023–24, Telangana's Gross State Domestic Product (GSDP) at current prices was estimated at ₹14.64 lakh crore, marking an impressive growth of 11.9% over the previous year—outpacing the national growth rate of 9.1%. This growth was primarily driven by the Services sector, which contributed a significant 63% to the state's GSVA, followed by the Industrial sector at 20%, and the Agriculture and Allied sector at 17%. Key growth drivers included information technology, trade, transport, communication, and financial

[25] **AP Finance**

services, highlighting Telangana's shift toward a dynamic, service-oriented economy underpinned by proactive governance and infrastructure development.[26]

Figure 4-9: Sectoral contribution to Telangana GSDP (FY24)



Source: Steer Analysis of Ministry of Statistics and Program Implementation (MoSPI) Data

Forecasts for growth drivers

4.19 In the following section we describe our assumptions in relation to forecasts of the key macro-economic drivers of traffic growth.

National GDP

4.20 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before COVID-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[27]

4.21 The COVID-19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 (as per the SAE) before slowing down to 6.5% in FY25 due to several domestic and external factors discussed in paragraph 4.9 above.

[26] tgdps.telangana.gov.in/seo-2024.pdf

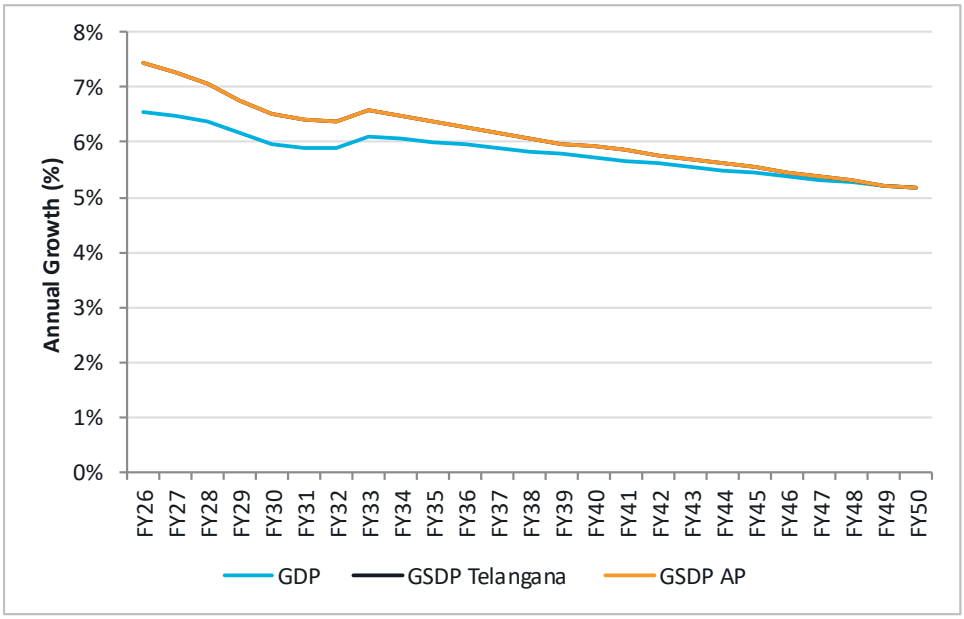
[27] Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu (September 2020)

4.22 Figure 4-10 below shows Client-provided GDP projections for India. The forecast provided expects national GDP to grow at 6.5% between FY25-FY27[28] and gradually tapering down to 5.2% by FY50. The India GDP growth forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[29] in the medium term.

4.23 Based on client projections, the Gross State Domestic Product (GSDP) in both Andhra Pradesh and Telangana is expected to outpace the national growth rate in the near to medium term. However, over the long term, we anticipate their GSDP growth will gradually align with the national average as their economies and industrial systems mature and additional growth potential diminishes.

4.24 Figure 4-10 shows the forecast growth lines for GSDP of Telangana and Andhra Pradesh with the national GDP.

Figure 4-10: GDP-GSDP forecast



Source: GDP and GSDP forecast provided by Client

[28] Based on Asia Pacific Consensus Forecasts (December 2024)

[29] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

5 FY26 base year AADT and traffic growth analysis

Introduction

5.1 In this section, we present our approach, assumptions, and estimates for base year AADT and background traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

As part of this study, we undertook regression analyses to estimate background growth relationships between traffic and the underlying growth drivers. However, our results indicated that estimating statistically robust elasticity coefficients was not possible with the given data. We therefore undertook a detailed benchmarking exercise, coupled with trip length and OD data analyses to estimate the background growth elasticities. These are discussed in detail below.

FY26 Base year AADT estimates

5.3 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.4 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client, and our contextual knowledge, to assess a reasonable estimate of current demand on the corridor.

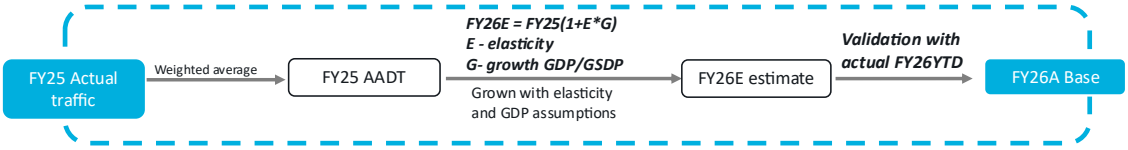
Methodology

5.5 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic volumes (April to March) was taken to arrive at the annual FY25 AADT value. Using elasticity-based growth assumptions for GSDP or GDP, we arrived at estimated FY26 (FY26E) AADT value.

5.6 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the ten months (April 2025 to September 2025) of FY26 (FY26YTD). The adopted FY26 AADT (FY26A) was then derived by making necessary adjustments to FY26E AADT to

reflect the outturn in traffic in FY26YTD (adjusted for seasonality). The methodology is represented using the schematic below.

Figure 5-1: FY26 Base Estimation methodology



Source: Steer Analysis

Seasonality Correction factors

5.7 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. E.g. we observe truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of the peak summer season followed by monsoons that affect freight movement patterns in large parts of the country in the July-September period. In addition to these, there may be other seasonal variations specific to the Asset.

5.8 To normalize for these types of variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza, by vehicle category, and over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa. Table 5.1 below presents the average of FY24 and FY25 SCF used to estimate the AADT for the Asset.

Table 5.1: SCF for TP1 Madgulapally

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.07	0.91	1.00	1.16	0.97	1.11	0.98	1.06	0.99	0.90	0.94	1.00
LCV	1.03	1.01	0.99	1.05	1.03	1.00	0.92	1.03	1.02	1.05	0.93	0.96
Bus	1.05	0.92	1.00	1.03	0.99	1.03	0.97	1.03	1.03	0.96	1.00	1.01
2A	1.08	1.10	1.07	1.08	1.04	0.98	0.97	1.03	0.97	0.98	0.87	0.90
3A	1.04	1.03	1.01	1.02	0.98	0.96	1.02	1.03	1.02	1.04	0.93	0.94
MAV	1.02	1.08	1.03	1.03	1.00	0.99	0.96	1.05	0.99	1.02	0.90	0.96

Source: Steer analysis based on Client TMS data

Table 5.2: SCF for TP2 Tummalacheruvu

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.06	0.89	1.03	1.18	0.98	1.11	0.97	1.07	0.99	0.87	0.96	0.98
LCV	1.05	1.06	1.01	1.06	1.06	1.03	0.92	1.01	0.98	1.01	0.93	0.92
Bus	1.04	0.93	1.02	1.03	0.98	1.02	0.97	1.01	1.02	0.97	1.04	0.99
2A	1.07	1.10	1.07	1.09	1.05	1.00	0.96	1.04	0.96	0.96	0.87	0.89
3A	1.01	1.02	0.97	1.01	1.00	0.98	1.00	1.06	0.98	1.03	0.96	0.99
MAV	1.03	1.08	1.06	1.04	0.99	0.97	0.99	1.04	0.99	1.01	0.90	0.93

Source: Steer analysis based on Client TMS data

Table 5.3: SCF for TP3 Elchuru

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.08	0.87	1.00	1.14	0.96	1.12	1.00	1.07	0.99	0.87	1.01	1.01
LCV	1.06	1.03	0.99	1.02	1.03	1.02	0.97	1.03	1.00	1.03	0.93	0.92
Bus	1.07	1.00	1.06	1.04	0.97	1.05	0.98	1.01	1.00	0.98	1.00	0.89
2A	1.08	1.08	1.05	1.07	1.03	0.97	0.98	1.08	0.99	0.96	0.88	0.89
3A	1.00	0.98	0.98	1.01	1.00	0.99	0.99	1.08	1.03	1.02	0.94	0.99
MAV	1.03	1.08	1.06	1.03	0.97	0.96	0.97	1.06	1.05	1.03	0.89	0.92

Source: Steer analysis based on Client TMS data

Adopted base estimates

5.9 Based on the above methodology and inputs, the adopted base for all the three toll plazas has been shown below.

Table 5.4: Adopted AADT, TP1 Madgulapally

Vehicle category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	7,464	8,080	8,232	**10.3%**
LCV	633	653	664	**5.0%**
Bus	790	836	831	**5.2%**
2A	1,215	1,263	1,333	**9.8%**
3A	646	647	647	**0.3%**
MAV	1,784	1,990	2,007	**12.5%**
Total	**12,530**	**13,469**	**13,715**	**9.5%**
PCUs	**22,083**	**23,678**	**24,099**	**9.1%**

Steer analysis: FY25 actual full year, FY26YTD includes 6 months (Apr-Sep) of FY25, FY26A is estimated base for FY26

Table 5.5: Adopted AADT, TP2 Tummalacheruvu

Vehicle category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	6,438	6,937	7,102	10.3%
LCV	615	619	640	4.0%
Bus	739	779	775	5.0%
2A	1,191	1,228	1,306	9.7%
3A	680	677	667	(1.9%)
MAV	2,528	2,700	2,749	8.7%
Total	**12,191**	**12,940**	**13,240**	**8.6%**
PCUs	**23,296**	**24,577**	**25,124**	**7.8%**

Steer analysis: FY25 actual full year, FY26YTD includes 6 months (Apr-Sep) of FY25, FY26A is estimated base for FY26

Table 5.6: Adopted AADT, TP3 Elchuru

Vehicle category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	3,330	3,626	3,661	9.9%
LCV	452	485	486	7.5%
Bus	395	425	424	7.3%
2A	931	977	1,021	9.7%
3A	570	602	586	2.8%
MAV	1,912	2,115	2,119	10.8%
Total	**7,590**	**8,231**	**8,298**	**9.3%**
PCUs	**15,828**	**17,152**	**17,279**	**9.2%**

Steer analysis: FY25 actual full year, FY26YTD includes 6 months (Apr-Sep) of FY25, FY26A is estimated base for FY26

5.10 From the above tables we observe that all three TPs exhibit similar trends at a PCU level when comparing FY26A values with FY25 AADT. Positive growth at a PCU level is expected on all three toll plazas with the highest at TP3 (9.2%), followed by TP1 (9.1%) and TP2 (7.8%). The growth is expected to be driven primarily by an increase in CJVs, 2As, and MAVs due to growth in inter-city personal travel between the urban centres along the Asset alignment, Hyderabad and Guntur/Vijayawada regions, as well as construction activity linked commercial transportation of cement from the cement clusters near the Asset to surrounding nearby consumption centres as well as destinations further away.

5.11 On TP1, MAV growth is significantly influenced by its strategic connectivity for freight traffic between the key economic centres of Hyderabad and Chennai. A substantial portion of this commercial traffic involves the transportation of manufactured goods, including automobile components moving between North India and Chennai. Furthermore, cement truck movement towards Hyderabad contributes to the growth in

commercial traffic at TP1 as well. The growth of 2A and MAV traffic on TP2 is driven by increasing consumption demand from regions such as Guntur, Chennai, and Hyderabad. TP3, despite having lower MAV volume, experiences growth driven by robust long-distance commercial traffic (specifically between North India and Chennai). This was further aided by truck volumes transporting construction materials from northern cement clusters along the Asset to consumption centers in Ongole, Nellore, Chennai, and other parts of South India.

5.12 2A growth has been robust at all three plazas. While 3A volumes have declined on TP2 and TP3, TP1 has observed growth, owing to higher volume of construction/mining-related traffic traveling towards Nalgonda.

Estimation of background elasticities

5.13 Elasticities, in the case of traffic growth, are the relationships between traffic growth and the growth in growth drivers of traffic. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide the forecasts of background traffic growth rates.

5.14 In terms of selecting growth drivers for different vehicle types, we have assumed state GSDP as the key growth driver for the CJVs and Buses given that this type of traffic is generally driven by local economic activity in cities and the state containing the Asset.

5.15 For the heavier commercial vehicles such as 2As, 3As, and MAVs (that generally ply long-distance routes), we assume national GDP as the key growth driver of traffic as growth in these types of commercial vehicles is influenced by nationwide economic cycles and inter-state market dynamics that are better captured by GDP growth trends of a much larger geographic extent than the immediate state(s) within which the Asset is located.

5.16 Table 5.7 below presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.7: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP AP	GSDP Telangana
Car		50% (All plazas)	50% (All plazas)
LCV		50% (All plazas)	50% (All plazas)
Bus		50% (All plazas)	50% (All plazas)
2A	100% (All plazas)		
3A	100% (All plazas)		
MAV	100% (All plazas)		

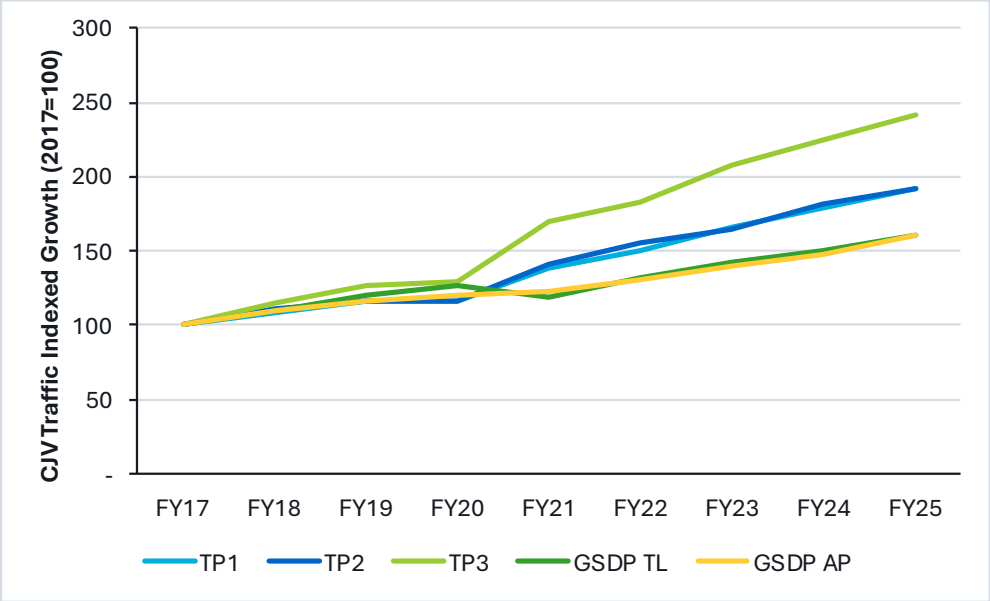
Source: Steer analysis of OD data

5.17 The recent historical period of tolling has had significant variations in traffic growth between years for certain vehicle types, impacts due to the effect of COVID-19 pandemic and the ban on illegal sandmining[15], especially for commercial vehicles. Therefore, only a few unaffected years were available for the regression analysis. This is one of the reasons for differences between the derived and assumed elasticities.

CJV

5.18 We see from the OD data that the CJVs on the Asset primarily cater to regional movements between Hyderabad, Guntur, Ongole and other towns lying on or near the Asset. We have therefore taken average GSDP growth rate between AP and Telangana to be the growth driver to model the growth of CJV traffic. Figure 5-2 below shows the relationship between indexed values of CJV traffic and AP and Telangana GSDP.

Figure 5-2: Relationship between CJV traffic and AP-Telangana GSDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.19 Generally, we would expect that in fast-growing economies with relatively low car ownership levels, car traffic growth rates are often in line with or slightly higher than growth in GSDP/GDP (i.e., suggesting elasticities at or just above 1.0). Further, there is an expected increase in car ownership proportion of overall population as the economy grows. This assumption is very contextual and subject to change as there are changes in economic policies of government and overall economic stability nationally and globally.

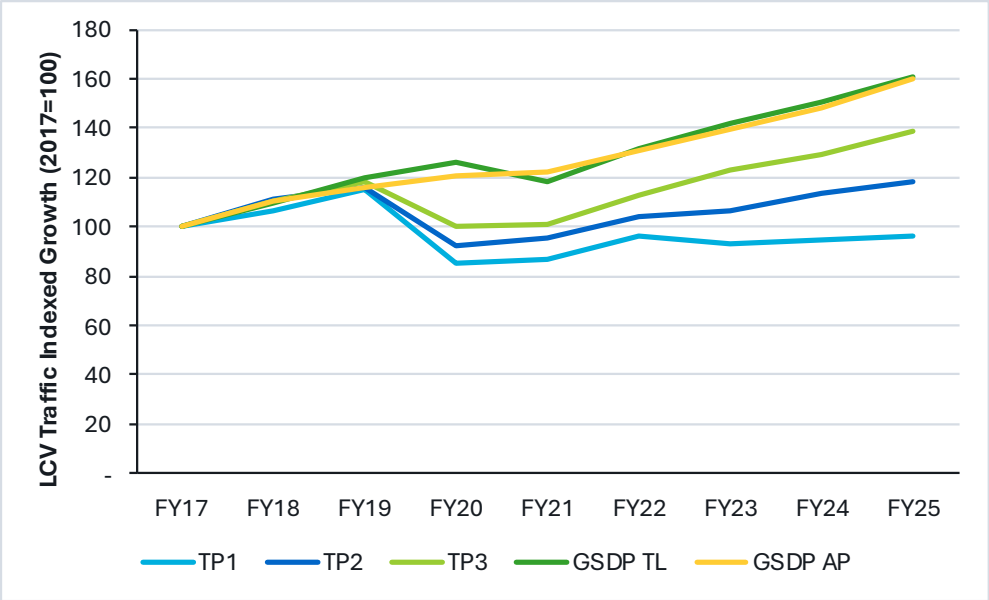
5.20 Historically, the CJV traffic on the Asset has shown strong growth throughout with the FY18-FY25 period showing over 10% CAGR in the category. The regression analysis suggests that between FY17 and FY25 traffic has grown with a background growth elasticity of approximately 1.5 (TP1), 1.5 (TP2) and 2.03 (TP3) with respect to GSDP of Telangana and Andhra Pradesh. Taking note of the positive outlook for passenger traffic on the Asset, driven by improved connectivity for business and leisure trips, and a benchmark toll road in the region, we have assumed a forecast background elasticity of 1.1 for CJVs on all plazas going forward.

LCV

5.21 In comparison to heavier commercial vehicles such as 3As and MAVs, LCVs have more regional movements within the state (i.e., AP and Telangana in this case) as seen in the OD data analyses above. More than 55% and up to approx. 80% of LCVs have trip ends in either Andhra Pradesh or Telangana. We have therefore taken GSDP of AP-Telangana to

be the growth driver to model growth of LCV traffic on the Asset. Figure 5-3 below shows the relationship between indexed values of LCV traffic and AP-Telangana GSDP.

Figure 5-3: Relationship between LCV and AP-Telangana GSDP



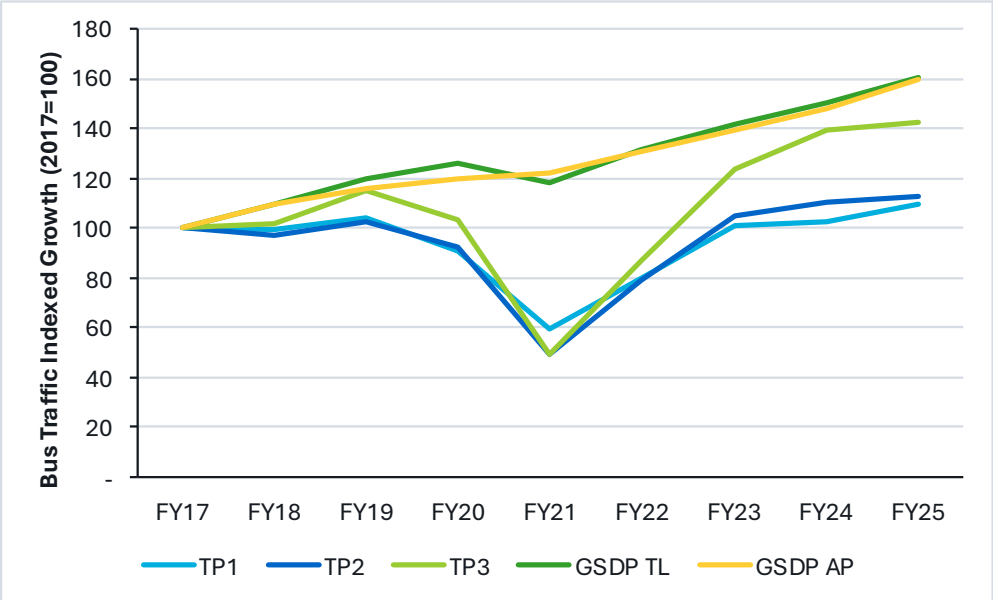
Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.22 Regression analysis suggests that when observing growth between FY17 and FY25, LCV showed an elasticity of 1.37 (TP1), 1.39 (TP2) and 1.39 (TP3) with respect to GSDP AP-Telangana.

Bus

5.23 Figure 5-4 shows the relationship between indexed values of bus traffic and AP-Telangana GSDP.

Figure 5-4: Relationship between Bus traffic and AP-Telangana GSDP



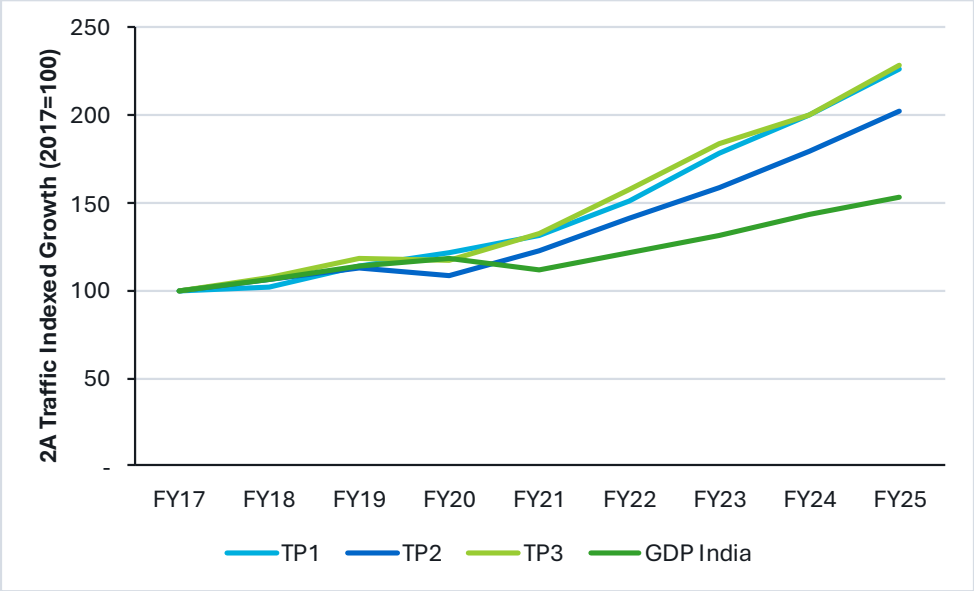
Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.24 Bus growth tends to be largely supply-driven in many parts of the country, with new buses being bought and deployed by the government at intervals of time. Based on our experience across the country, buses on inter-urban corridors in South India show moderate elasticities of 0.4 to 0.6. Despite a sharp drop in FY21 due to COVID-19, the regression results show elasticities in the range of 0.2 on the Asset. Based on the regression results and considering benchmarks, we have therefore assumed an elasticity of 0.4 at TP1 and 0.6 at TP2 and TP3, with respect to GSDP of AP-Telangana in our model.

2A

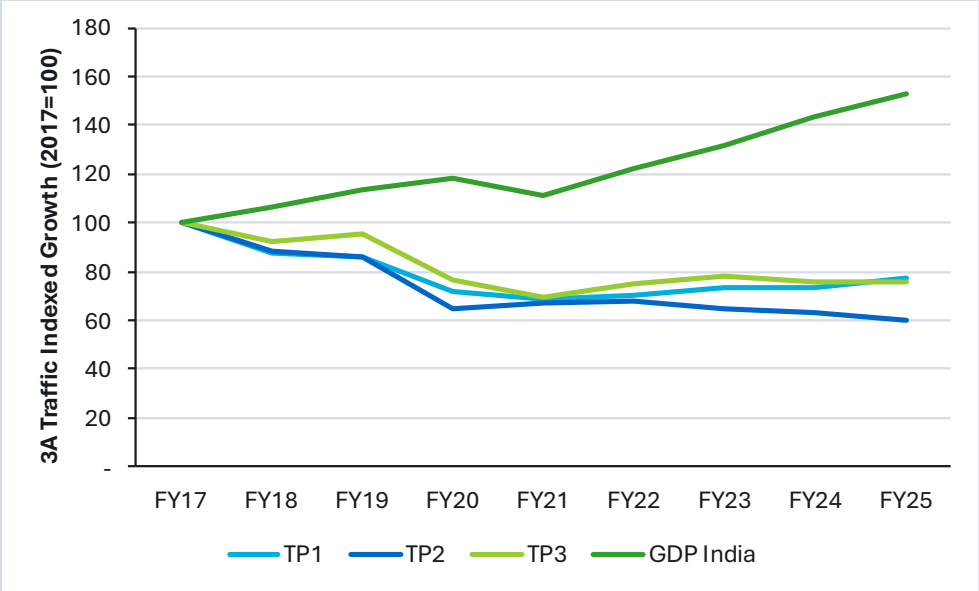
5.25 2A, 3A and MAV trucks have more national or long-distance movements covering several states. Given that manufacturing-related commodities tend to take prominence in their commodity distribution, traffic growth in commercial vehicles are dependent on industry demand-supply ecosystems spread across the country. We have therefore taken GDP as the key growth driver to model the traffic growth in 2As. Figure 5-5, Figure 5-6 and Figure 5-7 show the relationship between indexed values of 2A, 3A and MAV traffic respectively and India's GDP.

Figure 5-5: Relationship between 2A and India GDP



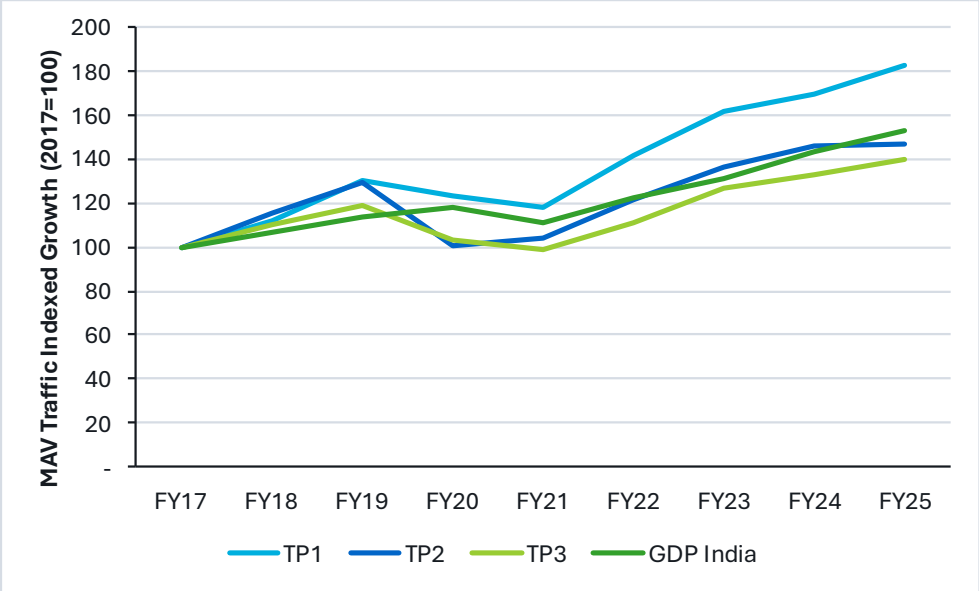
Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

Figure 5-6: Relationship between 3A combined traffic and India's GDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

Figure 5-7: Relationship between MAV combined traffic and India's GDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.26 Regression analysis suggests that when observing growth between FY17 and FY25, LCV showed an elasticity of 2.15 (TP1), 1.78 (TP2) and 2.11 (TP3) with respect to GSDP AP-Telangana. However, in our model we have assumed an elasticity of 0.80 going forward for 2A Trucks.

5.27 Historically, though 3A+MAV combined traffic experienced declines in FY21, they have exhibited strong growth since FY22. Analysis of historical data shows strong MAV growth on the Asset contrasting with flat or negative 3A traffic in recent years. We project slower 3A growth than MAVs due to an ongoing shift of 3-axle traffic towards MAVs, as discussed in paragraph 3.6. This preference for MAVs in long-distance transport is driven by their

greater load capacity, leading to economies of scale and reduced costs. However, 3A trucks are not expected to disappear entirely, as specific goods or transport needs will likely continue to favour them.

5.28 Based on the above points, as well as the indicative results obtained from the regression analyses, we have assumed elasticities of 0.20 and 0.90 for 3A and MAV trucks (respectively), with respect to India GDP growth.

Forecasts for background elasticities

5.29 Table 5.8 below presents a summary of the results of the regression analysis carried out on the historical toll plaza data and the macroeconomic (GDP/GDSP) growth, along with the assumed forecast elasticities for background traffic growth.

Table 5.8: Derived elasticities from regression analysis and assumed forecast elasticities for background growth

Vehicle type	Growth driver	History		Forecast	
		Derived elasticity	Years considered	Assumed forecast elasticity	Evolution of elasticity
TP1 Madgulapally					
CJV	GSDP AP-Telangana	1.50	FY17 to FY25	1.10	Reducing from 1.1 to 1.0 FY30 onwards
LCV	GSDP AP-Telangana	1.37		0.30	No change
Bus	GSDP AP-Telangana	0.22		0.40	No change
2A	GDP	2.15		0.80	No change
3A	GDP	N/A*		0.20	No change
MAV	GDP	1.43		0.90	No change
TP2 Tummalacheruvu					
CJV	GSDP AP-Telangana	1.50	FY17 to FY25	1.10	Reducing from 1.1 to 1.0 FY30 onwards
LCV*	GSDP AP-Telangana	1.39		0.30	No change
Bus	GSDP AP-Telangana	0.42		0.60	No change
2A	GDP	1.78		0.80	No change
3A	GDP	N/A*		0.20	No change
MAV	GDP	0.93		0.90	No change
TP3 Elchuru					
CJV	GSDP AP-Telangana	2.03	FY17 to FY25	1.10	Reducing from 1.1 to

Vehicle type	Growth driver	History		Forecast	
		Derived elasticity	Years considered	Assumed forecast elasticity	Evolution of elasticity
					1.0 FY30 onwards
LCV	GSDP AP-Telangana	1.39		0.30	No change
Bus	GSDP AP-Telangana	0.93		0.60	No change
2A	GDP	2.11		0.80	No change
3A	GDP	N/A*		0.20	No change
MAV	GDP	0.86		0.90	No change

Source: Steer analysis of Client data; * regression results for 3A regression analyses yielded invalid results

6 Forecast: Network overlays and forecasts

Introduction

6.1 Following the discussion on our forecast of background growth rates in the previous chapter, this chapter first covers the forecasting assumptions around the base year AADT. Thereafter, we present our assumptions around potential network impacts on traffic growth, Asset toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years.

Analysis of network/developmental impacts

6.2 This section details the network-related, or other developmental impacts which we believe would affect traffic growth on the Asset during the concession period. To assess these types of impacts on the Asset, whether positive or negative, we have reviewed existing and planned network-related developments (e.g., alternate roads, feeder roads) as well as other commercial developments in the Asset's vicinity and surrounding road network. Figure 6-1 below shows the road network surrounding the Asset.

Figure 6-1: Alternate routes and Asset route shown against the regional network context

Source: Steer analysis and cartography

Impact of Surat-Solapur-Chennai Expressway

6.3 The Surat-Solapur-Chennai expressway is progressing in its development (**refer to paragraph 2.16**). This expressway, once completed, will pass through 6 major states, including Gujarat, Maharashtra, Karnataka, Andhra Pradesh, Telangana and Tamil Nadu.

6.4 Two sections; Surat-Ahmednagar, and Akkalkot-Mahbubnagar, are planned as greenfield alignments, while the rest of the corridor includes brownfield upgrades of existing national highways. The impact of this network development has been split into two separate impacts in our analysis, based on in-scope markets for long-distance traffic currently observed on the Asset. This distinction is done on the following basis on the Traffic destined to Chennai, originating from areas in Solapur and west of Solapur.

6.5 **For in-scope market (Solapur/west to Chennai),** the proposed upgrades of Solapur bypass on NH50, along with the upgrade of Solapur-Kurnool-Kadapa-Tirupati-Chennai sections of the proposed expressway will improve the route's overall attractiveness for traffic generating from Solapur/west and Chennai/nearby regions.

6.6 No official information is available to definitively say when this project will be completed. However, different sources suggest the project may be completed by the mid of 2026 i.e., FY27Q2. We believe a more realistic timeline for its completion is FY28 given the size and complexity of this project.

6.7 Based on our GJC-based diversion analysis, we estimate a negative diversion on the Asset route once the expressway will be completed and opened to the public, as summarised by Table 6.1 below.

Table 6.1: Impact due to greenfield Surat-Chennai expressway (Solapur/West)

Vehicle type	FY28	FY29 onwards
Staging	*80%*	*100%*
TP1		
CJV	(0.6%)	(0.8%)
LCV	(1.4%)	(1.8%)
2A	(5.1%)	(6.3%)
3A	(6.6%)	(8.3%)
MAV	(4.5%)	(5.6%)
TP2		
CJV	(0.7%)	(0.9%)
LCV	(1.4%)	(1.8%)
2A	(5.1%)	(6.4%)
3A	(6.3%)	(7.9%)
MAV	(3.1%)	(3.9%)
TP3		
CJV	(1.4%)	(1.7%)
LCV	(2.0%)	(2.4%)
2A	(6.6%)	(8.2%)
3A	(7.6%)	(9.5%)
MAV	(4.2%)	(5.2%)

Source: Steer analysis of OD data, client TMS data and publicly available information

Impact of Nagpur Vijayawada Expressway

6.8 As discussed in Chapter 2, the 457 km long Nagpur – Vijayawada Expressway is being developed as Economic Corridor by National Highways Authority of India (NHAI) under Bharatmala Pariyojana Project2.19). While unofficial external sources suggest operationalization by FY28, the project's considerable scale and complexity lead us to incorporate a more conservative estimate of an additional 2.5 to 3 years for completion. Accordingly, we have assumed project completion by FY29-30.

6.9 The proposed alignment of the same is shown in Figure 6-2 below.

Figure 6-2: Impact due to Nagpur Vijayawada Expressway

Source: Steer analysis and cartography

6.10 The establishment of the proposed Nagpur-Vijayawada expressway will introduce a new competitive route for north-south (NH-44) traffic generated from Nagpur and North and South of the Asset on NH-16 currently part of the Asset's long-distance demand. We believe, the development of this expressway is anticipated to negatively impact the Asset's traffic. Based on our GJC-based diversion analysis, we have estimated a negative diversion on the Asset route, summarised by the Table 6.2 below.

Table 6.2: Impact due to Nagpur Vijayawada Expressway

Vehicle type	FY30	FY31 onwards
Staging	***25%***	***100%***
TP1		
CJV	(0.2%)	(0.9%)
LCV	(0.2%)	(0.7%)
2A	(3.0%)	(11.9%)

Vehicle type	FY30	FY31 onwards
Staging	***25%***	***100%***
3A	(1.8%)	(7.2%)
MAV	(2.8%)	(11.1%)
TP2		
CJV	(0.3%)	(1.0%)
LCV	(0.2%)	(0.7%)
2A	(3.0%)	(12.0%)
3A	(1.7%)	(6.9%)
MAV	(2.0%)	(7.8%)
TP3		
CJV	(0.5%)	(2.0%)
LCV	(0.2%)	(0.9%)
2A	(3.9%)	(15.4%)
3A	(2.1%)	(8.3%)
MAV	(2.6%)	(10.4%)

Source: Steer analysis of OD data, client TMS data and publicly available information

Impact of Hyderabad Regional Ring Road

6.11 The Hyderabad Regional Ring Road (RRR), a planned 330+ km highway situated outside the existing Outer Ring Road (ORR), aims to streamline long-distance traffic flow around Hyderabad. By connecting key towns and growth centres, it will serve as a crucial bypass, allowing vehicles to access southern regions efficiently, thereby reducing travel time and alleviating congestion.

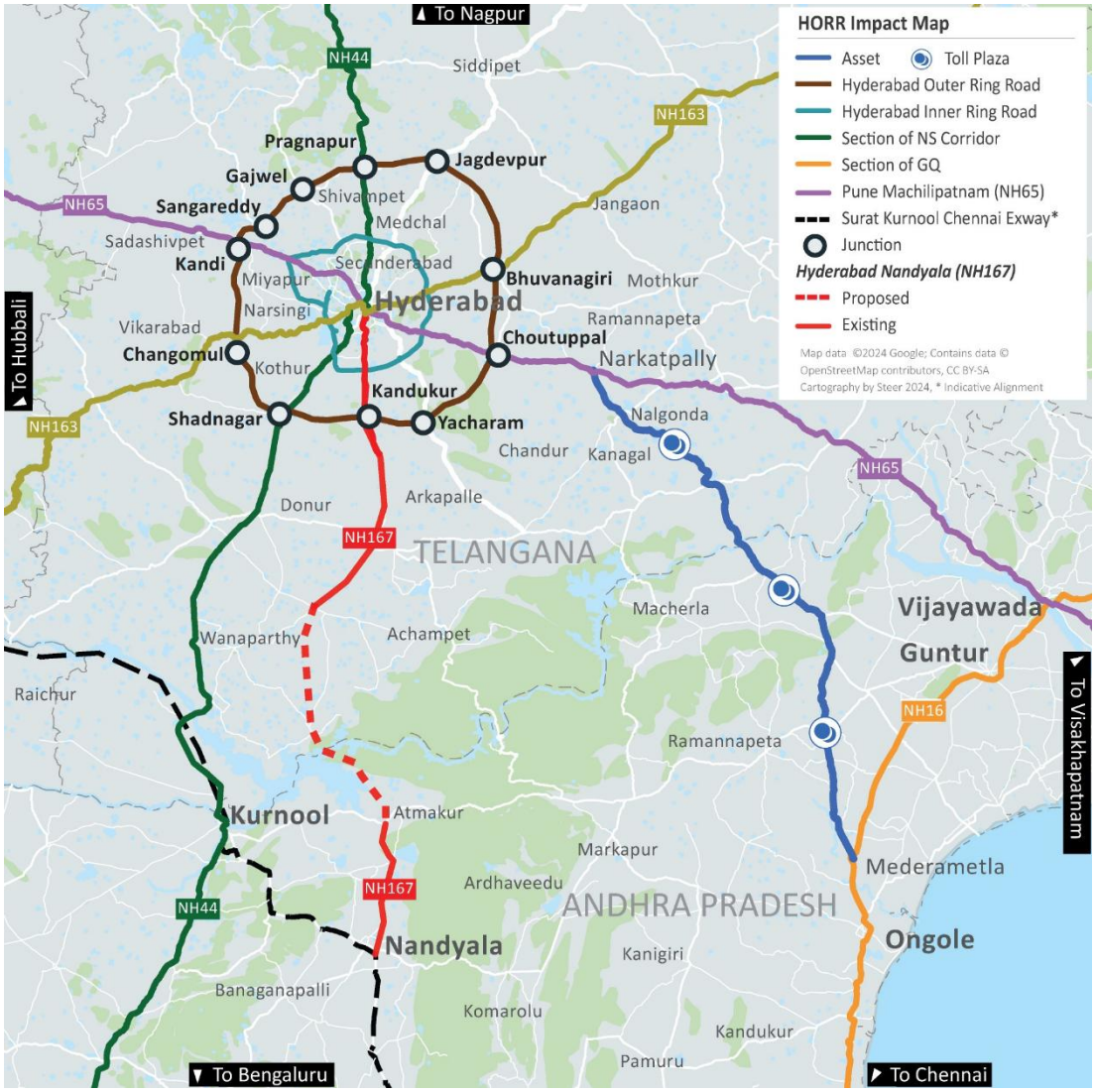
6.12 This expressway is projected to be developed in two parts, as follows:

- The northern section, which is around 164 km long and will connect Sangareddy, Narsapur, Toopran, Gajwel, Yadadri, Pragnapur, Bhongir, and Choutuppal.
- The southern half will connect Choutuppal, Ibrahimpatnam, Kandukur, Amangal, Chevella, Shankarpally, and Sangareddy.

6.13 As per the latest updates, the northern section of the Hyderabad Regional Ring Road has received environmental clearance and is presently in the bidding stage, while the Detailed Project Report for the southern section is under preparation[30]. The project is being carried out under a PPP model. The proposed alignment of the same is shown in Figure 6-3 below.

[30] Rs 34,367 Crore Hyderabad Regional Ring Road: Northern Section Gets Environmental Clearance; DPR For Southern Stretch In Progress

Figure 6-3: Impact due to RRR



Source: Steer analysis and cartography

6.14 We expect the RRR will positively impact traffic growth on the Asset from FY31 onwards (i.e., post it's assumed completion date). This can be explained as follows:

1. For this development, the in-scope traffic includes traffic moving from Hyderabad/North and Chennai/south which are currently using the Asset. This proportion represents traffic that is originating north of Hyderabad and is bound to regions between Chennai and Ongole.
2. Assuming some traffic shifts to the Nagpur–Vijayawada Expressway upon its expected FY29 completion, we anticipate a portion to return to the Asset by FY31 once the RRR is operational. That traffic will choose either to remain on the Nagpur–Vijayawada Expressway, or to use the RRR up to Chottupal, rejoin the Asset, and continue south toward Ongole.
3. Since the RRR will provide improved LoS on this route (i.e., enabling vehicles to avoid entering Hyderabad to access the NAM Asset), we believe an incremental proportion of 2As, 3As, and MAVs (~3%) will return to the Asset post the completion of the RRR.

6.15 Based on our GJC-based diversion analysis, we estimated a positive diversion on the Asset route, summarised by the Table 6.3 below.

Table 6.3: Impact due to RRR

Vehicle type	FY31	FY32	FY33 onwards
Staging	*80%*	*100%*	*100%*
TP1			
2A	3.2%	4.0%	4.0%
3A	1.7%	2.2%	2.2%
MAV	2.5%	3.2%	3.2%
TP2			
2A	3.2%	4.0%	4.0%
3A	1.5%	1.8%	1.8%
MAV	1.7%	2.1%	2.1%
TP3			
2A	4.1%	5.2%	5.2%
3A	1.8%	2.3%	2.3%
MAV	2.3%	2.9%	2.9%

Source: Steer analysis of OD data, client TMS data and publicly available information

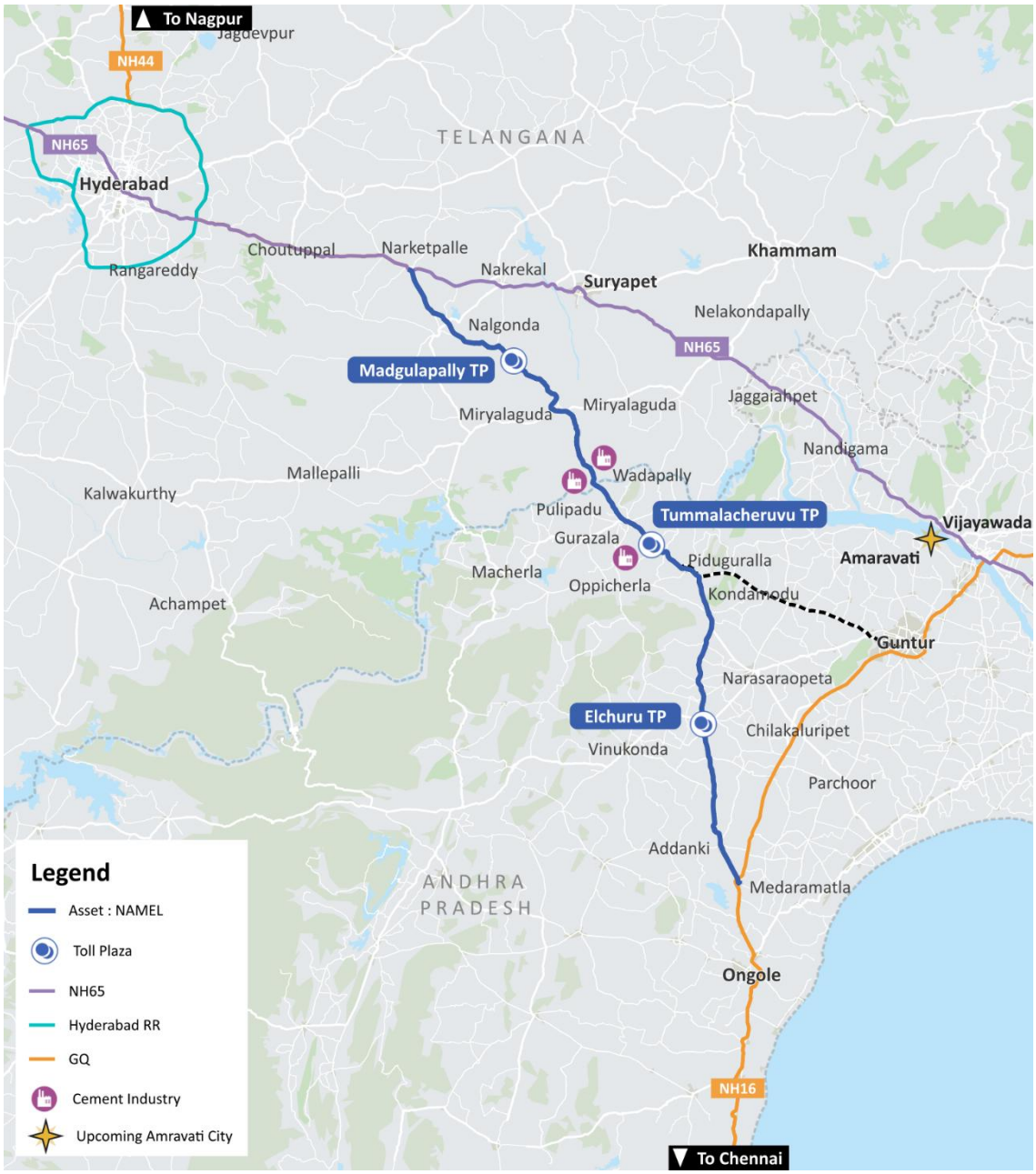
6.16 Additionally, the upgradation of the NH167K is also underway. NHAI is also developing Kalvakurthi to Karivena greenfield section. The existing 2-lane sections between Hyderabad to Kalvakuthi and Atmakur-Nandyal will be upgraded to 4-lane configuration, which includes a greenfield upgrade of the middle section of the development near Krishna River (close to Boravelle). Our current study does not factor in the NH167K development due to the unavailability of detailed information regarding its alignment and anticipated completion date. While this new route could influence traffic on the Asset and potentially serve as an alternative for traffic heading south from north of Hyderabad, any such impact is considered to overlap with the effects of the Nagpur–Vijayawada Expressway, which we have already accounted for in our forecasts.

Impact of Amaravati-Led Induced Demand

6.17 Following the Andhra Pradesh-Telangana state division, Amaravati is being established as the new administrative capital of Andhra Pradesh. The city's master plan includes a 217 sq km urban area with state-of-the-art infrastructure such as broad arterial roads, dedicated zones for governance, education, and finance, and smart city features like underground utility corridors and high-speed public transport. The government has relaunched construction with a massive ₹43,000 crore investment, targeting key projects including the High Court, Secretariat, Assembly, and residences for government officials. The city is also expected to host economic hubs to attract industries and global investors, supported by a land pooling model that integrates local farmers into the development

process. Amaravati aims to become a global capital city with sustainable urban planning and robust economic infrastructure.[31]

Figure 6-4: Impact of Amaravati Induced Demand



Source: Steer analysis and cartography

6.18 The development of the city is projected to influence the Asset in the following ways:

- Proximity to cement clusters suggests that these clusters will likely serve the construction needs of the developing city, a factor relevant to the Asset, particularly TP2.

[31] Amaravati Capital City Project revived: CM Chandrababu Naidu's global vision greenfield capital city's construction relaunched - India Today

- Upon completion, the city is expected to generate increased travel demand, which will positively impact traffic volumes on the Asset.

6.19 Based on our analysis, we estimated a positive impact on the Asset route, summarised by the Table 6.4 below.

Table 6.4: Impact due to Amaravati Induced Demand

Vehicle type	FY28	FY29 onwards
Staging	*80%*	*100%*
	TP1	
CJV	1.8%	2.2%
2A	1.4%	1.8%
MAV	1.9%	2.4%
	TP2	
CJV	2.0%	2.5%
2A	1.5%	1.8%
MAV	4.1%	5.2%
	TP3	
CJV	3.9%	4.9%
2A	1.9%	2.3%
MAV	1.8%	2.2%

Source: Steer analysis of OD data, client TMS data and publicly available information

Revenue forecasting assumptions

6.20 To forecast the revenues for a particular financial year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While "trip factors" provide the conversion factor to the former, i.e., traffic (trips) to tickets sold, "toll segmentation" provides the latter i.e., the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Toll evolution

6.21 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every two years (revision month is March) based on WPI-linked inflation. These are rounded up to the nearest five decimals to estimate the final toll rate charged to users.

6.22 We have used actual toll rates from the FY26 toll notifications and FY27 WPI to validate the modelling of future toll evolution of the Asset (and its individual toll plazas). WPI-linked toll growth was calculated based on the Client's WPI forecasts, as shown in the Table 6.5 below. These forecasts provided by the Client expect the Indian WPI to grow at an average of 4.2% between FY25-FY51. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client.

Table 6.5: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: FY27 onwards WPI print as per client inputs

Toll segmentation and trip factors

6.23 We have analysed the historical TMS data split by ticket categories, to understand toll segmentation trends, as presented in Chapter 3. As per the historical analysis we observed that the ticket segmentation of the Asset had progressively stabilised over FY22-FY25YTD period after two external events resulted in large variations prior to FY22 i.e., the COVID-19 pandemic and FASTag implementation. Therefore, the FY25YTD ticket segmentation provide us with a stable toll segmentation which can be used for forecasting purposes.

6.24 For the traffic and revenue forecast, we assume that the ticket segmentation observed in FY26 YTD—specifically April to September 2025—provides a reasonable assumption for long-term average segmentation. Our future toll segmentation profiles by vehicle type and across all three toll plazas on the Asset are presented in Table 6.6 through Table 6.8 below.

Table 6.6: Toll segmentation for the forecast years for TP-1

Ticket Type	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	46%	71%	37%	77%	84%	78%
Return	2%	1%	0%	0%	0%	0%
Local commercial	0%	0%	0%	0%	0%	0%
Monthly	0%	2%	32%	0%	0%	0%
Local personal	0%	0%	0%	0%	0%	0%
Violation	0%	0%	0%	0%	0%	0%
Exemption	13%	1%	0%	0%	0%	0%
Return 2	38%	26%	30%	22%	16%	21%

Source: Steer analysis of Client TMS data

Table 6.7: Toll segmentation for the forecast years for TP-2

Ticket Type	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	48%	75%	39%	78%	83%	82%

Ticket Type	CJV/MLCV	LCV	Bus	2A	3A	MAV
Return	3%	1%	0%	0%	0%	0%
Local commercial	0%	0%	0%	0%	0%	0%
Monthly	1%	0%	30%	0%	1%	0%
Local personal	0%	0%	0%	0%	0%	0%
Violation	0%	0%	0%	0%	0%	0%
Exemption	8%	2%	0%	0%	0%	0%
Return 2	39%	22%	31%	21%	16%	18%

Source: Steer analysis of Client TMS data

Table 6.8: Toll segmentation for the forecast years for TP-3

Ticket Type	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	56%	85%	43%	87%	82%	89%
Return	3%	0%	0%	1%	0%	0%
Local commercial	0%	0%	0%	0%	0%	0%
Monthly	1%	0%	22%	0%	0%	0%
Local personal	0%	0%	0%	0%	0%	0%
Violation	0%	0%	0%	0%	0%	0%
Exemption	4%	0%	5%	0%	0%	0%
Return 2	36%	15%	30%	12%	17%	11%

Source: Steer analysis of Client TMS data

6.25 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25YTD data available and listed in the Table 6.9, Table 6.10 and Table 6.11 below:

Table 6.9: Trip factors for the forecast years at TP 1

	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	248	6	5	2	4
Monthly	49	65	182	51	45	45
Local commercial	22	1	1	1	1	1
Local personal	45	45	45	45	45	45
Return 2	2	2	2	2	2	2

Source: Steer analysis of Client TMS data

Table 6.10: Trip factors for the forecast years at TP 2

	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	1	10	2	2	3	4

	CJV/MLCV	LCV	Bus	2A	3A	MAV
Monthly	89	97	86	103	110	45
Local commercial	29	1	1	1	1	1
Local personal	45	45	45	45	45	45
Return 2	2	2	2	2	2	2

Source: Steer analysis of Client TMS data

Table 6.11: Trip factors for the forecast years at TP 3

	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	21	2	4	6	5
Monthly	59	108	45	45	49	45
Local commercial	25	1	1	1	1	1
Local personal	45	45	45	45	45	45
Return 2	2	2	2	2	2	2

Source: Steer analysis of Client TMS data

6.26 Please note that the category Exemptions as reported in the TMS data includes local cars that are exempt from paying on this Asset. This assumes that further changes in toll categories, unless specific discounts are offered, are unlikely. For trips through ETC, especially the return trips, the trip factors input into the model calculations is 2.

Revenue reconciliation

6.27 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a monthly level for the Asset. To reconcile we have used the FY26YTD segmentation, FY26YTD ADT and compared it with the reported revenue for the year. The exercise was undertaken at an annual level. The comparison, as shown in Table 6.12 below, depicts the modelled revenue vs the reported revenue difference, and the difference lies within 1%, this gives us the confidence in the assumptions around segmentation and trip factors for future forecast purposes.

Table 6.12: FY25 Revenue reconciliation summary (INR Lakhs)

Asset	Modelled	Actual	Difference (%)
	FY26YTD	FY26YTD	
TP1	29.68	29.93	(0.8%)
TP2	34.58	34.63	(0.2%)
TP3	26.62	26.43	0.7%

Source: Steer comparison between FY26YTD modelled and reported revenue;

Traffic and Revenue forecasts

6.28 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the concession length of the Asset. The tables below present the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix A presents the detailed AADT and revenue forecasts for the Asset over the full concession period.

Table 6.13: Traffic forecasts (with impacts) AADT forecast for TP-1 Madgulapally

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
CJV	6,359	7,436	8,471	9,527	11,502	15,457
Mini LCV	1,873	1,982	2,089	2,197	2,372	2,676
Bus	831	879	927	975	1,052	1,187
LCV	664	679	698	717	752	811
2A	1,333	1,420	1,499	1,556	1,793	2,253
3A	647	620	612	604	626	663
MAV	2,007	2,188	2,349	2,462	2,887	3,729
AADT	**13,715**	**15,205**	**16,644**	**18,036**	**20,985**	**26,776**
PCU's	**24,099**	**26,213**	**28,251**	**30,095**	**34,675**	**43,617**

Source: Steer analysis

Table 6.14: Traffic forecasts (with impacts) traffic CAGR (%) for TP-1 Madgulapally

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY26-FY40
CJV	7.4%	6.0%	6.5%	6.1%	6.5%
Mini LCV	2.8%	2.6%	2.6%	2.4%	2.6%
Bus	2.8%	2.6%	2.6%	2.4%	2.6%
LCV	1.2%	1.3%	1.6%	1.5%	1.4%
2A	3.0%	1.9%	4.8%	4.7%	3.8%
3A	(1.4%)	(0.7%)	1.2%	1.2%	0.2%
MAV	4.0%	2.4%	5.5%	5.3%	4.5%
AADT	**5.0%**	**4.1%**	**5.2%**	**5.0%**	**4.9%**
PCU's	**4.1%**	**3.2%**	**4.8%**	**4.7%**	**4.3%**

Source: Steer analysis

Table 6.15: Revenue forecast (INR crores) for TP-1 Madgulapally

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
CJV	13.7	16.9	21.2	26.3	37.1	58.6
Mini LCV	4.0	4.5	5.2	6.1	7.6	10.2
Bus	6.1	6.8	7.9	9.1	11.6	15.4

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
LCV	3.4	3.7	4.2	4.7	5.8	7.3
2A	14.1	15.8	18.4	21.0	28.3	41.9
3A	17.4	17.6	19.1	20.7	25.1	31.4
MAV	53.3	61.1	72.2	83.1	114.2	173.8
Total	**112.1**	**126.4**	**148.1**	**170.9**	**229.7**	**338.5**

Source: Steer analysis

Table 6.16: Revenue forecast CAGR (%) for TP-1 Madgulapally

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY26-FY40
CJV	11.4%	11.3%	12.2%	9.6%	10.9%
Mini LCV	6.6%	7.7%	8.1%	5.8%	6.8%
Bus	6.6%	7.5%	8.2%	5.8%	6.8%
LCV	5.1%	6.2%	7.1%	4.9%	5.6%
2A	6.8%	6.8%	10.6%	8.1%	8.1%
3A	2.3%	4.1%	6.7%	4.5%	4.3%
MAV	7.9%	7.3%	11.2%	8.8%	8.8%
Total	**7.2%**	**7.4%**	**10.4%**	**8.1%**	**8.2%**

Source: Steer analysis

Table 6.17: Traffic forecasts (with impacts) AADT forecast for TP-2 Tummalacheruvu

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
CJV	5,486	6,427	7,323	8,228	9,935	13,350
Mini LCV	1,616	1,734	1,851	1,971	2,169	2,520
Bus	775	844	912	984	1,103	1,320
LCV	640	654	672	690	724	781
2A	1,306	1,391	1,468	1,522	1,755	2,204
3A	667	641	633	624	647	686
MAV	2,749	3,108	3,399	3,627	4,100	5,296
AADT	**13,240**	**14,798**	**16,258**	**17,647**	**20,433**	**26,158**
PCU's	**25,124**	**27,734**	**30,120**	**32,256**	**36,854**	**46,656**

Source: Steer analysis

Table 6.18: Traffic forecasts (with impacts) traffic CAGR (%) for TP-2 Tummalacheruvu

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY26-FY40
CJV	7.5%	6.0%	6.5%	6.1%	6.6%
Mini LCV	3.5%	3.2%	3.2%	3.0%	3.2%
Bus	4.1%	3.8%	3.9%	3.7%	3.9%

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY26-FY40
LCV	1.2%	1.3%	1.6%	1.5%	1.4%
2A	3.0%	1.8%	4.8%	4.7%	3.8%
3A	(1.3%)	(0.7%)	1.2%	1.2%	0.2%
MAV	5.4%	3.3%	4.2%	5.3%	4.8%
AADT	**5.3%**	**4.2%**	**5.0%**	**5.1%**	**5.0%**
PCU's	**4.6%**	**3.5%**	**4.5%**	**4.8%**	**4.5%**

Source: Steer analysis

Table 6.19: Revenue forecast (INR crores) for TP-2 Tummalacheruvu

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
CJV	12.6	15.4	19.5	24.1	34.0	53.8
Mini LCV	3.7	4.1	4.9	5.8	7.4	10.2
Bus	6.3	7.2	8.6	10.2	13.4	18.9
LCV	3.3	3.5	4.0	4.5	5.6	7.1
2A	13.8	15.4	18.0	20.5	27.7	40.9
3A	17.8	17.9	19.6	21.3	25.8	32.2
MAV	73.3	87.0	105.4	123.7	163.7	248.9
Total	**130.7**	**150.5**	**180.0**	**210.1**	**277.6**	**412.0**

Source: Steer analysis

Table 6.20: Revenue forecast CAGR (%) for TP-2 Tummalacheruvu

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY26-FY40
CJV	11.5%	11.3%	12.2%	9.6%	11.5%
Mini LCV	7.4%	8.4%	8.8%	6.5%	7.4%
Bus	8.1%	8.9%	9.5%	7.1%	8.1%
LCV	5.1%	6.4%	7.1%	4.9%	5.1%
2A	6.9%	6.8%	10.5%	8.1%	6.9%
3A	2.5%	4.1%	6.7%	4.5%	2.5%
MAV	9.5%	8.3%	9.8%	8.7%	9.5%
Total	**8.3%**	**8.0%**	**9.7%**	**8.2%**	**8.3%**

Source: Steer analysis

Table 6.21: Traffic forecasts (with impacts) AADT forecast for TP-3 Elchuru

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
CJV	2,828	3,354	3,823	4,266	5,150	6,921
Mini LCV	833	894	954	1,016	1,118	1,299
Bus	424	461	499	538	603	721
LCV	486	494	507	519	545	588

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
2A	1,021	1,076	1,120	1,141	1,316	1,653
3A	586	556	545	533	553	586
MAV	2,119	2,315	2,491	2,619	3,072	3,968
AADT	**8,298**	**9,149**	**9,940**	**10,633**	**12,357**	**15,736**
PCU's	**17,279**	**18,691**	**20,019**	**21,098**	**24,351**	**30,707**

Source: Steer analysis

Table 6.22: Traffic forecasts (with impacts) traffic CAGR (%) for TP-3 Elchuru

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY26-FY40
CJV	7.8%	5.6%	6.5%	6.1%	6.6%
Mini LCV	3.5%	3.2%	3.2%	3.0%	3.2%
Bus	4.1%	3.8%	3.9%	3.7%	3.9%
LCV	1.0%	1.2%	1.6%	1.5%	1.4%
2A	2.3%	0.9%	4.8%	4.7%	3.5%
3A	(1.8%)	(1.1%)	1.2%	1.2%	(0.0%)
MAV	4.1%	2.5%	5.5%	5.3%	4.6%
AADT	**4.6%**	**3.4%**	**5.1%**	**5.0%**	**4.7%**
PCU's	**3.7%**	**2.7%**	**4.9%**	**4.7%**	**4.2%**

Source: Steer analysis

Table 6.23: Revenue forecast (INR crores) for TP-3 Elchuru

Vehicle Type	FY26	FY28	FY30	FY32	FY35	FY40
CJV	6.7	8.4	10.7	13.1	18.5	29.3
Mini LCV	2.0	2.2	2.7	3.1	4.0	5.5
Bus	3.8	4.3	5.2	6.2	8.1	11.4
LCV	2.6	2.8	3.2	3.6	4.4	5.6
2A	10.9	12.1	14.1	15.7	21.2	31.4
3A	15.4	15.4	16.9	18.1	22.0	27.5
MAV	57.0	65.6	78.8	91.0	125.0	190.1
Total	**98.4**	**110.9**	**131.4**	**150.9**	**203.3**	**300.8**

Source: Steer analysis

Table 6.24: Revenue forecast CAGR (%) for TP-3 Elchuru

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY25-FY40
CJV	12.2%	10.9%	12.2%	9.6%	12.2%
Mini LCV	7.7%	8.4%	8.8%	6.5%	7.7%
Bus	8.5%	8.9%	9.5%	7.1%	8.5%

Vehicle Type	FY26-FY30	FY30-FY32	FY32-FY35	FY35-FY40	FY25-FY40
LCV	5.1%	6.3%	7.1%	4.9%	5.1%
2A	6.6%	5.8%	10.5%	8.1%	6.6%
3A	2.2%	3.7%	6.7%	4.5%	2.2%
MAV	8.4%	7.5%	11.1%	8.7%	8.4%
Total	**7.5%**	**7.2%**	**10.4%**	**8.2%**	**7.5%**

Source: Steer analysis

Upside and Downside cases

Upside and Downside scenario assumptions

6.29 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.30 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.31 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.25: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.32 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.33 The upside case impacts included in forecasts are summarised in Table 6.26 below.

Table 6.26: Summary of impacts on the Assets

	Year of Impact		Magnitude of impact		
			TP1 Madgullapally	TP2 Tummalacheruvu	TP3 Elchuru
Surat Chennai Expressway	FY29 (80%), FY30 (100%)	+25% of base case	CJV: (0.6%) LCV: (1.4%) 2A: (4.7%) 3A: (6.2%) MAV: (4.2%)	CJV: (0.7%) LCV: (1.4%) 2A: (4.8%) 3A: (5.9%) MAV: (2.9%)	CJV: (1.3%) LCV: (1.8%) 2A: (6.2%) 3A: (7.1%) MAV: (3.9%)
Hyderabad Ring Road	FY30 (20%), FY31 (60%), FY32 (100%)		2A: 5.0% 3A: 2.8% MAV: 4.0%	2A: 5.0% 3A: 2.3% MAV: 2.6%	2A: 6.5% 3A: 2.9% MAV: 3.6%
Nagpur-Vijayawada expressway	FY30 (25%), FY31 (100%)		CJV: (0.7%) LCV: (0.5%) 2A: (8.9%) 3A: (5.4%) MAV: (8.3%)	CJV: (0.8%) LCV: (0.5%) 2A: (9.0%) 3A: (5.2%) MAV: (5.9%)	CJV: (1.5%) LCV: (0.7%) 2A: (11.6%) 3A: (6.2%) MAV: (7.8%)
Amaravati Induced Demand	FY28 (80%), FY29 (100%)		CJV: 2.8% 2A: 2.3% MAV: 3.0%	CJV: 3.1% 2A: 2.3% MAV: 6.5%	CJV: 6.1% 2A: 2.9% MAV: 2.8%

Source: Steer

Impacts-Downside Case

6.34 The upside case impacts included in forecasts are summarised in Table 6.27 below.

Table 6.27: Summary of impacts on the Assets

	Year of Impact		Magnitude of impact		
			TP1 Madgullapally	TP2 Tummalacheruvu	TP3 Elchuru
Surat Chennai Expressway	FY28 (80%), FY29 (100%)	-25% of base case	CJV: (1.0%) LCV: (2.3%) 2A: (7.9%) 3A: (10.4%) MAV: (7.0%)	CJV: (1.1%) LCV: (2.3%) 2A: (8.0%) 3A: (9.9%) MAV: (4.9%)	CJV: (2.1%) LCV: (3.0%) 2A: (10.3%) 3A: (11.9%) MAV: (6.5%)
Hyderabad Ring Road	FY30 (20%), FY31 (60%), FY32 (100%)		2A: 3.0% 3A: 1.7% MAV: 2.4%	2A: 3.0% 3A: 1.4% MAV: 1.6%	2A: 3.9% 3A: 1.7% MAV: 2.2%

	Year of Impact		Magnitude of impact		
			TP1 Madgullapally	TP2 Tummalacheruvu	TP3 Elchuru
Nagpur-Vijayawada expressway	FY28 (25%), FY29 (100%)		CJV: (1.1%) LCV: (0.9%) 2A: (14.9%) 3A: (9.0%) MAV: (13.9%)	CJV: (1.3%) LCV: (0.9%) 2A: (15.0%) 3A: (8.6%) MAV: (9.8%)	CJV: (2.5%) LCV: (1.1%) 2A: (19.3%) 3A: (10.4%) MAV: (13.0%)
Amaravati Induced Demand	FY28 (80%), FY29 (100%)		CJV: 1.7% 2A: 1.4% MAV: 1.8%	CJV: 1.9% 2A: 1.4% MAV: 3.9%	CJV: 3.7% 2A: 1.7% MAV: 1.7%

Source: Steer

Upside and Downside Case Forecasts

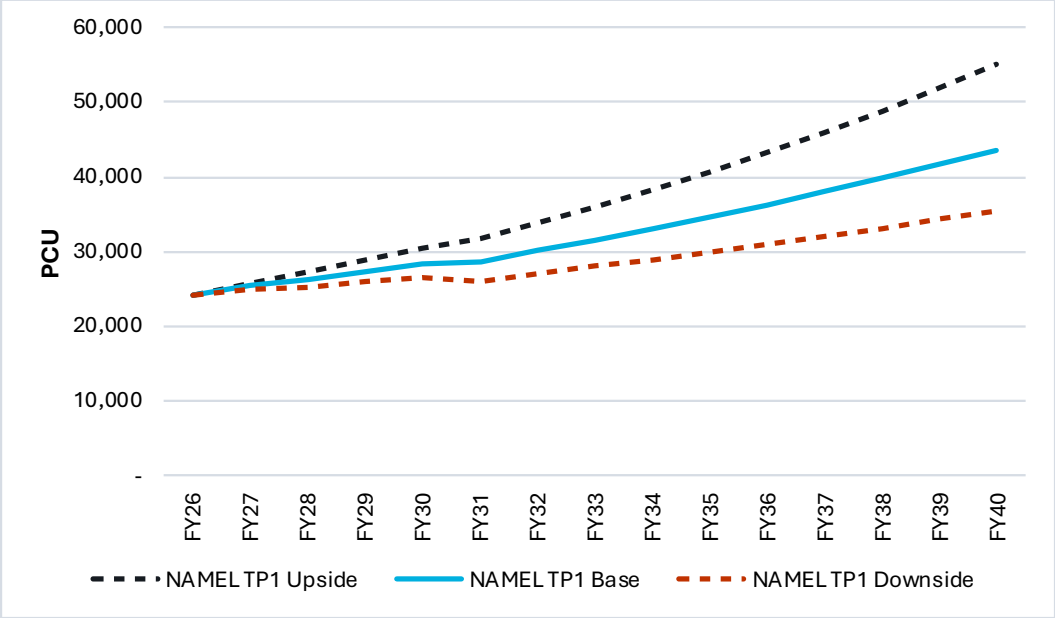
6.35 Table 6.28 below presents the difference between the Upside and Downside Case forecasts relative to the Base Case forecasts in FY40 (i.e., the concession end year) for all three Asset toll plazas. Figure 6-5 through Figure 6-10 below plot the Upside and Downside Case forecasts relative to the Base Case forecasts for each Asset toll plaza over the full concession period (FY26-FY40).

Table 6.28: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY40

Case	Measure	TP1 Madugulapally	TP2 Thummalacheruvu	TP3 Elchuru
Upside Case	Traffic (PCU)	26.2%	26.1%	28.2%
Downside Case		(18.9%)	(18.8%)	(20.2%)
Upside Case	Revenue	44.1%	43.3%	45.8%
Downside Case		(29.1%)	(28.6%)	(29.9%)

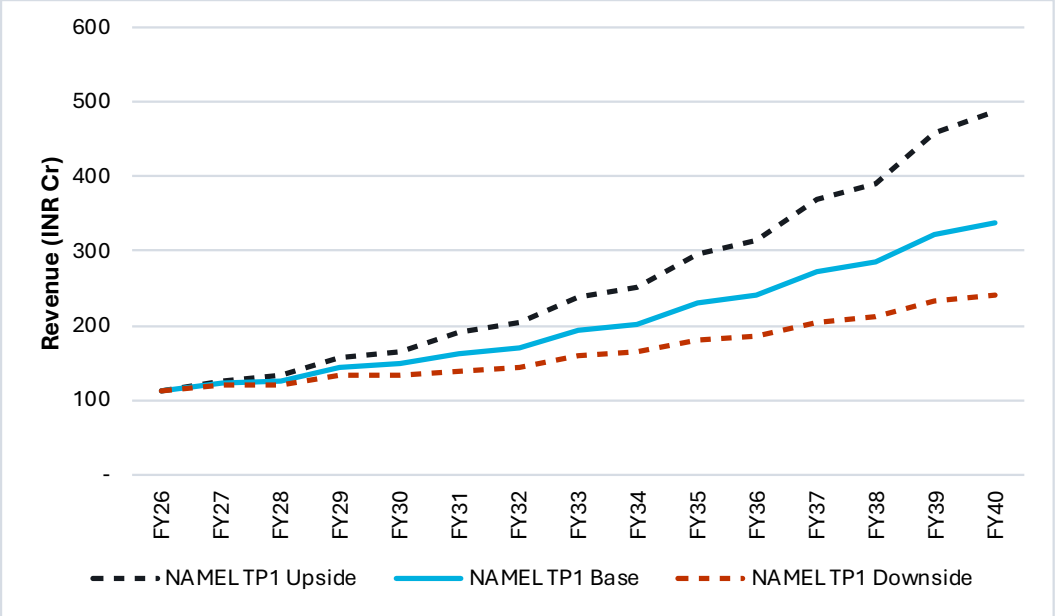
Source: Steer Analysis

Figure 6-5: Upside and Downside Case PCU Forecasts - TP1 Madugulapally



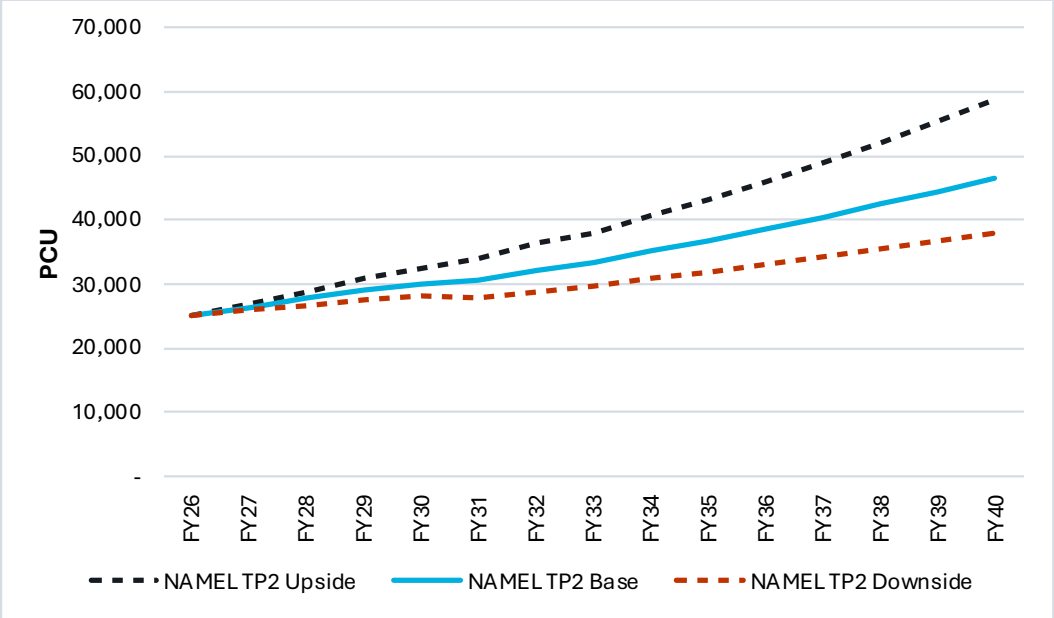
Source: Steer Analysis

Figure 6-6: Upside and Downside Case Revenue Forecasts - TP1 Madugulapally



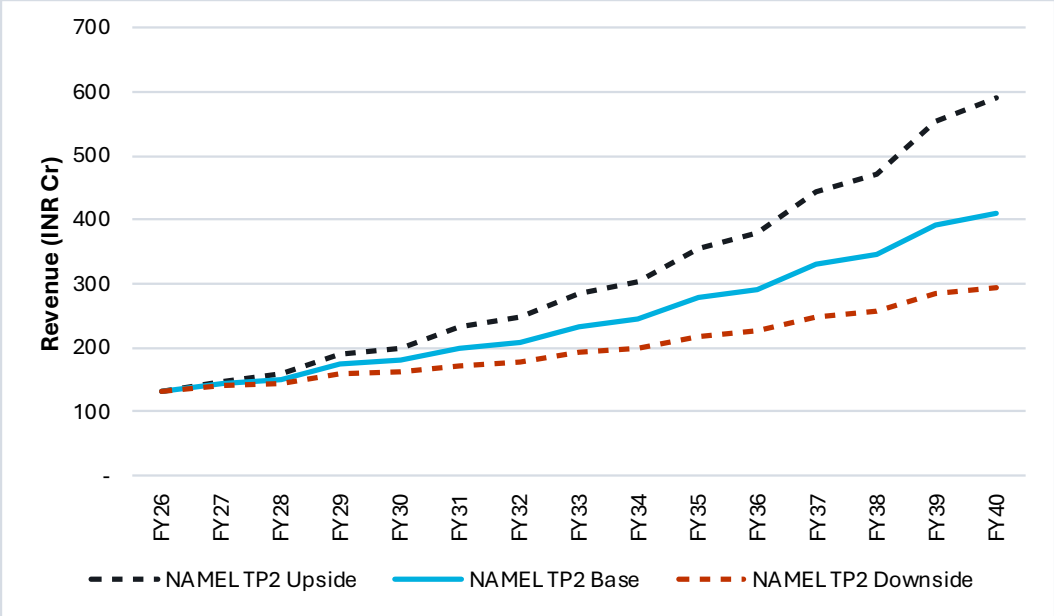
Source: Steer Analysis

Figure 6-7: Upside and Downside Case PCU Forecasts - TP2 Thummalacheruvu



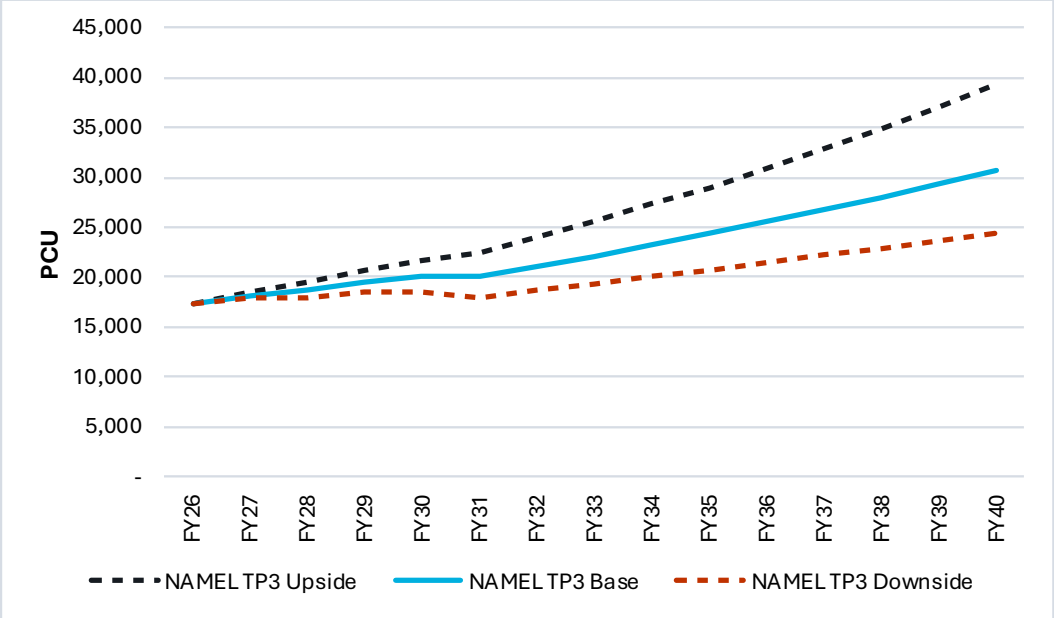
Source: Steer Analysis

Figure 6-8: Upside and Downside Case Revenue Forecasts - TP2 Thummalacheruvu



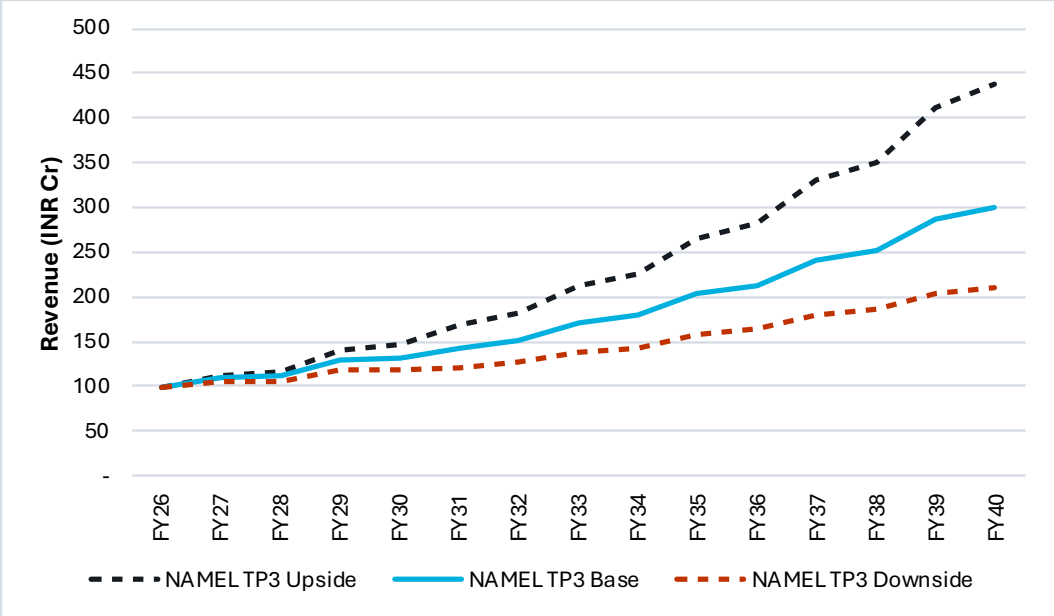
Source: Steer Analysis

Figure 6-9: Upside and Downside Case PCU Forecasts - TP3 Elchuru



Source: Steer Analysis

Figure 6-10: Upside and Downside Case Revenue Forecasts - TP3 Elchuru



Source: Steer Analysis

Summary outlook

6.36 Overall, passenger traffic on the Asset has a mix of regional movement between Hyderabad, Chennai, Ongole and other urban/semi-urban locations lying along the Asset alignment. Goods traffic on the Asset are driven by regional industries such as cement clusters near the Asset as well as manufacturing plants further away (such as automotive manufacturers in Tamil Nadu). There is also significant short to medium-distance movement of trucks carrying agricultural goods such as rice, chillis and tobacco.

6.37 The states of Andhra Pradesh and Telangana have both shown great focus on enhancing their respective industrial sectors while also establishing themselves as key IT hubs to foster a favourable environment for start-ups and tech-driven businesses (as observed in Hyderabad in Telangana, and as is intended for the city of Amravati in Andhra Pradesh). Several other investments in sectors like textiles, petrochemicals and food processing have also been made to boost economic growth in these states.

6.38 The two states have also invested heavily in strategic infrastructure development aimed at boosting trade and commerce by improving connectivity via roads and ports[32][33][34]. All these events are expected to positively influence traffic growth on the Asset going forward.

6.39 The impacts considered while forecasting include the onset of the Surat-Solapur-Chennai expressway, the Nagpur-Vijayawada expressway, combined net impact of the Hyderabad Regional Ring Road in conjunction with the NH167k upgrade between Hyderabad and Nandyal, and finally, the demand induced by Amaravati super city development in AP.

6.40 The forecasts overall translate to stable PCU growth rate CAGRs of 4.3%, 4.5% and 4.2% per year at TP1, TP2 and TP3 (respectively) between FY26 and FY40, and we expect these growth rates to sustain over the long-term after considering all network related impacts in and around the Asset's surrounding road network. Hence, reflecting the robustness of the underlying growth drivers of travel demand on the Asset.

[32] **Centre to take up road infra projects worth Rs 2 lakh crore in Telangana over 3-4 years: Nitin Gadkari - The Economic Times**

[33] **https://indiashippingnews.com/andhra-pradesh-govt-with-apmb-investing-in-construction-of-four-new-ports/**

[34] **Rs 76,000-crore highway projects underway in Andhra Pradesh**

Appendices

A Detailed forecasts

A.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

A.2 This section presents the detailed traffic forecasts for the forecast period until FY40. The following two tables show the traffic growth rates and AADT, respectively.

Table A.1: Forecasts for final (background+impacts) AADT at TP1 Madgulapally

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
FY26	6,359	1,873	831	664	1,333	647	2,007	**13,715**	**24,099**
FY27	6,849	1,927	855	677	1,402	656	2,124	**14,490**	**25,342**
FY28	7,436	1,982	879	679	1,420	620	2,188	**15,205**	**26,213**
FY29	7,970	2,036	903	688	1,476	617	2,295	**15,985**	**27,385**
FY30	8,471	2,089	927	698	1,499	612	2,349	**16,644**	**28,251**
FY31	8,955	2,142	950	705	1,472	594	2,321	**17,140**	**28,648**
FY32	9,527	2,197	975	717	1,556	604	2,462	**18,036**	**30,095**
FY33	10,154	2,255	1,000	728	1,632	611	2,597	**18,978**	**31,561**
FY34	10,813	2,313	1,026	740	1,711	619	2,739	**19,961**	**33,087**
FY35	11,502	2,372	1,052	752	1,793	626	2,887	**20,985**	**34,675**
FY36	12,224	2,432	1,079	764	1,878	633	3,042	**22,052**	**36,328**
FY37	12,980	2,492	1,106	776	1,967	641	3,203	**23,164**	**38,047**
FY38	13,769	2,553	1,132	787	2,059	648	3,371	**24,320**	**39,832**
FY39	14,592	2,614	1,160	799	2,154	656	3,547	**25,521**	**41,686**
FY40	15,457	2,676	1,187	811	2,253	663	3,729	**26,776**	**43,617**

Source: Steer analysis

Table A.2: Forecasts for final (background+impacts) growth rates (%) at TP1 Madgulapally

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
FY27	7.7%	2.9%	2.	1.	5.	1.	5.	5.	5.

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
			9%	8%	2%	3%	8%	7%	2%
FY28	8.6%	2.8%	2.8%	0.3%	1.3%	(5.4%)	3.0%	4.9%	3.4%
FY29	7.2%	2.7%	2.7%	1.3%	4.0%	(0.6%)	4.9%	5.1%	4.5%
FY30	6.3%	2.6%	2.6%	1.5%	1.5%	(0.8%)	2.4%	4.1%	3.2%
FY31	5.7%	2.6%	2.6%	1.1%	(1.8%)	(3.0%)	(1.2%)	3.0%	1.4%
FY32	6.4%	2.6%	2.6%	1.6%	5.7%	1.7%	6.1%	5.2%	5.1%
FY33	6.6%	2.6%	2.6%	1.6%	4.9%	1.2%	5.5%	5.2%	4.9%
FY34	6.5%	2.6%	2.6%	1.6%	4.8%	1.2%	5.5%	5.2%	4.8%
FY35	6.4%	2.6%	2.6%	1.6%	4.8%	1.2%	5.4%	5.1%	4.8%
FY36	6.3%	2.5%	2.5%	1.6%	4.8%	1.2%	5.4%	5.1%	4.8%

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
FY37	6.2%	2.5%	2.5%	1.5%	4.7%	1.2%	5.3%	5.0%	4.7%
FY38	6.1%	2.4%	2.4%	1.5%	4.7%	1.2%	5.3%	5.0%	4.7%
FY39	6.0%	2.4%	2.4%	1.5%	4.6%	1.2%	5.2%	4.9%	4.7%
FY40	5.9%	2.4%	2.4%	1.5%	4.6%	1.1%	5.2%	4.9%	4.6%

Source: Steer analysis

Table A.3 : Forecasts for final (background+impacts) AADT at TP2 Tummalacheruvu

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
FY26	5,486	1,616	775	640	1,306	667	2,749	**13,240**	**25,124**
FY27	5,909	1,675	809	652	1,374	675	2,910	**14,003**	**26,467**
FY28	6,427	1,734	844	654	1,391	641	3,108	**14,798**	**27,734**
FY29	6,892	1,792	878	662	1,446	638	3,289	**15,598**	**29,109**
FY30	7,323	1,851	912	672	1,468	633	3,399	**16,258**	**30,120**
FY31	7,735	1,910	947	679	1,440	615	3,429	**16,755**	**30,666**
FY32	8,228	1,971	984	690	1,522	624	3,627	**17,647**	**32,256**
FY33	8,771	2,036	1,022	702	1,597	632	3,689	**18,448**	**33,442**
FY34	9,339	2,102	1,062	713	1,674	640	3,890	**19,420**	**35,114**
FY35	9,935	2,169	1,103	724	1,755	647	4,100	**20,433**	**36,854**
FY36	10,558	2,237	1,144	736	1,838	655	4,320	**21,489**	**38,665**
FY37	11,211	2,306	1,187	747	1,925	663	4,549	**22,588**	**40,549**
FY38	11,893	2,377	1,230	758	2,015	671	4,788	**23,731**	**42,506**
FY39	12,604	2,448	1,274	770	2,108	678	5,037	**24,918**	**44,539**
FY40	13,350	2,520	1,320	781	2,204	686	5,296	**26,158**	**46,656**

Source: Steer analysis

Table A.4 : Forecasts for final (background+impacts) growth rates (%) at TP2 Tummalacheruvu

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
FY27	7.7%	3.6%	4.4%	1.8%	5.2%	1.3%	5.8%	**5.8%**	**5.3%**
FY28	8.8%	3.5%	4.2%	0.3%	1.3%	(5.1%)	6.8%	**5.7%**	**4.8%**
FY29	7.2%	3.4%	4.1%	1.3%	3.9%	(0.5%)	5.8%	**5.4%**	**5.0%**
FY30	6.2%	3.3%	3.9%	1.5%	1.5%	(0.7%)	3.3%	**4.2%**	**3.5%**
FY31	5.6%	3.2%	3.9%	1.1%	(1.8%)	(3.0%)	0.9%	**3.1%**	**1.8%**
FY32	6.4%	3.2%	3.8%	1.6%	5.7%	1.6%	5.8%	**5.3%**	**5.2%**
FY33	6.6%	3.3%	4.0%	1.6%	4.9%	1.2%	1.7%	**4.5%**	**3.7%**
FY34	6.5%	3.2%	3.9%	1.6%	4.8%	1.2%	5.5%	**5.3%**	**5.0%**
FY35	6.4%	3.2%	3.8%	1.6%	4.8%	1.2%	5.4%	**5.2%**	**5.0%**
FY36	6.3%	3.1%	3.8%	1.6%	4.8%	1.2%	5.4%	**5.2%**	**4.9%**
FY37	6.2%	3.1%	3.7%	1.5%	4.7%	1.2%	5.3%	**5.1%**	**4.9%**
FY38	6.1%	3.0%	3.6%	1.5%	4.7%	1.2%	5.3%	**5.1%**	**4.8%**
FY39	6.0%	3.0%	3.6%	1.5%	4.6%	1.2%	5.2%	**5.0%**	**4.8%**
FY40	5.9%	3.0%	3.6%	1.5%	4.6%	1.1%	5.2%	**5.0%**	**4.8%**

Source: Steer analysis

Table A.5 : Forecasts for final (background+impacts) AADT at TP3 Elchuru

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
FY26	2,828	833	424	486	1,021	586	2,119	**8,298**	**17,279**
FY27	3,046	863	442	495	1,074	594	2,242	**8,757**	**18,174**
FY28	3,354	894	461	494	1,076	556	2,315	**9,149**	**18,691**
FY29	3,607	924	480	500	1,115	551	2,429	**9,606**	**19,508**
FY30	3,823	954	499	507	1,120	545	2,491	**9,940**	**20,019**
FY31	4,010	985	518	511	1,077	524	2,471	**10,096**	**20,043**
FY32	4,266	1,016	538	519	1,141	533	2,619	**10,633**	**21,098**
FY33	4,547	1,050	559	528	1,197	540	2,764	**11,184**	**22,139**
FY34	4,842	1,084	581	536	1,255	546	2,914	**11,758**	**23,223**
FY35	5,150	1,118	603	545	1,316	553	3,072	**12,357**	**24,351**
FY36	5,474	1,153	626	554	1,378	559	3,236	**12,980**	**25,526**
FY37	5,812	1,189	649	562	1,443	566	3,408	**13,629**	**26,747**
FY38	6,165	1,225	673	571	1,511	573	3,587	**14,304**	**28,017**
FY39	6,534	1,262	697	579	1,580	579	3,774	**15,005**	**29,335**
FY40	6,921	1,299	721	588	1,653	586	3,968	**15,736**	**30,707**

Source: Steer analysis

Table A.6 : Forecasts for final (background+impacts) growth rates (%) at TP3 Elchuru

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total	PCUs
FY27	7.7%	3.6%	4.4%	1.8%	5.2%	1.3%	5.8%	**5.5%**	**5.2%**
FY28	10.1%	3.5%	4.2%	(0.2%)	0.2%	(6.4%)	3.2%	**4.5%**	**2.8%**
FY29	7.6%	3.4%	4.1%	1.2%	3.6%	(0.8%)	4.9%	**5.0%**	**4.4%**
FY30	6.0%	3.3%	3.9%	1.4%	0.5%	(1.1%)	2.6%	**3.5%**	**2.6%**
FY31	4.9%	3.2%	3.9%	0.9%	(3.9%)	(3.8%)	(0.8%)	**1.6%**	**0.1%**
FY32	6.4%	3.2%	3.8%	1.6%	6.0%	1.7%	6.0%	**5.3%**	**5.3%**
FY33	6.6%	3.3%	4.0%	1.6%	4.9%	1.2%	5.5%	**5.2%**	**4.9%**
FY34	6.5%	3.2%	3.9%	1.6%	4.8%	1.2%	5.5%	**5.1%**	**4.9%**
FY35	6.4%	3.2%	3.8%	1.6%	4.8%	1.2%	5.4%	**5.1%**	**4.9%**
FY36	6.3%	3.1%	3.8%	1.6%	4.8%	1.2%	5.4%	**5.0%**	**4.8%**
FY37	6.2%	3.1%	3.7%	1.5%	4.7%	1.2%	5.3%	**5.0%**	**4.8%**
FY38	6.1%	3.0%	3.6%	1.5%	4.7%	1.2%	5.3%	**5.0%**	**4.7%**
FY39	6.0%	3.0%	3.6%	1.5%	4.6%	1.2%	5.2%	**4.9%**	**4.7%**
FY40	5.9%	3.0%	3.6%	1.5%	4.6%	1.1%	5.2%	**4.9%**	**4.7%**

Source: Steer analysis

Revenue forecasts

A.3 The following table presents the year-wise annual revenue forecasts for the forecast period until FY40.

Table A.7: Forecasts for annual revenue for TP1, INR crores

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	13.7	4.0	6.1	3.4	14.1	17.4	53.3	**112.1**
FY27	15.5	4.4	6.6	3.7	15.6	18.5	59.1	**123.5**
FY28	16.9	4.5	6.8	3.7	15.8	17.6	61.1	**126.4**
FY29	19.9	5.1	7.7	4.1	18.1	19.2	70.5	**144.7**
FY30	21.2	5.2	7.9	4.2	18.4	19.1	72.2	**148.1**
FY31	24.6	5.9	8.9	4.6	19.8	20.3	78.1	**162.2**
FY32	26.3	6.1	9.1	4.7	21.0	20.7	83.1	**170.9**
FY33	30.2	6.7	10.1	5.2	23.8	22.6	94.8	**193.4**
FY34	32.2	6.9	10.4	5.2	24.9	22.9	99.9	**202.4**
FY35	37.1	7.6	11.6	5.8	28.3	25.1	114.2	**229.7**
FY36	39.5	7.9	11.9	5.9	29.8	25.5	120.6	**241.0**
FY37	45.5	8.7	13.2	6.4	33.6	27.9	137.3	**272.6**
FY38	48.2	8.9	13.5	6.5	35.2	28.2	144.5	**285.1**
FY39	55.2	9.9	15.0	7.2	40.0	30.9	164.8	**322.9**

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY40	58.6	10.2	15.4	7.3	41.9	31.4	173.8	**338.5**

Source: Steer analysis

Table A.8: Forecasts for annual revenue for TP2, INR crores

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	12.6	3.7	6.3	3.3	13.8	17.8	73.3	**130.7**
FY27	14.1	4.0	6.9	3.5	15.2	18.8	81.3	**143.7**
FY28	15.4	4.1	7.2	3.5	15.4	17.9	87.0	**150.5**
FY29	18.3	4.8	8.3	3.9	17.7	19.8	102.0	**174.8**
FY30	19.5	4.9	8.6	4.0	18.0	19.6	105.4	**180.0**
FY31	22.6	5.6	9.8	4.5	19.4	20.9	116.6	**199.3**
FY32	24.1	5.8	10.2	4.5	20.5	21.3	123.7	**210.1**
FY33	27.7	6.4	11.5	5.0	23.3	23.2	135.8	**232.9**
FY34	29.5	6.6	11.9	5.1	24.4	23.5	143.3	**244.3**
FY35	34.0	7.4	13.4	5.6	27.7	25.8	163.7	**277.6**
FY36	36.3	7.7	13.9	5.7	29.1	26.2	172.9	**291.7**
FY37	41.5	8.5	15.6	6.2	32.9	28.6	196.8	**330.3**
FY38	44.1	8.8	16.2	6.3	34.5	29.0	207.1	**345.9**
FY39	50.7	9.8	18.2	7.0	39.0	31.7	236.1	**392.5**
FY40	53.8	10.2	18.9	7.1	40.9	32.2	248.9	**412.0**

Source: Steer analysis

Table A.9: Forecasts for annual revenue for TP3, INR crores

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY26	6.7	2.0	3.8	2.6	10.9	15.4	57.0	**98.4**
FY27	7.6	2.2	4.1	2.8	12.0	16.4	63.4	**108.6**
FY28	8.4	2.2	4.3	2.8	12.1	15.4	65.6	**110.9**
FY29	10.1	2.6	5.0	3.1	14.0	17.1	76.8	**128.6**
FY30	10.7	2.7	5.2	3.2	14.1	16.9	78.8	**131.4**
FY31	12.3	3.0	5.9	3.5	14.8	17.8	85.7	**143.0**
FY32	13.1	3.1	6.2	3.6	15.7	18.1	91.0	**150.9**
FY33	15.1	3.5	6.9	3.9	17.8	19.8	103.7	**170.8**
FY34	16.1	3.6	7.2	4.0	18.7	20.1	109.4	**179.0**
FY35	18.5	4.0	8.1	4.4	21.2	22.0	125.0	**203.3**
FY36	19.8	4.2	8.4	4.5	22.3	22.3	132.0	**213.5**
FY37	22.6	4.6	9.5	4.9	25.3	24.4	150.2	**241.5**

Vehicle Type	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	Total
FY38	24.0	4.8	9.8	5.0	26.4	24.7	158.1	**252.8**
FY39	27.6	5.3	11.0	5.5	30.0	27.1	180.3	**286.7**
FY40	29.3	5.5	11.4	5.6	31.4	27.5	190.1	**300.8**

B Top OD Pairs

B.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1

Table B.1: CJV and Bus top 10 OD pair shares at TP1

	OD Pair	Share
1.	Tipararthi-Nalgonda-Narketpalle -Mirayalguda	22.4%
2.	Hyderabad City-Mirayalguda	18.9%
3.	Guntur -Hyderabad City	7.6%
4.	Ongole -Hyderabad City	6.8%
5.	Addanki-Singatakonda -Hyderabad City	4.7%
6.	Chennai City-Hyderabad City	4.5%
7.	Sri Potti Sriramulu Nellore-Hyderabad City	4.5%
8.	Hyderabad City-Tipararthi-Nalgonda-Narketpalle	2.9%
9.	Guntur - Tipararthi-Nalgonda-Narketpalle	2.5%
10.	Addanki-Singatakonda - Tipararthi-Nalgonda-Narketpalle	2.4%

Source: Steer analysis of OD data

Table B.2: MAV and OSV top 10 OD pair shares at TP1

	OD Pair	Share
1.	Chennai City-Hyderabad City	20.1%
2.	NCT of Delhi-Chennai City	11.8%
3.	Hyderabad City-Mirayalguda	7.3%
4.	Guntur -Hyderabad City	3.3%
5.	Dachepalli-Hyderabad City	3.2%
6.	Centre Maharashtra-Chennai City	2.9%
7.	Sri Potti Sriramulu Nellore-Hyderabad City	2.8%
8.	Madhya Pradesh-Chennai City	2.4%
9.	Tipararthi-Nalgonda-Narketpalle -Mirayalguda	2.2%
10.	Kandla Port or Mundra Port -Chennai City	1.9%

Source: Steer analysis of OD data

TP2

Table B.3: CJV top 10 OD pair shares at TP2

	OD Pair	Share
1.	Guntur -Hyderabad City	7.5%
2.	Guntur -Mirayalguda	6.9%
3.	Chennai City-Hyderabad City	5.2%
4.	Ongole -Hyderabad City	4.4%
5.	Guntur -Tipararthi-Nalgonda-Narketpalle	3.8%
6.	Guttikonda-Janapadu-Pidiguralla-Anupalem -Hyderabad City	3.1%
7.	Vijayawada South City-Hyderabad City	3.0%
8.	Guttikonda-Janapadu-Pidiguralla-Anupalem -Mirayalguda	2.7%
9.	Guntur -Dachepalli	2.7%
10.	Guttikonda-Janapadu-Pidiguralla-Anupalem -Dachepalli	2.7%

Source: Steer analysis of OD data

Table B.4: MAV and OSV top 10 OD pair shares at TP2

	OD Pair	Share
1.	Chennai City-Hyderabad City	19.7%
2.	Guntur -Hyderabad City	5.4%
3.	NCT of Delhi-Chennai City	3.9%
4.	Guntur -Mirayalguda	3.6%
5.	Ongole -Hyderabad City	2.2%
6.	Guttikonda-Janapadu-Pidiguralla-Anupalem -Mirayalguda	2.2%
7.	Guntur -Tipararthi-Nalgonda-Narketpalle	2.1%
8.	Mumbai City-Chennai City	1.8%
9.	Chennai City-Tipararthi-Nalgonda-Narketpalle	1.8%
10.	Vijayawada South City-Hyderabad City	1.7%

Source: Steer analysis of OD data

TP3

Table B.5: CJV top 10 OD pair shares at TP3

	OD Pair	Share
1.	Chennai City- Hyderabad City	15.7%
2.	Ongole -Hyderabad City	8.8%
3.	Sri Potti Sriramulu Nellore-Hyderabad City	7.2%
4.	Ongole -Amaravati (Andhra Pradesh)	4.2%
5.	Addanki-Singatakonda -Amaravati (Andhra Pradesh)	4.2%
6.	Narasaraopet -Ongole	4.0%
7.	Addanki-Singatakonda -Hyderabad City	2.9%
8.	Narasaraopet -Addanki-Singatakonda	2.5%
9.	Amaravati (Andhra Pradesh)- Hyderabad City	2.3%
10.	Ongole - Tipararthi-Nalgonda-Narketpalle	2.1%

Source: Steer analysis of OD data

Table B.6: MAV and OSV top 10 OD pair shares at TP3

	OD Pair	Share
1.	Chennai City- Hyderabad City	21.6%
2.	NCT of Delhi-Chennai City	7.0%
3.	Sri Potti Sriramulu Nellore-Hyderabad City	5.3%
4.	Chennai City- Tipararthi-Nalgonda-Narketpalle	3.0%
5.	Dachepalli-Chennai City	3.0%
6.	Ongole -Hyderabad City	2.9%
7.	Centre Maharashtra-Chennai City	2.3%
8.	Amaravati (Andhra Pradesh)- Hyderabad City	2.3%
9.	Chennai City-Rest of East Uttar Pradesh	2.2%
10.	Sri Potti Sriramulu Nellore-Dachepalli	2.0%

Source: Steer analysis of OD data

C Data Collection Exercise

C.1 In order to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

3-day TVC counts

Table C.1: TVC counts at TP1

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
26-09-2023	4,061	934	1,103	748	766	585	1,543	10	9,750
27-09-2023	4,674	831	1,084	672	907	601	1,714	5	10,488
28-09-2023	4,625	839	1,098	671	924	686	1,798	12	10,653

Source: Steer analysis of TVC data

Table C.2: TVC counts at TP1

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
22-01-2025	4,230	1,163	1,092	793	1,119	653	2,817	3	11,870
23-01-2025	4,357	1,486	1,232	794	1,066	664	2,867	10	12,476
24-01-2025	4,525	1,213	1,104	801	1,120	678	3,047	3	12,491

Source: Steer analysis of TVC data

Table C.3: TVC counts at TP3

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
26-09-2023	1,683	569	680	391	743	562	1,863	7	6,498
27-09-2023	2,158	553	749	367	820	583	1,973	3	7,206
28-09-2023	2,169	627	722	360	859	556	2,064	3	7,360

Source: Steer analysis of TVC data

TVC vs TMS comparison

Table C.4: TVC and TMS WADT

Toll Plaza	Source	CJV+ Mini LCV	LCV	Bus	2 Axle	3 Axle+ MAV	OSV	Total
TP1	TVC	5,321	1,095	697	866	2,309	9	10,297

Toll Plaza	Source	CJV+ Mini LCV	LCV	Bus	2 Axle	3 Axle+ MAV	OSV	Total
	TMS	5,413	676	665	1,200	2,356	-	10,309
TP2	TVC	5,658	1,143	796	1,102	3,575	5	12,279
	TMS	5,749	694	748	1,423	3,638	-	12,252
TP3	TVC	2,586	717	373	807	2,534	4	7,021
	TMS	2,615	481	372	932	2,566	-	6,966

Source: Steer analysis of TVC data

Zone list

Table C.5: Zones selected for OD analysis

Zone No	Zone name	State
1	Rest of India	Andaman & Nicobar Island
2	Y.s.r.	Andhra Pradesh
3	East Godavari	Andhra Pradesh
4	Machilipatnam-Diviseema-Vuyyuru	Andhra Pradesh
5	Chittoor	Andhra Pradesh
6	Tummapudi	Andhra Pradesh
7	Puttavalipalem-Santhamaguluru	Andhra Pradesh
8	West Godavari	Andhra Pradesh
9	Gudivada	Andhra Pradesh
10	Kopparam	Andhra Pradesh
11	Karumanchi	Andhra Pradesh
12	Dachepalle-Pulipadu	Andhra Pradesh
13	Guntur	Andhra Pradesh
14	Chimakurthy	Andhra Pradesh
15	Nekarikallu-Reddypalem	Andhra Pradesh
16	Madarametla	Andhra Pradesh
17	Kurnool	Andhra Pradesh
18	Sattenapalle	Andhra Pradesh
19	Mattapalli	Andhra Pradesh
20	Ponnur-Cherukupalli	Andhra Pradesh
21	Vizianagaram	Andhra Pradesh
22	Guttikonda-Janapadu-Pidiguralla-Anupalem	Andhra Pradesh
23	Amaravati	Andhra Pradesh
24	Narasaraopet	Andhra Pradesh

Zone No	Zone name	State
25	Bellamkonda	Andhra Pradesh
26	Vijayawada South City	Andhra Pradesh
27	Brahmanapalli-Karalapadu	Andhra Pradesh
28	Rajahmundry City	Andhra Pradesh
29	Nuzvid	Andhra Pradesh
30	Ongole	Andhra Pradesh
31	Kandukur-Tangutur	Andhra Pradesh
32	Anantapur	Andhra Pradesh
33	Maddipadu-Rachavaripalem	Andhra Pradesh
34	Kanigiri	Andhra Pradesh
35	Tenali	Andhra Pradesh
36	Vinukonda	Andhra Pradesh
37	Addanki-Singatakonda	Andhra Pradesh
38	Chilakaluripet	Andhra Pradesh
39	Sri Potti Sriramulu Nellore	Andhra Pradesh
40	Darsi	Andhra Pradesh
41	Nandigama-Jaggaiahpet	Andhra Pradesh
42	Visakhapatnam Port	Andhra Pradesh
43	Parchoor-Inkollu	Andhra Pradesh
44	Macherla	Andhra Pradesh
45	Krosur	Andhra Pradesh
46	Rompicharla	Andhra Pradesh
47	Elchuru	Andhra Pradesh
48	Vijayawada North City	Andhra Pradesh
49	Pinnelli	Andhra Pradesh
50	Bapatla-Chirala	Andhra Pradesh
51	Makkenavaripalem	Andhra Pradesh
52	Giddalur-Markapur	Andhra Pradesh
53	Oppicharla	Andhra Pradesh
54	Srikakulam	Andhra Pradesh
55	Mangalagiri	Andhra Pradesh
56	**Dachepalli**	Andhra Pradesh
57	Krishnapatnam port	Andhra Pradesh
58	Amaravati (Andhra Pradesh)	Andhra Pradesh
59	Bhutan	Bhutan

Zone No	Zone name	State
60	Bihar	Bihar
61	Chandigarh	Chandigarh
62	Chhattisgarh	Chhattisgarh
63	Dadara & Nagar Havelli	Dadara & Nagar Havelli
64	Daman & Diu	Daman & Diu
65	Kandla Port or Mundra Port	Gujarat
66	Rest of Gujarat	Gujarat
67	Haryana	Haryana
68	Himachal Pradesh	Himachal Pradesh
69	Jammu & Kashmir	Jammu & Kashmir
70	Jharkhand	Jharkhand
71	Bangalore City	Karnataka
72	**Mysuru**	Karnataka
73	Rest of Karnataka	Karnataka
74	North Kerala	Kerala
75	Rest of South Kerala	Kerala
76	Kochi Port	Kerala
77	Thiruvananthapuram	Kerala
78	Madhya Pradesh	Madhya Pradesh
79	Pune	Maharashtra
80	Rest of East Maharashtra	Maharashtra
81	Mumbai City	Maharashtra
82	SW Maharashtra	Maharashtra
83	Centre Maharashtra	Maharashtra
84	NW Maharashtra	Maharashtra
85	Nagpur City	Maharashtra
86	North East India	Mizoram, Assam, Guwahati, Nagaland, Meghalaya, etc
87	NCT of Delhi	NCT of Delhi
88	Nepal	Nepal
89	Rest of Odisha	Odisha
90	Paradip Port	Odisha
91	Rourkela City	Odisha
92	Puducherry	Puducherry
93	Punjab	Punjab

Zone No	Zone name	State
94	Jodhpur City	Rajasthan
95	Jaipur City	Rajasthan
96	Rest of Rajasthan	Rajasthan
97	Coimbatore City	Tamil Nadu
98	Chennai City	Tamil Nadu
99	Salem	Tamil Nadu
100	Rest of Tamil Naidu	Tamil Nadu
101	Mallepalli-Nidamanoor	Telangana
102	Adilabad	Telangana
103	Wazirabad-Miryalaguda	Telangana
104	Kothagudem City	Telangana
105	Nizamabad	Telangana
106	Chityala-Bhongir	Telangana
107	Khammam City	Telangana
108	Hyderabad City	Telangana
109	Warangal	Telangana
110	Tipararthi-Nalgonda-Narketpalle	Telangana
111	Kodad-HuzurNagar-Mattapalli	Telangana
112	Suryapet-Nakrekal	Telangana
113	Karimnagar	Telangana
114	Medak	Telangana
115	Rangareddy	Telangana
116	Rest of Khammam	Telangana
117	Mahbubnagar	Telangana
118	Marrigudem-Indugula	Telangana
119	Mirayalguda	Telangana
120	Rest of West Uttar Pradesh	Uttar Pradesh
121	Rest of East Uttar Pradesh	Uttar Pradesh
122	Uttarakhand	Uttarakhand
123	Kolkata City	West Bengal
124	Rest of West Bengal	West Bengal
125	Kharagpur	West Bengal

Source: Steer analysis

Direction wise commodity distribution

Table C.6: Commodity distribution (towards Addanki) at TP1

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	2%	3%	3%	2%
Groceries	22%	16%	15%	14%
Construction	2%	4%	4%	7%
Petroleum	11%	12%	8%	7%
Manufacturing	30%	28%	28%	30%
Automobiles	1%	6%	6%	6%
Miscellaneous	16%	23%	15%	6%
Metals	4%	3%	5%	12%
Empty	14%	4%	12%	9%
Cement	1%	1%	3%	7%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table C.7: Commodity distribution (towards Nalgonda) at TP1

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	16%	4%	5%	8%
Groceries	13%	13%	17%	11%
Construction	7%	1%	8%	12%
Petroleum	13%	10%	13%	8%
Manufacturing	14%	35%	21%	16%
Automobiles	1%	5%	4%	9%
Miscellaneous	18%	26%	17%	8%
Metals	3%	1%	2%	2%
Empty	15%	4%	8%	9%
Cement	-	1%	5%	18%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table C.8: Commodity distribution (towards Nalgonda) at TP2

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	1%	2%	3%	3%
Groceries	39%	20%	15%	10%
Construction	2%	5%	6%	5%
Petroleum	5%	10%	7%	11%
Manufacturing	15%	14%	14%	13%

Commodity Category	LCV	2 Axle	3 Axle	MAV
Automobiles	5%	5%	6%	5%
Miscellaneous	11%	11%	10%	5%
Metals	7%	17%	13%	25%
Empty	12%	15%	22%	18%
Cement	2%	2%	4%	5%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table C.9: Commodity distribution (towards Addanki) at TP2

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	3%	4%	3%	4%
Groceries	27%	29%	24%	23%
Construction	3%	6%	7%	5%
Petroleum	9%	7%	6%	7%
Manufacturing	19%	14%	16%	13%
Automobiles	1%	4%	4%	4%
Miscellaneous	13%	13%	11%	8%
Metals	3%	7%	12%	12%
Empty	16%	10%	8%	8%
Cement	6%	5%	10%	16%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table C.10: Commodity distribution (towards Nalgonda) at TP3

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	4%	2%	4%	5%
Groceries	13%	12%	12%	11%
Construction	5%	4%	6%	6%
Petroleum	11%	9%	12%	11%
Manufacturing	29%	19%	20%	17%
Automobiles	3%	7%	5%	7%
Miscellaneous	17%	32%	20%	8%
Metals	5%	8%	9%	23%
Empty	12%	6%	10%	8%
Cement	2%	2%	2%	4%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table C.11: Commodity distribution (towards Addanki) at TP3

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	3%	2%	7%	7%
Groceries	19%	17%	14%	13%
Construction	4%	7%	8%	9%
Petroleum	9%	11%	7%	7%
Manufacturing	40%	24%	22%	17%
Automobiles	1%	3%	2%	4%
Miscellaneous	14%	18%	16%	7%
Metals	2%	4%	4%	6%
Empty	5%	9%	7%	3%
Cement	4%	5%	12%	27%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Trip length frequency

Table C.12: Trip length frequency at TP1

Distance range	LCV	2A Truck	3A Truck	MAV
0-100 km	9%	4%	4%	3%
100-300 km	37%	18%	15%	23%
300-500 km	13%	10%	8%	8%
500-1000 km	27%	31%	29%	27%
>1000 km	14%	37%	44%	39%

Source: Steer analysis of OD data

Table C.13: Trip length frequency at TP2

Distance range	LCV	2A Truck	3A Truck	MAV
0-100 km	25%	11%	21%	19%
100-300 km	36%	29%	23%	22%
300-500 km	11%	11%	12%	20%
500-1000 km	19%	25%	19%	23%
>1000 km	9%	24%	25%	15%

Source: Steer analysis of OD data

Table C.14: Trip length frequency at TP3

Distance range	LCV	2A Truck	3A Truck	MAV
0-100 km	6%	4%	4%	4%
100-300 km	11%	13%	11%	14%

Distance range	LCV	2A Truck	3A Truck	MAV
300-500 km	20%	15%	17%	25%
500-1000 km	43%	37%	34%	31%
>1000 km	21%	30%	34%	26%

Source: Steer analysis of OD data

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Contents

Disclaimer		**i**
Glossary Items		**iii**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**5**
	Introduction	5
	Strategic Network Context	5
	Key economic activities	8
	Alternate routes	10
3	**Traffic Description**	**13**
	Introduction	13
	Historical trends	14
	Key findings of the TVC data analysis	23
	Key findings of origin-destination analysis	26
	Conclusions	35
4	**Socioeconomic context and traffic growth**	**36**
	Introduction	36
	Population growth	36
	Economic Indicators	37
	Economic Growth	40
	Forecasts for growth drivers	46
5	**FY26 Base year AADT and Traffic growth analysis**	**49**
	Introduction	49
	FY26 Base year AADT estimates	49
	Estimation of background elasticities	53
	Forecasts for background elasticities	58
6	**Forecast: Network overlays and forecasts**	**61**
	Introduction	61
	Analysis of potential impacts	61
	Revenue forecasting assumptions	69
	Traffic and Revenue forecasts	72
	Upside and Downside cases	76
	Summary outlook	81

Figures

Figure 2-1: Regional Context 5
Figure 2-2: Asset context 6
Figure 2-3 (clockwise): Typical cross-section of the Asset, toll plaza and alternate road 8
Figure 2-4: Alternate routes to the Asset 10
Figure 3-1: CJV Ticket-segmentation at KM46 (Gadpuri) 20
Figure 3-2: MAV Ticket-segmentation at KM46 (Gadpuri) 20
Figure 3-3: CJV Ticket-segmentation at KM94 (Karman) 21
Figure 3-4: MAV Ticket-segmentation at KM94 (Karman) 21
Figure 3-5: Ticket-segmentation for CJV at KM164 (Mahuvan) 22
Figure 3-6: Ticket-segmentation for MAV at KM164 22
Figure 3-7: TVC-TMS Comparison: KM46 Gadpuri & KM164 Mahuvan 24
Figure 3-8: Daily TVC and TMS traffic comparison on KM46 25
Figure 3-9: Daily TVC and TMS traffic comparison on K164 25
Figure 3-10: Comparison between vehicle shares from TVC and TMS WADTs 26
Figure 3-11: Zonal influence, KM46 Gadpuri 29
Figure 3-12: Zonal influence, KM164 Mahuvan 29
Figure 3-13: Internal-external distribution, KM46 Gadpuri 30
Figure 3-14: Internal-external distribution, KM164 Mahuvan 30
Figure 3-15: Commodity distribution, KM46 Gadpuri 32
Figure 3-16: Commodity distribution, KM164 Mahuvan 32
Figure 3-17: Trip length distribution, KM46 Gadpuri 34
Figure 3-18: Trip length distribution, KM164 Mahuvan 34
Figure 4-1: Annual growth – Index of Industrial Production 38
Figure 4-2: Car Ownership in India per 1,000 population 39
Figure 4-3: Relative Per Capita Income (FY15-FY25) 39
Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures 40
Figure 4-5: Month on Month IIP performance 41
Figure 4-6: Industrial components of GVA 41
Figure 4-7: Evolution of Delhi's and Uttar Pradesh's state GDP and national GDP 42
Figure 4-8: Sectoral contribution to Uttar Pradesh's GSDP as of FY25 43
Figure 4-9: Western UP vs UP GSDP Growth 44
Figure 4-10: GSDP Western UP vs GDP India Forecast 45
Figure 4-11: Sectoral contribution to Delhi's GSDP in FY25 46
Figure 4-12: GDP-GSDP forecast 48
Figure 5-1: FY26 Base Estimation methodology 50
Figure 5-2: Relationship between CJV traffic and Uttar Pradesh/Delhi GSDP (KM164 Mahuvan) 55
Figure 5-3: Relationship between LCV traffic and Uttar Pradesh/Delhi GSDP (KM164 Mahuvan) 56

Figure 5-4: Relationship between Bus/2A traffic with GSDP Delhi, GSDP UP and GDP (KM164 Mahuvan) 57
Figure 5-5: Relationship between 3A+MAV combined traffic and India's GDP (KM164 Mahuvan) 58
Figure 6-1: Alternate routes and Asset route shown against the regional network context 61
Figure 6-2: Yamuna - EPE connector – Northern ring 67
Figure 6-3: KM46 Gadpuri Upside and Downside Case PCU Forecasts 79
Figure 6-4: KM46 Gadpuri Upside and Downside Case Revenue Forecasts 79
Figure 6-5: KM94 Karman Upside and Downside Case PCU Forecasts 80
Figure 6-6: KM94 Karman Upside and Downside Case Revenue Forecasts 80
Figure 6-7: KM164 Mahuvan Upside and Downside Case PCU Forecasts 81
Figure 6-8: KM164 Mahuvan Upside and Downside Case Revenue Forecasts 81

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Summary of concession 7
Table 2.2: Vehicle-wise single toll rates on the Asset – applicable April 2025 to March 2026 8
Table 3.1: PCU factors 13
Table 3.2: Historical evolution in AADT by vehicle class at KM46 (Gadpuri) 14
Table 3.3: Historical evolution in Tollable AADT by vehicle class at KM46 (Gadpuri) 15
Table 3.4: Historical evolution in AADT by vehicle class at KM94 (Karman) 15
Table 3.5: Historical evolution in Tollable AADT by vehicle class at KM94 (Karman) 15
Table 3.6: Historical evolution in AADT by vehicle class at KM164 16
Table 3.7: Historical evolution in Tollable AADT by vehicle class at KM164 16
Table 3.8: Historical total revenue (INR Cr) and AADC (INR Lakhs): TP Gadpuri (KM46) 17
Table 3.9: Historical total revenue (INR Cr) and AADC (INR Lakhs): TP Karman (KM94) 18
Table 3.10: Historical total revenue (INR Cr) and AADC (INR Lakhs): TP Mahuvan (KM164) 18
Table 3.11: Typical ticket types sold at NHAI plazas 18
Table 3.12: Data collection schedule 23
Table 3.13: WADT at KM46 (Gadpuri) and KM164 (Mahuvan) 26
Table 3.14: Sample rates for OD data 27
Table 3.15: Zone aggregations for zonal influence analysis 27
Table 3.16: Aggregate commodity categories 31
Table 4.1: CAGR of population in India 36
Table 4.2: Population Growth in Uttar Pradesh, Delhi and India (2012-2024) 37
Table 5.1: Seasonality correction factors for KM46 Gadpuri 51
Table 5.2: Seasonality correction factors for KM94 Karman 51
Table 5.3: Seasonality correction factors for KM164 Mahuvan 51
Table 5.4: Adopted base estimates: KM46 Gadpuri 51
Table 5.5: Adopted base estimates: KM94 Karman 52
Table 5.6: Adopted base estimates: KM164 Mahuvan 52

Table 5.7: Identified growth drivers to model traffic growth 54
Table 5.8: Derived elasticities from regression analysis and assumed forecast elasticities 59
Table 6.1: List of network/other developments 62
Table 6.3: Impact of the Delhi-Mumbai Expressway: KM94 Karman 63
Table 6.4: Impact of the Delhi-Mumbai Expressway: KM164 Mahuvan 64
Table 6.5: Impact due to upgrade of Palwal-Tappal-Aligarh: KM94 Karman 64
Table 6.6: Impact due to upgrade of Palwal-Tappal-Aligarh: KM164 Mahuvan 65
Table 6.7: Impact due to completion of Ganga Expressway: KM46 Gadpuri 66
Table 6.8: Impact due to completion of Ganga Expressway: KM94 Karman 66
Table 6.9: Impact due to completion of Ganga Expressway: KM164 Mahuvan 66
Table 6.10: Impact due to Yamuna-EPE connector-Northern ring: KM94 Karman 68
Table 6.11: Impact due to Yamuna-EPE connector-Northern ring: KM164 Mahuvan 68
Table 6.12: Summary of impact assessments 68
Table 6.13: WPI growth forecast assumptions 69
Table 6.14: Toll estimation overview 70
Table 6.15: Forecast toll segmentation, FY26 onwards: KM46 Gadpuri 71
Table 6.16: Forecast toll segmentation, FY26 onwards: KM94 Karman 71
Table 6.17: Forecast toll segmentation, FY26 onwards: KM46 Mahuvan 71
Table 6.18: Annual Pass Compensation for CJVs (in INR Crore) 72
Table 6.19: Final traffic forecast: KM46 (Gadpuri) 72
Table 6.20: Background traffic growth rates (%), KM46 (Gadpuri) 73
Table 6.21: Final revenue forecast (INR crores): KM46 (Gadpuri) including AP Compensation for CJVs 73
Table 6.22: Revenue growth rates (%), KM46 (Gadpuri) including AP Compensation for CJVs 73
Table 6.23: Final traffic forecast: KM94 (Karman) 74
Table 6.24: Background traffic growth rates (%): KM94 (Karman) 74
Table 6.25: Final revenue forecast (INR crores): KM94 (Karman) including AP Compensation for CJVs 74
Table 6.26: Revenue growth rates (%): KM94 (Karman) including AP Compensation for CJVs 75
Table 6.27: Final traffic forecast: KM164 (Mahuvan) 75
Table 6.28: Background traffic growth rates (%): KM164 (Mahuvan) 75
Table 6.29: Final revenue forecast (INR crores): KM164 (Mahuvan) including AP Compensation for CJVs 76
Table 6.30: Revenue growth rates (%): KM164 (Mahuvan) including AP Compensation for CJVs 76
Table 6.31: Summary of Macro-economic Assumptions for upside and downside cases 77
Table 6.32: Summary of impacts on the Assets - Upside Case 77
Table 6.33: Summary of impacts on the Assets - Downside Case 78
Table 6.34: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY44 79

Appendices

A **Top 10 OD Pairs**

B **Detailed Traffic and Revenue Forecasts**

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
KM	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Delhi Agra Tollways Limited (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". It presents an update of the Asset's traffic and revenue forecasts over its remaining concession period based on actual traffic data available through September 2025 and latest macroeconomic, and network-related assumptions.

1.2 Our scope of work for the traffic and revenue forecasting process is presented in Table 1.1 below:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Origin-Destination (OD) data, Vendor reports and documents	• Provided by Client for the period between Dec'13 and Sept '25
• Historical analysis and forecasts for baseline growth, including – Background growth, – Seasonality	• Historical toll plaza data provided by Client and benchmarks from Assets in the vicinity wherever long time series historical data was not available
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue.
• OD analysis to understand growth drivers: – Zonal influence and Top OD pairs – Commodity distribution – Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer in 2025
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis based on Generalised Journey Cost spreadsheet-based analysis

Scope of work	Data source
• Historical revenue analysis and forecasts for revenue estimation, including – Toll segmentation and trip factors, – Overloading shares,	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research, Asset historical traffic performance and Steer's in-house experience of working on toll roads on the corridor • Gross Domestic Product (GDP) forecast assumptions provided by Client
• Toll revenue estimation for the entire concession including toll evolution	• Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI) and latest actual Wholesale Price Index (WPI) trends as shared by the Client. • Assumptions of WPI forecasts and future tolling length changes provided by Client • Revenues estimated as a product of traffic forecasts and toll evolution

Our approach

1.3 The approach employed by Steer in the preparation of these forecasts was developed to take advantage of existing knowledge of the Asset and available data from various sources made available by the Client as well as publicly sourced. It follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis focused on two sets of issues, namely:

- Understanding the traffic that is currently using the Asset; and
- Identifying how and why that traffic is likely to change in the future.

1.4 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data for KM46 and KM94 available from Jul'22 to Sept'25.
  - TMS data for KM164 from FY13 to Sept '25
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous T&R studies and reports.
  - Bid and Lender studies.
  - Steer-commissioned OD survey at two plazas on the Asset: TP1 Gadpuri (KM46) and TP3 Mahuvan (KM164) to validate any change in growth drivers and travel patterns. Surveys were conducted at TP1 and TP3 on 6th and 7th February 2025 respectively.
  - Steer-commissioned TVC surveys from 6th to 8th February 2025 on both TP1 and TP3.

- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by each of the toll plaza and subsequently matching it to the reported revenue for FY26YTD using the prevailing toll rates and reported segmentation/toll-frequencies for FY26YTD. This is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plazas.

1.5 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against six months of actual traffic (Apr-Sept) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by Client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the remaining concession period. The analysis here includes the specific impacts of network-related developments, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case, and upside and downside scenarios.

Contents of this report

1.6 The report has been divided into the following chapters:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence.
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits.
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC, and OD analysis.

- Chapter 4 presents the socio-economic context of India, the corridor and region/state containing the Asset, along with our approach and results on estimating background growth, and our key forecasting assumptions.
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth.
- Chapter 6 summarises our assessment of network-related impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for the upside and downside scenarios.

2 The Asset

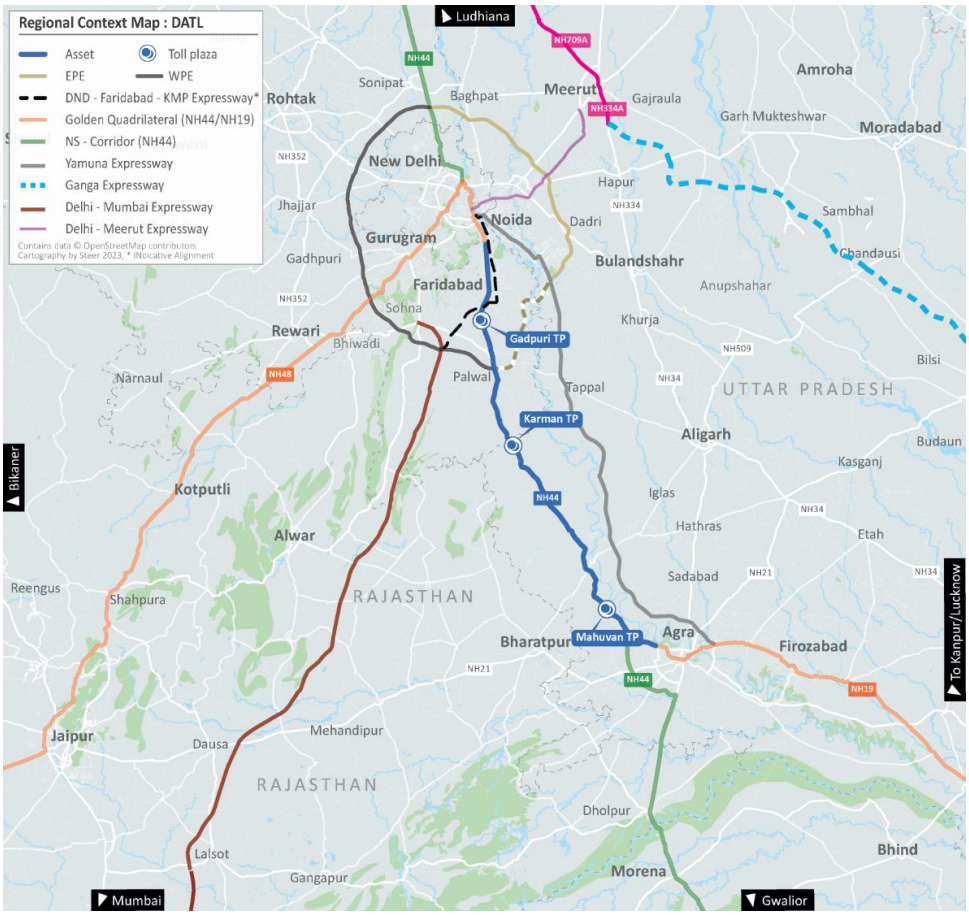
Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the Asset's strategic network context, followed by key economic activities and network-related developments around the Asset.

Strategic Network Context

2.2 The Asset is situated in the states of Haryana (HR) and Uttar Pradesh (UP), connecting the Central National Capital Region (NCR; comprising Delhi state) to Agra in the south, via Palwal (HR) and Mathura (UP). Figure 2-1 below presents the regional road network within which the Asset is located.

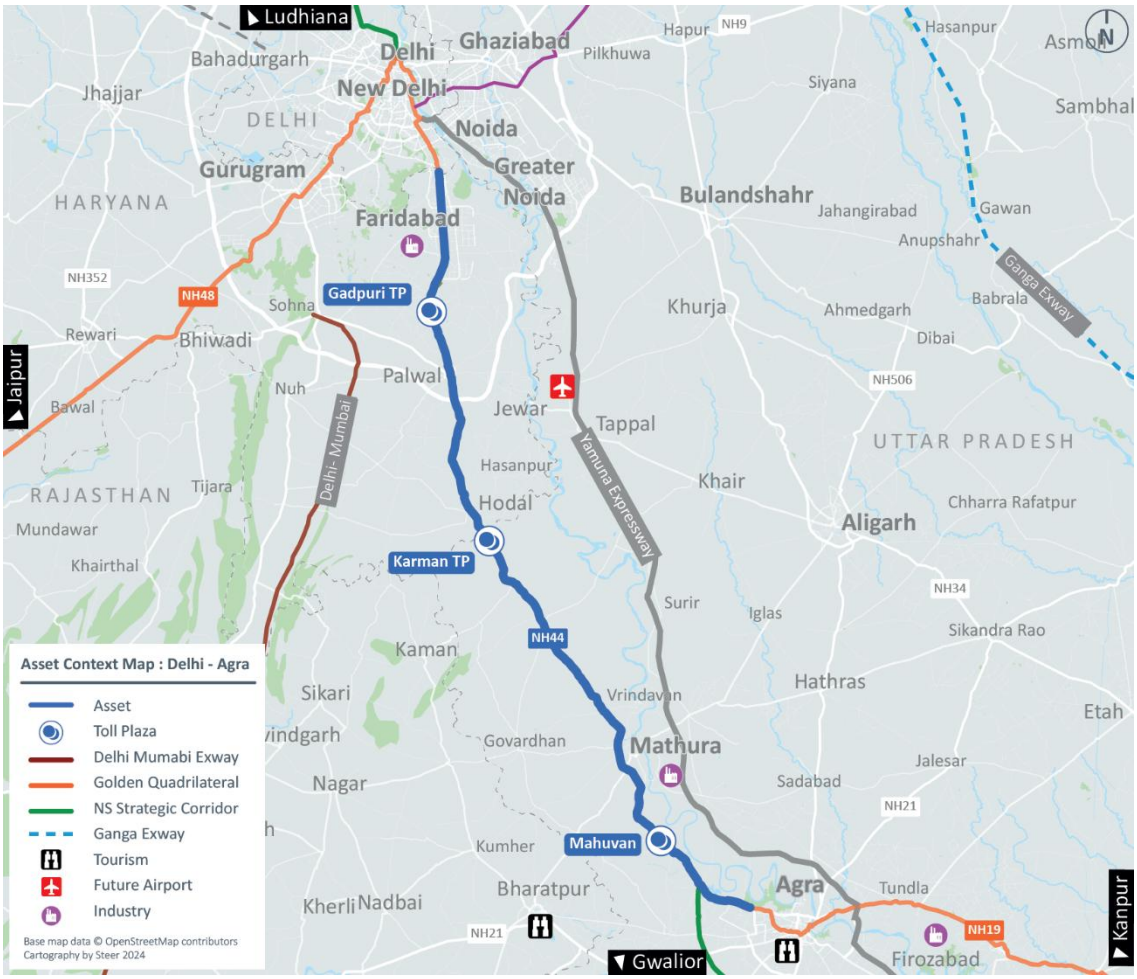
Figure 2-1: Regional Context



Source: Steer cartography using OpenStreetMap data

2.3 The Asset is a 179.5 km toll road between Delhi and Agra which forms part of the north-south NH44 corridor (Old NH2 in Haryana, and Uttar Pradesh). Previously, up to June 2022, the Asset operated two toll plazas i.e., Srinagar (KM74) and Mahuvan (KM164). On commencing full commercial operations (COD) from July 2022 onwards, the Asset began operating three toll plazas; Srinagar toll plaza (KM74) was split into two different toll plazas - Gadpuri (KM46), and Karman (KM94), which are now operational along with the existing plaza Mahuvan (KM164).

Figure 2-2: Asset context



Source: Steer cartography

2.4 The Asset forms part of the Grand Trunk Road – which is a part of the Asian Highway 1 (AH1). By virtue of its strategic location, it primarily caters to the following types of movements:

- **East-west long-distance movement** from Kashmir in North India to the India-Bangladesh border. This route originally connected Kabul in Afghanistan to Chittagong in Bangladesh. This movement caters traffic between northern parts of country and eastern states.
- **North-south long-distance movement** connecting Srinagar in Kashmir (northernmost state) to Kanyakumari in Tamil Nadu (southernmost state in mainland India). This movement caters traffic between northern parts of country (Delhi, Punjab) to the southern states of Karnataka, Telangana, etc.

- **Medium-distance movement** as a key corridor in this region, connecting Delhi with Lucknow, Kanpur, Indore etc. via Agra and Mathura.
- **Short-distance inter-urban movement** between towns and cities in and around Delhi, Palwal, Mathura and Agra.

Concession and tolling

2.5 The toll plazas on the Asset have been operational since December 2012, and the Client started the operations in FY20. There are still 13 years left in the concession period with FY39 being the last year of the concession. Table 2.1 below presents a summary of the concession.

Table 2.1: Summary of concession

Particulars	Details
State	Delhi, Haryana, Uttar Pradesh
Highway and lane configuration	• NH 19/NH 44 • Six-lane divided
Toll plazas	**Previously:** • KM74, Srinagar (till June 2022) • KM164, Mahuvan **Existing/Operational (July 2022 onwards):** • KM46, Gadpuri • KM94, Karman • KM196, Mahuvan
Length (KM) as per concession agreement, applicable	**Previously:** • KM74: 89.75 KM • KM164: 89.75 KM **Existing/Operational:** • KM46: 47.28 KM • KM94: 63.22 KM • KM164: 69.00 KM
Commencement of operations*	• KM46: July 2022 • KM94: July 2022 • KM164: December 2012
Operation by Client	FY20
Concession period	19 years
Last year of concession	FY39

Source: Concession agreement

2.6 Tolls are collected for toll categories including Single, Return, Local Commercial and Monthly Passes. Rates for Single Journey tickets on all three toll plazas are shown in the Table 2.2 below.

2.7 All three toll plazas have dedicated ETC/FASTag lanes for electronic tolling. FY26 toll rates were revised in the start of FY26 fiscal year i.e., April 1, 2025.

Table 2.2: Vehicle-wise single toll rates on the Asset – applicable April 2025 to March 2026

Type of Vehicle	Single Journey Fee (INR)		
	KM46 – **Gadpuri**	KM94 - **Karman**	KM164 - **Mahuvan**
CJV	125	95	105
LCV	195	155	170
Bus/Truck	400	325	355
3A/MAV	615	510	555
HCM/EME/OSV	780	620	675

Source: NHAI Revision of User fee Rate w.e.f 01.04.2025

2.8 Figure 2-3 below illustrates a typical cross-section of the Asset and its associated toll plazas. Specifically, Pictures 1 and 2 depict the Gadpuri and Mahuvan toll plazas, while Pictures 3 and 4 showcase a cross-section and the quality of the Asset's road infrastructure.

Figure 2-3 (clockwise): Typical cross-section of the Asset, toll plaza and alternate road

Source: Steer site visit

Key economic activities

2.9 The Asset connects the National Capital Territory (NCT) of Delhi at its northern end with the world-renowned tourist city of Agra at its southern end. Besides linking Agra to the national capital region, it also forms the initial section of a longer corridor that connects

Delhi and other parts of North India to Central, East and South India. As a result, the Asset observes significant volumes of all types of traffic, including, but not limited to:

- In terms of passenger movement, daily commuters travelling between Delhi and other smaller municipalities along the corridor (e.g., Palwal, Hodal, Mathura, Agra), and leisure travellers/tourists travelling to/from Agra and Delhi.
- In terms of commercial/goods movements, industry supplies and manufactured goods, as well as agricultural products, with a considerable share of consumption-based commodities.

Tourism

2.10 The Asset is surrounded by several major tourist attractions, with Delhi and Agra forming two of the three vertices of the Golden Triangle - one of India's most popular travel circuits for international tourists.[1] Delhi, Agra, Fatehpur Sikri and other towns in the region are home to several historical monuments and heritage sites, including the famed Taj Mahal (Agra). Religious tourism and pilgrimage sites include Surajkund, Badkhal Lake, Shivling at Hodal, ISKCON temple (all in and around Central NCR), and Banke Bihari and other major temples of Mathura and Vrindavan.

Industry

2.11 Major industrial and commercial centres are located at the northern end of the Asset, between Okhla, Badarpur, Faridabad[2], Ballabhgarh and Palwal[3], which are connected via the DND – KMP Expressway and the Asset. This includes North India's largest inland port and container transhipment terminal at Badarpur called ICD Tughlakabad[4]

2.12 Extending further south and east beyond the Asset, the Agra-Lucknow highway has historically been (and continues to be) an industrial corridor with leather and textile industries located in Agra[5] and Kanpur[6], and glassmaking industries located in Firozabad.

2.13 Mathura has an Indian Oil Corporation (IOCL) refinery with a capacity of 8.0 mmtpa[7]. Consequently, the Asset has a distinct industrial character, with a large share of traffic movements being good vehicles serving many of these industries.

[1] **Golden Triangle Tour: Official Website**

[2] **Faridabad Metropolitan Development Authority**

[3] **Brief Industrial Profile of Palwal**

[4] **Press Release: Press Information Bureau**

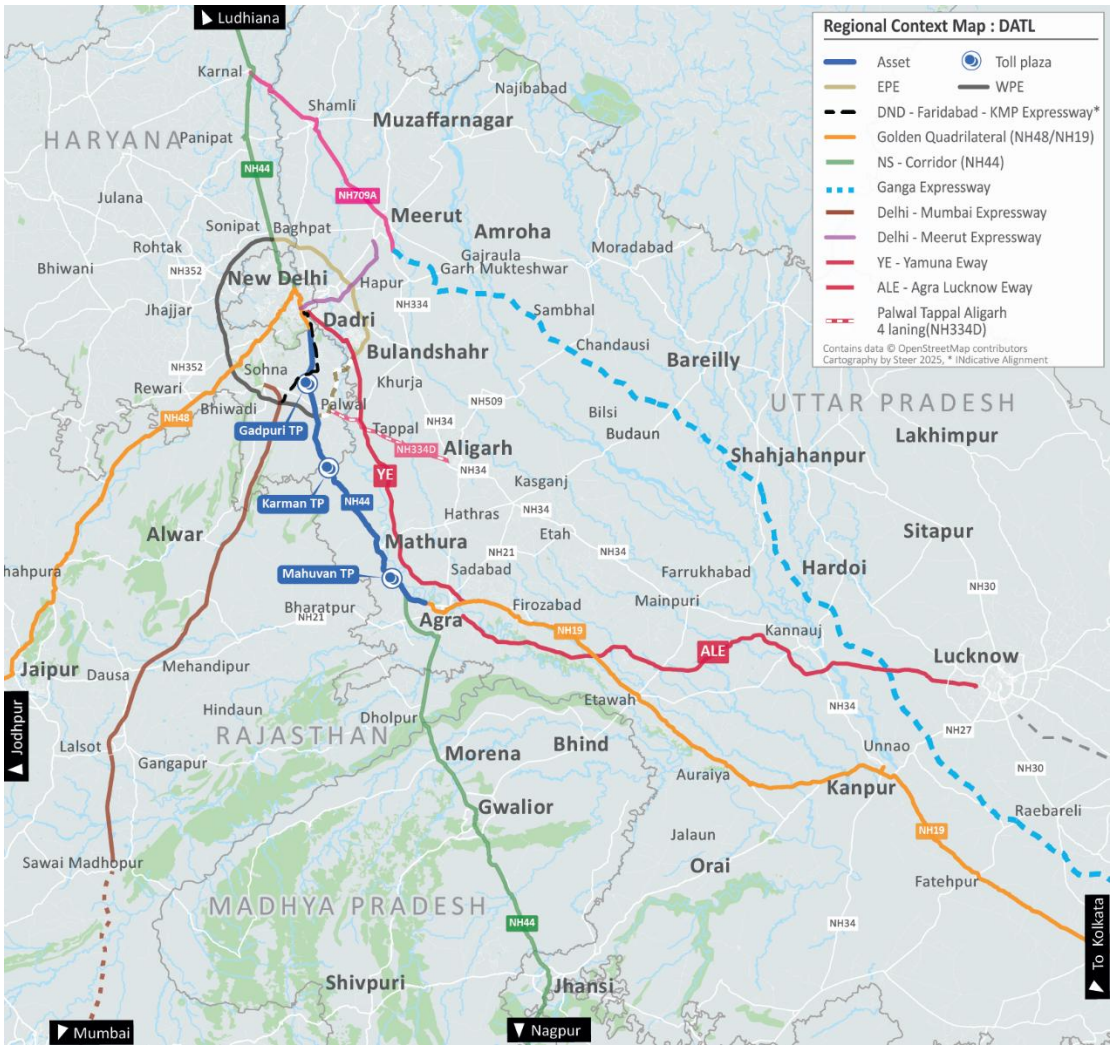
[5] **Department of MSME and Export Promotion - Agra**

[6] **Brief Industrial Profile of Kanpur**

[7] **Mathura Refinery | Petroleum Refinery | Indian Oil**

Alternate routes

Figure 2-4: Alternate routes to the Asset



Source: Steer Cartography

2.14 This Asset caters to the strategically important east-west movement - between Delhi and north-western India at one end, and Uttar Pradesh and eastern India at the other end – by virtue of its location and the linkage it provides between activity centres in the region. Figure 2-4 above illustrates other alternate routes available to users while travelling between Delhi and Lucknow. As shown in the map, the alternate routes are:

- **Asset route**: Delhi – Faridabad - Agra (via NH 44 – Kanpur - Lucknow
- **Alternate 1 route**: Delhi - Ghaziabad (via NH 34) – Aligarh – Kannauj - Lucknow
- **Alternate 2 route**: Palwal – Tappal – Aligarh – Kannauj - Lucknow (via NH334D)
- **Alternate 3 route**: Delhi - Yamuna Expressway (YE) - Agra Lucknow Expressway (ALE)- Lucknow

2.15 The Asset is also located on the strategically key north-south corridor, with NH44 traversing through Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh, Maharashtra, Telangana, Karnataka and Tamil Nadu. Currently there is one major alternative National Highway route for traffic with one trip end in northern India and other

in Maharashtra via NH48 corridor. Additionally, the upcoming the Delhi-Mumbai expressway will be another alternate for the traffic between Delhi NCR and Maharashtra.

Delhi-Mumbai Expressway

2.16 As aforementioned, the Asset currently connects traffic travelling between North Indian regions of Delhi, Agra, Punjab, Haryana, and beyond to regions located further south including Mumbai, and Indore, other parts of Maharashtra and beyond. In this context, a key alternative route that has materialized in recent years (since FY19) is the Delhi-Mumbai Expressway, upon expected completion by FY27, it will connect the Sohna Elevated Corridor to the Jawaharlal Nehru Port in Maharashtra, eventually becoming a key competing route to the Asset for north-west traffic movement.

2.17 The Delhi-Mumbai Expressway (DME) is a 1290-KM long greenfield expressway that has been developed to provide an improved 8-lane route to long-distance traffic between North/Western India to Mumbai[8]. Movements for which the DME serves as a directly competing alternative to the Asset route include the following:

- **Trips originating in Delhi/Punjab/Haryana/Agra destined to Indore**: For traffic to get to Indore, there is an alternate route through the expressway via Ratlam/Garoth-Ujjain.
- **Trips originating in Delhi/Punjab/Haryana/Agra destined to Mumbai**: This traffic currently uses either the NH8 corridor or NH44 and NH52 corridor. After the commencement of operations on the DME, users and commercial operators travelling this route will be presented with a cheaper, and faster alternative.
- **Trips originating in Punjab/north destined to Faridabad**: For traffic to access Faridabad from regions around Punjab, historically the preferred route passed through Palwal – Gadpuri – Faridabad. However, this movement has now shifted to the Western Peripheral in conjunction with the DME and the Faridabad spur. This shift only affects the Gadpuri (KM46) plaza.

2.18 A few sections of the greenfield expressway have been made operational with Sohna-Dausa-Lalsot section (Feb'23), Madhya Pradesh section (Sep'23), Vadodara-Bharuch section (Feb'24), Lalsot-Sawai-Madhopur section (Feb'24) and the Kota-Bundi Section (Dec'24) already being operationalised. The project is currently experiencing construction delays, mainly on the Gujarat stretch[9]. Once the remaining sections are made operational, the long-distance movement between Delhi/north and Mumbai/south currently appearing on the Asset could be at the risk of shifting to the alternate DME.

2.19 In addition to the DME, the 50 km stretch of the DND-KMP Flyway that will connect DND Flyway to KMP Expressway by FY27 is expected to impact traffic growth on the Asset as part of the same broad network development. The DND-KMP Flyway was conceived as a 3-package 50 km stretch aimed to reduce congestion within Delhi NCR and Faridabad by connecting Kalindi Kunj to the DME directly for commercial vehicles travelling through Delhi and originating from the industrial clusters of Faridabad and other parts of NCT to the DME via Nuh in Haryana[10]. Package 3 of this development was completed in February

[8] **Delhi - Mumbai Expressway (Times Now, April 2025)**

[9] **Delhi-Mumbai Expressway Update: Surat-Maharashtra stretch delayed,** (March 2025)

[10] **DND - KMP Flyway Package Details**

2023[11] and Package 2 was opened to traffic in November 2024[12]. Both these developments continue to impact Gadpuri plaza which has lost traffic over the past couple of years due to the increased access to the DME provided by these developments.

2.20 Package 1 of the DND-KMP Flyway i.e., 9km elevated corridor connecting Mithapur to DND Flyway is expected to be completed and operational by FY27. Once this is completed, a further loss of traffic is expected across the NH44 corridor for the share of long-distance through traffic that continues to use the Asset between Faridabad and other locations further south, and also along the DME alignment.

[11] **DND - KMP Flyway Package 3 Opening** (February 2023

[12] **DND - KMP Package 2 Opening** (November 2024)

3 Traffic Description

Introduction

3.1 This chapter presents historical and current traffic and revenue trends on the Asset, as well as analysis of origin-destination (OD) survey data and traffic count data. This covers data which was collected as a part of this study and in previous studies, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data was provided by the Client and was independently analysed and validated using traffic volume count (TVC) information.

PCU factors considered for reporting.

3.4 The PCU factors considered in Table 3.1 below are as per IRC64 1990[13]. Based on discussions with the Client, for reporting purposes, Rigid and Trailer truck splits in the TVC counts have been used for calculating the effective PCU for MAV trucks. For Rigid trailer trucks a PCU factor of 3 has been assumed, whereas for Trailer trucks a PCU factor of 4.5 as defined in IRC64 1990 [14] has been adopted.

Table 3.1: PCU factors

Vehicle category	PCU Factor
CJV	1.0
Mini LCV	1.5
LCV	1.5
Bus	3.0
2A	3.0
3A/MAV	3.60*
OSV	4.5

Source: Steer analysis and IRC64,1990; this PCU factor is taken as the average of the PCU factors calculated for each of the three plazas on the Asset.

[13] **IRC 064: Guidelines for Capacity of Roads in Rural Areas**

[14] On this Asset, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the Asset (conducted in February 2025)

Historical trends

3.5 By virtue of its location, the Asset caters to both passenger traffic and goods vehicles as it connects two major cities in north India, i.e., the NCT of Delhi, and Agra, and also connects the northern regions of Delhi, Punjab, Haryana (and beyond) to the rest of the country, including states across central, east, and south India, and all their constituent cities, industrial hubs, and trade centres. As a result, the Asset carries a healthy mix of both passenger and commercial traffic.

3.6 CJVs account for the highest volume of total traffic on the Asset as major religious sites and tourist destinations in Mathura, Vrindavan and Agra witness high volume of both domestic and international tourist traffic every year. In addition to this, the large presence of leather and textile industries [5 6] , and the IOCL refinery in Mathura also contribute to the growth of commercial traffic on the Asset.

3.7 Table 3.2 through Table 3.7 below present historical variation in tollable and total (tollable + exemptions/violations) traffic volume at all three toll plazas on the Asset, both in terms of vehicle-wise AADT as well as total PCUs. Post June 2022, the earlier toll plaza (Srinagar; KM74) was split into two toll plazas i.e., Gadpuri (KM46) and Karman (KM94) that currently continue to operate on the Asset. Therefore, the data presented in the tables below for these two plazas are for the period July 2022 to the latest available period (i.e., September 2025). For Mahuvan (KM164) the data has been presented from FY19.

Table 3.2: Historical evolution in AADT by vehicle class at KM46 (Gadpuri)

Vehicle Category	FY23*	FY24	FY25	FY26YTD	FY25 vs FY24 (%)
CJV	31,943	32,776	34,852	34,981	6.3%
LCV	1,750	1,803	1,636	1,641	(9.2%)
Bus	876	949	1,074	1,149	13.1%
2A	2,122	1,774	1,740	1,629	(1.9%)
3A/MAV	3,204	2,646	2,335	2,213	(11.8%)
OSV	10	2	1	1	-
AADT	**39,906**	**39,951**	**41,638**	**41,614**	**4.2%**
PCU[1]	**54,518**	**52,609**	**53,702**	**53,316**	**2.1%**

Source: Steer analysis of the Client data; FY23* consists of data from Jul'22 to Mar'23; FY26YTD consists of data from Apr'25 to Sep'25; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

3.8 From FY25 to FY26YTD, KM46 has observed 3.8% growth at an AADT level, driven by a 5% increase in CJVs. This growth in passenger traffic is likely due to increased movement between, and within, urban centres of Faridabad, Palwal, and other parts of Delhi NCR. At a PCU level KM46 has grown at 2.1% over FY25 levels (as of FY26YTD).

Table 3.3: Historical evolution in Tollable AADT by vehicle class at KM46 (Gadpuri)

Vehicle Category	FY23*	FY24	FY25	FY26YTD	FY25 vs FY24 (%)
CJV	27,219	29,242	31,066	30,877	6.2%
LCV	1,670	1,776	1,613	1,627	(9.2%)
Bus	839	939	1,064	1,145	13.3%
2A	2,010	1,746	1,719	1,612	(1.6%)
3A/MAV	3,160	2,617	2,320	2,205	(11.4%)
OSV	10	2	1	1	-
Tollable AADT	**34,908**	**36,322**	**37,782**	**37,465**	**4.0%**
Tollable PCU[1]	**49,075**	**48,882**	**49,736**	**49,097**	**1.7%**

Source: Steer analysis of the Client data; FY23* consists of data from Jul'22 to Mar'23; FY26YTD consists of data from Apr'25 to Sep'25; Tollable traffic excludes exemptions and violations; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

3.9 Commercial traffic (2A, 3A, and MAVs) volumes crossing KM46 experienced a year-on-year decline in both FY25 and the current FY26 YTD. This downturn can be attributed to the opening of the Delhi-Mumbai Expressway's Faridabad spur (DME) in February 2023[11] , which took away short- and medium-distance traffic previously observed at KM46 Gadpuri. Further decline in FY25 and FY26YTD can be attributed to the completion of Package 2 of the Flyway [12], which provides direct access from Jaitpur in Delhi to Faridabad. This spur connects with the Western Peripheral Expressway at Khalilpur plaza, offering a faster and more efficient route to Rohtak and locations further north/northwest.

Table 3.4: Historical evolution in AADT by vehicle class at KM94 (Karman)

Vehicle Category	FY23*	FY24	FY25	FY26YTD	FY25 vs FY24 (%)
CJV	18,232	20,026	22,117	22,576	10.4%
LCV	1,380	1,373	1,476	1,522	7.5%
Bus	775	827	894	904	8.0%
2A	3,352	3,304	3,634	3,761	10.0%
3A/MAV	5,984	5,908	5,790	5,447	(2.0%)
OSV	5	4	3	3	-
AADT	**29,728**	**31,442**	**33,914**	**34,214**	**7.9%**
PCU[1]	**52,883**	**54,418**	**57,433**	**57,220**	**5.5%**

Source: Steer analysis of the Client data; FY23* consists of data from Jul'22 to Mar'23; FY26YTD consists of data from Apr'25 to Sep'25; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

Table 3.5: Historical evolution in Tollable AADT by vehicle class at KM94 (Karman)

Vehicle Category	FY23*	FY24	FY25	FY26YTD	FY25 vs FY24 (%)
CJV	16,125	18,337	20,388	20,824	11.2%
LCV	1,303	1,358	1,467	1,510	8.0%
Bus	740	820	891	901	8.6%
2A	3,100	3,270	3,611	3,737	10.4%

Vehicle Category	FY23*	FY24	FY25	FY26YTD	FY25 vs FY24 (%)
3A/MAV	5,908	5,884	5,782	5,438	(1.7%)
OSV	5	4	3	3	-
Tollable AADT	**27,181**	**29,673**	**32,143**	**32,413**	**8.3%**
Tollable PCU[1]	**49,525**	**52,483**	**55,588**	**55,336**	**5.9%**

Source: Steer analysis of the Client data; FY23* consists of data from Jul'22 to Mar'23; FY26YTD consists of data from Apr'25 to Sep'25; Tollable traffic excludes exemptions and violations; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

3.10 Table 3.6 and Table 3.7 below present historical traffic trends at Mahuvan (KM164).

Table 3.6: Historical evolution in AADT by vehicle class at KM164

Vehicle Category	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	FY19-FY25
CJV	7,451	7,736	8,997	11,156	13,077	14,007	15,281	15,704	12.7%
LCV	1,505	1,348	1,144	1,294	1,357	1,358	1,485	1,514	(0.2%)
Bus	2,595	2,913	3,075	640	841	965	1,032	1,050	10.9%
2A				2,911	3,387	3,487	3,807	3,910	
3A/MAV	4,463	4,926	5,401	5,920	6,447	6,488	6,483	6,156	6.4%
OSV	-	-	-	2	2	3	3	3	-
Total	**16,014**	**16,924**	**18,617**	**21,922**	**25,112**	**26,308**	**28,091**	**28,337**	**9.8%**
PCU[1]	**32,613**	**35,187**	**39,364**	**45,049**	**50,995**	**52,748**	**54,001**	**53,722**	**8.8%**

Source: Steer analysis of the Client data (MAV includes 3A across all the years; 2A includes Bus from FY19-21; FY26YTD consists of data from Apr'25 to Sep'25; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

Table 3.7: Historical evolution in Tollable AADT by vehicle class at KM164

Class	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	FY19-FY25
CJV	7,451	7,734	7,919	9,931	11,867	13,084	14,265	14,689	11.4%
LCV	1,505	1,348	1,082	1,208	1,238	1,288	1,406	1,439	(1.1%)
Bus	2,595	2,913	3,020	637	838	962	1,028	1,046	10.8%
2A				2,879	3,351	3,460	3,774	3,880	
3A/MAV	4,463	4,926	5,335	5,893	6,414	6,478	6,474	6,149	6.4%
OSV	-	-	-	2	2	3	3	3	-
Tollable AADT	**16,014**	**16,921**	**17,356**	**20,549**	**23,710**	**25,276**	**26,950**	**27,202**	**9.1%**
Tollable PCU[1]	**32,613**	**34,819**	**34,920**	**42,019**	**47,457**	**50,242**	**52,725**	**52,455**	**8.3%**

Source: Steer analysis of the Client data (MAV includes 3A across all the years; 2A includes Bus from FY19-21; FY26YTD consists of data from Apr'25 to Sep'25.; tollable traffic excludes exemptions and violations; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

3.12 Since FY19, KM164 has observed strong PCU growth, posting an average annual growth rate of 9.1% per year over the period FY19-FY25. Much of this growth can be attributed to

the rapid pace of development in and around Delhi NCR over the past several years where the Asset has benefitted from its strategic location, connecting Delhi NCR to other locations across the country. KM94 and KM164 have grown at rates of 5.2% and 4.9% respectively in FY26YTD at a PCU level, stemming majorly from steady growth observed in CJVs, LCVs, and 2As. 3A/MAV traffic on the Asset has declined at all three toll plazas on the Asset in FY26YTD compared to FY25. Several factors have contributed to this, including:

- The secular decline of 3A traffic volumes – consistent with most national highway corridors in the country – due to updated axle load regulations, and a growing preference for 2As and MAVs. This contraction in 3A volumes is dampening the year-on-year growth rates for the combined total of 3A and MAV traffic volumes.
- The Delhi-Mumbai Expressway (DME) now observes a proportion of long-distance traffic which earlier used to appear on the Asset. Additionally (as detailed above in 2.19) the DND – KMP Flyway development has impacted long-distance movement appearing on the Asset by providing better access to the DME if passing through the inner areas of the National Capital.
- Upgrades to the Palwal – Tappal and Ghaziabad – Aligarh corridors have enhanced the Level of Service (LoS), leading to medium-distance traffic bound for Kanpur to favour the Ghaziabad – Aligarh – Kanpur route as an alternate to the asset.

3.13 The reduction in 3A volume observed on the Asset is a result of the declining demand for 3A vehicles, which are being replaced by 2As and MAVs. MAVs offer higher tonnage capacity making them more cost-effective for transporters, while the increase in 2A volume reflects the growing preference for these vehicles due to favourable changes in the legal permissible loads for 2As and their suitability for e-commerce-related freight, particularly high-value, low-volume goods over medium to long distances. This is consistent with our discussion with various transporters and OEMs across the country who are favouring 2A and 5A vehicles for commodity movement due to better unit economics.

Historical Revenue

3.14 Table 3.8, Table 3.9 and Table 3.10 below present the historical evolution in total and average daily revenue collection at Gadpuri (KM46), Karman (KM94), and Mahuvan (KM164). As of FY26YTD, AADC at all three toll plazas on the Asset grew over FY25 levels. The AADC growth at KM46, KM94, and KM164 has been 3%, 0.5% and 0.3% respectively.

3.15 This growth has been driven primarily by the increase in CJVs, LCVs, and 2As, as consumption demand from the urban consumption hubs of Faridabad, Delhi, Mathura and Agra continues to grow. Delhi and Agra also continue to grow as major tourism destinations for both domestic and international travellers.

Table 3.8: Historical total revenue (INR Cr) and AADC (INR Lakhs): TP Gadpuri (KM46)

Toll Plaza	CJV	LCV	Bus	2A	3A/MAV	Total	AADC	AADC Growth (%)
FY23	46.7	6.6	6.4	17.0	42.4	119.2	43.5	
FY24	66.2	9.7	10.0	21.0	50.6	157.5	43.0	**(1.1%)**
FY25	74.5	9.0	11.5	21.0	47.2	163.3	44.7	**4.0%**

Toll Plaza	CJV	LCV	Bus	2A	3A/MAV	Total	AADC	AADC Growth (%)
FY26YTD	39.1	4.8	6.4	10.6	23.9	84.8	46.1	

Source: Steer analysis of Client data

Table 3.9: Historical total revenue (INR Cr) and AADC (INR Lakhs): TP Karman (KM94)

Toll Plaza	CJV	LCV	Bus	2A	3A/MAV	Total	AADC	AADC Growth (%)
FY23	31.0	4.5	4.9	23.9	72.2	136.5	49.8	
FY24	48.9	6.5	7.6	35.3	102	199.9	54.6	**9.6%**
FY25	56.2	7.2	8.3	39.8	102	213.8	58.6	**7.2%**
FY26YTD	28.3	4.0	4.3	21.7	50.1	108.4	58.9	

Source: Steer analysis of Client data

Table 3.10: Historical total revenue (INR Cr) and AADC (INR Lakhs): TP Mahuvan (KM164)

Toll Plaza	CJV	LCV	Bus	2A	3A/MAV	Total	AADC	AADC Growth (%)
FY23	33.7	6.7	8.2	39.7	120.3	208.6	57.1	
FY24	38.0	6.9	9.6	40.7	120.8	216.0	59.0	**3.3%**
FY25	41.4	7.7	10.5	45.3	123.2	228.0	62.5	**5.8%**
FY26YTD	21.2	4.1	5.4	24.2	60.3	115.3	62.7	

Source: Steer analysis of Client data

Toll Frequencies

3.16 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. Each vehicle category has a different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the Client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some Assets offer custom made local passes to attract the local commuters to opt for these category passes instead of evading tolls. Brief descriptions of the different ticket types are provided in Table 3.11 below.

Table 3.11: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Daily pass for crossing the toll plaza multiple times within 24 hours. Charged 1.5 times the single toll
Monthly	Discounted entry ticket for users who undertake multiple trips within a month can buy the monthly pass.

Category	Description
Local Personal	Discounted monthly pass only for private cars of residents within 20KM radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.17 Understanding the toll frequency gives insights into the nature of traffic plying on the Asset. CJVs generally have higher shares of return tickets or monthly passes as passenger vehicles typically travel shorter distances and are more regular/routine than commercial movements; heavy trucks mostly have single tickets as these trips are longer distance and vehicles may not be appearing on the same plazas as frequently given the nature of commercial transportation. Nonetheless, the exact shape and form of these ticket type distributions across different vehicle categories vary from Asset to Asset or even toll plaza to toll plaza. The Asset catering to short distance local traffic generally observes high share of return or other local, and monthly passes while an Asset catering to strategic long-distance traffic generally observes a high share of single ticket traffic.

Introduction of Annual pass for CJVs

3.18 The National Highway Authority of India launched the “The FASTag Annual Pass” on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.19 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

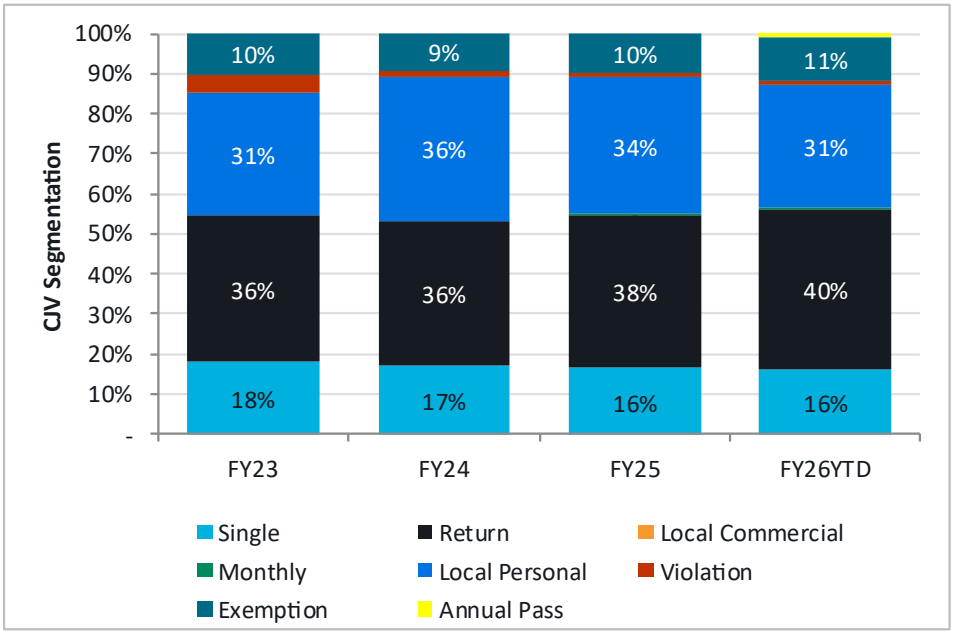
The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll road

Share of traffic by payment type

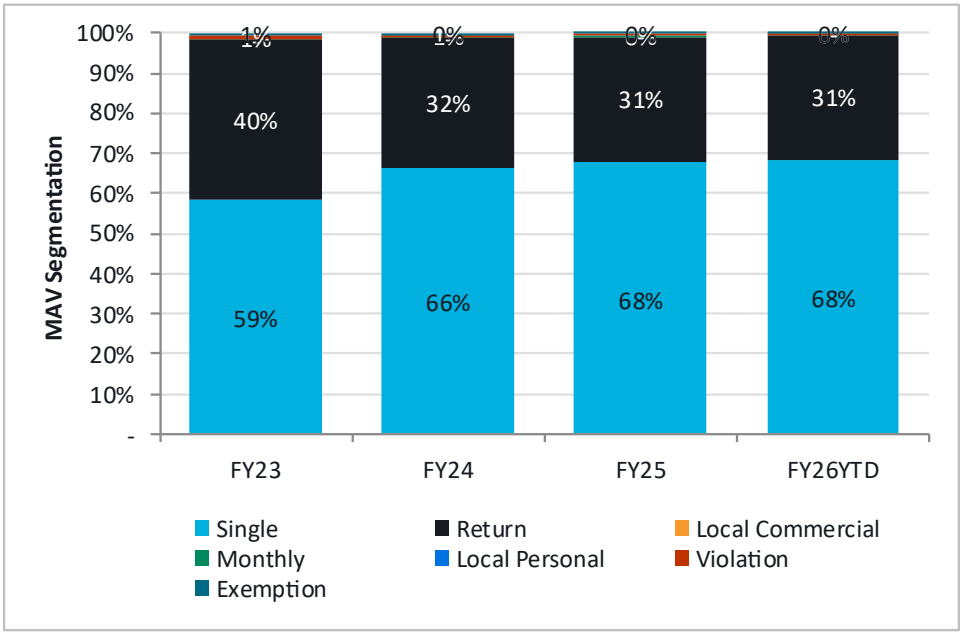
3.20 Figure 3-1 through Figure 3-4 below illustrate CJV and MAV ticket segmentations observed at KM46 (Gadpuri) and KM94 (Karman) toll plazas for the period FY23 (partial, July 2022-March 2023) through FY26YTD (April 2025- August 2025).

Figure 3-1: CJV Ticket-segmentation at KM46 (Gadpuri)



Source: Steer analysis of Client data; FY23 consists of data from Jul'22 to Mar'23; FY26YTD contains data thru Aug'25

Figure 3-2: MAV Ticket-segmentation at KM46 (Gadpuri)



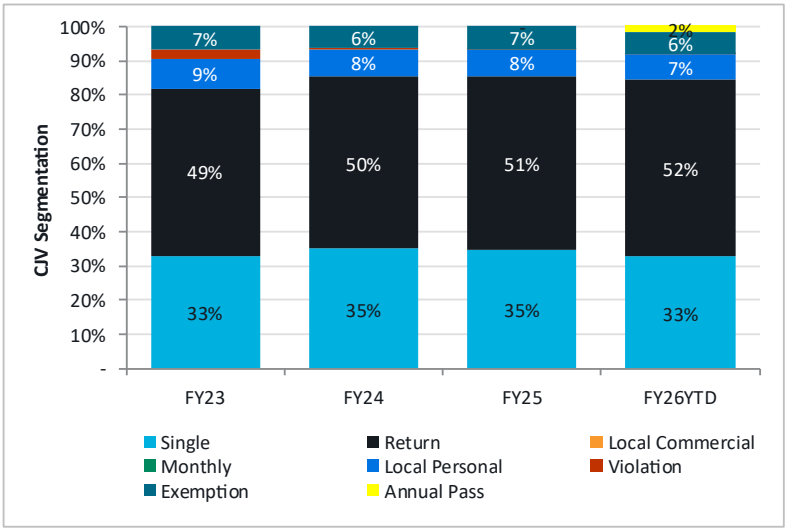
Source: Steer analysis of Client data; FY23 consists of data from Jul'22 to Mar'23; FY26YTD contains data thru Aug'25

3.21 As discussed earlier, two of the Asset toll plazas i.e., KM46 (Gadpuri), and KM94 (Karman), became operational after the original Srinagar toll plaza (prior KM74) was split into two different plazas in July 2022 (FY23). From graphs above, we see that ticket segmentation trends at both the plazas follow from their geographic locations along the Asset; KM46 (Gadpuri), the plaza located nearest to Delhi NCR and between the urban settlements of Delhi/Faridabad and Palwal, observes a high share of local traffic, or traffic

volumes captive to the area. At KM46, commercial trucks (MAVs) also make short-distance trips within Delhi-NCR, as evidenced from the high share of MAV return tickets on this plaza (as compared to KM94 and KM164). As of FY26YTD, 31% of MAVs were return trips at KM46.

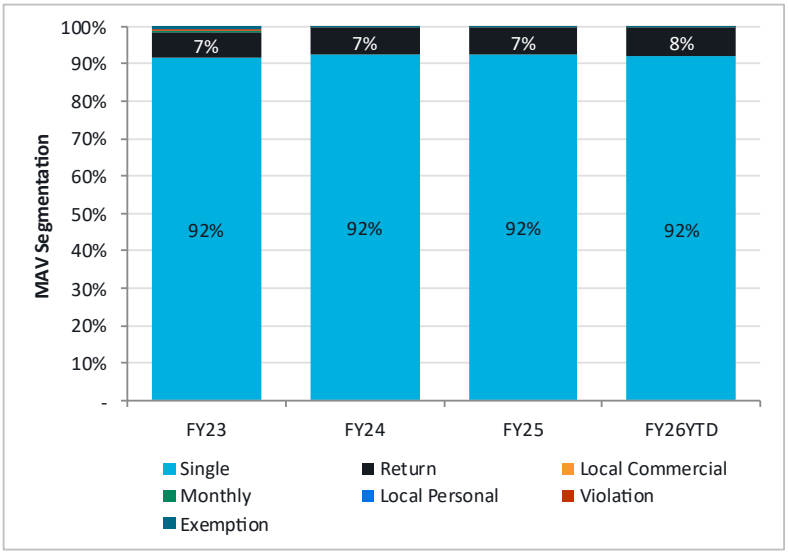
3.22 KM94 (Karman) observes more long-distance traffic than observed at KM46, largely because it is located farther away from urban centres on either end of the Asset, meaning most traveller crossing KM94 are likely longer-distance in nature. As shown in Figure 3-3 and Figure 3-4 below, this is supported by the significantly lower share of return tickets (and correspondingly higher share of single tickets) observed at KM94 relative to KM46. This observation is further validated by 2A/3A categories reporting a smaller share of return tickets in their segmentations at KM94.

Figure 3-3: CJV Ticket-segmentation at KM94 (Karman)



Source: Steer analysis of Client data; FY23 consists of data from Jul'22 to Mar'23; FY26YTD contains data thru Aug'25

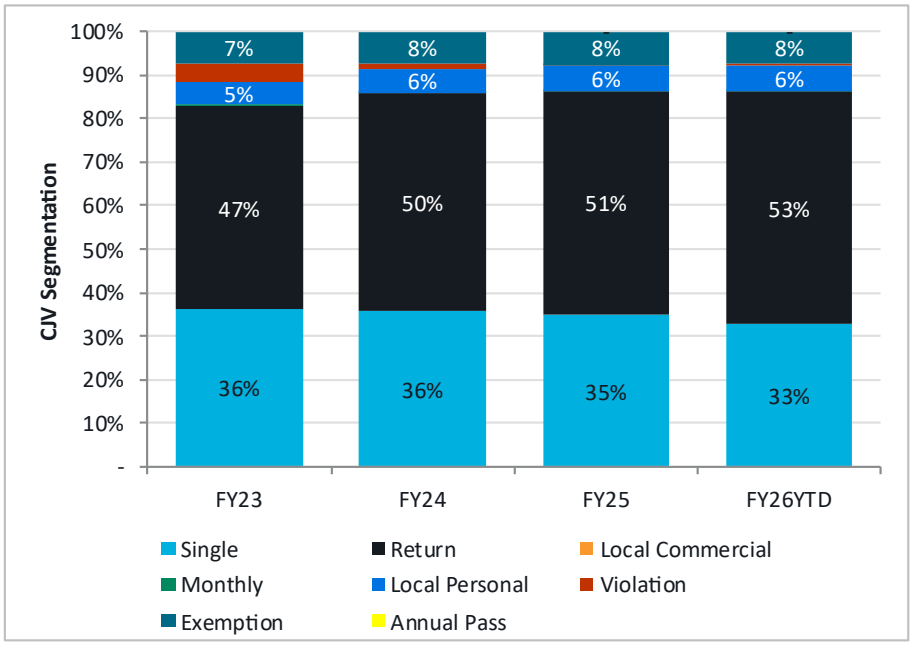
Figure 3-4: MAV Ticket-segmentation at KM94 (Karman)



Source: Steer analysis of Client data; FY23 consists of data from Jul'22 to Mar'23; FY26YTD contains data thru Aug'25

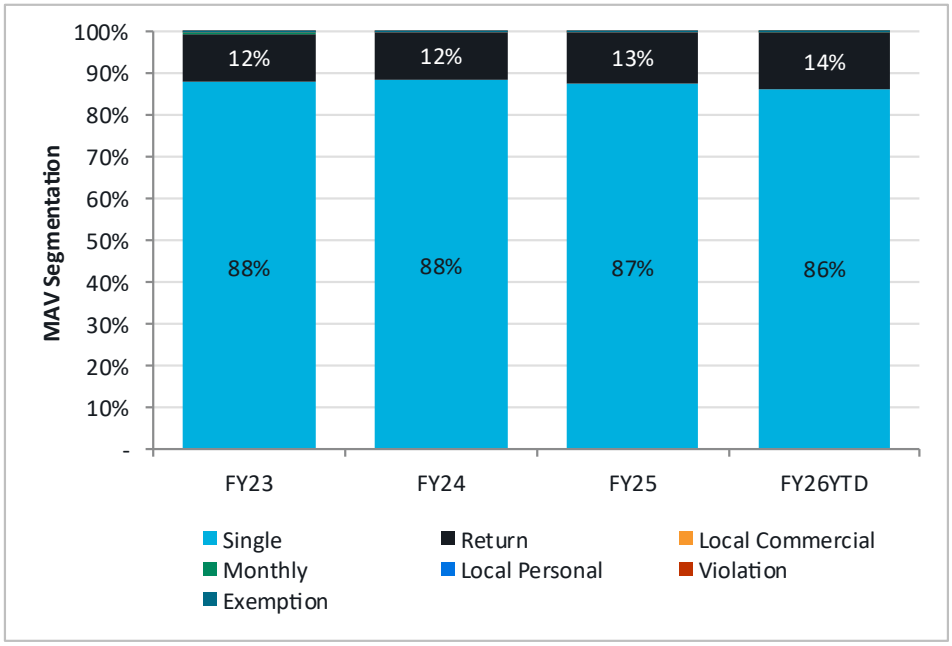
3.23 Figure 3-5 and Figure 3-6 below present ticket segmentation for CJVs and MAVs at KM164 (Mahuvan). Since the adoption of FASTag in FY21, the share of single tickets purchased by CJVs at KM164 (Mahuvan) has stabilized, and as of FY26YTD is 33%. The proximity of KM164 to Agra and nearby urban centres further explains the high share of return tickets for CJVs – which has been roughly 49-52% across the past four years.

Figure 3-5: Ticket-segmentation for CJV at KM164 (Mahuvan)



Source: Steer analysis of Client data; FY26YTD contains data thru Aug'25

Figure 3-6: Ticket-segmentation for MAV at KM164



Source: Steer analysis of Client data; FY26YTD contains data thru Aug'25

3.24 The share of single tickets at KM164 Mahuvan is high (86%, as of FY26YTD) implying MAVs observed on the asset are long-distance – significantly more than KM46 (68%).

Additionally, the share of return tickets for MAVs are still higher than that observed at KM94 meaning that KM164's proximity to Agra and nearby urban centres also influence the nature of MAV trips observed at KM164 - where some proportion of commercial trucks are also short-distance - lower than KM46, but higher than KM94.

Data Collection exercise

3.25 As mentioned previously, to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset, comprising the surveys listed in Table 3.12 below. OD survey data was collected on behalf of the Client, and TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic crossing the toll plazas, followed by manual counting.

Table 3.12: Data collection schedule

TP	3-day videography-based TVC			1-day OD survey	
	Start date	End date	Time (hrs)	Start date	Start time
KM46 Gadpuri	06 Feb 2025	08 Feb 2025	0000-2359	06 Feb 2025	0900 hours
KM164 Mahuvan	06 Feb 2025	08 Feb 2025	0000-2359	07 Feb 2025	0900 hours

Source: Steer

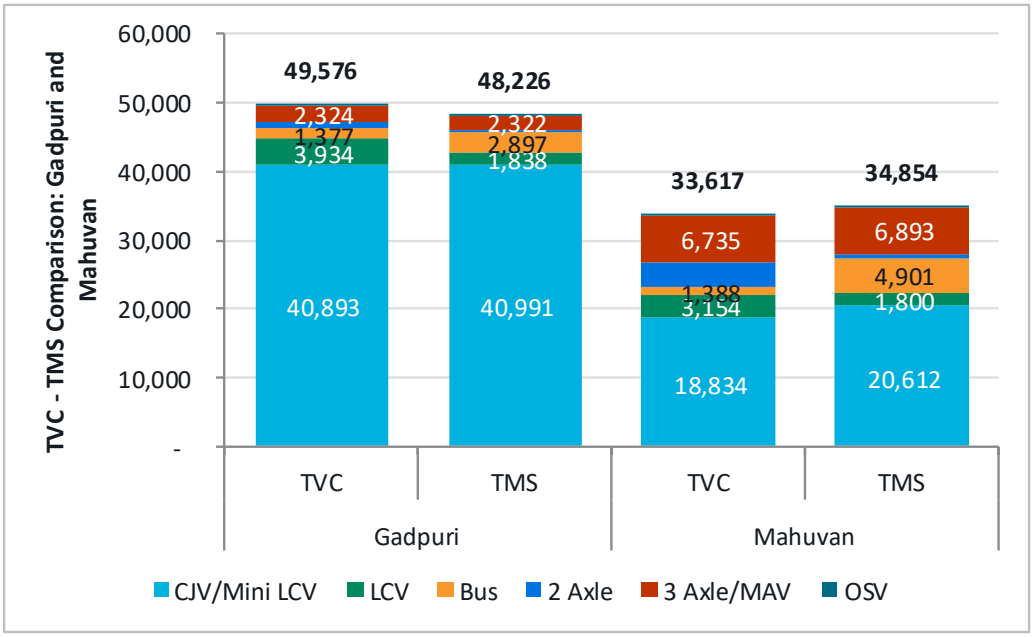
3.26 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended. Hence, in order to fully understand the impact of this weekly fluctuation on the Asset, we collected three-day counts at each toll plaza.

Key findings of the TVC data analysis

3.27 The results of the TVC study carried out by Steer in February 2025 are presented in this section. TVC surveys were conducted to help validate TMS data provided by the Client, and to inform various inputs used in our forecasting analysis.

3.28 Since we use the TMS data to estimate the base year AADT, we have used our overlapping TVC data to validate the TMS data on those days, as provided by the Client. In Figure 3-7 below, we observe that over the period (or days) for which the TVC data was collected, there existed little difference between the reported TMS traffic count data and the independently recorded TVC data. Based on this output, we independently validated the TMS count data provided by the Client, and no additional adjustment (in this respect) was made to estimate our Base year AADT from the TMS data provided by the Client.

Figure 3-7: TVC-TMS Comparison: KM46 Gadpuri & KM164 Mahuvan



Source: Steer analysis

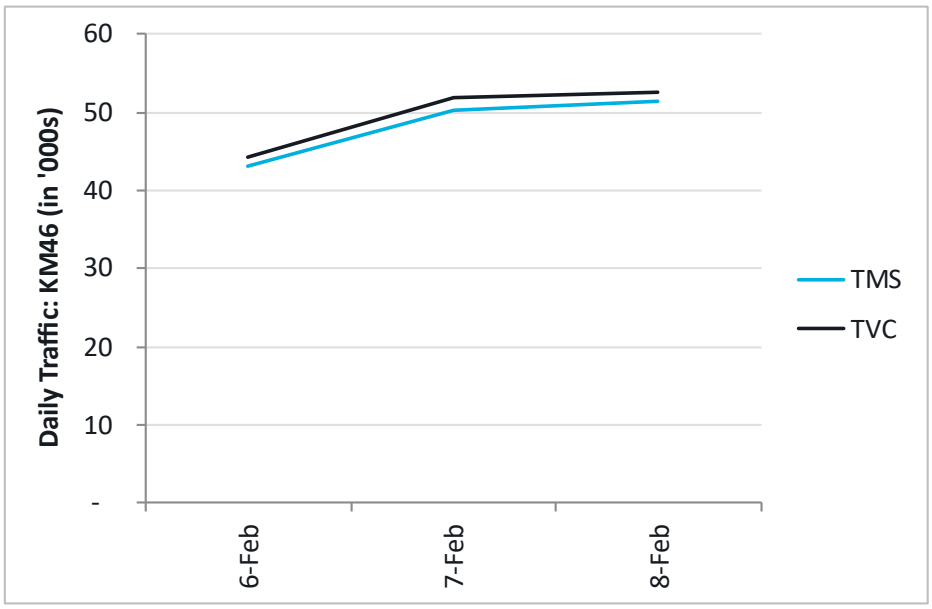
3.29 Additionally, the difference between the TMS and TVC data at a total traffic level, as well as for commercial traffic volumes alone was well within our accepted levels of variation. We have thus relied on the TMS data for additional study without any adjustments.

TVC-TMS analysis

3.30 Figure 3-8 and Figure 3-9 below present our analysis of the TVC data sourced via independent primary surveys and the TMS data provided by the Client over the same data collection period/days i.e., 6th February 2025 to 8th February 2025. We used our TVC data to validate the toll plaza data for the same days as supplied by the Client via their toll management system (TMS). This TMS data was then used as the base data, for our forecasting model.

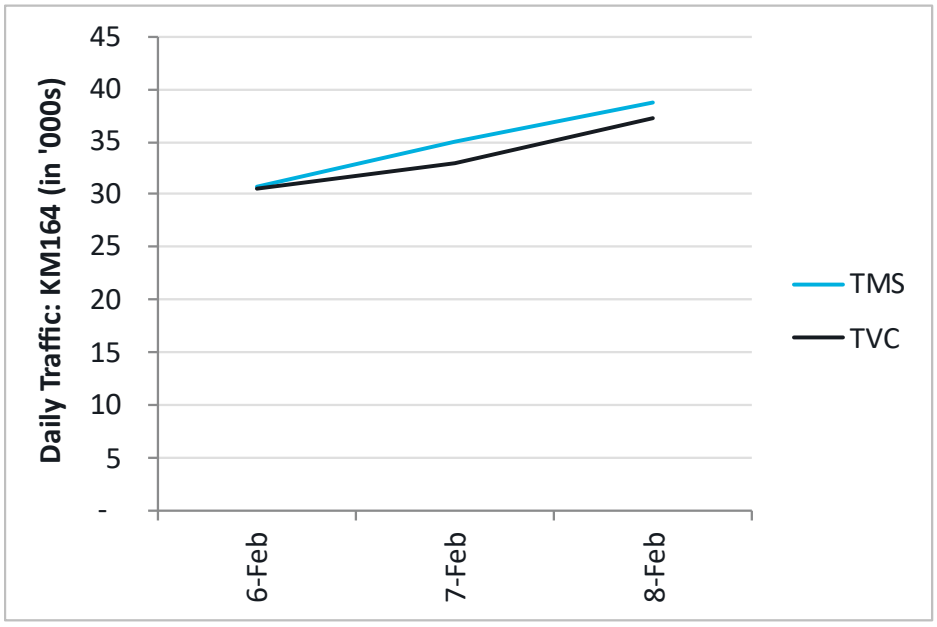
3.31 The graphs show the comparison of TMS and TVC calculated Average Daily Traffic (ADT) levels at two of the plazas on which the surveys were conducted i.e., KM46 (Gadpuri) and KM164 (Mahuvan). The TMS data from the Client's operational systems at both plazas closely aligns with our third-party TVC data for the same days, showing a difference of 2.8% at Gadpuri and (3.6%) at Mahuvan toll plaza. This comparison provides confidence in the TMS data for forecasting purposes and ensures that the data being used to estimate the Base year AADT (and subsequent forecasts of traffic and revenue from that Base) is accurate and reflective of actual plaza volumes.

Figure 3-8: Daily TVC and TMS traffic comparison on KM46



Source: Steer analysis

Figure 3-9: Daily TVC and TMS traffic comparison on K164



Source: Steer analysis

WADT estimates

3.32 Taking a simple average of the three-day TVC count data, we obtained the weekly average daily traffic (WADT) for each of the two toll plazas (KM46 and KM164). This WADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, and government vehicles.

3.33 As presented in Table 3.13 below, CJVs and Mini LCVs constitute the highest WADT at the Gadpuri toll plaza (KM46) with a combined value of 40,893. LCVs and MAVs follow with

3,934 and 1,577 WADT, respectively. The Mahuvan toll plaza (KM164) exhibits a comparable trend, where CJVs have the highest WADT (16,962), succeeded by MAVs (4,519 WADT) and Mini LCVs (1,872 WADT).

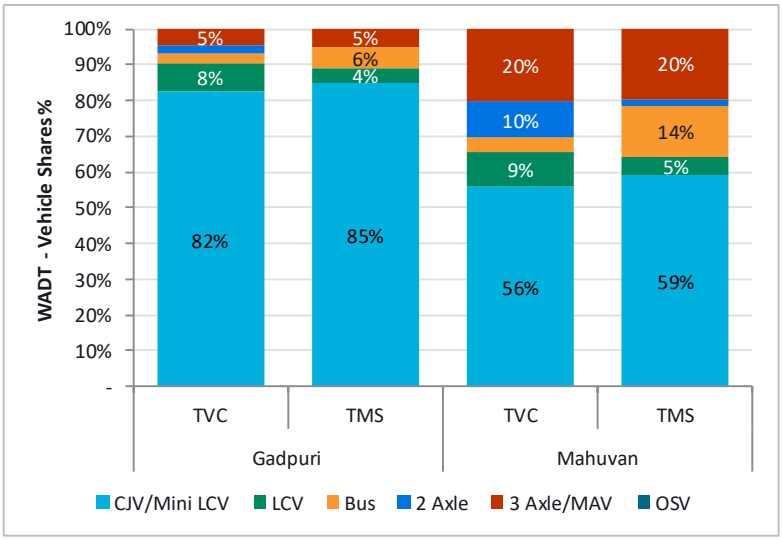
Table 3.13: WADT at KM46 (Gadpuri) and KM164 (Mahuvan)

Toll Plaza	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total WADT	Total PCU
KM46 (Gadpuri)	37,374	3,519	3,934	1,377	1,034	747	1,577	14	**49,576**	**61,663**
KM164 (Mahuvan)	16,962	1,872	3,154	1,388	3,502	2,216	4,519	3	**33,617**	**60,177**

Source: Steer analysis of TVC data

3.34 Figure 3-10 below compares the outputs of the TMS and TVC data analysis in terms of traffic volume shares by vehicle type. As evidenced from the plot below, as well as the analysis outputs presented above, we believe our estimation of the base year traffic from the TMS data is reasonably accurate and reflective of true volumes observed on the Asset. The overall good fit of the data at a WADT level and minimal variation between the TVC and TMS data for the largest revenue generator (3A and MAV) suggests that the Client TMS data is robust and reflect actual operational volumes currently appearing on the Asset.

Figure 3-10: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

Key findings of origin-destination analysis

Overview

3.35 Origin-destination (OD) analysis enables us to understand the nature of traffic movement on the Asset. The OD analysis presented here is based on data collected on behalf of the Client in February 2025. OD surveys were conducted at two of the toll plazas on the Asset i.e., at KM46 (Gadpuri), and at KM164 (Mahuvan) owing to the difference in traffic trends and movements observed at both these plazas. Given the similarity in traffic profiles observed at KM94 and KM164, no additional OD survey was commissioned for KM94. The

OD data collected as part of this study was analysed to derive the following key insights regarding the nature and profile of traffic plying the Asset:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.36 While zonal analysis and the list of top OD pairs help us to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and to inform our key forecasting assumptions around traffic demand elasticities, growth drivers, and other exogenous factors that may impact future traffic growth on the Asset.

Sample rates

3.37 Sample rates help understand the reliability of OD data. They are calculated by dividing OD sample counts from the OD surveys by traffic counts (based on the TVC data) over the survey period. Table 3.14 below presents the sample rates for key vehicle categories at both the Asset toll plazas.

3.38 Sample rates at toll plazas are typically low for passenger vehicles due to shorter stoppage durations and reduced response times following the implementation of FASTag in FY22. On the contrary, sample rates for commercial vehicles are higher. Our acceptable thresholds for passenger vehicles are typically a minimum of 20-25%, while for commercial vehicles, the threshold is 60%.

3.39 Table 3.14 below presents the sample rates recorded at KM46 Gadpuri and KM194 Mahuvan for both passenger and commercial vehicles.

Table 3.14: Sample rates for OD data

Vehicle type	KM46 Gadpuri	KM164 Mahuvan
Passenger	24.5%	17.4%
Goods (2A+3A+MAV)	73.8%	43.1%

Source: Steer analysis of OD data

Zone categories

3.40 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in Table 3.15 below. The methodology applied to aggregate zones vary based on the characteristics of different Assets.

Table 3.15: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
Immediate area of influence (IAOI)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 KM distance from the Asset.
Rest of State	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)

Aggregate Zone	Description
Central NCR	Delhi, Gurgaon, Noida.
Rest of Haryana	Haryana
North India	Uttarakhand, Jammu & Kashmir, Himachal Pradesh
Madhya Pradesh	Madhya Pradesh
Rajasthan	Rajasthan
Punjab	Punjab
Uttarakhand	Uttarakhand
Gujarat	Gujarat
East and Northeast India	West Bengal, Orissa and Northeast Indian states
South India	Andhra Pradesh, Tamil Nadu, Karnataka, Kerala, Maharashtra, Goa

Source: Steer analysis

Zonal influence

3.41 Zonal influence measures the contribution of a zone or zonal aggregation/region to traffic volumes plying on the Asset, by vehicle type[15]. This section presents the zonal influence[16] of different zones (as described in Table 3.15 above) at both the toll plazas where OD surveys were conducted in February 2025 i.e., KM46 (Gadpuri) and KM164 (Mahuvan). Figure 3-11 and Figure 3-12 below present the zonal influence of different zones on traffic volumes of each vehicle category that cross both the toll plazas.

3.42 At Gadpuri, regions in 'North India' hold the highest share across all vehicle categories, with local and IAOI zones also holding high shares (34% for 3A/MAVs). On the other hand, at Mahuvan, IOAI and Local influence decreases with an increase in vehicle size (66% for CJVs and 22% for MAVs)

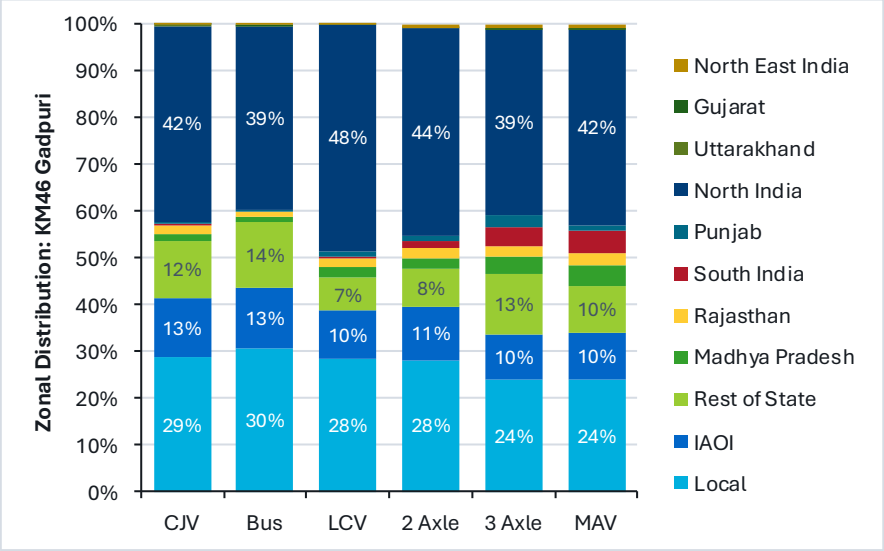
3.43 For inter-urban corridors, only smaller vehicles (CJVs and LCVs) see a higher share of local trips compared to trucks. However, since we see industrial zones located on the Asset itself, the influence of zones located in immediate regions (inclusive of parts of all three regions) is high even for heavy trucks like MAVs, which range from 38% at KM164 to 44% at KM46.

3.44 'Local' trips on the Asset are mainly destined towards or originating from areas within a 20 km radius of the Asset, including locations such as Runakta, Sikandra, Mathura (all in Uttar Pradesh and Ballabhgarh (in Haryana). Apart from regions within the state, share of commercial vehicle trips to and from North India have a major influence on traffic plying on the Asset – the share for 3A/MAVs being 39-44% at Gadpuri and 27-30% at Mahuvan.

[15] Zonal influence is analysed on trip ends and not trips.

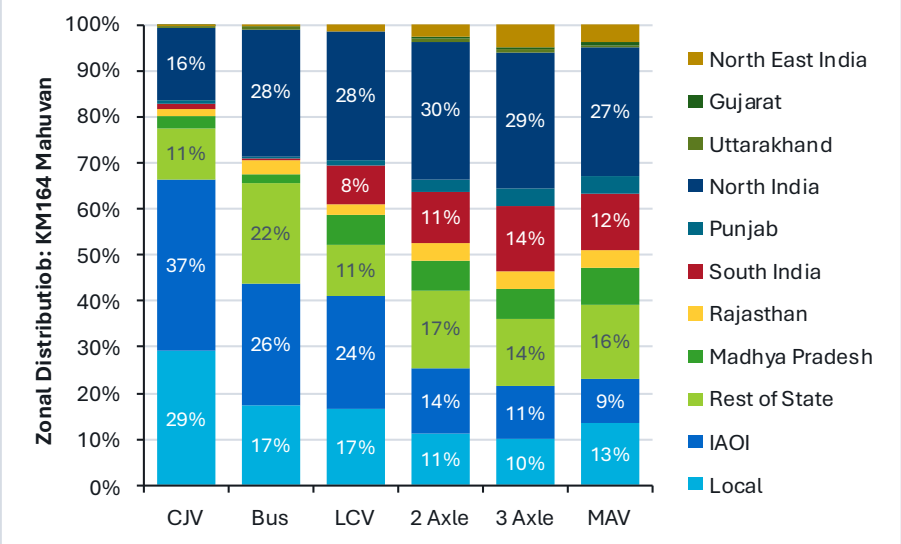
[16] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad is 50% since one trip end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

Figure 3-11: Zonal influence, KM46 Gadpuri



Source: Steer analysis of OD data

Figure 3-12: Zonal influence, KM164 Mahuvan



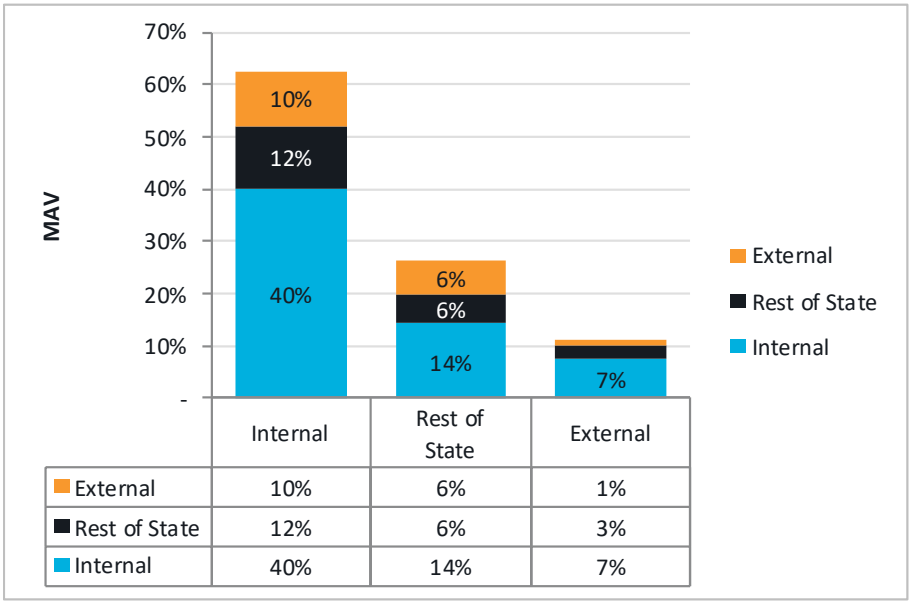
Source: Steer analysis of OD data

Internal External analysis

3.45 Internal-External analysis helps in identifying the trips which either have both the origin and destination within the regions close to the Asset, or any only one end in the region, or if it is through-traffic (i.e., with both trip ends outside the immediate region of the Asset), that travel medium to long distances across the country.

3.46 Figure 3-13 and Figure 3-14 below present the outputs of the Internal-External analysis conducted on the latest OD survey data at both the Asset toll plazas i.e., KM46 (Gadpuri) and KM164 (Mahuvan). The plots help provide additional insight into the trip patterns of different vehicle types observed on the Asset.

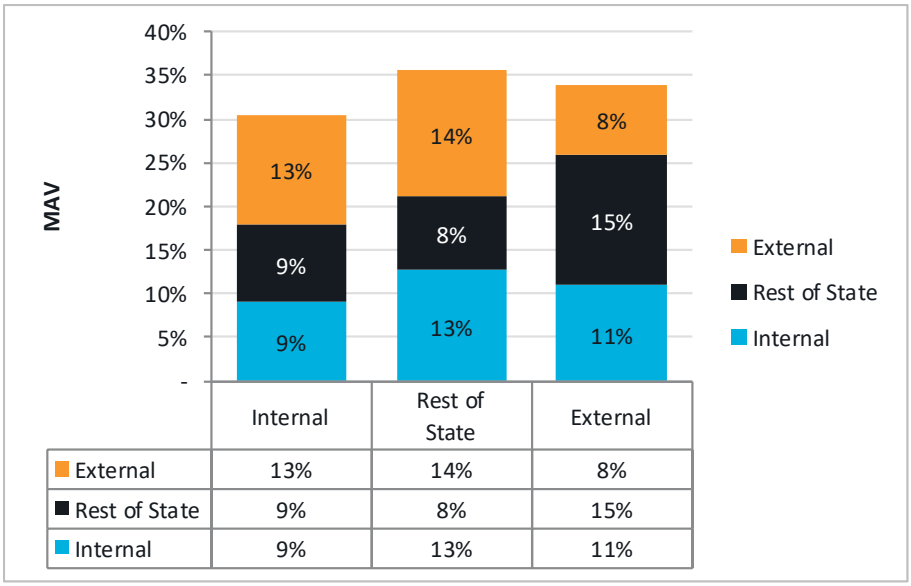
Figure 3-13: Internal-external distribution, KM46 Gadpuri



	Internal	Rest of State	External
External	10%	6%	1%
Rest of State	12%	6%	3%
Internal	40%	14%	7%

Source: Steer analysis of OD data

Figure 3-14: Internal-external distribution, KM164 Mahuvan



	Internal	Rest of State	External
External	13%	14%	8%
Rest of State	9%	8%	15%
Internal	9%	13%	11%

Source: Steer analysis of OD data

3.47 Figure 3-14 and Figure 3-15 above show that the influence of local and IAOI zones for MAVs reduces on the Asset, from the northern to the southern toll plazas. The external-external influence is lower at KM46 (1%), while it has the higher (40%) share of I-I trips.

3.48 This difference in trip patterns of MAVs crossing either of the toll plazas is due to their relative locations along the Asset alignment. The KM46 plaza lies at the southern end of the NCR which is a major industrial and manufacturing region (with hubs such as Ballabhgarh, Okhla and Manesar), as well as being a large consumption centre. Thus, a large proportion of "Internal- Internal" MAV trips at this plaza are those between different

industrial units across NCR as well as the traffic between industries and consumption centres in the region.

3.49 In contrast to Gadpuri, the E-E and I-I shares at KM164 (Mahuvan) are 8% and 9% respectively. KM164 lies closer to Agra and further away from Delhi resulting in a lower share of local trips for MAVs, as there are less industrial clusters in this region, and most traffic observed in this area will be medium-long distance traffic originating and destined for locations far away from where the plaza is located

Commodity distribution

3.50 For the commodity distribution analysis, we grouped various commodities into aggregate categories for ease of interpretation, as shown in Table 3.16 below. The charts in the following sub-section present information in terms of aggregate commodity categories.

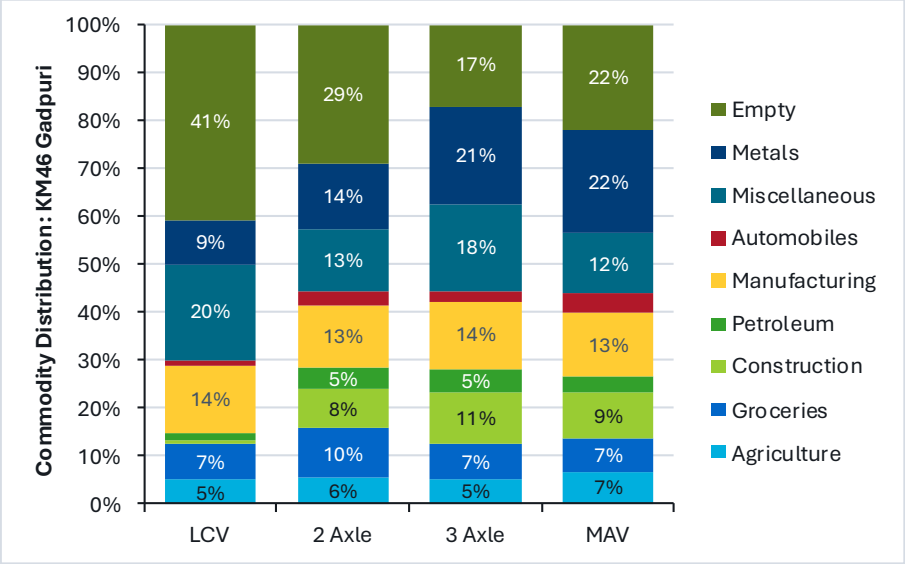
Table 3.16: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, goat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cold drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood, Cork & Wood Products, Furn	WUD	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Machinery / Spare parts	MAC	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, House hold items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

Source: Steer analysis

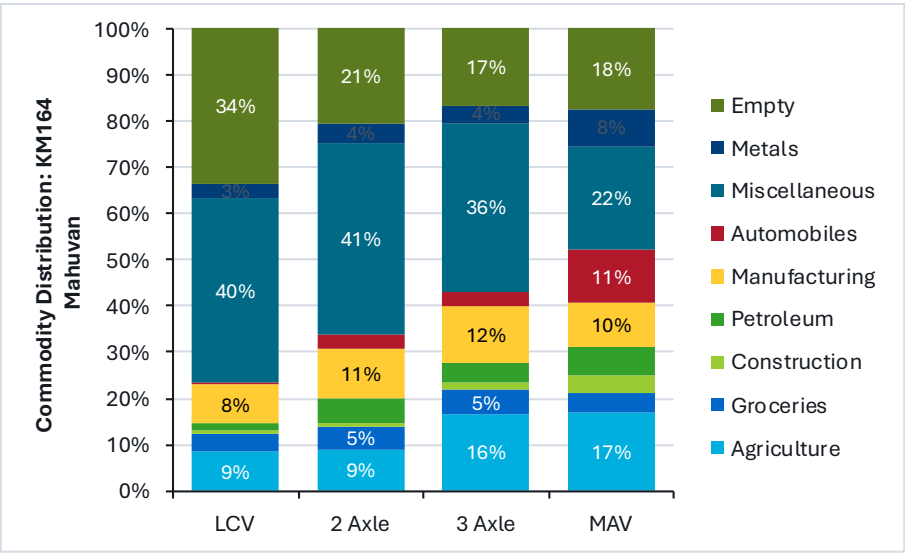
3.51 Figure 3-15 and Figure 3-16 below present the commodity distribution for goods vehicles at both the toll plazas where the OD surveys were conducted. Analysis of the commodity distribution at both toll plazas reveals that agricultural items, groceries, manufactured products, miscellaneous goods (including parcels), and metals represent the predominant categories. These commodity groups collectively account for approximately 62% and 61% of the traffic volume for 3-Axle vehicles (3A) and Multi-Axle Vehicles (MAV) at the Gadpuri toll plaza, and approximately 74.5% and 61.1% for 3As and MAVs at the Mahuvan toll plaza, respectively.

Figure 3-15: Commodity distribution, KM46 Gadpuri



Source: Steer analysis of OD data

Figure 3-16: Commodity distribution, KM164 Mahuvan



Source: Steer analysis of OD data

3.52 Agricultural commodities (such as onions, potatoes and rice), manufactured items (such as plastic, electronics and medicines), metals (iron and steel) and groceries have the highest share in terms of commodity distribution at both toll plazas. At KM46 Gadpuri, these categories have a combined share of 47% for 3A and 49% for MAVs, while at KM164 Mahuvan, these shares are found to be 39% for both 3A/MAVs.

3.53 The share of empty vehicles is higher for LCVs and lower for 2A/3A/MAVs. Amongst 2A/3A/MAVs, the range of empty vehicle share is 22-29% at KM46 (Gadpuri), while at KM164 (Mahuvan) this range is observed to be 18-21%. This is expected as more local truck movements at KM46 results in them making more trips for loading and unloading at warehouses.

3.54 Miscellaneous commodities (which include couriers and parcels) are observed to have a share of 12-20% across all goods vehicle categories at KM46 (Gadpuri). This share is much higher at KM164 (Mahuvan), where 35-40% of LCV/2A/3As are observed to carry miscellaneous goods.

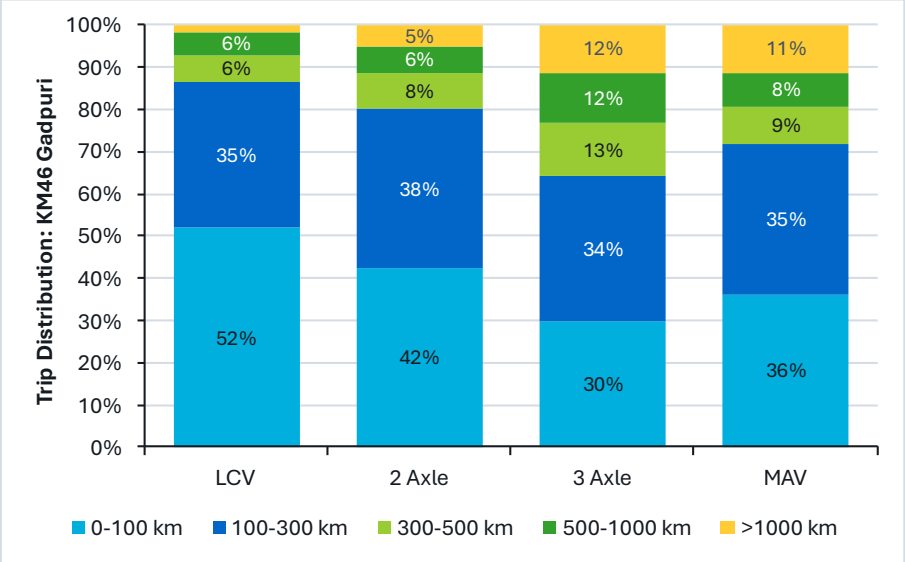
Trip length analysis

3.55 Trip-length distribution provides distance-based profiles of each vehicle category crossing either of the toll plazas. This insight, in addition to explaining trip patterns of traffic plying the Asset, also helps to validate our assumed macroeconomic drivers of traffic, outputs from the zonal influence analysis, and each plaza's toll segmentation trends.

3.56 Figure 3-17 and Figure 3-18 below present the outputs of the trip length analysis performed on the OD survey data from both the plazas. Each plot shows the distribution of total trips (by each vehicle category) across different trip distances. For ease of interpretation, we have categorised distances into five groups – local (0-100KM), short-distance (100-300 KM), medium-distance (300-500 KM), long-distance (500-1000 KM) and very-long-distance (+1,000 KM). The trip distances were derived as driving distances from Google Distance Matrix Tool and is based on the zonal coordinates of each OD pair recorded during the OD surveys[17].

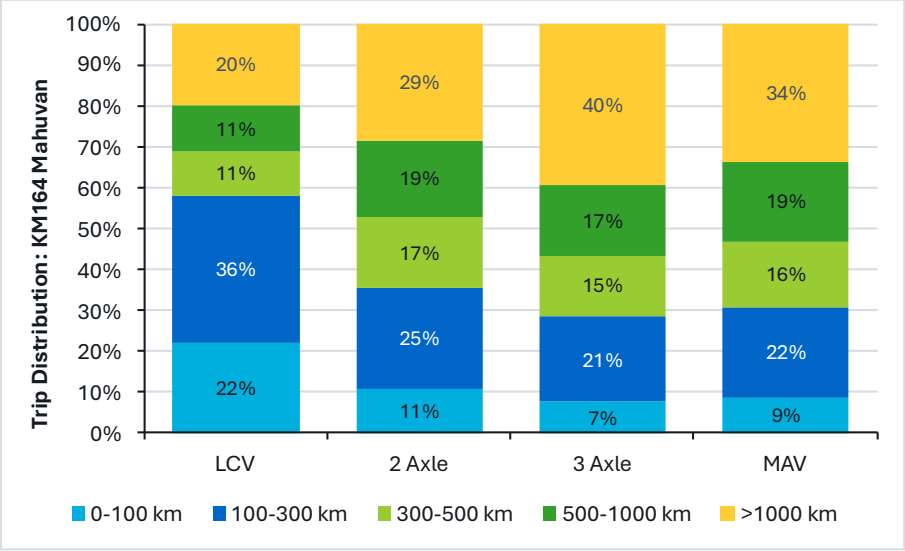
[17] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3-17: Trip length distribution, KM46 Gadpuri



Source: Steer analysis of OD data

Figure 3-18: Trip length distribution, KM164 Mahuvan



Source: Steer analysis of OD data

3.57 As discussed in the previous sections, KM46 (Gadpuri) and KM164 (Mahuvan) have distinct distributions of trip lengths by each vehicle category. As shown in Figure 3-17 above, KM46 (Gadpuri) observes a high share (64-77%) of trips below 300km in distance, across all goods vehicle categories. This is due to its proximity to the densely-populated NCR area, facilitating more local and IAOI movement.

3.58 In contrast, the trip distribution analysis at KM164 (Mahuvan) reflects more of its long-distance nature of traffic as observed at the toll plaza; 40% of 3As and 34% of MAVs crossing the plaza make trips more than 1000km in length, validating our observations from the zonal distribution and internal-external analyses. As we move from north to south along the Asset, the influence of states such as Madhya Pradesh, Rajasthan and regions in South India (Bengaluru, Hyderabad, Chennai) increases.

Conclusions

3.59 The Asset is a 179.5 km toll road between Delhi and Agra which has historically been a part of NH44, which is a major National Highway facilitating north-south movement. It is also the longest national highway in the country.

3.60 The Asset consists of three toll plazas – KM46 (Gadpuri), KM94 (Karman) and KM164 (Mahuvan). KM46 and KM94 started operations in July 2022, while KM164 has been operational since FY13. In terms of total AADT, the growth rates at the plazas in FY26YTD compared to FY25 is 3.8%, 8.1% and 9.0% respectively. When considering the total PCUs, the plazas have grown at 1.9%, 5.2% and 4.9% respectively over the same period in FY25.

3.61 KM46 has observed muted growth overall and in PCU terms largely due to the impact of the DME as well as the DND KMP Flyway packages 2 and 3 that become operational in February 2023 and November 2024 resulting in decline in commercial vehicles originating from the industrial clusters of Faridabad and other parts of the NCT of Delhi, that previously crossed KM46. In contrast KM94 and KM164 have exhibited strong growth over FY25 levels despite the loss of long-distance traffic volumes due to partial commissioning of Delhi-Mumbai expressway, upgrade of Aligarh Kanpur (NH34) and through traffic previously coming from KM46 as these two plazas have always observed more long-distance traffic and also observe traffic that never crosses KM46 i.e., traffic that originates further north of Delhi, bypasses it using the EPE or WPE/KMP (including KM46) but then connects with the Asset at Palwal to continue on their journey's southbound or eastbound from Delhi.

3.62 The TVCs conducted by Steer in February 2025, at KM46 (Gadpuri) and KM164 (Mahuvan) toll plazas found that at the total level, TMS counts were 2.8% lower than TVC counts at KM46, and 3.6% higher than TVC counts at KM164. Although the difference between the TMS and TVC counts is slightly higher at KM164 than evaluated at KM46, the magnitude of variation may arise due to etc reconciliation as volume of traffic is quite high, allowing us to validate the TMS data with the independent TVC data collected as part of this study.

3.63 The OD analysis conducted by Steer in February 2025 found that KM46 (Gadpuri) exhibits a higher share of local trips compared to KM164 (Mahuvan) – expected given KM46's closer proximity to Delhi NCR and other nearby urban and commercial clusters relative to KM164, which is farther away and though closer to Agra, does not observe similar volumes of locally originating traffic. At both the plazas, a high share of local and IAOI trips were observed for both passenger and commercial vehicles due to the presence of urban clusters such as Agra, Mathura, Palwal, Ballabhgarh, Faridabad

3.64 An analysis of commodity distribution at Gadpuri and Mahuvan reveals that in terms of 3A/MAVs, the key commodities transported on the Asset include leather & textiles, manufactured items, fabricated metal sheets (as discussed above in 2.11), - which combined make up around 40-50% of the commodity share at both plazas, for 3A/MAVs .

3.65 When considering the internal-external analyses for MAVs at both the plazas, KM164 (Mahuvan) was found to have a greater share of External-External trips (8%) compared to KM46 Gadpuri (1%). KM46, due to its proximity to Delhi, also observes 40% of MAV trips with both ends within an internal region. The trip length analysis supports these findings, with MAVs at KM46 having a large share (71%) of trips below 300km in length, while 53% of MAV trips at KM164 are more than 500km in length.

4 Socioeconomic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions in the regions where the Asset is located and the country as a whole. These include:

1. Changes in factors such as population, economic growth (regional and national) and industrial production; and
2. Other local factors such as strategic port growth, and growth in local industries near the Assets.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available. In this chapter, we assess the socio-economic indicators relevant to traffic growth on the Asset.

Population growth

National Level

4.3 Table 4.1 below shows that the total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.4 Table 4.2 below shows the evolution of population in the states of Uttar Pradesh and Delhi (containing the Asset), compared to that of the country.

4.5 As Table 4.2 shows, the populations of both Uttar Pradesh and Delhi have grown at a faster pace compared to that of India, between FY12 and FY24. As of FY24, Uttar Pradesh holds an 8.1% share in India's population, while Delhi has a 1.5% share.

Table 4.2: Population Growth in Uttar Pradesh, Delhi and India (2012-2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Uttar Pradesh	201.5	237.0	1.4%
Delhi	17.0	21.6	2.0%
India	1,210	1,395	1.2%

Source: Ministry of Statistics and Program Implementation estimates

4.6 Due to the complexities of patterns of urbanisation, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide the underlying socio-economic context of the state/trends in the regions in which the Asset is located.

Economic Indicators

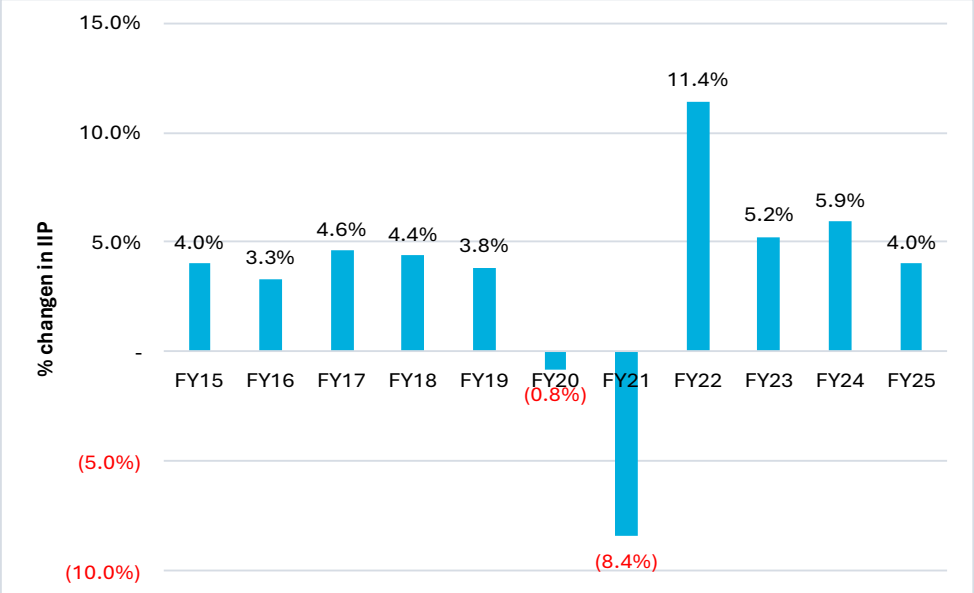
Industrial Production

4.7 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.8 Figure 4-1 shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

4.9 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. However, we do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Figure 4-1: Annual growth – Index of Industrial Production



Source: Steer Analysis of MoSPI data

Vehicle ownership

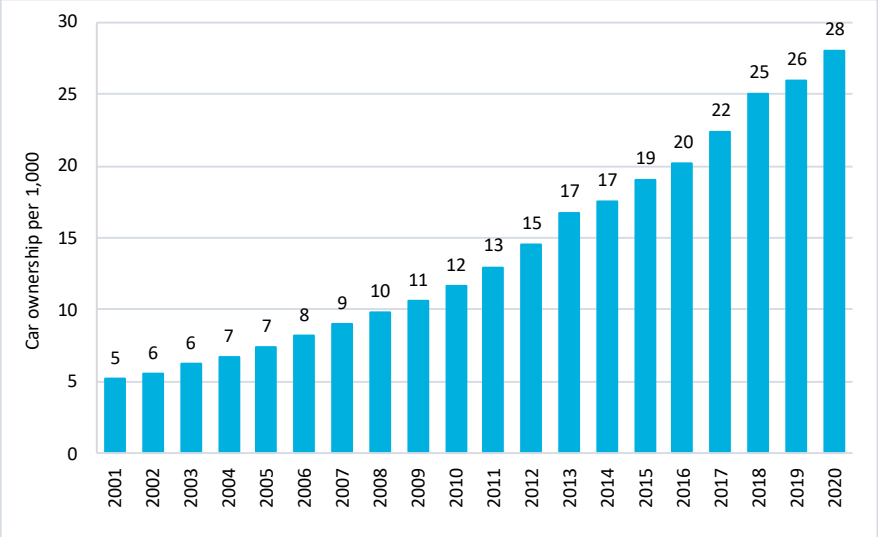
4.10 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[18]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled (from 7 in 2007 to 22 in 2017) and increased at a CAGR of about 11%.

4.11 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[19]

[18] **India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto**

[19] **https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf**

Figure 4-2: Car Ownership in India per 1,000 population



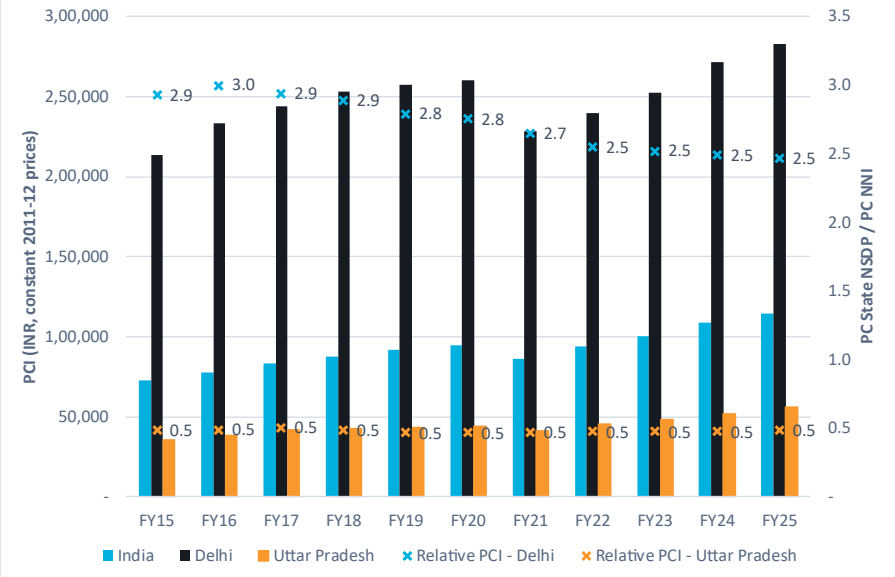
Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.12 The Asset lies in Uttar Pradesh and Delhi. As shown in Figure 4-3 below, the per capita income of Uttar Pradesh is lower as compared to that of India - it has historically been at roughly 40-50% of the national average since FY15 through present day. On the other hand, the per capita income of Delhi has consistently been higher than that of India – it was 2.5 times higher than the national average, as of FY25.

4.13 Traffic on the Asset is influenced by both Delhi and Uttar Pradesh – specifically, the western region of UP, which has grown at a faster rate than the rest of the state in recent years and is expected to continue this trajectory. The higher per capita income of Delhi and the higher growth in western UP indicates sustained economic growth in the region, driving traffic growth on the Asset over time.

Figure 4-3: Relative Per Capita Income (FY15-FY25)



Source: Steer Analysis of MoSPI data

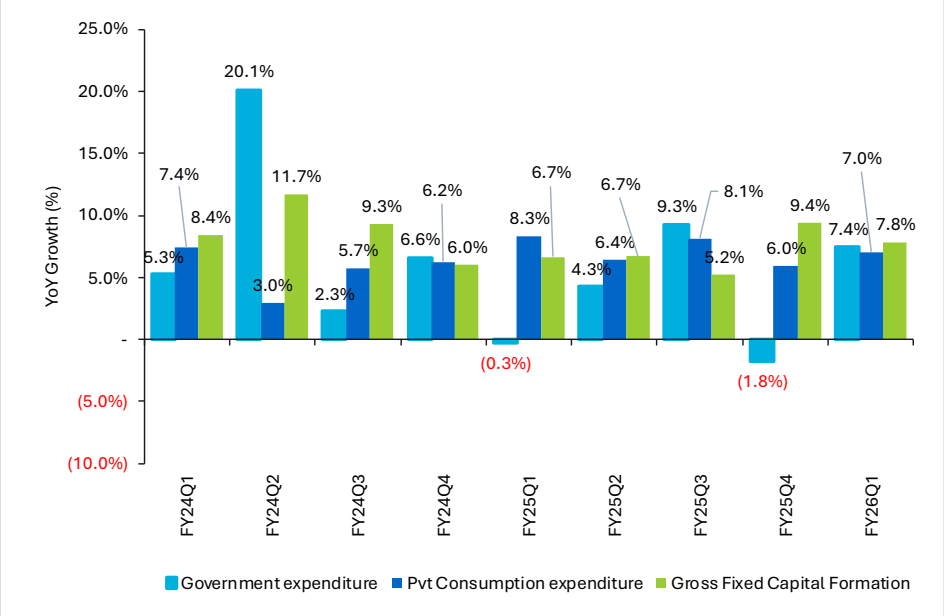
Economic Growth

India's Performance

4.14 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[20].

4.15 In Figure 4-4 below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures



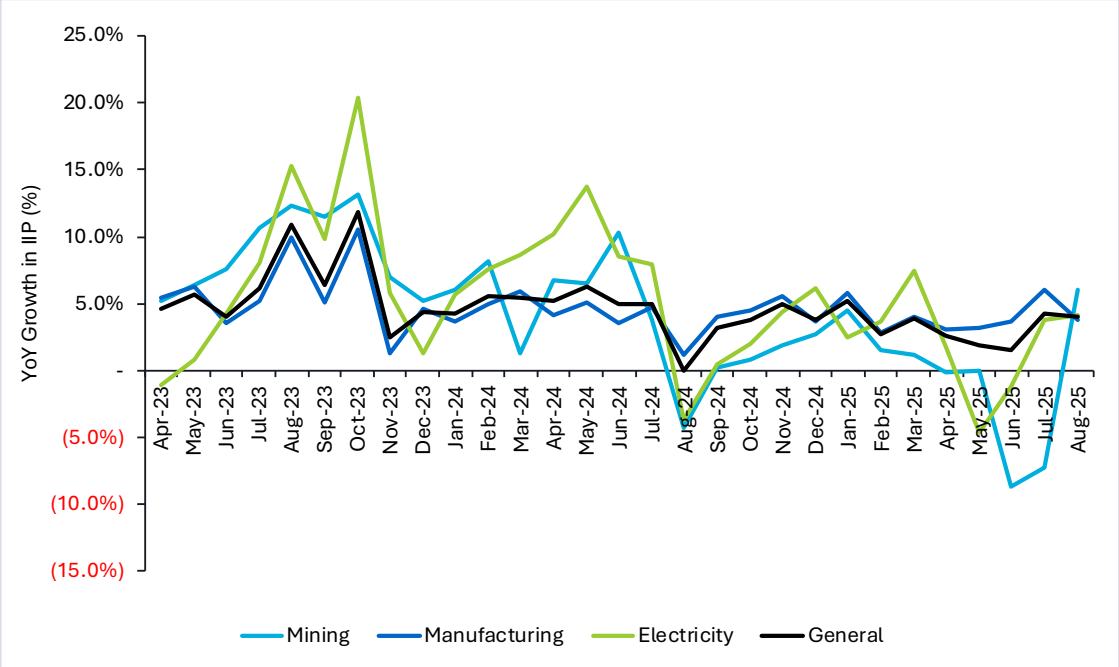
Source: Steer Analysis of MOSPI Data

4.16 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.17 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In Figure 4-5 below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

[20] Government of India, PIB Release Oct 1 '25

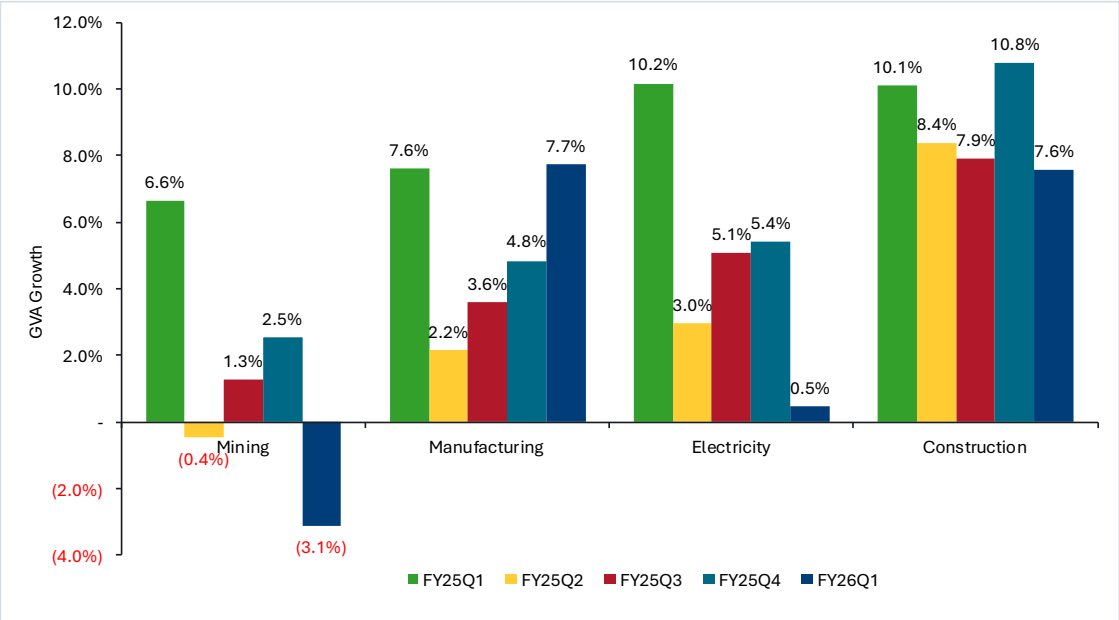
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.18 In addition to monthly trends in IIP, Figure 4-6 below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. Generally, economic growth has remained resilient as of FY26YTD, but performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



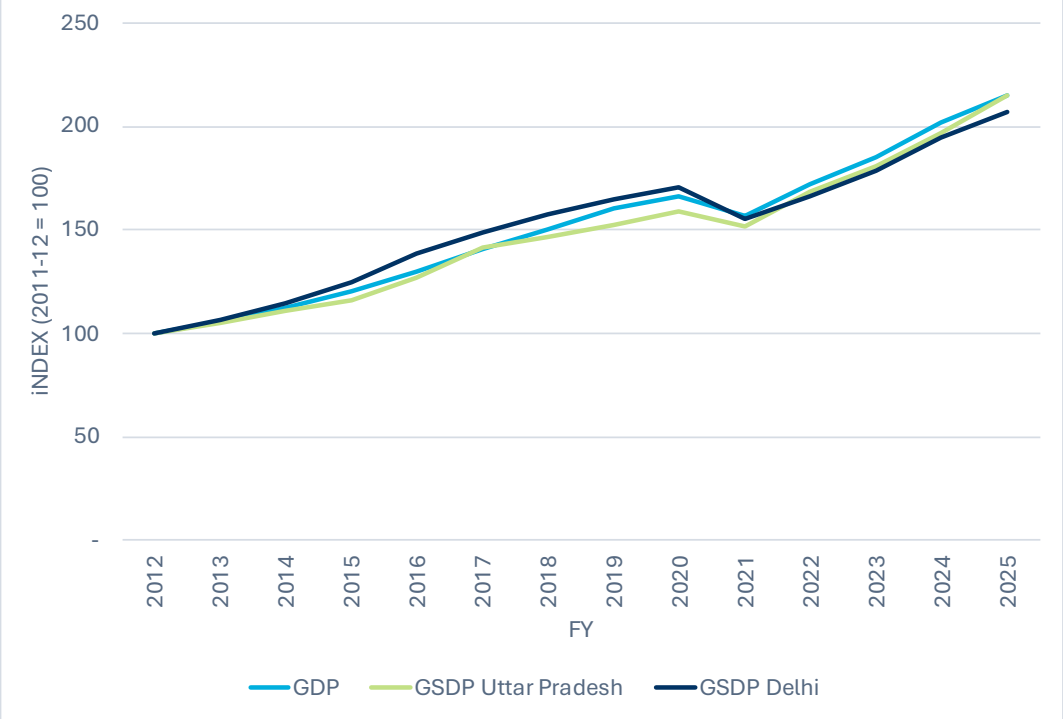
Source: Steer Analysis of MOSPI Data

GDP and GSDP Growth

4.19 Figure 4-7 below presents historical growth in Delhi and Uttar Pradesh GSDP, and the GDP of India. Between the period of FY12 and FY25, the Indian economy grew at a CAGR of 6.1% per year – aided by strong growth in the services/tertiary sector, which grew at a CAGR of 6.9%per year over the same period. UP GSDP and Delhi GSDP grew at 6.1% and 5.8% per year (respectively) between FY12 and FY25 – in step with the national economy.

4.20 As shown in Table 4.2 above, Delhi and UP respectively accounted for 1.5% and 17% of national population in FY24. In terms of national economic contribution, Delhi and Uttar Pradesh contributed approximately 4% and 8% respectively to India's GDP in FY24. Therefore, Delhi's per capita GDP contribution in FY24 far exceeded the same for UP statewide, highlighting the importance of the region in driving consumption demand and regional traffic growth near the Asset.

Figure 4-7: Evolution of Delhi's and Uttar Pradesh's state GDP and national GDP



Source: Steer Analysis of MoSPI data

Economic activity in the state

Uttar Pradesh

4.21 Uttar Pradesh is the most populous state in India with a population of ~237 million people (as of FY24). The state has a large pool of skilled, semi-skilled and unskilled labour. A shown in Figure 4-8 below, the tertiary sector has the highest sectoral contribution (49%) to the state GSVA followed by the secondary (28%) and primary (23%) sectors, as of FY25.

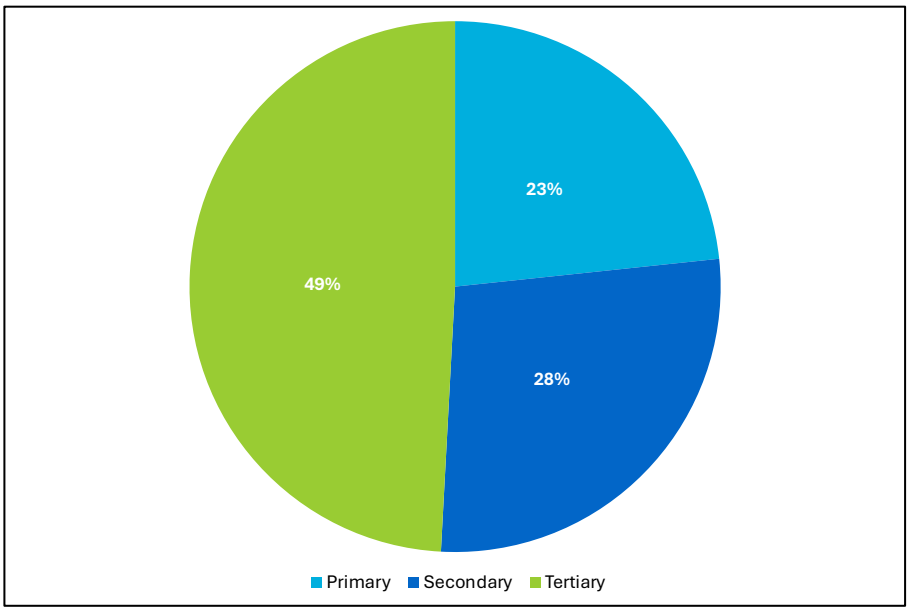
4.22 Uttar Pradesh is considered one of the primary tourist destinations in India, with key tourist attractions being Agra, Varanasi, Mathura and Prayagraj. The state recorded a

tourist footfall of 64.9 crore in 2024, a significant increase of over 17 crore compared to 2023, as per Union Ministry of Tourism[21]

4.23 In terms of secondary sector, the state has key industrial areas in Khurja (Ceramic); Moradabad (Metals); Meerut, Bareilly, Mirzapur and Lucknow (Handloom & Handicrafts); and Kanpur and Noida (Leather and tannery). The state also has an oil refinery in Mathura, operated by the Indian Oil Corporation (IOCL).

4.24 Uttar Pradesh has very fertile Gangetic land with a large share of population dependent upon agriculture for the livelihood. The state is mainly known for production of wheat, sugarcane, potato and mango. As of FY25, the state contributes approximately 13% to India's GVA in terms of the 'Agriculture, forestry and fishing' sub-sector

Figure 4-8: Sectoral contribution to Uttar Pradesh's GSDP as of FY25



Source: Steer Analysis of MoSPI data

Western UP vs UP GSDP Growth

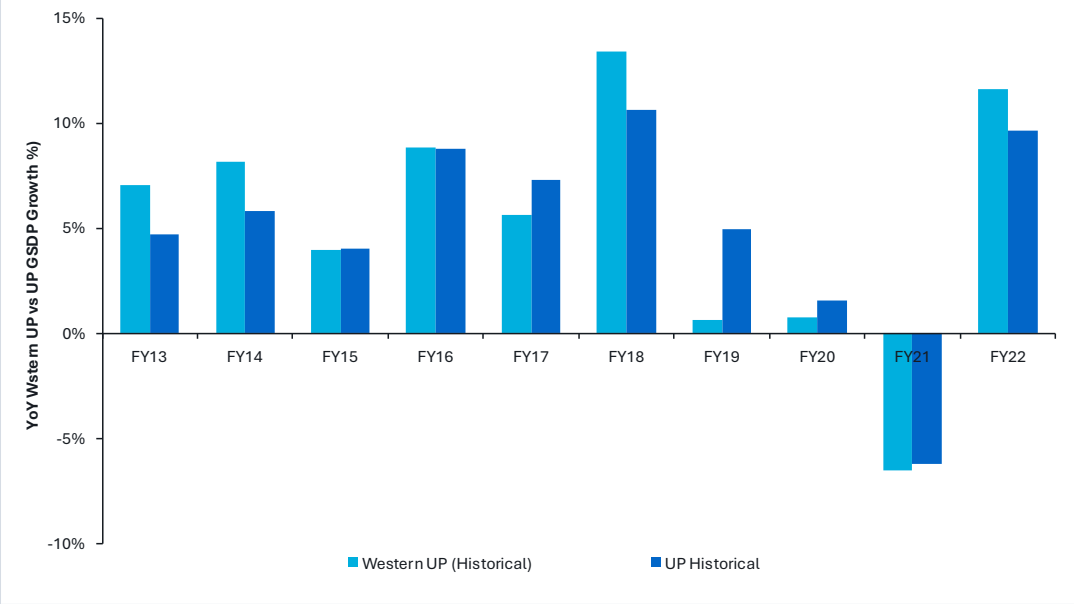
4.25 Since FY13, growth of Western UP GSDP[22] has remained relatively stable, and in line with UP statewide GSDP growth. In Figure 4-9 below, we see that between FY13 and FY22, GSDP growth in Western UP exceeded that of UP overall in 5 of the 10 years (FY13, FY14, FY18, FY21 and FY22), was consistent with UP in 2 of the 10 years (FY15 and FY16), and was below UP GSDP growth in 3 of the 10 years (FY17, FY19 and FY20). While UP statewide growth is largely influenced by Western UP, in recent years (FY21-22), Western UP GSDP has exhibited growth more sensitive than statewide trends.[23]

[21] **up-sees-65-crore-tourists-in-2024-over-17-crore-more-from-2023**

[22] The Western UP region consists of 30 districts, prominent among which are Ghaziabad, Gautam Budh Nagar, Agra, Meerut, Mathura and Bareilly. Historically, this collective region has been the more economically developed part of Uttar Pradesh, and as of FY22 accounted for half of the statewide total GSDP.

[23] Steer analysis of data sourced from the Directorate of Economics and Statistics, Uttar Pradesh (**UPDES website**)

Figure 4-9: Western UP vs UP GSDP Growth



Source: Directorate of Economics and Statistics, Uttar Pradesh

4.26 This can be explained due to a combination of policy- and market-driven factors which have contributed to higher growth in the Western region of the state in recent years. Some of these major developments pertaining to large-scale infrastructure investments in the region include:

- Delhi – Meerut Expressway[24]
- Ganga Expressway [25]
- Noida International Airport (Jewar Airport) [26]
- Logistics hub in Agra, by the Agra Development Authority [27]
- 'New Noida' initiative by the Uttar Pradesh government [28]

4.27 Between FY12–FY25, the GSDP of Uttar Pradesh grew at a CAGR of 6.1% per year. Over the same period, national GDP grew at 6.1%[29] per year, implying that the long-term elasticity factor of UP GSDP growth to national GDP growth is roughly 1. In this context, since Western UP has exhibited more elastic growth relative to UP state overall in recent years, and expectations of strong near-term growth in the Western UP region remain, we have assumed the near-term growth forecast for Western UP to be similarly elastic to

[24] https://timesofindia.indiatimes.com/city/meerut/gadkari-lays-foundation-of-highway-projects-worth-rs-11595-crore-in-west-up/articleshow/68086587.cms

[25] 28 Flyovers, 126 Bridges, 600km In 6 Hours: Ganga Expressway Set To Open Soon; Check Route - News18

[26] Noida's Jewar Airport, Set To Be Asia's Largest, Will Open In April 2025; PM Modi To Inaugurate | Times Now

[27] Proposal for Rs 570 crore state-of-the-art logistics hub in Agra approved - India Today

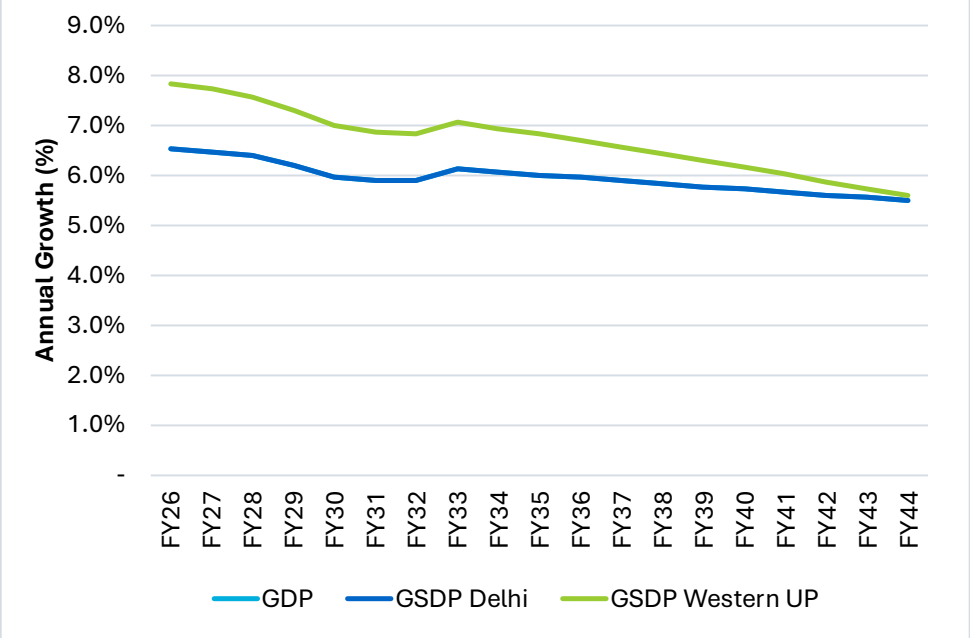
[28] New Noida: UP govt approves massive housing and infrastructure development plan | Key details | Business News – India TV

[29] Steer analysis of MoSPI data

India's GDP growth forecast (as it has been with respect to UP statewide GSDP growth in recent years).

4.28 Figure 4-10 below presents the Client-provided forecasts of national (India) GDP growth from FY26 to FY44, and our assumed GSDP forecast for Western Uttar Pradesh over the same period. In the short term, we have assumed GSDP of Western UP to grow at 1.2 times that of national GDP growth forecast, eventually tapering down to a factor of 1.00 over time as it converges to the national growth rate forecast by FY44.

Figure 4-10: GSDP Western UP vs GDP India Forecast



Source: Steer Analysis

Delhi

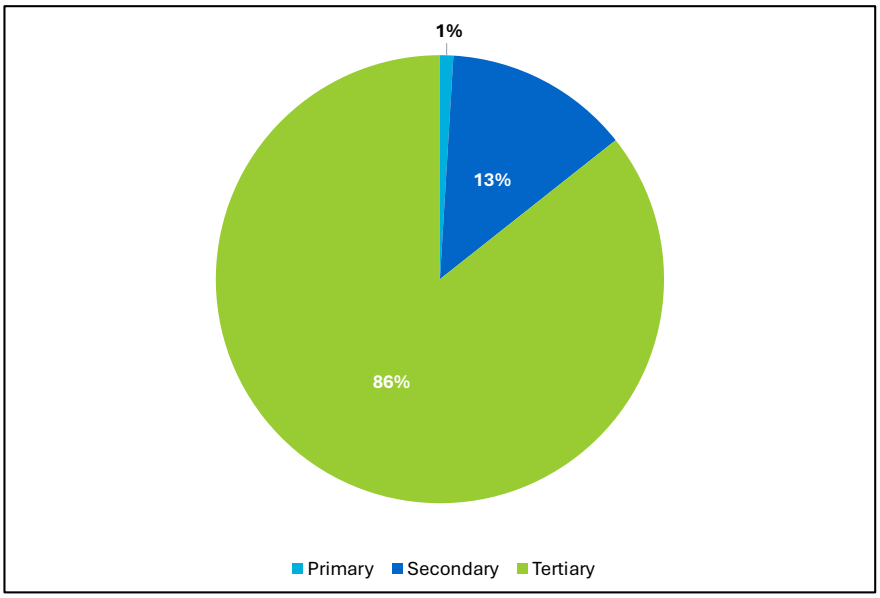
4.29 Delhi, the capital city of India, is one of the largest metropolises in the country. In terms of the GSVA composition of Delhi, as shown in Figure 4-11, the tertiary sector has the highest share (86%) followed by the secondary sector (13%) as of FY25.

4.30 The biggest contributors to the tertiary sector in Delhi are tourism, trade, financial services and real estate. Owing to its location, connectivity and rich cultural history, Delhi has always been a prime tourist attraction of the country with key tourist places being India Gate, Lotus Temple, Humayun's Tomb and Akshardham. The Indira Gandhi International Airport of Delhi serves both domestic and international passengers and as of 2024, it was the tenth-busiest airport in the world[30], catering to approximately 72.2 million passengers.

4.31 In terms of secondary sector, the region has key industrial clusters at Narela, Naraina, Okhla and Mayapuri. The primary/agricultural sector accounts for a small share of Delhi's GSVA.

[30] **Delhi's IGI airport is the 10th busiest airport in the world: Report | World News - The Indian Express**

Figure 4-11: Sectoral contribution to Delhi's GSDP in FY25



Source: Steer Analysis of MoSPI data

Forecasts for growth drivers

4.32 Following the discussion in Chapter 4 on the nature of economic activity in the state of Western Uttar Pradesh and in Delhi, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth on the Asset.

4.33 We have based our forecasts of the GSDPs for Western Uttar Pradesh and Delhi based on the forecasts of the GDP of India as provided by the client.

National GDP

4.34 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption[31].

4.35 The Covid-19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23 and 9.2% in FY24, before showing signs of slowdown again in FY25 due to several domestic and external

[31] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

factors. Since H2FY25, the economy has shown strong growth, driven by improved consumer optimism, and growing consumption and investment demand.

4.36 Figure 4-12 below shows the Client-provided GDP projections for India. The forecast projects the GDP of India to grow at an average of 6.3% between FY26-FY30 and 5.8% between FY31-FY44, gradually tapering down to 5.2% by FY50. The GDP growth forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[32] in the medium term.

4.37 We assume the GSDP growth of Delhi to be in line with India's GDP growth throughout the concession period. For our forecast of the GSDP growth of Uttar Pradesh, we have considered the growth expectations for the western region of UP – as opposed to UP state-wide, due to the location of the Asset in the western region of UP. Additionally, we have assumed the GSDP growth of western UP to higher than that of the GDP of India going forward, across the concession period.

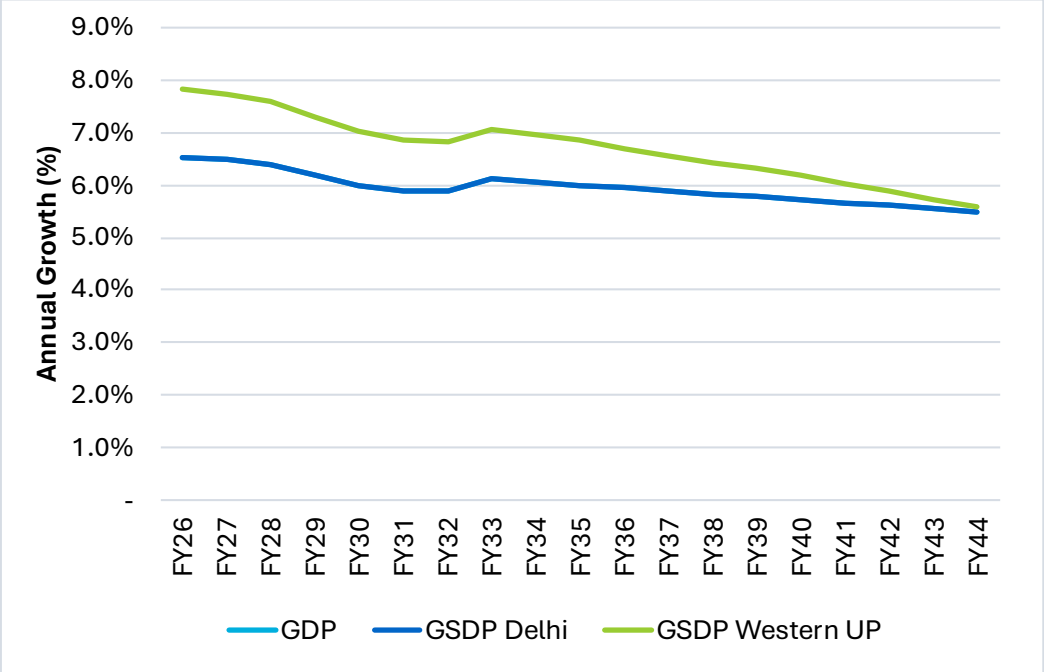
4.38 In particular, we expect it to grow at 1.2 times the GDP of India in the short-term, tapering down to be in line with national GDP growth by FY44. This assumption is based on the recent performance of the GSDP of western UP relative to statewide GSDP growth (as discussed in detail in 4.25 above), as well as expectations of continued investment and economic growth in the region owing to a variety of factors

4.39 There are significant investments expected to take place as part of the Delhi and Uttar Pradesh state/regional government plans over the near to medium term (as described in 4.26 above). Given its leading position in industrial investments, western UP is expected to benefit significantly from these future investment plans. In this context, we believe it is reasonable to assume that Western UP will observe more robust economic growth over the near and medium term relative to UP state overall, and by extension, relative to national GDP growth as well.

4.40 Figure 4-12 below shows the assumed growth forecasts for Western UP and Delhi GSDP, and the GDP of India.

[32] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 96th Round (Oct 2025)**

Figure 4-12: GDP-GSDP forecast



Source: GDP forecast provided by Client, GSDP analysis by Steer based on historical GDP and GSDP relationships

5 FY26 Base year AADT and Traffic growth analysis

Introduction

5.1 In this chapter, we present our approach, assumptions, and results for baseline (or background) traffic growth for each vehicle category on the Asset. Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.2 In the absence of long-term historical data on KM46 (Gadpuri) and KM94 (Karman) toll plazas, the option of running statistical models to estimate background growth relationships was not possible for these two plazas, and therefore we have undertaken a detailed benchmarking exercise, coupled with trip length and OD analysis to estimate the traffic growth elasticities for these two plazas. While regression analysis was conducted for KM164 (Mahuvan), the final growth elasticities used to forecast traffic growth at the plazas were also based on benchmarking analysis from other comparable assets and studies conducted by Steer. The estimated elasticities helped inform our final assumptions for use in the forecasting models. These are discussed in detail below.

5.3 Typically, passenger and light commercial vehicle traffic like cars, buses, LCVs and 2-axle trucks grow in line with the GSDP of the state in which the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This is because the majority of light vehicles tend to travel shorter distances within the state, whereas a significant proportion of heavy vehicles carry commodities for long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and therefore relate more with GDP growth.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for the forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

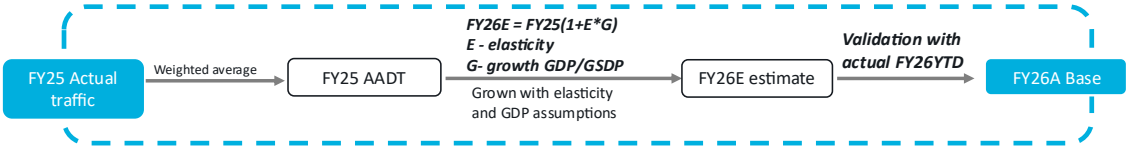
5.5 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our contextual knowledge, to assess demand on the corridor.

Methodology

5.6 In the absence of long term reliable historical data and relatively short operational history of two of the three toll plazas on the Asset, the base traffic positions for FY26 (across all three plazas) have been estimated utilizing 12 months of actual FY25 traffic data. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual FY25 AADT. Using elasticity-based growth assumptions of GSDP or GDP we arrived at our 'estimated' FY26 (FY26E) AADT.

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the 6 months (April - September) of FY26 (FY26YTD). The 'adopted' FY26 AADT (FY26A) was then derived by making necessary adjustments to FY26E to reflect the outturn traffic in FY26YTD (adjusted for seasonality). The methodology is presented in Figure 5-1 below:

Figure 5-1: FY26 Base Estimation methodology



Source: Steer Analysis

Seasonality Correction factors

5.8 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.9 In order to normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.10 Therefore, we studied the monthly seasonality of traffic on the Asset by analysing the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling (excluding years impacted by non-normal events e.g. FY21 COVID). The averaged seasonality trend is then applied to the monthly traffic to obtain our FY26 Base AADT.

5.11 Table 5.1 through Table 5.3 below present the SCFs used for the estimation of the FY26 base year AADT at KM46 (Gadpuri), KM94 (Karman) and KM164 (Mahuvan) toll plazas.

Table 5.1: Seasonality correction factors for KM46 Gadpuri

Vehicle Type	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.01	1.00	1.01	1.11	1.10	1.05	1.07	0.95	0.94	0.98	0.89	0.92
LCV	1.04	0.97	1.05	1.05	0.88	0.93	0.92	0.94	1.08	1.11	1.04	1.05
Bus	1.07	1.06	1.03	1.05	1.06	0.97	0.99	0.99	0.99	1.03	0.94	0.87
2A	0.94	0.99	1.03	1.06	1.08	0.98	0.95	1.01	1.02	1.08	0.90	0.99
3A/MAV	0.89	0.95	1.02	1.04	0.97	0.95	0.94	1.10	1.05	1.11	0.99	1.03

Source: Steer analysis of Client historical TMS data

Table 5.2: Seasonality correction factors for KM94 Karman

Vehicle Type	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.97	0.99	0.92	1.14	1.13	1.06	1.13	0.90	0.93	1.09	0.96	0.87
LCV	1.01	1.05	1.10	1.10	1.11	0.97	0.92	1.00	0.96	1.00	0.90	0.93
Bus	0.98	1.04	1.03	1.05	1.07	0.98	0.97	0.96	1.00	1.11	0.96	0.88
2A	1.04	1.03	1.07	1.09	1.08	0.96	0.89	1.01	0.98	1.02	0.93	0.94
3A/MAV	0.99	1.02	1.07	1.08	1.07	0.99	0.90	0.96	0.95	1.03	0.97	0.99

Source: Steer analysis of Client historical TMS data

Table 5.3: Seasonality correction factors for KM164 Mahuvan

Vehicle Type	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.04	1.01	0.93	1.11	1.07	1.10	1.13	0.89	0.91	1.06	0.94	0.90
LCV	1.05	1.05	1.06	1.09	1.09	0.99	0.91	1.00	0.94	1.01	0.91	0.95
Bus	1.00	1.02	1.01	1.03	1.04	0.99	1.01	0.95	0.98	1.14	0.97	0.89
2A	1.03	1.04	1.06	1.09	1.08	0.97	0.89	1.01	0.98	1.02	0.93	0.95
3A/MAV	1.00	1.00	1.04	1.09	1.09	1.02	0.94	0.98	0.94	1.03	0.94	0.96

Source: Steer analysis of Client historical TMS data

Adopted base estimates

5.12 Based on the above methodology and inputs, the adopted FY26 base for the three toll plazas on the Asset are presented in Table 5.4 through Table 5.6 below:

Table 5.4: Adopted base estimates: KM46 Gadpuri

Category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	34,852	34,981	36,918	5.9%
LCV	1,636	1,641	1,615	(1.3%)
Bus	1,074	1,149	1,194	11.2%
2A	1,740	1,629	1,665	(4.3%)
3A/MAV	2,335	2,213	2,261	(3.2%)

Category	FY25	FY26YTD	FY26A	FY26A vs FY25
OSV	1	1	1	-
Total	**41,638**	**41,614**	**43,654**	**4.8%**
PCU[1]	**53,702**	**53,316**	**55,619**	**3.6%**

Source: Steer analysis. FY26YTD includes 6 months of FY26 (Apr-Sept '25); FY26YTD vs. FY25 growth above reflects growth over the same assessment period in FY25 i.e., Apr-Sept '25 vs. Apr-Sept '24; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

Table 5.5: Adopted base estimates: KM94 Karman

Vehicle Type	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	22,117	22,576	23,458	6.1%
LCV	1,476	1,522	1,605	8.8%
Bus	894	904	926	3.7%
2A	3,634	3,761	3,923	8.0%
3A/MAV	5,790	5,447	5,778	(0.2%)
OSV	3	3	3	-
Total	**33,914**	**34,214**	**35,694**	**5.3%**
PCU[1]	**57,433**	**57,220**	**59,895**	**4.3%**

Source: Steer analysis. FY26YTD includes 6 months of FY26 (Apr-Sept '25), FY26A is adopted base for FY26; FY26YTD vs. FY25 growth above reflects growth over the same assessment period in FY25 i.e., Apr-Sept '25 vs. Apr-Sept '24; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

Table 5.6: Adopted base estimates: KM164 Mahuvan

Vehicle Type	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	15,281	15,704	16,324	6.8%
LCV	1,485	1,514	1,595	7.5%
Bus	1,032	1,050	1,065	3.2%
2A	3,807	3,910	4,074	7.0%
3A/MAV	6,483	6,156	6,512	0.4%
OSV	3	3	3	-
Total	**28,091**	**28,337**	**29,573**	**5.3%**
PCU[1]	**54,001**	**53,722**	**56,207**	**4.1%**

Source: Steer analysis. FY26YTD includes 6 months of FY26 (Apr-Sept '25);; FY26YTD vs. FY25 growth above reflects growth over the same assessment period in FY25 i.e., Apr-Sept '25 vs. Apr-Sept '24; 1 PCU totals above consider PCU factor of ~3.60 for 3A/MAV combined traffic.

5.13 Except for 3A/MAV, all other vehicle categories have exhibited strong growth as of FY26YTD. 3A/MAV volumes across the NH44 corridor continue to be impacted by the access provided by the DME (primarily) in addition to other network changes that have and continue to divert traffic away from the Asset -most significantly at km46 (Gadpuri). Our base estimates for FY26 reflect the assumption that traffic performance for the remainder of the year (Oct '25 – Mar '26) will broadly continue the trend observed through

H1FY26 i.e., Apr-Sept '25. At a PCU level, KM46 is estimated to grow at 3.5%, while KM94 and KM164 are estimated to grow at 4.2% and 4.0% (respectively) over FY25.

5.14 The lower growth at KM46 Gadpuri stems from the shift of short-distance traffic (between Faridabad/Delhi and Rohtak/Punjab) to the DME which earlier used to appear at KM46. The Faridabad bypass connecting to DME and KMP has continued to impact commercial traffic growth on the Asset with both 2A and 3A/MAV volumes observing declines on KM46. Given the more long-distance nature of commercial volumes on KM94 and KM164, 2A trucks on both the plazas recorded strong growth as of FY26YTD. 3A/MAV volumes however showed some decline across both the plazas. Our FY26A Base AADT estimates incorporate these differences in growth trends across the three plazas.

5.15 Passenger traffic (CJV/LCV/Buses) is projected to grow at ~6.1% from FY25 to FY26 at an Asset level which can be attributed to growth observed in urban clusters such as Delhi NCR, Agra, Mathura, and Faridabad. These regions are expected to increase in urban density and experience sustained economic growth going forward, with travel demand related to employment, education and medical purposes expected to positively influence traffic growth on the Asset.

5.16 A common trend observed across the Asset is the flatlining of 3A/MAV growth in FY26A:

- **Preference shift from 3As to MAVs**: As discussed in detail in Section 3.12, the 3A performance over the last three years has been muted. While this Asset does not report 3A trucks separately, evidence from other Assets in the region (based on Steer studies) suggest that 3As have either declined or shown little y-o-y growth since FY22.
- **Shift of medium distance movements to Delhi Mumbai Expressway**: While the full impact of the DME has not yet materialised on KM164 and KM94, a share of short/medium distance movement till Jaipur, Indore have seen a diversion towards the expressway.
- **Shift of Kanpur bound movement to Ghaziabad/Palwal – Aligarh – Kanpur**: Recent upgradation of the Palwal-Tappal and the Ghazibad-Aligarh sections have improved the overall LoS of the alternate route for traffic bound to/originating in Kanpur. This share of traffic earlier used to appear on the Asset but has now started to prefer the alternate route.

Estimation of background elasticities

5.17 Traffic growth elasticities measure the relationship between traffic growth on the Asset and growth in the underlying macroeconomic and regional economic drivers that influence traffic growth on the Asset. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide forecasts of background traffic growth rates.

5.18 The Asset observes CJVs making shorter trips across all the three toll plazas, whereas the commercial traffic trends vis a vis the trip lengths differ from plaza to plaza. These differences can be attributed to the changing proximity of each of the toll plazas to urban centres in the region. These observations have been validated by the results of the OD analysis as well, which show a greater percentage of I-I trips for passenger vehicles, and a growing share of E-E trips for commercial vehicles as we move from KM46 (nearest to Delhi NCR) down to KM164 (nearest to Agra).

5.19 As a result, growth drivers for each vehicle category were selected based on these traffic profiles and trip patterns observed across all three toll plazas (from the OD survey

analysis of the two toll plazas from February 2025 and from prior OD surveys conducted on KM94 in prior studies). Table 5.7 below presents the growth drivers identified to model the forecast background traffic growth rates for each vehicle category at all three plazas.

Table 5.7: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP Western Uttar Pradesh	GSDP Delhi
Car		25% - KM46 Gadpuri 50% - KM74 Karman and KM164 Mahuvan	75% - KM46 Gadpuri 50% - KM74 Karman and KM164 Mahuvan
LCV		50%	50%
Bus		50%	50%
2A	100%		
3A	100%		
MAV	100%		

Source: Steer analysis of Client data

5.20 The recent historical period of tolling is chequered with variations in traffic growth between years for certain vehicle types. As discussed in detail in Chapter 2 and 3, the Asset has seen several network and regulatory related impacts affecting traffic growth over the years, such as:

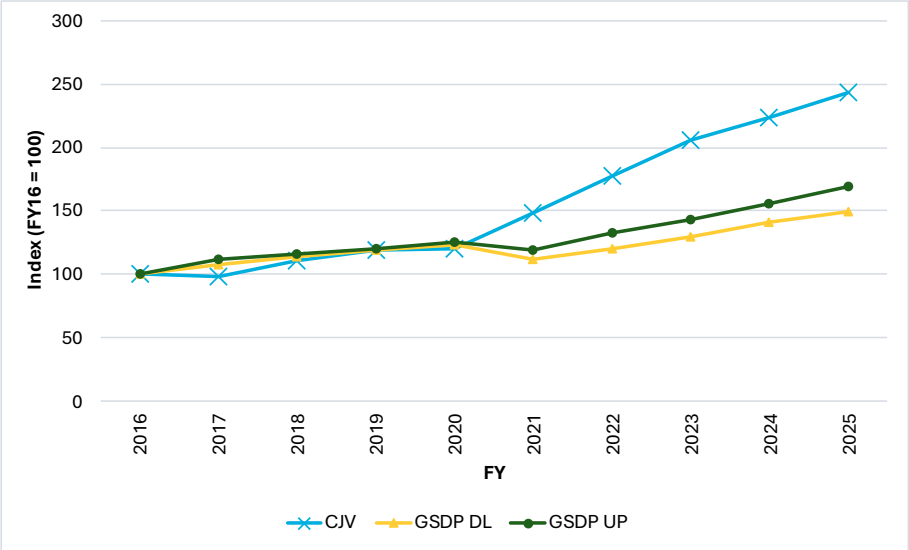
- The splitting of the KM74 toll plaza in FY23 resulted in a change in traffic profiles observed at the two new plazas (relative to the prior plaza). Traffic profiles and trip patterns observed at KM164 have remained more stable since it was not affected by the splitting KM74 in FY23.
- Due to the partial commissioning of Delhi-Mumbai Expressway (DME), we have seen further variations in traffic as different sections of it have gotten operational.

5.21 In our regression analysis for KM164, we have used combined traffic for specific toll/vehicle categories as data for historical years were available only in combined form for those categories (e.g., 3A/MAV), or to estimate more stable models as mandatory FASTag implementation since FY22 resulted in large variations in certain vehicle categories (traffic volumes were redistributed into different vehicle types e.g. Bus/2A).

CJV

5.22 We see from the OD data that the CJVs primarily cater to regional movements between NCR, Faridabad, Mathura/Vrindavan, Agra and other towns lying on the Asset. Apart from the local and IAOI influence seen from towns and cities in Uttar Pradesh, we also observed a considerable influence from Central NCR and Faridabad. We have therefore taken a 50:50 combined GSDP growth of Western UP and Delhi to be the growth driver to model the growth of CJV traffic. Historically, the CJV traffic at Mahuvan toll plaza observed a healthy CAGR of 10% per year between FY16 and FY25, while the GSDP of Delhi and Uttar Pradesh grew by 5% and 6% (respectively) over the same period. Figure 5-2 below shows the relationship between indexed values of CJV traffic at KM164 (Mahuvan) and Western UP/Delhi GSDP.

Figure 5-2: Relationship between CJV traffic and Uttar Pradesh/Delhi GSDP (KM164 Mahuvan)



Source: Steer analysis of Client TMS data and publicly available GSDP data

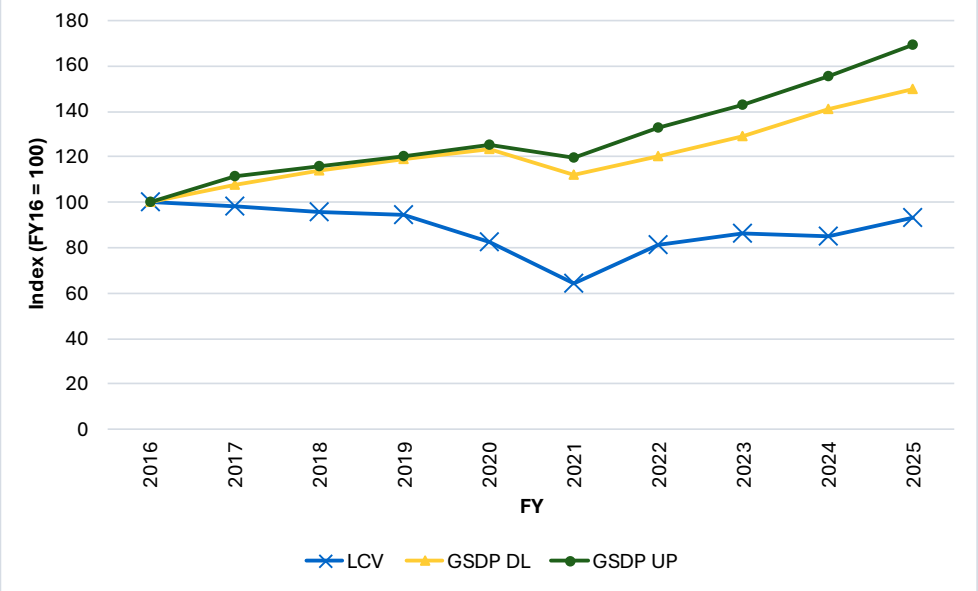
5.23 Considering the robust growth in CJV traffic observed over the operational historical period with trips largely seen between urban areas in and around the Asset, we have assumed a forecast background elasticity of 1.20 at KM94 (Karman) and KM164 (Mahuvan), with respect to the GSDPs of Delhi and Western Uttar Pradesh. This elasticity is tapered down to 1.10 by FY35 at both KM94 and KM164. At KM46 (Gadpuri), we have assigned an elasticity of 1.10 which dampens to 1.0 by FY35. This is in line with benchmarks we have observed at other toll roads across the country, which have a considerable concentration of inter-urban areas along their alignment.

LCV, Bus and 2A

LCV

5.24 As noted in the OD analysis above, LCVs have more regional movements within the state - UP and Delhi in the case of the Asset- than heavier vehicles like 3As and MAVs. As a result, we used Western UP/Delhi GSDP growth as the growth driver to predict LCV traffic growth going forward. However, after FY20, the axle load regulations switched in favour of 2A to carry higher tonnage which has influenced the LCV volumes observed on the Asset. As a result, we see a downward trend in LCV relative to GSDP. Figure 5-3 below depicts the link between indexed values of LCV traffic observed at KM164 (Mahuvan) and Western UP/Delhi GSDP.

Figure 5-3: Relationship between LCV traffic and Uttar Pradesh/Delhi GSDP (KM164 Mahuvan)



Source: Steer analysis of Client TMS data and publicly available GSDP data

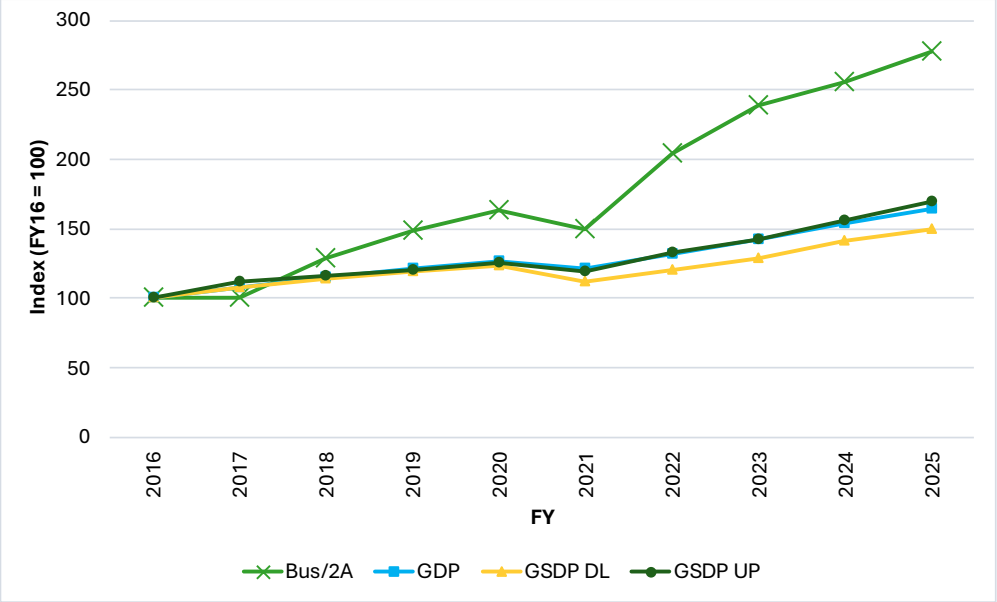
5.25 Based on the above observations and our experience across other toll roads in the country, we conclude that LCV will continue to grow at a modest elasticity of 0.30 to Western UP/Delhi GSDP growth. This is consistent across all three toll plazas on the Asset.

Bus & 2A

5.26 Bus growth tends to be largely supply-driven in many parts of the country, with new buses being bought and deployed by the government at different intervals of time. Based on our experience across the country, buses on inter-urban corridors show moderate elasticities of 0.4 to 0.6 with respect to the regional/state GSDP in which the asset is located.

5.27 Bus/2A category at KM164 (Mahuvan) has observed steady growth from FY18 onwards. The combined Bus/2A volumes grew at a CAGR of 12% between FY18 and FY25. Considering the period post-COVID, Bus+2A volumes have grown at a CAGR of 8% per year between FY23 and FY25, at KM164. However, based on historical data as well as benchmark assets with similar characteristics as DATL, this growth is driven largely off the growth of 2As, and Buses have witnessed a relatively muted growth profile over this period. Thus, we have assumed an elasticity of 0.50 for Buses (with respect to Western UP/Delhi GSDP), and a more positive elasticity of 0.90 for 2As across all toll plazas on the Asset.

Figure 5-4: Relationship between Bus/2A traffic with GSDP Delhi, GSDP UP and GDP (KM164 Mahuvan)



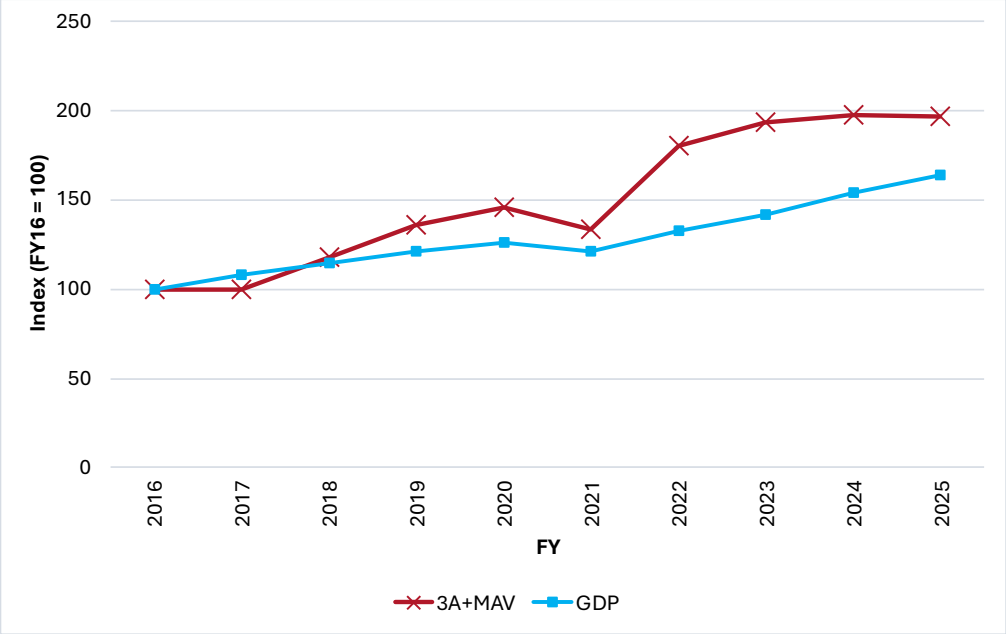
Source: Steer analysis of Client TMS data and publicly available GSDP data

3A/MAV Trucks

5.28 Compared to lighter trucks like LCVs and 2As, 3As and MAVs have more national or long-distance movements covering several states. Given that manufacturing-related commodities tend to take prominence in their commodity distribution, growth in 3A and MAV traffic is dependent on industry demand-supply ecosystems spread across the country. Thus, we have taken GDP as the growth driver to model the traffic growth in 3A and MAVs on the Asset. Figure 5-5 below shows the relationship between indexed values of 3A+MAV traffic at KM164 (Mahuvan) and national GDP over the period FY16-25.

5.29 Historically, 3A+MAV combined traffic has observed robust growth from FY18 onwards. From FY18 to FY25, the combined traffic grew at a 8% CAGR. This growth has been observed due to network-related improvements and continued economic growth in the region within the vicinity of the Asset e.g., Delhi NCR. Over the same period, national GDP grew at a CAGR of 5% per year while UP GSDP grew at a CAGR of 6% per year. Thus 3A/MAV growth at KM164 appears to have shown stronger growth relative to the growth observed in both the state GSDP and India GDP, highlighting the importance of this corridor in facilitating long-distance commercial movements across the country.

Figure 5-5: Relationship between 3A+MAV combined traffic and India's GDP (KM164 Mahuvan)



Source: Steer analysis of Client TMS data and publicly available GDP

5.30 Based on our results from the regression analysis of KM164 (Mahuvan), our observations from the OD analyses presented in Chapter 3, particularly the analysis of trip lengths and commodity distributions, as well as the historical growth observed on the Asset relative to other similar corridors, we have assumed an elasticity of 0.30 (to national GDP) for 3As across all three plazas on the Asset. For MAVs, we have assumed an elasticity of 1.00 at KM46 (Gadpuri), and 1.10 at KM94 (Karman) and KM164 (Mahuvan).

Forecasts for background elasticities

5.31 Table 5.8 below presents a summary of the results of the regression analysis carried out on the historical toll plaza data for KM164 (Mahuvan) and the various macroeconomic (GDP/GDSP) drivers assumed to influence traffic growth on the Asset, along with the assumed forecast elasticities we used to forecast background traffic growth on the Asset.

5.32 The forecast elasticities are projected to remain constant over the majority of the concession period, with gradual tapering down over the long-term for specific plaza-vehicle category combinations. This assumption is grounded in historical trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away.

5.33 The 6-lane configuration on NH corridors is designed to handle up to 120,000 PCUs. Once the Asset exceeds its 6-lane designed capacity, we anticipate that the year-over-year growth of the Asset will be constrained due to growing congestion and declining Level of Service (LoS).

From our projections, the Asset is expected to reach its design capacity of 120,000 daily PCUs in FY44 (average across all three plazas). As the traffic levels on the Asset get closer to this level, the increasing congestion and deterioration in the level of service (LoS) results in a slowdown of growth as the prospective users look for alternative routes and a proportion of them shift towards the alternatives. To factor in this kind of shift, we have

dampened the elasticities for CJVs and 2As in our forecast model starting from FY35. The same is presented in Table 5.8 below.

Table 5.8: Derived elasticities from regression analysis and assumed forecast elasticities

Vehicle Type	Growth Driver	History		Forecast	
		Derived elasticity	Period considered	Assumed forecast elasticity	Evolution of elasticity
KM164 Mahuvan					
Car	GSDP Western Uttar Pradesh/Delhi	1.27	FY16-FY24	1.20	Decreasing to 1.1 by FY35
LCV	GSDP Western Uttar Pradesh/Delhi	N/A	FY16-FY24	0.30	No change
(Bus + 2A)*	GSDP Western Uttar Pradesh/Delhi	2.13	FY16-FY24	0.50	No Change
2A	GDP			1.00	Decreasing to 0.90 by FY35
(3A + MAV)*	GDP	1.13	FY16-FY25	0.30	No change
				1.10	No Change
KM46 Gadpuri					
Car	GSDP Western Uttar Pradesh/Delhi	-	-	1.10	Decreasing to 1.0 by FY35
LCV*	GSDP Western Uttar Pradesh/Delhi	-	-	0.30	No change
Bus	GSDP Western Uttar Pradesh/Delhi	-	-	0.50	No Change
2A*	GDP	-	-	0.80	No change
3A	GDP	-	-	0.30	No change
MAV	GDP	-	-	1.0	No Change
KM94 Karman					
Car	GSDP Western Uttar Pradesh/Delhi	-	-	1.20	Decreasing to 1.1 by FY35
LCV*	GSDP Western Uttar Pradesh/Delhi	-	-	0.30	No change
Bus	GSDP Western Uttar Pradesh/Delhi	-	-	0.50	No Change
2A*	GDP	-	-	1.00	Decreasing to 0.90 by FY35

Vehicle Type	Growth Driver	History		Forecast	
		Derived elasticity	Period considered	Assumed forecast elasticity	Evolution of elasticity
3A	GDP	-	-	0.30	No change
MAV	GDP	-	-	1.10	No change

Source: Steer analysis; *regressions were run on Bus+2A and 3A+MAV aggregated volumes and elasticities estimated reflect the relationship of growth in the aggregated volumes w.r.t the underlying driver. However, our forecast models assume separate elasticities for each of the vehicle categories w.r.t to the underlying driver variables; Bus + 2A model was run on Western UP/Delhi GSDP variable rather than India GDP, but forecasts assume that 2A traffic is driven by GDP growth

6 Forecast: Network overlays and forecasts

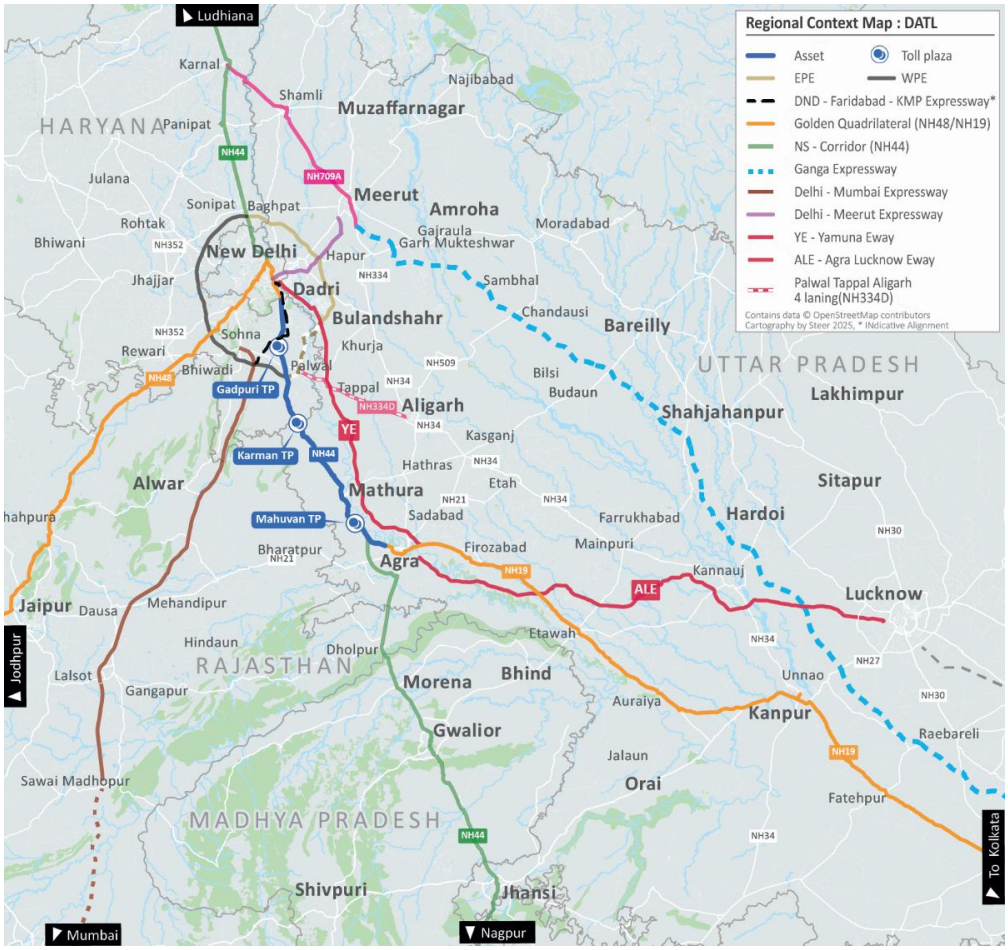
Introduction

6.1 Following the discussion on estimated and assumed forecast background growth rates in the previous chapter, this chapter first deals with the forecasting assumptions around base year AADT and potential impacts on traffic growth on the Asset. Later, it also presents the assumed toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to estimate the forecasted revenue based on the forecasted traffic. In the final section, the chapter summarises the traffic growth rates for the forecast years.

Analysis of potential impacts

6.2 Figure 6-1 below shows a map of the regional transportation road network surrounding the Asset, along with various key feeder and competing routes in the region.

Figure 6-1: Alternate routes and Asset route shown against the regional network context



Source: Steer analysis and cartography

Alternate routes and improvements

6.3 Table 6.1 below presents the upcoming network/other developments, corresponding alternate/feeder routes, year of completion and indicative direction of impact on the Asset. To assess these types of future impacts on the Asset, whether they be positive or negative, we have studied developments (alternate roads, feeder roads and regulatory changes) that are relevant to the Asset within the context of its surrounding road network.

6.4 Apart from the Delhi-Mumbai Expressway becoming fully operational by FY27[33], other major network developments that could potentially have an impact on future traffic growth on the Asset include four-laning of Aligarh-Kannauj and Palwal-Tappal-Aligarh Road sections, the Ganga Expressway, as well as the completion of the Yamuna Expressway (YE) – Eastern Peripheral Expressway (EPE) connector.

6.5 The commissioning of the proposed Ganga Expressway will directly compete with a considerably sized long-distance traffic plying on the Asset. Also, the Yamuna Expressway connection to EPE is expected to provide a positive impact on two plazas of the Asset (KM94 and KM164) as it will provide long-distance traffic travelling to and from regions farther north of Delhi improved access to the Asset as they can bypass Delhi NCR before joining (or after exiting) the Asset.

Table 6.1: List of network/other developments

S. No.	Development	Route affected	Year of impact	Impact (+/-)
1.	Palwal-Tappal-Aligarh 4-laning	Asset route: East-west NH 2 corridor connecting Delhi and Lucknow via Agra Alternate route: Palwal region connected to Aligarh-Lucknow via Palwal-Tappal-Aligarh Road section	FY28 onwards: 100%	-ve
2.	Delhi-Mumbai Expressway	Asset route: North-south NH19 – NH52 corridor Alternate route: Market 1: Delhi-Ratlam-Indore Market 2: Delhi-Mumbai via Delhi-Mumbai Expressway	FY26: 25% FY27 onwards: 100%	-ve
3.	Ganga Expressway	Asset route: Delhi-Agra-Lucknow through NH2/NH19 Alternate route: East-west expressway between Meerut and Prayagraj	FY26: 25% FY28 onwards: 100%	-ve
4.	Yamuna Expway- EPE Connector – Northern Ring	Traffic between Greater Noida industrial area and Agra/beyond currently using the Yamuna expressway	FY28: 20% FY30 onwards: 100%	+ve

Source: Steer analysis

[33] **Delhi-Mumbai Expressway Update: Surat-Maharashtra stretch delayed,** (March 2025)

Impact assessment for network/other developments

6.6 The section below includes a narrative for each of the network improvements or developments, as listed in Table 6.1 above, that are expected to have a material impact on future traffic growth on the Asset. Please note that all traffic volumes for impacts were estimated as impact rates applied on FY26 base AADT.

Delhi-Mumbai Expressway

6.7 The Delhi-Mumbai Expressway is a 1290-KM long greenfield expressway being developed to provide improved level of service to long-distance traffic between North and Western India compared to the existing national highways that are already operating at high-capacity utilisation. Competing with the traditional north-south NH corridors - NH 2 corridor containing the Asset and the NH 8 corridor part of the Golden Quadrilateral, the upcoming Delhi-Mumbai Expressway could provide faster and unhindered connectivity, as illustrated in Figure 6-1 above.

6.8 As discussed earlier, we have considered two types of north-south movements for this impact, as these have distinct cost comparisons between the Asset corridor and the upcoming expressway:

- **Indore region**: The route through the expressway via Ratlam/Garoth-Ujjain provides an alternate route for long-distance traffic to reach Indore.
- **Mumbai region and South India**: This traffic currently use either NH 8 or NH 2 to ply between Mumbai region, Kerela, and western parts of Karnataka in the south, and Delhi and regions in north. While Central and Eastern parts of Karnataka, Andhra Pradesh traffic already is part of the NH 44 route and therefore out of scope, we have not included Tamil Nadu in the in-scope traffic as we have observed recent shifts from other corridors to the NH 44 route. Overall, the route through expressway provides cost savings through unhindered, seamless, and quicker travel with potentially competitive toll costs.

6.9 A few sections of the greenfield expressway have been made operational with Sohna-Dausa-Lalsot section (Feb'23), Madhya Pradesh section (Sep'23), Vadodara-Bharuch section (Feb'24), Lalsot-Sawai-Madhopur section (Feb'24) and the Kota-Bundi Section (Dec'24) already being operationalised. The project is currently suffering from construction delays, mainly on the Gujarat stretch. The timeline for completion of the expressway has been revised several times and is now expected to be completed by end of FY26 as per reports[33]. The plaza closer to Delhi-NCR (KM46 Gadpuri) has already started observing the negative variance on account of the DME, as discussed in the earlier sections of the report. However, since KM94 and KM164 observe a higher share of long-distance traffic, the impact of the DME has been factored into our forecasts from FY26Q4.

6.10 We have estimated impacts as shown in tables below, using a GJC-based logit model. We have staged the impact over two years to account for a phased completion of various sections and gradual unfolding of the impacts.

Table 6.2: Impact of the Delhi-Mumbai Expressway: KM94 Karman

Vehicle type	FY26	FY27 onwards
Staging	***25%***	***100%***
CJV	(0.1%)	(0.4%)

Vehicle type	FY26	FY27 onwards
LCV	(0.9%)	(3.5%)
2A	(1.2%)	(4.9%)
3A	(1.8%)	(7.2%)
MAV	(2.1%)	(8.3%)

Source: Steer analysis

Table 6.3: Impact of the Delhi-Mumbai Expressway: KM164 Mahuvan

Vehicle type	FY26	FY27 onwards
Staging	***25%***	***100%***
CJV	(0.1%)	(0.6%)
LCV	(0.9%)	(3.5%)
2A	(1.2%)	(4.7%)
3A	(1.9%)	(7.5%)
MAV	(1.7%)	(6.9%)

Source: Steer analysis

Palwal-Tappal-Aligarh

6.11 The Palwal-Tappal-Aligarh Road is a two-laned section that is a key connection between the region south of Central NCR and Aligarh-Lucknow corridor. The road is currently under expansion to 4-lane tolled road[34]. For long-distance traffic between Central NCR, west and northwest, and Lucknow and east, this upgrade would improve the level of service of the alternate corridor connecting the regions west and northwest of Central NCR with the region east of Lucknow.

6.12 There are two bypasses, Khair and Jattari, that are not progressing as per the schedule and are experiencing delays. Considering all the information, it is anticipated that the construction will take an additional year, resulting in an assumed impact from FY28[34].

6.13 Table 6.4 and Table 6.5 below presents the estimated impact due to the upgrade at KM94 (Karman) and KM164 (Mahuvan), derived using a GJC-based logit model.

Table 6.4: Impact due to upgrade of Palwal-Tappal-Aligarh: KM94 Karman

Vehicle type	FY28 onwards
Staging	***100%***
CJV	(0.7%)
LCV	(1.7%)
2A	(2.7%)
3A	(1.5%)
MAV	(2.3%)

[34] **Aligarh-Palwal Highway: UP Govt To Acquire 160 Hectares Of Land Across 21 Villages For Expansion;** (December 2024)

Source: Steer analysis

Table 6.5: Impact due to upgrade of Palwal-Tappal-Aligarh: KM164 Mahuvan

Vehicle type	FY28 onwards
Staging	***100%***
CJV	(1.1%)
LCV	(1.7%)
2A	(2.6%)
3A	(1.6%)
MAV	(1.9%)

Source: Steer analysis

Ganga Expressway

6.14 The Ganga Expressway is a 596-KM long greenfield expressway being developed to provide improved level of service to long-distance traffic between western and eastern India. Competing with the traditional east-west NH corridors - NH 2 corridor containing the Asset and the Delhi-Agra-Lucknow and Purvanchal Expressways, the upcoming Ganga Expressway could provide faster and unhindered connectivity for long-distance east-west movement across the country, as illustrated in Figure 6-1 above.

6.15 We have considered two types of east-west movements for this impact, as these have distinct cost comparisons between the Asset corridor and the upcoming expressway:

- **Delhi region**: The route through the expressway provides a competitive route for long-distance traffic from Delhi and west to reach Lucknow and east. While toll costs are favourable for the Asset route, distance and time costs are lower on the expressway.
- **Northwest of Delhi**: The trips which are originating from Northwest of Delhi, including Karnal, Punjab, etc. and destined to Lucknow could also potentially prefer this route.

6.16 Assuming successful implementation of all the sections of the expressway, we have estimated impacts as shown Table 6.6 through Table 6.8 below, using a GJC-based logit model. We have staged the impact over three years to account for a phased completion of various sections and gradual unfolding of the impacts. The staging is to account for the gradual network shift expected to start in FY26[35]and materialise into the full impact as the network stabilises with completion of all sections of the Ganga Expressway by FY28.

[35] 28 Flyovers, 126 Bridges, 600km In 6 Hours: Ganga Expressway Set To Open Soon (April 2025)

Table 6.6: Impact due to completion of Ganga Expressway: KM46 Gadpuri

Vehicle type	FY26	FY27	FY28 onwards
Staging	***25%***	***80%***	***100%***
CJV	(0.6%)	(1.9%)	(2.4%)
LCV	(0.2%)	(0.6%)	(0.7%)
2A	(0.5%)	(1.5%)	(1.9%)
3A	(0.8%)	(2.6%)	(3.2%)
MAV	(0.5%)	(1.6%)	(2.0%)

Source: Steer analysis

Table 6.7: Impact due to completion of Ganga Expressway: KM94 Karman

Vehicle type	FY26	FY27	FY28 onwards
Staging	***25%***	***80%***	***100%***
CJV	(0.3%)	(0.9%)	(1.2%)
LCV	(0.5%)	(1.6%)	(2.1%)
2A	(0.9%)	(3.0%)	(3.8%)
3A	(1.2%)	(3.8%)	(4.7%)
MAV	(0.9%)	(3.0%)	(3.8%)

Source: Steer analysis

Table 6.8: Impact due to completion of Ganga Expressway: KM164 Mahuvan

Vehicle type	FY26	FY27	FY28 onwards
Staging	***25%***	***80%***	***100%***
CJV	(0.4%)	(1.4%)	(1.7%)
LCV	(0.5%)	(1.6%)	(2.1%)
2A	(0.9%)	(2.9%)	(3.6%)
3A	(1.2%)	(3.9%)	(4.9%)
MAV	(0.8%)	(2.5%)	(3.1%)

Source: Steer analysis

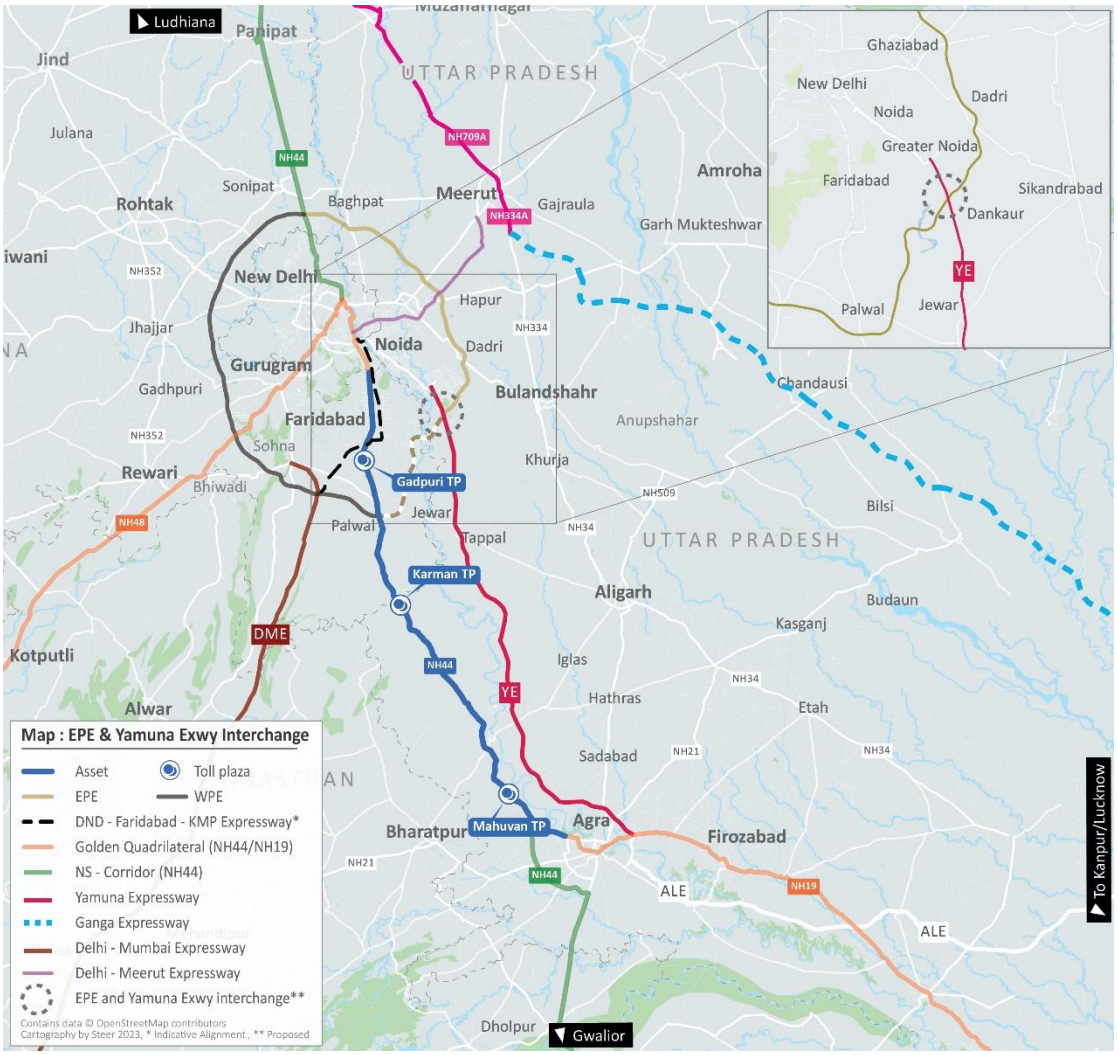
Yamuna Expressway- EPE connector – Northern ring

6.17 The existing alignment of the Eastern Peripheral Expressway runs from Sonipat to Palwal and does not intersect with the Yamuna Expressway. However, recently it has been agreed between UPEIDA and NHAI that the construction of a cloverleaf loop connecting EPE to Yamuna Expressway near Jewar will be commenced[36]. The connection will result in improving connectivity between parts of Noida, Greater Noida, Delhi NCR and Agra. As a result, the traffic which currently originates in the industrial corridor near Greater Noida

[36] **Delhi: Yamuna Expressway To Finally Get Direct Link With Eastern Peripheral Expressway - News18** (April 2025)

and is destined to Agra/beyond will have an alternative via the EPE-Asset route who would have otherwise been using the Yamuna expressway currently.

Figure 6-2: Yamuna - EPE connector – Northern ring



Source: Steer analysis and cartography

6.18 As per the latest data available for Yamuna Expressway approximately 900-1300 trucks currently use the Yamuna Expressway during peak hours[37]. Since the Yamuna Expressway operates at toll rates of more than 14 Rs/Km (compared to the 10 Rs/km on the Asset for Multi Axle vehicles [38], once the connector between Yamuna Expressway and EPE becomes operational this volume of traffic will be able to access Agra via the Asset which will be characterized by toll saving, and a marginal time saving. Therefore, it is expected that a small proportion of the trucks will divert towards the Asset from Yamuna expressway. The positive impact of this development is expected to appear on the Asset starting FY28 in our forecasts. The estimated impact of this development on KM94 and KM164 toll plazas are presented below.

[37] Traffic Density Impact Assessment

[38] Toll rates hiked on Yamuna Expressway from October 1 - Hindustan Times (September 2024)

Table 6.9: Impact due to Yamuna-EPE connector-Northern ring: KM94 Karman

Vehicle type	FY28	FY29	FY30 onwards
Staging	***20%***	***80%***	***100%***
2A	0.5%	2.0%	2.5%
3A	0.5%	1.8%	2.3%
MAV	0.6%	2.2%	2.8%

Source: Steer analysis

Table 6.10: Impact due to Yamuna-EPE connector-Northern ring: KM164 Mahuvan

Vehicle type	FY28	FY29	FY30 Onwards
Staging	***20%***	***80%***	***100%***
2A	0.5%	2.0%	2.5%
3A	0.4%	1.8%	2.2%
MAV	0.5%	1.9%	2.4%

Source: Steer analysis

Capacity Constraints

6.19 As per the concession agreement, the Asset's design capacity is set at 120,000 PCU's (an average of all three plazas). As congestion increases on the road, the level of service offered by the Asset reduces resulting in traffic either diverting to other alternates or a suppression in local trips takes place primarily in passenger vehicles due to the perceived congestion profile of the Asset.

6.20 Our forecasts suggest that the Asset will start reaching design capacity FY41 onwards, and in this scenario, we believe that will reduce the frequency of short to medium-distance passenger trips on the Asset. We have incorporated this impact into our projections by introducing a growth dampener from FY35 onwards, that results in a slowing year-over-year growth rate of passenger vehicles post FY35.

Summary of impact assessments

6.21 Table 6.11 below summarises the potential impacts on the Asset due to the several ongoing and foreseen improvements on the alternate routes, the Asset route, and other regulatory developments.

Table 6.11: Summary of impact assessments

Impact	Year of impact	Probability/ scale of impact	In-scope traffic	Direction of impact (+/-)
Delhi-Mumbai Expressway Diversion impact from competing under-construction north-south expressway connecting Delhi to Mumbai	FY26 onwards	High	Traffic plying between Indore region and Delhi/north	**-ve**
			Traffic plying between Mumbai region and South India at one end, and Delhi/north at the other	**-ve**

Impact	Year of impact	Probability/ scale of impact	In-scope traffic	Direction of impact (+/-)
Palwal-Tappal-Aligarh Diversion impact due to improved feeder route to alternate corridor	FY28 onwards	High	Trips between Delhi/west/northwest at one end and Lucknow and east at the other	**-ve**
Ganga Expressway Diversion impact from upcoming and competing east-west expressway connecting Delhi to Mumbai	FY26 onwards	Medium	Trips between northwest of Delhi, and Lucknow and east	**-ve**
			Trips between Delhi and west, and Lucknow and east	**-ve**
Yamuna-EPE connector – Northern Ring	FY28 onwards			**+ve**
Capacity induced constraints	FY35 onwards	High	Passenger traffic (CJVs) at the breach of capacity	**-ve**

Source: Steer analysis of OD data, Client TMS data and publicly available information

Revenue forecasting assumptions

6.22 To forecast the revenues for a forecast year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate. While toll segmentation provides the breakup of trips paying each ticket type, trip factors provide the conversion factor to convert from traffic (trips) to tickets sold. This section discusses assumptions related to toll segmentation, trip factors and toll rates for the forecast period.

Toll evolution

6.23 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation (as of December 2024). These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.24 We have used actual toll rates from the FY25 toll notifications and FY26 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in Table 6.12 below. These forecasts provided by the Client. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client.

Table 6.12: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.6%
FY27	2.4%
FY28	5.0%

Financial year	WPI growth (%)
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: FY27 onwards WPI as per Client input.

6.25 Table 6.13 below provides an overview of toll estimation method as per the FY25 & FY26 toll notifications, and the concession agreement.

Table 6.13: Toll estimation overview

Toll fee escalation	Revision date	Nearest rounding
Linked to 100% WPI increase	April	5

Source: Concession agreement and toll notification

Toll segmentation and trip factors

6.26 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles[39].

6.27 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

%CJV using Annual pass	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
KM 46 (Gadpuri)	8.4%	15.7%	18.2%
KM 94 (Karman)	12.0%	20.0%	22.9%
KM 164 (Mahuvan)	17.7%	22.3%	24.9%

Source: Steer Analysis of Client data

6.28 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise. Under the above assumptions, the calculated shares of CJV Annual Pass transactions for FY26, FY27 and beyond are presented in Table 6.14 through Table 6.16 below. At this stage the proportion of annual pass is assumed to be around 26% across

[39] Finalization-Concessionaire-Annual-Pass-Facility-on-NHs-01092025.pdf

the plazas, however this proportion may vary given the nature of CJV users of the Asset being close to large urban centres.

6.29 For other vehicle categories we analysed the historical TMS data split by ticket categories to understand the latest trends in ticket segmentation across all three toll plazas. For the traffic and revenue forecast, we have assumed FY26YTD (Apr-Sept '25) segmentation to apply for all non-CJV vehicle categories.

Table 6.14: Forecast toll segmentation, FY26 onwards: KM46 Gadpuri

Ticket Type	CJV		Mini LCV	LCV	Bus	2A	3A/MAV	OSV
	FY26	FY27 onwards	FY26 onwards					
Single	13%	10%	16%	29%	6%	53%	68%	65%
Return	32%	24%	41%	63%	85%	46%	31%	35%
Monthly	0%	0%	0%	7%	8%	0%	0%	-
Local personal	30%	28%	31%	1%	0%	1%	0%	-
Exemption	11%	11%	11%	0%	0%	0%	0%	-
Violation	1%	1%	1%	-	-	-	-	-
Annual Pass	**13%**	**26%**	**-**	**-**	**-**	**-**	**-**	**-**

Source: Steer analysis of Client TMS data

Table 6.15: Forecast toll segmentation, FY26 onwards: KM94 Karman

Ticket Type	CJV		Mini LCV	LCV	Bus	2A	3A/MAV	OSV
	FY26	FY27 onwards	FY26 onwards					
Single	28%	23%	33%	61%	20%	86%	92%	80%
Return	45%	38%	54%	37%	80%	14%	8%	20%
Monthly	0%	0%	6%	1%	0%	-	0%	-
Local personal	6%	6%	7%	1%	0%	1%	0%	-
Exemption	8%	7%	0%	0%	0%	0%	0%	-
Violation	-	-	-	-	-	-	-	-
Annual Pass	**14%**	**26%**	**-**	**-**	**-**	**-**	**-**	**-**

Source: Steer analysis of Client TMS data

Table 6.16: Forecast toll segmentation, FY26 onwards: KM46 Mahuvan

Ticket Type	CJV		Mini LCV	LCV	Bus	2A	3A/MAV	OSV
	FY26	FY27 onwards	FY26 onwards					
Single	29%	23%	33%	63%	19%	83%	86%	93%
Return	45%	37%	53%	32%	80%	16%	14%	7%

Monthly	-	-	-	-	0%	-	0%	-
Local personal	7%	8%	8%	5%	0%	1%	0%	-
Exemption	6%	6%	6%	0%	1%	0%	0%	-
Violation	-	-	-	-	-	-	-	-
Annual Pass	**12%**	**26%**	-	-	-	-	-	

Source: Steer analysis of Client TMS data

6.30 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Table 6.17 below presents the Annual pass compensation computed for the toll plaza.

Table 6.17: Annual Pass Compensation for CJVs (in INR Crore)

Toll Plaza	FY26	FY28	FY30	FY35	FY40	FY44
KM 46	16.1	39.7	50.1	84.0	140.1	199.6
KM 94	8.7	20.9	26.5	47.4	80.8	120.1
KM 164	5.9	15.2	19.2	33.7	58.2	87.2

Source: Steer Analysis

Trip factors

6.31 As for trip factors, based on the implementation of FASTag rules followed by NHAI order restricting sale of discounted passes by cash, and our experience across studying other toll roads in the region as well as across the country, we have assumed trip factors of 1, 2 and 50 for Single, Return and Monthly categories, respectively. There are no major toll categories being charged, apart from the official list of toll categories in the toll notification. This assumes that further changes in toll categories, unless specific discounts are offered, are unlikely.

Traffic and Revenue forecasts

6.32 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the Asset over its remaining concession period i.e., FY26-44. Table 6.18 and Table 6.19 below present the AADT/PCU forecast growth rates and CAGRs for KM46 (Gadpuri). Table 6.22 and Table 6.23 below present AADT/PCU forecasts and associated growth rates for KM94 (Karman), and Table 6.26 and Table 6.27 present the same for KM164 (Mahuvan). In addition, Appendix B presents detailed forecasts of AADT and revenues for all three toll plazas on the Asset over the forecast period.

Table 6.18: Final traffic forecast: KM46 (Gadpuri)

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
CJV	33,542	35,533	43,148	58,716	76,895	91,919
Mini LCV	3,177	3,307	3,707	4,453	5,314	6,070
LCV	1,612	1,641	1,740	1,915	2,098	2,245
Bus	1,194	1,236	1,365	1,601	1,862	2,083

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
2A	1,657	1,724	1,986	2,509	3,152	3,754
3A	721	722	758	829	904	966
MAV	1,526	1,607	1,916	2,563	3,403	4,229
OSV	1	1	1	2	2	3
AADT	**43,430**	**45,771**	**54,621**	**72,587**	**93,630**	**1,11,270**
PCU	**55,346**	**58,133**	**68,688**	**90,083**	**1,15,361**	**1,36,991**

Source: Steer analysis

Table 6.19: Background traffic growth rates (%), KM46 (Gadpuri)

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
CJV	5.9%	6.7%	6.4%	5.5%	4.6%	5.8%
Mini LCV	4.1%	3.9%	3.7%	3.6%	3.4%	3.7%
LCV	1.7%	2.0%	1.9%	1.8%	1.7%	1.9%
Bus	3.6%	3.4%	3.2%	3.1%	2.8%	3.1%
2A	4.1%	4.8%	4.8%	4.7%	4.5%	4.6%
3A	0.1%	1.6%	1.8%	1.8%	1.7%	1.6%
MAV	5.3%	6.0%	6.0%	5.8%	5.6%	5.8%
OSV	6.5%	6.2%	6.0%	5.8%	5.6%	5.9%
AADT	**5.4%**	**6.1%**	**5.9%**	**5.2%**	**4.4%**	**5.4%**
PCU	**5.0%**	**5.7%**	**5.6%**	**5.1%**	**4.4%**	**5.2%**

Source: Steer analysis

Table 6.20: Final revenue forecast (INR crores): KM46 (Gadpuri) including AP Compensation for CJVs

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
CJV	79.2	89.9	126.1	212.5	352.0	502.8
Mini LCV	7.4	8.0	10.4	15.5	23.3	31.9
LCV	9.5	9.9	12.3	16.9	23.2	29.7
Bus	13.3	14.2	18.2	26.7	39.0	52.1
2A	21.2	22.8	30.5	48.1	75.8	107.8
3A	15.0	15.6	19.0	25.8	35.3	45.3
MAV	31.9	34.7	48.1	80.1	133.3	198.6
OSV	0.0	0.0	0.0	0.1	0.1	0.2
Total	**177.5**	**195.2**	**264.6**	**425.7**	**681.9**	**968.3**

Source: Steer analysis

Table 6.21: Revenue growth rates (%), KM46 (Gadpuri) including AP Compensation for CJVs

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
CJV	13.4%	11.9%	11.0%	10.6%	9.3%	10.8%
Mini LCV	9.0%	9.0%	8.3%	8.5%	8.1%	8.5%
LCV	4.9%	7.4%	6.6%	6.5%	6.4%	6.6%
Bus	7.0%	8.6%	7.9%	7.8%	7.5%	7.9%
2A	7.8%	10.1%	9.6%	9.5%	9.2%	9.5%

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
3A	3.4%	6.9%	6.4%	6.5%	6.4%	6.3%
MAV	8.7%	11.5%	10.7%	10.7%	10.5%	10.7%
OSV	10.0%	11.6%	10.8%	10.8%	10.4%	10.8%
Total	**10.0%**	**10.7%**	**10.0%**	**9.9%**	**9.2%**	**9.9%**

Source: Steer analysis

Table 6.22: Final traffic forecast: KM94 (Karman)

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
CJV	21,773	23,384	29,028	41,173	56,376	70,121
Mini LCV	1,602	1,670	1,881	2,275	2,726	3,119
LCV	1,583	1,555	1,615	1,777	1,947	2,084
Bus	926	959	1,060	1,242	1,445	1,617
2A	3,838	3,841	4,500	5,759	7,234	8,616
3A	2,141	2,003	2,111	2,308	2,517	2,690
MAV	3,463	3,391	4,121	5,670	7,740	9,823
OSV	3	4	4	6	8	10
AADT	**35,330**	**36,806**	**44,320**	**60,210**	**79,994**	**98,079**
PCUs	**58,936**	**60,006**	**71,185**	**94,461**	**1,23,487**	**1,50,508**

Source: Steer analysis

Table 6.23: Background traffic growth rates (%): KM94 (Karman)

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
CJV	7.4%	7.5%	7.2%	6.5%	5.6%	6.7%
Mini LCV	4.3%	4.0%	3.9%	3.7%	3.4%	3.8%
LCV	(1.8%)	1.3%	1.9%	1.8%	1.7%	1.5%
Bus	3.6%	3.4%	3.2%	3.1%	2.8%	3.1%
2A	0.1%	5.4%	5.1%	4.7%	4.5%	4.6%
3A	(6.5%)	1.8%	1.8%	1.8%	1.7%	1.3%
MAV	(2.1%)	6.7%	6.6%	6.4%	6.1%	6.0%
OSV	7.1%	6.8%	6.6%	6.4%	6.1%	6.5%
AADT	**4.2%**	**6.4%**	**6.3%**	**5.9%**	**5.2%**	**5.8%**
PCUs	**1.8%**	**5.9%**	**5.8%**	**5.5%**	**5.1%**	**5.3%**

Source: Steer analysis

Table 6.24: Final revenue forecast (INR crores): KM94 (Karman) including AP Compensation for CJVs

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
CJV	56.3	63.1	90.6	160.4	274.7	406.9
Mini LCV	6.4	7.0	9.1	13.6	20.5	27.9
LCV	8.1	8.2	9.9	13.5	18.7	23.8
Bus	8.7	9.4	12.0	17.6	25.6	34.2
2A	43.9	45.4	61.8	98.4	155.8	220.7
3A	39.2	37.7	46.2	63.3	86.5	110.3

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
MAV	63.4	63.9	90.2	155.6	265.9	402.9
OSV	0.1	0.1	0.1	0.2	0.3	0.5
Total	**226.1**	**234.7**	**320.0**	**522.8**	**848.0**	**1,227.3**

Source: Steer analysis

Table 6.25: Revenue growth rates (%): KM94 (Karman) including AP Compensation for CJVs

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
CJV	12.1%	12.8%	12.1%	11.4%	10.3%	11.6%
Mini LCV	8.4%	9.4%	8.4%	8.5%	8.0%	8.5%
LCV	1.1%	6.4%	6.5%	6.6%	6.3%	6.2%
Bus	7.6%	8.6%	7.9%	7.8%	7.5%	7.9%
2A	3.3%	10.9%	9.7%	9.6%	9.1%	9.4%
3A	(3.7%)	7.0%	6.5%	6.4%	6.3%	5.9%
MAV	0.8%	12.2%	11.5%	11.3%	10.9%	10.8%
OSV	10.6%	12.3%	11.4%	11.3%	11.0%	11.4%
Total	**3.8%**	**10.9%**	**10.3%**	**10.2%**	**9.7%**	**9.9%**

Source: Steer analysis

Table 6.26: Final traffic forecast: KM164 (Mahuvan)

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
CJV	14,617	15,625	19,298	27,372	37,479	46,617
Mini LCV	1,622	1,692	1,905	2,304	2,762	3,159
LCV	1,573	1,546	1,605	1,767	1,936	2,071
Bus	1,065	1,103	1,218	1,428	1,662	1,859
2A	3,989	4,003	4,694	6,007	7,546	8,987
3A	2,211	2,060	2,168	2,370	2,584	2,762
MAV	4,125	4,108	4,998	6,877	9,387	11,913
OSV	3	3	4	5	7	9
AADT	**29,206**	**30,141**	**35,891**	**48,131**	**63,363**	**77,378**
PCUs	**55,244**	**55,925**	**65,846**	**86,500**	**1,12,316**	**1,36,597**

Source: Steer analysis

Table 6.27: Background traffic growth rates (%): KM164 (Mahuvan)

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
CJV	6.9%	7.3%	7.2%	6.5%	5.6%	6.7%
Mini LCV	4.3%	4.0%	3.9%	3.7%	3.4%	3.8%
LCV	(1.7%)	1.3%	1.9%	1.8%	1.7%	1.5%
Bus	3.6%	3.4%	3.2%	3.1%	2.8%	3.1%
2A	0.4%	5.4%	5.1%	4.7%	4.5%	4.6%
3A	(6.8%)	1.7%	1.8%	1.8%	1.7%	1.2%
MAV	(0.4%)	6.8%	6.6%	6.4%	6.1%	6.1%
OSV	7.1%	6.8%	6.6%	6.4%	6.1%	6.5%
AADT	**3.2%**	**6.0%**	**6.0%**	**5.7%**	**5.1%**	**5.6%**

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
PCUs	**1.2%**	**5.6%**	**5.6%**	**5.4%**	**5.0%**	**5.2%**

Source: Steer analysis

Table 6.28: Final revenue forecast (INR crores): KM164 (Mahuvan) including AP Compensation for CJVs

Vehicle Type	FY26	FY27	FY30	FY35	FY40	FY44
CJV	41.1	46.0	64.9	114.1	196.8	293.3
Mini LCV	4.5	5.0	6.4	9.6	14.5	19.8
LCV	8.5	8.6	10.4	14.3	19.4	25.1
Bus	10.9	11.7	15.1	22.0	32.1	42.9
2A	49.2	50.8	69.3	110.6	174.8	248.8
3A	43.2	41.7	50.8	69.6	94.9	121.4
MAV	80.6	83.2	117.0	202.1	344.6	523.5
OSV	0.1	0.1	0.1	0.2	0.3	0.5
Total	**238.1**	**247.1**	**334.1**	**542.5**	**877.5**	**1,275.3**

Source: Steer analysis

Table 6.29: Revenue growth rates (%): KM164 (Mahuvan) including AP Compensation for CJVs

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY40-FY44	FY26-FY44
CJV	12.0%	12.2%	11.9%	11.5%	10.5%	11.5%
Mini LCV	10.1%	8.8%	8.4%	8.6%	8.1%	8.6%
LCV	1.4%	6.6%	6.5%	6.4%	6.6%	6.2%
Bus	7.2%	8.7%	7.8%	7.9%	7.6%	7.9%
2A	3.3%	10.9%	9.8%	9.6%	9.2%	9.4%
3A	(3.4%)	6.8%	6.5%	6.4%	6.3%	5.9%
MAV	3.2%	12.1%	11.5%	11.3%	11.0%	11.0%
OSV	11.1%	12.1%	11.5%	11.3%	11.0%	11.4%
Total	**3.8%**	**10.6%**	**10.2%**	**10.1%**	**9.8%**	**9.8%**

Source: Steer analysis

Upside and Downside cases

Upside and Downside scenario assumptions

6.33 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.34 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.35 To account for the possible variations in the growth drivers, we also present an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.30: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.36 Further, network developments are highly dependent on governmental directions, policies, legal and financial measures which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case for our network-related impacts as well. However, consistent with our macro-economic assumptions, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.37 The upside case impacts included in forecasts are summarised in Table 6.31 below.

Table 6.31: Summary of impacts on the Assets - Upside Case

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact		
			TP1 Gadpuri	TP2 Karman	TP3 Mahuvan
Delhi-Mumbai Expressway	FY26*	+25% of base case	-	CJV: (0.3%) LCV: (2.6%) 2A: (3.7%) 3A: (5.4%) MAV: (6.2%)	CJV: (0.4%) LCV: (2.6%) 2A: (3.5%) 3A: (5.6%) MAV: (5.1%)
Ganga Expressway	FY26*		CJV: (1.8%) LCV: (0.5%) 2A: (1.4%) 3A: (2.4%) MAV: (1.5%)	CJV: (0.9%) LCV: (1.5%) 2A: (2.8%) 3A: (3.5%) MAV: (2.8%)	CJV: (1.3%) LCV: (1.5%) 2A: (2.7%) 3A: (3.7%) MAV: (2.3%)
Palwal-Tappal-Aligarh 4-laning	FY28*		-	CJV: (0.6%) LCV: (1.3%) 2A: (2.0%) 3A: (1.2%) MAV: (1.7%)	CJV: (0.8%) LCV: (1.3%) 2A: (1.9%) 3A: (1.2%) MAV: (1.4%)
Yamuna - EPE Connector – Northern Ring	FY28*		-	2A: 3.2% 3A: 2.8% MAV: 3.5%	2A: 3.1% 3A: 2.7% MAV: 3.0%

Source: Steer analysis; *Same as base case timeline

Impacts-Downside Case

6.38 The downside case impacts included in forecasts are summarised in Table 6.32 below.

Table 6.32: Summary of impacts on the Assets - Downside Case

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact		
			TP1 Gadpuri	TP2 Karman	TP3 Mahuvan
Delhi-Mumbai Expressway	FY26*	-25% of base case	-	CJV: (0.5%) LCV: (4.4%) 2A: (6.2%) 3A: (9.0%) MAV: (10.4%)	CJV: (0.7%) LCV: (4.4%) 2A: (5.9%) 3A: (9.4%) MAV: (8.6%)
Ganga Expressway	FY26*		CJV: (3.0%) LCV: (0.9%) 2A: (2.4%) 3A: (4.0%) MAV: (2.5%)	CJV: (1.4%) LCV: (2.6%) 2A: (4.7%) 3A: (5.9%) MAV: (4.7%)	CJV: (2.2%) LCV: (2.6%) 2A: (4.5%) 3A: (6.1%) MAV: (3.9%)
Palwal-Tappal-Aligarh 4-laning	FY27*		-	CJV: (0.9%) LCV: (2.1%) 2A: (3.4%) 3A: (1.9%) MAV: (2.8%)	CJV: (1.4%) LCV: (2.1%) 2A: (3.2%) 3A: (2.0%) MAV: (2.3%)
Yamuna - EPE Connector – Northern Ring	FY28*		-	2A: 1.9% 3A: 1.7% MAV: 2.1%	2A: 1.8% 3A: 1.6% MAV: 1.8%

Source: Steer analysis; *Same as base case timeline

Upside and Downside Case Forecasts

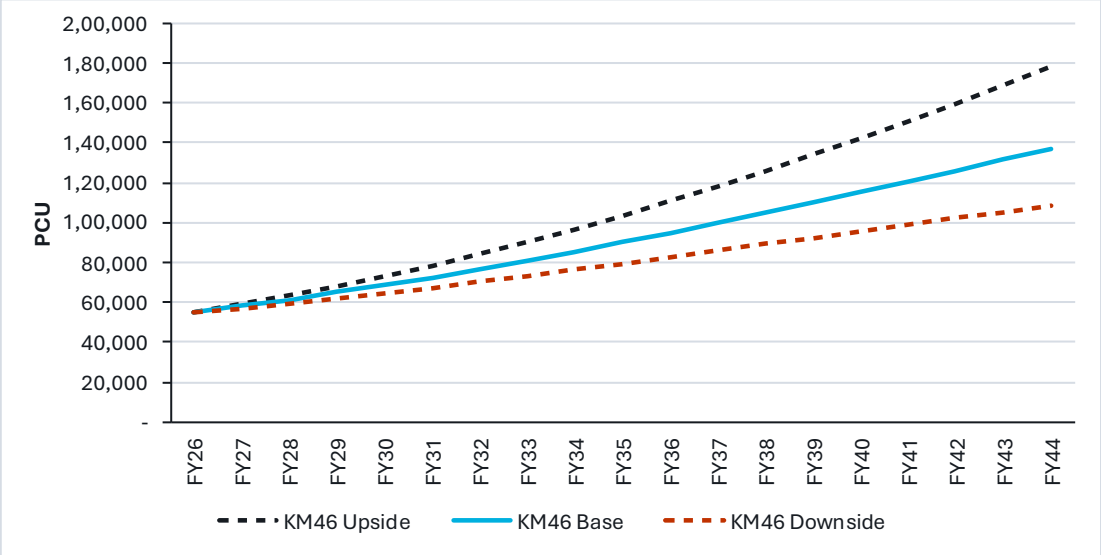
6.39 Table 6.33 below presents the difference between the Upside and Downside Case forecasts relative to the Base Case forecasts in FY44 (i.e., the concession end year) for all three Asset toll plazas. Figure 6-3 through Figure 6-8 below plot the Upside and Downside Case forecasts relative to the Base Case forecasts for each Asset toll plaza over the full concession period (FY26-FY44).

Table 6.33: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY44

Case	Measure	KM46 Gadpuri	KM94 Karman	KM164 Mahuvan
Upside Case	Traffic (PCU)	29.9%	35.1%	34.7%
Downside Case		(20.7%)	(23.6%)	(23.1%)
Upside Case	Revenue	48.0%	55.2%	55.2%
Downside Case		(30.4%)	(33.0%)	(32.8%)

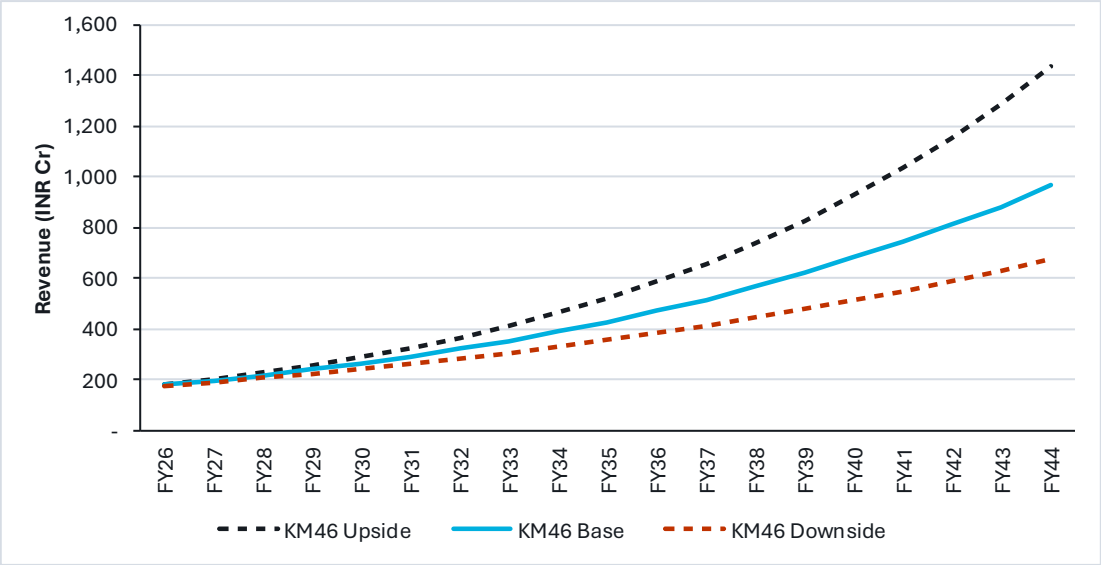
Source: Steer

Figure 6-3: KM46 Gadpuri Upside and Downside Case PCU Forecasts



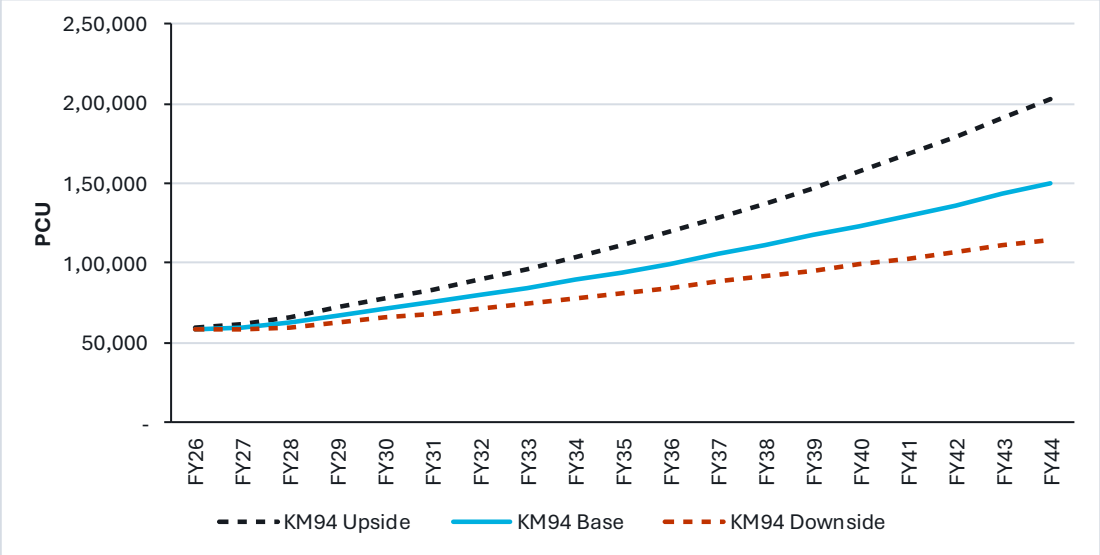
Source: Steer Analysis

Figure 6-4: KM46 Gadpuri Upside and Downside Case Revenue Forecasts



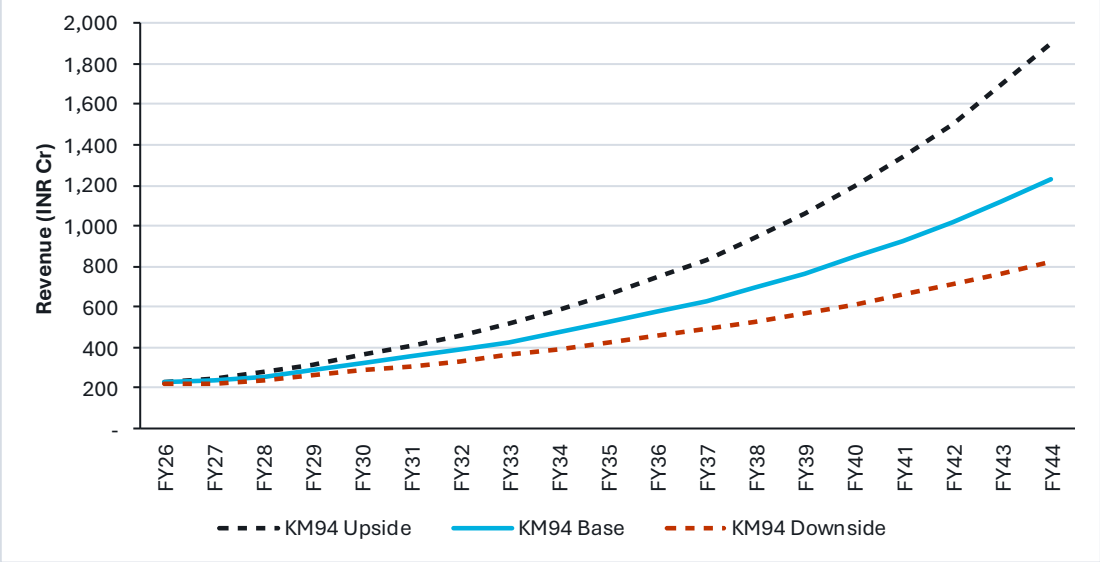
Source: Steer Analysis

Figure 6-5: KM94 Karman Upside and Downside Case PCU Forecasts



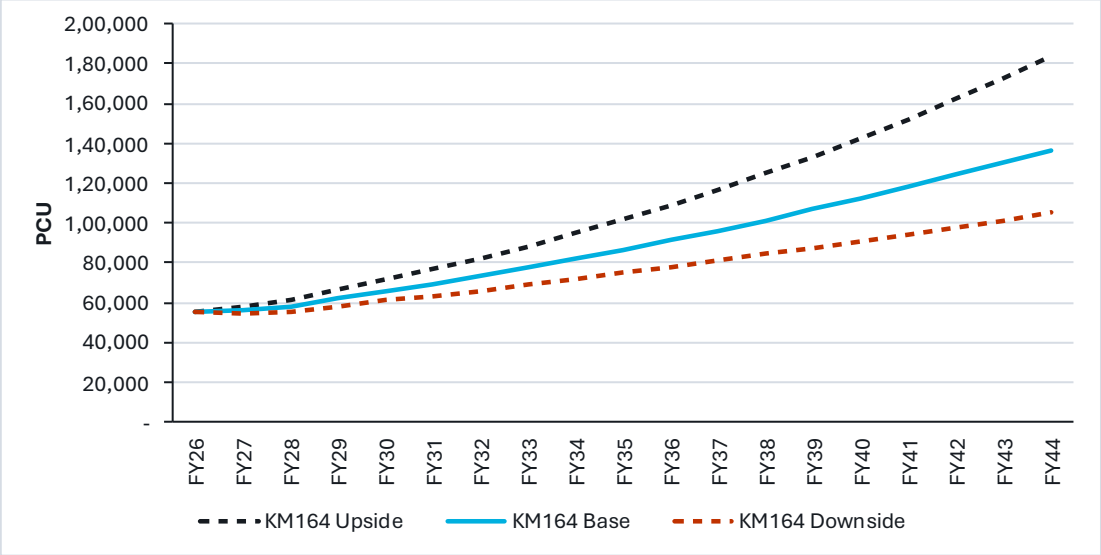
Source: Steer Analysis

Figure 6-6: KM94 Karman Upside and Downside Case Revenue Forecasts



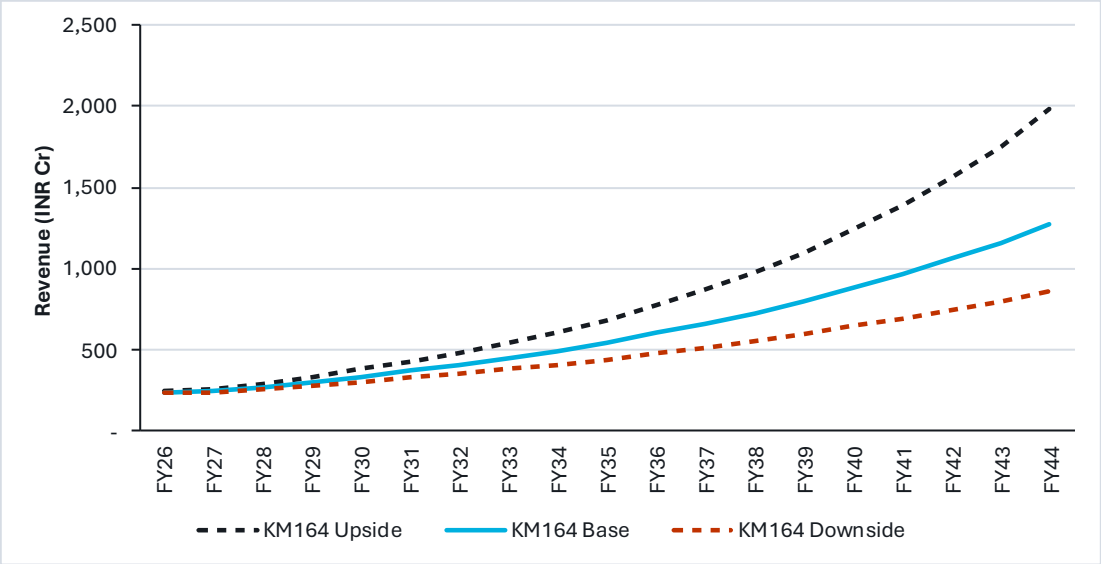
Source: Steer Analysis

Figure 6-7: KM164 Mahuvan Upside and Downside Case PCU Forecasts



Source: Steer Analysis

Figure 6-8: KM164 Mahuvan Upside and Downside Case Revenue Forecasts



Source: Steer Analysis

Summary outlook

6.40 The Asset is a 179.5 km toll road between Delhi and Agra which forms a part of the NH44. The Asset forms part of the Grand Trunk Road – which is part of the prominent Asian Highway 1 (AH1) - that forms part of a wider longer strategic corridor that connects Delhi NCR and other regions in North India with other regions in the country.

6.41 The Asset consists of three toll plazas – KM46 Gadpuri, KM94 Karman and KM164 Mahuvan. The Asset's strategic and geographic location is a significant advantage as it offers seamless connectivity to users via the upgraded expressway network in the form of KMP and EPE. It is the preferred route for north-south and north-east movement,

connecting regions such as Jammu and Kashmir, Punjab, Haryana to Karnataka, Tamil Nadu, Telangana, Andhra Pradesh, Eastern Uttar Pradesh, and Bihar.

6.42 The Asset serves a significant volume of local passenger traffic, as it connects densely populated areas such as Palwal, Faridabad, New Delhi to Mathura, Vrindavan, and Agra over short-to-medium distances. We anticipate a healthy growth in car usage on the Asset due to the shift away from public transport by users, and the increasing ownership of cars in the National Capital Region.

6.43 The Asset's provide improved Level of Service (LoS) due to its six-lane configuration. The steady growth in traffic in recent years is expected to continue in the future. Although some of this growth can be attributed to network shifts, we expect a significant share of natural traffic growth to characterise the Asset’s performance going forward.

6.44 We see a positive outlook for the region and the Asset as it serves significant urban centres such as Delhi NCR, Faridabad, Palwal, Agra, Mathura, and Vrindavan. Furthermore, it caters to long-distance movements to/from Chennai, Bangalore, Hyderabad, etc. The underlying growth drivers of the corridor are strong, which we believe will deliver sustained long-term traffic growth on the Asset.

6.45 Our observations, analysis and conclusions in this report are based on thorough analysis of primary and secondary data, site visits, feedback from Client meetings, and macroeconomic assumptions prescribed by the Client. While there may be both positive and negative risks associated with these assumptions and forecasts, the broad growth outlook for the Asset remains positive owing to its strategic position as a key link between Delhi and North India and the rest of the country, including the East, Central and Southern parts of the country. It’s proximity to Delhi NCR and other industrial clusters in and around the region also bode well for the Asset as it will continue to observe traffic flows that originate from or are destined to these production and consumption centres, and will continue to experience the indirect impacts of general economic growth in the region and the country despite network related improvements and developments that may also impact traffic growth on the Asset over time.

Appendices

A Top 10 OD Pairs

A.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

KM46 Gadpuri

Table A.1: CJV and Bus top 10 OD pair shares at KM46 Gadpuri

	OD Pair	Share
1.	Palwal city-Faridabad City	22%
2.	Central Delhi (inside ring road)-Palwal city	11%
3.	Palwal city-Ballabgarh	7%
4.	Faridabad City-Pirthala, Bhagola	5%
5.	Pirthala, Bhagola-Ballabgarh	5%
6.	Mathura-Central Delhi (inside ring road)	5%
7.	South West Agra including Agra City-Central Delhi (inside ring road)	3%
8.	Central Delhi (inside ring road)-Pirthala, Bhagola	2%
9.	Mathura-Ballabgarh	2%
10.	Bhangel, Noida-Central Delhi (inside ring road)	2%

Source: Steer analysis of OD data

Table A.2: 3A and MAV top 10 OD pair shares at KM46 Gadpuri

	OD Pair	Share
1.	Palwal city-Faridabad City	24%
2.	Palwal city-Rest of Faridabad	14%
3.	Palwal city-Ballabgarh	10%
4.	South West Haryana (Gurugram)-Sikri, Piyala	5%
5.	South West Agra including Agra City-Central Delhi (inside ring road)	5%
6.	Aligarh-Central Delhi (inside ring road)	5%
7.	Central Delhi (inside ring road)-Jaipur City	5%
8.	Gaziabad-Palwal city	5%
9.	Faridabad City-Jaipur City	5%
10.	Jhajjar-Pirthala, Bhagola	5%

Source: Steer analysis of OD data

KM164 Mahuvan

Table A.3: CJV top 10 OD pair shares at KM164 Mahuvan

	OD Pair	Share
1.	South West Agra including Agra City-Mathura	53%
2.	South West Agra including Agra City-Central Delhi (inside ring road)	13%
3.	South West Agra including Agra City-Vrindavan, Raya	6%
4.	Mathura-Farah, Parkam	4%
5.	South West Agra including Agra City-Faridabad City	2%
6.	Mainpuri, Etah, Firozabad-Mathura	2%
7.	South West Agra including Agra City-South West Haryana (Gurugram)	1%
8.	Mathura-North Madhya Pradesh	1%
9.	South West Agra including Agra City-Hodal	1%
10.	South West Agra including Agra City-Refinery, Mathura, Mahuan	1%

Source: Steer analysis of OD data

Table A.4: MAV and OSV top 10 OD pair shares at KM164 Mahuvan

	OD Pair	Share
1.	South West Agra including Agra City-Mathura	4%
2.	South West Agra including Agra City-Central Delhi (inside ring road)	4%
3.	Central Delhi (inside ring road)-Tamil nadu	3%
4.	Central Delhi (inside ring road)-West Maharashtra	3%
5.	Central Delhi (inside ring road)-West Bengal and Sikkim	3%
6.	Central Delhi (inside ring road)-Karnataka	2%
7.	Central Delhi (inside ring road)-North Madhya Pradesh	2%
8.	Punjab, Chandigarh-West Bengal and Sikkim	2%
9.	Mathura-North Madhya Pradesh	2%
10.	Central Delhi (inside ring road)-Chhatisgarh	2%

Source: Steer analysis of OD data

B Detailed Forecasts

B.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

B.2 This section presents the detailed traffic forecasts for the forecast period until FY44. The following tables show the forecast AADT for operational toll plazas.

Table B.1: Forecasts for final (background+impacts) AADT, KM46 (Gadpuri)

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total	PCU
FY26	33,542	3,177	1,612	1,194	1,657	721	1,526	1	**43,430**	**55,346**
FY27	35,533	3,307	1,641	1,236	1,724	722	1,607	1	**45,771**	**58,133**
FY28	37,895	3,440	1,673	1,279	1,806	731	1,703	1	**48,527**	**61,421**
FY29	40,493	3,573	1,706	1,322	1,895	745	1,808	1	**51,543**	**65,019**
FY30	43,148	3,707	1,740	1,365	1,986	758	1,916	1	**54,621**	**68,688**
FY31	45,901	3,843	1,773	1,409	2,079	771	2,029	1	**57,806**	**72,484**
FY32	48,800	3,985	1,807	1,454	2,177	785	2,148	1	**61,157**	**76,475**
FY33	51,968	4,137	1,843	1,502	2,284	799	2,280	1	**64,813**	**80,828**
FY34	55,273	4,293	1,879	1,551	2,394	814	2,418	2	**68,623**	**85,364**
FY35	58,716	4,453	1,915	1,601	2,509	829	2,563	2	**72,587**	**90,083**
FY36	62,236	4,617	1,951	1,651	2,629	843	2,715	2	**76,645**	**94,925**
FY37	65,824	4,785	1,988	1,703	2,753	858	2,875	2	**80,788**	**99,883**
FY38	69,470	4,958	2,024	1,755	2,881	873	3,043	2	**85,007**	**1,04,948**
FY39	73,164	5,134	2,061	1,808	3,014	888	3,219	2	**89,291**	**1,10,110**
FY40	76,895	5,314	2,098	1,862	3,152	904	3,403	2	**93,630**	**1,15,361**
FY41	80,648	5,497	2,135	1,917	3,295	919	3,596	2	**98,009**	**1,20,685**
FY42	84,411	5,685	2,171	1,972	3,443	934	3,798	2	**1,02,417**	**1,26,072**
FY43	88,172	5,876	2,208	2,027	3,596	950	4,009	3	**1,06,840**	**1,31,511**
FY44	91,919	6,070	2,245	2,083	3,754	966	4,229	3	**1,11,270**	**1,36,991**

Source: Steer analysis.

Table B.2: Forecasts for final (background+impacts) AADT, KM94 (Karman)

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total	PCU
FY26	21,773	1,602	1,583	926	3,838	2,141	3,463	3	**35,330**	**58,936**
FY27	23,384	1,670	1,555	959	3,841	2,003	3,391	4	**36,806**	**60,006**
FY28	25,047	1,740	1,553	993	3,944	1,994	3,529	4	**38,804**	**62,620**
FY29	27,007	1,810	1,584	1,026	4,243	2,063	3,842	4	**41,581**	**67,031**
FY30	29,028	1,881	1,615	1,060	4,500	2,111	4,121	4	**44,320**	**71,185**
FY31	31,140	1,953	1,646	1,094	4,735	2,148	4,388	5	**47,108**	**75,295**
FY32	33,383	2,028	1,677	1,128	4,977	2,186	4,672	5	**50,055**	**79,626**
FY33	35,851	2,108	1,710	1,166	5,234	2,226	4,987	5	**53,287**	**84,360**
FY34	38,448	2,190	1,744	1,204	5,495	2,267	5,319	6	**56,671**	**89,305**
FY35	41,173	2,275	1,777	1,242	5,759	2,308	5,670	6	**60,210**	**94,461**

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total	PCU
FY36	44,007	2,361	1,811	1,282	6,033	2,349	6,041	6	**63,891**	**99,833**
FY37	46,948	2,450	1,845	1,322	6,317	2,390	6,433	7	**67,711**	**1,05,421**
FY38	49,992	2,540	1,879	1,362	6,612	2,432	6,846	7	**71,670**	**1,11,225**
FY39	53,136	2,632	1,913	1,403	6,918	2,474	7,281	8	**75,766**	**1,17,247**
FY40	56,376	2,726	1,947	1,445	7,234	2,517	7,740	8	**79,994**	**1,23,487**
FY41	59,700	2,822	1,982	1,488	7,562	2,560	8,222	9	**84,344**	**1,29,935**
FY42	63,103	2,920	2,016	1,530	7,902	2,603	8,729	9	**88,812**	**1,36,589**
FY43	66,579	3,018	2,050	1,573	8,253	2,646	9,263	10	**93,391**	**1,43,447**
FY44	70,121	3,119	2,084	1,617	8,616	2,690	9,823	10	**98,079**	**1,50,508**

Source: Steer analysis.

Table B.3: Forecasts for final (background+impacts) AADT, KM164 (Mahuvan)

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total	PCU
FY26	14,617	1,622	1,573	1,065	3,989	2,211	4,125	3	**29,206**	**55,244**
FY27	15,625	1,692	1,546	1,103	4,003	2,060	4,108	3	**30,141**	**55,925**
FY28	16,651	1,763	1,543	1,142	4,118	2,049	4,299	3	**31,569**	**58,134**
FY29	17,955	1,834	1,575	1,180	4,427	2,119	4,665	4	**33,758**	**62,126**
FY30	19,298	1,905	1,605	1,218	4,694	2,168	4,998	4	**35,891**	**65,846**
FY31	20,702	1,978	1,636	1,257	4,939	2,206	5,322	4	**38,045**	**69,501**
FY32	22,193	2,054	1,667	1,297	5,191	2,245	5,666	4	**40,318**	**73,348**
FY33	23,834	2,135	1,700	1,340	5,459	2,286	6,048	5	**42,808**	**77,549**
FY34	25,560	2,219	1,733	1,384	5,732	2,328	6,451	5	**45,411**	**81,933**
FY35	27,372	2,304	1,767	1,428	6,007	2,370	6,877	5	**48,131**	**86,500**
FY36	29,256	2,392	1,800	1,473	6,293	2,412	7,327	6	**50,960**	**91,263**
FY37	31,211	2,482	1,834	1,519	6,589	2,454	7,802	6	**53,898**	**96,224**
FY38	33,235	2,573	1,868	1,566	6,897	2,497	8,303	6	**56,946**	**1,01,384**
FY39	35,325	2,667	1,902	1,614	7,216	2,541	8,831	7	**60,101**	**1,06,748**
FY40	37,479	2,762	1,936	1,662	7,546	2,584	9,387	7	**63,363**	**1,12,316**
FY41	39,689	2,859	1,970	1,710	7,888	2,628	9,972	8	**66,724**	**1,18,084**
FY42	41,951	2,958	2,004	1,759	8,242	2,673	10,587	8	**70,182**	**1,24,053**
FY43	44,262	3,058	2,038	1,809	8,609	2,717	11,234	9	**73,734**	**1,30,224**
FY44	46,617	3,159	2,071	1,859	8,987	2,762	11,913	9	**77,378**	**1,36,597**

Source: Steer analysis.

Revenue forecasts

B.3 The following table presents the year-wise annual revenue forecasts (including Annual Pass Compensation Amount within CJV revenues) for the forecast period until FY44.

Table B.4: Revenue Forecasts, (INR crores), KM46 (Gadpuri) including AP Compensation for CJVs

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY26	79.2	7.4	9.5	13.3	21.2	15.0	31.9	0.0	**177.5**
FY27	89.9	8.0	9.9	14.2	22.8	15.6	34.7	0.0	**195.2**

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY28	100.4	8.8	10.8	15.5	25.1	16.7	38.8	0.0	**216.1**
FY29	111.5	9.5	11.5	16.8	27.6	17.8	43.3	0.0	**238.1**
FY30	126.1	10.4	12.3	18.2	30.5	19.0	48.1	0.0	**264.6**
FY31	139.2	11.2	13.1	19.7	33.3	20.2	53.1	0.0	**289.9**
FY32	156.7	12.3	14.0	21.2	36.6	21.5	58.9	0.0	**321.3**
FY33	172.2	13.2	14.8	23.0	40.1	22.9	65.4	0.1	**351.7**
FY34	193.7	14.5	15.9	24.8	44.0	24.3	72.3	0.1	**389.3**
FY35	212.5	15.5	16.9	26.7	48.1	25.8	80.1	0.1	**425.7**
FY36	236.5	16.8	18.1	28.9	52.7	27.7	89.2	0.1	**469.9**
FY37	262.1	18.3	19.2	31.1	57.7	29.3	98.2	0.1	**516.0**
FY38	290.1	19.9	20.4	33.4	63.0	31.2	109.0	0.1	**567.1**
FY39	319.7	21.5	21.8	36.1	69.0	33.1	120.3	1.0	**622.4**
FY40	352.0	23.3	23.2	39.0	75.8	35.3	133.3	0.1	**681.9**
FY41	383.9	25.1	24.5	41.8	82.6	37.5	147.1	0.1	**742.8**
FY42	418.4	27.0	26.3	45.0	90.2	39.9	162.5	0.1	**809.5**
FY43	456.5	29.3	27.8	48.3	98.4	42.4	179.1	0.1	**881.9**
FY44	502.8	31.9	29.7	52.1	107.8	45.3	198.6	0.2	**968.3**

Source: Steer analysis

Table B.5: Revenue Forecasts, (INR crores), KM94 (Karman) including AP Compensation for CJVs

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY26	56.3	6.4	8.1	8.7	43.9	39.2	63.4	0.1	**226.1**
FY27	63.1	7.0	8.2	9.4	45.4	37.7	63.9	0.1	**234.7**
FY28	70.7	7.6	8.7	10.2	49.4	39.8	70.5	0.1	**257.1**
FY29	80.2	8.3	9.2	11.0	55.3	43.0	80.0	0.1	**287.1**
FY30	90.6	9.1	9.9	12.0	61.8	46.2	90.2	0.1	**320.0**
FY31	100.9	9.8	10.6	13.0	68.3	49.3	100.8	0.1	**352.8**
FY32	113.5	10.7	11.3	14.0	74.8	52.7	112.6	0.1	**389.8**
FY33	125.8	11.4	12.1	15.1	82.1	55.9	125.2	0.2	**427.9**
FY34	143.9	12.6	12.7	16.3	90.1	59.4	139.3	0.2	**474.5**
FY35	160.4	13.6	13.5	17.6	98.4	63.3	155.6	0.2	**522.8**
FY36	178.7	14.8	14.6	19.1	108.7	67.6	173.9	0.2	**577.6**
FY37	197.3	16.0	15.5	20.5	118.0	71.6	192.7	0.2	**631.8**
FY38	221.8	17.4	16.5	22.0	129.3	76.0	213.8	0.3	**697.0**
FY39	245.7	18.9	17.4	23.7	141.4	80.8	237.8	2.9	**768.6**
FY40	274.7	20.5	18.7	25.6	155.8	86.5	265.9	0.3	**848.0**
FY41	304.1	22.1	19.9	27.5	169.2	91.4	293.6	0.4	**928.2**
FY42	333.3	23.9	21.0	29.5	185.1	97.2	325.9	0.4	**1,016.2**
FY43	369.6	26.0	22.4	31.9	202.1	103.5	362.3	0.4	**1,118.2**
FY44	406.9	27.9	23.8	34.2	220.7	110.3	402.9	0.5	**1,227.3**

Source: Steer analysis

Table B.6: Revenue Forecasts, (INR crores), KM164 (Mahuvan) including AP Compensation for CJVs

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
FY26	41.1	4.5	8.5	10.9	49.2	43.2	80.6	0.1	**238.1**
FY27	46.0	5.0	8.6	11.7	50.8	41.7	83.2	0.1	**247.1**
FY28	51.1	5.4	9.1	12.8	55.3	43.7	91.8	0.1	**269.3**
FY29	57.7	5.9	9.7	13.8	62.3	47.4	104.3	0.1	**301.1**
FY30	64.9	6.4	10.4	15.1	69.3	50.8	117.0	0.1	**334.1**
FY31	72.1	6.9	11.0	16.2	76.3	54.3	131.1	0.1	**367.9**
FY32	80.8	7.5	11.7	17.6	84.1	57.8	146.0	0.1	**405.8**
FY33	92.1	8.2	12.5	18.9	92.0	61.2	161.9	0.2	**447.0**
FY34	102.6	8.9	13.3	20.4	101.5	65.2	180.6	0.2	**492.6**
FY35	114.1	9.6	14.3	22.0	110.6	69.6	202.1	0.2	**542.5**
FY36	129.1	10.5	15.2	23.8	121.7	74.1	225.0	0.2	**599.7**
FY37	142.1	11.3	16.0	25.6	132.8	78.6	249.9	0.2	**656.6**
FY38	160.1	12.4	17.2	27.6	145.0	83.5	277.7	0.3	**723.8**
FY39	175.6	13.3	18.4	29.7	159.1	89.0	309.4	2.9	**797.3**
FY40	196.8	14.5	19.4	32.1	174.8	94.9	344.6	0.3	**877.5**
FY41	217.1	15.6	20.6	34.4	190.4	100.8	382.5	0.4	**961.9**
FY42	240.7	16.9	22.0	37.1	207.7	107.2	424.8	0.4	**1,056.8**
FY43	265.9	18.3	23.3	39.9	227.3	113.8	470.6	0.4	**1,159.6**
FY44	293.3	19.8	25.1	42.9	248.8	121.4	523.5	0.5	**1,275.3**

Source: Steer analysis

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Final Report
October 2025

Project Transit: Traffic Due Diligence Farakka - Raiganj Highways Limited

Cube Highways Fund Advisors Private Limited
Our Ref: 23741310
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Final Report
October 2025

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Contents

Disclaimer		**i**
Glossary Items		**i**
1	**Introduction**	**1**
	Our approach	2
	Contents of this report	3
2	**The Asset**	**5**
	Introduction	5
	Strategic network	5
	Asset context	6
	Concession and tolling details	7
	Key economic activities	9
	Alternate and feeder routes	10
	Overloading	12
3	**Traffic Description**	**13**
	Introduction	13
	Historical trend	14
	Data Collection exercise	23
	Key findings of the TVC data analysis	24
	Key findings of origin-destination analysis	27
	Conclusions	34
4	**Socio-economic context and traffic growth**	**36**
	Introduction	36
	Population growth	36
	Economic Indicators	37
	Economic growth	40
	Forecasts for growth drivers	43
5	**FY26 Base year AADT and Traffic growth Analysis**	**45**
	Introduction	45
	FY26 Base year AADT estimates	45
	Estimation of background elasticities	48
	Forecasts for background elasticities	52
6	**Forecast: Network overlays and forecasts**	**54**
	Introduction	54
	Analysis of potential network impacts	54
	Overloading	58
	Revenue forecasting assumptions	59
	Traffic and Revenue forecasts	62
	Upside and Downside cases	66
	Summary outlook	70

Figures

Figure 2-1: Asset location in the regional road network 5
Figure 2-2: Asset context 7
Figure 2-3 (clockwise): TP1 Lakshmipur, TP2 Gazole, Raiganj Bypass and ROB, Stone Chip Stockyard at India-Bangladesh Border in Mahadipur 8
Figure 2-4: 3A+MAV Growth vs. Bangladesh-bound Export Growth (FY23-FY25YTD) 10
Figure 3-1: Ticket-segmentation for CJV, TP1 Lakshmipur 19
Figure 3-2: Ticket-segmentation for MAV, TP1 Lakshmipur 19
Figure 3-3: Ticket-segmentation for CJV, TP2 Gazole 20
Figure 3-4: Ticket Segmentation for MAV, TP2 Gazole 20
Figure 3-5: 3A, MAV overloading shares at TP1 Lakshmipur (October 2016 – September 2025) 22
Figure 3-6: 3A, MAV overloading shares at TP2 Gazole (October 2016 – September 2025) 22
Figure 3-7: Comparison between TVC and TMS daily traffic data, TP1 Lakshmipur 25
Figure 3-8: Comparison between TVC and TMS daily traffic data, TP2 Gazole 25
Figure 3-9: Comparison between vehicle shares from TVC and TMS WADTs for TP1 26
Figure 3-10: Comparison between vehicle shares from TVC and TMS WADTs for TP2 26
Figure 3-11: Zonal influence, TP1 Lakshmipur 29
Figure 3-12: Zonal influence, TP2 Gazole 29
Figure 3-13: Internal-External distribution, TP1 Lakshmipur 30
Figure 3-14: Internal-External distribution, TP2 Gazole 30
Figure 3-15: Commodity distribution, TP1 Lakshmipur (Total) 32
Figure 3-16: Commodity distribution, TP2 Gazole (Total) 32
Figure 3-17: Trip length distribution, TP1 Lakshmipur 34
Figure 3-18: Trip length distribution, TP2 Gazole 34
Figure 4-1: Annual growth – Index of Industrial Production (FY15-FY25) 38
Figure 4-2: Car ownership in India per 1,000 population 39
Figure 4-3: Historical Growth in Per Capita Incomes – West Bengal vs. India (FY15-FY25) 39
Figure 4-4: Government final consumption expenditure 40
Figure 4-5: Month on Month IIP performance 41
Figure 4-6: Industrial components of GVA 41
Figure 4-7: Evolution of West Bengal's state GDP and national GDP, FY12-25 42
Figure 4-8: Sectoral contribution to West Bengal's GSDP in FY25 43
Figure 4-9: GDP-GSDP forecast 44
Figure 5-1: FY26 Base Estimation methodology 46
Figure 5-2: Relationship between CJV traffic GSDP of West Bengal – TP1 & TP2 49
Figure 5-3: Relationship between LCV traffic and GSDP of West Bengal – TP1 & TP2 50
Figure 5-4: Relationship between Bus and 2A traffic with GSDP West Bengal and GDP – TP1 & TP2 51
Figure 5-5: Relationship between 3A and MAV traffic with GSDP West Bengal and GDP – TP1 & TP2 52

Figure 6-1: Asset route shown against the regional network context 54
Figure 6-2: Impact of 6-laning LOS improvement 56
Figure 6-3: Forecast traffic and growth rates in PCUs - Background and final, TP1 66
Figure 6-4: Forecast traffic and growth rates in PCUs - Background and final, TP2 66
Figure 6-5: Upside and Downside Case PCU Forecasts - TP1 Lakshmipur 68
Figure 6-6: Upside and Downside Case Revenue Forecasts - TP1 Lakshmipur 69
Figure 6-7: Upside and Downside Case PCU Forecasts - TP2 Gazole 69
Figure 6-8: Upside and Downside Case Revenue Forecasts - TP2 Gazole 70

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Key concession details 7
Table 2.2: Single toll rates on the Asset (INR), applicable April 2025 to March 2026 8
Table 3.1: PCU factors 13
Table 3.2: Traffic levels at TP1 Lakshmipur 14
Table 3.3: Tollable Traffic levels at TP1 Lakshmipur 14
Table 3.4: Traffic levels at TP2 Gazole 14
Table 3.5: Tollable Traffic levels at TP2 Gazole 15
Table 3.6: Total revenue (INR Crores) and AADC (annual average daily collection) in INR Lakhs at TP1 Lakshmipur 16
Table 3.7: Total revenue (INR Crores) and AADC in INR Lakhs at TP2 Gazole 16
Table 3.8: Typical ticket types sold at NHAI plazas 17
Table 3.9: Ticket-segmentation for LCV, Bus and 2As at TP1 Lakshmipur and TP2 Gazole (FY26YTD) 20
Table 3.10: Overloading shares between FY21-FY26YTD 21
Table 3.11: Data collection schedule 24
Table 3.12: WADT from TVC counts 24
Table 3.13: Sample rates for OD data 27
Table 3.14: Zone aggregations for zonal influence analysis 27
Table 3.15: Aggregate commodity categories 31
Table 4.1: CAGR of population in India 36
Table 4.2: Population Growth in West Bengal and India (2012 – 2024) 37
Table 5.1: Adopted SCF for the Asset for TP1 Lakshmipur 47
Table 5.2: Adopted SCF for the Asset for TP2 Gazole 47
Table 5.3: Adopted base estimates: TP1 Lakshmipur 47
Table 5.4: Adopted base estimates: TP2 Gazole 48
Table 5.5: Identified growth drivers to model traffic growth 48
Table 5.6: Assumed forecast elasticities for background growth 53
Table 6.1: List of network/other developments 55
Table 6.2: Impact of completion of Completion of Sahibganj Bridge 55

Table 6.3: Impact of 6 laning LOS improvement for TP1 Lakshmipur	57
Table 6.4: Impact of 6 laning LOS improvement for TP2 Gazole	57
Table 6.5: Impact of Bangladesh Recovery on TP1	58
Table 6.6: Impact of Bangladesh Recovery on TP2	58
Table 6.7: Overloading assumptions for forecast years (FY26 onwards)	59
Table 6.8: Annual pass adoption between 15th August and 30th September 2025	59
Table 6.9: Toll segmentation at TP1 Lakshmipur	60
Table 6.10: Toll segmentation at TP2 Gazole	60
Table 6.11: Trip factors at TP1 Lakshmipur	60
Table 6.12: Trip factors at TP2 Gazole	61
Table 6.13: WPI growth forecast assumptions	62
Table 6.14: Revenue reconciliation summary (AADC INR lakhs)- FY26YTD	62
Table 6.15: Final Traffic forecast for TP1 Lakshmipur	63
Table 6.16: Final Traffic CAGR (%) for TP1 Lakshmipur	63
Table 6.17: Final Revenue forecast (INR Crores) for TP1 Lakshmipur	63
Table 6.18: Final Revenue CAGR (%) for TP1 Lakshmipur	64
Table 6.19: Final Traffic forecast for TP2 Gazole	64
Table 6.20: Final Traffic CAGR (%) for TP2 Gazole	64
Table 6.21: Final Revenue forecast (INR Crores) for TP2 Gazole	65
Table 6.22: Final Revenue CAGR (%) for TP2 Gazole	65
Table 6.23: Summary of Macro-economic Assumptions for upside and downside cases	67
Table 6.24: Summary of impacts on the Assets	67
Table 6.25: Summary of impacts on the Assets	67
Table 6.26: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY42	68

Appendices

A	**Top 10 OD Pairs**
B	**Data Collection Exercise**
C	**Detailed Forecasts**

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	Net State Domestic Production
OD	Origin Destination
OSV	Over sized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Farakka-Raiganj Tollway Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Farakka-Raiganj consists of a single stretch of toll road with two toll plazas. For the purpose of this report, we hereafter call the toll plazas present on the Asset as TP1 and TP2 respectively as:

- TP1 – Lakshmipur
- TP2 – Gazole

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Oct'16 and Sep'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable.
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer in 2023 (TP1) and 2019 (TP2) respectively
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by Steer based on Generalised Journey Cost spreadsheet-based analysis

Scope of work	Data source
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research, Asset historical traffic performance and Steer's in-house experience of working on toll roads on the corridor • Gross Domestic Product (GDP) forecast assumptions provided by Client
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI) and latest actual Wholesale Price Index (WPI) trends as shared by the Client. • Assumptions of WPI forecasts and future tolling length changes provided by Client • Revenues estimated as a product of traffic forecasts and toll evolution

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis has essentially focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data starting Oct'16 to September 2025.
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous studies related to traffic and revenue
  - Bid documents and studies by lenders
  - In the previous study in 2023, Steer-commissioned OD surveys on one plaza of the Asset, TP1 Lakshmipur to validate any change in growth drivers and travel patterns on the Asset. Survey on TP1 was conducted on 3rd July 2023 and on TP2 in the earlier commission in 2019.
  - In the previous study in 2023, Steer-commissioned TVC counts from 2nd July to 5th July 2023 at TP1 Lakshmipur on behalf of the client to validate TMS data independently. The TVC counts on TP2 Gazole had been undertaken as part of earlier study in 2019.
- We undertook revenue reconciliation on FY26YTD by building up revenue from the traffic reported by each of the toll plaza and subsequently match it to the reported

revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against the ten months of actual traffic (Apr-Sep) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.7 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic trends on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of India, the corridor and region/state containing the Asset, along with our approach and results on estimating background along with our key forecasting assumptions,

- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases.

2 The Asset

Introduction

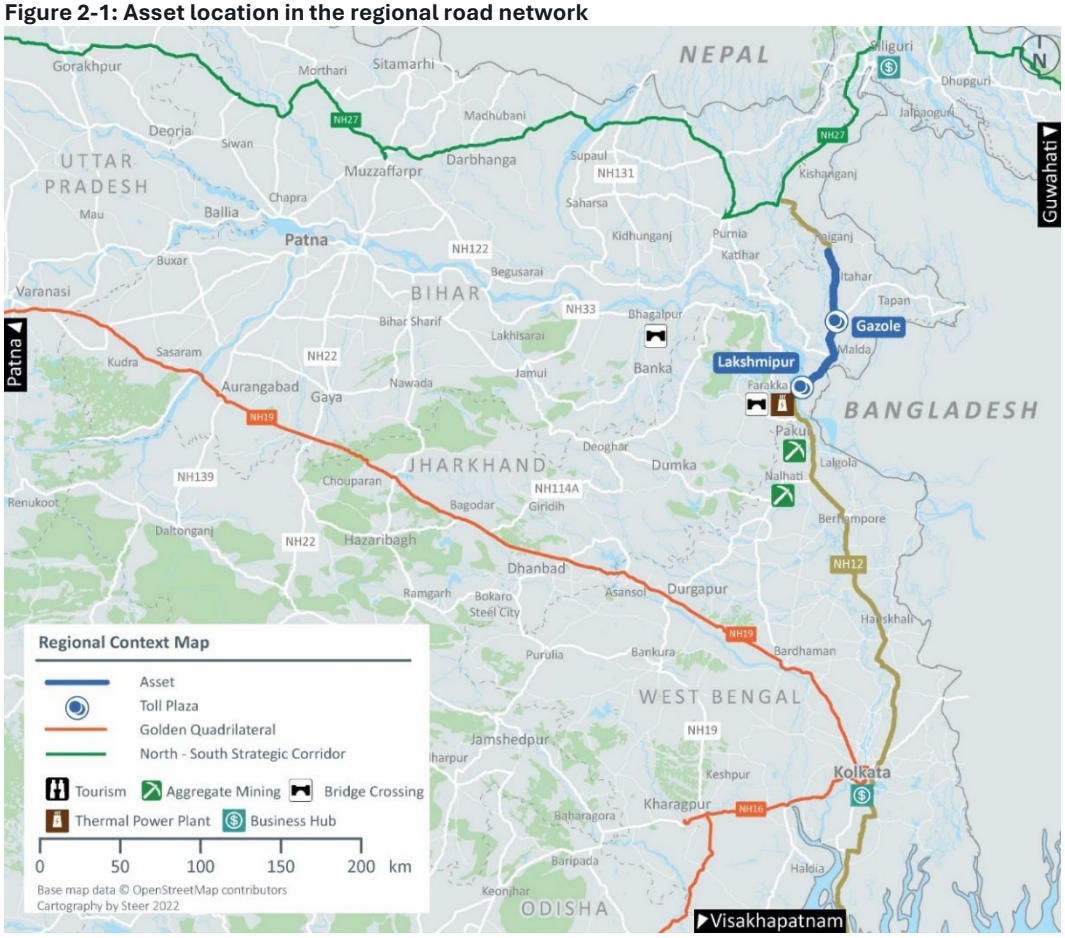
2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of West Bengal, connecting the cities of Farakka and Raiganj and provides connectivity to the city of Malda. The Asset is also located very close to the international border of Bangladesh

2.3 The figure below shows the regional road network in which the Asset is located.

Figure 2-1: Asset location in the regional road network



Source: Steer cartography using OpenStreetMap data.

2.4 As the Asset sits near the border, it also provides connectivity to international land ports on India-Bangladesh border at Mahadipur and Hili (via NH512) connected to the Asset at Malda and Gazole respectively.

2.5 Traffic on the project road is primarily commercial traffic carrying goods to/from different parts of the state of West Bengal, the north-eastern states, adjoining western states (Bihar and Jharkhand) and some southern states (such as Andhra Pradesh and Tamil Nadu).

2.6 The Asset primarily caters to three different types of strategic movements:

- **Short-distance trips** between Malda and other towns in Malda and Murshidabad districts.
- **Medium-distance** trips between southern and northern parts of West Bengal, including movements between Pakur district of Jharkhand, Malda, and Bangladesh.
- **Long-distance trips** between South and East India including Kolkata, and Northeast India. Kolkata is the largest urban agglomeration and one of the four older metropolitan cities of India and is both a large attractor and generator of consumption-linked commodities in East and Northeast India.

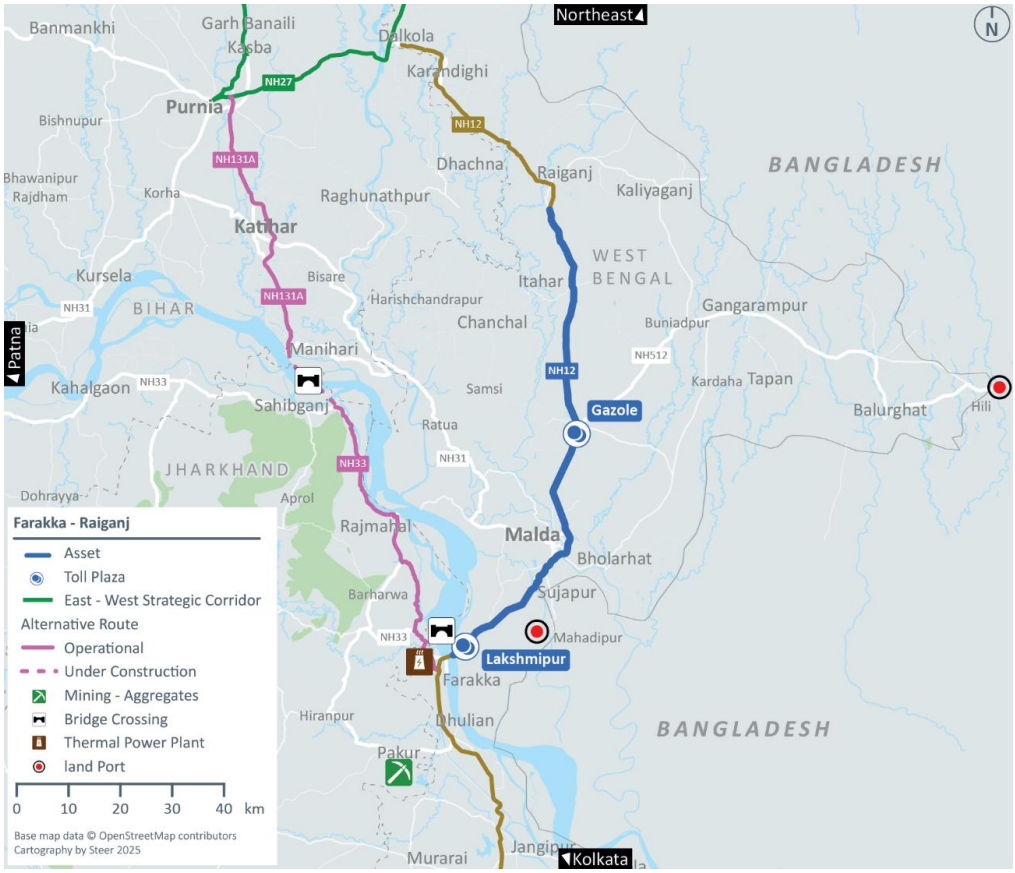
2.7 Essentially, both medium-distance and long-distance movements need to cross the two-lane Farakka Barrage, on the Ganges River, located just at the southern end of the Asset which makes the Asset a crucial funnelling link between southern and northern parts of West Bengal state. Traffic between Kolkata/Durgapur/Bardhhaman and Kishanganj/northeast regions use this barrage, and it is the only bridge crossing available in the region or on this route along the NH12. As a result, the Asset forms part of a strategic corridor that primarily serves long distance commercial traffic.

Asset context

2.8 The Asset is a 100 km toll road section of the NH12 that is the main north-south highway in West Bengal. It is a four-lane highway with two toll plazas, namely, Lakshmipur (TP1) at Km 297.9 (nearer to Farakka) and Gazole (TP2) at Km 351.4 (nearer to Raiganj).

2.9 Malda and Gazole are major settlements situated along the Asset and serve as trip generators / attractors of short – medium distance passenger and commercial traffic that are observed crossing one or both toll plazas on the Asset. Figure 2-2 below provides a closer view of the Asset in the context of its immediate surroundings.

Figure 2-2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.10 Both toll plazas on the Asset have been operational since October 2016 and the Client assumed operations in September 2020. Currently, FY42 is expected to be the last year of the concession, implying 16 years remaining in its concession life. Table 2.1 below summarises key aspects of the concession.

Table 2.1: Key concession details

Particulars	Details
State	West Bengal
Highway and lane configuration	NH12, four-laned
Toll plazas	• TP1: Lakshmipur • TP2: Gazole
Appointed date	February 2011
Commencement of operations*	October 2016
Operated by Client since	September 2020
Concession period	30 years
Last year of concession	FY42
Tollable length (Km) as per concession agreement, applicable	TP1: 56.715 km (including 9.05 km Malda Bypass)

Particulars	Details
	TP2: 43.375 km

Source: Client Data

2.11 Figure 2-3 below shows a typical cross-section of the Asset and its toll plazas.

Figure 2-3 (clockwise): TP1 Lakshmipur, TP2 Gazole, Raiganj Bypass and ROB, Stone Chip Stockyard at India-Bangladesh Border in Mahadipur

Source: Steer site visit

2.12 Tolls are collected for the following ticket categories: Single, Return, Local Commercial, and Monthly tickets. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling.

2.13 Table 2.2 below presents single journey toll rates for FY26 at both the toll plazas.

Table 2.2: Single toll rates on the Asset (INR), applicable April 2025 to March 2026

Type of Vehicle	Single Journey Fee	
	TP1 Lakshmipur	TP2 Gazole
CJV	145	65
LCV	230	105
Bus/Truck	470	225
HCM/EME/3A/MAV	720	350
OSV	915	425

Source: NHAI Revision of User fee

Key economic activities

2.14 Traffic on the Asset is primarily commercial traffic carrying agricultural commodities, and construction materials to/from different areas within the state of West Bengal, the north-eastern states, neighbouring states of Bihar and Jharkhand and some southern states (such as Andhra Pradesh and Tamil Nadu). It also serves traffic originating from or destined to neighbouring countries of Nepal, Bhutan and Bangladesh. West Bengal is regarded as the gateway for India's Act East Policy[1], which aims to strengthen India's strategic, economic, and cultural ties with the Southeast Asian countries, including Bangladesh. In this context, the Asset can be classified as providing critical infrastructure connecting India to Bangladesh via land ports at Mahadipur and Hili.

2.15 Pakur district (JH), located 25 km south of the Asset, is an important region for the production and transportation of stone aggregate to Bangladesh via land ports at Mahadipur, Hili, and other locations further north and along the India-Bangladesh international border. As of January 2018, there were 246 operative and non-operative stone mines across the full district[2] and 255 stone-crushing units[3] that process stone mined from quarries into stone chips/aggregates that are transported to serve construction demand both domestically and across the border in Bangladesh. Seasonal changes, mining regulation, and govt. policies such as vehicle overloading restrictions all have direct and indirect impacts on commercial traffic growth on the Asset as they relate to the productivity and operations of these mines.

2.16 Thus, key economic activities in the region include agriculture and related activities (cotton, rice, and vegetables being the major commodities) and stone (aggregate) mining. Agricultural commodities that are produced and transported via the asset from local farms and cold storages vary by season, and specific externalities. Mining output and materials carried on the asset are impacted by market demand dynamics in both domestic and international markets (primarily Bangladesh), government policies and regulation, as well as seasonal variation. The extent to which these factors do and could continue to impact traffic growth on the Asset is discussed briefly in Chapter 6 below.

Influence of Bangladesh Economy and Domestic Policies on Asset Performance

2.17 As aforementioned, international demand for construction material, particularly stone chips/aggregate demand in Bangladesh serves as an important driver of commercial traffic growth on the Asset. Given the strategic significance of Bangladesh’s economy to the Asset, it is important to review how economic conditions in Bangladesh over the past year have evolved and impacted traffic growth on the Asset:

2.18 In FY24, the country's commercial banks had struggled to meet their import payment obligations, which reduced their foreign exchange reserves[4] and made it more challenging

[1] **Bangladesh corridor vital to India’s ‘Act East’ policy (World Bank blog, September 2017)**

[2] **(PAKUR) DISTRICT SURVEY REPORT FOR STONE MINING (2016-2017)**

[3] **https://dcmsme.gov.in/dips/Pakur.pdf**

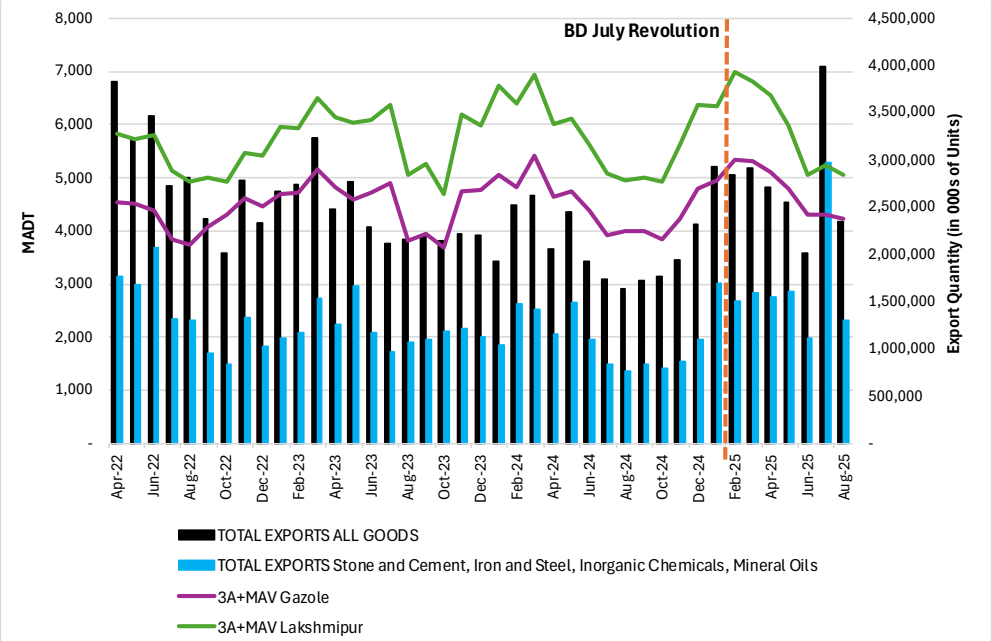
[4] **Major challenges for Bangladesh economy in 2023 | The Financial Express**

to get "Letters of Credit". This continued through the early part of FY25 as well before significantly improving over the past five months[5].

2.19 According to a report published by the Asian Development Bank[6], the downturn in the Bangladesh economy in FY23 and early months of FY24 reflected falling private and public investment tied to high inflation and lower export demand. In FY24, GDP growth in Bangladesh slowed further and expectations of growth in FY25 were also qualified given impact of global supply chain disruption and political transition.

2.20 In addition to the above, which has affected construction activity in Bangladesh and subsequently reduced stone chip/aggregate exports from India (see Figure 2-4 below), domestic policies such as the crackdown on illegal stone mining and quarrying in Jharkhand (and across the wider nation) and other market factors[7] have also impacted production of stone chips/aggregate in Pakur district over the past few years. Both these developments have contributed to suppressed growth of commercial volumes on the Asset. Based on this, expectations of future growth in commercial traffic on the asset is discussed in more detail in Chapter 6.

Figure 2-4: 3A+MAV Growth vs. Bangladesh-bound Export Growth (FY23-FY25YTD)



Source: Steer Analysis of Client data, and Ministry of Commerce (Government of India) Data

Alternate and feeder routes

Alternate routes

2.21 Following from the strategic network context of the Asset (as described above), this section details alternate routes that are either currently available or may be potentially

[5] Overdue import bills down to $88m from $445m in five months | The Business Standard

[6] Asian Development Outlook (ADO) April 2024: Bangladesh

[7] Mechanisation, shutting down of stone quarries push Pakur's workers to the brink - Daijiworld.com

available (in future) to users of the Asset. As part of this study, we have conducted an extensive review of these alternate routes and network developments and have incorporated the impact of those that we believe would impact the Asset significantly into our final traffic and revenue forecasts. These impacts can be summarized as follows:

- Ro-Ro service between Rajmahal and Manikcha[8] : For north-south movements on road, the NH12 (Asset) is the only option for medium-distance traffic between Pakur district (JH) and Malda (WB) or Bangladesh. However, according to truck driver interviews conducted during our site inspections, the unofficial Ro-Ro service between Rajmahal (JH) on the southern bank, and Manikchak (WB) on the northern bank of the Ganges offers an alternative north-south route to the Asset. This route is typically used during times of severe traffic congestion on the Asset, generally due to roadworks and construction activity on the Farakka Barrage. Based on our site visit observations and general understanding of travel patterns within the regional network, the service provided by the Ro-Ro route is currently of an informal set-up, and unlikely to form a competing alternative to the asset for medium-distance commercial volumes carrying stone chip/aggregate materials to/from Pakur to other parts of WB and into Bangladesh. Therefore, we have excluded any potential impact of this route alternative on future traffic growth on the Asset.
- New bridge over Ganga River in Sahibganj, Bihar: A four-lane bridge of length 6km on the Ganges River near Sahibganj, is currently under construction between Sahibganj and Manihari. It is expected to be completed by FY27-FY289. This would provide a route choice to the OD pairs including but not limited to, south of Farakka (including Kolkata, Bardhhaman, Pakur) and North of Raiganj (area between Kishanganj and Supaul including Purnia, Katihar). This impact is evaluated in Chapter 6 below.

Feeder routes

2.22 Over the past few years, several sections of the NH12 highway have been upgraded over time and have significantly improved the overall Level of Service provided by the highway for vehicular traffic travelling both short and long-distances between north, central, and south WB, as well as from/to neighbouring states. While the 4-laning of Farakka-Raiganj section of the NH12 (i.e., the Asset) was completed in FY22[10], the upgrade of the highway extending further north and south of the Asset generally bodes well for traffic growth on the Asset as overall Level of Service (LoS) across a longer stretch of the NH12 is improved and made more attractive to users travelling both short and longer distances. Some of these improvements considered in our network analysis include the following:

- The Dalkhola bypass on the NH12 that was completed in FY22.
- By March ‘24, the section of the NH12 north of the Asset between Raiganj and Dalkhola had also been fully upgraded to 4-lanes[10], along with the opening of the Raiganj Bypass and ROB by May 2024[11].

[8] **What Is RoRo Shipping? A Guide for Businesses & Individuals**

[9] **Project Details - NHAI (4L of Sahibganj - Manihari Ganga Bridge including Manihari Bypass)**

[10] **AS172.pdf**

[11] **Opposition slams Centre’s move to open unfinished road before LS elections**

- 4-laning of the Krishnanagar-Behrampore section of the NH12, expected to be completed by FY26[12].
- The new Farakka Setu, which is a ~2.6km 4-lane road bridge connecting Farakka to Baishnabnagar across the Ganga is under construction. Though construction was expected to get completed by the end of August 2025, the bridge has still not been opened to the public[13]. This can be expected to be opened around mid-FY27.

2.23 We understand that the new bridge will act as a replacement to the existing Farakka Barrage where road traffic will be fully restricted post completion of the new bridge. Plans to construct a rail bridge alongside the completed road bridge have been voiced but not officially sanctioned.

2.24 Based on the network developments listed above, we believe the impact of the improved LoS of the NH12 highway due to completion of the Dalkhola Bypass, Raiganj Bypass and ROB, as well as 4-laning of the full Farakka to Dalkhola section of the NH12 is already being observed on the Asset. The construction of the New Farakka Setu over the past several years and expected construction of the rail bridge beside it is expected to keep construction related traffic growth on the Asset consistent over the near to medium-term. In our analysis, we have not included any additional LoS impact due to the New Farakka Setu as it is meant to replace the access currently being provided by the Farakka Barrage. Given that the Krishnanagar-Behrampore section of the NH12 is still not full upgraded to 4-lane configuration, we have incorporated the impact of this improved LoS on NH12 in our future traffic growth forecasts on the Asset.

Overloading

2.25 Given the nature of commodities carried by commercial vehicles on the Asset, which primarily comprise heavy weight high-volume items such as construction materials - particularly stone chips/aggregates - overloading of commercial vehicles has been historically prevalent on this corridor. Overloaded vehicles are charged through a staggered overloading penalty system, where truckers pay up to 10 times the toll as a penalty.

2.26 Due to historical prevalence of overloading on the corridor, several truckers using the NH12 to transport commodities have also become accustomed to paying overloading penalties and have pre-determined routes that account for the various hidden and apparent transaction costs of transporting goods in overloaded vehicles.

[12] **Project Details - NHAI (Krishnagar - Berhampore section from km 115.00 to km 193.00 of NH-34)**

[13] **Malda: 'Farakka to have second Railway bridge by next year'**

3 Traffic Description

Introduction

3.1 This chapter presents historical traffic and revenue growth trends on the Asset, as well as our analysis of origin-destination (OD) data and traffic count data sourced from primary surveys. This covers data which was collected as a part of this study and previous studies, as well as data provided by the Client.

3.2 Traffic count data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Toll plaza data is used as the primary basis from which the current/base year annual average daily traffic (AADT) is established. This data is typically provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU Factor assumption for Forecasts

3.4 The PCU factors considered in Table 3.1 below are as per IRC64 1990[14]. Based on the discussion with the Client, we have referred to the rigid and trailer splits from the TVC data collected earlier for calculating the effective PCU for MAVs. For Rigid trailer trucks we have assumed a PCU factor of 3, whereas for Trailer trucks we have assumed a PCU factor of 4.5 as defined in IRC64 1990

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV	1.0
Mini LCV	1.0
LCV	1.5
Bus	3.0
2A	3.0
3A	3.0
MAV	3.35
OSV	4.5

Source: Steer analysis

[14] IRC 064: Guidelines for Capacity of Roads in Rural Areas

Historical trends

3.5 The table below presents the historical traffic evolution for each of the Asset toll plazas. Historical traffic data on the Asset is available from October 2016 through FY26YTD (September 2025). However, since the data for the complete FY17 is not available, Table 3.2 to Table 3.5 below present the data between FY18 and FY26YTD.

Table 3.2: Traffic levels at TP1 Lakshmipur

Class	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	2,536	2,479	2,822	3,659	3,661	3,680	3,887	4,082	4,288	7.0%
LCV	800	868	861	743	421	375	400	477	556	(7.1%)
Bus	1,293	1,350	1,317	1,298	411	434	420	420	422	2.0%
2A*					875	923	974	1,070	1,171	
3A	1,770	954	1,039	956	774	781	757	737	688	(11.8%)
MAV	3,515	3,216	4,347	3,960	4,436	4,767	5,001	5,077	4,810	5.4%
Total	**9,915**	**8,867**	**10,385**	**10,616**	**10,578**	**10,961**	**11,438**	**11,864**	**11,936**	**2.6%**
PCU	**24,721**	**21,483**	**25,765**	**24,822**	**25,356**	**26,656**	**27,718**	**28,516**	**28,108**	**2.1%**

Source: Steer analysis of Client data; FY26YTD includes data till September 2025; *2A includes Buses till March 2021

Table 3.3: Tollable Traffic levels at TP1 Lakshmipur

Class	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	2,390	2,322	2,603	3,393	3,413	3,454	3,646	3,795	3,989	6.8%
LCV	750	810	800	687	403	345	365	441	525	(7.3%)
Bus	1,268	1,308	1,268	1,278	395	429	413	406	417	2.0%
2A*					85	905	954	1,049	1,154	
3A	1,767	942	1,030	936	770	780	756	736	688	(11.8%)
MAV	3,512	3,187	4,325	4,019	4,421	4,761	4,999	5,074	4,806	5.4%
Tollable AADT	**9,687**	**8,570**	**10,026**	**10,314**	**10,255**	**10,676**	**11,133**	**11,502**	**11,579**	**2.5%**
Tollable PCU	**24,404**	**20,980**	**25,209**	**24,551**	**22,601**	**26,288**	**27,336**	**28,054**	**27,679**	**2.0%**

Source: Steer analysis of Client data; FY26YTD includes data till September 2025; Tollable traffic excludes exemption and violation; *2A includes Buses till March 2021

Table 3.4: Traffic levels at TP2 Gazole

Class	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	3,498	3,895	4,283	4,796	5,097	5,308	5,616	5,820	6,297	7.5%
LCV	651	637	658	543	319	323	361	427	540	(5.8%)

Class	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
Bus	1,655	1,658	1,679	1,536	557	666	658	659	686	1.8%
2A*					1,034	1,113	1,147	1,213	1,327	
3A	1,321	851	999	913	789	799	763	756	733	(7.7%)
MAV	2,452	2,501	3,337	3,167	3,290	3,621	3,664	3,755	3,764	6.3%
Total	**9,577**	**9,541**	**10,956**	**10,955**	**11,088**	**11,831**	**12,210**	**12,630**	**13,347**	**4.0%**
PCU	**21,630**	**20,767**	**24,501**	**23,583**	**23,759**	**25,681**	**26,160**	**26,945**	**27,976**	**3.2%**

Source: Steer analysis of Client data; FY26YTD includes data till September'25; *2A includes Buses till March 2021

Table 3.5: Tollable Traffic levels at TP2 Gazole

Class	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25
CJV	3,253	3,618	3,912	4,377	4,758	4,939	5,235	5,408	5,874	7.5%
LCV	633	617	628	499	315	320	355	419	536	(5.7%)
Bus	1,630	1,632	1,632	1,498	547	663	652	648	683	1.8%
2A*					1,031	1,099	1,133	1,195	1,315	
3A	1,316	845	991	885	785	782	762	754	732	(7.7%)
MAV	2,446	2,491	3,312	3,140	3,290	3,607	3,659	3,748	3,760	6.3%
Tollable AADT	**9,279**	**9,206**	**10,476**	**10,401**	**10,727**	**11,410**	**11,796**	**12,172**	**12,902**	**4.0%**
Tollable PCU	**21,250**	**20,344**	**23,840**	**22,816**	**27,129**	**29,286**	**29,874**	**27,621**	**28,711**	**3.2%**

Source: Steer analysis of Client data; FY26YTD includes data till September'25; Tollable traffic excludes exemption and violation; *2A includes Buses till March 2021

3.6 TP1 (Lakshmipur) observed a CAGR of 2.1% in terms of PCU between FY18 and FY25, while TP2 grew by CAGR 3.2% in the same period. The increase in CJV volumes at both toll plazas in FY25 can be attributed to an increased LoS offered by the completion of the Raiganj Bypass and ROB north of the Asset as well as the completion of the 4-laning of the Dalkhola-Raiganj section of the NH12 by March 2024 making CJV travel more attractive.

3.7 TP2 (Gazole) carries more CJV traffic compared to TP1, as TP2 is closer to the town of Malda which contributes to higher passenger traffic on the Asset. Additionally, 2A+Bus account for a considerable share of total traffic at both plazas, at around 1,600 and 2,000 AADT in FY25 at TP1 and TP2 (respectively).

3.8 The growth trend of tollable traffic on the Asset has been at the same level as that of total traffic. For the period of FY18-25, TP1 Lakshmipur recorded an average annual growth of 2.0% per year for its tollable PCU compared to 2.1% per year for total PCU. Over the same

period, TP2 recorded an annual growth of 3.2% per year for its tollable PCU vs. 3.2% per year for total PCUs.

3.9 3A category has shown a negative trend historically. The reduction in 3A volume is a result of the declining demand for 3A vehicles, which are being replaced by 2As and MAVs – a trend not unique to the Asset or region. MAVs offer higher tonnage capacity making them more cost-effective for transporters with the Asset primarily catering to construction traffic, movement towards MAV's is more favourable for users. While the increase in 2A volume reflects the growing preference for these vehicles due to favourable changes in the legal permissible loads for 2As and their suitability for e-commerce-related freight, particularly high-value, low-volume goods over medium to long distances. This is consistent with our discussion with various transporters and OEMs across the country who are favouring 2A and 5A vehicles for commodity movement due to better unit economics.

3.10 The recent decline in commercial volume especially in FY25 and FY26YTD has been partly contributed by decline in exports to Bangladesh, due to the recent economic and political turmoil the country has seen (refer chapter 2). It is expected that the Bangladesh economy should revive in the medium term resulting in improved traffic performance on the Asset.

3.11 Table 3.6 and Table 3.7 below present total annual revenue (in INR Cr) and AADC (in INR Lakhs) at TP1 and TP2 respectively over the period FY21-FY26YTD.

Table 3.6: Total revenue (INR Crores) and AADC (annual average daily collection) in INR Lakhs at TP1 Lakshmipur

Year	TP1 (INR Crores)	AADC	AADC Growth (%)
FY21	88.3	24.2	-
FY22	140.2	38.4	58.8%
FY23	155.6	42.6	10.9%
FY24	162.2	44.3	4.0%
FY25	165.8	45.4	2.5%
FY26YTD	91.2	49.6	9.1%

Source: Steer analysis of the Client data; FY26YTD includes data till September'25

Table 3.7: Total revenue (INR Crores) and AADC in INR Lakhs at TP2 Gazole

Time Period	TP2 (INR Crores)	AADC	AADC Growth (%)
FY21	78.4	21.5	-
FY22	63.2	17.3	(19.4%)
FY23	69.7	18.7	7.9%
FY24	70.5	19.3	3.1%
FY25	54.0	17.8	(7.5%)
FY26YTD	40.6	22.0	23.7%

Source: Steer analysis of the Client data; FY26YTD includes data till September'25

3.12 As of FY26YTD, TP1 Lakshmipur reported an AADC of ~INR 49.6 Lakhs – significantly higher than the ~INR 22.0 Lakhs reported by TP2 Gazole.

3.13 In FY25, the Asset recorded an average daily collection of INR 63.2 lakhs. This is at the same level observed in FY24 (INR 63.6 Lakhs).

Toll Frequencies

3.14 Toll frequency or ticket segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has a different ticket segmentation. As a part of our historical data analysis, we calculate toll frequencies for each vehicle category from the latest monthly traffic data shared by the Client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract local commuters to opt for these category passes instead of evading toll. Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For the Asset, the segmentation discussed below reports Exemptions and Violations together.

3.15 Understanding toll frequencies provide us insights into the nature of traffic using the Asset. CJVs generally have higher shares of return passes or local monthly passes because they travel for short to medium distances, while heavy trucks mostly have single tickets since they travel longer distances. The Asset catering to short distance local traffic generally observes high share of return or other local monthly passes while the Asset catering to strategic long-distance traffic generally observes high share of single ticket traffic. Table 3.8 below presents ticket types currently sold at both the Asset plazas.

Table 3.8: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows the vehicle to cross the plaza twice in a day at discounted rates.
Monthly Pass	Discounted ticket for all road users issued at toll plaza who intend to undertake multiple single trips using the toll plaza. 50 trips are allowed on a discounted rate to be used within 30 days of issue.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

Source: Client data

3.16 As a general pattern, the shares of single/return/monthly tickets tend to stabilise within 2-3 years of the commencement of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns. During FY21 and FY22, however, two key events impacted the traffic patterns throughout the country: COVID-19 and FASTag implementation.

3.17 FY21 had multiple disruptions in traffic patterns related to the pandemic. In February 2021, there was also significant change in ticket segmentation observed across several toll roads around the country due to the imposition of the use of FASTag, the electronic toll payment system mandated by the National Highway Authority of India (NHAI). This mandate significantly changed ticket patterns in FY21 and FY22 across most (if not all) toll road assets across the country including the Asset. However, by FY23, travel patterns had stabilised, following which they can be considered to follow normal travel behaviours on the Asset.

Introduction of Annual pass for CJVs

3.18 The National Highway Authority of India launched the “The FASTag Annual Pass” on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.19 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

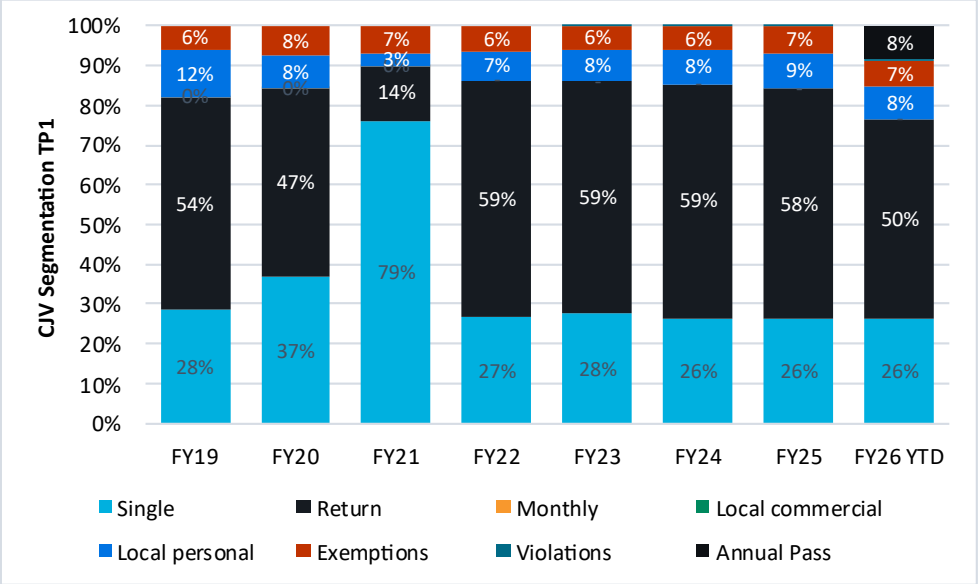
The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll roads

Share of traffic by payment type

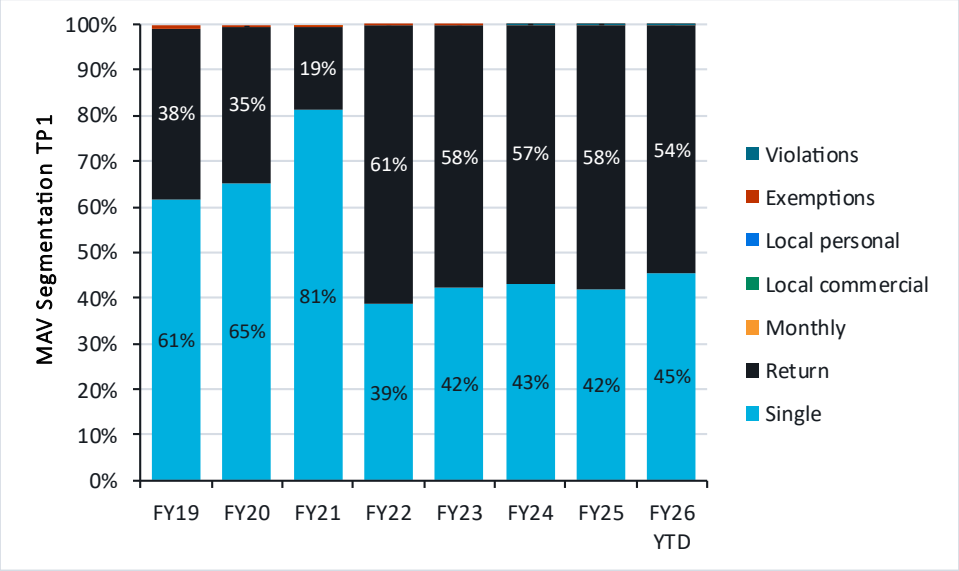
3.20 In our forecasted segmentation we have used the average ticket distribution by vehicle category observed in FY26YTD (April - September 2025) and held that constant through the end of the forecast. Figure 3-1 through Figure 3-4 below present historical changes in toll segmentation at both TP1 and TP2 for CJVs and MAVs.

Figure 3-1: Ticket-segmentation for CJV, TP1 Lakshmipur



Source: Steer analysis of the Client data; FY26YTD includes data till September'25

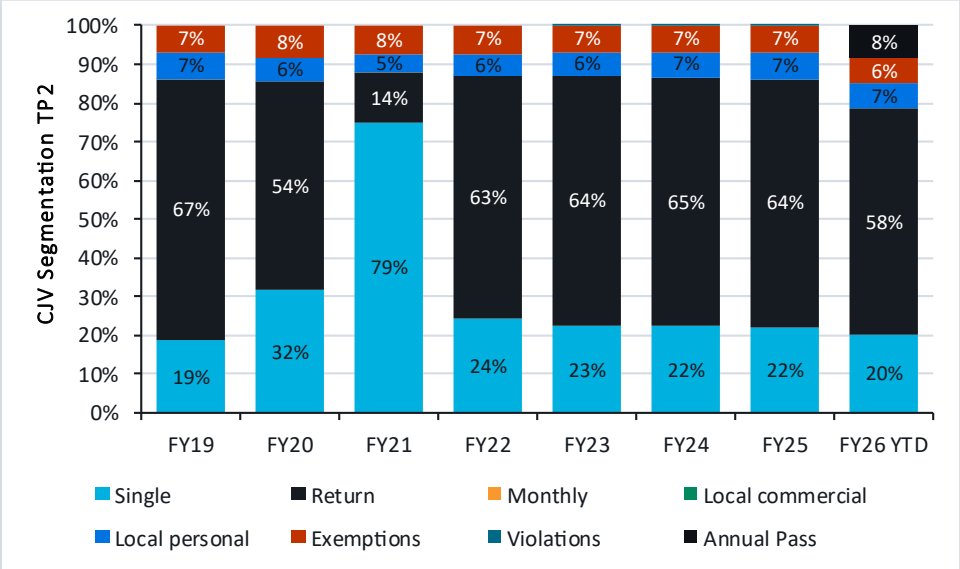
Figure 3-2: Ticket-segmentation for MAV, TP1 Lakshmipur



Source: Steer analysis of the Client data; FY26YTD includes data till September'25

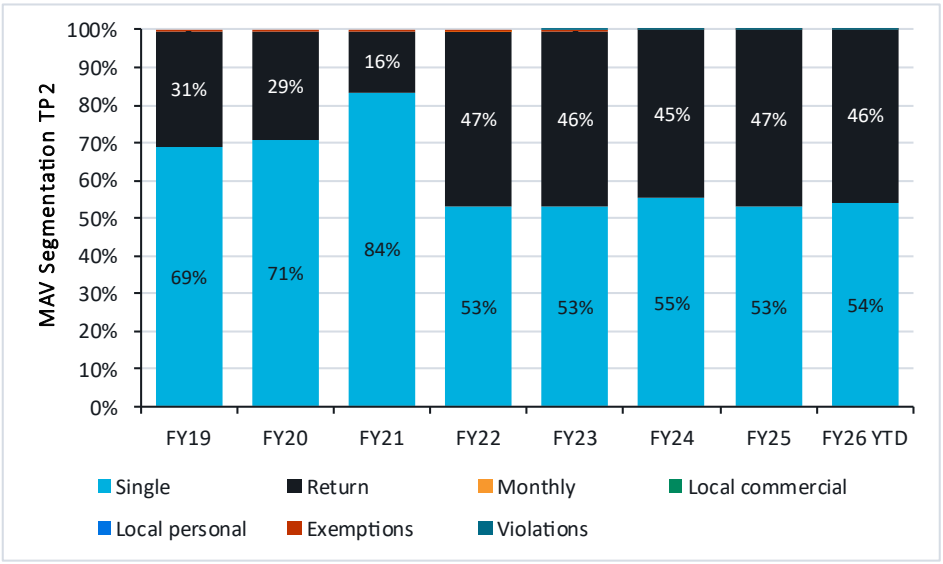
3.21 Ticket segmentations for both CJVs and MAVs at TP1 in FY26YTD are consistent with FY24 and FY25 segmentations. Return tickets remain as the dominant ticket category in FY26YTD accounting for more than 55% of tickets in both CJVs and MAVs. At TP1, the share of local personal tickets and exemptions for CJVs are 9% and 7% (respectively) as of FY26YTD and comparable to FY25 shares of the same tickets. This indicates stability in the travel patterns with no major differences. The high share of return tickets in MAVs (at 58% in FY26YTD) reflects the prevalence of short-medium distance commercial trips.

Figure 3-3: Ticket-segmentation for CJV, TP2 Gazole



Source: Steer analysis of the Client data; FY26YTD includes data till September'25

Figure 3-4: Ticket Segmentation for MAV, TP2 Gazole



Source: Steer analysis of the Client data; FY26YTD includes data till September'25

3.22 At Gazole, travel patterns are like Lakshmipur for CJVs where return remains the dominant ticket category. For MAVs however, the share of single tickets at TP2 is higher than observed at TP1. Additionally, the ticket segmentation across all vehicle categories in FY26YTD is consistent with FY25 levels.

3.23 Table 3.9 below depicts the FY26YTD segmentation (Apr-Sep'25) for LCV, Bus and 2As at TP1 Lakshmipur and TP2 Gazole.

Table 3.9: Ticket-segmentation for LCV, Bus and 2As at TP1 Lakshmipur and TP2 Gazole (FY26YTD)

Ticket Category	TP1 Lakshmipur				TP2 Gazole			
	LCV	Bus	2A	3A	LCV	Bus	2A	3A
Single	43%	58%	75%	78%	43%	54%	65%	73%
Return	52%	41%	23%	22%	57%	45%	34%	27%

Ticket Category	TP1 Lakshmipur				TP2 Gazole			
	LCV	Bus	2A	3A	LCV	Bus	2A	3A
Monthly	-	-	-	-	-	-	-	-
Local commercial	-	-	-	-	-	-	-	-
Exemption	6%	1%	1%	0%	1%	0%	1%	0%

Source: Steer analysis of Client data

Overloading

3.24 Based on our analysis of the historical data as shown in Figure 3-5 and Figure 3-6 below, the Asset shows a notable share of overloaded vehicles, especially for 2As, 3As and MAVs. This is due to the high share of denser commodities like aggregate and stone being carried on commercial vehicles on the Asset. FY26YTD overloading trends (compared to FY25) show a decline in LCVs and a rise in MAVs. The below figure and table layout the historical levels of observed overloading on the Asset.

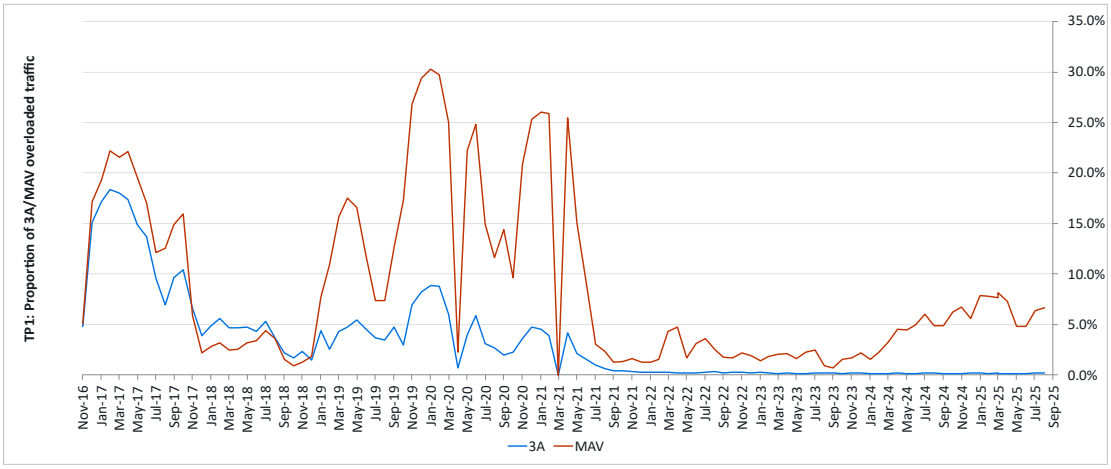
3.25 As observed in Table 3.10 below, due to strict restriction on overloading, the shares have consistently declined across all vehicles categories since FY21.

Table 3.10: Overloading shares between FY21-FY26YTD

Vehicle type	FY21	FY22	FY23	FY24	FY25	FY26 YTD
TP1						
LCV	6.2%	11.2%	5.1%	2.5%	1.7%	1.3%
2A	4.6%	0.8%	0.5%	0.3%	0.5%	0.4%
3A	3.6%	0.3%	0.2%	0.2%	0.2%	0.1%
MAV	15.1%	2.0%	2.4%	1.7%	6.0%	6.4%
TP2						
LCV	4.3%	8.7%	5.2%	3.4%	2.2%	2.1%
2A	2.5%	0.7%	0.5%	0.5%	0.6%	0.7%
3A	3.0%	0.4%	0.4%	0.3%	0.4%	0.7%
MAV	10.7%	1.5%	1.4%	0.0%	2.7%	3.3%

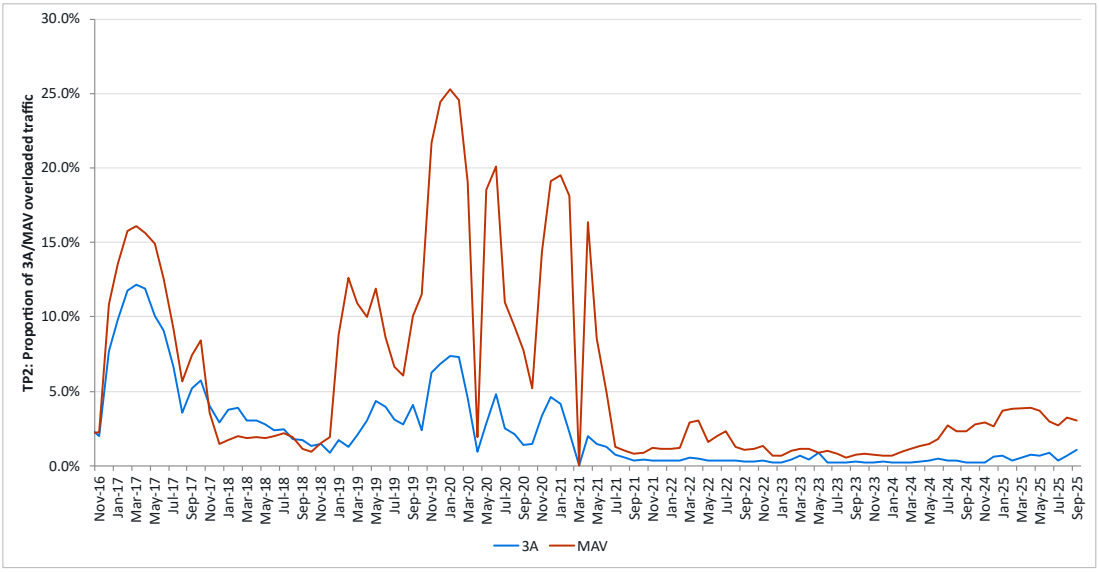
Source: Steer review of Client TMS data; FY26YTD includes data till September'25

Figure 3-5: 3A, MAV overloading shares at TP1 Lakshmipur (October 2016 – September 2025)



Source: Steer analysis of Client data

Figure 3-6: 3A, MAV overloading shares at TP2 Gazole (October 2016 – September 2025)



Source: Steer analysis of Client data

3.26 As shown in Figure 3-5 and Figure 3-6 above, the share of overloaded 3A and MAV vehicles at both plazas (TP1 and TP2) show a consistent drop since FY21. Historical overloading shares show large variations due to exogenous impacts - local authority restrictions leading to the drops in overloaded traffic from Jan-18 to Jul-18 and Jul-19; monsoons; repair works of Farakka Barrage and COVID-19.

3.27 Overloaded MAV traffic at both plazas have observed growth over FY24 levels. Between FY22 and FY24, the share of overloaded vehicles observed on the Asset was low due to the strict enforcement of government restrictions on overloaded vehicles across the state. This trend showed signs of abatement late FY24 onwards as non-compliance increased. In September 2024, the Federation of West Bengal Truck Operators Association (WBTOA) called for a three-day strike[15] demanding stronger enforcement

[15] **West Bengal truckers announce 72-hour strike over overloading and illegal fees | Kolkata News - Times of India**

across the state. As a result, the Asset observed a drop in the share of overloaded commercial traffic briefly during that time. However, as time progressed, the share of overloaded vehicles continued to increase with January 2025 observing 7.8% overloaded MAVs relative to 1.5% observed the previous year (January 2024).Figure 3-5 and Figure 3-6 above present historical growth in the share of overloaded 3As and MAVs at both plazas on the Asset.

3.28 In our forecasting models, to avoid high variability in overloading revenues going forward, and to reflect the assumption that growth in overloaded vehicles will not sustain, we have assumed overloading to remain constant at the average shares (by vehicle category at both plazas) observed over the period Apr-Sep '25. Any increase in overloading from current levels will be an upside on revenue on this Asset.

3.29 Historically, overloaded vehicles were charged a flat nine-times penalty of the Single fee for the vehicle type, on the Asset. However, based on an NHAI circular[16] dated 25 September 2018, the Client has been charging overloading penalties as per the staggered penalty system presented in Table 3.9 below. It is important to note that as per the information available 75% of the overloaded revenue is allocated to the old Concessionaire[17] and 25% of the overloaded revenue will be allocated to the new concessionaire.

Table 3-9: Overloading penalties on Asset

Percentage of excess load over Maximum Permissible Gross Vehicular Weight	Multiplying factor to Single rate of fees (including normal fees)	Penalty
0% to 20%	2	Single fee multiplied by multiplying factor
>20% to 40%	4	
>40% to 60%	6	
>60% to 80%	8	
>80% and above	10	

Source: NHAI circular [F. No. H-25016/1/2018-Toll]

3.33 Aside from the NHAI rules on overloading and penalties for the same, the local administration around the Asset has introduced bans on overloading at various times and lifted them later in the history of the Asset's operation. This reflects in the swinging shares of overloading observed on the Asset. As changes in the ability to overload change the number of trucks required to operate a certain payload, we observe associated swings in truck volumes as well during these periods. We discuss this in further detail in Chapter 6.

Data Collection exercise

3.34 As aforementioned, to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset, comprising the surveys listed in Table 3.11 below. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual

[16] NHAI circular numbered F. No. H-25016/1/2018-Toll

[17] HCC is the old Concessionaire and the Client is the new Concessionaire

data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.11: Data collection schedule

Toll Plaza	3-day videography based TVC			1-day OD survey	
	Start date	End date	Time (hrs)	Start date	Start time
TP1	2nd Jul 2023	4th Jul 2023	00:00-23:59	3rd Jul 2023	2000 hours
TP2	9th Dec 2020	15th Dec 2020	0000-2359	13th Nov 2019	0900 hours

Source: Steer analysis

3.35 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, in order to fully understand the impact of this weekly fluctuation on the Asset, we had collected seven-day counts at each toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.36 Taking an average of the TVC counts, we obtained the following weekly average daily traffic (WADT) for each toll plaza. This WADT excludes non-tollable vehicle such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicle, government vehicle and other vehicle types officially allowed as 'exempted' under the concession agreement.

3.37 As presented in Table 3.12 below, CJVs are largest vehicle category at TP1 (3,927), closely followed by MAVs at 3,483. However, at TP2, CJVs are the largest vehicle category (5,720), followed by MAVs 3,592. Lower truck volumes at TP1 and TP2 can be attributed to ongoing economic slowdown in Bangladesh. TP1 being closer to Bangladesh border Mahadipur observes heavy export items of stone chips/aggregate carried to Bangladesh. However, with the economic slowdown and reduced exports, total traffic has reduced on both plazas reflecting lower growth. Higher CJV volumes at TP2 is due to its proximity to more urban and densely populated town of Malda (as compared to Farakka for TP1).

Table 3.12: WADT from TVC counts

Toll Plaza	CJV	LCV	Bus/2A	3A/MAV	Total
TP1 Lakshmipur	3,927	882	955	3,483	**9,248**
TP2 Gazole	5,720	809	1,390	3,592	**12,454**

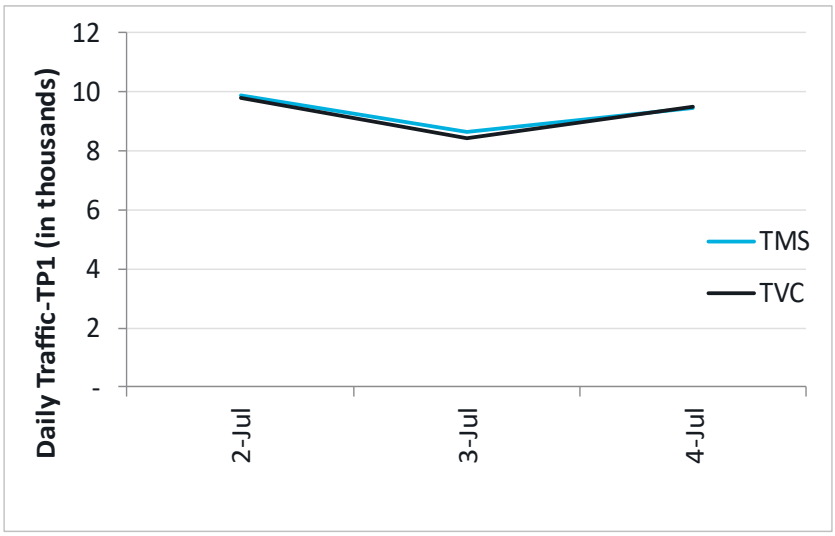
Source: Steer analysis

TVC v/s TMS analysis

3.38 We used our TVC data to validate the toll plaza data for the same days, as supplied by the Client via their toll management system (TMS). This TMS data was then used as the base data, for our forecasting model.

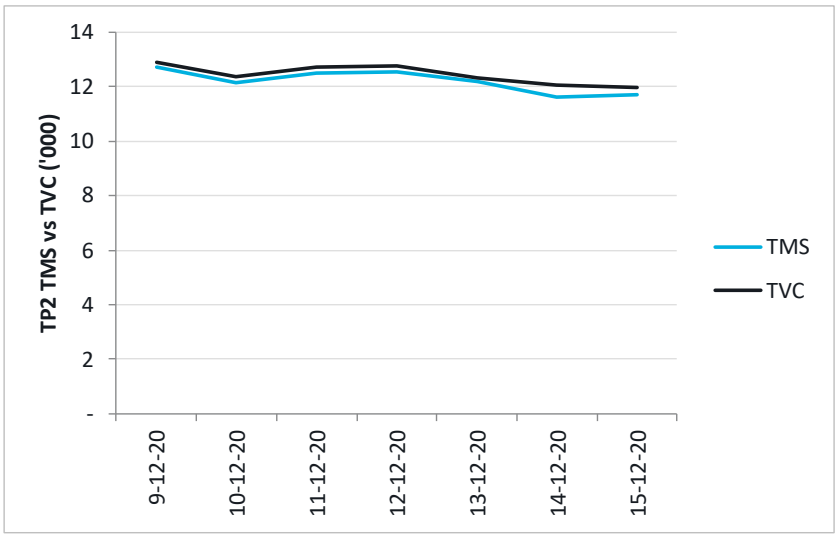
3.39 The following figures show the comparison between the daily traffic observed by TVC and TMS for the two toll plazas.

Figure 3-7: Comparison between TVC and TMS daily traffic data, TP1 Lakshmipur



Source: Steer analysis of TVC and Client TMS data

Figure 3-8: Comparison between TVC and TMS daily traffic data, TP2 Gazole



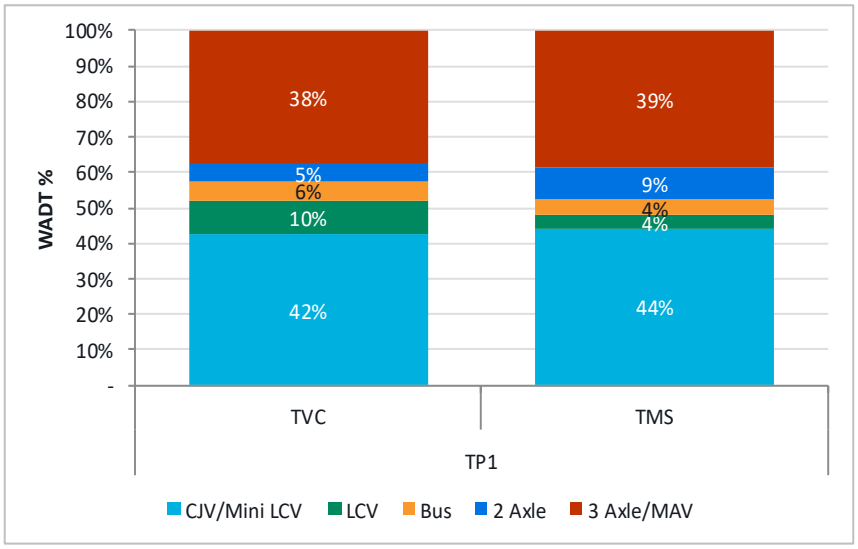
Source: Steer analysis of TVC and Client TMS data

3.40 Figure 3-7 through Figure 3-10 show the comparison between daily traffic data and shares of vehicle categories in TVC and TMS for the two toll plazas. As presented in Figure 3-7 and Figure 3-8 above, the difference between daily traffic from both sources is minimal at both TP1 and TP2. However, in both cases, the TVC is consistently 1-2% higher than the TMS across the week. These differences can be attributed to technical differences between the two independent traffic counting systems.

3.41 Further, Figure 3-9 and Figure 3-10 below compare the shares of vehicle types at both plazas, between TVC and TMS data. As seen below, there is a good fit between TVC and TMS data in terms of proportions, except for LCV and Buses/2A. However, as we have observed in several toll roads across the country, this can be attributed to classification

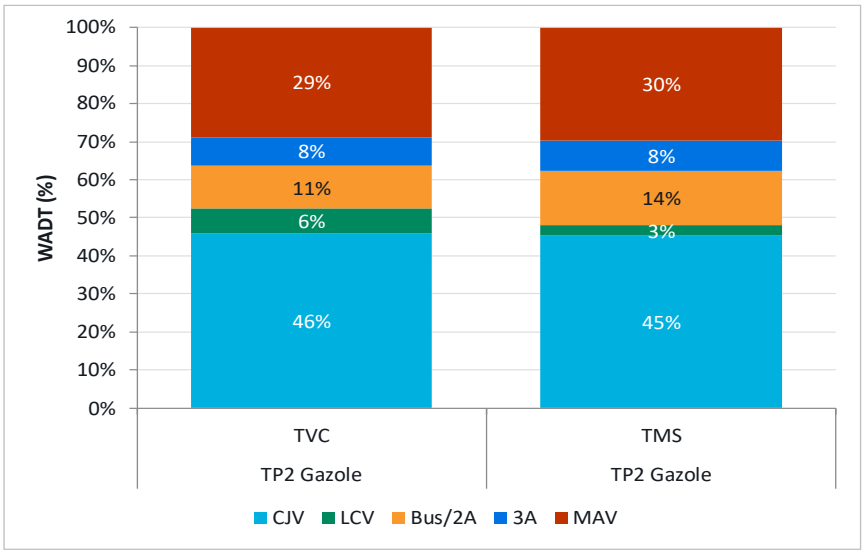
differences in different counting systems, especially as often observed for LCV and Buses/2A.

Figure 3-9: Comparison between vehicle shares from TVC and TMS WADTs for TP1



Source: Steer analysis of TVC and client TMS data

Figure 3-10: Comparison between vehicle shares from TVC and TMS WADTs for TP2



Source: Steer analysis of TVC and client TMS data

3.42 Upon combining vehicle categories into two super-categories (light and heavy vehicles), we see that for light vehicles (including CJV, LCV, 2A and Buses), the difference comes down to about 6% and 3% at TP1 and TP2 respectively. Heavy vehicles comprising 3A and MAVs show minimal differences at less than 2%. Given the overall good fit of the data at a WADT level and minimal variation between the TVC and TMS data for the largest revenue generator (3A and MAVs), we believe the base year traffic calculated using the Client TMS data forms a reasonable estimate.

Key findings of origin-destination analysis

Overview

3.43 Origin-destination (OD) analysis enables us to understand the nature of traffic movement on the Asset. The OD analysis presented here is based on data collected on behalf of the Client in July 2023 and November 2019. More recent OD surveys were not undertaken as this Asset has a long operational history and we did not believe material changes in these patterns would have occurred in this period.

3.44 We have analysed the regional drivers of demand based on the following analyses:

Zonal influence
Commodity distribution
Top OD pairs
Trip length distribution

3.45 While zonal analysis and list of top OD pairs help us to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.46 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TVC data) during the same period. Table 3.13 below presents the sample rates for key vehicle type aggregations at both the toll plazas. We believe that the sample rates of the OD data are reasonable.

Table 3.13: Sample rates for OD data

Vehicle type	TP1 Lakshmipur	TP2 Gazole
Passenger (CJV + Bus)	51%	33%*
Goods (LCV+ 2A + 3A + MAV)	73%	79%

Source: Steer analysis of OD data, * The surveys took place during the COVID-19 pandemic due to which the vehicles were reluctant to stop and answer the enumerators.

Zone categories

3.47 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states, and regions in the vicinity of the Asset, we have aggregated zonal data as described in the following table.

Table 3.14: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	On or very close to the Asset.
Immediate area of influence (IAOI)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of State	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)

Aggregate Zone	Description
Odisha	All the trips that originate or end in the neighbouring state of Odisha
Bihar	Bihar
Northeast India	Northeast Indian states
Chhattisgarh	Chhattisgarh
Jharkhand	Jharkhand
Madhya Pradesh	Madhya Pradesh
West India	Rajasthan, Gujarat
Maharashtra	Maharashtra (including Mumbai)
North India	Uttarakhand, Jammu and Kashmir, Delhi NCR, Uttar Pradesh, Punjab
South India	Andhra Pradesh, Tamil Nadu, Karnataka, Kerala
Rest of India	Rest of Indian states.
Outside India	Nepal, Bhutan, Bangladesh.

Source: Steer analysis

Zonal influence

3.48 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence[18] at each toll plaza of each Asset, aggregated based on zonal aggregation listed in the previous sub-section. Please note that zonal influence is analysed on trip ends and not trips.

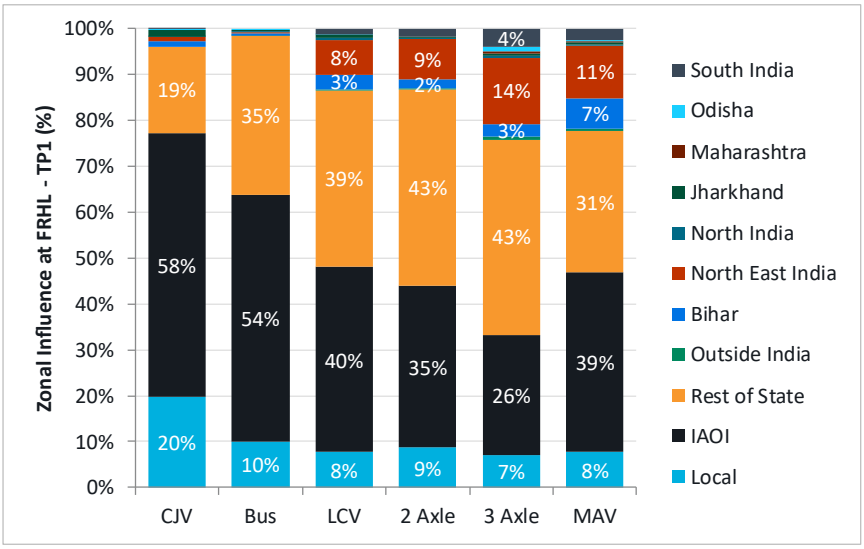
3.49 Figure 3-11 and Figure 3-12 below presents the zonal influence of different regions on all types of vehicular traffic observe at each of the toll plazas. We can see that 'IAOI' trips consistently account for the largest share of trips across all vehicle types. This follows from the earlier observation of the high share of 'return' trips observed at both plazas on the Asset. We observe the highest share of IAOI trips for CJVs (58% at TP1, and 60% at TP2). Trips between Farakka and Malda are the largest contributor to the CJV traffic on TP1, whereas Malda and Gazole contribute to almost 36% of the total CJV trips at TP2.

3.50 In case of 3A/MAVs too, we see a very high share of IAOI trips at 39% and 34% respectively, at TP1 and TP2. Rest of West Bengal contributes to about 25% of traffic volume. The trip ends with highest zonal influence for 3A/MAV on the Asset are Farakka, Raiganj, Kolkata and Darjeeling, with each of these contributing to about 10-15% of the total trips on the Asset.

3.51 Other contributors are North-east India with about 11-14% share in 3A/MAV vehicles and South India with about 3-4% share in 3A/MAV category.

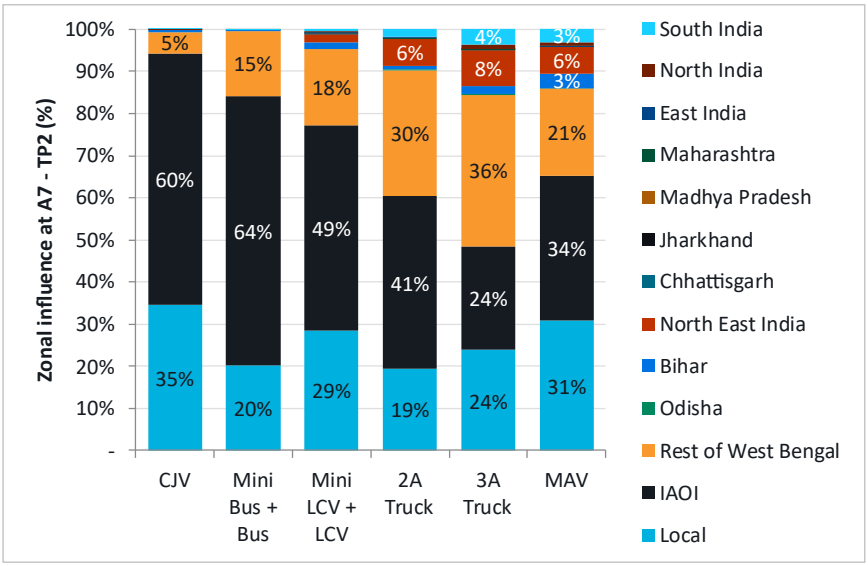
[18] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad is 50% since one trip end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

Figure 3-11: Zonal influence, TP1 Lakshmipur



Source: Steer analysis of OD data

Figure 3-12: Zonal influence, TP2 Gazole



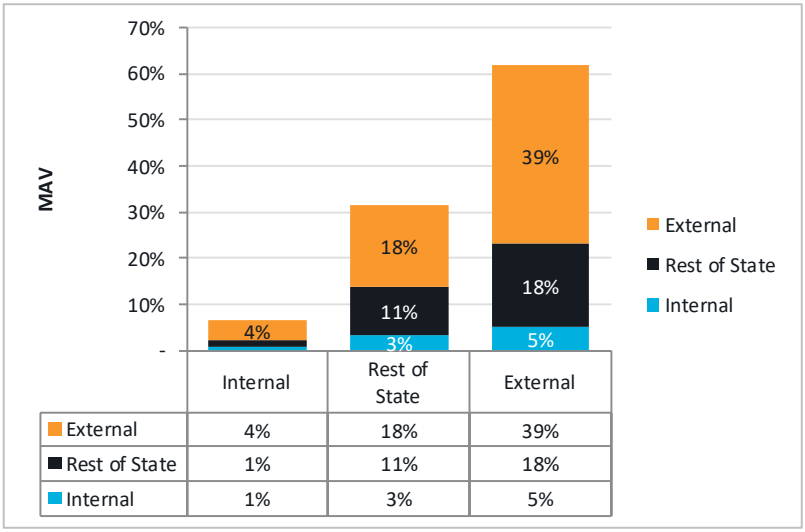
Source: Steer analysis of OD data

Internal External analysis

3.52 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e., local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). RoS (Rest of State) here represents areas within the state which are neither local nor IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e. lying on the Asset, while 'External' zones are areas lying outside the state. The graphs below show the distribution of trips based on these categories. These reflect observations from the zonal influence analysis presented earlier, except at a higher level of aggregation and at a trip level.

3.53 As evidenced in Figure 3-13 and Figure 3-14 below, a significant share of I-I trips is observed across all vehicle categories at both toll plazas due to significant generators of economic activity like Pakur located relatively near the Asset. The share of E-E movements in heavy goods vehicles is also low, reflecting the local/regional nature of the movements facilitated by the Asset.

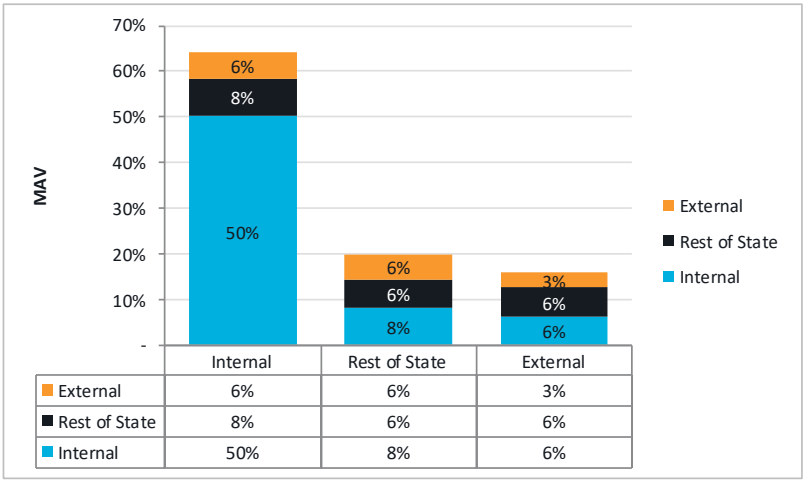
Figure 3-13: Internal-External distribution, TP1 Lakshmipur



	Internal	Rest of State	External
External	4%	18%	39%
Rest of State	1%	11%	18%
Internal	1%	3%	5%

Source: Steer analysis of OD data

Figure 3-14: Internal-External distribution, TP2 Gazole



	Internal	Rest of State	External
External	6%	6%	3%
Rest of State	8%	6%	6%
Internal	50%	8%	6%

Source: Steer analysis of OD data

Commodity distribution

3.54 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in Table 3.4 below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3.15: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	AGR
Cattle Food / Livestock (sheep, goat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood, Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, Household items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

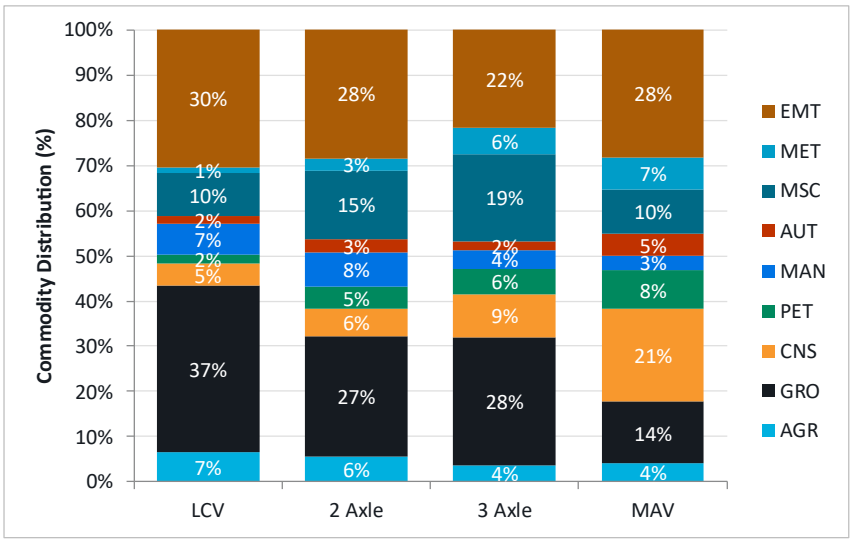
Source: Steer analysis

3.55 Figure 3-15 and Figure 3-16 below show the commodity distribution at each toll plaza, at the total level, and by direction. The commodity distribution for goods vehicles, indicates the importance of stone quarries and crushers in the immediate vicinity of the Asset; about 21% of MAVs carry construction material, primarily stones and aggregates at TP1 Lakshmipur. Based on the analysis of the OD movements of the CNS category, we observe the movement of stone and other building material originating from the nearby towns of Pakur and Nalhati to the Bangladesh border and parts of North Bengal.

3.56 Agricultural and grocery products are carried by a significant share (32%) of 3As at TP1 Lakshmipur. These trips are generally between agricultural areas of northern West Bengal, including tea plantations in Darjeeling, and large urban consumption centres like Kolkata and cities in the southern states.

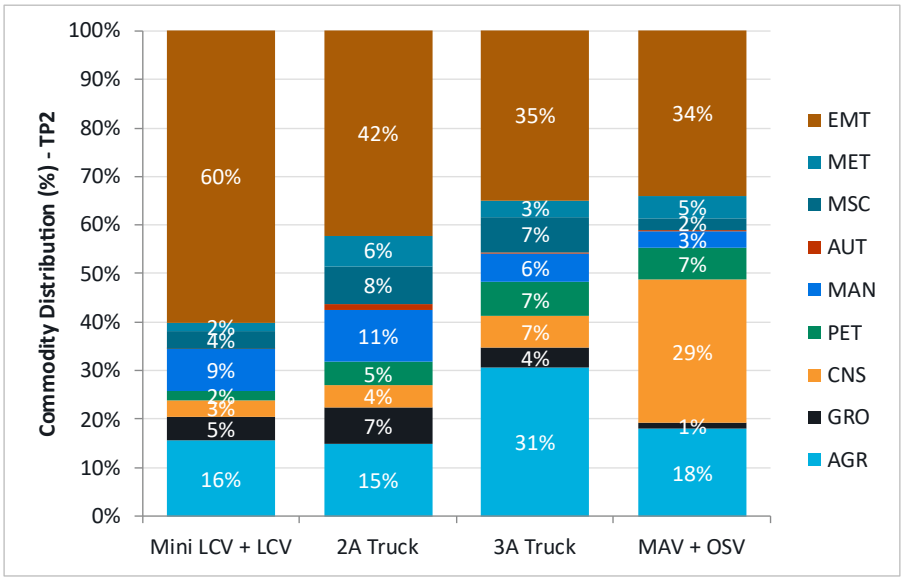
3.57 The share of empty vehicles is high at 28% and 34% for MAVs at TP1 and TP2 respectively. This is mainly due to the high share of trucks carrying aggregate material at TP1, which tend to return empty in the other direction. We also observe a 7-8% of share of petroleum-related products in MAVs across both plazas. The remaining commodities are a heterogeneous mix, comprising of machinery, automobile, cotton, jute, petroleum products and containers.

Figure 3-15: Commodity distribution, TP1 Lakshmipur (Total)



Source: Steer analysis of OD data

Figure 3-16: Commodity distribution, TP2 Gazole (Total)



Source: Steer analysis of OD data

Trip length analysis

3.58 Trip-length distribution provides us the distance-based profile of various vehicle types. This helps to validate our assumptions on the influence of macro-economic variables on traffic growth on the Asset, as well as our outputs from the zonal influence and toll segmentation analyses. For ease of interpretation, we have categorised distances into 5

groups — local (0-100km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance (+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[19]

3.59 Traffic on the project road is primarily commercial traffic carrying goods to/from different parts of the state of West Bengal, the north-eastern states, adjoining western states (Bihar and Jharkhand) and some southern states (such as Andhra Pradesh and Tamil Nadu). In addition, a significant proportion of this commercial traffic is cross-border (into/out of Bangladesh) and a small share of traffic carries goods to Nepal and Bhutan.

3.60 Travel patterns of vehicles crossing both the Asset plazas are also dependent on various factors including local market conditions for stone chips and aggregates as well as external demand for the same in Bangladesh. After consultations with local truckers, toll plaza managers and other stakeholders during our site visit, we noted that demand for Pakur stone in West Bengal is weaker that it is in Northeast India. To support this, we reviewed the outputs of our trip length analysis from the OD surveys conducted at both the plazas (as shown in Figure 3-17 and Figure 3-18 below), and found that there was a marked difference in the trip lengths observed at both the plazas.

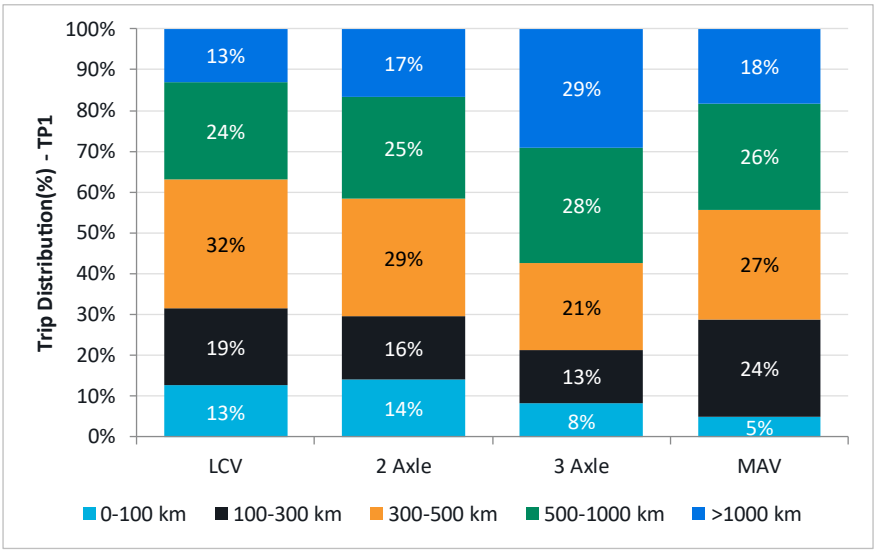
3.61 At TP1, we find that the trip lengths are more evenly distributed (relative to TP2), where the majority of 3A trips are long distance (>500 km), and MAVs also show a similar distribution where the proportion of trips longer than 500 km is high (~45%).

3.62 In contrast to TP1, trip lengths of 3A/MAV vehicles crossing TP2 are more skewed towards shorter distances (<500km). Generally, smaller vehicles have shorter-distance trips as compared to goods-carrying heavy vehicles, but in case of TP2, we see that trips distances in the range of 100-300 km are most common. These trips pre-dominantly constitute movements between stone-mining sites in the Pakur region and the India-Bangladesh border-crossing site at Mahadipur, as well as sand-distribution hubs located near Malda. These findings are consistent with the expectation that traffic crossing TP1 must travel longer distances to serve consumption centres further north and towards northeast Indian states, whereas traffic crossing TP2 would travel need to travel shorter distances as TP2 is located further north from TP1 and is closer to the NE Indian states.

3.63 MAVs have a considerable share at 53% and 20% respectively at TP1 and TP2, of vehicles undertaking long-distance trips covering more than 300 km but less than 1000 km. Share of vehicles undertaking very long-distance trips of greater than 1000 km, including those with trip ends in the southern states, is 18% and 12% at TP1 and TP2, respectively.

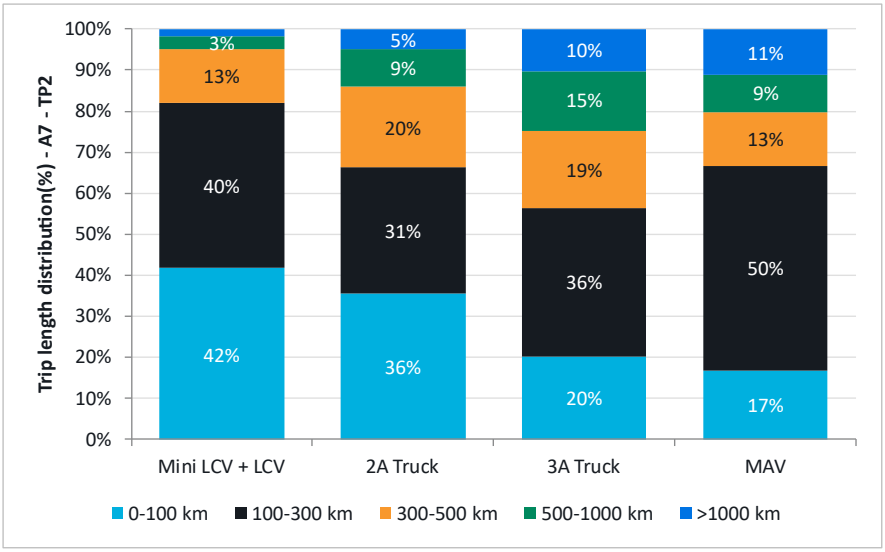
[19] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3-17: Trip length distribution, TP1 Lakshmipur



Source: Steer analysis of OD data

Figure 3-18: Trip length distribution, TP2 Gazole



Source: Steer analysis of OD data

Conclusions

3.64 The historical traffic trends reveal that over the period FY18 to FY25, both toll plazas have observed growth. Over this period, TP1 Lakshmipur grew at an AADT CAGR of 2.6% and PCU CAGR of 2.1%, while the corresponding growth for TP2 Gazole were 4.0% and 3.2% (respectively). However, FY26YTD vs FY25 registers a decline in commercial traffic due to subdued exports to Bangladesh, which directly use the Asset to reach the land ports of Hilly and Mahadipur.

3.65 When considering ticket segmentation, return tickets remain the dominant category at both plazas - except for MAVs at TP2, wherein single tickets have accounted for roughly 55% of total trips since FY22. As of FY26YTD, 50% of CJV tickets are return trips at TP1,

and 58% at TP2, with the corresponding numbers for MAVs being 54% and 46% respectively.

3.66 The TVC counts show minimal variation from the TMS data; at the total level, TMS counts were 1% higher than TVC counts at TP1, and 2% lower than TVC counts at TP2. The difference in the vehicle shares of the two dominant categories, CJVs and MAVs, is also minimal.

3.67 The OD analysis found that in terms of zonal influence, 'IAOI' trips make up the largest share for all vehicle types. This follows from the earlier observation of the high share of 'return' trips across all vehicle categories. Trips between Farakka and Malda are the largest contributor to the CJV traffic on TP1 Lakshmipur, whereas Malda and Gazole contribute to almost 36% of total CJV trips at TP2 Gazole.

3.68 The commodity distribution analysis highlights the Asset's vicinity to stone quarries and crushers (and their consequent influence on the Asset), with construction materials accounting for 21% and 29% of commodities carried by MAVs at TP1 and TP2 respectively. Agricultural products and groceries also accounted for a considerable share of total commodities carried at both plazas. TP1 has a particularly high share of empty goods vehicles (45%) and can be attributed to the high share of trucks carrying stone chips/aggregate material at TP1 in one direction, and return empty in the opposite direction.

3.69 When considering the internal and external distribution, internal trips are dominant at both plazas for all vehicle categories. It is important to note from the zonal influence analysis that through trips observed at both plazas are not very long distance, and are primarily IAOI trips. The trip length analysis outputs support this, with the dominant trip length across all vehicle categories being shorter distance trips (<300km) specially at TP2.

4 Socio-economic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions of the region where the Asset is located and conditions on a national scale. These include:

Changes in factors such as population, economic growth (regional and national) and industrial production; and,

Other local factors such as strategic port growth, and growth in local industries near the Assets.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available.

4.3 In this chapter, we assess the socio-economic indicators relevant to traffic growth on the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in the state of West Bengal where the Asset is located.

National Level

4.5 Table 4.1 below shows that the total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.6 Table 4.2 below shows the historical population growth in the state of West Bengal compared to national population growth. Overall, the population of West Bengal has grown at a slower rate than observed across the country; between FY12 and FY24, the state's population grew at a CAGR of 0.7% per year, while the corresponding growth for the country was 1.2% per year.

Table 4.2: Population Growth in West Bengal and India (2012 – 2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
West Bengal	91.8	99.3	0.7%
India	1210	1395	1.2%

Source: MoSPI estimates

4.7 Due to the complexities of urbanisation, and the dynamic nature of local population migration (both of which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide the underlying socio-economic context of the state/trends in the regions in which the Asset is located.

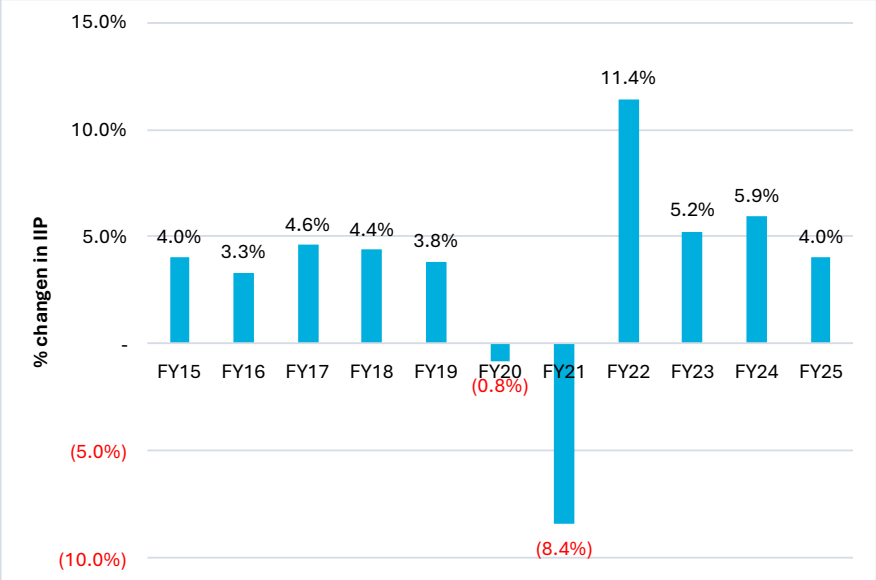
Economic Indicators

Industrial Production

4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.9 The figure below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

Figure 4-1: Annual growth – Index of Industrial Production (FY15-FY25)



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.10 Since state-level IIP data is not as readily available as national-level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MoSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle Ownership

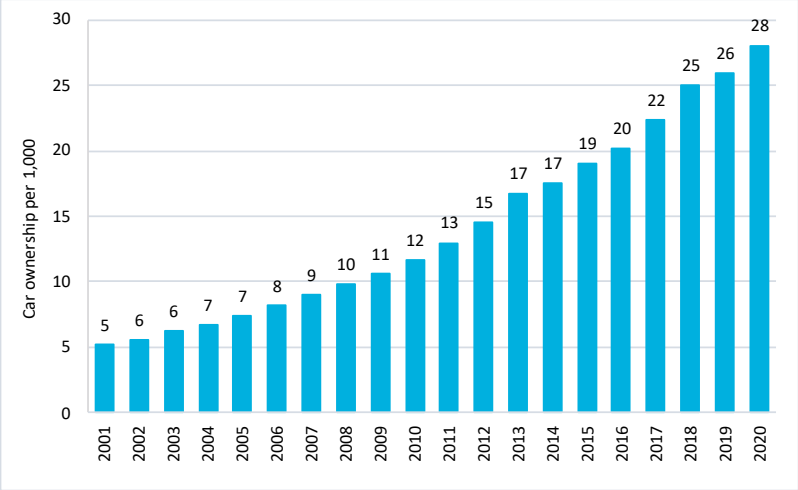
4.11 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[20]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled and increased at a CAGR of about 11%.

4.12 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[21]

[20] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[21] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4-2: Car ownership in India per 1,000 population



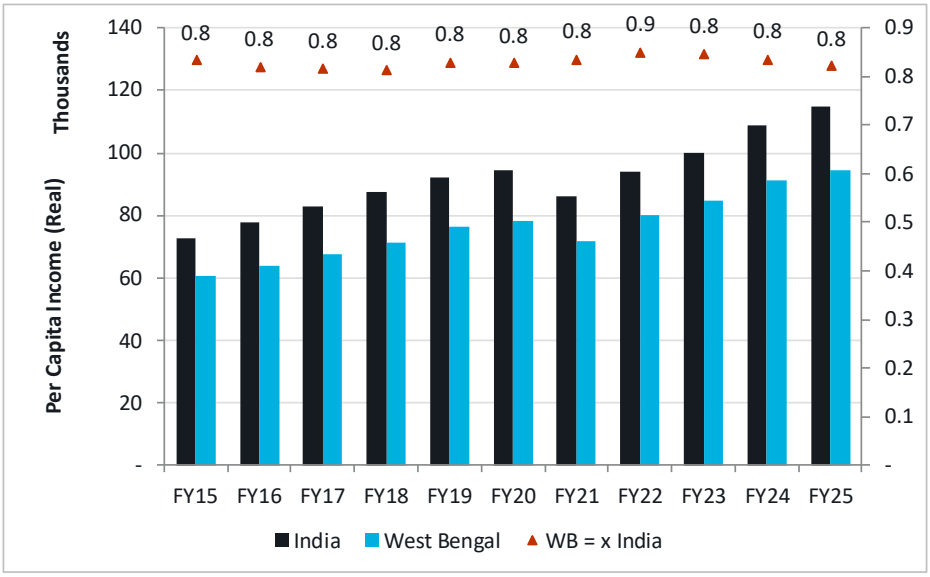
Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.13 As shown in Figure 4-3 below, the per capita income of the state where the Asset lies, i.e., West Bengal, has historical been lower than the national average, and has been at about 80% of the national level over the past few years. During the period 2015-2025, India's average PCI has grown at a rate of 4.7% whereas that of West Bengal has grown at rate of 4.5%.

4.14 Though lower than the national average, per capita incomes have grown at about 4.0% per year between FY15 and FY24 - consistent with national trends over the same period.

Figure 4-3: Historical Growth in Per Capita Incomes – West Bengal vs. India (FY15-FY25)



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.15 Given the difficulty in obtaining granular district level PCI data, it is not advisable to use this as a growth driver in our forecasts. Additionally, long-term forecasts for PCI are not

available from official sources and we therefore refrain from using it to forecast traffic growth.

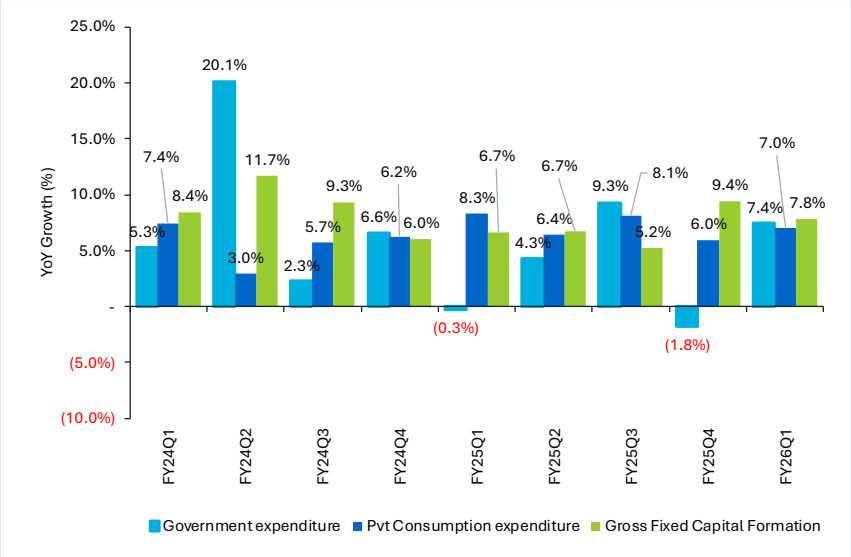
Economic growth

India's Performance

4.16 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[22].

4.17 The figure below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: Government final consumption expenditure



Source: Steer Analysis of MOSPI Data

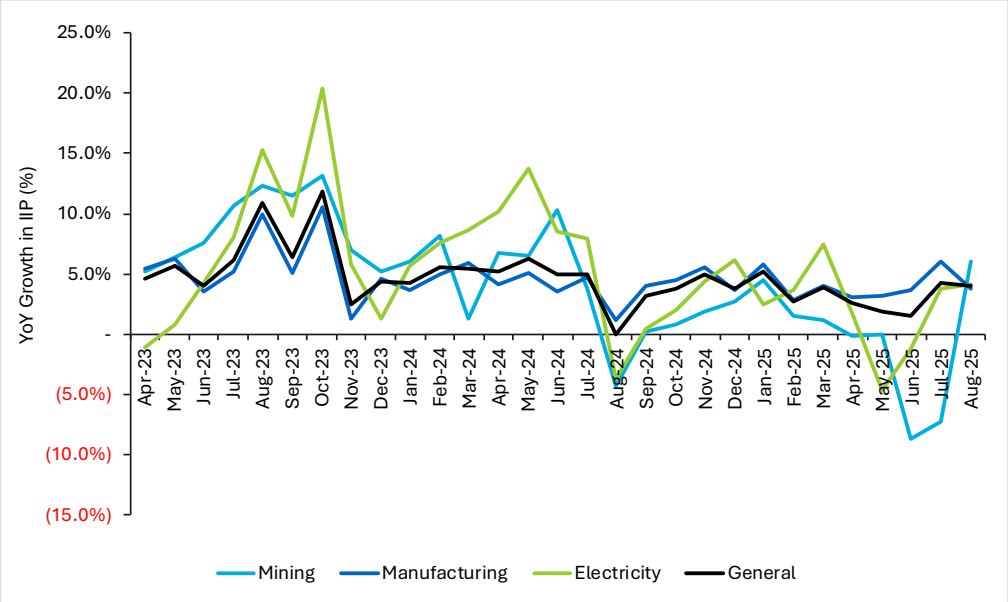
4.18 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.19 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In the figure below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the

[22] Government of India, PIB Release Oct 1 '25

two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

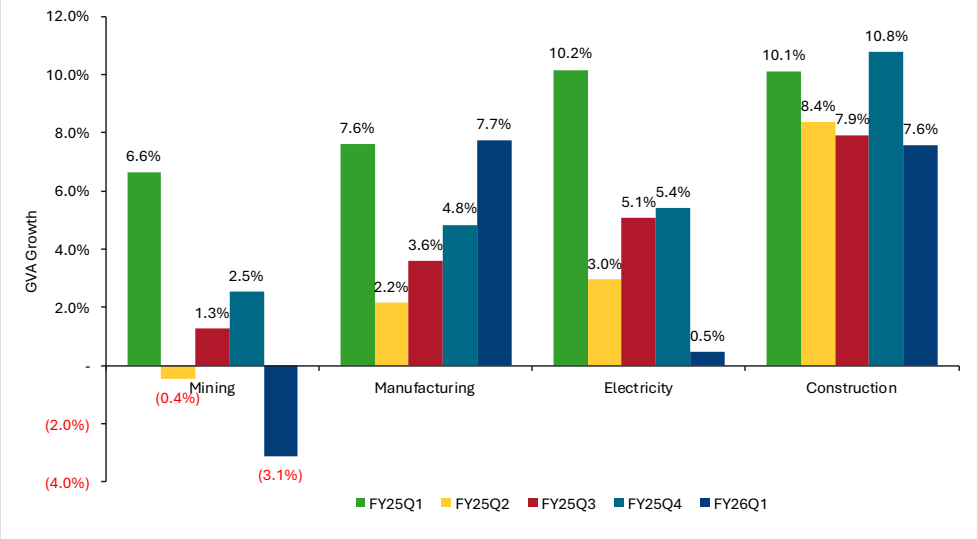
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.20 In addition to monthly trends in IIP, the figure below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. While overall economic growth has remained resilient as of FY26YTD, performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



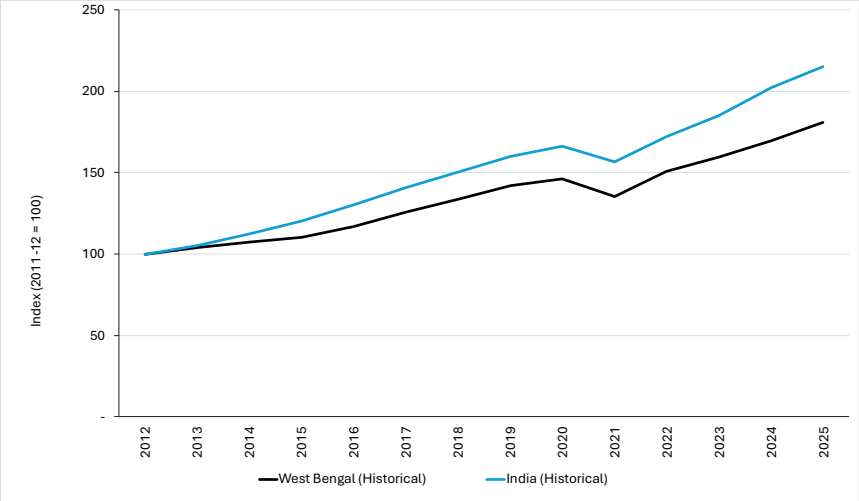
Source: Steer Analysis of MOSPI Data

GDP and GSDP Growth

4.21 Over the period FY12-FY24, the Indian economic has grown at a CAGR of approx. 6% aided by growth in the tertiary sector which grew at a CAGR of approx. 6.9% over the same period. Over the same period, economic growth of West Bengal has been slower than the country overall; between FY12-24, the state's GSDP grew at a 4.7% CAGR.

4.22 The state contributes approximately 5.1% to India's GDP, and has a 7.1% share in India's population in FY24. It is the fourth-most populated state in the country, with a population of 99.3 million in FY24. Figure 4-7 below shows historical growth in West Bengal GSDP compared to India GDP.

Figure 4-7: Evolution of West Bengal's state GDP and national GDP, FY12-25



Source: Ministry of Statistics and Program Implementation (MoSPI)

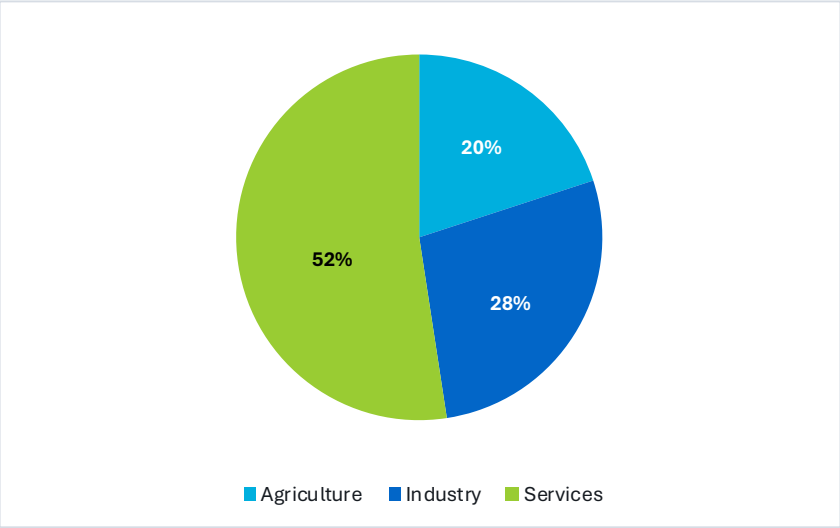
4.23 As can be seen in Figure 4-8, the state economy is largely driven by the tertiary sector which contributed approximately 52% to state GSVA as of FY24.[23] The tertiary sector is followed by the secondary and primary sectors, which account for 28% and 20% of statewide GSDP (respectively).

4.24 Within the secondary/industrial sector, Chittaranjan, Dankuni, Kharagpur (railway locomotive manufacturing), Haldia (petrochemical) and Durgapur (steel and iron ore) constitute the key industrial regions within the state. The state is also home to the Shyama Prasad Mookherjee Port – one of the 12 major ports under the aegis of the Government of India, and an Indian Oil Corporation's refinery at Haldia.

4.25 The key primary industries in the state include agro and food processing and crop production. The state is mainly known for production of tea (in Darjeeling and Jalpaiguri) and rice.

[23] **GSVA/NSVA by economic activities | Ministry of Statistics and Program Implementation | Government Of India**

Figure 4-8: Sectoral contribution to West Bengal's GSDP in FY25



Source: Ministry of Statistics and Program Implementation

4.26 The official historical GDP and GSDP data for India are released by the Ministry of Statistics and Program Implementation (MoSPI). The GDP forecasts for India are available from various reliable sources such as Oxford Economics and Consensus Economics[24], but state-specific GSDP forecasts are not published by any such sources. To derive state GSDP forecasts, we rely on past trends of the relationship between GDP and GSDP, and develop GSDP forecasts as a function of our assumed GDP forecasts[25].

4.27 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.28 Following the discussion in Chapter 4 on the nature of economic activity in the state of Uttar Pradesh and in Delhi, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth on the Asset.

4.29 We have based our forecasts of West Bengal GSDP using forecasts of GDP provided by the Client.

National GDP

4.30 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under

[24] **Consensus Economics - Economic Forecasts and Indicators**

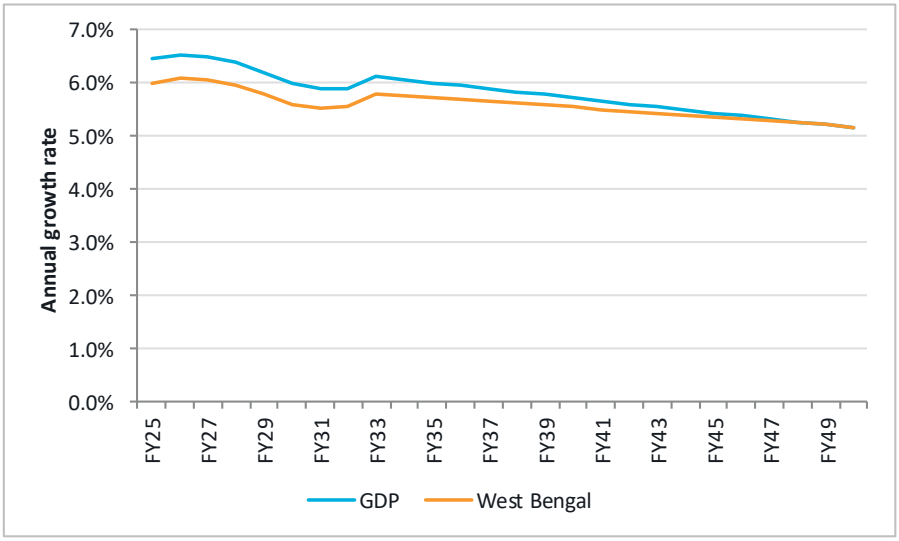
[25] Assuming that the historical long-term relationship between GSDP and GDP sustains over the short-term, we project future growth in GSDP as a function of our GDP growth forecast. We taper the relationship of GSDP growth to converge to GDP growth gradually over the long-term.

stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[26]

4.31 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 (as per the SAE) before slowing down to 6.5% in FY25 due to several domestic and external factors discussed in paragraph 4.9.

4.32 Figure 4-9 below shows Client-provided GDP projections for India. The forecast provided expects the Indian GDP to grow at 6.5% between FY25-FY27[27] and gradually tapering down to 5.2% by FY50. The India GDP growth forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[28] in the medium term.

Figure 4-9: GDP-GSDP forecast



Source: GDP forecast provided by Client, GSDP forecast based on client GDP data

[26] Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu (September 2020)

[27] Based on Asia Pacific Consensus Forecasts (December 2024)

[28] Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)

5 FY26 Base year AADT and Traffic growth Analysis

Introduction

5.1 In this chapter, we present our approach, assumptions and results for base (or background) traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 To understand historical traffic trends observed on the Asset in relation to these underlying growth drivers, we carry out regression analyses to determine the historical relationship between traffic growth (by vehicle category) and the underlying macroeconomic driver assumed to influence its growth on the Asset. The dynamics of traffic demand is the dependent variable while the dynamics of one or more identified growth drivers are the independent or explanatory variables.

5.4 Typically, passenger and light commercial vehicle traffic like cars, buses, LCVs and 2-axle trucks grow in line with the GSDP of the state in which the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This is because most light vehicles tend to travel shorter distances within the state, whereas heavy vehicles typically carry commodities over long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and therefore relate more with GDP growth than more local or regional growth drivers.

FY26 Base year AADT estimates

5.5 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. For this traffic study, we have used FY26 as the base year for generating or future year traffic forecasts for the Asset.

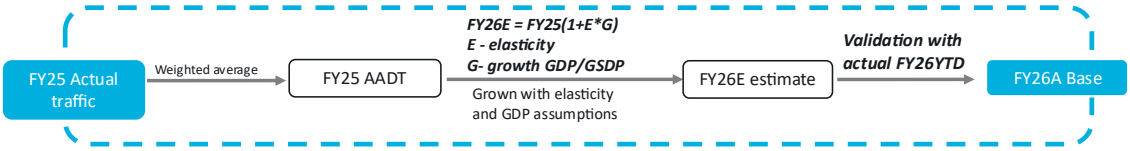
5.6 To establish the base year (FY26) traffic position, we utilised information from various sources including historical traffic data from the Client (FY25 and FY26YTD), latest information on FY26 estimated GDP and GSDP growth (as published by official sources), as well as our own contextual knowledge of the region and wider economy, and transportation network the Asset forms a part of.

Methodology

5.7 The base traffic for FY26 is estimated by utilizing actual 12 months of FY25 as well as latest available data for FY26 that included the first 6 months of FY26 for this study. To arrive at an initial estimate for full year FY26 AADT ("FY26E"), we apply elasticity-based growth assumptions of GSDP or GDP to the FY25 actual AADT as a first step.

5.8 In the second step, the monthly profile of the FY26E AADT was compared to the actual traffic observed in the six months (April to September) of FY26 traffic data (FY26YTD) that was available. After reviewing how actual traffic performed over this period relative to our initial estimate, we make necessary adjustments to the FY26E AADT to arrive at our Adopted FY26 AADT ("FY26A") that reflects the outturn traffic in FY26YTD (adjusted for seasonality). The methodology is represented using the below schematic:

Figure 5-1: FY26 Base Estimation methodology



Source: Steer Analysis

Seasonal Correction Factors

5.9 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. E.g., it is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affect the freight movement patterns in large parts of the country in the July-September period. In addition to these, there may be other seasonal variations specific to the Asset.

5.10 To normalise for these variations across the year when estimating AADT, Seasonality Correction Factors (SCFs) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF greater than one implies that the traffic for that month is lower than the annual average and vice-versa.

5.11 We have analysed the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling (as described in Chapter 3 above), excluding the years that were impacted by specific events. Historical traffic data was available for all toll vehicle categories up-to September 2025. With FY21 and FY22 being pandemic-impacted years, we consider FY23 onwards for the base estimation. Thus, an average of FY23 and FY24 SCFs has been considered to arrive at the FY25 base year estimates.

5.12 Table 5.1 and Table 5.2 below present the average of FY23, FY24, and FY25 SCFs, used for the estimation of our FY26 base traffic position.

Table 5.1: Adopted SCF for the Asset for TP1 Lakshmipur

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.00	0.89	0.79	0.96	1.09	1.17	1.08	1.11	1.03	1.04	1.02	0.96
LCV	0.95	0.92	0.92	0.98	1.08	1.12	1.15	1.08	1.04	1.06	0.99	0.83
Bus	1.00	1.00	0.95	1.04	1.09	1.05	1.01	0.99	0.96	0.98	1.00	0.98
2A	0.95	0.94	0.97	1.04	1.06	1.04	1.12	1.05	1.02	1.03	0.94	0.88
3A	0.91	0.96	1.00	1.07	1.04	1.02	1.10	1.02	0.99	1.04	0.96	0.92
MAV	0.96	0.96	0.97	1.16	1.16	1.14	1.19	0.99	0.96	0.94	0.88	0.84

Source: Steer analysis of Client historical TMS data

Table 5.2: Adopted SCF for the Asset for TP2 Gazole

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.99	0.93	0.93	1.02	1.09	1.10	1.06	1.03	0.97	0.99	0.98	0.96
LCV	0.96	0.91	0.96	1.10	1.14	1.10	1.16	1.05	1.04	1.04	0.94	0.77
Bus	1.03	1.02	0.96	1.02	1.04	1.03	1.02	0.99	0.96	0.99	0.97	0.98
2A	0.96	0.96	0.97	1.09	1.08	1.03	1.11	0.99	0.98	1.02	0.96	0.90
3A	0.92	0.94	1.00	1.09	1.05	1.02	1.11	1.02	0.98	1.02	0.96	0.92
MAV	0.96	0.97	0.99	1.19	1.18	1.13	1.14	0.98	0.95	0.96	0.89	0.83

Source: Steer analysis of Client historical TMS data

Adopted FY26 Base AADT

5.13 Based on the above methodology and inputs, the Adopted FY26 Base AADT for both toll plazas are presented in Table 5.3 and Table 5.4 below:

Table 5.3: Adopted base estimates: TP1 Lakshmipur

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	4,082	4,288	4,177	2.3%
LCV	477	556	533	11.6%
Bus	420	422	429	2.3%
2A	1,070	1,171	1,169	9.2%
3A	737	688	687	(6.9%)
MAV	5,077	4,810	5,149	1.4%
Total	**11,864**	**11,936**	**12,143**	**2.4%**
PCUs	**30,164**	**29,669**	**29,107**	**2.1%**

Source: Steer analysis: FY25 actual full year, FY26YTD includes 6 months of FY26, FY26A is adopted base for FY26

Table 5.4: Adopted base estimates: TP2 Gazole

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	5,820	6,297	6,273	7.8%
LCV	427	540	510	19.3%
Bus	659	686	696	5.5%
2A	1,213	1,327	1,343	10.7%
3A	756	733	735	(2.8%)
MAV	3,755	3,764	3,997	6.5%
Total	**12,630**	**13,347**	**13,554**	**7.3%**
PCUs	**28,163**	**29,197**	**28,772**	**6.8%**

Source: Steer analysis: FY25 actual full year, FY26YTD includes 6 months of FY26, FY26A is adopted base for FY26

5.14 The tables above show that PCU growth from the full year FY25 AADT to the FY26A has been 2.1% at TP1 and 6.8% at TP2. Across all vehicle categories, we observed modest growth in FY26A, relative to FY25. LCVs observed a healthy growth in FY26 owing to stronger consumption trends in local areas near the Asset. Buses have observed muted growth; this could be attributed to shifting preferences towards personal mobility reflected in growth of CJVs.

5.15 For 3A/MAVs the muted growth trends are a result of two major factors - (1) continued decline in trade exports to Bangladesh, and (2) crackdown on illegal stone mining in Pakur District and other quarrying districts of Bengal, explained in more detail in Chapter 2 above and Chapter 6 below

Estimation of background elasticities

5.16 Elasticities, in the case of traffic growth, are the relationships between traffic growth and the growth of underlying macro-economic drivers of traffic. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide the forecasts of background traffic growth.

5.17 The TMS data for the Asset reports 3A and MAV separately along with Bus and 2A hence no further splits were required to understand the growth pattern of these vehicle categories. Following the brief note on historical trends provided in Chapter 3 above, we now delve deeper into the results of the historical growth analysis for each major vehicle type. Table 5.5 below shows the share of influence of each macroeconomic driver variable considered for estimating the background traffic growth of each vehicle category on the Asset.

Table 5.5: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP West Bengal
Car		100%
LCV		100%
Bus		100%
2A	100%	
3A	100%	
MAV	100%	

Source: Steer analysis of Client data

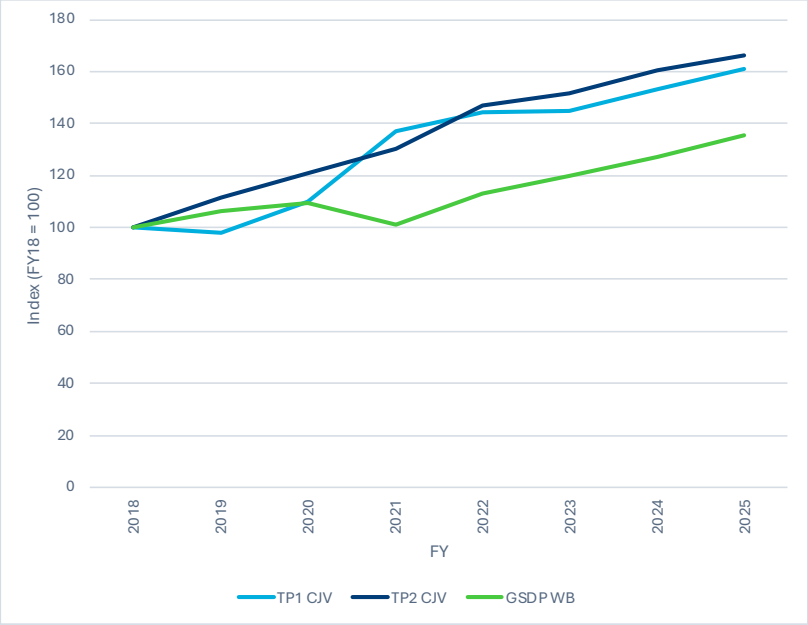
5.18 Since cars (CJVs), buses and LCVs cater to more regional movements (as validated from the OD trip lengths and zonal analyses above), growth of these vehicle categories are more influenced by regional economic drivers such West Bengal state GSDP. However, for 2As, 3As and MAVs that carry heavy commodities like construction material and agricultural products into West Bengal and Bangladesh, growth of these vehicle volumes on the Asset are more linked to nationwide GDP growth.

CJV

5.19 We see from the OD analysis (conducted in 2019 at TP2 and 2023 at TP1) that the CJVs primarily cater to regional movements between Farakka, Malda, Gazole, Raiganj and other towns lying on the Asset. We have therefore taken West Bengal GSDP to be the growth driver to model the growth of CJV traffic. Figure 5-2 below shows the relationship between the historical AADT CJV traffic on TP1 and TP2, over the period FY17 and FY24 and the GSDP of West Bengal.

5.20 Over the period FY18-25, CJV traffic at TP1 and TP2 grew at a CAGR of 7.0% and 7.5% per year respectively, while WB state GSDP grew at an average of 4.4% per year over the same period.

Figure 5-2: Relationship between CJV traffic GSDP of West Bengal – TP1 & TP2



Source: Steer analysis of Client TMS data and MoSPI data

5.21 Generally, we would expect that in fast-growing economies with relatively low car ownership levels, car traffic growth rates are often in line with or slightly higher than growth in GSDP/GDP (i.e. suggesting elasticities at or just above 1.0). Further, there is an expected increase in car ownership proportion of overall population as the economy grows. This assumption is however contextual and subject to changes in economic policies of government as well as overall regional economic conditions.

5.22 Considering the robust growth in CJV traffic observed over the operational history of the Asset, with trips largely between urban areas in and around the Asset, we have assumed a forecast background elasticity of 1.1 at TP1 and 1.0 at TP2 for CJVs, with respect to West

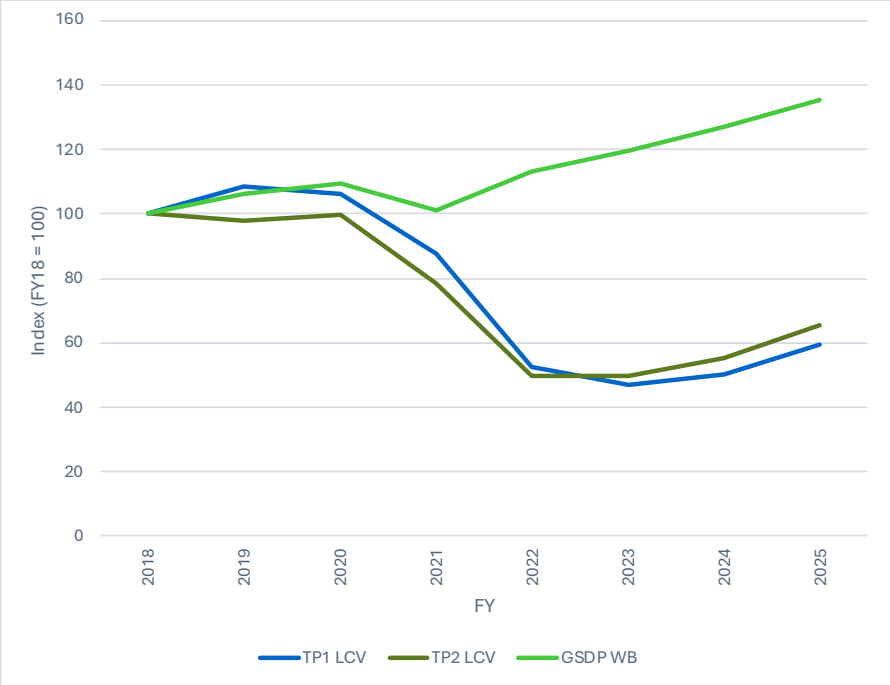
Bengal GSDP. This is line with benchmarks we have observed at toll roads across the country, which have a considerable concentration of inter-urban areas.

LCV

5.23 Compared to heavy vehicles like 3A and MAV, LCVs on the Asset have more regional movements within the state, as observed in the OD data analysis (conducted in 2019 at TP2 and 2023 at TP1), where 70% of LCVs have one end of their trips within West Bengal. Hence, we have taken GSDP West Bengal as the growth driver for LCV.

5.24 Post FY20, due a change in national axle-load norms, there was nationwide shift in truckers' preferences from using LCVs to 2A trucks to carry more tonnage in commodities. Additionally, after the complete implementation of FASTag, there has been a significant reclassification of LCVs as either CJVs or 2As. This has also contributed to the declining LCV volumes on the Asset – between FY21 and FY25, LCV traffic witnessed a degrowth of CAGR 7.1% at TP1 and CAGR 7.7% at TP2.

Figure 5-3: Relationship between LCV traffic and GSDP of West Bengal – TP1 & TP2



Source: Steer analysis of Client TMS data and MoSPI data

Bus and 2A

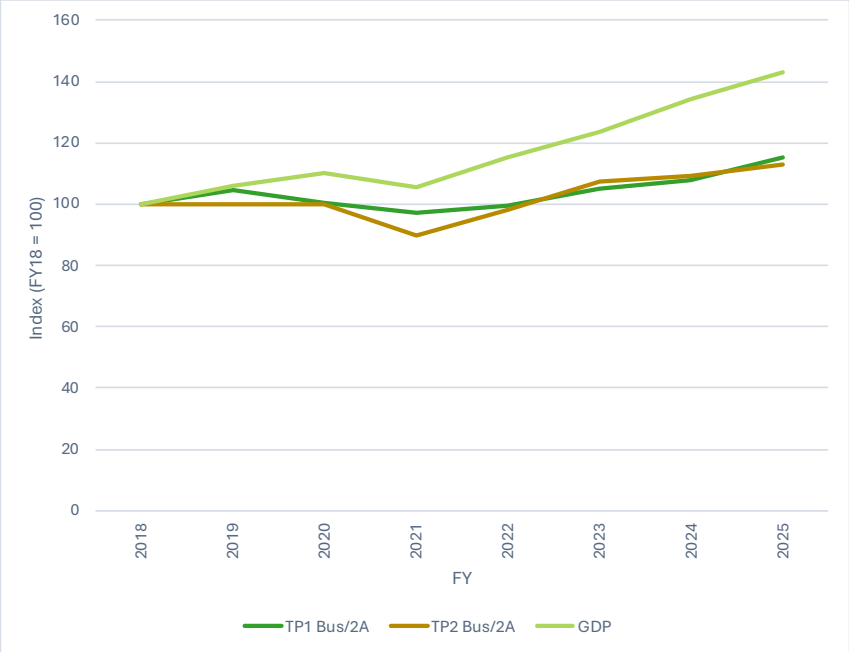
5.25 From FY22 onwards, Bus and 2A traffic were recorded separately, prior to which they were recorded together. Thus, given the limited period of three years (FY22-FY25) to understand the growth of Bus and 2A traffic trends separately we undertook regression analysis on the combined Bus and 2A traffic volumes. Bus growth tends to be largely supply-driven in many parts of the country, with new buses being bought and deployed by the government during different intervals of time. Based on our experience across the country, buses on inter-urban and tourism corridors show elasticities of 0.4 to 0.6 with respect to the GSDP.

5.26 In the period of FY18-25, combined Bus and 2A traffic grew at a CAGR of 2.0% on TP1 and 1.8% on TP2, while WB state GSDP grew at an average 4.4% per year and national GDP

grew at an average 4.8% per year over the same period. With its closer proximity to Malda town, Bus+2A volumes at TP2 are higher than observed at TP1.

5.27 As a result, for the purpose of forecasting traffic growth at both plazas, we have considered an elasticity of 0.25 for buses and 0.75 for 2As, at both toll plazas respectively.

Figure 5-4: Relationship between Bus and 2A traffic with GSDP West Bengal and GDP – TP1 & TP2

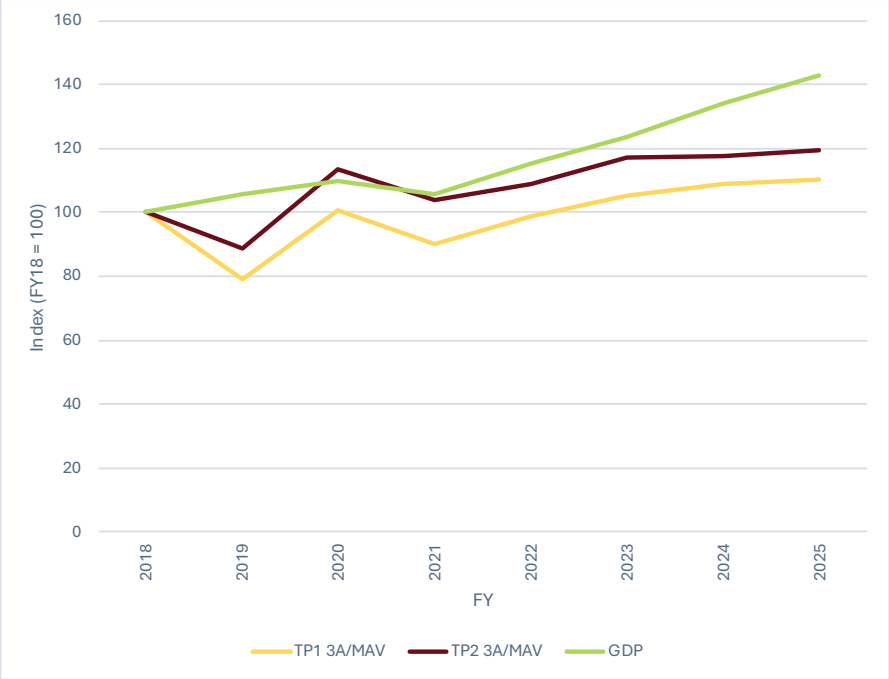


Source: Steer analysis of Client TMS data and MoSPI data

3A/MAV Trucks

5.28 Compared to lighter trucks like LCVs and 2As, 3As and MAVs have more national or long-distance movements covering several states. Given that manufacturing-related commodities typically take prominence in their commodity distributions, traffic growth of 3As and MAVs is more influenced by industrial demand-supply ecosystems spread across the country. For the purpose of forecasting 3A and MAV traffic growth on the Asset, we have used national GDP as the growth driver for 3A and MAV in our forecasting model. Figure 5-5 below presents the relationship between indexed values of 3A+MAV (combined) traffic volumes on the Asset and National GDP over the period FY18-25.

Figure 5-5: Relationship between 3A and MAV traffic with GSDP West Bengal and GDP – TP1 & TP2



Source: Steer analysis of Client TMS data and MoSPI data

5.29 As seen in Figure 5-5 above, 3A/MAV traffic at both toll plazas has seen consistent growth in the past years. Though late FY19 saw a big temporary drop in traffic due to the closure of the Farakka Barrage for six months, FY20 showed a strong recovery growth, before the start of the pandemic. Based on FY18-25 growth, TP1 shows 1.4% 3A+MAV growth while TP2 shows 2.6% MAV growth against GDP growth of 5.2%.

5.30 A slowdown in the Bangladesh economy over the past few years (FY23-FY26YTD) in addition to domestic policies to curb illegal stone mining across the country including parts of WB and JH from where stone chips/aggregate materials are transported via trucks on the Asset has resulted in muted 3A/MAV growth on the Asset (at both plazas) over the past couple of years (FY25 and FY26YTD).

5.31 In the combination of 3A+MAV, 3As have grown slower than MAVs due to a shift in axle preferences over the last several years, as truckers and transporters have continued to favour MAVs over 3As for long-distance movements since ~FY20. This is because MAVs have higher load capacity allowing transporters to enjoy economies of scale through lower per unit costs of moving material over longer distances when doing so through MAVs instead of 3-Axle trucks. It is however, unlikely that 3A truck volumes will reduce to zero as there are certain commodities or movements that remain best served by 3As.

Forecasts for background elasticities

5.32 Table 5.6 below presents a summary of our assumed forecast elasticities for background traffic growth in comparison to our derived elasticities from our regression analyses.

5.33 The forecast elasticities for buses and LCVs are projected to remain constant throughout the concession period. The elasticity for CJVs at TP1 Lakshmipur is reduced from FY30 onwards, while that of MAVs has been increased from FY27 to FY30- in view of the expected recovery of exports to Bangladesh - This assumption is grounded in historical

trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away. These trends are based on a long-term understanding of historical relationships and an overall outlook on the growth of the region and the country.

Table 5.6: Assumed forecast elasticities for background growth

Vehicle type	Growth driver	Derived Elasticity	Period Considered (Without Dummy)	Forecast	
				Assumed forecast elasticity	Evolution of elasticity
TP1 Lakshmipur					
Car	GSDP West Bengal	1.41	FY18-25	1.10	Reduced to 1.0 by FY30
LCV	GSDP West Bengal	0.80*	FY18-25	0.50	No change
Bus+2A	GSDP West Bengal	0.42	FY18-25	0.25 for Bus and 0.75 for 2A	No change
3A+MAV	GDP	0.62*	FY18-25	0.20 for 3A and 0.9 for MAV	No change
TP2 Gazole					
Car	GSDP West Bengal	1.50	FY18-25	1.00	No change
LCV	GSDP West Bengal	1.26	FY18-25	0.40	No change
Bus+2A	GSDP West Bengal	0.45	FY18-25	0.25 for Bus and 0.75 for 2A	No change
3A+MAV	GDP	0.60	FY18-25	0.30 for 3A and 0.9 for MAV	No change

Source: Steer analysis of Client data; *insignificant results; FY25 AADT used in to derive the elasticities via regression analyses was the actual FY25 AADT; The derived elasticities for the Bus + 2A models at both plazas are with respect to GSDP WB, whereas in the models, Buses are driven by WB GSDP while 2As are driven by National GDP (as per Table 5.5 above).

6 Forecast: Network overlays and forecasts

Introduction

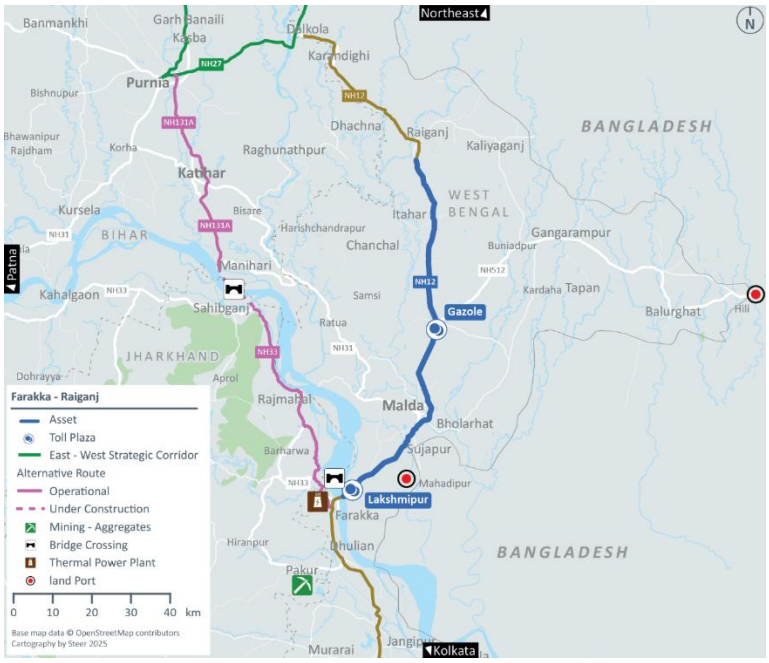
6.1 Following the discussion on estimated and assumed forecast background growth rates in the previous chapter, this chapter first deals with the forecasting assumptions around base year AADT and potential impacts on traffic growth on the Asset. Later, it presents the assumed toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to estimate the forecasted revenue based on the forecast traffic. In the final section, the chapter summarises the traffic growth rates for the forecast years.

Analysis of potential network impacts

Alternate routes and improvements

6.2 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed in Chapter 2, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, and feeder roads) in the surrounding road network. Figure 6-1 below shows the road network surrounding the Asset.

Figure 6-1: Asset route shown against the regional network context



Source: Steer analysis and cartography

6.3 Table 6.1 below summarizes upcoming network/other developments considered for this Asset, corresponding alternate/feeder routes associated with these developments, their year of completion, and indicative direction of each impact on the Asset.

Table 6.1: List of network/other developments

S. No.	Development	Route affected	Year of completion	Impact (+/-)
1	Completion of Sahibganj Bridge	Trips between south of Farakka and North of Raiganj.	FY31	-ve
2	LoS improvement (4-laning of Krishnanagar-Behrampore section of the NH12)	Asset Corridor	FY27	+ve
3	Recovery of Bangladesh bound traffic	Asset Corridor	FY28	+ve

Source: Steer analysis

Impact assessment for network/other developments

6.4 The subsection below includes a narrative of the improvement, as listed in the table above, and impacts associated to that development.

Completion of Sahibganj Bridge

6.5 As discussed in Chapter 2, the completion of 6-km 4-lane Sahibganj bridge across the Ganges between Sahibganj (JH) and Manihari (BH) is expected to be completed by FY28[9]. Upon its completion, we expect that some of the traffic currently plying on the Asset moving between Farakka, Pakur, Nalhati and further south (of Bengal) and parts of Bihar (including Purnia, Katihar), and north of Raiganj (in WB) will divert to this alternative route especially short to medium distance trips.

6.6 It can be seen from Figure 6-1 above that the northern section of the longer corridor i.e., Purnia and Manihari section of the NH131A is already 4-laned and currently being tolled at the Routara toll plaza. Going forward we expect the southern section of the corridor i.e., the Sahibganj-Farakka section of the NH33 to also become fully upgraded to a 4-lane configuration, improving the overall LoS of alternative route to the Asset. The impact estimated is applied over 4 years – 25% from FY28 to FY30, and 100% FY31 onwards

6.7 Table 6.2 below presents the impacts estimated for both the toll plazas.

Table 6.2: Impact of completion of Completion of Sahibganj Bridge

Vehicle type	FY28-FY30	FY31 Onwards
Staging	*25%*	*100%*
TP1 Lakshmipur		
2A	(0.6%)	(2.3%)
3A	(0.5%)	(2.0%)
MAV	(0.8%)	(3.3%)
TP2 Gazole		
2A	(0.5%)	(2.0%)
3A	(0.5%)	(2.0%)

Vehicle type	FY28-FY30	FY31 Onwards
MAV	(1.1%)	(4.5%)

Source: Steer analysis

4-laning of Krishnanagar-Behrampore section of NH12

6.8 As seen in Figure 6-2 below, while the Raiganj bypass and ROB as well as the Raiganj-Dalkhola section of the NH12 have been fully upgraded (to 4-lane configuration) as of early FY25[10], the southern section of the NH12 (i.e., 4-laning between Krishnanagar and Behrampore) is still under construction in several sections (as of August 2025) and is expected to completed by end of FY26.

Figure 6-2: Impact of 6-laning LOS improvement

Source: Steer analysis and cartography

6.9 Given the 4-laning of the NH12 section between Kolkata and Krishnagar is also completed as of early FY25[29], **the completion of the Krishnanagar-Behrampore section** will significantly increase the LoS offered by the NH12 across its full length from Kolkata to Raiganj, improving long-distance commercial traffic access to the Asset. To incorporate the positive impact of this development on future traffic growth on the Asset, we performed a GJC cost analysis of the NH12 pre and post-completion of the project.

6.10 A comparison of generalised journey costs (GJC) provides how different elements of cost and time affect traffic. This comparison was done for both light and heavy vehicles. Lower GJCs correspond to higher induced traffic. Based on Steer's studies and research in India, we have found that for every 1% reduction in the GJCs, the traffic increases by a factor of 0.3. We then applied the difference of GJCs to the elasticity of 0.3 to get net influence on the traffic.

6.11 The improvement in travel costs or GJC is translated into the impact on that share of local + IAOI OD movements using a linear inverse relationship. Thereafter, the GJC influence is applied on the corresponding shares of traffic, which were extracted from OD data.

6.12 Table 6.3 and Table 6.4 below present the extent of the LoS impact on both Asset toll plazas and the expected timelines of the impact on the Asset.

Table 6.3: Impact of 6 laning LOS improvement for TP1 Lakshmipur

Vehicle category	FY27 Onwards
Staging	*100%*
CJV	1.2%
LCV	0.4%
2A	0.6%
3A	0.4%
MAV	0.4%

Source: Steer Analysis

Table 6.4: Impact of 6 laning LOS improvement for TP2 Gazole

Vehicle category	FY27 Onwards
Staging	*100%*
CJV	0.8%
LCV	0.4%
2A	0.5%
3A	0.4%
MAV	0.6%

Source: Steer Analysis

[29] **Project Details - NHAI (Four Laning of Bal. Works of Barasat-Krishnagar from km. 48.553 to km. 115.272)**

Recovery of Bangladesh bound Traffic

6.13 The overall slowdown and rising inflation in Bangladesh's economy has led to overall drop in export and import and in addition affected the construction activity in the country, due to which demand of construction materials has declined. The political instability in the country[30] has also had an impact on trade, with FY25 seeing a major dip following the crisis that emerged in August 2024. This has been observed to pursue in FY26 YTD as well.

6.14 Bangladesh's economy has recently been affected by economic downturn due to high inflation, dwindling foreign reserves, high debt among others resulting in a decline in overall economic activity in the country. Private consumption growth, public investments witnessed a fall in Bangladesh, as a result the country's imports have also gone down, according to a report published by the Asian Development Bank, earlier discussed in section 2.17. This had led to fall in India's overall exports to Bangladesh by ~19% in FY24 vs FY23. This drop continues in FY25 and FY26. In terms of commodities this drop is seen in cement, stone, minerals, cotton and steel.

6.15 However, with the recovery in Bangladesh economy, we expect construction activity in the country to pick up and export demand will start increasing.[31] This recovery impact is assumed from FY27 onwards and expected to materialise in full by FY28 in a phased manner as shown in Table 6.5 and Table 6.6 below.

Table 6.5: Impact of Bangladesh Recovery on TP1

Vehicle category	FY27	FY28 Onwards
3A	1.5%	7.3%
MAV	1.3%	6.1%

Source: Steer Analysis

Table 6.6: Impact of Bangladesh Recovery on TP2

Vehicle category	FY27	FY28 Onwards
3A	0.5%	2.0%
MAV	0.7%	2.7%

Source: Steer Analysis

Overloading

6.16 Overloading contributes to a significant share of both traffic and revenue at both Asset toll plazas. Over the past years since commencement of tolling, the proportion of overloading has varied significantly, mainly due to the decisions taken by the local administration to either ban or lift the ban on overloading at various times. Since overloading proportions are already at historic lows, (as discussed in Chapter 3), no further reduction in overloading shares has been assumed in our future traffic and revenue forecasts for the Asset. FY26YTD (Apr-Sep 2025) average overloading shares have been considered for the forecasts.

[30] Timeline of student-people's 'July uprising' | News

[31] Asian Development Outlook (ADO) April 2025: Bangladesh

Table 6.7: Overloading assumptions for forecast years (FY26 onwards)

Vehicle type	TP1 Lakshmipur	TP2 Gazole
LCV	1.3%	2.1%
2A	0.4%	0.7%
3A	0.1%	0.7%
MAV	6.4%	3.3%

Source: Steer analysis of Client data

Revenue forecasting assumptions

6.17 To forecast the revenues for a forecast year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate. While toll segmentation provides the breakup of trips paying each ticket type, trip factors provide the conversion factor to convert from traffic (trips) to tickets sold. This section discusses assumptions related to toll segmentation, trip factors and toll rates for the forecast period.

Toll segmentation

6.18 As discussed in Chapter 3, segmentation trends have largely been stabilising over the years, with FY26YTD indicating the latest segmentation trends. Table 6.9 and Table 6.10 below provide the toll segmentation assumed for the period of forecast. For the traffic and revenue forecast, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period. Therefore, we believe the FY26YTD segmentation is representative of the travel patterns on the Asset and the same has been assumed for forecast years as well.

6.19 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

Table 6.8: Annual pass adoption between 15th August and 30th September 2025

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
Lakshmipur	3.0%	5.9%	8.5%
Gazole	3.0%	5.7%	7.7%

Source: Steer analysis of TMS data

6.20 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.21 In FY26, the share of CJVs using the Annual Pass on Lakshmipur is projected at 8.4% (on an annual basis) with a March 2026 estimate of around 21%, which from FY27, expected to stabilize at March 2026 levels. On Gazole, the share of CJVs using annual pass is projected at 8.4% (on an annual basis) with March 2026 estimated to be around 22%, which from FY27 is expected to stabilize at March 2026 levels.

6.22 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period.

Table 6.9: Toll segmentation at TP1 Lakshmipur

Forecast	CJV (FY26)	CJV (FY27)	Mini-LCV	LCV	Bus	2A	3A	MAV
Single	26.3%	21.3%	28.4%	42.6%	57.9%	75.4%	78.2%	45.4%
Return	50.3%	42.6%	56.9%	51.8%	41.0%	23.1%	21.7%	54.5%
Local personal	8.1%	7.9%	7.9%	-	-	-	-	-
Exemptions	6.8%	6.7%	0.2%	5.6%	1.2%	1.5%	0.1%	0.1%
Violations	0.2%	0.2%	6.7%	0.0%	0.0%	-	0.0%	0.0%
Annual Pass	8.4%	21.3%	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.10: Toll segmentation at TP2 Gazole

Forecast	CJV (FY26)	CJV (FY27)	Mini-LCV	LCV	Bus	2A	3A	MAV
Single	20.1%	16.7%	22.3%	42.7%	54.5%	65.0%	73.4%	54.2%
Return	58.4%	48.6%	64.8%	56.6%	45.1%	34.1%	26.6%	45.7%
Local personal	6.5%	6.4%	6.4%	-	-	-	-	-
Exemptions	6.5%	6.3%	6.3%	0.6%	0.4%	0.9%	0.1%	0.1%
Violations	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Annual Pass	8.4%	21.8%	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Trip factors

6.23 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and are presented in Table 6.11 and Table 6.12 below.

Table 6.11: Trip factors at TP1 Lakshmipur

Forecast	CJV/Mini-LCV	LCV	Bus/2A	3A	MAV
Single	1	1	1	1	1
Return	2	2	2	2	2

Forecast	CJV/Mini-LCV	LCV	Bus/2A	3A	MAV
Monthly	45	48	45	49	45
Local commercial	1	1	1	1	1
Local personal	18	-	-	-	-
Exemptions	1	1	1	1	1
Violations	1	1	1	1	1

Source: Steer analysis of Client TMS data

Table 6.12: Trip factors at TP2 Gazole

Forecast	CJV/Mini-LCV	LCV	Bus/2A	3A	MAV
Single	1	1	1	1	1
Return	2	2	2	2	2
Monthly	45	45	45	45	45
Local commercial	1	1	1	1	1
Local personal	27	-	-	-	-
Exemptions	1	1	1	1	1
Violations	1	1	1	1	1

Source: Steer analysis of Client TMS data

Toll evolution

6.24 Based on the concession agreement and the gazetted toll notification, we see that base toll rates increase every year based on WPI-linked inflation to provide us unrounded toll rates. These are rounded up to the nearest five rupees to estimate the rounded toll rates charged to the road user.

6.25 We have used actual toll rates from FY25 toll notifications to validate the modelling of the toll evolution. Forecasted growth in WPI was adopted from Client based inputs of WPI growth forecasts, presented in Table 6.13 below. The upward trend in inflation is expected to continue in the medium term, before gradually tapering to 4.1% in the long term.

6.26 These WPI forecasts provided by the Client. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the Client.

Table 6.13: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: FY27 onwards WPI print as per client inputs

Revenue reconciliation

6.27 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue for FY26YTD. To reconcile we have used the FY26YTD segmentation, FY26YTD AADT and compared it with the reported revenue for the year. The exercise was undertaken at an annual level. The comparison, as shown in Table 6.14 below, depicts the modelled revenue vs the reported revenue difference, and the difference lies within 0.1%. This gives us the confidence in the assumptions around segmentation and trip factors for future forecast purposes.

Table 6.14: Revenue reconciliation summary (AADC INR lakhs)- FY26YTD

Toll Plaza	Modelled Revenue	Actual Revenue	Difference (%)
TP1 Lakshmipur	47.34	47.34	0.0%
TP2 Gazole	21.62	21.63	(0.1%)

Source: Steer analysis

Traffic and Revenue forecasts

6.28 Based on the traffic and revenue related forecast assumptions discussed above, we modelled traffic and revenue forecasts for the Asset over its full concession period. Table 6.15, Table 6.16, Table 6.19, and Table 6.20 below present the AADT/PCU forecasts and associated forecasted growth rates on the Asset. Further, Appendix A presents the AADT and revenue forecasts for the Asset.

Table 6.15: Final Traffic forecast for TP1 Lakshmipur

Vehicle Type	FY26	FY27	FY30	FY32	FY37	FY42
CJV	2,291	2,469	2,936	3,271	4,326	5,670
Mini LCV	1,886	1,991	2,244	2,422	2,950	3,571
LCV	533	551	600	634	731	838
Bus	429	436	455	468	502	538
2A	1,169	1,232	1,404	1,505	1,875	2,314
3A	687	709	774	781	829	878
MAV	5,149	5,542	6,779	7,341	9,552	12,280
OSV	0	0	0	0	1	1
AADT	**12,143**	**12,929**	**15,193**	**16,422**	**20,766**	**26,090**
PCU	**29,107**	**31,013**	**36,728**	**39,538**	**50,046**	**62,894**

Source: Steer analysis

Table 6.16: Final Traffic CAGR (%) for TP1 Lakshmipur

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY32	FY32-FY37	FY37-FY42	FY26-FY42
CJV	7.8%	5.9%	5.6%	5.7%	5.6%	5.8%
Mini LCV	5.5%	4.1%	3.9%	4.0%	3.9%	4.1%
LCV	3.4%	2.9%	2.8%	2.9%	2.8%	2.9%
Bus	1.5%	1.5%	1.4%	1.4%	1.4%	1.4%
2A	5.4%	4.4%	3.5%	4.5%	4.3%	4.4%
3A	3.3%	3.0%	0.5%	1.2%	1.1%	1.5%
MAV	7.6%	6.9%	4.1%	5.4%	5.2%	5.6%
OSV						5.4%
AADT	**6.5%**	**5.5%**	**4.0%**	**4.8%**	**4.7%**	**4.9%**
PCU	**6.5%**	**5.8%**	**3.8%**	**4.8%**	**4.7%**	**4.9%**

Source: Steer analysis

Table 6.17: Final Revenue forecast (INR Crores) for TP1 Lakshmipur

Vehicle Type	FY26	FY27	FY30	FY32	FY37	FY42
CJV	8.8	9.7	13.6	16.5	27.3	44.8
Mini LCV	7.2	7.9	10.4	12.3	18.6	28.2
LCV	3.8	4.0	5.0	5.8	8.4	12.1
Bus	7.5	7.8	9.4	10.7	14.2	19.1
2A	18.7	20.4	26.8	31.6	48.9	75.4
3A	17.1	18.2	23.0	25.5	33.7	44.6
MAV	127.8	142.0	201.5	239.1	387.6	623.1
OSV	0.0	0.0	0.0	0.0	0.0	0.0
Total	**190.9**	**209.9**	**289.8**	**341.5**	**538.8**	**847.2**

Source: Steer analysis

Table 6.18: Final Revenue CAGR (%) for TP1 Lakshmipur

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY32	FY32-FY37	FY37-FY42	FY26-FY42
CJV	10.6%	11.7%	10.3%	10.6%	10.4%	10.7%
Mini LCV	8.4%	9.8%	8.7%	8.7%	8.6%	8.9%
LCV	6.0%	8.2%	7.6%	7.5%	7.6%	7.6%
Bus	4.9%	6.5%	6.4%	5.9%	6.0%	6.0%
2A	8.9%	9.6%	8.6%	9.1%	9.0%	9.1%
3A	6.3%	8.2%	5.2%	5.8%	5.8%	6.2%
MAV	11.1%	12.4%	8.9%	10.1%	10.0%	10.4%
OSV	9.3%	10.9%	10.2%	10.2%	9.9%	10.2%
Total	**10.0%**	**11.3%**	**8.6%**	**9.5%**	**9.5%**	**9.8%**

Source: Steer analysis

Table 6.19: Final Traffic forecast for TP2 Gazole

Vehicle Type	FY26	FY27	FY30	FY32	FY37	FY42
CJV	3,986	4,261	5,050	5,626	7,440	9,752
Mini LCV	2,287	2,388	2,647	2,827	3,349	3,946
LCV	510	525	562	587	658	735
Bus	696	707	738	759	815	873
2A	1,343	1,415	1,613	1,732	2,160	2,665
3A	735	751	787	794	843	893
MAV	3,997	4,283	5,084	5,453	7,095	9,122
OSV	0	0	0	0	0	0
AADT	**13,554**	**14,329**	**16,483**	**17,779**	**22,360**	**27,985**
PCU	**28,772**	**30,425**	**35,017**	**37,488**	**47,037**	**58,698**

Source: Steer analysis

Table 6.20: Final Traffic CAGR (%) for TP2 Gazole

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY32	FY32-FY37	FY37-FY42	FY26-FY42
CJV	6.9%	5.8%	5.6%	5.7%	5.6%	5.8%
Mini LCV	4.4%	3.5%	3.3%	3.4%	3.3%	3.5%
LCV	2.8%	2.3%	2.2%	2.3%	2.2%	2.3%
Bus	1.5%	1.5%	1.4%	1.4%	1.4%	1.4%
2A	5.4%	4.5%	3.6%	4.5%	4.3%	4.4%
3A	2.2%	1.6%	0.4%	1.2%	1.1%	1.2%
MAV	7.1%	5.9%	3.6%	5.4%	5.2%	5.3%
OSV						5.4%
AADT	**5.7%**	**4.8%**	**3.9%**	**4.7%**	**4.6%**	**4.6%**
PCU	**5.7%**	**4.8%**	**3.5%**	**4.6%**	**4.5%**	**4.6%**

Source: Steer analysis

Table 6.21: Final Revenue forecast (INR Crores) for TP2 Gazole

Vehicle Type	FY25	FY26	FY27	FY32	FY37	FY42
CJV	7.0	7.8	10.8	12.9	21.5	34.9
Mini LCV	4.0	4.3	5.6	6.4	9.5	13.9
LCV	1.8	1.9	2.4	2.7	3.8	5.3
Bus	5.5	5.7	6.9	7.8	10.5	14.0
2A	10.1	10.9	14.4	16.9	26.4	40.7
3A	8.9	9.3	11.4	12.7	16.6	22.1
MAV	47.5	52.3	72.4	85.3	137.5	221.4
OSV	0.0	0.0	0.0	0.0	0.0	0.0
Total	**84.7**	**92.2**	**123.9**	**144.8**	**225.7**	**352.3**

Source: Steer analysis

Table 6.22: Final Revenue CAGR (%) for TP2 Gazole

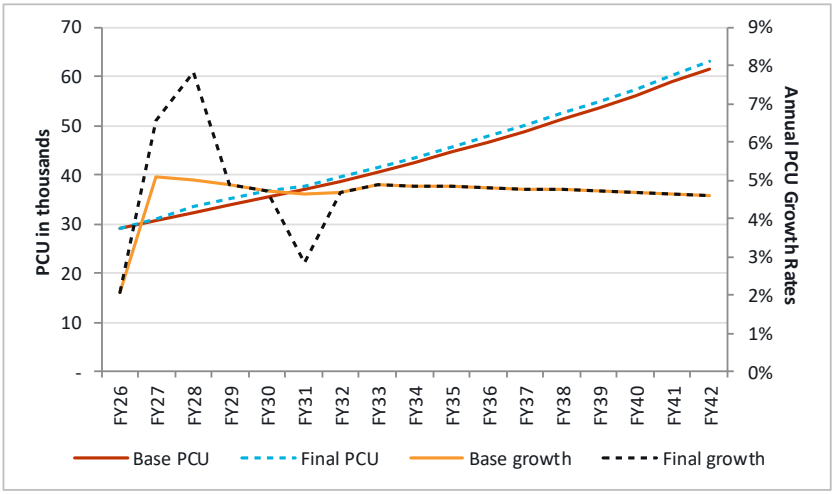
Vehicle Type	FY25-FY26	FY26-FY27	FY27-FY32	FY32-FY37	FY37-FY42	FY25-FY42
CJV	10.7%	11.5%	9.5%	10.7%	10.2%	10.5%
Mini LCV	6.9%	9.4%	7.4%	8.1%	7.9%	8.1%
LCV	6.9%	7.8%	6.9%	6.8%	7.0%	7.0%
Bus	4.0%	6.4%	6.3%	6.0%	6.0%	6.0%
2A	7.9%	9.6%	8.6%	9.3%	9.0%	9.1%
3A	5.2%	6.9%	5.3%	5.6%	5.8%	5.8%
MAV	10.2%	11.5%	8.5%	10.0%	10.0%	10.1%
OSV	9.6%	10.9%	10.5%	10.0%	10.0%	10.2%
Total	**8.8%**	**10.3%**	**8.1%**	**9.3%**	**9.3%**	**9.3%**

Source: Steer analysis

6.29 As presented in Table 6.16 and Table 6.20 above, concession end CAGRs (i.e., for the period FY26-FY42) of our final traffic forecasts (i.e., background growth + impacts) in PCUs are 4.9% and 4.6% per year at TP1 Lakshmipur, and TP2 Gazole (respectively). While the background growth is primarily driven by car growth followed by MAV growth, the minimal uplift in final growth rates (as evidenced in Figure 6-3 and Figure 6-4 below) is due to two impacts expected going forward namely, (1) Recovery in Bangladesh-bound construction traffic movement on the Asset, and (2) Increased long-distance and within state traffic flows on the Asset due to significant LoS improvement on the NH12 corridor due to 4-laning completion of the Krishnanagar-Behrampore section of the NH12.

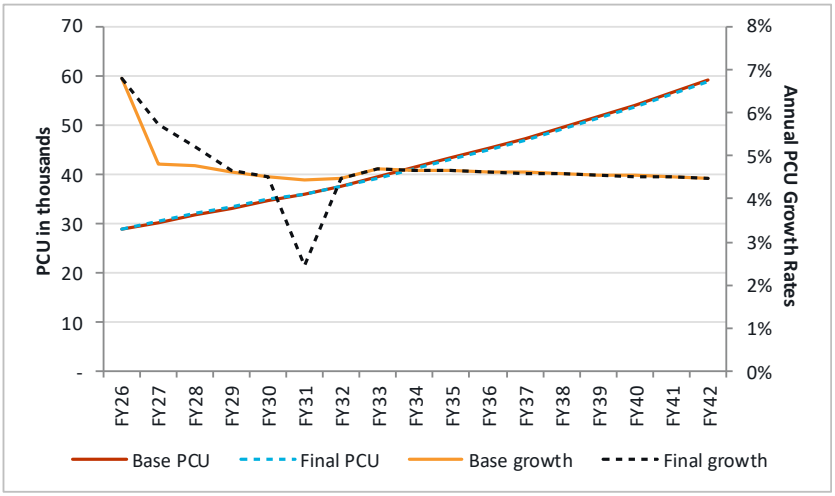
6.30 Figure 6-3 and Figure 6-4 below present the PCU volumes and growth rates from the Base Year (FY26) through the end of the concession in FY42.

Figure 6-3: Forecast traffic and growth rates in PCUs - Background and final, TP1



Source: Steer analysis

Figure 6-4: Forecast traffic and growth rates in PCUs - Background and final, TP2



Source: Steer analysis

Upside and Downside cases

Upside and Downside scenario assumptions

6.31 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.32 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.33 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.23: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.34 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.35 The upside case impacts included in forecasts are summarised in below.

Table 6.24: Summary of impacts on the Assets – upside case

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Lakshmipur	TP2 Gazole
Sahibganj Bridge Completion	FY31*	+25% of base case	2A: (1.7%) 3A: (1.5%) MAV: (2.5%)	2A: (1.5%) 3A: (1.5%) MAV: (3.3%)
Bangladesh bound traffic recovery	FY27*		3A: 8.4% MAV: 7.0%	3A: 2.8% MAV: 3.7%
4-laning of Krishnanagar-Behrampore section of NH12	FY28*		CJV: 3.1% MLCV: 3.1% LCV: 0.9% 2A: 1.4% 3A: 1.1% MAV: 1.0%	CJV: 1.9% MLCV: 1.9% LCV: 1.0% 2A: 1.2% 3A: 1.1% MAV: 1.4%

Source: Steer analysis; *Same as base case timeline

Impacts-Downside Case

6.36 The downside case impacts included in forecasts are summarised in the table below.

Table 6.25: Summary of impacts on the Assets - downside case

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Lakshmipur	TP2 Gazole
Sahibganj Bridge Completion	FY31*	-25% of base case	2A: (2.8%) 3A: (2.5%)	2A: (2.5%) 3A: (2.5%)

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Lakshmipur	TP2 Gazole
			MAV: (4.1%)	MAV: (5.6%)
Bangladesh bound traffic recovery	FY27*		3A: 5.0% MAV: 4.2%	3A: 1.7% MAV: 2.2%
6-laning LOS improvement	FY28*		CJV: 1.9% MLCV: 1.9% LCV: 0.5% 2A: 0.8% 3A: 0.7% MAV: 0.6%	CJV: 1.1% MLCV: 1.1% LCV: 0.6% 2A: 0.7% 3A: 0.6% MAV: 0.8%

Source: Steer analysis; *Same as base case timeline

Upside and Downside Case Forecasts

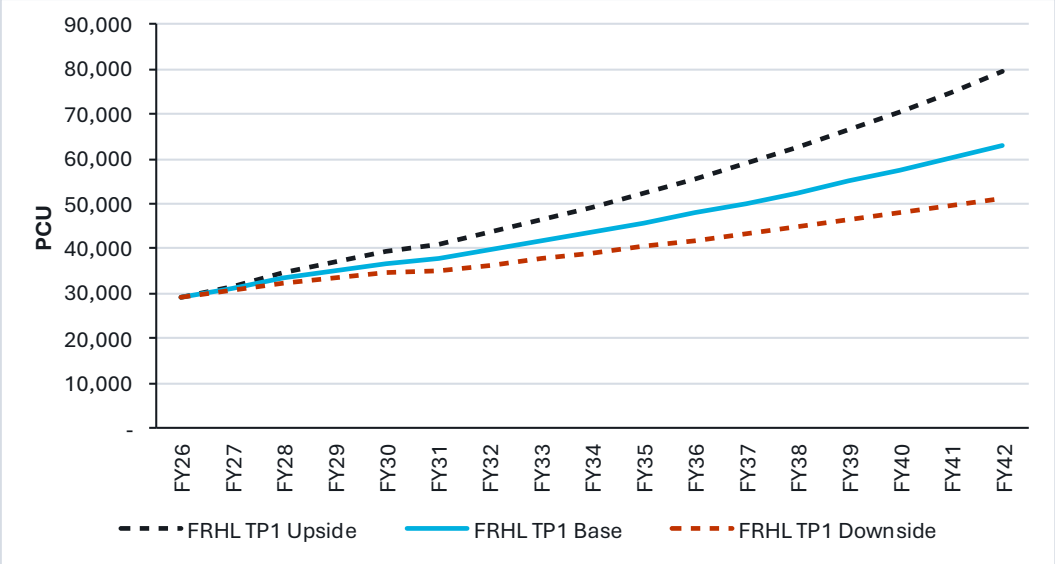
6.37 Table 6.26 below presents the difference between the Upside and Downside Case forecasts relative to the Base Case forecasts in FY42 (i.e., the concession end year) for both Asset toll plazas. Figure 6-5 through Figure 6-8 below plot the Upside and Downside Case forecasts relative to the Base Case forecasts for each Asset toll plaza over the full concession period (FY26-FY42).

Table 6.26: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY42

Case	Measure	TP1 Lakshmipur	TP2 Gazole
Upside Case	Traffic (PCU)	+26.0%	+24.5%
Downside Case		(18.7%)	(17.7%)
Upside Case	Revenue	+42.7%	+41.2%
Downside Case		(28.6%)	(24.9%)

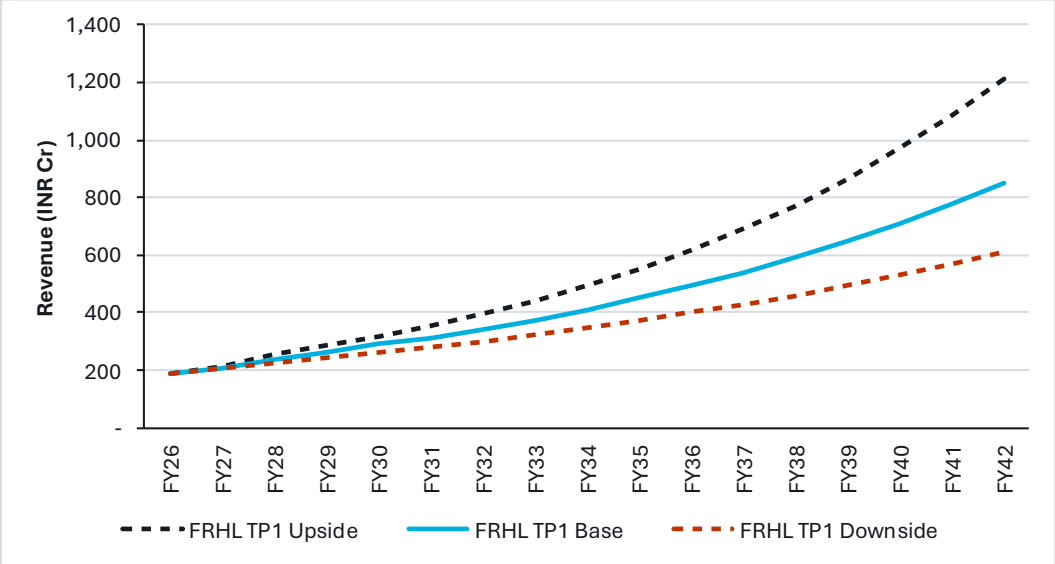
Source: Steer Analysis of client data

Figure 6-5: Upside and Downside Case PCU Forecasts - TP1 Lakshmipur



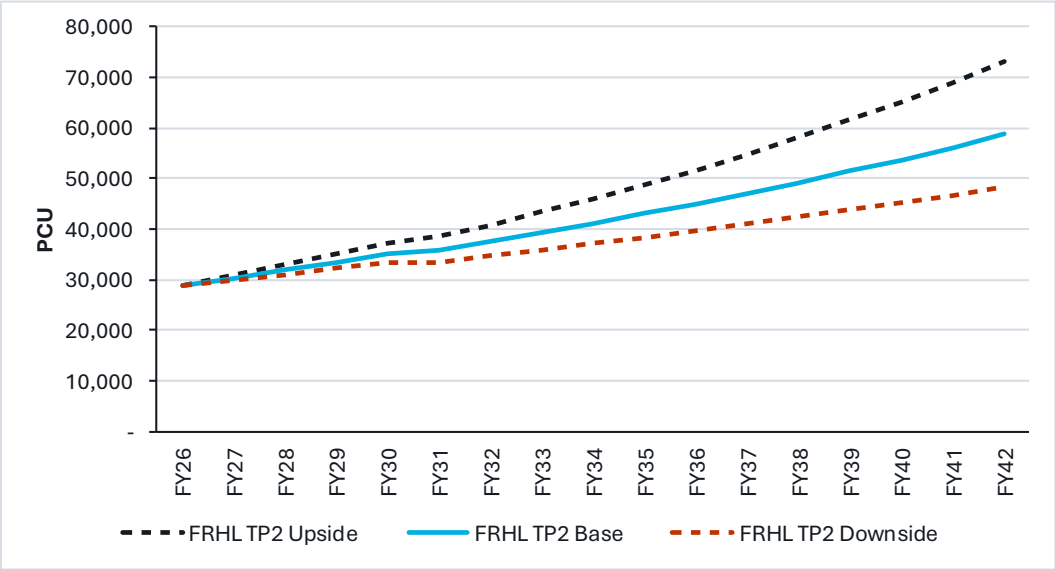
Source: Steer Analysis of client data

Figure 6-6: Upside and Downside Case Revenue Forecasts - TP1 Lakshmipur



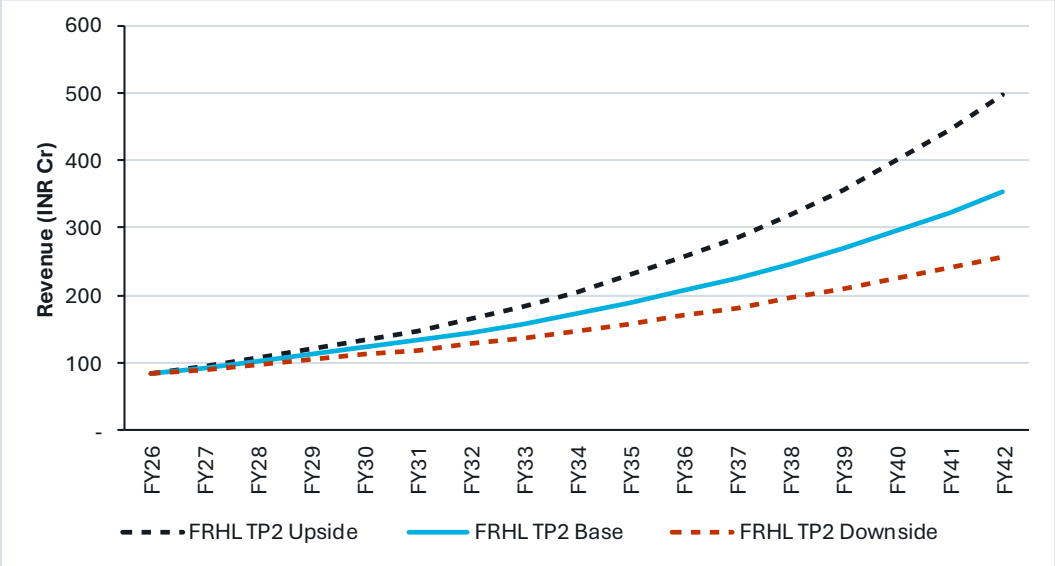
Source: Steer Analysis of client data

Figure 6-7: Upside and Downside Case PCU Forecasts - TP2 Gazole



Source: Steer Analysis of client data

Figure 6-8: Upside and Downside Case Revenue Forecasts - TP2 Gazole



Source: Steer Analysis of client data

Summary outlook

6.38 Overall, passenger traffic on the Asset is mainly influenced by leisure travel between major urban centers in the state and near the Asset including Kolkata in south Bengal as well as other towns like Farakka, Malda, Gazole, and Raiganj that lie along the Asset route. In contrast to the passenger traffic profile on the Asset, most of the goods traffic observed on the Asset is influenced by economic productivity of local stone mines/quarries and crushing units near the Asset (i.e., in Pakur district of Jharkhand) and trade export flows of construction materials (particularly stone chips) and agricultural products from India to Bangladesh, which is further linked to the Bangladeshi economy.

6.39 Between FY22 and FY25, both passenger and goods traffic on the Asset have observed robust growth, with TP1 growing at an AADT CAGR of 4% and TP2 at 4.3% , attributable to growing household incomes and local tourism activity in the region, as well as the ongoing construction of the New Farakka Setu, which has kept demand for construction material buoyant, and induced growing construction traffic movement on the Asset over the same period. Further, a slowdown in supply of stone and construction material from Jharkhand for Bangladesh was observed due to erratic mining on account of the monsoon. On the demand side, it was observed that the demand for stone aggregate still has not fully stabilised in Bangladesh. As a result, traffic on Lakshmipur has seen lower growth than Gazole.

6.40 While most of the NH12 between Kolkata and Dalkhola has already been upgraded to 4-lane configuration, some sections such as the Krishnanagar-Behrampore section are still yet to complete in full. These upgrades are anticipated to enhance the overall service level along the entire corridor, leading to not only steady traffic growth on the Asset via traditional movements but also an increase in induced traffic volumes on the Asset.

6.41 The Asset acts as the primary route connecting Kolkata and southern West Bengal with the northern parts of the state and Northeast India. Consequently, improvements in service levels due to the completion of construction in various planned and ongoing

sections are expected to encourage more passenger movement and stimulate additional traffic. The strategic and geographical advantage of its unique location works in favour of the Asset, as there are currently no other viable alternative routes for users moving between these regions.

6.42 In summary, future traffic growth outlook of the Asset remains promising given its captive commercial traffic market and strategic nature as the only viable route connecting South Bengal and beyond to parts of North Bengal and the NE states. Furthermore, it serves as the main artery on the tourism corridor, with both state and national governments focusing on developing northeastern states as tourism hubs in the near future. Despite recent declines in commercial traffic volumes over the past few years (FY23-FY26YTD), we expect traffic on the Asset to rebound in-step with a revival of the Bangladeshi economy which is forecast to return to trend growth by FY27 and beyond[32]. Thus, the underlying growth drivers of the corridor remain robust and are expected to deliver sustained long-term growth.

[32] **Bangladesh Economy to Slow to 3.9% Growth in FY2025 Before Rebounding in FY2026 | Asian Development Bank**

Appendices

A Top 10 OD pairs

A.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1 Lakshmipur

Table A.1: CJV top 10 OD pair shares at TP1 Lakshmipur

	OD Pair	Share
1.	Farakka Area-Rest of Maldah	16%
2.	Rest of Murshidabad-Rest of Maldah	14%
3.	Dhuliyan Area-Rest of Maldah	9%
4.	Kolkata-Rest of Maldah	8%
5.	Jalpaiguri-Kolkata	5%
6.	Barddhaman-Rest of Maldah	4%
7.	Jalpaiguri-Rest of Murshidabad	2%
8.	Rest of Maldah-Rampurhat Area	2%
9.	Rest of Pakur-Rest of Maldah	2%
10.	Nadia-Rest of Maldah	2%

Source: Steer analysis of OD data

Table A.2: MAV and OSV top 10 OD pair shares at TP1 Lakshmipur

	OD Pair	Share
1.	Assam-Kolkata	8%
2.	Jalpaiguri-Kolkata	7%
3.	Assam-Barddhaman	4%
4.	Kolkata-Rest of Maldah	4%
5.	Barddhaman-Rest of Maldah	4%
6.	Suri Area-Rest of Maldah	3%
7.	Rest of Pakur-Rest of Maldah	3%
8.	Barddhaman-Jalpaiguri	3%
9.	Rest of Murshidabad-Rest of Maldah	2%
10.	Farakka Area-Rest of Maldah	2%

Source: Steer analysis of OD data

TP2 Gazole

Table A.3: CJV top 10 OD pair shares at TP2 Gazole

	OD Pair	Share
1.	Rest of Maldah-Gazole Area	36.1%
2.	Rest of Maldah-Raiganj Area	13.3%
3.	Rest of Maldah-Chanchal Area	5.6%
4.	Rest of Maldah-Balurghat Area	5.2%
5.	Dakshin Dinajpur-Rest of Maldah	4.8%
6.	Samsi Area-Rest of Maldah	3.7%
7.	Gangarampur Area-Rest of Maldah	3.5%
8.	Farakka Area-Raiganj Area	2.7%
9.	Rest of Maldah-Itahar Area	2.4%
10.	Darjiling-Rest of Maldah	2.2%

Source: Steer analysis of OD data

Table A.4: MAV top 10 OD pair shares at TP2 Gazole

	OD Pair	Share
1.	Farakka Area-Raiganj Area	13.1%
2.	Assam-Kolkata	3.6%
3.	Darjiling-Kolkata	3.4%
4.	Rest of Maldah-Gazole Area	2.5%
5.	Rest of Maldah-Raiganj Area	2.4%
6.	Rest of Pakur-Raiganj Area	2.4%
7.	Farakka Area-Balurghat Area	2.2%
8.	Farakka Area-Bamangola Area	2.0%
9.	Assam-Purba Medinipur	1.8%
10.	Rest of Pakur-Rest of Uttar Dinajpur	1.8%

B Data Collection Exercise

B.1 To validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

TVC count

Table B.1: 3-day TVC counts at TP1 Lakshmipur

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
02-07-2023	2,505	1,665	909	470	517	708	3,026	-	9,800
03-07-2023	2,053	1,476	748	486	408	535	2,728	1	8,435
04-07-2023	1,904	2,179	989	573	412	540	2,911	-	9,508

Source: Steer analysis

Table B.2: 7-day TVC counts at TP2 Gazole

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
9-12-20	4,344	2,034	774	727	675	856	3,483	-	12,893
10-12-20	3,770	2,070	863	801	579	821	3,477	4	12,385
11-12-20	3,894	2,003	837	779	587	983	3,663	-	12,746
12-12-20	3,526	1,970	839	795	574	991	4,079	3	12,777
13-12-20	3,787	1,692	791	749	578	1,103	3,633	1	12,334
14-12-20	3,629	1,809	779	803	578	891	3,568	1	12,058
15-12-20	3,608	1,903	778	784	723	954	3,232	1	11,983

Source: Steer analysis

Table B.3: Weekly average daily traffic of TVC vs TMS

Toll Plaza	Source	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
TP1 Lakshmipur	TVC	2,154	1,773	882	510	446	594	2,888	0	9,248
	TMS	4,117	-	363	393	846	601	3,002	-	9,323

Toll Plaza	Source	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
TP2 Gazole	TVC	3,794	1,926	809	777	613	943	3,591	1	12,454
	TMS	5,518				1,717	988	3,618		12,198

Source: Steer analysis, TMS Traffic data shared by Client

Zone list

Table B.4: Zone list used for OD analysis

Zone No	Zone Name	State
1	Rest of India	Andaman & Nicobar Island
2	Andhra Pradesh	Andhra Pradesh
3	Arunanchal Pradesh	Arunanchal Pradesh
4	Assam	Assam
5	Bangladesh	Bangladesh
6	Bhutan	Bhutan
7	Araria	Bihar
8	Aurangabad	Bihar
9	Banka	Bihar
10	Begusarai	Bihar
11	Bihpur Naugachhia Area	Bihar
12	Bhojpur	Bihar
13	Buxar	Bihar
14	Darbhanga	Bihar
15	Gaya	Bihar
16	Gopalganj	Bihar
17	Jamui	Bihar
18	Kaimur (bhabua)	Bihar
19	Rest of Katihar	Bihar
20	Khagaria	Bihar
21	Kishanganj	Bihar
22	Lakhisarai	Bihar
23	Madhepura	Bihar
24	Madhubani	Bihar
25	Munger	Bihar
26	Muzaffarpur	Bihar
27	Nalanda	Bihar
28	Nawada	Bihar

Zone No	Zone Name	State
29	Pashchim Champaran	Bihar
30	Patna	Bihar
31	Purba Champaran	Bihar
32	Purnia	Bihar
33	Rohtas	Bihar
34	Saharsa	Bihar
35	Samastipur	Bihar
36	Saran (chhapra)	Bihar
37	Sheikhpura	Bihar
38	Sheohar	Bihar
39	Sitamarhi	Bihar
40	Siwan	Bihar
41	Supaul	Bihar
42	Vaishali	Bihar
43	Arwal	Bihar
44	Jehanabad	Bihar
45	Barsoi Area	Bihar
46	Sultanganj Area	Bihar
47	Bhagalpur Area	Bihar
48	Kahalgaon Area	Bihar
49	Chandigarh	Chandigarh
50	Rest of Chhattisgarh	Chhattisgarh
51	Bailadilla City	Chhattisgarh
52	Bilaspur City	Chhattisgarh
53	Bhilai City	Chhattisgarh
54	Dadara & Nagar Havelli	Dadara & Nagar Havelli
55	Daman & Diu	Daman & Diu
56	Goa	Goa
57	Pipavav Port	Gujarat
58	Rest of Gujarat	Gujarat
59	Jamnagar Port	Gujarat
60	Mundra Port	Gujarat
61	Surat Port	Gujarat
62	Kandla Port	Gujarat
63	Rest of Haryana	Haryana
64	Gurgaon City	Haryana
65	Panipat City	Haryana

Zone No	Zone Name	State
66	North India	Himachal Pradesh
67	Bokaro City	Jharkhand
68	Rest of Bokaro	Jharkhand
69	Chatra	Jharkhand
70	Deoghar	Jharkhand
71	Dhanbad	Jharkhand
72	Dumka	Jharkhand
73	Garhwa	Jharkhand
74	Giridih	Jharkhand
75	Godda	Jharkhand
76	Gumla	Jharkhand
77	Hazaribagh City	Jharkhand
78	Rest of Hazaribagh	Jharkhand
79	Jamtara	Jharkhand
80	Khunti	Jharkhand
81	Kodarma	Jharkhand
82	Latehar	Jharkhand
83	Lohardaga	Jharkhand
84	Rest of Pakur	Jharkhand
85	Palamu	Jharkhand
86	Pashchimi Singhbhum	Jharkhand
87	Jamshedpur City	Jharkhand
88	Rest of Purbi Singhbhum	Jharkhand
89	Ramgarh	Jharkhand
90	Ranchi	Jharkhand
91	Rest of Sahibganj	Jharkhand
92	Saraikela-kharsawan	Jharkhand
93	Simdega	Jharkhand
94	Sahibganj Area	Jharkhand
95	Pakur Area	Jharkhand
96	Karnataka	Karnataka
97	Kerala	Kerala
98	Rest of West Madhya Pradesh	Madhya Pradesh
99	Rest of East Madhya Pradesh	Madhya Pradesh
100	Rest of Central Madhya Pradesh	Madhya Pradesh
101	Balaghat City	Madhya Pradesh

Zone No	Zone Name	State
102	Bhopal	Madhya Pradesh
103	Indore City	Madhya Pradesh
104	Rest of Maharashtra	Maharashtra
105	Mumbai City	Maharashtra
106	Pune	Maharashtra
107	Nagpur City	Maharashtra
108	Manipur	Manipur
109	Meghalaya	Meghalaya
110	Mizoram	Mizoram
111	Myanmar	Myanmar
112	Nagaland	Nagaland
113	NCT of Delhi	NCT of Delhi
114	Nepal	Nepal
115	Rest of Odisha	Odisha
116	Rayagada City	Odisha
117	Paradip Port	Odisha
118	Rourkela City	Odisha
119	Pakistan	Pakistan
120	Puducherry	Puducherry
121	Punjab	Punjab
122	Rajasthan	Rajasthan
123	Sikkim	Sikkim
124	Tamil Nadu	Tamil Nadu
125	Telangana	Telangana
126	Tripura	Tripura
127	Agra	Uttar Pradesh
128	Rest of West Uttar Pradesh	Uttar Pradesh
129	Allahabad	Uttar Pradesh
130	Rest of East Uttar Pradesh	Uttar Pradesh
131	Kanpur Nagar	Uttar Pradesh
132	Lucknow	Uttar Pradesh
133	Mathura	Uttar Pradesh
134	Moradabad	Uttar Pradesh
135	Varanasi	Uttar Pradesh
136	West Uttar Pradesh	Uttar Pradesh
137	Uttarakhand	Uttarakhand

Zone No	Zone Name	State
138	Bankura	West Bengal
139	Barddhaman	West Bengal
140	Suri Area	West Bengal
141	Dakshin Dinajpur	West Bengal
142	Darjiling	West Bengal
143	Haora	West Bengal
144	Hugli	West Bengal
145	Jalpaiguri	West Bengal
146	Koch Bihar	West Bengal
147	Kolkata	West Bengal
148	Bhaluka Area	West Bengal
149	Dhuliyan Area	West Bengal
150	Nadia	West Bengal
151	North 24 Parganas	West Bengal
152	Pashchim Medinipur	West Bengal
153	Purba Medinipur	West Bengal
154	Puruliya	West Bengal
155	South 24 Parganas	West Bengal
156	Stalkuri Area	West Bengal
157	Gangarampur Area	West Bengal
158	Rest of Murshidabad	West Bengal
159	Rest of Uttar Dinajpur	West Bengal
160	Samsi Area	West Bengal
161	Farakka Area	West Bengal
162	Aurangabad Area	West Bengal
163	Rest of Maldah	West Bengal
164	Manikchak Area	West Bengal
165	Baishnabnagar Area	West Bengal
166	Kachu Pukur Area	West Bengal
167	Malda Area	West Bengal
168	Ratua Area	West Bengal
169	Adina Jadupur Area	West Bengal
170	Bamangola Area	West Bengal
171	Dahil Area	West Bengal
172	Gazole Area	West Bengal
173	Makdampur Area	West Bengal

Zone No	Zone Name	State
174	Makra Area	West Bengal
175	Khasra Area	West Bengal
176	Gosaipur Area	West Bengal
177	Khatil Area	West Bengal
178	Balurghat Area	West Bengal
179	Kaliyaganj Area	West Bengal
180	Mirual Area	West Bengal
181	Gulandar Area	West Bengal
182	Khail Area	West Bengal
183	Kamalabari Area	West Bengal
184	Lahanda Area	West Bengal
185	Gunarajpur Area	West Bengal
186	Bankur Area	West Bengal
187	Raiganj Area	West Bengal
188	Bhadratha Area	West Bengal
189	Itahar Area	West Bengal
190	Chanchal Area	West Bengal
191	Eklakhi Area	West Bengal
192	Harishchandrapur Area	West Bengal
193	Baliadanga Area	West Bengal
194	Sujapur Area	West Bengal
195	Rampurhat Area	West Bengal
196	Nalhati Area	West Bengal
197	Barharwa Area	West Bengal
198	Farakka NTPC Plant	West Bengal
199	NTPC	West Bengal

Source: Steer Analysis

Direction-wise commodity distribution

Table B.5: Commodity distribution towards Farakka for TP1 Lakshmipur

Commodity code	LCV	2 Axle	3 Axle	MAV
Agriculture	5%	5%	4%	5%
Groceries	40%	37%	22%	12%
Construction	3%	2%	2%	1%
Petroleum	4%	5%	8%	7%
Manufacturing	3%	5%	1%	2%

Automobile	0%	2%	1%	1%
Miscellaneous	7%	5%	21%	14%
Metals & minerals	0%	1%	1%	1%
Empty	38%	38%	40%	57%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Table B.6: Commodity distribution towards Raiganj for TP1 Lakshmipur

Commodity code	LCV	2 Axle	3 Axle	MAV
Agriculture	8%	6%	3%	3%
Groceries	34%	16%	34%	15%
Construction	5%	9%	16%	38%
Petroleum	1%	4%	4%	10%
Manufacturing	11%	13%	8%	5%
Automobile	3%	4%	3%	8%
Miscellaneous	12%	25%	18%	6%
Metals & minerals	3%	4%	9%	13%
Empty	24%	19%	6%	2%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Table B.7: Commodity distribution towards Farakka for TP2 Gazole

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	11%	11%	30%	12%
Groceries	2%	2%	2%	1%
Construction	1%	1%	1%	2%
Petroleum	1%	4%	3%	3%
Manufacturing	6%	9%	6%	2%
Automobile	-	1%	0%	0%
Miscellaneous	3%	8%	8%	3%
Metals & minerals	0%	0%	1%	1%
Empty	76%	63%	49%	75%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Table B.8: Commodity distribution towards Raiganj for TP2 Gazole

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	22%	19%	32%	23%
Groceries	9%	13%	6%	2%
Construction	7%	8%	14%	50%
Petroleum	4%	6%	12%	9%
Manufacturing	13%	12%	6%	4%
Automobile	0%	2%	0%	0%
Miscellaneous	4%	7%	6%	2%
Metals & minerals	4%	13%	7%	7%
Empty	37%	20%	17%	4%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Trip length distribution

Table B.9: Trip length frequency for TP1 Lakshmipur

Distance range	LCV	2A Truck	3A Truck	MAV
0-100 km	13%	14%	8%	5%
100-300 km	19%	16%	13%	24%
300-500 km	32%	29%	21%	27%
500-1000 km	24%	25%	28%	26%
>1000 km	13%	17%	29%	18%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

Table B.10: Trip length frequency for TP2 Gazole

Distance range	Mini LCV + LCV	2A Truck	3A Truck	MAV
0-100 km	42%	36%	20%	17%
100-300 km	40%	31%	36%	50%
300-500 km	13%	20%	19%	13%
500-1000 km	3%	9%	15%	9%
>1000 km	2%	5%	10%	11%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

C Detailed forecasts

C.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

C.2 This section presents the detailed traffic forecasts for the forecast period until FY42. The following two tables show the traffic growth rates and AADT, respectively, in the scenario without overloading clampdown.

Table C.1: Forecasts for final (background + impacts) traffic forecasts (%), TP1 Lakshmipur

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	2,291	1,886	533	429	1,169	687	5,149	**12,143**	**29,107**
FY27	2,469	1,991	551	436	1,232	709	5,542	**12,929**	**31,013**
FY28	2,623	2,074	567	442	1,284	755	6,094	**13,841**	**33,442**
FY29	2,779	2,159	584	449	1,344	765	6,433	**14,512**	**35,071**
FY30	2,936	2,244	600	455	1,404	774	6,779	**15,193**	**36,728**
FY31	3,099	2,331	617	461	1,441	772	6,972	**15,693**	**37,772**
FY32	3,271	2,422	634	468	1,505	781	7,341	**16,422**	**39,538**
FY33	3,461	2,521	652	475	1,574	790	7,746	**17,219**	**41,468**
FY34	3,661	2,623	671	482	1,645	800	8,168	**18,051**	**43,481**
FY35	3,872	2,728	691	488	1,719	810	8,610	**18,919**	**45,580**
FY36	4,093	2,838	710	495	1,796	819	9,071	**19,823**	**47,767**
FY37	4,326	2,950	731	502	1,875	829	9,552	**20,766**	**50,046**
FY38	4,570	3,067	751	510	1,958	839	10,054	**21,749**	**52,418**
FY39	4,826	3,188	772	517	2,042	848	10,577	**22,772**	**54,888**
FY40	5,095	3,312	794	524	2,130	858	11,122	**23,835**	**57,454**
FY41	5,376	3,439	816	531	2,221	868	11,689	**24,940**	**60,122**
FY42	5,670	3,571	838	538	2,314	878	12,280	**26,090**	**62,894**

Source: Steer analysis

Table C.2: Forecasts for final (background + impacts) growth rates (%) for TP1 Lakshmipur

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	2.3%	2.3%	11.6%	2.3%	9.2%	(6.9%)	1.4%	**2.4%**	**2.1%**
FY27	7.8%	5.5%	3.4%	1.5%	5.4%	3.3%	7.6%	**6.5%**	**6.5%**
FY28	6.3%	4.2%	3.0%	1.5%	4.2%	6.5%	10.0%	**7.0%**	**7.8%**
FY29	5.9%	4.1%	2.9%	1.5%	4.6%	1.2%	5.6%	**4.9%**	**4.9%**
FY30	5.6%	3.9%	2.8%	1.4%	4.5%	1.2%	5.4%	**4.7%**	**4.7%**

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY31	5.5%	3.9%	2.8%	1.4%	2.6%	(0.3%)	2.8%	**3.3%**	**2.8%**
FY32	5.6%	3.9%	2.8%	1.4%	4.4%	1.2%	5.3%	**4.6%**	**4.7%**
FY33	5.8%	4.1%	2.9%	1.5%	4.6%	1.2%	5.5%	**4.9%**	**4.9%**
FY34	5.8%	4.0%	2.9%	1.4%	4.5%	1.2%	5.5%	**4.8%**	**4.9%**
FY35	5.8%	4.0%	2.9%	1.4%	4.5%	1.2%	5.4%	**4.8%**	**4.8%**
FY36	5.7%	4.0%	2.9%	1.4%	4.5%	1.2%	5.4%	**4.8%**	**4.8%**
FY37	5.7%	4.0%	2.8%	1.4%	4.4%	1.2%	5.3%	**4.8%**	**4.8%**
FY38	5.6%	4.0%	2.8%	1.4%	4.4%	1.2%	5.3%	**4.7%**	**4.7%**
FY39	5.6%	3.9%	2.8%	1.4%	4.3%	1.2%	5.2%	**4.7%**	**4.7%**
FY40	5.6%	3.9%	2.8%	1.4%	4.3%	1.1%	5.2%	**4.7%**	**4.7%**
FY41	5.5%	3.9%	2.8%	1.4%	4.3%	1.1%	5.1%	**4.6%**	**4.6%**
FY42	5.5%	3.8%	2.7%	1.4%	4.2%	1.1%	5.0%	**4.6%**	**4.6%**

Source: Steer analysis

Table C.3: Forecasts for final (background + impacts) traffic forecasts, TP2 Gazole

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	3,986	2,287	510	696	1,343	735	3,997	**13,554**	**28,772**
FY27	4,261	2,388	525	707	1,415	751	4,283	**14,329**	**30,425**
FY28	4,517	2,474	537	717	1,476	768	4,570	**15,060**	**32,016**
FY29	4,780	2,561	550	728	1,544	778	4,825	**15,765**	**33,504**
FY30	5,050	2,647	562	738	1,613	787	5,084	**16,483**	**35,017**
FY31	5,329	2,735	575	748	1,659	785	5,179	**17,011**	**35,881**
FY32	5,626	2,827	587	759	1,732	794	5,453	**17,779**	**37,488**
FY33	5,953	2,925	601	770	1,812	804	5,753	**18,619**	**39,242**
FY34	6,297	3,027	615	781	1,894	814	6,067	**19,495**	**41,072**
FY35	6,659	3,131	629	792	1,980	823	6,396	**20,411**	**42,980**
FY36	7,040	3,239	644	803	2,068	833	6,738	**21,365**	**44,967**
FY37	7,440	3,349	658	815	2,160	843	7,095	**22,360**	**47,037**
FY38	7,860	3,463	673	826	2,254	853	7,468	**23,397**	**49,191**
FY39	8,301	3,579	688	838	2,352	863	7,857	**24,478**	**51,433**
FY40	8,762	3,698	703	849	2,453	873	8,262	**25,601**	**53,762**
FY41	9,246	3,821	719	861	2,557	883	8,683	**26,770**	**56,183**
FY42	9,752	3,946	735	873	2,665	893	9,122	**27,985**	**58,698**

Source: Steer analysis

Table C.4: Forecasts for final (background + impacts) growth rates (%) for TP2 Gazole

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	7.8%	7.8%	19.3%	5.5%	10.7%	(2.8%)	6.5%	**7.3%**	**6.8%**
FY27	6.9%	4.4%	2.8%	1.5%	5.4%	2.2%	7.1%	**5.7%**	**5.7%**
FY28	6.0%	3.6%	2.4%	1.5%	4.3%	2.3%	6.7%	**5.1%**	**5.2%**
FY29	5.8%	3.5%	2.3%	1.5%	4.6%	1.2%	5.6%	**4.7%**	**4.6%**

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY30	5.6%	3.4%	2.3%	1.4%	4.5%	1.2%	5.4%	**4.6%**	**4.5%**
FY31	5.5%	3.3%	2.2%	1.4%	2.8%	(0.3%)	1.9%	**3.2%**	**2.5%**
FY32	5.6%	3.3%	2.2%	1.4%	4.4%	1.2%	5.3%	**4.5%**	**4.5%**
FY33	5.8%	3.5%	2.3%	1.5%	4.6%	1.2%	5.5%	**4.7%**	**4.7%**
FY34	5.8%	3.5%	2.3%	1.4%	4.5%	1.2%	5.5%	**4.7%**	**4.7%**
FY35	5.8%	3.5%	2.3%	1.4%	4.5%	1.2%	5.4%	**4.7%**	**4.6%**
FY36	5.7%	3.4%	2.3%	1.4%	4.5%	1.2%	5.4%	**4.7%**	**4.6%**
FY37	5.7%	3.4%	2.3%	1.4%	4.4%	1.2%	5.3%	**4.7%**	**4.6%**
FY38	5.6%	3.4%	2.3%	1.4%	4.4%	1.2%	5.3%	**4.6%**	**4.6%**
FY39	5.6%	3.4%	2.2%	1.4%	4.3%	1.2%	5.2%	**4.6%**	**4.6%**
FY40	5.6%	3.3%	2.2%	1.4%	4.3%	1.1%	5.2%	**4.6%**	**4.5%**
FY41	5.5%	3.3%	2.2%	1.4%	4.3%	1.1%	5.1%	**4.6%**	**4.5%**
FY42	5.5%	3.3%	2.2%	1.4%	4.2%	1.1%	5.0%	**4.5%**	**4.5%**

Source: Steer analysis

Revenue forecasts

C.3 The following table presents the year-wise annual revenue forecasts for the forecast period until FY42.

Table C.5: Forecasts for final (background + impacts) revenue forecasts (in INR Cr), TP1 Lakshmipur

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	8.8	7.2	3.8	7.5	18.7	17.1	127.8	**190.9**
FY27	9.7	7.9	4.0	7.8	20.4	18.2	142.0	**209.9**
FY28	11.1	8.8	4.4	8.4	22.4	20.4	164.7	**240.0**
FY29	12.1	9.4	4.7	8.9	24.5	21.7	182.3	**263.6**
FY30	13.6	10.4	5.0	9.4	26.8	23.0	201.5	**289.8**
FY31	15.0	11.3	5.4	10.0	28.8	24.0	216.8	**311.3**
FY32	16.5	12.3	5.8	10.7	31.6	25.5	239.1	**341.5**
FY33	18.2	13.3	6.3	11.3	34.3	26.9	263.4	**373.7**
FY34	20.2	14.5	6.8	11.9	37.6	28.5	290.3	**409.8**
FY35	22.4	15.8	7.3	12.7	41.0	30.1	319.6	**448.9**
FY36	24.8	17.2	7.9	13.5	44.9	32.0	353.4	**493.6**
FY37	27.3	18.6	8.4	14.2	48.9	33.7	387.6	**538.8**
FY38	30.1	20.2	9.0	15.1	53.4	35.7	426.8	**590.3**
FY39	33.2	22.0	9.7	16.0	58.2	37.7	469.4	**646.2**
FY40	36.9	23.9	10.5	17.0	63.7	39.9	516.9	**708.9**
FY41	40.4	25.9	11.2	18.0	69.3	42.2	567.2	**774.2**
FY42	44.8	28.2	12.1	19.1	75.4	44.6	623.1	**847.2**

Source: Steer analysis

Table C.6: Forecasts for final (background + impacts) revenue forecasts (in INR Cr), TP2 Gazole

FY	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	7.0	4.0	1.8	5.5	10.1	8.9	47.5	**84.7**
FY27	7.8	4.3	1.9	5.7	10.9	9.3	52.3	**92.2**
FY28	8.5	4.6	2.1	6.1	12.0	10.1	59.1	**102.4**
FY29	9.7	5.1	2.2	6.5	13.2	10.8	65.5	**112.9**
FY30	10.8	5.6	2.4	6.9	14.4	11.4	72.4	**123.9**
FY31	11.9	6.0	2.5	7.4	15.6	11.9	77.3	**132.7**
FY32	12.9	6.4	2.7	7.8	16.9	12.7	85.3	**144.8**
FY33	14.3	6.9	2.9	8.3	18.6	13.3	93.7	**158.0**
FY34	15.8	7.5	3.1	8.8	20.3	14.1	102.9	**172.5**
FY35	17.7	8.3	3.3	9.3	22.2	14.9	113.8	**189.6**
FY36	19.6	8.9	3.5	9.9	24.3	15.7	125.1	**207.1**
FY37	21.5	9.5	3.8	10.5	26.4	16.6	137.5	**225.7**
FY38	23.9	10.4	4.0	11.1	28.7	17.7	151.7	**247.5**
FY39	26.2	11.1	4.3	11.8	31.5	18.6	166.7	**270.3**
FY40	29.1	12.1	4.6	12.5	34.3	19.8	183.9	**296.3**
FY41	32.0	13.1	4.9	13.2	37.3	20.9	201.6	**323.1**
FY42	34.9	13.9	5.3	14.0	40.7	22.1	221.4	**352.3**

Source: Steer analysis

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Project Transit: Traffic Due Diligence for Ghaziabad Aligarh Expressway Private Limited

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Final Report
October 2025

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Contents

Disclaimer		**1**
Glossary Items		**3**
1	**Introduction**	**5**
	The assignment	5
	Our approach	6
	Contents of this report	7
2	**The Asset**	**9**
	Introduction	9
	Strategic network	9
	Key economic activities	12
	Alternate Routes	13
3	**Traffic Description**	**16**
	Introduction	16
	Historical Trends	16
	Toll Frequencies	20
	Key findings of origin-destination analysis	28
	Conclusions	35
4	**Socio Economic Context**	**37**
	Population growth	37
	Economic Indicators	38
	Economic growth	41
	Forecasts for growth drivers	46
5	**Traffic growth analysis**	**49**
	Introduction	49
	FY26 Base year AADT estimates	49
	Estimation of background elasticities	52
	Forecasts for background elasticities	57
6	**Forecasts: Base year AADT and Impacts**	**59**
	Introduction	59
	Revenue forecasting assumptions	62
	Traffic and Revenue forecasts	65
	Upside and Downside cases	69
	Summary outlook	72

Figures

Figure 2-1: Asset Location 9
Figure 2-2: Completed 6-Laning of the Asset 10
Figure 2-3: Asset context 10
Figure 2-4: Typical cross section of the Asset and toll plazas 12
Figure 2-5: Alternate routes 13
Figure 2-6: Local leak at TP1 (first row) and TP2 (second row) 14
Figure 3-1: Ticket segmentation for CJV at TP1 (Luharli) 22
Figure 3-2: Ticket segmentation for MAV at TP1 (Luharli) 23
Figure 3-3: Ticket segmentation for CJV at TP2 (Somna) 23
Figure 3-4: Ticket segmentation for MAVs at TP2 (Somna) 24
Figure 3-5: Comparison between TVC and TMS daily traffic data, TP1 Luharli 26
Figure 3-6: Comparison between TVC and TMS daily traffic data, TP2 Somna 27
Figure 3-7: Comparison between vehicle shares from TVC and TMS WADTs 27
Figure 3-8: Zonal influence, TP1 Luharli 31
Figure 3-9: Zonal influence at TP2, Somna 31
Figure 3-10: Internal-external distribution, TP1 Luharli 32
Figure 3-11: Internal-external distribution, TP2 Somna 32
Figure 3-12: Commodity distribution, TP1 Luharli 33
Figure 3-13: Commodity distribution, TP2 Somna 34
Figure 3-14: Trip length distribution TP1 34
Figure 3-15: Trip length distribution TP2 35
Figure 4-1: Annual growth – Index of Industrial Production 39
Figure 4-2: Car Ownership in India per 1,000 population 40
Figure 4-3: Relative Per Capita Income (FY15-FY25) 40
Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures 41
Figure 4-5: Month on Month IIP performance 42
Figure 4-6: Industrial components of GVA 42
Figure 4-7: Evolution of Delhi's and Uttar Pradesh's GSDP and national GDP 43
Figure 4-8: Sectoral contribution to Uttar Pradesh's GSDP as of FY25 44
Figure 4-9: Western UP vs UP GSDP Growth 45
Figure 4-10: Sectoral contribution to Delhi's GSDP in FY25 46
Figure 4-11: GDP-GSDP forecast 48
Figure 5-1: FY25 Base Estimation methodology 50
Figure 5-2: Relationship between CJV traffic and Delhi/Uttar Pradesh GSDP, TP1 and TP2 54
Figure 5-3: Relationship between LCV traffic and Delhi/Uttar Pradesh GSDP, TP1 and TP2 55
Figure 5-4: Relationship between Bus/2A traffic and Delhi/Uttar Pradesh GSDP and GDP, TP1 and TP2 56
Figure 5-5: Relationship between 3A+MAV traffic and India GDP, TP1 and TP2 56
Figure 6-1: Alternate routes and Asset shown against the regional network context 59
Figure 6-2: Upside and Downside Case PCU Forecasts - TP1 Luharli 71

Figure 6-3: Upside and Downside Case Revenue Forecasts - TP1 Luharli 71
Figure 6-4: Upside and Downside Case PCU Forecasts - TP2 Somna 72
Figure 6-5: Upside and Downside Case Revenue Forecasts - TP2 Somna 72

Tables

Table 1.1: Scope of work and sources of data 5
Table 2.1: Concession details 11
Table 2.2: Vehicle wise toll rates on GAEPL (INR) 12
Table 3.1: PCU factors 16
Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Luharli 17
Table 3.3: Historical Tollable Traffic Levels at TP1 – Luharli 17
Table 3.4: Historical evolution in AADT by vehicle class at TP2 – Somna 19
Table 3.5: Historical Tollable Traffic Levels at TP2 – Somna 19
Table 3.6: Historical evolution in annual revenue (in INR Crore) and AADC (in INR Lakhs) 20
Table 3.7: Typical ticket types sold at NHAI plazas 21
Table 3.8: Segmentation for LCV, Bus, 2A and 3A category – FY26YTD 24
Table 3.9: Data collection schedule 25
Table 3.10: ADT at TP1 Luharli & TP2 Somna 26
Table 3.11: Difference in TVC and TMS in combined categories 28
Table 3.12: Sample rates for OD data 28
Table 3.13: Aggregate commodity categories 29
Table 3.14: Zone aggregations for zonal influence analysis 30
Table 4.1: CAGR of population in India 37
Table 4.2: Population Growth in Uttar Pradesh, Delhi and India (2012-2024) 38
Table 5.1: Seasonality correction factors for TP1-Luharli 51
Table 5.2: Seasonality correction factors for TP2-Somna 51
Table 5.3: Adopted Base AADT, TP1 Luharli plaza 51
Table 5.4: Adopted Base AADT, TP2 Somna Plaza 52
Table 5.5: Identified growth drivers to model traffic growth 53
Table 5.6: Comparison of Derived Elasticities and Assumed Elasticities for Forecasting 57
Table 6.1: List of network/other developments 60
Table 6.2: Impact of THDC Khurja super thermal power projects 61
Table 6.3: Impact of Ganga Expressway and Gorakhpur-Shamli Expressway 62
Table 6.4: Trip factors for the forecast years for TP1 Luharli 62
Table 6.5: Trip factors for the forecast years for TP2 Somna 63
Table 6.6: Forecast toll segmentation, FY26 onwards: Luharli (TP1) 64
Table 6.7: Forecast toll segmentation, FY26 onwards: Somna (TP2) 64
Table 6.8: WPI growth forecast assumptions 64
Table 6.9: Revenue reconciliation summary (INR Lakhs) 65
Table 6.10: Traffic forecast (With Impacts) for TP1 Luharli 65

Table 6.11: Traffic growth CAGR (%) for TP1 Luharli 66
Table 6.12: Revenue forecast (with Impacts) for TP1 (INR Crores) including AP Compensation for CJVs 66
Table 6.13: Revenue growth CAGR (%) for TP1 Luharli 66
Table 6.14: Traffic forecast (With Impacts) for TP2 Somna 67
Table 6.15: Traffic growth CAGR (%) for TP2 Somna 67
Table 6.16: Revenue forecast (with Impacts) for TP2 (INR Crores) including AP Compensation for CJVs 67
Table 6.17: Revenue growth CAGR (%) for TP2 Somna 68
Table 6.18: Summary of Macro-economic Assumptions for upside and downside cases 69
Table 6.19: Summary of impacts on the Assets - UPSIDE 69
Table 6.20: Summary of impacts on the Assets - DOWNSIDE 70
Table 6.21: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY40 70

Appendices

A Detailed Forecasts

B Top OD Pairs

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
Km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit: it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate

SCF	Seasonality Correction Factor
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Ghaziabad Aligarh Expressway Private Limited (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on primary surveys undertaken in 2025, actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Ghaziabad- Aligarh consists of a single stretch of toll road with two toll plazas. For this report, we hereafter call the toll plazas present on the Asset as TP1 and TP2 respectively.

- TP1 – Luharli
- TP2 – Somna (Gabana)

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by Client for the period between FY16 and Sept '25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical toll plaza data provided by Client and benchmarks from Asset in the vicinity wherever long time series historical data was not available
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer in 2025
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis was conducted by Steer based on

Scope of work	Data source
	Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research, Asset historical traffic performance and Steer's in-house experience of working on toll roads on the corridor • Gross Domestic Product (GDP) forecast assumptions provided by Client
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI) and latest actual Wholesale Price Index (WPI) trends as shared by the Client. • Assumptions of WPI forecasts and future tolling length changes provided by Client • Revenues estimated as a product of traffic forecasts and toll evolution

Source: Steer

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis has essentially focused on two sets of issues, namely:

- Understanding the traffic that is currently using the Asset; and
- Identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data starting June 2015 to September 2025.
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous studies related to traffic and revenue
  - Bid documents and studies by lenders
  - Steer-commissioned OD survey on 3rd February 2025 on TP1 and 4th February 2025 at TP2 to validate any change in growth drivers and travel patterns.
  - Steer-commissioned TVC counts between 3rd of February 2025 and 5th of February 2025. TMS for the coinciding dates was available from the data shared by Client.

- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by the toll plaza and subsequently matched it to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic (FY26E). To determine the adopted FY26 (FY26A), the expected FY25 traffic was validated against six months of actual traffic (Apr'25-Sept'25) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY27 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by Client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.7 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analyses;

- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 summarises our approach and results on estimating background traffic demand growth along with our key forecasting assumptions,
- Chapter 6 presents our baseline year forecast, concession traffic and revenue forecasts for the Asset along with assessment of network impacts.

2 The Asset

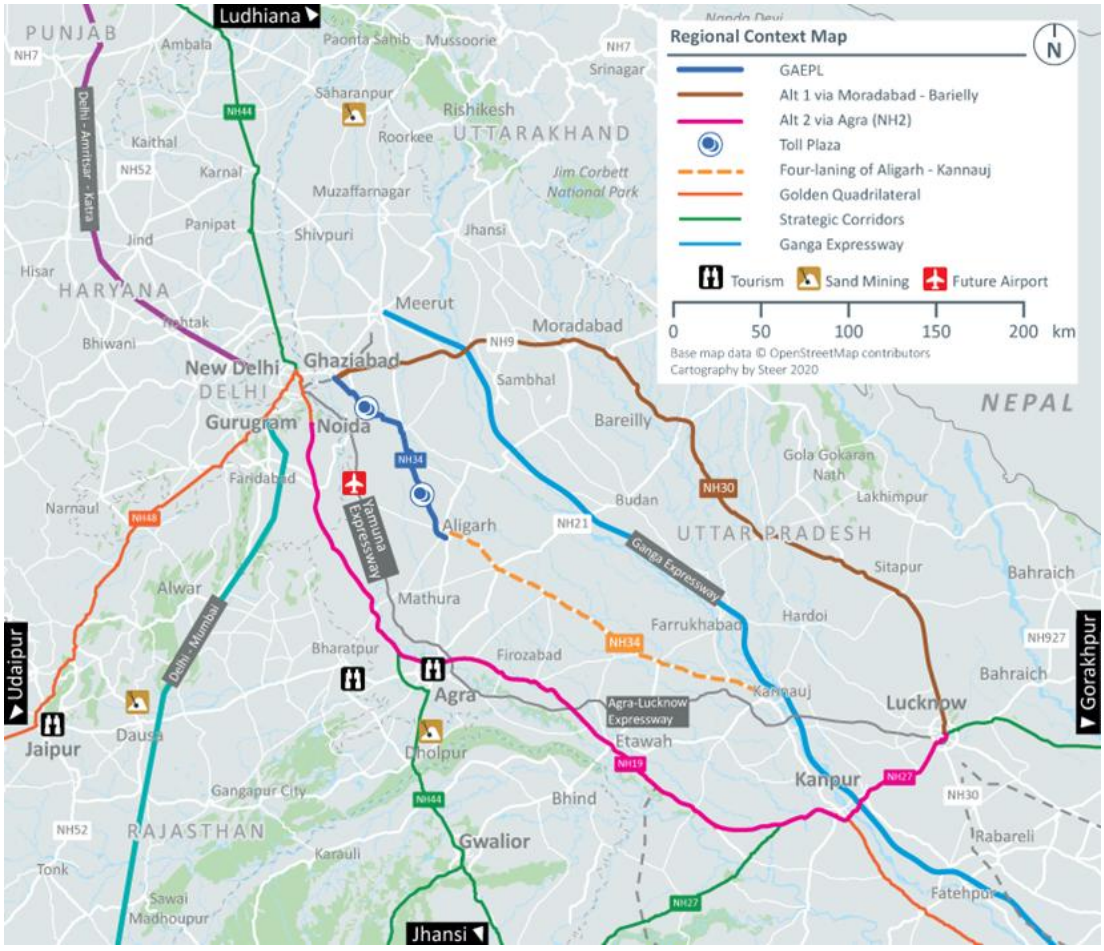
Introduction

2.1 This chapter provides a description of the Asset, primarily based on both primary (site visits) and our understanding of the regional and network context of the Asset. Starting with the strategic network context, the chapter discusses the Asset-level context, followed by economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in western Uttar Pradesh (UP), connecting the cities of Ghaziabad and Aligarh via Khurja and Bulandshahar. Figure 2-1 below shows the regional and wider road network in which the Asset is located.

Figure 2-1: Asset Location



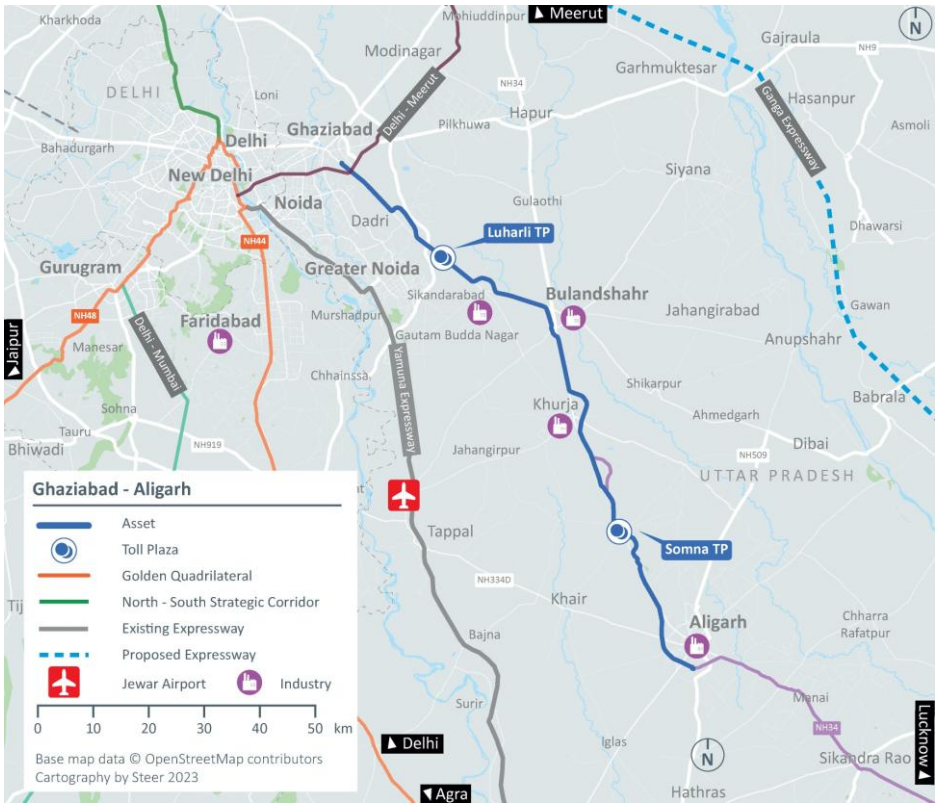
Source: Steer cartography

2.3 This 125.175-km asset is a six-lane toll road, a segment of NH 91 in Uttar Pradesh. It features two toll plazas: Luharli (TP1), situated closer to Ghaziabad, and Somna (TP2), near Aligarh. In October 2023, the Asset was expanded to a six-lane configuration, significantly enhancing capacity and unlocking growth across all vehicle categories that has sustained until present. In July of 2025, Luharli (TP1) was expanded to 16 lanes from 8 lanes earlier to ease congestion at the plaza during peak times[1].

Figure 2-2: Completed 6-Laning of the Asset

Source: Steer site visit

Figure 2-3: Asset context



Source: Steer cartography using OpenStreetMap data

[1] Jagran News, July '25

2.5 The Asset primarily caters to three different types of movements, by virtue of its strategic location on various corridors:

- Local traffic between cities in western UP, Delhi Central NCR (consisting of Delhi state) and Ghaziabad.
- Trips to the industrial area of Sikandrabad which is located on the Asset and serves as a major attractor/generator of traffic.
- Heavy vehicle traffic originating from the states of Haryana, Punjab and Jammu and Kashmir in the north travelling to states in the east of India including West Bengal, Orissa, and the north-eastern states. The Asset is part of strategic north – east movement.

2.6 On TP1, most of the traffic is to/from Delhi NCR and Sikandrabad Industrial Area which has small and medium scale manufacturing industries such as tiles, pesticides, pipes, paint, and furniture. Some of the key players such as Orient Bell tiles, Ultratech Cement, Vishal Pipes, Goodluck Industries have their presence in the vicinity of the Asset. Apart from these, there is also long-distance traffic going towards Kanpur present at TP1.

2.7 On TP2 Somna, majority of the traffic is medium to long distance going to and from Kanpur and Etawah. Also, local transportation of meat and hardware from processing plants and industries near/in Aligarh also contribute to traffic on the Asset. There exists significant bus traffic between Delhi and Aligarh that appears on this plaza as well. TP2 also has presence of THDC power plant in Khurja opened in January 2025[2].

Concession and tolling

2.8 The toll plazas on the Asset have been operational since June 2015. As per the original concession agreement the concession period was of approx. 20 years, which was scheduled to complete by 2035. But as per the settlement agreement dated 08th April 2022 an extension of 4.32 years has been granted and agreed upon by National highways Authority of India (NHAI) based on the clause 29 of the concession agreement and now the end of concession has been extended to FY40.

Table 2.1: Concession details

Item	Description
State	Uttar Pradesh
Highway and lane configuration	NH 91 six-lane
Toll plazas	TP1: Luharli TP2: Somna
Length (km) as per concession agreement, applicable	TP1: 62.175 Km TP2: 63.00 Km
Commencement of operations*	TP1: June 2015 TP2: June 2015
Concession period	24 years
Last year of concession	FY40

Source: Concession agreement

[2] Press Release: Press Information Bureau

2.9 The following pictures indicate a typical cross-section of the Asset and its toll plazas.

Figure 2-4: Typical cross section of the Asset and toll plazas

Source: Steer photos from site visit

2.10 In July '25, the Luharli toll plaza (TP1) was expanded to a 16-lane staggered configuration. The new plaza is expected to ease congestion at the toll plaza during peak times and increase capture of traffic that earlier bypassed the plaza via a nearby micro diversion route (discussed later). Overloading is charged on TP1 only and not on TP2.

2.11 Tolls are collected for Car/Jeep/Van (CJV), LCV/Minibus, Bus/Truck, 3A/MAV/HCH/EME/OSV categories. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling, apart from hybrid lanes. The toll rates for FY26 are as shown in Table 2.2 below.

Table 2.2: Vehicle wise toll rates on GAEPL (INR)

Type of Vehicle	Single Journey Fee	
	TP1 Luharli	TP2 Somna*
CJV	150	200
LCV	235	305
Bus/2A	480	615
3A/MAV	735	935
OSV	940	1220

Source: NHAI Revision of User fee rate, w.e.f. 01.04.2025; *For TP2, these reflect official toll rates as per the FY26 NHAI Toll Notification. Toll rates assumed in our forecast models are lower as we exclude 2.185 km from the total tolling length of TP2 from FY26 onwards as per Client input.

2.12 Apart from single tickets, the typical NHAI ticket categories like return, monthly, local personal and local commercial passes are also available on the Asset.

Key economic activities

2.13 Uttar Pradesh is the most populous state in India and is largely an agrarian economy with agriculture being a major source of employment and livelihood. With several urban centres located on the Asset, including Ghaziabad, the toll plazas, especially TP1 Luharli, serve large volumes of local and regional light vehicular traffic with its proximity from Delhi/NCR and Ghaziabad.

2.14 The part of the state, where the Asset is located, is an industrial region with towns like Sikandrabad, Khurja and Aligarh that serve as separate distinct hubs of medium and large-scale industries specializing in manufacturing (e.g., ceramics, hardware). Commercial traffic on the Asset reflects characteristics consistent with this industrial profile carrying manufactured commodities from nearby factories to consumption centres elsewhere or intermediate goods destined for these factories for further processing on their production lines.

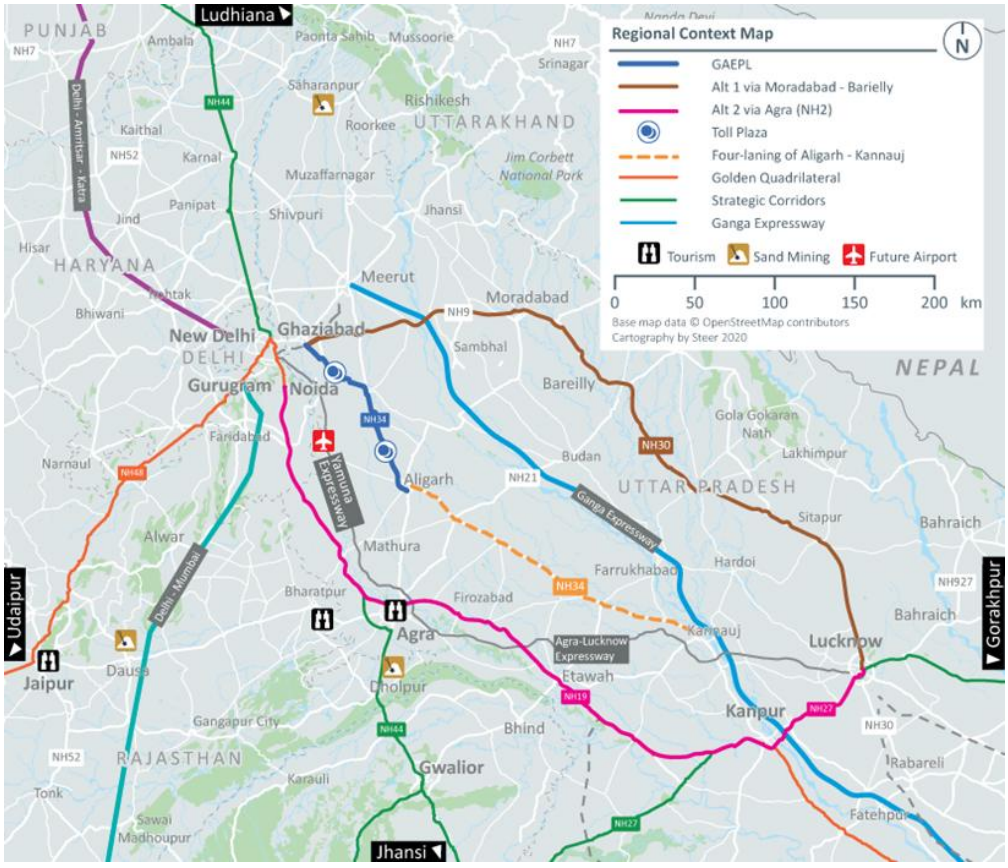
2.15 At TP1, majority of the commercial traffic is plying between Sikandrabad Industrial Area and National Capital Region (NCR). The influence of these economic drivers on the Asset's performance is discussed in more detail in Chapter 3 and 5 below.

Alternate Routes

2.16 The Asset occupies a strategically vital position along the east-west corridor connecting Delhi and the west with Lucknow and beyond. Figure 2-5 below illustrates other alternate routes available to long-distance users while travelling between Delhi and Lucknow. Currently, for travelling between Delhi and Lucknow there are four major routes:

- Asset: Delhi-Ghaziabad-Aligarh-Kannauj-Lucknow via NH91
- Alternate 1: Delhi-Moradabad-Bareilly-Sitapur-Lucknow via NH 24
- Alternate 2: Delhi-Faridabad-Agra-Kanpur-Lucknow via NH2 (NH19).
- Alternate 3: Delhi-Agra (via Yamuna Expressway)-Lucknow (via Agra-Lucknow expressway).

Figure 2-5: Alternate routes



Source: Steer Cartography

2.17 Medium-distance traffic, particularly those traveling southeast of the Asset, now have access to several recently upgraded state highways (such as the 4-laned Aligarh-Kanpur section). These improvements have enhanced the quality of the local road network, offering cheaper, and often free, alternative routes to industrial hubs such as Sikandrabad and Ghaziabad.

2.18 Chapter 6 provides a discussion and estimation of potential impacts due to these alternate routes in addition to the impact of new routes not currently operational (but expected to become operational in the near term) such as the Ganga Expressway

2.19 On the northbound side (towards Ghaziabad direction) near TP1, a micro leakage exists which could earlier be accessed from points on the Asset roughly 400-500m away from the earlier in-line plaza location. It is a two-lane local road which mostly caters to local Car and Mini-LCV traffic, that previously offered users the opportunity to evade the toll by taking a 1 km longer detour that could be travelled in roughly 10 minutes.

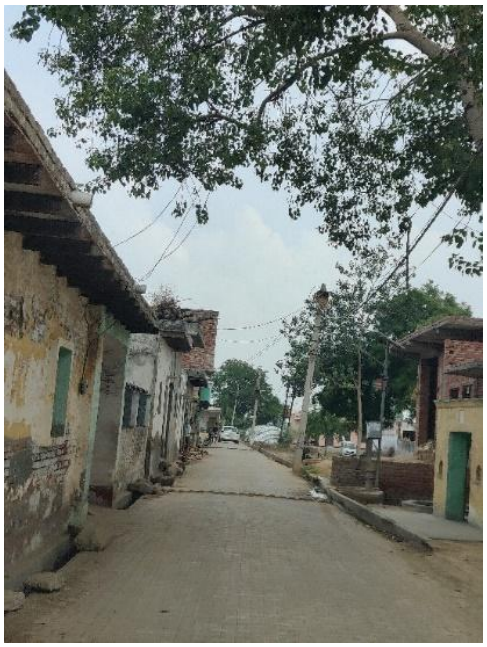
2.20 To address the issue of micro diversion of toll paying traffic, a Check Plaza was opened in Aug'23 at the location where local leak was connecting to the Asset. After almost a year of being operational, during which the existence of the check plaza significantly reduced leakage at TP1, the check plaza was vandalized by locals in September 2024.

Staggered Plaza for TP1 : Luharli

2.21 While the check plaza was not under operation since September 2024, the newly operational staggered plaza configuration is expected to reduce this leakage going forward. The staggered plaza was opened mid-July 2025, and daily traffic data available through 30 September 2025 did not suggest any significant change in the ticket segmentation distribution at TP1 prior to the introduction of the Annual Pass on 15 August 2025. Thus, beyond assumptions of how we expect the share of Annual Pass CJV trips to evolve going forward (and its impact on residual CJV ticket shares), we have not assumed any further changes in segmentation that may or may not result from operationalisation of the staggered plaza configuration of TP1 relative to its earlier in-line configuration.

2.22 There exists a local diversion road at TP2 Somna as well. However, the TP2 micro diversion road is unmetalled and local villagers show resistance against vehicles using this road, suggesting that TP2 does not suffer the same or any significant level of revenue loss due to existence of this local diversion road.

Figure 2-6: Local leak at TP1 (first row) and TP2 (second row)



Source: Steer photos from site visit

3 Traffic Description

Introduction

3.1 This chapter describes current traffic and revenue trends on the Asset, as well as Steer's analysis of origin-destination (OD) data and traffic count data, including that which was collected as a part of this study, and data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year Monthly Average Daily Traffic (MADT) is established. This data is typically provided by the Client and independently analysed and validated by us using Traffic Volume Count (TVC) information.

PCU Factor assumption

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in Table 3.1 below.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV/ Mini LCV	1.0
LCV	1.5
Bus/2A/3A	3.0
MAV*	3.6
OSV	4.5

Source: Steer analysis and IRC64,1990

Historical Trends

3.5 Table 3.2 and Table 3.3 below present the historical variation in total traffic and tollable traffic volumes at TP1 Luharli toll plaza, by vehicle category and in total PCU terms.

Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Luharli

Vehicle	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR (FY19-25)	FY26YTD vs FY25YTD (%)
CJV	17,294	16,663	15,519	17,516	15,762	16,596	19,243	21,451	1.8%	19.5%
LCV	2,433	2,283	1,905	1,672	1,620	1,514	1,461	1,566	(8.2%)	5.2%
Bus	1,701	1,686	1,509	1,614	1,772	1,844	1,939	2,110	2.2%	10.4%
2A	872	1,084	795	1,052	1,232	1,502	1,722	1,896	12.0%	11.8%
3A	1,562	1,432	895	832	689	660	662	670	(13.3%)	0.9%
MAV	989	1,152	1,561	1,862	2,021	2,169	2,400	2,336	15.9%	3.3%
OSV	2	2	4	3	4	2	1	1	-	-
Total	**24,852**	**24,303**	**22,187**	**24,551**	**23,101**	**24,287**	**27,428**	**30,029**	**1.7%**	**15.6%**
PCU	**36,948**	**36,890**	**33,660**	**37,298**	**36,631**	**38,774**	**43,127**	**46,317**	**2.6%**	**12.4%**

Source: Steer analysis of the Client data. FY26YTD consists of data from Apr'25 to Sep'25.

Table 3.3: Historical Tollable Traffic Levels at TP1 – Luharli

Vehicle	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR (FY19-25)
CJV	5,854	6,793	7,671	9,254	9,069	11,925	14,175	16,165	15.9%
LCV	2,072	1,904	1,580	1,295	1,211	1,269	1,390	1,523	(6.4%)
Bus	1,630	1,611	1,488	1,599	1,746	1,841	1,934	2,105	2.9%
2A	812	1,020	743	985	1,125	1,374	1,669	1,872	12.8%
3A	1,363	1,271	791	726	594	608	648	667	(11.6%)
MAV	963	1,117	1,513	1,760	1,812	2,053	2,376	2,320	16.2%
OSV	2	2	4	4	3	2	1	1	(8.6%)
Tollable AADT	**12,697**	**13,719**	**13,791**	**15,623**	**15,559**	**19,073**	**22,193**	**24,653**	**9.8%**
Tollable PCU	**23,886**	**25,425**	**24,623**	**27,538**	**27,876**	**32,766**	**37,649**	**40,815**	**7.9%**

Source: Steer analysis of the Client data. FY26YTD consists of data from Apr'25 to Sep'25.

3.6 Between FY19 and FY25, total PCUs on TP1 have grown at approximately 3% per year. This modest PCU growth on TP1 is primarily due to variability in CJV traffic capture due to the micro leakage route near the toll plaza. Since TP1 is located in the NCR region, it observes a higher share of CJV, Mini LCV, and LCV traffic relative to TP2. In addition, the plaza has historically had a high share of non-paying users within the more local CJV, Mini LCV, and LCV vehicle categories.

3.7 However, in contrast to growth in total traffic, growth in tollable traffic over the same period (i.e. FY19-FY25) has been significantly faster, having grown at roughly 8% per year since FY19. This growth in tollable volumes can be attributed to a number of factors

- The mandatory implementation of FASTag in Feb '21.
- Capacity expansion of the Asset to six-lane configuration in October '23, and;
- Operation of a Check Plaza between Aug '23 and Sept '24.

3.8 All vehicle categories (except LCV and 3A) registered positive growth over FY19-FY25.

3.9 The strategic location of TP1 Luharli, in proximity to major urban centers such as Ghaziabad and Delhi, and serving significant intercity movement towards Sikandrabad,

further influences traffic dynamics on the Asset. CJVs constitute the dominant traffic segment, representing over 70% of total traffic in FY25. This substantial share is due to the Asset's location, serving large urban and industrial hubs including Ghaziabad, Aligarh, Khurja, Bulandshahar, as well as other areas in and around Delhi NCR.

3.10 As mentioned earlier, TP1 Luharli has witnessed a positive increase in total as well as tollable traffic volume in FY26YTD due to a combination of factors including completion of 6 -lane configuration of the Asset and opening of check plaza at TP1 which has led to improved reporting and compliance resulting in increase in FY25 and FY26YTD traffic volumes as well as tollable traffic[3]. Further as discussed in chapter 2, opening of a new staggered toll plaza starting July-25 has resulted in increased capture of CJV traffic and reduced the congestion faced by users using the earlier toll plaza. This has resulted in higher capture of traffic (effectively nullifying the effect of the micro leakage), better reporting of vehicles as well as reduced wait time for users at the Luharli toll plaza.

3.11 Moreover, 4-laning of NH-914 Aligarh-Kanpur section in H2 of 2024 – located east of the Asset has further improved LOS of the corridor, paving way for growth on the Asset.

3.12 The historical classification of LCV-2As has presented challenges due to the similar physical characteristics of vehicles in these categories which has led to the share of LCVs decreasing over the past five years, attributable to classification shifts between the LCV and 2A categories. The implementation of FASTag has further contributed to this trend, resulting in the reclassification of some Mini LCVs, previously counted under the LCV category to CJVs. Consequently, LCV traffic at the plaza has exhibited a declining trend since FY19, with a 6.4% annual decline observed between FY19 and FY25. Post reclassification in FY22-23 however, LCV volumes have exhibited strong growth, with FY26YTD at 5.2% above FY25 levels.

3.13 The 2A/Bus category has also experienced strong growth since FY19, benefiting from the positive impact of the Asset's six-lane expansion, as well as the 4-laning of the Aligarh-Kanpur section of the NH91. 2A trucks have also benefitted from a shift in preference from 3A trucks due to favourable changes in the legal permissible loads for 2As[5] and their suitability for e-commerce-related freight, particularly high-value, low-volume goods over medium to long distances.

3.14 3A traffic on the Asset has declined consistently since FY19, at a CAGR of -13.3%. This decline stems from lower demand for 3A vehicles as transporters increasingly opt for 2A and MAVs. MAVs offer greater tonnage capacity over long distances while 2As are cheaper for shorter distances. Discussions with transporters and OEMs nationwide

[3] Luharli toll plaza witnessed tollable traffic growth due to behavioral shifts among local users during the brief operationalization of the check plaza in FY24. Although the check plaza was later vandalized in September 2024, its presence temporarily curbed toll evasion and led to a sustained increase in users opting to pay tolls. Additionally, local villagers blocked the micro diversion route used to evade tolls, increasing the detour distance from roughly 1 km to nearly 3 km. This reduced the attractiveness of the alternate route and further limited leakage, helping maintain higher tollable traffic volumes despite the check plaza's destruction in late FY24.

[4] **Kanpur-Aligarh four-lane highway nears completion | Kanpur News - Times of India**

[5] **New axle load norm gets two amendments, ETAuto**

corroborate this shift towards 2A and 5A vehicles for commodity movement due to improved unit economics.

3.15 Table 3.4 and Table 3.5 below present the historical variation in total traffic and tollable traffic volumes at the TP2 Somna toll plaza, by vehicle category and in total PCU terms.

Table 3.4: Historical evolution in AADT by vehicle class at TP2 – Somna

Vehicle	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR (FY19-25)	FY26YTD vs FY25YTD
CJV	6,250	6,482	6,013	6,206	5,726	5,892	7,154	7,964	2.3%	27.1%
LCV	1,574	1,329	1,002	824	792	800	888	957	(9.1%)	16.9%
Bus	1,118	1,088	1,061	1,110	1,198	1,225	1,280	1,409	2.3%	13.9%
2A	740	911	756	926	1,072	1,203	1,408	1,549	11.3%	20.9%
3A	1,471	1,228	913	732	663	663	663	645	(12.4%)	1.4%
MAV	1,065	940	1,084	1,209	1,250	1,445	1,710	1,695	8.2%	10.8%
OSV	1	0	1	1	3	2	1	0		
Total	**12,221**	**11,979**	**10,831**	**11,008**	**10,704**	**11,229**	**13,106**	**14,221**	**1.2%**	**20.8%**
PCU	**22,476**	**21,576**	**19,649**	**20,143**	**20,269**	**21,621**	**24,760**	**26,372**	**1.6%**	**17.1%**

Source: Steer analysis of the Client data. FY26YTD consists of data from Apr'25 to Sep'25.

Table 3.5: Historical Tollable Traffic Levels at TP2 – Somna

Vehicle	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR (FY19-25)
CJV	4,663	4,941	4,636	4,717	4,411	4,735	5,833	6,612	3.8%
LCV	1,491	1,270	959	772	756	777	872	941	(8.6%)
Bus	1,101	1,071	1,053	1,109	1,194	1,222	1,276	1,405	2.5%
2A	734	902	750	917	1,060	1,187	1,399	1,540	11.3%
3A	1,467	1,224	910	727	647	645	661	644	(12.4%)
MAV	1,064	939	1,084	1,207	1,242	1,434	1,709	1,695	8.2%
OSV	1	0	2	2	3	2	1	0	2.8%
Tollable AADT	10,522	10,347	9,394	9,451	9,314	10,001	11,751	12,837	1.9%
Tollable PCU	4,663	4,941	4,636	4,717	18,777	20,280	23,362	24,949	2.1%

Source: Steer analysis of Client data; FY26YTD consists of data from Apr'25 to Sep'25.; Tollable traffic excludes exemption and violation.

3.16 Between FY19 and FY25, TP2 has seen similar muted growth at a PCU level , which can be attributed to (1) the impact of the Covid-19 pandemic in FY21, and (2) the impact of the 4-lane expansion of the NH91 Kanpur-Aligarh section which led to a reduction in level of service during the construction period (FY22-FY24).

3.17 As of FY26YTD, TP2 Somna has observed strong growth in MAV traffic, having grown from 1,531 AADT in FY25 (Apr-Sept '24) to 1,695 AADT in FY26YTD i.e., ~11% annual growth. The strong continued growth in MAV volumes at TP2 (and TP1) since H2FY24 is primarily driven by the overall upgradation of the NH91 corridor, increasing the attractiveness of the Asset as a facilitator of east-west long-distance goods movement. Post 6-laning of the Asset in late 2023, traffic growth at TP2 picked up and has since sustained well, with FY26YTD traffic recording roughly 21% growth over FY25 levels. As per our conversation with the toll plaza authorities, FY26YTD increase in volumes is also a result of a temporary

diversion due to construction of local road in the vicinity. The estimates for full FY26 have been adjusted accordingly to reflect this temporary effect

3.18 Similar to TP1, 2A and MAV traffic at TP2 have exhibited strong growth since FY19, while 3A volumes have consistently declined over time.

Historical Revenue

3.19 Table 3.6 below shows the historical reported revenue on the Asset.

Table 3.6: Historical evolution in annual revenue (in INR Crore) and AADC (in INR Lakhs)

Toll Plaza	FY23	FY24	FY25	FY26YTD
TP1	129.7	158.7	186.7	103.8
TP2	121.6	139.3	163.5	90.6
Total	251.3	298.0	350.2	194.4
AADC (INR Lakh)	**68.8**	**81.4**	**96.0**	**105.7**
Growth		**18.2%**	**17.9%**	

Source: Steer analysis based on data provided by the Client; FY26YTD consists of data from Apr'25 to Sep'25

3.20 The opening of Check Plaza between Aug'23 and Sept '24 at TP1 Luharli resulted in improved reporting and compliance. This was observed as increased volumes of tollable traffic between August'23 and September'24 specifically for Cars and LCVs along with segmentation changes that showed a reduction in exemptions and violations during the same period. Thus, better reporting and growth in tollable traffic coupled with the impact of improved LOS on the Asset in FY24 resulted in strong AADC growth in FY24 and FY25. As of FY26YTD, AADC is at INR 106 Lakh per day.

Toll Frequencies

3.21 Toll frequency or segmentation is the distribution of different ticket categories recorded for all vehicle categories. This is based on the toll policy which is a part of the concession agreement. Each vehicle category has a different segmentation. As a part of our historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the Client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these category passes instead of evading toll.

3.22 Understanding the toll frequency gives us insights into the nature of traffic plying on the Asset. CJVs generally have higher shares of return passes or local monthly passes because they travel shorter distances, while heavy trucks mostly have single tickets since they travel longer distances. Exemptions and Violations are typically observed for CJVs and smaller vehicles since they are not tolled per government mandates (e.g. 2-wheelers and tractors), or include state vehicles (e.g., police cars and govt convoys) that are exempted from paying tolls as per NHAI policy. An Asset catering to short distance local traffic generally observes high share of return or other local monthly passes while one catering to strategic long-distance traffic generally has high share of single ticket traffic.

3.23 Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For the Asset, the segmentation discussed below reports Exemption and violations together.

3.24 Table 3.7 below summarizes the types of tickets being sold at both toll plazas of the Asset.

Table 3.7: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows for a return journey within a day with a 50% discount on the return trip.
Monthly	Discounted single entry ticket for users who undertake multiple trips within a month can buy the monthly pass.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

Introduction of Annual pass for CJVs

3.25 The National Highway Authority of India launched the “The FASTag Annual Pass” on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.26 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll road

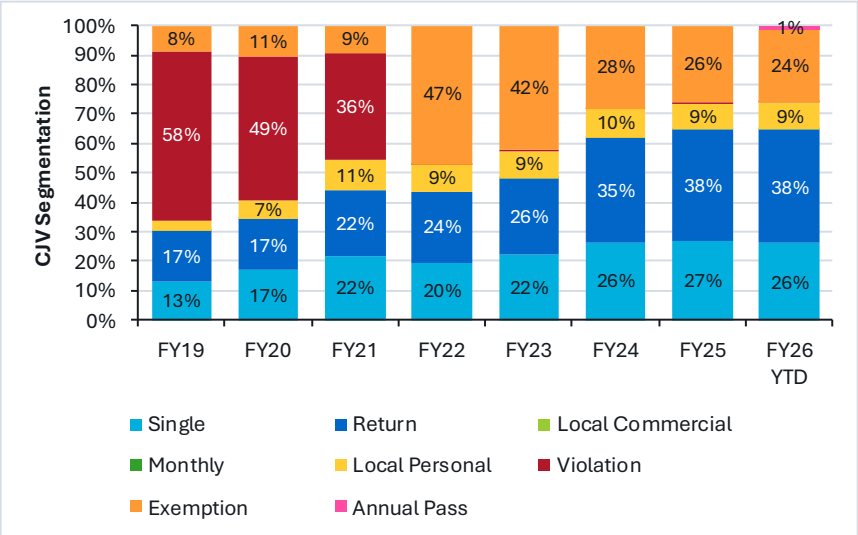
3.27 Figure 3-1 through Figure 3-4 below present toll segmentation for the historical years at TP1 and TP2 for CJVs and MAVs. Table 3.8 below presents the same for the remaining vehicle types at both the Asset toll plazas.

3.28 As a general pattern, the shares of single/return/monthly tickets tend to stabilise within 2-3 years of the commencement of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns. During FY21 and FY22, however, two key events impacted the traffic patterns throughout the country: COVID-19 and FASTag implementation. Despite large variations

in ticket segmentations observed during those two years, segmentation trends on the Asset have slowly stabilised since, with FY25 and FY26YTD showing more consistent segmentation trends for CJVs and MAVs at both TP1 than in previous years (see Figure 3-1 through Figure 3-4 below).

3.29 Given stable segmentation trends observed over the past few years and through Aug '25, we have used FY26YTD (thru Aug'25) segmentation as the base segmentation for all vehicle categories **except CJVs** for forecasting purposes. For CJVs however, we have incorporated the assumption of Annual Pass adoption through the rest of FY26 and beyond into our forecasts – this is discussed in more detail in Chapter 6.

Figure 3-1: Ticket segmentation for CJV at TP1 (Luharli)



Source: Steer analysis of the Client data; FY26YTD contains data thru Aug'25

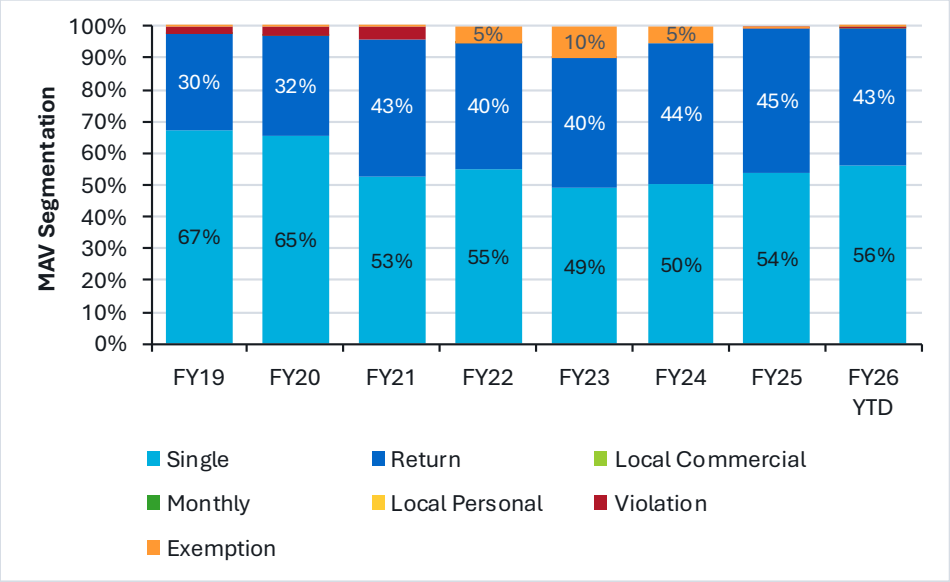
3.30 As observed from Figure 3-1 above, we see a major share of the CJV traffic under the Exemption+Violation category ranging from 40% to 65% over the years. This share has reduced to around 24% as of FY26YTD as compared to 66% in FY19. This decrease can be attributed to a few factors namely FASTag implementation in FY22, operation of Check Plaza at TP1 between in Aug '23 and Sept '24, as well as other measures that improved reporting and compliance over the past few years.

3.31 The magnitude of the share of exemptions observed on this Asset is much higher than our observations on similar Assets across the country. As per our observation during the site visits and our understanding of the region, local political influences and aggressive attitudes of local road users resistant to pay the toll play a role in this high share.

3.32 Single trips have shown an upward trend, growing from 13% in FY19 to 26% in FY26YTD. Return trips have experience more significant growth – more than doubling from 17% in FY19 to 38% in FY25 and FY26YTD

3.33 Figure 3-2 below presents the ticket segmentation for MAVs at TP1. For MAVs, single ticket shares grew 4% and return ticket shares declined 1% in FY25 relative to FY24. This coincided with a 5% decrease in traffic exemptions, suggesting a greater capture of both long-distance and local traffic.

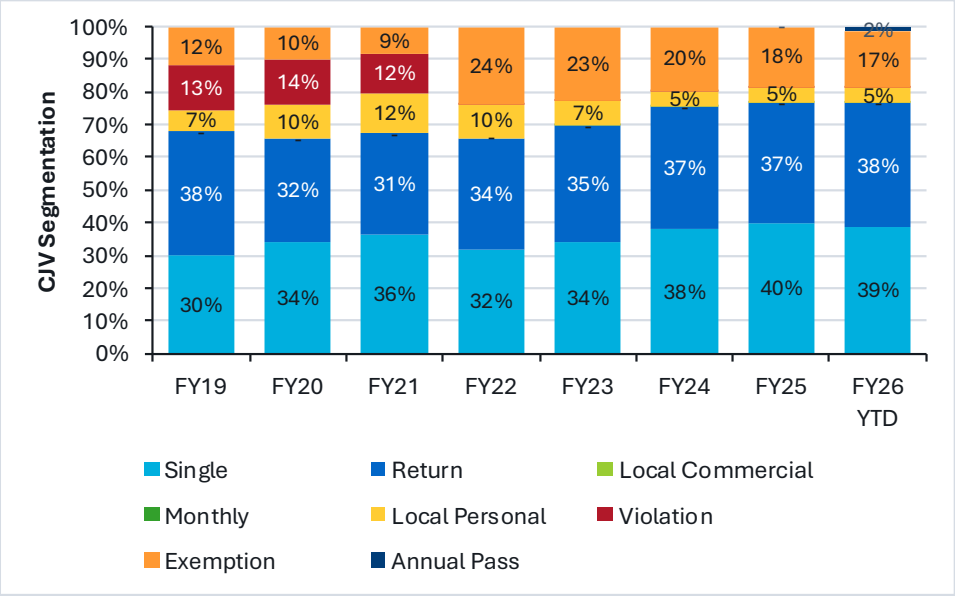
Figure 3-2: Ticket segmentation for MAV at TP1 (Luharli)



Source: Steer analysis of the Client data; FY26YTD contains data thru Aug'25

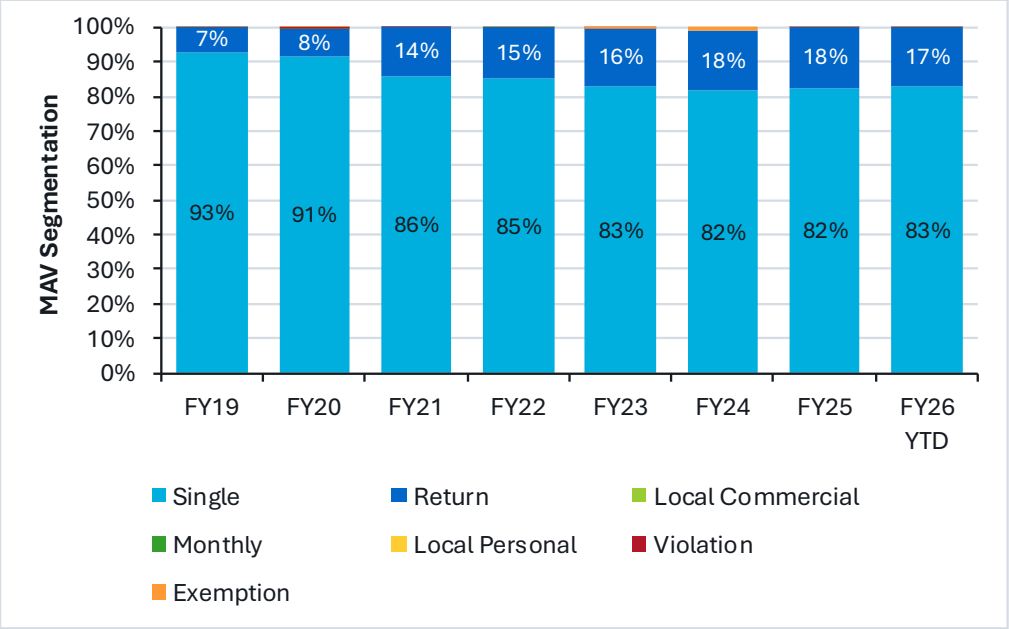
3.34 Figure 3-3 and Figure 3-4 below present the ticket segmentation for CJVs and MAVs (respectively) at the TP2 Somna toll plaza.

Figure 3-3: Ticket segmentation for CJV at TP2 (Somna)



Source: Steer analysis of the Client data; FY26YTD contains data thru Aug'25

Figure 3-4: Ticket segmentation for MAVs at TP2 (Somna)



Source: Steer analysis of the Client data; FY26YTD contains data thru Aug'25

3.35 As shown in Figure 3-3 above, return journey tickets and local personal tickets together have historically accounted for the majority share of CJV trips at TP2 Somna. The high share of local trips in CJVs is validated by their average trip length of around 260kms[6], suggested that majority of CJV traffic at TP2 is regional in nature. Exemptions and violations in FY26YTD are similar to FY25 shares, whereas exemptions on TP2 is lower than the TP1 given lower volumes and urban density compared to TP1.

3.36 Figure 3-4 above shows that as of FY26YTD, MAV trips observed at TP2 Somna had a high share of single journey tickets (at approx. 83% of total trips). This high share of single tickets suggests the dominance of long-distance movements, further validated by the OD analysis outputs— with MAVs averaging a trip length of approx. 650 kms.

3.37 The segmentation shows us that both the plazas on the Asset have very distinct characteristics. TP1 has a high share of local traffic catering to the travel demand generated by the regions of Dadri, Sikandrabad and Ghaziabad whereas TP2 serves long haul trips connecting north-west Uttar Pradesh, Punjab etc. to cities like Kanpur, Lucknow, Patna, Kolkata.

3.38 Table 3.8 below presents the FY26 YTD (thru Aug'25) segmentation for LCV, Bus, 2A and 3A categories.

Table 3.8: Segmentation for LCV, Bus, 2A and 3A category – FY26YTD

Ticket Category	TP1 (Luharli)				TP2 (Somna)			
	LCV	Bus	2A	3A	LCV	Bus	2A	3A
Single	39%	7%	58%	69%	59%	10%	78%	85%

[6] Value is achieved by Steer's analysis of Origin-Destination survey data conducted on 3rd February 2025 on TP1 and 4th February 2025 on TP2.

Return	57%	93%	41%	30%	39%	89%	21%	15%
Local Commercial	-	-	-	-	-	-	-	-
Monthly	2%	0%	0%	0%	0%	-	-	-
Violation	1%	0%	1%	0%	0%	0%	0%	-
Exemption	1%	0%	1%	0%	2%	0%	1%	0%

Source: Steer analysis of the Client data

Data collection exercise

3.39 As aforementioned, to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset comprising the surveys listed in the table below. While TVC survey data were provided by the Client, OD surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video graphic capture of traffic passing crossing the toll plazas, followed by manual counting. Table 3.9 below summarizes the details of the primary surveys Steer conducted as part of this study.

Table 3.9: Data collection schedule

Toll plaza	1-day OD survey		3-day videography based TVC			
	Start date	End date	Start date	Start Time	End Date	End Time
TP1 Luharli	3rd February 2025	4th February 2025	3rd February 2025	0900 hours	5th February 2025	0900 hours
TP2 Somna	4th February 2025	5th February 2025	3rd February 2025	0900 hours	5th February 2025	0900 hours

3.40 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, in order to fully understand the impact of the fluctuation on the Asset.

Key findings of the TVC data analysis

ADT estimates

3.41 Taking a simple average of the three-day TVC counts, we obtained the following average daily traffic (ADT) for each toll plaza. This ADT excludes non-tollable vehicle such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicle, government vehicle and other vehicle types officially allowed as 'exempted' under the concession agreement.

3.42 As presented in Table 3.10 below, CJVs are largest vehicle category at TP1 (approx. 20,000 AADT), closely followed by LCVs and MAVs at approx. 2,870 and 2,318 ADT respectively. TP2 mirrors this trend with CJVs being the largest vehicle category (approx. 8,200 AADT), followed by LCVs and MAVs at approx. 1,890 and 1,700 AADT.

Table 3.10: ADT at TP1 Luharli & TP2 Somna

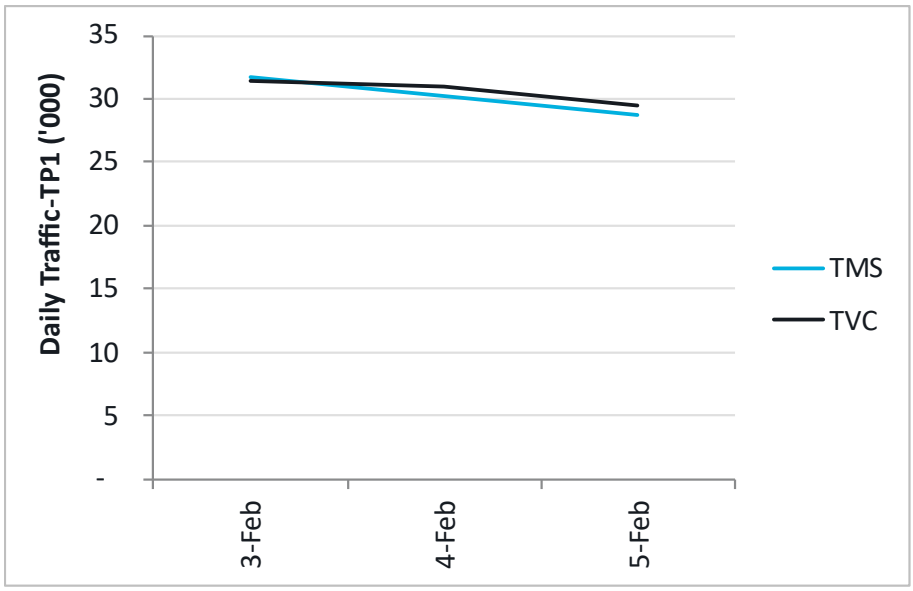
Toll Plaza	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total	PCU
TP1 Luharli	20,061	2,109	2,870	1,617	927	680	2,318	6	**30,588**	**44,596**
TP2 Somna	8,249	1,025	1,889	1,245	987	656	1,694	7	**15,751**	**26,954**

Source: Steer analysis of TVC data

3.43 We used the TVC data to validate the toll plaza data for the same days, as supplied by the Client via their toll management system (TMS). This TMS data was then used as the base data, for our forecasting model.

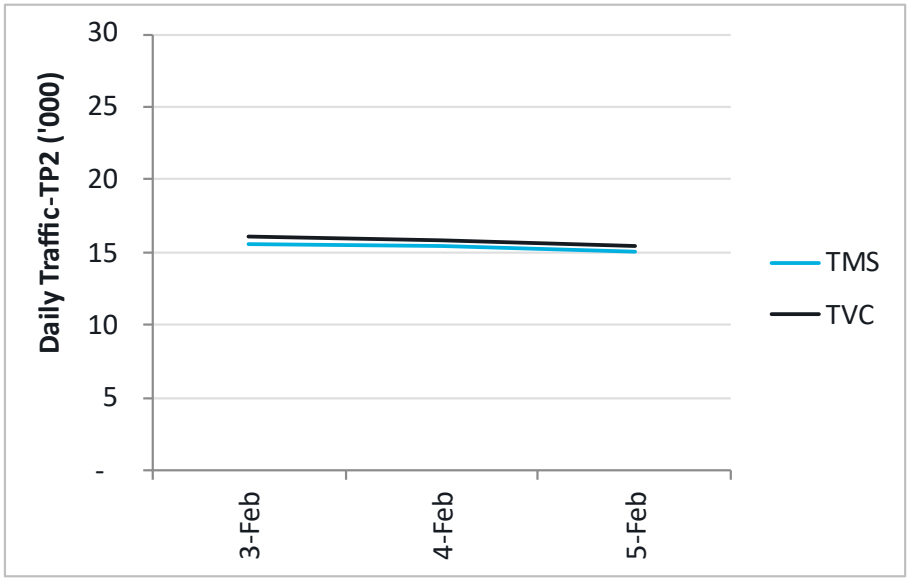
3.44 Figure 3-5 and Figure 3-6 below show the comparison between daily traffic data and shares of vehicle categories in TVC and TMS for the two toll plazas. The variation between the TVC ADT and TMS data on TP1 is approx. 1.2% at a total level and the same for TP2 is around 2.7%. The difference between daily traffic from both sources is minimal at both TP1 and TP2 and can be attributed to technical differences between the two independent traffic counting systems.

Figure 3-5: Comparison between TVC and TMS daily traffic data, TP1 Luharli



Source: Steer analysis of TVC and Client TMS data

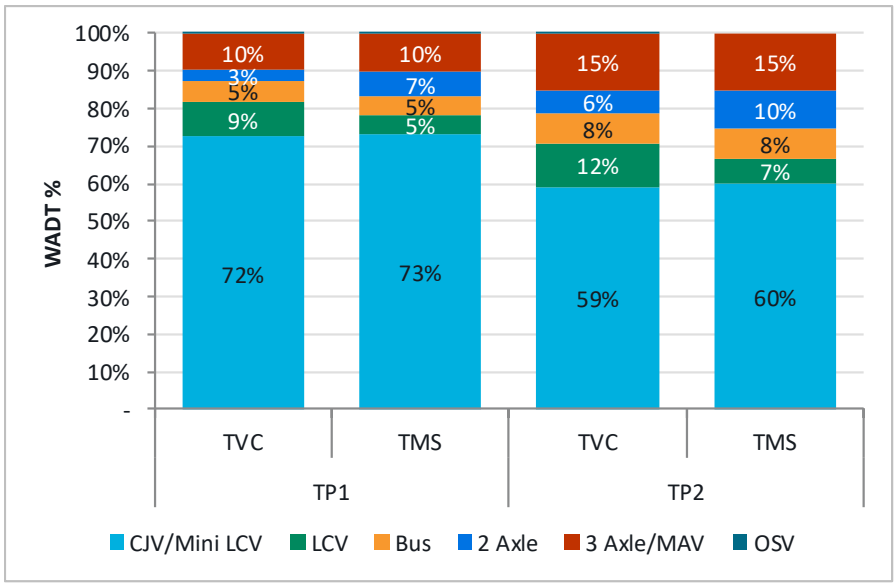
Figure 3-6: Comparison between TVC and TMS daily traffic data, TP2 Somna



Source: Steer analysis of TVC and Client TMS data

3.45 Figure 3-7 below displays the shares of vehicle types at both plazas, between TVC and TMS data. As can be seen, in the figure and as aforementioned, TP1 sees a higher influence of CJVs.

Figure 3-7: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.46 Due to certain vehicle types like LCV and Mini LCV often showing issues in classification at various toll roads across the country, we combine the light vehicle categories (CJV/Mini LCV, LCV, Bus, 2A) and heavy vehicles (3A, MAV) as we compare TMS versus TVC. Table 3.11 below presents a comparison of the difference between these aggregated totals between the TVC and TMS data for both the Asset toll plazas. Post combining, we observe the absolute differences in light and heavy vehicles on TP1 is approx. 0.2% and 4.2% respectively. TP2 on the other hand sees an absolute difference of 0.7% in light vehicles

and 5.8% in heavy vehicles. Given the overall good fit of the data at a WADT level and minimal variation between the TVC and TMS data for the largest revenue generator (3A and MAVs), we believe the base year traffic calculated using the Client TMS data forms a reasonable estimate.

Table 3.11: Difference in TVC and TMS in combined categories

Vehicle type	TP1 Luharli			TP2 Somna		
	TVC	TMS	TMS vs TVC (%)	TVC	TMS	TMS vs TVC (%)
CJV+MLCV	22,170	22,132	**0.2%**	9,274	9,207	**0.7%**
LCV+Bus+2A+3A+MAV+OSV	8,418	8,081	**4.2%**	6,477	6,122	**5.8%**

Source: Steer analysis of TVC and Client TMS data

Key findings of origin-destination analysis

Overview

3.47 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. As part of this assignment, we have analysed the regional drivers of demand based on the following OD analyses on the data as provided by the Client:

- Zonal influence
- Internal External analysis
- Commodity distribution
- Trip length distribution

3.48 While zonal analysis and list of top OD pairs help us to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analysis is used to estimate key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.49 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TVC data) during the same time period. Table 3.12 below presents the sample rates for key vehicle type aggregations at both the toll plazas. Lower samples in Passenger at both the plazas is due to reduced stopping time of Cars especially at the plazas post FASTag implementation. However, we believe that the sample rates of the OD data are reasonable.

Table 3.12: Sample rates for OD data

Vehicle type	TP1 Luharli	TP2 Somna
Passenger (CJV+Bus)	35%	15%
Goods (LCV+2A+3A+MAV)	78%	80%

Source: Steer analysis of OD data

Commodity Categories

3.50 We have grouped various commodities into aggregate categories for ease of interpretation, as shown Table 3.13 below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3.13: Aggregate commodity categories

Commodity Description	Code	Aggregation code
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, goat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood, Cork & Wood Products, Furniture	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, Household items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

Source: Steer analysis

3.51 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones and influenced by various cities, states, and regions in the proximity of the Asset, we have aggregated zonal data as described in Table 3.14 below. The methodology behind zone aggregation may vary based on the characteristics displayed by each Asset.

Table 3.14: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
Immediate area of influence (IAOI)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of State	Rest of cities/Districts in the state that Asset lies in (other than Local/IAOI)
Haryana	Haryana
Rajasthan	Rajasthan
Uttarakhand	Uttarakhand
Bihar	Bihar
North India	Punjab, Himachal Pradesh, Jammu & Kashmir
Central India	Madhya Pradesh
West India	Gujarat, Maharashtra, Goa
South India	Southern Indian states
East & Northeast India	Jharkhand, Odisha, West Bengal and Northeast Indian states
Outside India	Nepal, Bhutan, Bangladesh

Source: Steer analysis

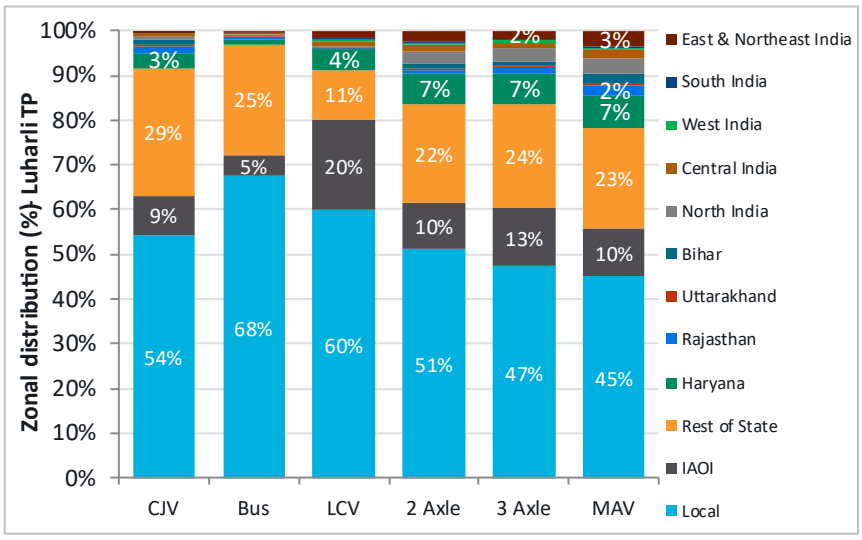
Zonal influence

3.52 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence of different regions (as defined in the table above) on traffic volumes crossing at each of the Asset toll plazas. Please note that zonal influence is analysed on trip ends and not trips.

3.53 Figure 3-8 and Figure 3-9 below present the zonal influence of different zones/regions on all the vehicle types crossing the toll plazas. We can see that ‘local’ trips make up the largest share for all vehicle types on TP1 whereas TP2 sees a mix of rest of state and local trips dominating the zonal distribution of the plaza. The influence of local trips is seen decreasing as the size of vehicle type increases, consistent with general trends observed across most highways across the country, given that heavier vehicles travel longer distances. In this context, the high incidence of local trips can be specifically attributed to the urban nature of the Asset and proximity to several industrial and growing urban centres like Ghaziabad, Sikandrabad, Khurja and Aligarh. The distribution also varies between the toll plazas, with TP2 showing lower ‘local’ influence.

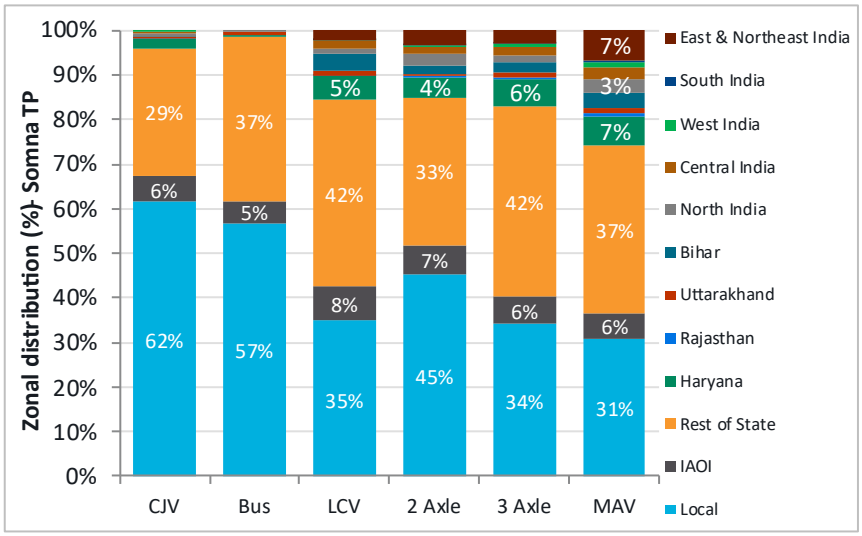
3.54 We observe the highest share of 'local’ influence for CJV’s (54%, and 62% at TP1, and TP2 respectively). MAVs see lower but significant ‘local’ influence (45%, and 31% at TP1 and TP2 respectively), which is still much higher than observations made at long-distance corridors across roads in the country. Compared with competing long-distance corridors, this indicates potentially larger share of traffic having one trip end lying on the Asset i.e., dependent on the regional economy. This is further discussed in the sub-sections presenting top OD pairs and trip length analysis.

Figure 3-8: Zonal influence, TP1 Luharli



Source: Steer analysis of OD data

Figure 3-9: Zonal influence at TP2, Somna



Source: Steer analysis of OD data

3.55 TP2 shows a much greater influence of Rest of State, with all categories showing shares above 25%, touching 37% for MAVs. The zonal distribution of both plazas indicates a high influence of within state trips across all vehicle categories

Internal External analysis

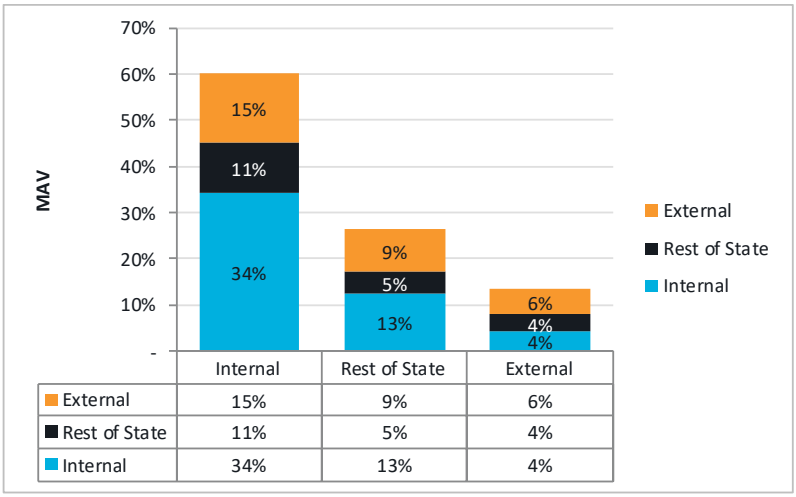
3.56 Internal-External analysis helps in identifying the trips which have both the origin and destination on the Asset (Internal-Internal), both trips ends within the state (RoS) or or neither end on the Asset i.e. through trips (External-External). 'Internal' zones are those that were analysed as 'local' in the zonal influence analysis, i.e., lying on the Asset, while 'External' zones are all other zones.

3.57 Figure 3-10 and Figure 3-11below show the distribution of MAV trips based on these categories at both the Asset toll plazas TP1 Luharli and TP2 Somna (respectively). These supplement observations made in the zonal influence analysis presented earlier, but at a higher level of aggregation and at a trip level.

3.58 For CJVs and light vehicles at TP1 Luharli and TP2 Somna, we see that the zonal influence maps to a combination of internal and rest of state trips which means that there are both short-distance and medium-distance trips that contributed to the high 'local' zonal influence. MAVs, on the other hand, show difference between TP1 and TP2, with TP1 having a high share of trips having one 'internal' trip end. On the contrary, TP2 sees a slightly more balanced share between trips having one end 'internal' and one end as 'rest of state'.

3.59 As demonstrated in Tables 3.10 and 3.11, TP1's proximity to industrial zones in Khurja, Sikandrabad, and Bulandshahar results in shorter trip lengths (as detailed in the trip length analysis in Figure 3.14). Consequently, internal trips constitute approximately 60% of the traffic on TP1. In contrast, TP2's zonal influence (refer to Figure 3-9), extending to the rest of the state and northeastern states, leads to a higher proportion of rest of state and external trips.

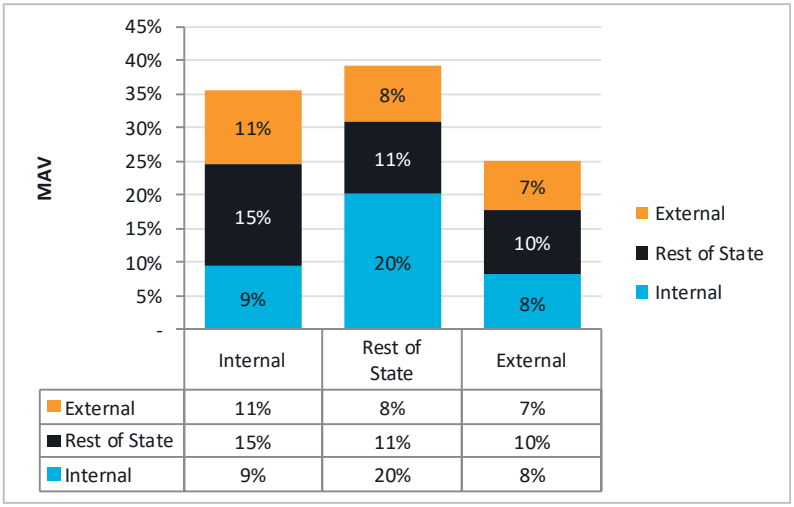
Figure 3-10: Internal-external distribution, TP1 Luharli



	Internal	Rest of State	External
External	15%	9%	6%
Rest of State	11%	5%	4%
Internal	34%	13%	4%

Source: Steer analysis of OD data

Figure 3-11: Internal-external distribution, TP2 Somna



	Internal	Rest of State	External
External	11%	8%	7%
Rest of State	15%	11%	10%
Internal	9%	20%	8%

Source: Steer analysis of OD data

Commodity distribution

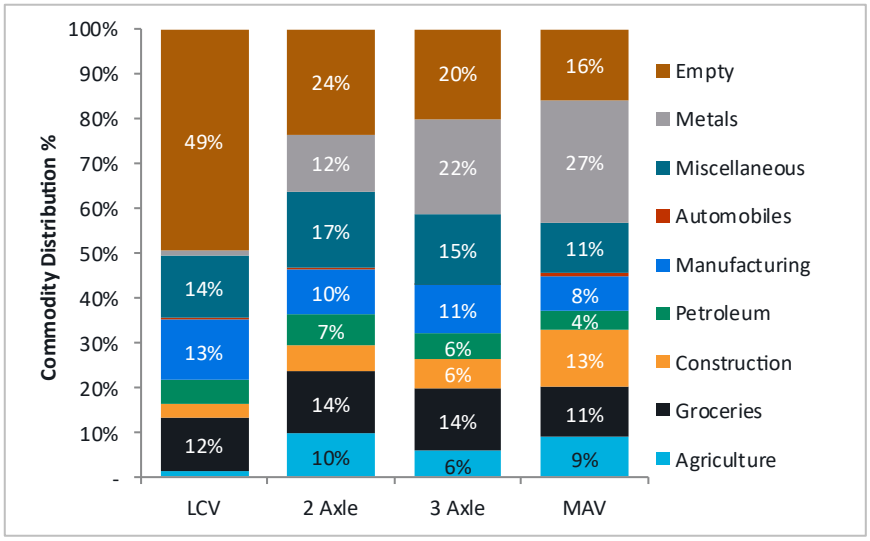
3.60 Figure 3-12 and Figure 3-13 below present the commodity distribution for goods vehicles at TP1 Luharli and TP2 Somna respectively. As also observed during our site visits, we see a high proportion of vehicles that are 'empty', which is consistent with the high 'local' zonal influence and significant shares of 'return' trips observed in our historical analysis section above.

3.61 There is a significant volume of construction, manufacturing, metals and petroleum related commodities on both plazas the Asset along with agricultural materials. Vehicles carrying these products generally have one end of their trips in the industrial areas of Sikandrabad, Ghaziabad, Bulandshahar or Aligarh. The share of construction traffic observed on the Asset can be attributed to cement being transported from Sikandrabad to Delhi NCR region.

3.62 The metal traffic observed on both the toll plazas is primarily iron pipes travelling in both directions from Sikandrabad to Delhi NCR region and from Ghaziabad to Sikandrabad and Aligarh.

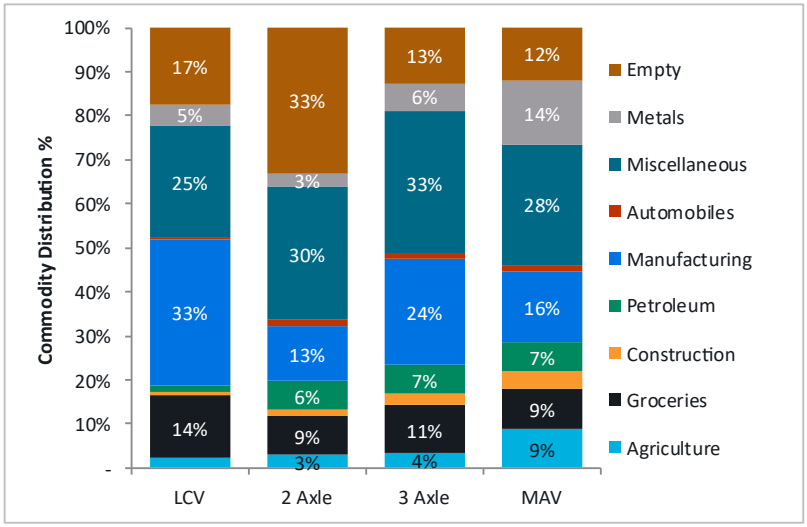
3.63 Somna toll plaza shows more efficient vehicle utilization with a lower share of empty trips and a high concentration of manufacturing and miscellaneous goods across all vehicle types, pointing to a diverse industrial catchment.

Figure 3-12: Commodity distribution, TP1 Luharli



Source: Steer analysis of OD data

Figure 3-13: Commodity distribution, TP2 Somna

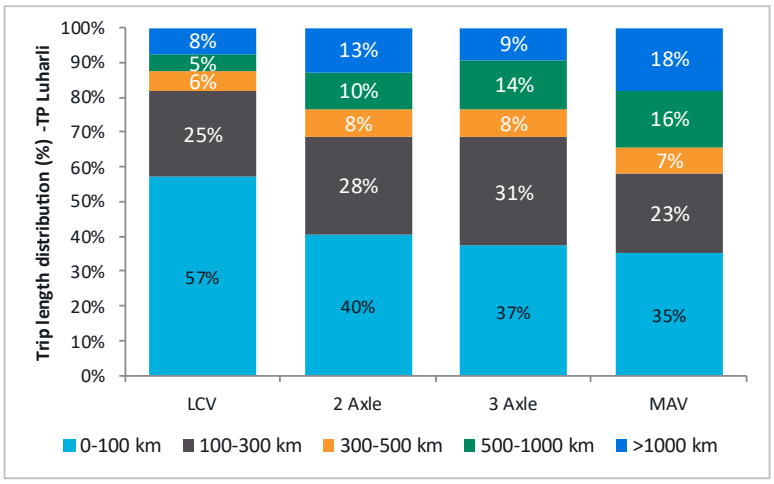


Source: Steer analysis of OD data

Trip length analysis

3.64 Trip-length distribution provides the distance-based profile of various vehicle types. This helps to validate assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into groups – 0-100 km, 100-300 km, 300-500 km, and 500-1000 km and >1,000 km. The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[7]

Figure 3-14: Trip length distribution TP1



Source: Steer analysis of OD data

3.65 In keeping with observations in the zonal influence analyses, we see that up to approx. 77% (CJVs at TP1) and approx. 87% (CJVs at TP2) make trips that are less than 300 km

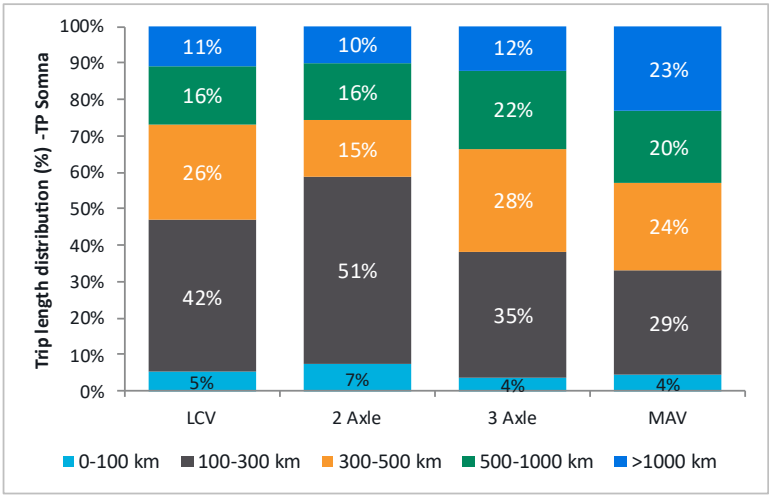
[7] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: https://developers.google.com/maps/documentation/distance-matrix/start. Travel distance and time information for driving under various scenarios can be extracted using macro-enabled Excel, R, etc.

long. This supports the urban nature of the Asset with relatively shorter trips and a higher percentage of passenger vehicles.

3.66 Consistent with the zonal influence analysis, a majority of CJVs undertake relatively short trips, with approximately 77% at TP1 and about 87% at TP2 traveling less than 300 km. This reinforces the urban character of the Asset, characterized by shorter journeys and a greater prevalence of passenger vehicles.

3.67 Also, it is observed that TP1, being closer to urban centres of Sikandrabad, Khurja and Ghaziabad, has a higher share of short distance local trips i.e., travelling within 300kms compared to TP2. The trend is similar in higher vehicle categories as well where one of the trips end is in the Asset region (within Delhi, UP or Haryana). In contrast, TP2 has a comparatively higher share of long-distance trips (i.e., more than 300kms) as evidenced in Figure 3-15 below. These long-distance trips primarily move between Delhi, Haryana and Punjab towards eastern UP regions of Kanpur and further towards north-eastern states such as West Bengal and Bihar.

Figure 3-15: Trip length distribution TP2



Source: Steer analysis of OD data

Conclusions

3.68 In summary, TP1 Luharli has witnessed strong growth in both total and tollable traffic as of FY26YTD due to combination of factors including the impact of increased LoS across the full NH91 corridor from Delhi to Kanpur through (1) the 6 lane expansion of the Asset by October 2023, and (2) completion of 4-laning on the Kanpur-Aligarh stretch of the NH91 by H2FY24. Other factors include the impact of the opening of check plaza at TP1 between August 2023 and September 2024 which led to improved reporting and compliance in recent years. The recent operationalisation of the 16-lane Luharli (TP1) staggered configuration plaza is expected to enable these growth trends to continue in the near term by alleviating congestion and curbing leakage from toll evaders.

3.69 The TVC analysis confirmed the reliability of the Toll Management System (TMS) data, with minimal variation between TVC and TMS counts (1.2% at TP1, 2.7% at TP2). These differences are within acceptable limits, validating the use of TMS data for base year traffic estimates.

3.70 The OD analyses highlighted significant local influence, particularly at TP1, where local trips form the largest share for most vehicle types as it serves demand being generated by the industrial regions of Dadri, Sikandrabad and Ghaziabad. TP2 on the other hand, shows a greater influence from the 'Rest of State'. MAVs exhibit higher 'local' influence than typical long-distance corridors, suggesting dependence on the regional economy and nearby industrial hubs (such as the Sikandrabad industrial area). Key commodities observed on the Asset include construction materials, manufacturing goods, metals, petroleum and agricultural produce.

3.71 The overall characteristic of the Asset is strategic in nature connecting several key urban and economic activity centres of New Delhi, Ghaziabad, Sikandrabad, Khurja, and Aligarh in the immediate vicinity with wider generators and attractors in Western-Uttar Pradesh, Punjab, Kanpur and Lucknow region, Bihar, and West Bengal also being connected by the Asset. High population density and contiguous development of urban centres are drivers for healthy CJV and Bus traffic growth on the Asset as well.

4 Socio Economic Context

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions of the region where the Asset is located and conditions on a national scale. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and,
- Other local factors such as strategic port growth, and growth in local industries near the Assets.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available.

4.3 In this chapter, we assess the socio-economic indicators relevant to traffic growth on the Asset.

Population growth

National Level

4.4 The total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 – 1985	2.3%	1.9%	3.8%
1985 – 2000	2.0%	1.7%	2.9%
2000 – 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.5 Table 4.2 shows the evolution of population in the state of Uttar Pradesh and Delhi (containing the Asset), compared to that of the country.

4.6 As the tables show, the populations of both Uttar Pradesh and Delhi have grown at a faster pace, compared to that of India between 2012-2024. As of FY24, Uttar Pradesh holds an 8.1% share in India's population, while Delhi has a 3.8% share.

Table 4.2: Population Growth in Uttar Pradesh, Delhi and India (2012-2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Uttar Pradesh	201.5	237.0	**1.4%**
Delhi	17.0	21.6	**2.0%**
India	1,210	1,395	**1.2%**

Source: National Institution for Transforming India (NITI Aayog) – Census Data

4.7 Due to the complexities of patterns of urbanisation, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide the underlying socio-economic context of the state/trends in the regions in which the Asset is located.

Economic Indicators

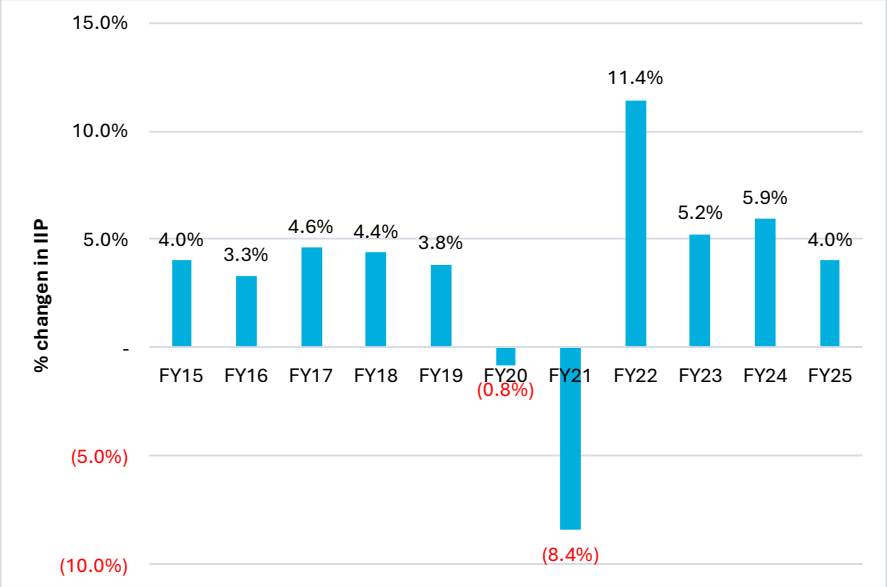
Industrial Production

4.1 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.2 Figure 4-1 below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

4.3 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. However, we do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Figure 4-1: Annual growth – Index of Industrial Production



Source: Ministry of Statistics and Program Implementation (MoSPI)

Vehicle ownership

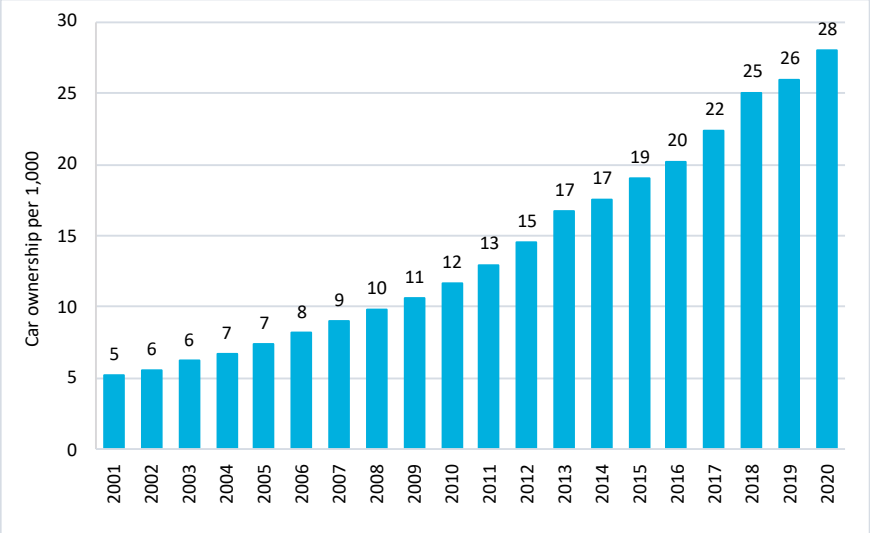
4.4 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[8]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled and increased at a CAGR of about 11%.

4.5 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[9]

[8] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[9] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4-2: Car Ownership in India per 1,000 population



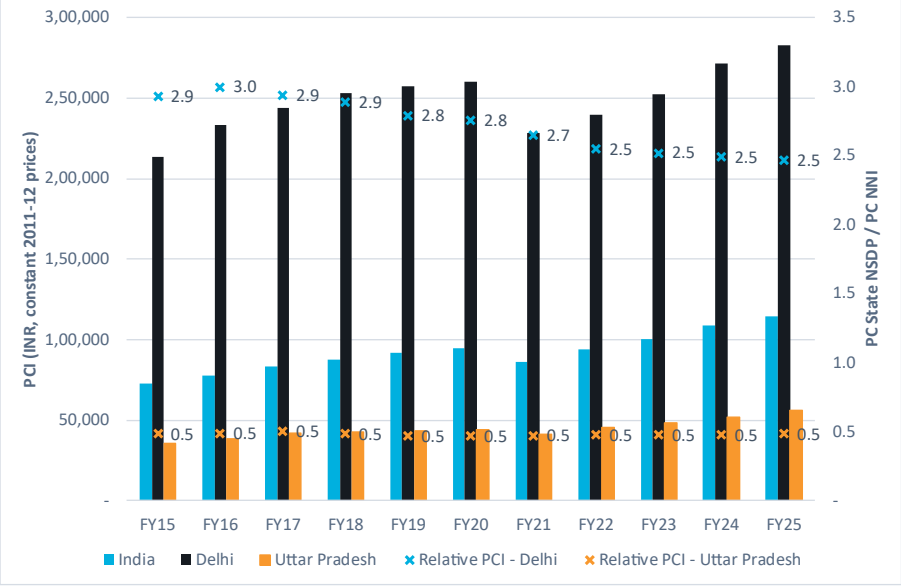
Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.6 The Asset lies in Uttar Pradesh and Delhi. As shown in Figure 4-3 below, since FY15, the per capita income of Uttar Pradesh has been at roughly 40-50% of the national average. In contrast, the per capita income of Delhi has consistently been much higher – varying between 2-3 times the national average over the period FY15-FY25.

4.7 Traffic on the Asset is influenced by both Delhi and Uttar Pradesh – specifically, the western region of UP, which has grown at a faster rate than the rest of the state in recent years and is expected to continue this trajectory (as discussed in 4.21 below). The higher per capita income of Delhi and the higher growth in western UP indicates sustained economic growth in the region, driving traffic growth on the Asset over time.

Figure 4-3: Relative Per Capita Income (FY15-FY25)



Source: Steer Analysis of MoSPI data

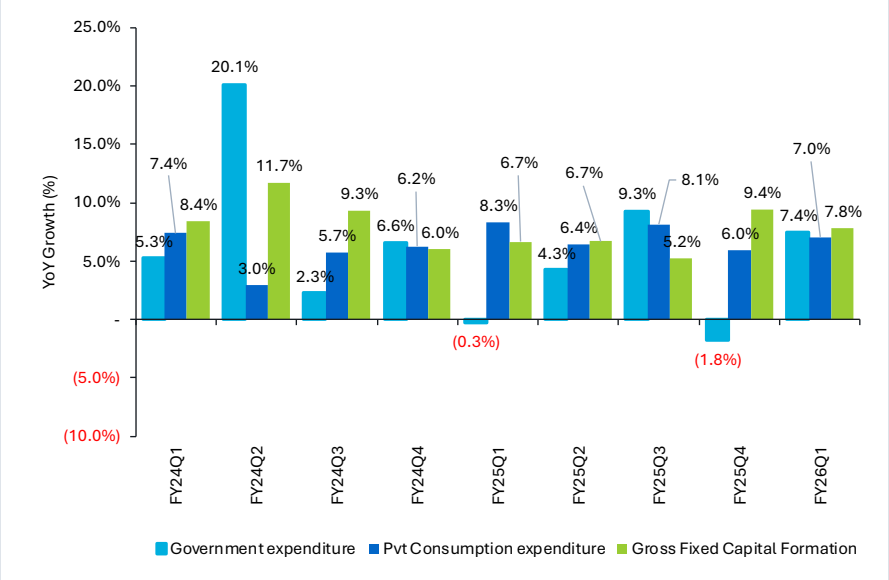
Economic growth

India's Performance

4.8 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[10].

4.9 In Figure 4-4 below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures



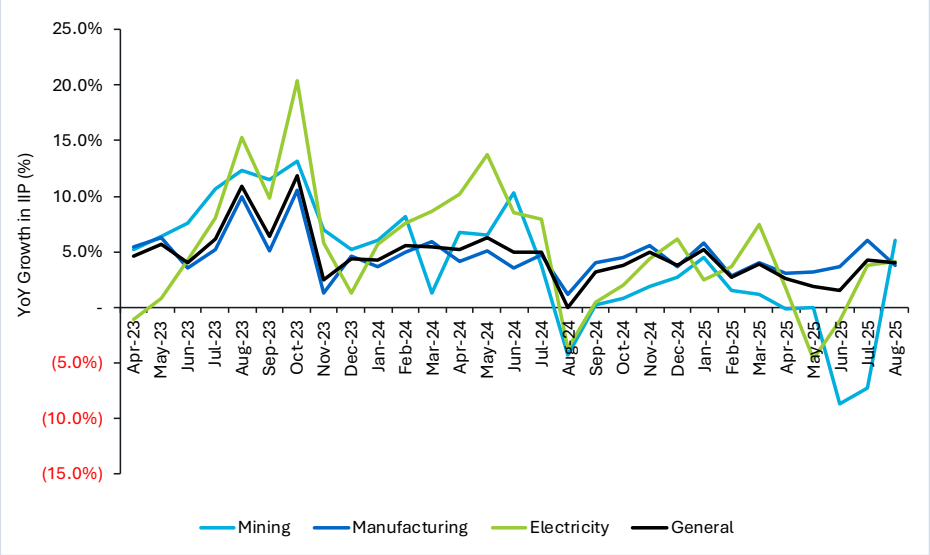
Source: Steer Analysis of MOSPI Data

4.10 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.11 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In Figure 4-5 below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

[10] Government of India, PIB Release Oct 1 '25

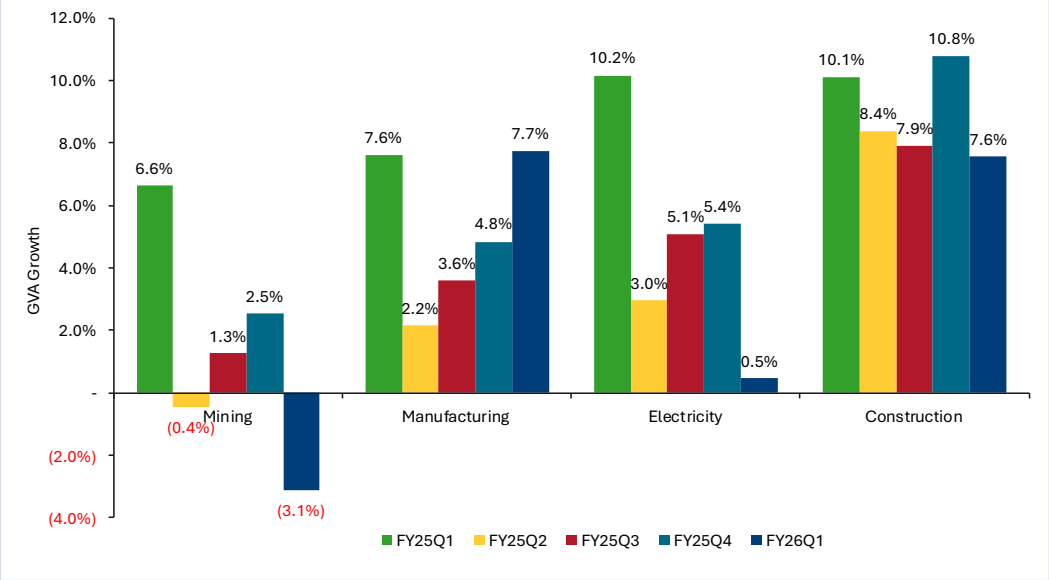
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.12 In addition to monthly trends in IIP, Figure 4-6 below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. Generally, economic growth has remained resilient as of FY26YTD, but performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

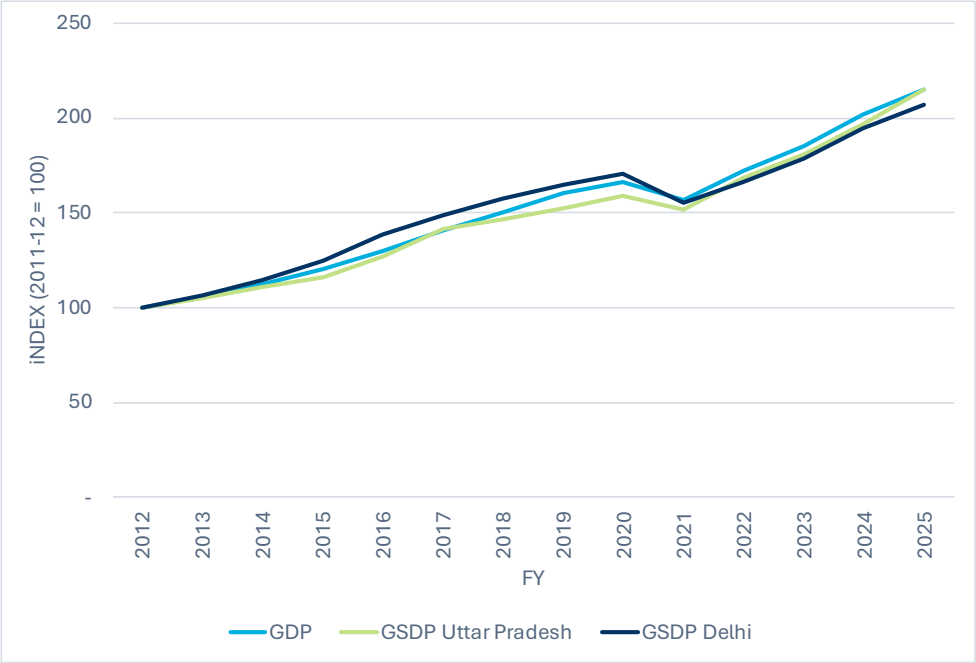
GDP and GSDP Growth

4.13 Figure 4-7 below presents historical growth in Delhi and Uttar Pradesh GSDP, and the GDP of India. Between the period of FY12 and FY25, the Indian economy grew at a CAGR

of 6.1% per year – aided by strong growth in the services/tertiary sector, which grew at a CAGR of 6.9%per year over the same period. UP GSDP and Delhi GSDP grew at 6.1% and 5.8% per year (respectively) between FY12 and FY25 – in step with the national economy.

4.14 As shown in Table 4.2 above, Delhi and UP respectively accounted for 1.5% and 17% of national population in FY24. In terms of national economic contribution, Delhi and Uttar Pradesh contributed approximately 4% and 8% respectively to India's GDP in FY24. Therefore, Delhi's per capita GDP contribution in FY24 far exceeded the same for UP statewide, highlighting the importance of the region in driving consumption demand and regional traffic growth near the Asset.

Figure 4-7: Evolution of Delhi's and Uttar Pradesh's GSDP and national GDP



Source: Ministry of Statistics and Program Implementation (MoSPI)

Economic activity in the state

Uttar Pradesh

4.15 Uttar Pradesh is the most populous state in India with a population of ~237 million people (as of FY24). The state has a large pool of skilled, semi-skilled and unskilled labour. A shown in Figure 4-8 below, the tertiary sector has the highest sectoral contribution (49%) to the state GSVA followed by the secondary (28%) and primary (23%) sectors, as of FY25.

4.16 Uttar Pradesh is considered one of the primary tourist destinations in India, with key tourist attractions being Agra, Varanasi, Mathura and Prayagraj. The state recorded a tourist footfall of 64.90 crore in 2024, a significant increase of over 17 crore in 2023, as per Union Ministry of Tourism[11]. Overall, Uttar Pradesh had an 8.2% contribution to national GDP as per FY24 data by the Ministry of Statistics and Program Implementation.

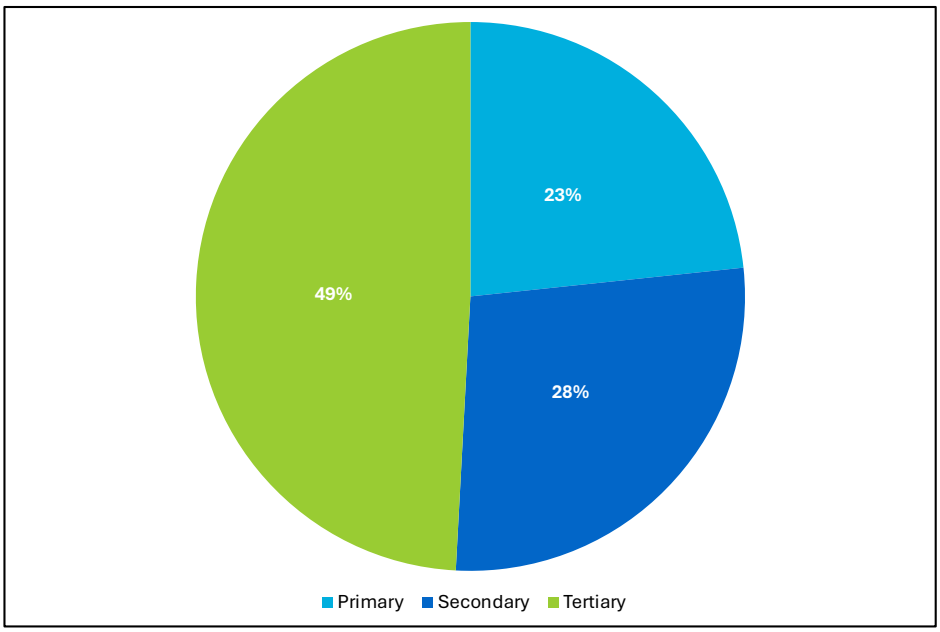
4.17 In terms of secondary sector, the state has key industrial areas in Khurja (Ceramic); Moradabad (Metals); Meerut, Bareilly, Mirzapur and Lucknow (Handloom & Handicrafts);

[11] up-sees-65-crore-tourists-in-2024-over-17-crore-more-from-2023

and Kanpur and Noida (Leather and tannery). The state also has an oil refinery in Mathura, operated by Indian Oil Corporation.

4.18 Uttar Pradesh has very fertile Gangetic land with a large share of population dependent upon agriculture sector for the livelihood. The key primary industries in the state include crop production and horticulture. The state is mainly known for production of wheat, sugarcane, potato and mango.

Figure 4-8: Sectoral contribution to Uttar Pradesh's GSDP as of FY25



Source: Steer Analysis of MoSPI data

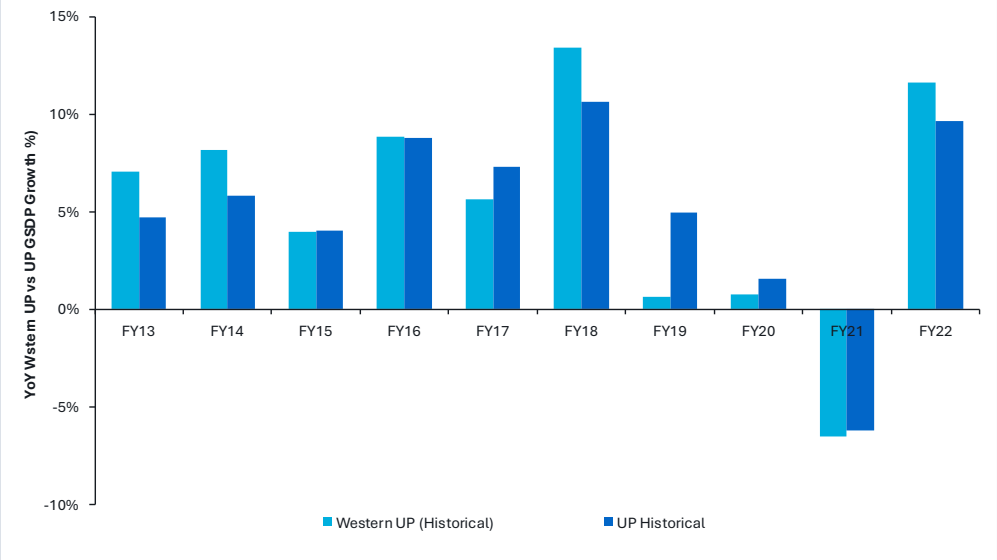
Western UP vs UP GSDP Growth

4.19 Since FY13, growth of Western UP GSDP[12] has remained relatively stable, and in line with UP statewide GSDP growth. In Figure 4-9 below, we see that between FY13 and FY22, GSDP growth in Western UP exceeded that of UP overall in 5 of the 10 years (FY13, FY14, FY18, FY21 and FY22), was consistent with UP in 2 of the 10 years (FY15 and FY16), and was below UP GSDP growth in 3 of the 10 years (FY17, FY19 and FY20). While UP statewide growth is largely influenced by Western UP, in recent years (FY21-22), Western UP GSDP has exhibited growth more sensitive than statewide trends.[13]

[12] The Western UP region consists of 30 districts, prominent among which are Ghaziabad, Gautam Budh Nagar, Agra, Meerut, Mathura and Bareilly. Historically, this collective region has been the more economically developed part of Uttar Pradesh, and as of FY22 accounted for half of the statewide total GSDP.

[13] Steer analysis of data sourced from the Directorate of Economics and Statistics, Uttar Pradesh (**UPDES website**)

Figure 4-9: Western UP vs UP GSDP Growth



Source: Directorate of Economics and Statistics, Uttar Pradesh

4.20 This can be explained due to a combination of policy- and market-driven factors which have contributed to higher growth in the Western region of the state. Some of these major developments pertaining to large-scale infrastructure investments in the region include:

- Delhi – Meerut Expressway[14]
- Ganga Expressway [15]
- Noida International Airport (Jewar Airport) [16]
- Logistics hub in Agra, by the Agra Development Authority [17]
- 'New Noida' initiative by the Uttar Pradesh government [18]

4.21 Between FY12–FY25, the GSDP of Uttar Pradesh grew at a CAGR of 6.1% per year. Over the same period, national GDP grew at 6.1%[19] per year, implying that the long-term elasticity factor of UP GSDP growth to national GDP growth is roughly 1. In this context, as Western UP has exhibited more elastic growth relative to UP state overall in recent years, as well as expectations of strong near-term growth in the Western region driven by large-scale infrastructure and commercial investments, we have assumed the near-term growth forecast for Western UP to be similarly elastic to India's GDP growth forecast.

4.22 Figure below presents the Client-provided forecasts of national (India) GDP growth from FY26 to FY45, and our assumed GSDP forecast for Western Uttar Pradesh over the same period. In the short term, we have assumed GSDP of Western UP to grow at 1.2 times that of national GDP growth forecast, eventually tapering down to a factor of 1.0 over time as it converges to the national growth rate forecast by FY45.

[14] https://timesofindia.indiatimes.com/city/meerut/gadkari-lays-foundation-of-highway-projects-worth-rs-11595-crore-in-west-up/articleshow/68086587.cms?

[15] 28 Flyovers, 126 Bridges, 600km In 6 Hours: Ganga Expressway Set To Open Soon; Check Route - News18

[16] Noida's Jewar Airport, Set To Be Asia's Largest, Will Open In April 2025; PM Modi To Inaugurate | Times Now

[17] Proposal for Rs 570 crore state-of-the-art logistics hub in Agra approved - India Today

[18] New Noida: UP govt approves massive housing and infrastructure development plan | Key details | Business News – India TV

[19] Steer analysis of MoSPI data

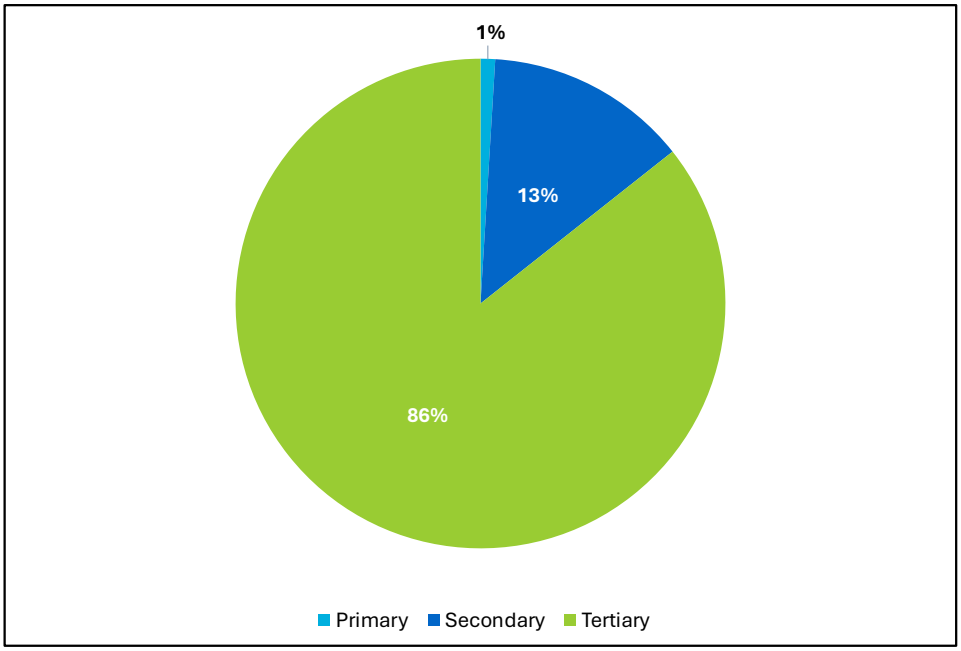
Delhi

4.23 Delhi, the capital city of India, is one of the largest metropolises in the country. In terms of the GSVA composition of Delhi, as shown in Figure 4-10, the tertiary sector has the highest share (86%) followed by the secondary sector (13%) as of FY25.

4.24 The biggest contributors to the tertiary sector in Delhi are tourism, trade, financial services and real estate. Owing to its location, connectivity and rich cultural history, Delhi has always been a prime tourist attraction of the country with key tourist places being India Gate, Lotus Temple, Humayun's Tomb and Akshardham. The Indira Gandhi International Airport of Delhi serves both domestic and international passengers and as of 2024, it was the tenth-busiest airport in the world[20], catering to approximately 72.2 million passengers.

4.25 In terms of secondary sector, NCT of Delhi has key industrial clusters at Narela, Naraina, Okhla and Mayapuri. The primary/agricultural sector accounts for a small share of Delhi's GSVA.

Figure 4-10: Sectoral contribution to Delhi's GSDP in FY25



Source: Steer Analysis Ministry of Statistics and Program Implementation (MoSPI) Data

Forecasts for growth drivers

4.26 Following the discussion in Chapter 4 on the nature of economic activity in the state of Western Uttar Pradesh and in Delhi, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth on the Asset.

4.27 We have based our forecasts of the GSDPs for Western Uttar Pradesh and Delhi based on the forecasts of the GDP of India as provided by the client.

[20] Delhi's IGI airport is the 10th busiest airport in the world: Report | World News - The Indian Express

National GDP

4.28 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[21]

4.29 The Covid-19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23 and 9.2% in FY24, before showing signs of slowdown again in FY25 due to several domestic and external factors. Since H2FY25, the economy has shown strong growth, driven by improved consumer optimism, and growing consumption and investment demand.

4.30 Figure 4-11 below shows Client-provided GDP projections for India. The forecast projects the GDP of India to grow at an average of 6.3% between FY26-FY30 and 5.8% between FY31-FY44, gradually tapering down to 5.2% by FY50. The GDP growth forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[22] in the medium term.

4.31 We assume the GSDP growth of Delhi to be in line with India's GDP growth throughout the concession period. For our forecast of the GSDP growth of Uttar Pradesh, we have considered the growth expectations for the western region of UP – as opposed to UP state-wide, due to the location of the Asset in the western region of UP. Additionally, we have assumed the GSDP growth of western UP to higher than that of the GDP of India going forward, across the concession period.

4.32 In particular, we expect it to grow at 1.2 times the GDP of India in the short-term, tapering down to be in line with national GDP growth by FY45. This assumption is based on the recent performance of the GSDP of western UP relative to statewide GSDP growth (as discussed in detail in 4.19 above), as well as expectations of continued investment and economic growth in the region owing to a variety of factors.

4.33 There are significant investments expected to take place as part of the UP and Delhi state/regional government plans over the near to medium term (as described in 4.20 above). Given its leading position in industrial investments, western UP is expected to benefit significantly from these future investment plans. In this context, we believe it is

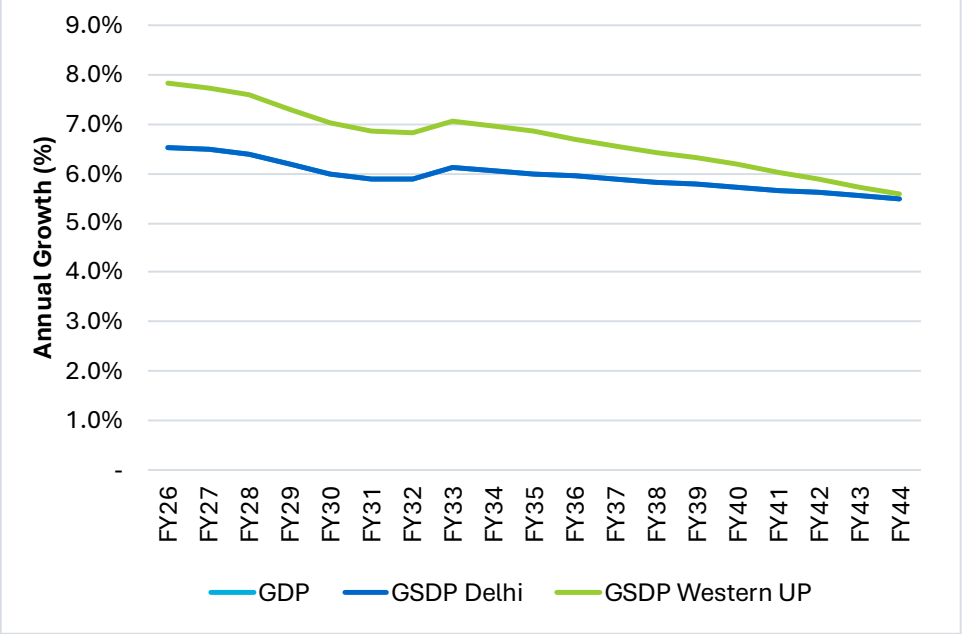
[21] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[22] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 96th Round (Oct 2025)**

reasonable to assume that Western UP will observe more robust economic growth over the near and medium term relative to UP state overall, and national GDP growth.

4.34 Figure 4-11 below shows the assumed growth forecasts for Western UP and Delhi GSDP, and the GDP of India.

Figure 4-11: GDP-GSDP forecast



Source: GDP and GSDP forecast provided by Client, GSDP analysis by Steer based on historical GDP and GSDP relationships

5 Traffic growth analysis

Introduction

5.1 In this section, we present our approach, assumptions, and results for base (or background) traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 To understand the historical traffic trends in relation to these growth drivers, we carried out regression analyses to determine the historical relationship between each major vehicle category and its macroeconomic growth driver at each toll plaza. The dynamics of traffic demand is the dependent variable while the dynamics of one or more identified growth drivers are the independent or explanatory variables.

5.4 Typically, passenger and light commercial vehicle traffic like cars, buses, LCVs and 2-axle trucks grow in line with the GSDP of the state in which the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This is because most light vehicles tend to travel shorter distances within the state, whereas heavy vehicles typically carry commodities over long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and therefore relate more with GDP growth than more local or regional growth drivers.

FY26 Base year AADT estimates

5.5 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. For this traffic study, we have used FY26 as the base year for generating or future year traffic forecasts for the Asset.

5.6 To establish the base year (FY26) traffic position, we utilised information from various sources including historical traffic data from the Client (FY25 and FY26YTD), latest information on FY26 estimated GDP and GSDP growth (as published by official sources), as well as our own contextual knowledge of the region and wider economy, and transportation network the Asset forms a part of.

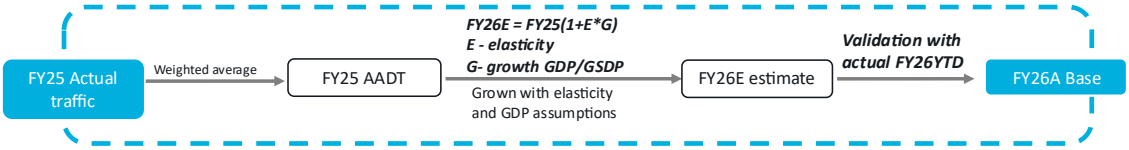
Methodology

5.7 The base traffic for FY26 is estimated by utilizing actual 12 months of FY25 as well as latest available data for FY26 that included the first six months of FY26 for this study. To arrive at an initial estimate for full year FY26 AADT ("FY26E"), we apply elasticity-based growth assumptions of GSDP or GDP to the FY25 actual AADT as a first step.

5.8 In the second step, the monthly profile of the FY26E AADT was compared to the actual traffic observed in the six months (April to September 2025) of FY26 traffic data (FY26YTD) that was available. After reviewing how actual traffic performed over this period relative to our initial estimate, we make necessary adjustments to the FY26E AADT to arrive at our Adopted FY26 AADT ("FY26A") that reflects the outturn traffic in FY26YTD (adjusted for seasonality).

5.9 The methodology is represented in Figure 5-1 below:

Figure 5-1: FY25 Base Estimation methodology



Source: Steer Analysis

Seasonal Correction Factors

5.10 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. E.g., it is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affect the freight movement patterns in large parts of the country in the July-September period. In addition to these, there may be other seasonal variations specific to the Asset.

5.11 To normalise for these variations across the year when estimating AADT, Seasonality Correction Factors (SCFs) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF greater than one implies that the traffic for that month is lower than the annual average and vice-versa.

5.12 We have analysed the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling, excluding the years that were impacted by specific events. Historical traffic data was available for all toll vehicle categories up-to September 2025. With FY21 and FY22 being pandemic-impacted years, we consider FY23 onwards for the base estimation. Thus, an average of FY23 and FY24 SCFs has been considered to arrive at the FY26 base year estimates.

5.13 Table 5.1 and Table 5.2 below present the average of FY23 and FY24 SCFs (TP1) and FY23 SCFs (TP2), used for the estimation of our FY26 base traffic position.

Table 5.1: Seasonality correction factors for TP1-Luharli

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.04	0.98	1.00	1.12	1.05	1.10	1.06	0.96	0.98	1.06	0.88	0.96
LCV	0.95	0.97	0.98	0.98	0.98	1.01	1.03	1.01	1.03	1.10	0.97	1.02
Bus	1.02	0.97	0.98	0.96	0.97	1.05	1.03	0.94	1.04	1.20	0.98	0.92
2A	1.18	1.14	1.09	0.96	0.98	0.99	0.97	0.92	0.96	1.04	0.92	0.93
3A	0.99	1.04	1.04	0.93	1.00	1.04	1.05	0.95	1.00	1.11	0.95	0.94
MAV	1.10	1.15	1.04	1.03	1.03	1.05	0.91	0.86	0.92	1.06	0.96	0.98

Source: Steer analysis of Client TMS data

Table 5.2: Seasonality correction factors for TP2-Somna

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.94	0.88	0.91	1.02	1.04	1.21	1.05	1.03	0.99	1.09	0.84	1.09
LCV	0.95	0.98	0.98	1.04	1.08	1.08	1.12	0.95	0.94	1.02	0.89	1.00
Bus	0.98	0.93	0.98	1.05	0.95	1.07	0.99	1.00	1.06	1.13	0.99	0.93
2A	1.08	1.06	1.05	1.10	1.04	1.00	0.99	0.95	0.95	1.02	0.89	0.91
3A	0.99	1.02	1.06	1.07	1.05	1.00	0.96	0.89	0.94	1.10	1.00	0.98
MAV	1.18	1.19	1.13	1.13	1.05	1.04	0.87	0.78	0.86	1.03	0.97	0.99

Source: Steer analysis of Client TMS data

Adopted base estimates

5.14 Based on the above methodology and inputs, the adopted base for both the toll plazas has been shown in Table 5.3 and Table 5.4 below:

Table 5.3: Adopted Base AADT, TP1 Luharli plaza

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	19,243	21,451	22,899	19.0%
LCV	1,461	1,566	1,594	9.1%
Bus	1,939	2,110	2,094	8.0%
2A	1,722	1,896	1,966	14.2%
3A	662	670	668	1.0%
MAV	2,400	2,336	2,468	2.8%
OSV	1	1	1	
Total	**27,428**	**30,029**	**31,690**	**15.5%**
PCU	**43,127**	**46,317**	**48,444**	**12.3%**

Source: Steer analysis; FY26YTD includes 6 months of FY26 (Apr – Sept '25), FY26A is adopted base for FY26

Table 5.4: Adopted Base AADT, TP2 Somna Plaza

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	7,154	7,964	8,008	11.9%
LCV	888	957	965	8.7%
Bus	1,280	1,409	1,384	8.1%
2A	1,408	1,549	1,597	13.5%
3A	663	645	665	0.2%
MAV	1,710	1,695	1,863	8.9%
OSV	1	0	1	
Total	**13,106**	**14,221**	**14,482**	**10.5%**
PCU	**24,760**	**26,372**	**27,164**	**9.7%**

Source: Steer analysis ; FY26YTD includes 6 months of FY26 (Apr – Sept '25), FY26A is adopted base for FY26

5.15 In PCU terms, the FY26A estimates show robust growth at both toll plazas, reflecting our assumption strong growth observed at both plazas through H1FY26 (Apr – Sept '25) is expected to continue through end of FY26. In PCU terms, we estimate TP1 and TP2 to grow by 12.3% and 9.7% (respectively) over FY25 levels.

5.16 Strong traffic growth on the Asset since FY24 is driven by the expansion of the Asset from four lanes to six lanes in October 2023, which significantly improved the Level of Service (LoS). Additionally, the four-laning of the NH91 Aligarh-Kanpur section, construction on nearby state roads (affecting Somna toll plaza), which extends east of the Asset towards Kanpur, has also improved highway conditions significantly, particularly for long-distance commercial movements.

5.17 Other contributing factors include better traffic reporting and compliance at TP1 from the check plaza that was operational between Aug'23 and Sept '24, continued operations of Wonder Cements' Aligarh Grinding Unit near TP2 since April 2023, the opening of the THDC Thermal Plant in Khurja (Unit 1) in January 2025, and most recently, the opening of Unit 2 in September 2025[23]. TP1, which was recently expanded from an 8-10 lane in-line plaza configuration to a 16-lane staggered (split) plaza configuration (July 2025) is also expected to improve travel times and curb leakage going forward.

5.18 While both plazas observed robust growth in FY26YTD, 3A volumes have remained relatively flat across both plazas. As discussed in 3.14 above, flat growth in 3A trucks is due to shift of preference from 3A to MAV/2A category for long-distance traffic movement.

Estimation of background elasticities

5.19 Elasticities, in the case of traffic growth, are the relationships between traffic growth and the growth in underlying macroeconomic drivers of traffic. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide forecasts of background traffic growth.

5.20 Typically, we rely on national GDP as a growth driver for 3A/MAV trucks, given their characteristics of travelling across multiple states and carrying varied types of commodities which contribute to national GDP.

[23] Press Release:Press Information Bureau

5.21 OD analysis reveals a strong link to Delhi and Uttar Pradesh, with approximately 92% of cars and 78% of MAVs at TP1, and 96% of cars and 74% of MAVs at TP2 having one end of their trip in these regions. This contributes to the fact that about 67% of all vehicle traffic on the asset travels within 300kms, suggesting traffic growth is significantly influenced by the Gross State Domestic Product (GSDP) of UP and Delhi. In contrast, the growth in traffic volume for 2-axle, 3-axle, and MAVs, which are key for transporting heavy commodities such as construction materials, manufactured goods, and metals, and make longer distance inter-state trips is more dependent on the national GDP growth.

5.22 Table 5.5 below presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.5: Identified growth drivers to model traffic growth

Vehicle type	TP1 Luharli			TP2 Somna		
	GDP India	GSDP Delhi	GSDP Western UP	GDP India	GSDP Delhi	GSDP Western UP
Car		50%	50%			100%
LCV		20%	80%			100%
Bus		30%	70%			100%
2A	100%			100%		
3A	100%			100%		
MAV	100%			100%		

Source: Steer analysis of Client data; *

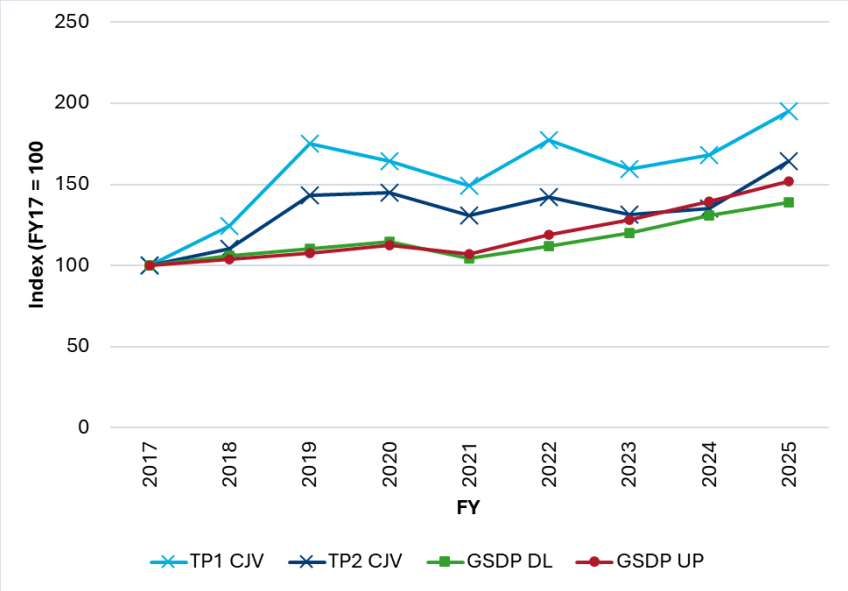
5.23 To understand the traffic growth on the Asset, we undertook regression analysis using traffic data over the period FY17-25 for all vehicle types at both the Asset toll plazas. However, since the Asset has shown variable growth trends every year since FY17, the results of the econometric regression analyses did not yield sufficiently reliable estimates of the elasticities to our assumed underlying growth drivers. We have therefore, analysed trends of each vehicle category and compared them with the growth of key drivers to arrive at assume elasticities, as described below.

CJV

5.24 We see from the OD data that the CJVs primarily cater to regional movements between Ghaziabad, Sikandrabad, Bulandshahr, Delhi, Aligarh and other towns lying on the Asset. In the period of FY17-24, Cars have grown by 6.7% at TP1 and 3.4% at TP2 per year, while the corresponding GSDP growth of Delhi was 1.9% and UP was 1.2% per year. In our understanding this is consistent with the Asset being closer to urban clusters of Delhi NCR and Aligarh, both of which are characterized by high per capita incomes, and levels of car ownership. Hence, we observe slightly higher growth of Cars (higher at TP1) with respect to GSDP.

5.25 Figure 5-2 below shows the relationship between the indexed values of CJV traffic and Uttar Pradesh GSDP at TP1 Luharli and TP2 Somna.

Figure 5-2: Relationship between CJV traffic and Delhi/Uttar Pradesh GSDP, TP1 and TP2



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data. CJV traffic includes reported exemptions.

5.26 Taking note of the positive outlook for passenger traffic on the Asset, regression results on earlier historical years and the urban nature of the Asset, we have assumed a forecast background elasticity of 1.1 for TP1 and 1.0 for TP2 Somna for CJVs going forward.

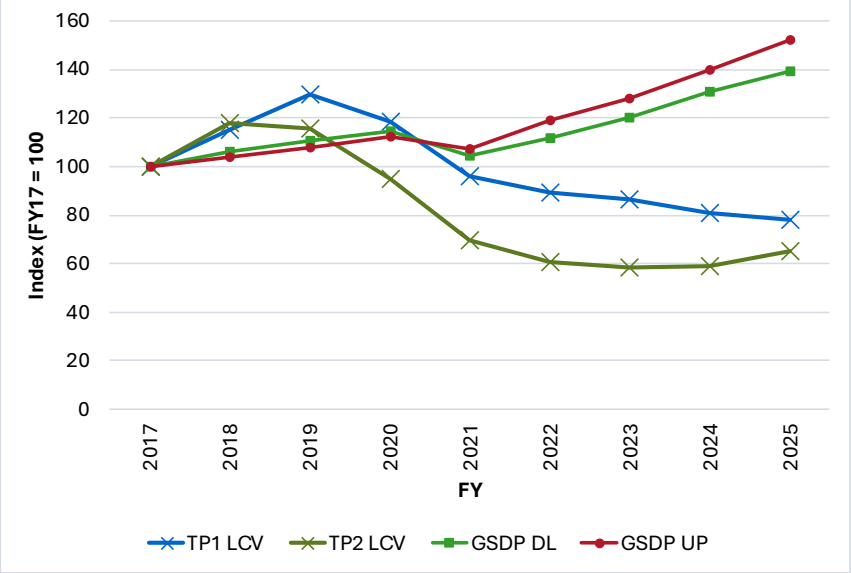
LCV, Bus & 2A

LCV

5.27 Prior to FY19-20, LCV growth on the Asset was strong. However, after FY20, axle load regulations switched in favour of 2A to carry higher tonnage of goods; this shift in preferences impacted LCV traffic growth across the country, and on the Asset as well. The impact of the Covid-19 pandemic in FY21 and reclassification LCVs into CJVs (Mini LCVs) post mandatory FASTag implementation in FY22 also resulted in degrowth of LCVs on the Asset since FY17. Since FY22 however, LCV volumes at both Asset plazas have observed muted or flat growth through FY25. Figure 5-3 below shows the relationship between indexed values of LCVs at both Asset plazas and Uttar Pradesh and Delhi's GSDP.

5.28 LCVs demonstrate more regional travel within Uttar Pradesh and Delhi NCR compared to 3A and MAV vehicles, as validated by the zonal distribution analyses above. As a result, the growth in LCVs at TP1 is modelled using the GSDP of both Uttar Pradesh and Delhi, while growth at TP2 is modelled using only the GSDP of Uttar Pradesh due to its closer proximity. We have assumed LCV will grow at a background elasticity of 0.5 for TP1 Luharli and 0.4 for TP2 Somna.

Figure 5-3: Relationship between LCV traffic and Delhi/Uttar Pradesh GSDP, TP1 and TP2



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

Bus & 2A

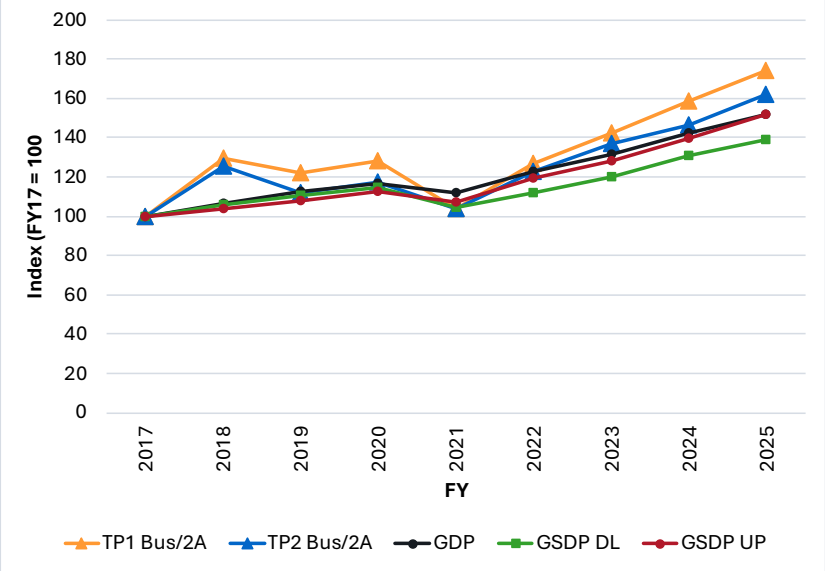
5.29 Bus growth tends to be largely supply-driven in many parts of the country, with new buses being bought and deployed by the government at different intervals of time. Based on our experience across the country, buses on inter-urban corridors show moderate elasticities of 0.4 to 0.6 with respect to the regional/state GSDP in which the asset is located.

5.30 Given that manufacturing-related commodities tend to take prominence in their commodity distribution, growth in 2A traffic is dependent on industry demand-supply ecosystems in the vicinity of the Asset and across the country. We have thus taken GDP as the growth driver to model the traffic growth in 2As. Compared to lighter trucks like LCVs, 2As have more national or long-distance movements covering several states.

5.31 Due to reporting issues (i.e., Buses and 2As being reported together prior to FY19), we present the relationship between the underlying growth drivers (i.e., GSDP Delhi, UP, and GDP) with the growth trend of the combined Bus/2A volumes in Figure 5-4 below. In terms of their split within the aggregate, Buses and 2As accounted for roughly 50% of the total at both toll plazas (53% of the total at TP1 and 48% of the total at TP2 in FY25).

5.32 Since FY17, Bus/2A volumes have exhibited robust y-o-y growth. Between FY17 and FY25, Bus/2A volumes grew at a CAGR of 7.2% and 6.2% at TP1 and TP2 respectively. Post the impact of the Covid-19 pandemic (FY21), and the mandatory implementation of FASTag (FY21-22), Bus+2A volumes have growth at CAGR of 9-10% per year (at both plazas) between FY23 and FY25. This growth is driven largely off the growth of 2As, as Bus volumes have witnessed a relatively muted growth profile over this period. Therefore, we have assumed an elasticity of 0.40 for Buses (with respect to Western UP/Delhi GSDP), and a more positive elasticity of 0.90 for 2As across both toll plazas on the Asset.

Figure 5-4: Relationship between Bus/2A traffic and Delhi/Uttar Pradesh GSDP and GDP, TP1 and TP2

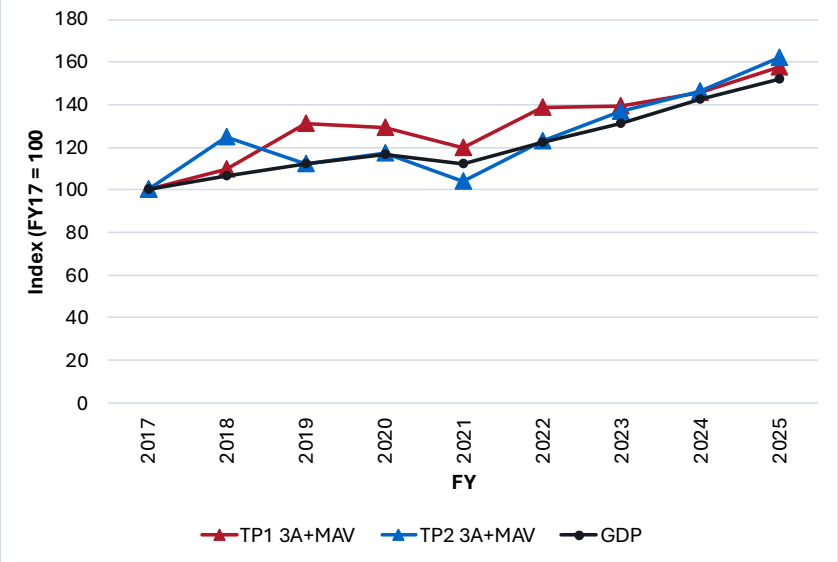


Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

3A/MAV Trucks

5.33 Given that manufacturing-related commodities tend to take prominence in their commodity distribution, growth in 3A and MAV traffic is dependent on industry demand-supply ecosystems in the vicinity of the Asset and across the country. We have thus taken GDP as the growth driver to model the traffic growth in 3As and MAVs. Compared to lighter trucks like LCVs, 3As and MAVs have more national or long-distance movements covering several states. Figure 5-5 below compares growth trends of 3As and MAVs at both TP1 and TP2 and India's GDP.

Figure 5-5: Relationship between 3A+MAV traffic and India GDP, TP1 and TP2



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

Forecasts for background elasticities

5.34 Table 5.6 below presents a summary of the results of the regression analysis carried out on the historical toll plaza data and the macroeconomic (GDP/GDSP) growth, along with the assumed forecast elasticities for background traffic growth.

Table 5.6: Comparison of Derived Elasticities and Assumed Elasticities for Forecasting

Vehicle type	Growth driver	History		Forecast
		Derived elasticity	Years considered	Assumed forecast elasticity
TP1 Luharli				
Car	GSDP UP and Delhi	1.35	FY17-FY25	1.1*
LCV	GSDP UP and Delhi	0.9	FY17-FY25	0.5*
Bus	GSDP UP and Delhi	0.5	FY17-FY25	0.4*
2A	GDP India	1.2	FY17-FY25	0.9 reducing to 0.8 by FY30
3A+MAV	GDP India	1.0	FY17-FY25	0.2 for 3A
				0.8 for MAV
TP2 Somna				
Car	GSDP UP	0.8	FY17-FY25	1.0*
LCV	GSDP UP	N/A[24]	FY17-FY25	0.4*
Bus	GSDP UP	0.6	FY17-FY25	0.4*
2A	GDP India	1.0	FY17-FY25	0.9 reducing to 0.8 by FY30
3A+MAV	GDP India	N/A[24]	FY17-FY25	0.2 for 3A
				0.8 for MAV

Source: Steer analysis; FY25 AADT used in the model is FY25A, *wrt GSDP Western UP

5.35 In recent historical traffic performance across national highway corridors and as discussed in paragraph 3.14 in Chapter 3, a notable trend has emerged: there is a discernible shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in the Assets performance as well, which has been discussed in detail in the subsequent sections. Due to these evolving axle

[24] Regression results were invalid.

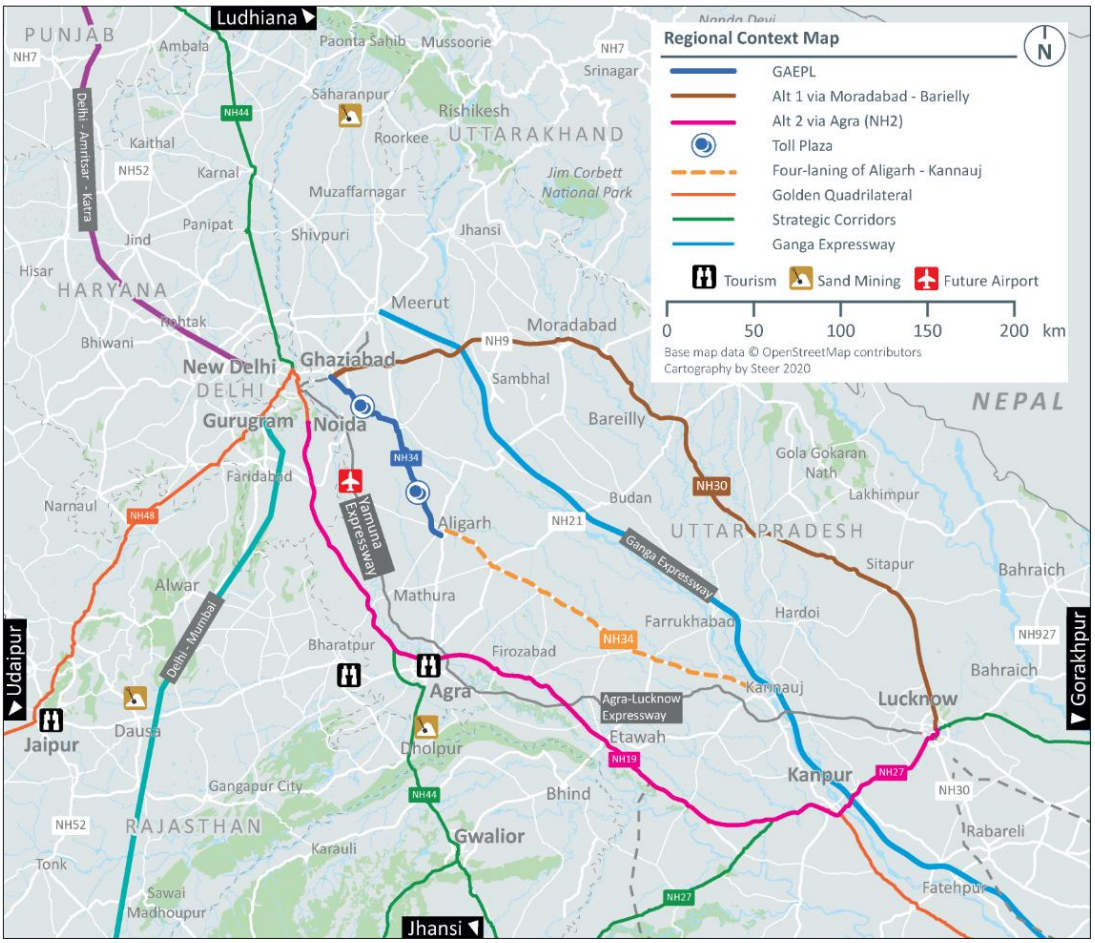
preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

6 Forecasts: Base year AADT and Impacts

Introduction

6.1 Following the discussion on estimated and assumed forecast background growth rates in the previous chapter, this chapter first deals with the forecasting assumptions around base year AADT and potential impacts on traffic growth on the Asset. Later, it also presents the assumed toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to estimate the forecast revenue based on the forecast traffic. In the final section, the chapter summarises the traffic growth rates for the forecast years.

Figure 6-1: Alternate routes and Asset shown against the regional network context



Source: Steer analysis and cartography

6.2 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed earlier in Chapter 2, in order to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network. Figure 6-1 below shows the road network surrounding the Asset.

6.3 A few key network-related and other developments are expected to impact traffic growth on the Asset going forward, including the Ganga Expressway, and the increased movement of fly-ash from recently completed THDC thermal power plants in Khurja (UP) that are accessible via the Asset. The impact of the recently operationalised 16-lane staggered plaza at TP1 was not conclusive from our analysis of daily traffic and ticket segmentation trends between 15-20 July through 14th Aug '25 i.e., prior to the introduction of the Annual Pass, which impacted ticket segmentation trends independently. Therefore, beyond the assumptions relating to Annual Pass adoption rates for FY26 and FY27 onwards for CJVs, we have not assumed further changes to ticket segmentation that may (or may not) be attributable to the operationalisation of the staggered plaza at TP1.

6.4 Table 6.1 below presents the upcoming network/other developments, corresponding alternate/feeder routes, year of completion and indicative direction of impact on the Asset.

Table 6.1: List of network/other developments

S. No.	Development	Route affected/ nature of impact	Year of completion	Impact (+/-)	
				TP1 Luharli	TP2 Somna
1.	THDC Khurja thermal Plant	Fly ash related movement from the thermal plant	FY26*	+ve	+ve
2.	Ganga Expressway + Shamli-Gorakhpur Expressway Impact	Trips between Delhi/North and Lucknow/east	FY26	-ve	-ve

Source: Steer analysis; *in our forecasts we have assumed the positive impact of this development on the Asset to be gradual and begin from FY27.

Impact assessment for network/other developments

6.5 The subsections below include a narrative of each of the improvements, as listed in the table above, and impacts associated from each of these. Please note that all traffic volumes for impacts were estimated as impact rates applied on FY26 Base AADT.

THDC Khurja super thermal power project

6.6 The THDC Khurja Super Thermal Power Project (Khurja STPS) is a 1320-megawatt coal-fired supercritical power plant situated in Khurja, Bulandshahr, Uttar Pradesh, India. On January 25th, 2025, THDC India Limited declared the commercial operation date for Unit 1 of the power plant[2]. The second unit of the power plant (Unit 2) was recently

operationalised in September 2025[25]. Thermal plants generate fly ash as residue of burning coal which is used in construction and manufacturing of cement and bricks.

6.7 As the THDC plant is expected to generate Fly ash carrying traffic and we have estimated the impact as shown in the Table 6.2 below.

Table 6.2: Impact of THDC Khurja super thermal power projects

FY27 onwards	TP1	TP2
3A	0.6%	0.5%
MAV	0.4%	0.5%

Source: Steer analysis of Client OD data and publicly available information.

Ganga Expressway and Shamli-Gorakhpur Expressway Impact

6.8 The Ganga Expressway is a 596-km long greenfield expressway being developed to provide an improved level of service to long-distance traffic between western and eastern India. Competing with the traditional route using the Asset, the upcoming Ganga Expressway could provide faster and unhindered connectivity, as illustrated in Figure 6-1 above[26].

6.9 We have considered North (India)-East (India) movements for this impact for long distance traffic between Delhi/North of Delhi and Lucknow/east of Lucknow towards east, as these have distinct cost comparisons between the Asset corridor and the upcoming expressway. The route through the expressway provides a competitive route for long-distance traffic from Delhi and west to reach Lucknow and east. While toll costs are favourable for the Asset route, distance and time costs are lower on the expressway.

6.10 On the other hand, The Gorakhpur-Shamli Expressway is a planned 700-kilometre, six-lane greenfield corridor connecting Gorakhpur in eastern Uttar Pradesh to Shamli in the western part of the state. Designed to pass through 22 districts and 37 tehsils, this project aims to significantly reduce travel time between the two ends to just 6 hours, cutting the distance by 200 kilometres compared to current routes like the Agra-Lucknow Expressway. The National Highways Authority of India (NHAI) is preparing a detailed project report (DPR), after which land acquisition will commence, paving the way for construction estimated to cost around Rs 35,000 crore. Once operational, the expressway will also enhance connectivity to popular destinations like Haridwar, Dehradun, Mussoorie, and Rishikesh[27]. This expressway will provide an alternate route to vehicles on the Asset and is expected to negatively affect north – east movement of traffic served by the Asset.

6.11 While both the above expressways will effectively serve the same alignment i.e., long-distance movements between the North of India and the East of India, and being parallel to the Asset near Delhi and North India, will act as a direct competing route for these movements, the estimated impacts as shown in Table 6.3 below, using a GJC-based logit

[25] **Press Release:Press Information Bureau**

[26] **Development of 'Ganga Expressway'**

[27] **Gorakhpur-Shamli Expressway: 700-Km-Stretch To Connect Haridwar, Dehradun And Mussoorie | Full Details Here**

model is primarily that of the Ganga Expressway as it is expected to become fully operational by FY27-28 (assuming some delay beyond current estimates)[28]. The Shamli Gorakhpur Expressway, while being considered in combination with the Ganga Expressway for this impact estimation is still in its early stages, with its eventual future impact on the Asset less immediate or clear relative to the already under construction and soon-expected-to-open Ganga Expressway.

Table 6.3: Impact of Ganga Expressway and Gorakhpur-Shamli Expressway

Vehicle type	TP1 Luharli			TP2 Somna		
	FY26	FY27	FY28 Onwards	FY26	FY27	FY28 Onwards
CJV	(0.3%)	(1.0%)	(1.2%)	(0.7%)	(2.8%)	(3.3%)
2A	(2.4%)	(9.4%)	(11.3%)	(3.6%)	(14.4%)	(17.3%)
3A	(3.3%)	(13.3%)	(16.0%)	(3.4%)	(13.5%)	(16.2%)
MAV	(3.1%)	(12.2%)	(14.7%)	(4.3%)	(17.3 %)	(20.7%)

Source: Steer analysis of Client OD data, Client TMS data and publicly available information.

Revenue forecasting assumptions

6.12 To forecast the revenues for a particular financial year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While "trip factors" provide the conversion factor to the former, i.e. traffic (trips) to tickets sold, "toll segmentation" provides the latter i.e. the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Trip Factors

6.13 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and listed in Table 6.4 and Table 6.5 below:

Table 6.4: Trip factors for the forecast years for TP1 Luharli

Vehicle category	CJV	LCV/Mini Bus	Bus	2A	3A	MAV	OSV
Single	1	1	1	1	1	1	1
Return	2	2	2	2	2	2	2
Monthly	59	51	45	42	45	45	45
Local	26	1	1	1	1	1	1
Exemptions	1	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

[28] Ganga Expressway to connect east, west Uttar Pradesh post Mahakumbh - Hindustan Times

Table 6.5: Trip factors for the forecast years for TP2 Somna

Vehicle category	CJV	LCV/Mini Bus	Bus	2A	3A	MAV	OSV
Single	1	1	1	1	1	1	1
Return	2	2	2	2	2	2	2
Monthly	45	45	45	45	45	45	45
Local	32	1	1	1	1	1	1
Exemptions	1	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

6.14 There is no major toll category being charged, apart from the official list of toll categories in the toll notification. This assumes that further changes in toll categories, unless specific discounts are offered, are unlikely.

Toll Segmentation

6.15 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles[29].

6.16 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

%CJV using Annual pass	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
Luharli (TP1)	12.6%	19.9%	23.2%
Somna (TP2)	14.9%	21.9%	25.3%

Source: Steer Analysis of Client data

6.17 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise. Under the above assumptions, the calculated shares of CJV Annual Pass transactions for FY26, FY27 and beyond are presented in Table 6.6 and Table 6.7 below.

6.18 For all other vehicle categories, we analysed the historical TMS data split by ticket categories to understand the latest trends in ticket segmentation across both Asset toll plazas. For the traffic and revenue forecast, we have assumed FY26YTD (Apr-Sept '25) segmentation to apply for all non-CJV vehicle categories.

[29] Finalization-Concessionaire-Annual-Pass-Facility-on-NHs-01092025.pdf

Table 6.6: Forecast toll segmentation, FY26 onwards: Luharli (TP1)

Ticket Type	CJV		Mini LCV	LCV	Bus	2A	3A	MAV	OSV
	FY26	FY27 onwards	FY26 onwards						
Single	19.7%	11.7%	26.0%	38.8%	6.9%	58.0%	69.4%	55.9%	63.3%
Return	28.7%	17.6%	39.1%	56.5%	92.7%	40.5%	30.1%	43.4%	36.0%
Monthly	0.0%	0.0%	0.0%	1.9%	0.2%	0.3%	0.1%	0.0%	-
Local personal	9.4%	9.4%	9.4%	-	-	-	-	-	-
Exemption	24.6%	25.0%	25.0%	1.4%	0.2%	0.6%	0.4%	0.3%	0.7%
Violation	0.3%	0.3%	0.3%	1.4%	0.0%	0.7%	0.0%	0.3%	-
Annual Pass	**17.2%**	**35.8%**	-	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.7: Forecast toll segmentation, FY26 onwards: Somna (TP2)

Ticket Type	CJV		Mini LCV	LCV	Bus	2A	3A	MAV	OSV
	FY26	FY27 onwards	FY26 onwards						
Single	29.3%	17.6%	39.2%	58.9%	10.4%	78.1%	85.1%	82.7%	94.4%
Return	28.7%	17.4%	38.6%	39.2%	89.3%	21.3%	14.9%	17.2%	5.6%
Monthly	0.0%	0.0%	0.0%	0.2%	-	-	-	-	-
Local personal	4.9%	5.0%	5.0%	-	-	-	-	-	-
Exemption	17.0%	17.1%	17.1%	1.7%	0.3%	0.6%	0.1%	0.1%	-
Violation	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	-	0.0%	-
Annual Pass	**19.9%**	**42.8%**	-	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Toll evolution

6.19 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.20 We have used actual toll rates from the FY25 and FY26 WPI toll notifications to validate the modelling of future toll evolution. These forecasts provided by the Client. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client

Table 6.8: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.6%
FY27	2.4%
FY28	5.0%

FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: FY27 onwards WPI print as per Client inputs

Revenue reconciliation

6.21 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue against the modelled revenue at the AADC level. We have reconciled reported revenue with the modelled revenue for the year FY26YTD (Apr – July '25) to exclude the impact of Annual Pass introduction in Aug '25 on ticket segmentation distribution for CJVs. To reconcile the revenues, toll rates assumed in the model incorporate the additional 2.185 km within the tolling length of TP2 to make toll revenue calculations across both the TMS data and our model consistent. For the revenue forecasts, as per Client input, we do not assume the additional tolling length to calculation TP2 toll rates in FY26 and beyond.

6.22 The comparison, as shown in Table 6.9 below, shows that modelled revenue overall is within a variation of 0.9% from the reported revenue for TP1 and 0.5% for TP2. This gives us confidence that the revenues estimated using the traffic data in our forecasts are accurately representing the revenues being reported from the Asset.

Table 6.9: Revenue reconciliation summary (INR Lakhs)

Asset	Modelled AADC	Actual AADC	Difference (%) Modelled vs Actual
	FY26YTD	FY26YTD	
TP-1 Luharli	55.39	55.89	(0.9%)
TP-2 Somna	48.80	49.02	(0.5%)

Source: Steer comparison between modelled and reported revenue; FY26YTD here refers to the period prior to introduction of Annual Pass in Aug '25 (i.e., Apr – July '25)

Traffic and Revenue forecasts

6.23 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the forecast period for the Asset. Table 6.10 through Table 6.17 below present the AADT/PCU forecast growth rates and forecasted revenue CAGRs on this Asset (at both TP1 and TP2).

Table 6.10: Traffic forecast (With Impacts) for TP1 Luharli

Vehicle Type	FY26	FY27	FY30	FY35	FY40
CJV	20,668	22,057	26,880	36,765	49,559
Mini LCV	2,178	2,260	2,508	2,960	3,458
LCV	1,594	1,642	1,785	2,039	2,310
Bus	2,094	2,155	2,341	2,668	3,020
2A	1,920	1,883	2,144	2,709	3,403
3A	646	590	596	632	670

MAV	2,393	2,289	2,577	3,257	4,092
OSV	1	1	1	1	2
AADT	**31,494**	**32,878**	**38,832**	**51,032**	**66,514**
PCU	**47,913**	**48,986**	**56,675**	**72,651**	**92,635**

Source: Steer analysis

Table 6.11: Traffic growth CAGR (%) for TP1 Luharli

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY26-FY40
CJV	6.7%	6.8%	6.5%	6.2%	6.4%
Mini LCV	3.7%	3.5%	3.4%	3.2%	3.4%
LCV	3.0%	2.8%	2.7%	2.5%	2.7%
Bus	2.9%	2.8%	2.7%	2.5%	2.7%
2A	(1.9%)	4.4%	4.8%	4.7%	4.2%
3A	(8.6%)	0.3%	1.2%	1.2%	0.3%
MAV	(4.3%)	4.0%	4.8%	4.7%	3.9%
OSV	6.7%	6.8%	6.5%	6.2%	6.4%
AADT	**4.4%**	**5.7%**	**5.6%**	**5.4%**	**5.5%**
PCU	**2.2%**	**5.0%**	**5.1%**	**5.0%**	**4.8%**

Source: Steer analysis

Table 6.12: Revenue forecast (with Impacts) for TP1 (INR Crores) including AP Compensation for CJVs

Vehicle Type	FY26	FY27	FY30	FY35	FY40
CJV	64	71	100	171	292
Mini LCV	9	10	13	19	28
LCV	12	12	15	22	32
Bus	28	30	38	54	76
2A	30	31	41	64	101
3A	16	15	18	24	31
MAV	59	58	76	120	188
OSV	0	0	0	0	0
Total	**218**	**227**	**300**	**473**	**748**

Source: Steer analysis

Table 6.13: Revenue growth CAGR (%) for TP1 Luharli

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY26-FY40
CJV	9.6%	12.2%	11.4%	11.3%	11.4%
Mini LCV	7.5%	8.7%	8.1%	8.0%	8.2%
LCV	7.3%	7.7%	7.4%	7.4%	7.4%
Bus	6.5%	8.0%	7.3%	7.2%	7.4%

2A	1.3%	9.8%	9.6%	9.5%	9.0%
3A	(5.4%)	5.3%	5.8%	5.8%	4.9%
MAV	(1.0%)	9.2%	9.6%	9.5%	8.7%
OSV	8.5%	10.3%	9.6%	9.5%	9.6%
Total	**3.9%**	**9.7%**	**9.5%**	**9.6%**	**9.2%**

Source: Steer analysis

Table 6.14: Traffic forecast (With Impacts) for TP2 Somna

Vehicle Type	FY26	FY27	FY30	FY35	FY40
CJV	7,074	7,441	8,992	12,157	16,115
Mini LCV	885	912	995	1,140	1,295
LCV	965	995	1,085	1,243	1,412
Bus	1,384	1,427	1,556	1,783	2,025
2A	1,540	1,445	1,624	2,053	2,579
3A	642	586	590	627	664
MAV	1,782	1,630	1,810	2,287	2,873
OSV	1	1	1	1	1
AADT	**14,273**	**14,437**	**16,652**	**21,290**	**26,963**
PCU	**26,583**	**26,144**	**29,502**	**36,860**	**45,772**

Source: Steer analysis

Table 6.15: Traffic growth CAGR (%) for TP2 Somna

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY26-FY40
CJV	5.2%	6.5%	6.2%	5.8%	6.1%
Mini LCV	3.1%	2.9%	2.8%	2.6%	2.8%
LCV	3.1%	2.9%	2.8%	2.6%	2.8%
Bus	3.1%	2.9%	2.8%	2.6%	2.8%
2A	(6.1%)	4.0%	4.8%	4.7%	3.8%
3A	(8.8%)	0.3%	1.2%	1.2%	0.2%
MAV	(8.5%)	3.5%	4.8%	4.7%	3.5%
OSV	5.2%	4.9%	4.8%	4.7%	4.8%
AADT	**1.1%**	**4.9%**	**5.0%**	**4.8%**	**4.6%**
PCU	**(1.6%)**	**4.1%**	**4.6%**	**4.4%**	**4.0%**

Source: Steer analysis

Table 6.16: Revenue forecast (with Impacts) for TP2 (INR Crores) including AP Compensation for CJVs

Vehicle Type	FY26	FY27	FY30	FY35	FY40
CJV	35	38	53	89	147
Mini LCV	5	5	7	9	13
LCV	9	10	13	18	26

Vehicle Type	FY26	FY27	FY30	FY35	FY40
Bus	24	25	32	46	65
2A	32	31	40	64	100
3A	21	19	23	30	40
MAV	57	54	69	109	172
OSV	0.0	0.0	0.0	0.1	0.1
Total	**182**	**183**	**236**	**366**	**564**

Source: Steer analysis

Table 6.17: Revenue growth CAGR (%) for TP2 Somna

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY40	FY26-FY40
CJV	9.8%	11.6%	11.1%	10.5%	10.9%
Mini LCV	7.4%	8.0%	7.4%	7.2%	7.5%
LCV	6.5%	8.2%	7.5%	7.3%	7.5%
Bus	6.5%	8.1%	7.4%	7.3%	7.5%
2A	(3.0%)	9.2%	9.5%	9.5%	8.5%
3A	(5.8%)	5.3%	5.8%	5.8%	4.8%
MAV	(5.6%)	8.8%	9.6%	9.5%	8.2%
Total	**0.3%**	**8.9%**	**9.1%**	**9.0%**	**8.4%**

Source: Steer analysis

6.24 As presented in Table 6.11 above, Total PCUs at TP1 Luharli is forecasted to grow at 4.8% per year over the remaining life of the concession (FY26-FY40); over the same period, total revenue (incl. AP compensation for CJVs) is forecasted to grow at 9.2% per year. PCU growth at TP2 Somna is forecasted to be 4.0% per year, while total revenue is forecasted to grow at 8.4% per year through the end of FY40. The Asset performance is largely impacted by the commissioning of the Ganga Expressway which is expected to significantly affect commercial traffic movement.

6.25 While the background growth is primarily driven by car growth and MAVs to some extent, the enhanced capacity of the Asset (from earlier 4-lane to current 6-lane), as well as the overall upgradation of the NH91 through Kanpur has significantly improved the attractiveness of the Asset for long-distance east-west movement between Delhi - Kanpur and beyond. This has been captured in the historical growth since FY24 and is expected to continue over the near term given the increasing economic importance of the region.

6.26 The high growth in CJVs on both the Asset plazas is attributable to Asset's proximity to large urban settlements, allowing it to capture local movements near and between Delhi, Ghaziabad, Bulandshahr as well as Lucknow, Kanpur, Etah, and so on. The projected MAV growth (CAGR) for TP1 over the remaining concession period is approximately 3.9%, driven by local freight demand. Similarly, TP2 is expected to experience a comparable CAGR of around 3.5% per year through FY40, given its role in transporting a significant portion of manufacturing and fast-moving consumer goods (FMCG) traffic between Haryana, Punjab, and Uttar Pradesh, as well as industrial traffic connecting Meerut, Aligarh, Kanpur, and Lucknow.

Upside and Downside cases

Upside and Downside scenario assumptions

6.27 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.28 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.29 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.18: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.30 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.31 The upside case impacts included in forecasts are summarised in Table 6.19 below.

Table 6.19: Summary of impacts on the Assets – Upside case

Development	Year of Impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Luharli	TP2 Somna
THDC Khurja thermal Plant	FY27*	+25% of base case	3A: 0.7% MAV: 0.5%	3A: 0.6% MAV: 0.6%
Ganga Expressway + Shamli-Gorakhpur Expressway Impact	FY26*		CJV: (0.9%) 2A: (8.5%) 3A: (12.0%) MAV: (11.0%)	CJV: (2.5%) 2A: (13.0%) 3A: (12.1%) MAV: (15.6%)

Source: Steer analysis; *Same as base case timeline; the impact estimates reflect total impact %s

Impacts-Downside Case

6.32 The downside case impacts included in forecasts are summarised in below.

Table 6.20: Summary of impacts on the Assets – Downside case

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Luharli	TP2 Somna
THDC Khurja thermal Plant	FY27*		3A: 0.4% MAV: 0.3%	3A: 0.4% MAV: 0.3%
Ganga Expressway + Shamli-Gorakhpur Expressway Impact	FY26*	-25% of base case	CJV: (1.5%) 2A: (14.1%) 3A: (20.0%) MAV: (18.3%)	CJV: (4.1%) 2A: (21.6%) 3A: (20.2%) MAV: (25.9%)

Source: Steer analysis; *Same as base case timeline; the impact estimates reflect total impact %s

Upside and Downside Case Forecasts

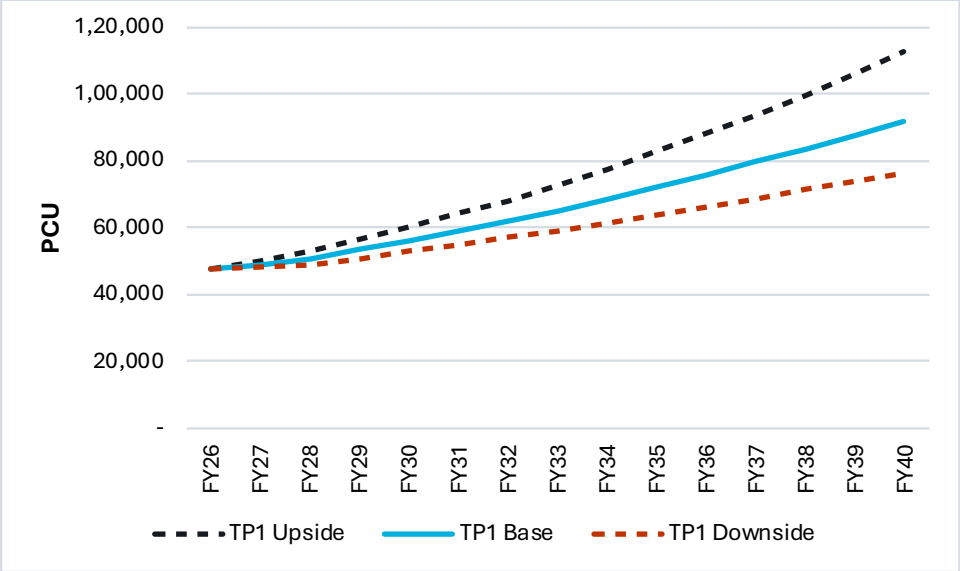
6.33 Table 6.21 below presents the difference between the Upside and Downside Case forecasts relative to the Base Case forecasts in FY40 (i.e., the concession end year) for both Asset toll plazas. Figure 6-2 through Figure 6-5 below plot the Upside and Downside Case forecasts relative to the Base Case forecasts for each Asset toll plaza over the full concession period (FY26-FY40).

Table 6.21: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts - FY40

Case	Measure	TP1 Luharli	TP2 Somna
Upside Case	Traffic (PCU)	22.8%	22.1%
Downside Case		(16.8%)	(16.5%)
Upside Case	Revenue	35.5%	36.4%
Downside Case		(24.8%)	(24.8%)

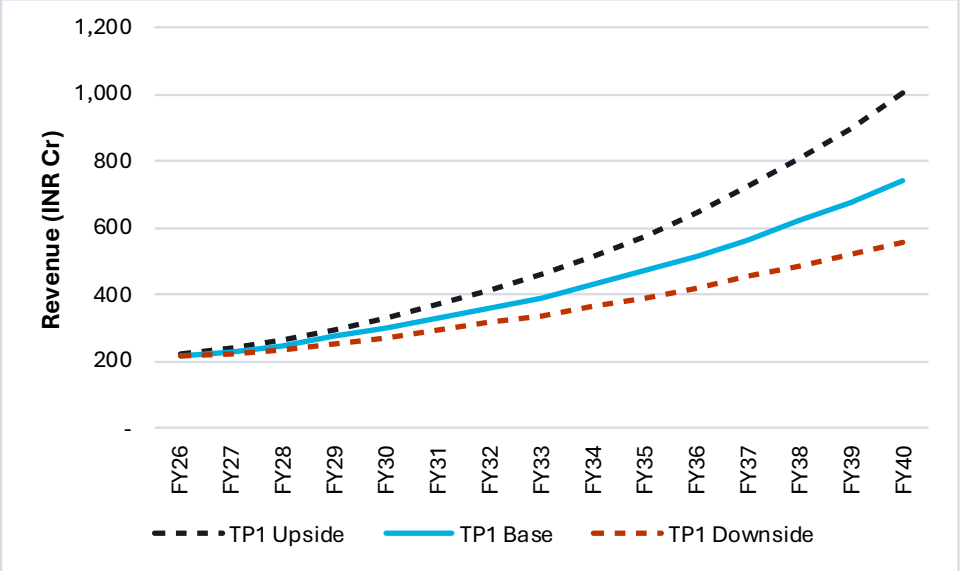
Source: Steer Analysis

Figure 6-2: Upside and Downside Case PCU Forecasts - TP1 Luharli



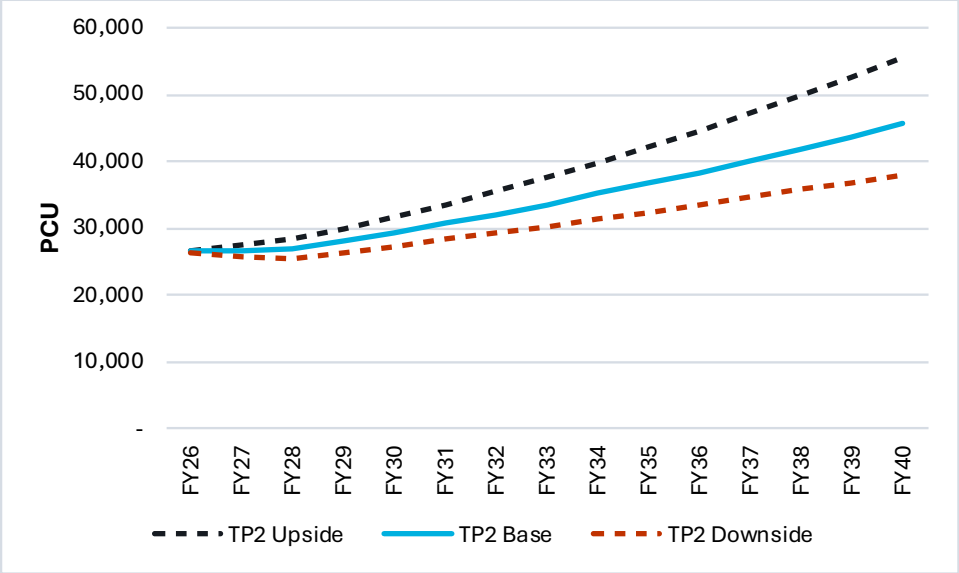
Source: Steer Analysis

Figure 6-3: Upside and Downside Case Revenue Forecasts - TP1 Luharli



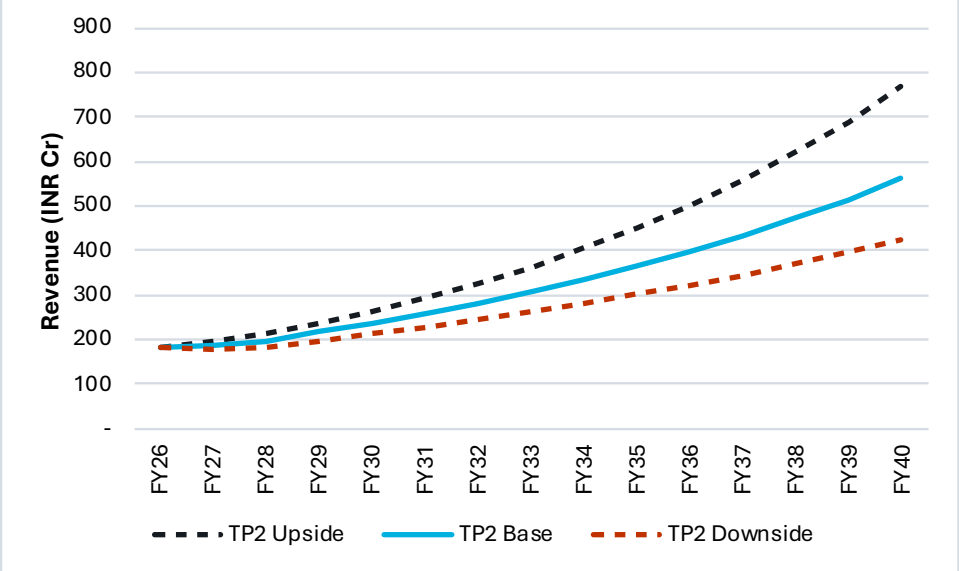
Source: Steer Analysis

Figure 6-4: Upside and Downside Case PCU Forecasts - TP2 Somna



Source: Steer Analysis

Figure 6-5: Upside and Downside Case Revenue Forecasts - TP2 Somna



Source: Steer Analysis

Summary outlook

6.34 Passenger traffic on the Asset primarily serves local needs, connecting the densely populated Delhi NCR, Sikandrabad, Bulandshahr, Khurja, Ghaziabad, Luharli, Somna, and Aligarh over short distances, as well as connecting the medium-to-long distance cities of Meerut, Muzaffarnagar, Kanpur, and Lucknow. The check plaza previously in place contributed to better compliance and fewer exemptions between August 2023 and September 2024, before its vandalism by locals (discussed earlier). The newly operational staggered plaza at TP1 is expected to further curb leakage from forced exemptions.

6.35 This Asset is unique in nature as both the toll plazas have very different traffic profiles serving key strategic movements specific to each of them. TP1 caters to industrial demand generated by local centres of Luharli, Sikandrabad, Ghaziabad, Aligarh, and Dadri while also serving the consumption demand of the Delhi-NCR region. On the other hand, TP2 serves a significant proportion of agricultural, construction and grocery carrying traffic traveling between Haryana, Punjab and Uttar Pradesh along with industrial traffic between Meerut, Aligarh, Kanpur, and Lucknow.

6.36 Following the opening of the TP1 check plaza, traffic volume on the Asset stabilized, leading to improved reporting and compliance. Operational between August 2023 and September 2024 (before getting vandalised by locals), the check plaza contributed to an increase in tollable traffic and a subsequent positive rise in per day collection (as shown in Table 3.6 above). Another major reason which contributes to positive performance of the Asset is the completion of 6 lane expansion of the Asset in October 2023 which significantly improved level of service of the Asset and consequently led to an increase in local traffic of Car, LCV, Buses and MLCV.

6.37 We anticipate a positive future for the Asset, driven by the increasing demand for agricultural and manufacturing goods between the key connecting centers of Delhi NCR and Aligarh/Uttar Pradesh. These essential commodities are projected to experience continued healthy growth in the coming years. Further, to cater to this growing demand and increasing traffic movement, the new 16-lane staggered plaza at TP1 will allow for effective management of heavy traffic movement in peak hours and ease congestion.

6.38 Overall, we see a positive outlook for the region and the Asset, given that it serves major urban centres of Delhi NCR, Ghaziabad, Aligarh, Lucknow and it being the part of the traditional Grand Trunk Road serving the east-west movement across the country. The underlying growth drivers of the corridor are strong and are expected to deliver long term sustained growth.

6.39 In conclusion, we anticipate a positive future for both the region and the Asset. This is due to its strategic location serving major urban centers like Delhi NCR, Ghaziabad, Aligarh, and Lucknow, and its position along the historic Grand Trunk Road, facilitating east-west movement across India. Improved LOS on the Asset post August 2023, introduction of the split plaza in July ‘25 along with strong underlying growth factors of this corridor are expected to drive sustained long-term growth.

Appendices

A Detailed forecasts

A.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

A.2 This section presents the detailed traffic forecasts for the forecast period until FY40.

Table A.1: Traffic Forecast (with impacts) over horizon years at TP1 Luharli

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	AADT	PCU
FY26	20,668	2,178	1,594	2,094	1,920	646	2,393	**31,494**	**47,913**
FY27	22,057	2,260	1,642	2,155	1,883	590	2,289	**32,878**	**48,986**
FY28	23,613	2,343	1,690	2,218	1,945	581	2,342	**34,732**	**51,233**
FY29	25,238	2,426	1,738	2,279	2,046	589	2,460	**36,777**	**53,953**
FY30	26,880	2,508	1,785	2,341	2,144	596	2,577	**38,832**	**56,675**
FY31	28,596	2,592	1,833	2,402	2,245	603	2,699	**40,970**	**59,494**
FY32	30,417	2,678	1,882	2,465	2,350	610	2,826	**43,229**	**62,464**
FY33	32,425	2,770	1,934	2,532	2,465	617	2,964	**45,708**	**65,713**
FY34	34,540	2,864	1,986	2,600	2,585	625	3,108	**48,308**	**69,107**
FY35	36,765	2,960	2,039	2,668	2,709	632	3,257	**51,032**	**72,651**
FY36	39,098	3,057	2,093	2,737	2,838	640	3,412	**53,876**	**76,342**
FY37	41,542	3,155	2,146	2,807	2,972	647	3,573	**56,844**	**80,183**
FY38	44,098	3,255	2,201	2,878	3,111	655	3,740	**59,938**	**84,176**
FY39	46,769	3,356	2,255	2,948	3,254	662	3,913	**63,160**	**88,326**
FY40	49,559	3,458	2,310	3,020	3,403	670	4,092	**66,514**	**92,635**

Table A.2 Forecasts (with impacts) for AADT growth rates (%) at TP1 Luharli

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	AADT	PCU
FY27	6.7%	3.7%	3.0%	2.9%	(1.9%)	(8.6%)	(4.3%)	4.4%	2.2%
FY28	7.1%	3.7%	2.9%	2.9%	3.3%	(1.7%)	2.3%	5.6%	4.6%
FY29	6.9%	3.5%	2.8%	2.8%	5.2%	1.4%	5.0%	5.9%	5.3%
FY30	6.5%	3.4%	2.7%	2.7%	4.8%	1.2%	4.8%	5.6%	5.0%
FY31	6.4%	3.3%	2.7%	2.6%	4.7%	1.2%	4.7%	5.5%	5.0%
FY32	6.4%	3.3%	2.7%	2.6%	4.7%	1.2%	4.7%	5.5%	5.0%
FY33	6.6%	3.4%	2.7%	2.7%	4.9%	1.2%	4.9%	5.7%	5.2%
FY34	6.5%	3.4%	2.7%	2.7%	4.8%	1.2%	4.8%	5.7%	5.2%
FY35	6.4%	3.3%	2.7%	2.6%	4.8%	1.2%	4.8%	5.6%	5.1%
FY36	6.3%	3.3%	2.6%	2.6%	4.8%	1.2%	4.8%	5.6%	5.1%
FY37	6.2%	3.2%	2.6%	2.5%	4.7%	1.2%	4.7%	5.5%	5.0%
FY38	6.2%	3.2%	2.5%	2.5%	4.7%	1.2%	4.7%	5.4%	5.0%
FY39	6.1%	3.1%	2.5%	2.5%	4.6%	1.2%	4.6%	5.4%	4.9%
FY40	6.0%	3.0%	2.4%	2.4%	4.6%	1.1%	4.6%	5.3%	4.9%

Source: Steer analysis

Table A.3: Traffic Forecast AADT (with impacts) over horizon years at TP2 Somna

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	7,074	885	965	1,384	1,540	642	1,782	**14,273**	**26,583**
FY27	7,441	912	995	1,427	1,445	586	1,630	**14,437**	**26,144**
FY28	7,926	940	1,025	1,471	1,473	576	1,644	**15,056**	**26,938**
FY29	8,458	968	1,055	1,514	1,550	583	1,727	**15,855**	**28,226**
FY30	8,992	995	1,085	1,556	1,624	590	1,810	**16,652**	**29,502**
FY31	9,547	1,022	1,114	1,599	1,701	597	1,895	**17,476**	**30,817**
FY32	10,134	1,050	1,145	1,642	1,781	604	1,984	**18,341**	**32,194**
FY33	10,777	1,080	1,177	1,689	1,868	612	2,081	**19,284**	**33,691**
FY34	11,452	1,110	1,210	1,736	1,958	619	2,182	**20,267**	**35,246**
FY35	12,157	1,140	1,243	1,783	2,053	627	2,287	**21,290**	**36,860**
FY36	12,891	1,171	1,276	1,831	2,150	634	2,396	**22,350**	**38,530**
FY37	13,654	1,201	1,310	1,879	2,252	642	2,509	**23,447**	**40,255**
FY38	14,445	1,232	1,344	1,928	2,357	649	2,626	**24,581**	**42,037**
FY39	15,266	1,263	1,378	1,976	2,466	657	2,747	**25,753**	**43,875**
FY40	16,115	1,295	1,412	2,025	2,579	664	2,873	**26,963**	**45,772**

Table A.4: Forecasts (with impacts) for AADT growth rates (%) at TP2 Somna

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	AADT	PCU
FY27	5.2%	3.1%	3.1%	3.1%	(6.1%)	(8.8%)	(8.5%)	1.1%	(1.6%)
FY28	6.5%	3.0%	3.0%	3.0%	2.0%	(1.7%)	0.9%	4.3%	3.0%
FY29	6.7%	2.9%	2.9%	2.9%	5.2%	1.4%	5.1%	5.3%	4.8%
FY30	6.3%	2.8%	2.8%	2.8%	4.8%	1.2%	4.8%	5.0%	4.5%
FY31	6.2%	2.7%	2.7%	2.7%	4.7%	1.2%	4.7%	4.9%	4.5%
FY32	6.1%	2.7%	2.7%	2.7%	4.7%	1.2%	4.7%	5.0%	4.5%
FY33	6.3%	2.8%	2.8%	2.8%	4.9%	1.2%	4.9%	5.1%	4.7%
FY34	6.3%	2.8%	2.8%	2.8%	4.8%	1.2%	4.8%	5.1%	4.6%
FY35	6.2%	2.7%	2.7%	2.7%	4.8%	1.2%	4.8%	5.0%	4.6%
FY36	6.0%	2.7%	2.7%	2.7%	4.8%	1.2%	4.8%	5.0%	4.5%
FY37	5.9%	2.6%	2.6%	2.6%	4.7%	1.2%	4.7%	4.9%	4.5%
FY38	5.8%	2.6%	2.6%	2.6%	4.7%	1.2%	4.7%	4.8%	4.4%
FY39	5.7%	2.5%	2.5%	2.5%	4.6%	1.2%	4.6%	4.8%	4.4%
FY40	5.6%	2.5%	2.5%	2.5%	4.6%	1.1%	4.6%	4.7%	4.3%

Source: Steer analysis

Revenue forecasts

A.3 The following table presents the year-wise annual revenue forecasts for the forecast period

Table A.5: Revenue Forecasts (with impacts) for horizon years (INR Crores) at TP1 including AP compensation for CJVs

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	64	9	12	28	30	16	59	**218**
FY27	71	10	12	30	31	15	58	**227**
FY28	80	11	13	32	33	16	62	**249**
FY29	91	12	14	35	37	17	69	**275**
FY30	100	13	15	38	41	18	76	**300**
FY31	112	14	17	41	45	19	83	**329**
FY32	125	15	18	44	49	20	91	**362**
FY33	137	16	19	46	53	21	99	**393**
FY34	153	17	21	50	59	22	109	**431**
FY35	171	19	22	54	64	24	120	**473**
FY36	190	20	24	58	70	25	131	**519**
FY37	210	22	26	62	77	26	143	**566**
FY38	236	24	27	66	84	28	157	**622**
FY39	260	26	29	71	92	30	172	**679**
FY40	292	28	32	76	101	31	188	**748**

Table A.6: Revenue Forecasts (with impacts) for horizon years (INR Crores) at TP2 including AP compensation for CJVs

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	35	5	9	24	32	21	57	**182**
FY27	38	5	10	25	31	19	54	**183**
FY28	43	6	11	27	33	20	57	**197**
FY29	47	6	12	29	37	21	63	**216**
FY30	53	7	13	32	40	23	69	**236**
FY31	58	7	14	34	44	24	76	**258**
FY32	65	8	15	37	49	26	83	**282**
FY33	73	8	16	40	53	27	91	**307**
FY34	80	9	17	42	58	28	100	**335**
FY35	89	9	18	46	64	30	109	**366**
FY36	99	10	19	49	70	32	120	**399**
FY37	109	11	21	53	77	34	131	**434**
FY38	121	12	22	56	84	36	143	**474**
FY39	133	12	24	60	92	38	157	**517**
FY40	147	13	26	65	100	40	172	**564**

Source: Steer analysis

B Top OD Pairs

B.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1 Luharli

Table B.1: CJV and Bus top 10 OD pair shares at TP1 Luharli

	OD Pair	Share
1	Akbapur, Nausana-Ghaziabad	6%
2	Ghaziabad-Sanwli and Sikandrabad	6%
3	Akbapur and Bulandsheher - Delhi	4%
4	Aligarh-Ghaziabad	4%
5	Central part of Delhi-Central part of Hapur district	3%
6	Western part of Agra district-Ghaziabad	3%
7	North-Eastern part of Gautam Buddha Nagar -Central part of Hapur district	3%
8	Ghaziabad-Khurja	2%
9	Aligarh-Central part of Delhi	2%
10	Akbapur and Bulandshahr-North-Eastern part of Gautam Buddha Nagar district	2%

Source: Steer analysis of OD data

Table B.2: 3A and MAV top 10 OD pair shares at TP1 Luharli

	OD Pair	Share
1	Ghaziabad-Sanwli & Sikandrabad	11%
2	Akbapur, Bulandshahr, & Nausana-Ghaziabad	10%
3	Lucknow district-Ghaziabad	3%
4	North-Eastern part of Gautam Buddha Nagar district-Central part of Hapur district	2%

	OD Pair	Share
5	Western part of Agra district-Ghaziabad	2%
6	Northern part of Haryana-Sanwli & Sikandrabad	2%
7	Sanwli & Sikandrabad-Eastern part of Ghaziabad district	2%
8	Central part of Delhi-Central part of Hapur district	2%
9	Aligarh-Ghaziabad	2%
10	Akbapur, Bulandshahr, & Nausana-North-Eastern part of Gautam Buddha Nagar district	2%

Source: Steer analysis of OD data

TP2 Somna

Table B.3: CJV top 10 OD pair shares at TP2 Somna

	OD Pair	Share
1.	Aligarh-Central part of Delhi	11%
2.	Aligarh-Western part of Hapur district	10%
3.	Western part of Agra district-Central part of Delhi	5%
4.	Aligarh-Northern part of Gautam Buddha Nagar district	5%
5.	Aligarh-Ghaziabad	4%
6.	Aligarh-Akbapur, Bulandshahr, & Nausana	4%
7.	Aligarh-Meerut district	3%
8.	Etah, Firozabad, & Mainpuri districts-Central part of Delhi	3%
9.	Aligarh-North-Eastern part of Gautam Buddha Nagar district	3%
10.	Kanpur Nagar district-Central part of Delhi	2%

Source: Steer analysis of OD data

Table B.4: MAV and OSV top 10 OD pair shares at TP2 Somna

	OD Pair	Share
1.	Kanpur Nagar district-Ghaziabad	3%
2.	Aligarh-Western part of Hapur district	2%
3.	Etah, Firozabad, & Mainpuri districts-Northern part of Haryana	2%

	OD Pair	Share
4.	Lucknow district-Ghaziabad	2%
5.	Aligarh-Northern part of Gautam Buddha Nagar district	2%
6.	Aligarh-Ghaziabad	2%
7.	Kanpur Nagar district-Northern part of Gautam Buddha Nagar district	2%
8.	Kanpur Nagar district-Northern part of Haryana	2%
9.	Lucknow district-Central part of Delhi	2%
10.	Kanpur Nagar district-Central part of Delhi	1%

Source: Steer analysis of OD data

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Project Transit: Traffic Due Diligence for Hazaribagh Tollway Limited

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Contents

Disclaimer		**i**
Glossary Items		**i**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this Report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Key economic activities	7
	Alternate Routes	8
3	**Traffic description**	**10**
	Introduction	10
	Historical trends of traffic	11
	Key findings of the TVC data analysis	16
	Key findings of origin-destination analysis	18
	Conclusions	25
4	**Socio economic context and traffic growth**	**27**
	Introduction	27
	Population Growth	27
	Economic Indicators	28
	Vehicle ownership	29
	Economic growth	31
	Forecasts for growth drivers	33
5	**FY26 Base year AADT and Traffic growth Analysis**	**36**
	FY26 Base year AADT estimates	36
	Estimation of background elasticities	38
	Overview	38
6	**Forecasts: Network overlays and forecasts**	**41**
	Introduction	41
	Analysis of potential network/developmental impacts	41
	Revenue forecasting assumptions	44
	Traffic and Revenue forecasts	46
	Target revenues and modification of concession period	48
	Upside and Downside cases	49
	Summary outlook	52

Figures

Figure 2.1: Asset location in the regional network context 4
Figure 2.2: Asset context 5
Figure 2.3: Road cross section of the Asset 6
Figure 3.1: Ticket segmentation for CJV at TP1 Pundag 14
Figure 3.2: Ticket segmentation for MAV at TP1 Pundag 15
Figure 3.3: Comparison between TVC and TMS daily traffic data on TP1 Pundag 17
Figure 3.4: Comparison between vehicle shares from TVC and TMS WADTs 17
Figure 3.5: Zonal influence at TP1 Pundag 20
Figure 3.6 Internal-external distribution at TP1 Pundag 21
Figure 3.7: Commodity distribution at TP1 Pundag 23
Figure 3.8: Commodity distribution at TP1 Pundag (Towards Hazaribagh) 23
Figure 3.9: Commodity distribution at TP1 Pundag (Towards Ranchi) 24
Figure 3.10: Trip length distribution at TP1 Pundag 25
Figure 4.1: Annual growth – Index of Industrial Production 29
Figure 4.2: Car Ownership in India per 1,000 population 30
Figure 4.3: Per Capita Income 30
Figure 4-4: Government final consumption expenditure 31
Figure 4-5: Month on Month IIP performance 32
Figure 4-6: Industrial components of GVA 32
Figure 4.7: Evolution of Jharkhand's GSDP and the National GDP 33
Figure 4.8: GDP-GSDP forecast 35
Figure 5.1: FY25 Base Estimation methodology 37
Figure 6.1: NH320 and Varanasi Kolkata Expressway 42
Figure 6.2: Long term PCU forecasts for Pundag TP including upside and downside scenario 51
Figure 6.3: Long term Revenue forecasts for Pundag TP including upside and downside scenario 51

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Summary of concession 6
Table 2.2: Single toll rates on the Asset (INR), applicable FY26 7
Table 3.1: PCU factors 10
Table 3.2: Annual Average Daily Traffic (AADT) at TP1 Pundag 11
Table 3.3: Historical Tollable Traffic at TP1 Pundag 11
Table 3.4: Revenue (INR Crores) and AADC (in INR Lakhs) by vehicle type at TP1 Pundag 12
Table 3.5: Typical ticket types sold at NHAI plazas 13
Table 3.6: Ticket segmentation for LCV, Bus, 2A and 3A 15
Table 3.7: Data collection schedule 16
Table 3.8: WADT from TVC counts 16

Table 3.9: Sample rates for OD data	18
Table 3.10: Zone aggregations for zonal influence analysis	18
Table 3.11: Aggregate commodity categories	21
Table 3.12: Average trip length (in km)	25
Table 4.1: CAGR of Population in India	27
Table 4.2: Population Growth in India (2012-2024)	28
Table 5.1: SCF Values for TP1 Pundag	37
Table 5.2: Adopted base estimates: TP1 Pundag	38
Table 5.3: Identified growth drivers to model traffic growth	39
Table 5.4: Passenger and Commercial growth with normalised FY22	39
Table 5.5: Elasticity Recommendations for the Asset	40
Table 6.1: Impact of ongoing four lane expansion of NH320 (Oramanjhi Gola Bokara section)	42
Table 6.2: Varanasi-Kolkata Expressway Impact	43
Table 6.3: Impact of 6 laning LOS improvement	43
Table 6.4: Toll segmentation for FY26 onwards	44
Table 6.5: Annual pass compensation for CJVs (in Crore)	45
Table 6.6: Trip factors at TP1 Pundag	45
Table 6.7: WPI growth forecast assumptions	46
Table 6.8: FY25 Revenue Reconciliation AADC (INR lakhs/daily)	46
Table 6.9: Final traffic forecast for TP1 Pundag	46
Table 6.10: Traffic CAGR (%) for TP1 Pundag	47
Table 6.11: Revenue forecast for TP1 Pundag (INR crores) including Annual Pass Compensation revenue for CJV	47
Table 6.12: Revenue growth CAGR (%) for TP1 Pundag	47
Table 6.13: Target Revenues for Extension 1	48
Table 6.14: Target Revenues for Extension 2	48
Table 6.15: Summary of Macro-economic Assumptions for upside and downside cases	49
Table 6.16: Summary of impacts on the Assets	49
Table 6.17: Summary of impacts on the Assets	50
Table 6.18: Upside potential and Downside PCU scenario – FY51	50
Table 6.19: Upside potential and Downside Revenue scenario – FY51	51

Appendices

A	**Top 10 OD Pairs**
B	**Data Collection Exercise**
C	**Detailed Forecasts**

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
INR	Indian Rupees
km	Kilometre
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NHIIMPL	National Highways Infra Investment Managers Private Limited
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Hazaribagh- Ranchi Toll Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project. This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Hazaribagh-Ranchi consists of the single toll road section with its own special purpose vehicle (SPV). For this report, we hereafter call the toll plaza on the Asset as TP1.

- Hazaribagh Tollway Limited: HTL: TP1 - Pundag

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Oct'20 and Sept'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable.
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer. The surveys were undertaken in year 2024.
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by Steer based on Generalised Journey Cost spreadsheet-based analysis

Scope of work	Data source
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research and Steer's in-house experience of working in the vicinity of the Asset
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI); and latest Wholesale Price Index (WPI) trends as shared by the client

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data from October 2020 to September 2025.
  - Concession agreement and toll notifications for FY25 and FY26.
  - Previous studies related to traffic and revenue
  - Steer-commissioned OD survey on 7th July 2023 to validate any change in growth drivers and travel patterns.
  - Steer-commissioned TVC survey in 2021 as a part of study in earlier commission.
- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by each of the toll plaza and subsequently match it to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against the six months of actual traffic (Apr-Sept) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.

- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this Report

1.7 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases

2 The Asset

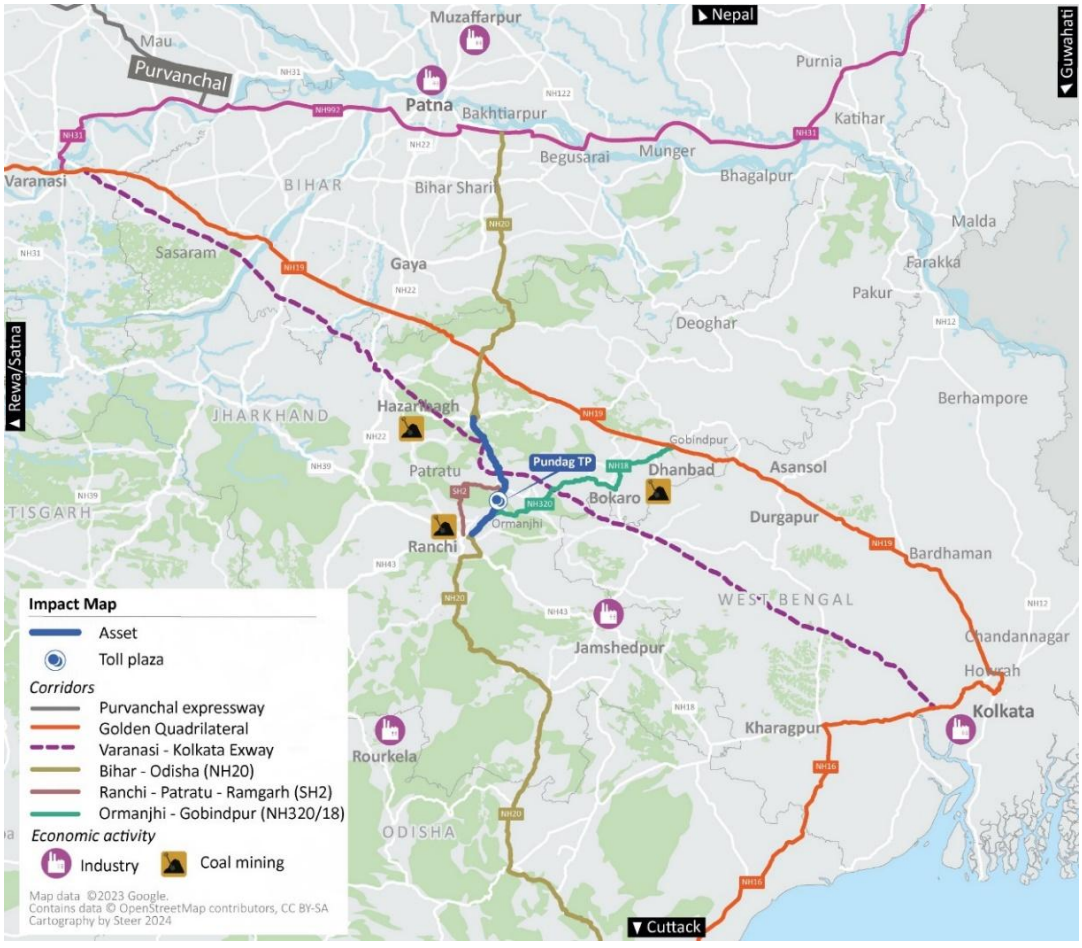
Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of Jharkhand, connecting Ranchi, the capital of Jharkhand, and Hazaribagh, on the NH 20 (old NH 33). The following figure shows the regional road network in which the Asset is located.

Figure 2.1: Asset location in the regional network context



Source: Steer cartography using OpenStreetMap data

2.3 This Asset primarily caters to three different types of strategic movements:

- **Short-distance trips** including tourism and leisure travel trips between some of the key tourist destinations in Jharkhand. Many CJV users are either local or travel between Ramgarh and Patratu at one end and Ranchi at the other.
- **Medium-distance trips** between Bihar/rest of Jharkhand connecting the mines situated close to the Asset, to industries in Jharkhand. The Asset also transports a significant number of minerals, steel, and related products across the states of Bihar, West Bengal, and Odisha.
- **Long-distance trips** between Bihar/southern West Bengal and southern as well as central states of India.

2.4 The Asset is a 73.79 km long toll road which forms a part of the NH 20 (old NH 33) in Jharkhand. It is a four-lane divided road with one toll plaza, namely, Pundag at Km 100.4. The toll plaza is situated nearer to the Ranchi side of the Asset than to the Hazaribagh side. A detailed view of the Asset and its adjacent area is shown in Figure 2.2.

Figure 2.2: Asset context

Source: Steer Cartography

2.5 About 67% of vehicles on the Asset are CJVs, in FY26YTD which predominantly commute between Ranchi, Ramgarh, Hazaribagh and other local destinations along the Asset. The commercial vehicles on the Asset cover a mix of medium and long distances. Trucks from Jharkhand, Bihar are observed, as well as those from UP, Delhi, Haryana, and Rajasthan.

Concession and tolling details

2.6 The toll plaza on the Asset has been operational since September 2013 and the Client took over the operations in October 2020. The concession period ends in FY51. Table 2.1: Summary of concession presents a summary of the concession.

Table 2.1: Summary of concession

Particulars	Details
State	Jharkhand
Highway and lane configuration	NH 33 (old NH 20), 4-lane divided
Toll plaza	Pundag
Length (km) as per concession agreement, applicable	73.79 km
Commencement of operations	September 2013
Operated by Client since	20th October 2020
Concession period	30 years
Last year of concession	2051

Source: Client data

2.7 The following images show a typical cross section of Asset and its toll plaza.

Figure 2.3: Road cross section of the Asset

Source: Steer site visit

2.8 The toll rates for single category are shown in the following table. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling. Like the other National Highway plazas, the Asset has Single, Return, Local Commercial, Local Personal, Monthly, and Local Monthly tickets.

2.9 Due to general elections in India from Apr-May'24 the toll rates on National highways across the country for next financial year were applicable Jun'24 onwards instead of Apr'24.

Table 2.2: Single toll rates on the Asset (INR), applicable FY26

Type of Vehicle	Single Journey Fee
	Pundag
CJV	125
LCV	205
Bus/Truck	425
3A	465
HCM/EME/MAV	670
OSV	815

Source: NHAI Revision of User fee Rate w.e.f 01.06.2025

2.10 Apart from single tickets, ticket categories like monthly, local personal and local commercial passes are also available on the Asset.

Key economic activities

2.11 The Asset is situated in Jharkhand, a state rich in mineral resources, contributing 40% to India's mineral reserve. Minerals ranging from iron ore, coal, copper ore, mica, bauxite, Manganese, limestone, China clay, fire clay, graphite, kainite, chromite asbestos, thorium, sillimanite, uranium (Jarsuguda mines, Narwa Pahar) and even gold (Rakha Mines) and silver and several other minerals are found in Jharkhand.

2.12 The presence of large deposits of coal and iron ore in the vicinity has resulted in the concentration of industries, in centres like Jamshedpur, Dhanbad, Bokaro and Ranchi. Particularly, Hazaribagh and Chattra near the Asset contribute significantly to the state's total coal reserves, making coal one of the common commodities being transported on the Asset.

2.13 Jharkhand contributes 20-25% of the total steel produced in India and is home to industries like Tata Steel, Steel Authority of India Limited (SAIL), Jindal Steel and Power Limited (JSPL) etc. TATA Steel in Jamshedpur is 130 km from Ranchi towards the south-east of the Asset and accounts for a significant amount of traffic on the Asset. As per the 2023 report, Tinplate Company of India Limited (TCIL) is investing more than 2000 cr to increase capacity of steel production by 3L Ton per annum[1]. Jindal Steel and Power Limited (JSPL) operates a steel plant as well as power plant in Patratu (40 km from the Asset) and is planning to invest to add 2-2.5 million tonnes per annum to its current capacity of 0.6 million tonnes per annum (wire rod mill) and 1.2 million tonnes per annum (bar mill)2. The expansion is expected to add further steel carrying tollable traffic from Ranchi – Patratu.

2.14 The Ramgarh and Hazaribagh areas are rich in limestone mines. Since the state has reserves of cement grade limestone, the region is well-suited for creating additional capacities. Burnpur Cement's plant in Patratu attracts cement carrying traffic towards the Asset. Burnpur Cement is planning to launch new cement products from the Patratu plant

[1] **TCIL expansion project very important for Jamshedpur and Tata Steel: Narendran | The Avenue Mail**

[2] **https://www.thehindubusinessline.com/companies/jspl-looking-to-set-up-2-25-mtpa-steel-plant-at-patratu-in-jharkhand/article31088657.ece**

as well as increase its capacity utilisation[3]. Further exploration of limestone would help in developing new cement plants and hence, would generate additional traffic on our Asset.

2.15 Dalmia Cement (Bharat) Limited is investing ₹758 crore in Bokaro to expand its cement manufacturing capacity and sustainability initiatives. This includes ₹567 crore for a 2.6 MTPA grinding unit (taking total capacity to 6.3 MTPA), ₹250 crore for a solar power plant, and ₹8 crore for waste management facilities under Ranchi Municipal Corporation. The expansion is expected to generate significant employment and contribute to tollable traffic from Bokaro to Ranchi.[4]

2.16 The industrial area in Hazaribagh is also a significant traffic generator for the Asset. 1500+ industries are present in the industrial area involved in the production of cement, coke, and stone.[5] Although no major tourism spot is present on the Asset, Patratu Thermal Power Station (PTPS) dam at Patratu attracts CJV traffic from Ranchi and nearby areas as a weekend getaway.

Alternate Routes

2.17 For short/medium – distance traffic connecting Ranchi to Ramgarh, there is an alternate route via Patratu on SH 2 that bypasses the toll plaza. The same route also leads to Hazaribagh bypassing the whole Asset. The route is not preferred by truck drivers as it is longer and present on hilly terrain. Also, it is two-laned and passes through uninhabited areas. Hence, no traffic shift and impact are assumed for same.

2.18 For Hazaribagh – Jamshedpur traffic, an alternate route is available at Kothar (near Ramgarh). The alternate is two-lane undivided road connecting Hazaribagh – Jamshedpur. During Steer's site visit it was found that a few local coal carrying trucks from Hazaribagh/Barhi take this route instead of the Asset as the route is shorter (23 kms) and has no tolls. However, the route is known to be affected by local Naxal based insurgency and deemed unsafe. Long distance trucks follow the Asset as it is four-laned throughout the way (till Jamshedpur) and is safer as it doesn't pass through uninhabited areas. Therefore, for the reasons stated above the alternate is not considered to be favourable route for majority of the users.

2.19 As per latest updates, the Oramanjhi-Gola-Bokaro section of NH320 between Bokaro-Ranchi is undergoing 4 lane expansion with a construction duration of 24 months. Due to this bottlenecks and road closures are observed on the alternate, which has led to temporary gain in traffic on the Asset particularly moving between Ranchi and Bokaro.[6] The same is validated from monthly traffic data, wherein increased volume is observed on the plaza starting June'23 onwards. This diverted traffic is expected to return to the alternate road when the construction activity is completed, and the ban is lifted.[7] Basis

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[3] https://www.globalcement.com/news/item/5828-burnpur-cement-to-launch-pozzolona-portland-cement-brand-in-april-2017

[4] **Dalmia Bharat to impact 20,000 lives of Bokaro, investing Rs. 758 Cr on Industrial project - India CSR**

[5] **DIPS Hazaribagh.pdf (dcmsme.gov.in)**

[6] **https://www.livehindustan.com/jharkhand/bokaro/story-villagers-protest-nh-320-road-construction-in-lepo-mauja-demand-underpass-201741001945578.html**

[7] ttps://www.livehindustan.com/jharkhand/bokaro/story-villagers-protest-nh-320-road-construction-in-lepo-mauja-demand-underpass-201741001945578.html

the conversations with local stakeholders and secondary research, the construction of Gola – Oramanjhi stretch is expected to be completed by Mar'26[8] and the remaining stretch of the NH320 i.e Gola – Bokaro is expected to be completed by Dec'25. The detailed impact assumed is presented in Chapter 6 of the report.

2.20 National Highway Authority of India (NHAI) has proposed a 4/6 lane greenfield Varanasi Ranchi-Kolkata expressway connecting Varanasi, Ranchi, and Kolkata. As per the latest information available, the alignment of this expressway is supposed to cross the Asset north of the Ramgarh, and hence, is not expected to take away any traffic which is currently moving from east of Hazaribagh to Ranchi or vice versa. In the long-term, trips between Kolkata and Ranchi can benefit from the improved connectivity and act as a positive on the Asset. Hence, impact of the expressway has been considered in our analysis and has been detailed further in Chapter 6.

2.21 During Steer's site visit to the Asset, no major micro-diversions through local roads were observed close to the toll plazas.

[8] Page 4 pf PDF, item 20,21
https://sansad.in/getFile/annex/267/AU1549_Jap5yu.pdf?source=pqars

3 Traffic description

Introduction

3.1 This chapter outlines the current traffic and revenues on the Asset, as well as our analysis of origin-destination (OD) data and traffic count data. This covers data which was collected as a part of this study and previous studies, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data is typically provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU Factor assumption

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2024 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV	1.0
Mini LCV	1.0
LCV	1.5
Bus	3.0
2A	3.0
3A	3.0
MAV*	3.8
OSV	4.5

Source: Steer analysis, * Rigid-Trailer PCU calculated using TVC splits of such vehicle types

Historical trends of traffic

3.1 The following table illustrates the traffic data over the period of 6 years from October 2020 – September 2025 (provided by the Client) at a plaza level. There is lack of long-term historical data available on the Asset since tolling was started by the client only in October 2020 and the available years of data, FY21 and FY22 were impacted by COVID-19 related restrictions. Starting FY23 traffic on the Asset has started to get normalised with temporary traffic gain starting FY23 due to construction of alternate Oramanjhi- Gola-Bokaro Section.

Table 3.2: Annual Average Daily Traffic (AADT) at TP1 Pundag

Vehicle category	FY21*	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23-25
CJV	9,186	8,516	8,935	9,879	10,928	11,949	10.6%
LCV	859	467	445	488	363	390	(9.6%)
Bus	672	447	583	594	797	896	16.9%
2A	490	586	681	845	1,023	1,026	22.6%
3A	516	455	480	529	555	553	7.6%
MAV	1594	1,629	1,690	1,950	2,557	2,687	23.0%
OSV	0	1	2	2	2	2	2
AADT	**13,318**	**12,103**	**12,814**	**14,287**	**16,224**	**17,503**	**12.5%**
PCU	**21,521**	**19,832**	**21,209**	**23,876**	**28,245**	**30,099**	**15.4%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25

Table 3.3: Historical Tollable Traffic at TP1 Pundag

Vehicle category	FY21*	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23-25
CJV	8,010	7,770	8,172	9,013	9,905	10,773	10.1%
LCV	862	460	442	484	357	385	(10.1%)
Bus	668	441	578	588	772	890	15.6%
2A	501	568	665	832	1,007	1,011	23.1%
3A	514	449	473	526	550	549	7.8%
MAV	1,690	1,624	1,687	1,948	2,551	2,685	23.0%
OSV	4	1	2	2	2	2	12.7%
Tollable AADT	**12,249**	**11,312**	**12,019**	**13,392**	**15,144**	**16,295**	**12.3%**
Tollable PCU	**20,740**	**18,961**	**20,351**	**22,928**	**27,055**	**28,832**	**15.3%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25

3.5 CJVs have the dominant share in traffic, comprising more than ~67% share in FY26YTD due to the presence of large urban centres close to the Asset like Ranchi, Hazaribagh and Ramgarh Cantt, which attracts large quantum of CJV traffic. Vehicles from nearby urban settlements in the influence area like Bokaro, Patratu, Jamshedpur also use this Asset. This is further validated by the analysis of the OD data discussed later.

3.6 As can be seen from Table 3.2, the average traffic for the MAV have been consistent up to 2023 and was maintained between ~1,600-1,700 vehicles. However, the Asset has seen an increase in both CJV and MAV traffic since FY24.

3.7 The CJV traffic has increased from ~8,900 AADT in FY23 to ~12,000 AADT in FY26 YTD. Whereas the MAV volume has increased from the earlier range of ~1600-1700 AADT to ~2,700 AADT in FY26YTD. This volume increase is mainly driven by temporary traffic shift on the Asset due to the undergoing four laning of the Ormanjhi-Gola-Bokaro section of NH320 as mentioned in Chapter 2 which is expected to complete by March 2026.

3.8 Furthermore, effective May 2024, minibuses previously tolled as LCVs have been reclassified under the bus category. This reclassification is based on a passenger count system, replacing the earlier gross vehicle weight-based classification. Travel patterns in FY25 and FY26YTD remain largely consistent.

3.9 The trend of tollable traffic on the Asset has largely followed that of total traffic. The Asset has recorded 15.3% tollable PCU CAGR.

3.10 It is seen that the exemption volume in CJV is consistent ~800-1000 vehicles historically with no major change, as seen in Table 3.3.

3.11 The MAV traffic on the Asset is largely influenced by the mineral industries along its alignment, which also contributes to the overall stability of MAV volumes across different time periods.

3.12 The steel industry has seen slowdown over the last couple of years first due to Covid19 related disruptions, slowdown in demand for steel in China, and subsequent high inflation. Recent evidence from various industry players suggests a rebound in Steel production and consumption led by economic activity and urbanization which is expected to boost demand for steel in India to between 240-260 million metric tons by 2035. [9] [10]

3.13 These factors support the growth prospects of the Steel related industry and traffic in the future. Beyond these natural growth factors, higher than usual growth was observed on Asset due to the work on the alternate NH320 as mentioned earlier.

Historical Revenue

3.14 The following table shows the total revenue (in INR Crores) and AADC (Annual Average Daily Collection; in INR Lakhs) by vehicle type at the toll plaza for FY21 to FY26YTD.

Table 3.4: Revenue (INR Crores) and AADC (in INR Lakhs) by vehicle type at TP1 Pundag

FY	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY21*	1.2	0.2	0.3	0.3	0.3	1.5	0.0	**3.8**	**22**	
FY22	21.4	2.0	3.7	6.8	6.2	35.2	0.0	75.3	**21**	**(4.5%)**
FY23	21.8	1.9	4.7	7.9	6.3	36.4	0.0	79.1	**21.7**	**4.8%**
FY24	31.9	2.8	7.0	11.4	7.9	45.1	0.1	106.3	**29.0**	**31.8%**
FY25	35.6	2.2	9.3	14.0	8.4	59.0	0.1	128.6	**35.2**	**21.3%**
FY26YTD	19.7	1.3	5.5	7.6	4.4	32.9	0.0	71.4	**38.8**	**10.2%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD includes 6 months of reported revenue Apr-Jan'25.

[9] Evolving with steel: Future growth and opportunities | McKinsey

[10] https://www.moneycontrol.com/news/sector/indian-steel-industry-tapered-now-tempered-for-future-thanks-to-improving-macros-10125481.html

3.15 The MAVs are the biggest revenue contributor on the Asset followed by CJVs. Lower per day collection in FY22 can be attributed to COVID-19 with restricted traffic movements. FY21 and FY23 recorded the similar average per day collection of INR 22 lakh. FY24 onwards there is an increased per day collection jump by 32%, 21% respectively due to incremental traffic gain on the plaza by the ongoing construction activity of the alternate and healthy growth observed in commercial traffic due to increased demand of steel.

Toll Frequencies

3.1 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the client. The most common ticket categories observed on a typical National Highway are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these passes instead of evading toll.

3.2 The following are the types of tickets being sold at the plazas of the Asset.

Table 3.5: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows for a return journey within a day with a 50% discount on the return trip.
Monthly Pass	Discounted single entry ticket for users who undertake multiple trips within a month can buy the monthly pass.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.3 Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For some Assets, the Exemption and violations are at time reported together.

3.4 Generally, over the period the shares of single/return/monthly tickets tend to stabilise within 2-3 years of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns.

3.5 Further, FY21 was impacted due to the mandatory implementation of FASTag as a mode of payment, where users were now paying via an online payment system instead of cash payments at the toll plaza. Additionally, in FY22 traffic and travel patterns were impacted by the second wave of COVID-19 in Q1 and Q2. With FY21 and FY22 being impacted these external events, the segmentation began to stabilise from FY23 onwards and reached steady state starting FY24.

Introduction of Annual pass for CJVs

3.6 The National Highway Authority of India launched the "The FASTag Annual Pass" on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.7 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

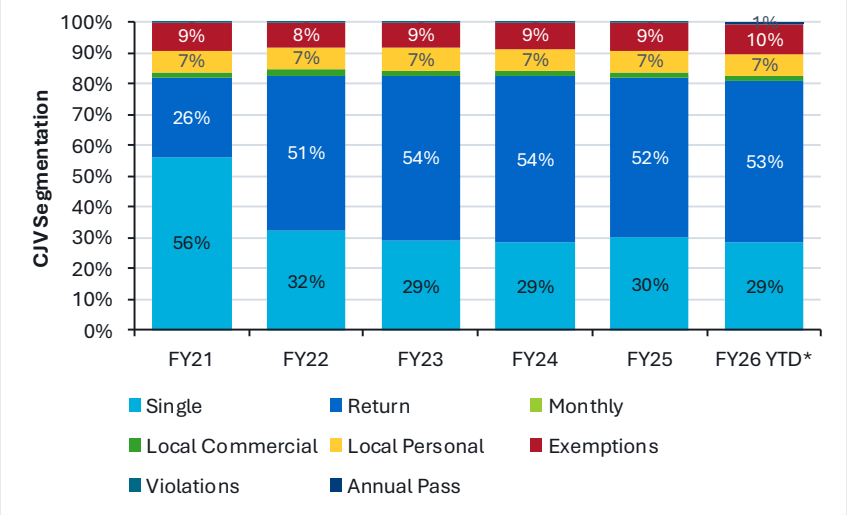
The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll roads.

Share of traffic by payment type

3.8 As shown in Figure 3.1 from the period of FY26YTD, more than half of the CJVs paid for return tickets, and the remainder ticket-share being made up of single journeys, local passes, and exemptions. High CJV return trips could be attributed to the travel pattern of the daily commuters between Ramgarh and Ranchi. The toll frequencies for CJV have largely remained the same since FY23.

Figure 3.1: Ticket segmentation for CJV at TP1 Pundag

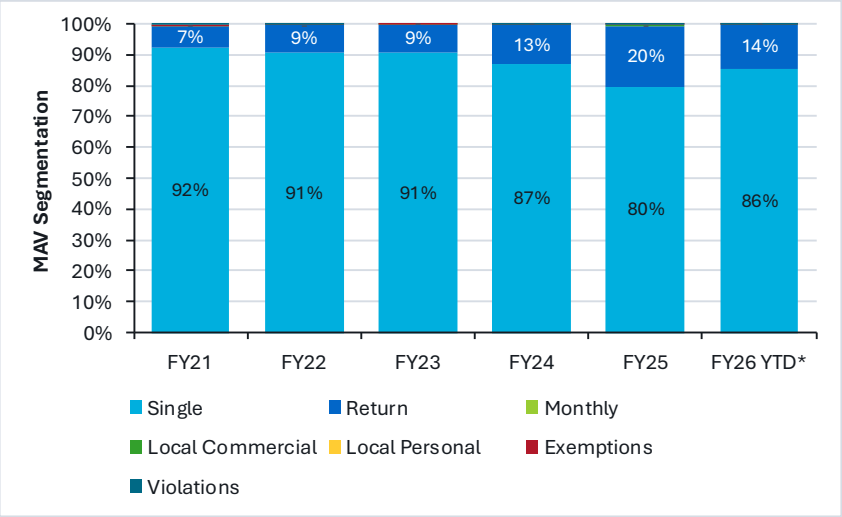


Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; FY26YTD is for 5 months between April and September 2025

3.9 MAVs are observed to have high share of single tickets since FY21 which is aligned to observation of MAVs doing medium to long distance trips on the Asset. As discussed, and validated from the OD data, around 54% of the MAVs on the Asset travel >500 kms. A slight increase in return tickets is visible due to implementation of FASTag, allowing

trucks to avail return journey discounts if they return within 24 hrs. In addition to this, FY24 and FY25 has observed increase in return tickets primarily could be due to MAVs carrying construction material such as cement, sand, etc. for the ongoing construction of NH320. Ranchi, Ramgarh and Patna are the major trip generators for the MAV traffic

Figure 3.2: Ticket segmentation for MAV at TP1 Pundag



Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; FY26YTD is for 5 months between April and September 2025

3.10 For FY26YTD, the MAV segmentation observes increase in the single tickets suggesting the decline of construction related traffic on the asset for NH320 alternate.

3.11 Refer below to the table for FY26YTD segmentation for LCV, Bus, 2A and 3A category:

Table 3.6: Ticket segmentation for LCV, Bus, 2A and 3A

Ticket Category	LCV	Bus	2A	3A
Single	42%	8%	64%	67%
Return	51%	91%	34%	30%
Local commercial	5%	1%	0%	4%
Exemption	1%	1%	2%	1%

Source: Steer analysis of Client data

Data Collection exercise

3.12 As mentioned previously, to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset, comprising the surveys listed in the table below. Both OD surveys and TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.7: Data collection schedule

TP	7-day videography-based TVC			1-day OD survey			
	Start date	End date	Time (hrs)	Start date	Start time	End Date	End Time
TP1 Pundag	27 Jan 2021	02 Feb 2021	0000-2359	7 Jul 2023	0800 hours	8 Jul 2023	0800 hours

Source: Steer analysis

3.13 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, to fully understand the impact of this weekly fluctuation on the Asset, we collected seven-day counts at the toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.14 Taking an average of the seven-day TVC counts (27th Jan – 2nd Feb 2021, 0000-2359), we obtained the following weekly average daily traffic (WADT) for each toll plaza. This WADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Table 3.8: WADT from TVC counts

Toll Plaza	CJV	LCV	Mini LCV	Bus	2A	3A	MAV	Total
TP1 Pundag	7831	862	1,136	756	433	555	1,717	13,290

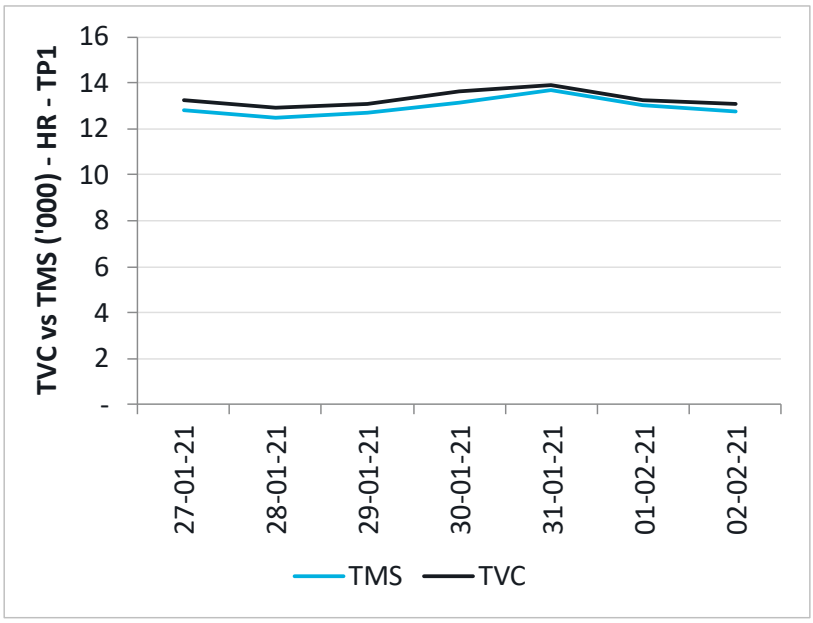
Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.15 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those days, as provided by the Client.

3.16 The following figures show the comparison between the daily traffic observed by TVC and TMS for the toll plaza.

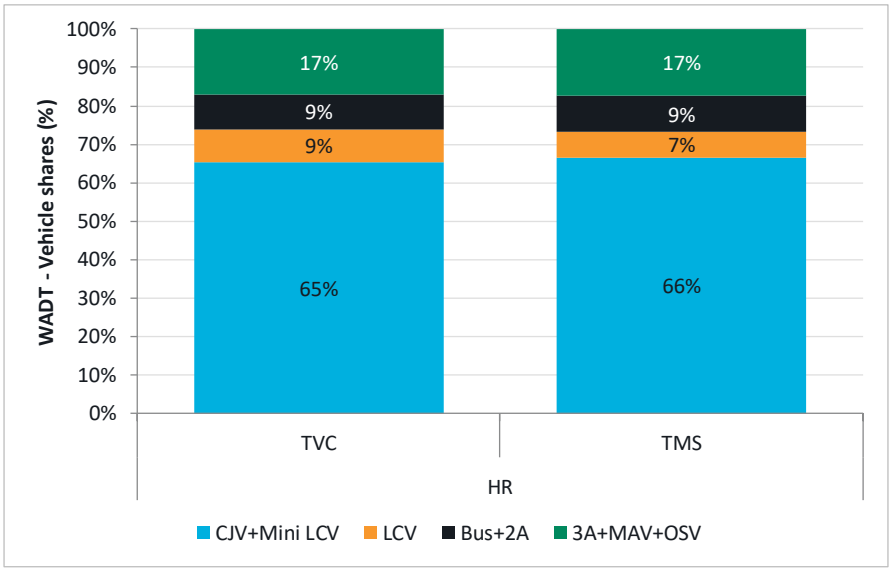
Figure 3.3: Comparison between TVC and TMS daily traffic data on TP1 Pundag



Source: Steer analysis of TVC and Client TMS data

3.17 The figure below compares the shares of vehicle types at both toll plazas observed by the TVC and TMS data. As can be seen, whilst the share of CJVs and 3A+MAV+OSV is marginally higher for TMS compared to TVC, it is equal for bus/2A and lower for LCV category. This difference can be attributed to common misclassification of vehicle categories.

Figure 3.4: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.18 Considering the smaller variation between the TVC and TMS data for the largest revenue generator 3A+MAVs, and an overall match in the traffic volumes, our TVC-TMS analysis gives us confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

Key findings of origin-destination analysis

Overview

3.19 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. As mentioned previously, the OD analysis presented here has been based on the data collected on 7th-8th July 2023.

3.20 We have analysed the regional drivers of demand based on the following analyses:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.21 While zonal analysis and the list of top OD pairs help to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.22 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TMS data) during the same time period. The table below presents the sample rates for key vehicle type aggregations at the toll plaza.

Table 3.9: Sample rates for OD data

Vehicle type	TP1 Pundag
Passenger (CJV+Bus)	37%
Goods (LCV+2A+3A+MAV+OSV)	78%

Source: Steer analysis of OD data

Zone categories

3.23 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in the table below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Asset being studied.

Table 3.10: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of State	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)

Aggregate Zone	Description
East & Northeast India	West Bengal, Jharkhand, and Northeast Indian states
Bihar	Bihar (Including Patna etc.)
Odisha	Delhi State, including New Delhi
South India	Tamil Nadu, Karnataka, Kerala, Andhra Pradesh
North India	Uttarakhand, Haryana, Punjab, Jammu and Kashmir
Central India	Madhya Pradesh, Chhattisgarh
West India	Rajasthan, Gujarat
Delhi	Delhi State, including New Delhi
Outside of India	Bangladesh, Nepal etc.

Source: Steer analysis

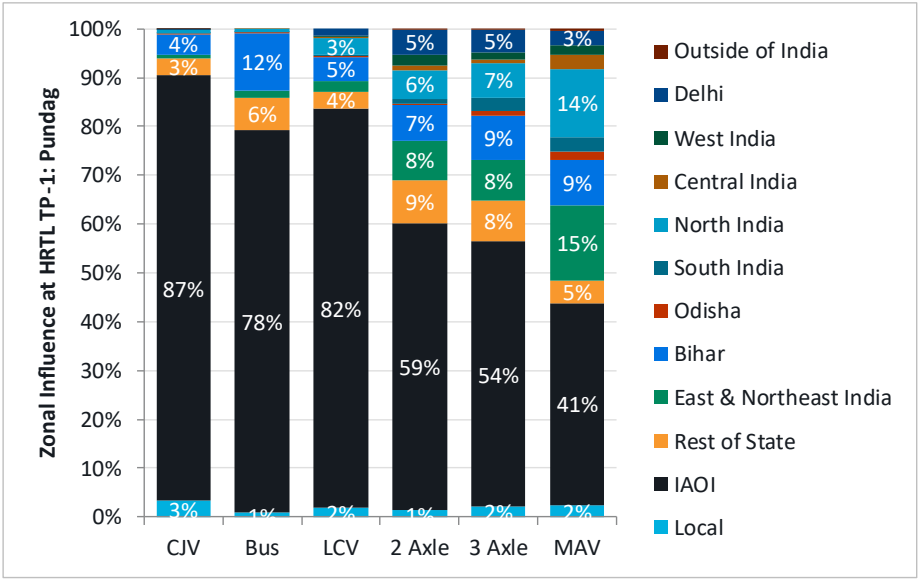
Zonal influence

3.24 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence[11] at each toll plaza of each Asset, based on zonal aggregation listed in the previous sub-section. it should be noted that zonal influence is analysed on trip ends and not trips.

3.25 From the figures below, it can be observed that the plaza has high share of IAOI trips with 41% for MAVs and 87% for CJVs. 3A and MAV trips are comparable with higher proportion of local trips given the presence of coal mines and large-scale industries close to the Asset. We see a high share of Bihar and East and Northeast India in 2A, 3A and MAV zonal influence. The share of both North India as well as East and Northeast India rise to ~15% each for MAV. This shows that the Asset serves to connect the eastern part of the country to the northern parts. The neighbouring state of Bihar also serves as a major influence across vehicle categories with 5-9% of goods vehicles influenced by it.

[11] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad would be 50% since one end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

Figure 3.5: Zonal influence at TP1 Pundag



Source: Steer analysis of OD data

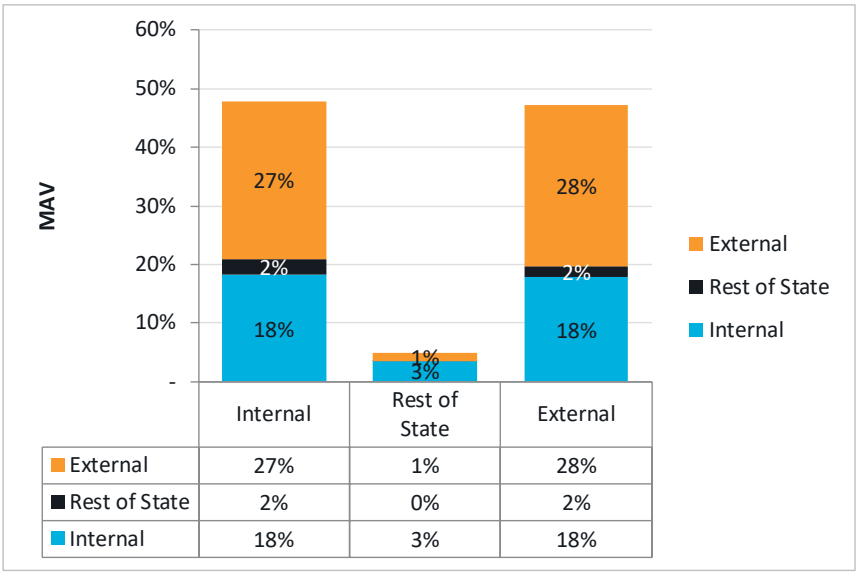
Internal External analysis

3.26 Internal-External analysis helps in identifying the trips which have both the origin and destination on the Asset (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e., lying on the Asset or in the "immediate area of influence", 'Rest of State' zones are those origins and destinations aggregated as "Rest of State" in the zonal analysis while 'External' zones are all other zones.

3.27 Figure 3.6 below show the distribution of trips based on these categories. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation.

3.28 We see that I-I, I-E and, E-I trips dominate for MAV category suggesting Jharkhand as a significant origin of truck traffic. Presence of big industries near the Asset as well as in the state can be the reason behind this high number of Internal trips. This proportion also suggests that the trips are local in nature. 28% external-external trips validates the assertion that the Asset is a major connector for locations in East and North East of India with North India.

Figure 3.6 Internal-external distribution at TP1 Pundag



Source: Steer analysis of OD data

Commodity distribution

3.29 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the table below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3.11: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane,Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, ghoat, cow,cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread,cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids,Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN

Commodity Description	Code	Combined codes used for charts
Raw Wood,Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, House hold items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

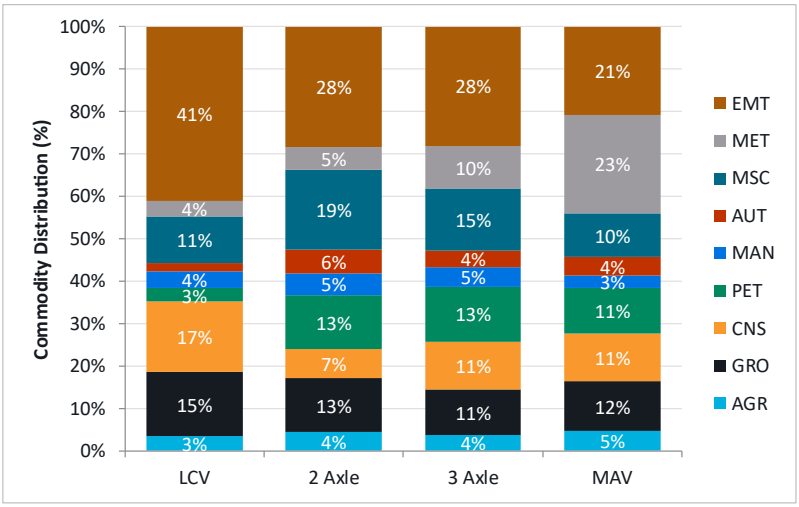
Source: Steer analysis

3.30 The following figures present the commodity distribution for goods vehicles at the toll plaza at the total level and also split by direction, towards Ranchi (Figure 3.9) and towards Hazaribagh (Figure 3.8). As observed during our site visit, a proportion of the vehicles were travelling empty. Those not empty, were carrying manufactured goods and related commodities (10-19%) across all goods vehicles.

3.31 For MAVs, metals and related commodities were observed with the highest share of 23%. Steel plants at Bokaro and Jamshedpur can be the main reason behind high shares. As the vehicle size decreases, the proportion of metal commodities being transported also decreases.

3.32 Agriculture, groceries and related commodities dominated the LCV category. Agricultural and groceries made up 18% of the total share. LCVs also carry 17% construction materials. The share of agriculture and grocery decreases slightly for 2A, 3A and MAV but hovers between 15 and 17%. 13% of 2A trucks and 13% of 3A trucks are also observed to transport petroleum products. The Asset also sees traffic of petroleum products, ~10% of MAV, in both directions carry these products.

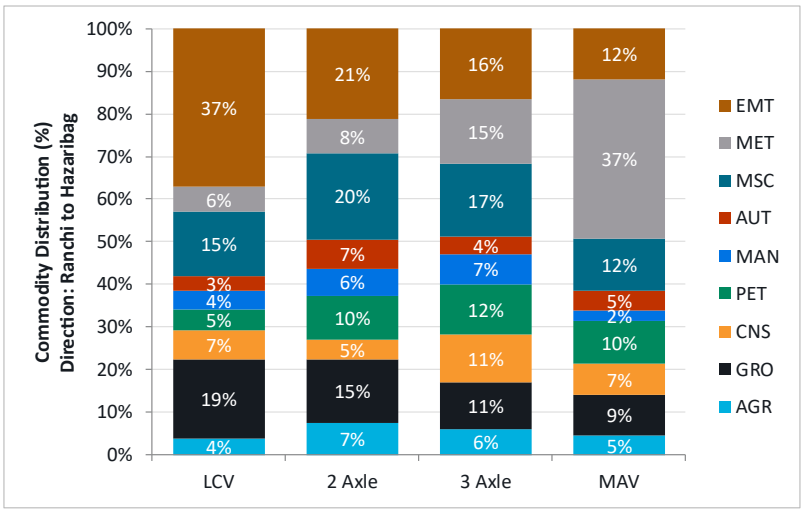
Figure 3.7: Commodity distribution at TP1 Pundag



Source: Steer analysis of OD data

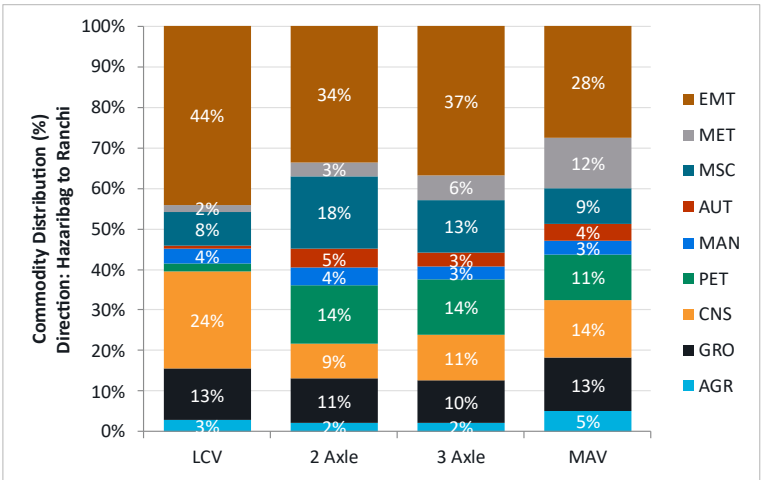
3.33 Considering these trends by direction (shown in the following two figures), a much greater share of vehicles is travelling empty towards Ranchi than those travelling in the opposite direction towards Hazaribagh. For the LCV category, the share of agriculture + groceries drops from 23% to 16% when the origin direction changes from Ranchi to Hazaribagh indicating the production/consumption balance between these two cities, Ranchi being much larger in population. Also, MAV have higher share of metals travelling towards Hazaribagh as areas such as Jamshedpur are located south of Ranchi. Manufactured commodities have slightly higher share towards Hazaribagh.

Figure 3.8: Commodity distribution at TP1 Pundag (Towards Hazaribagh)



Source: Steer analysis of OD data

Figure 3.9: Commodity distribution at TP1 Pundag (Towards Ranchi)



Source: Steer analysis of OD data

Trip length analysis

3.34 Trip-length distribution provides the distance-based profile of various vehicle types. This aids in validating assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into 5 groups – local (0-100 km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance (+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[12]

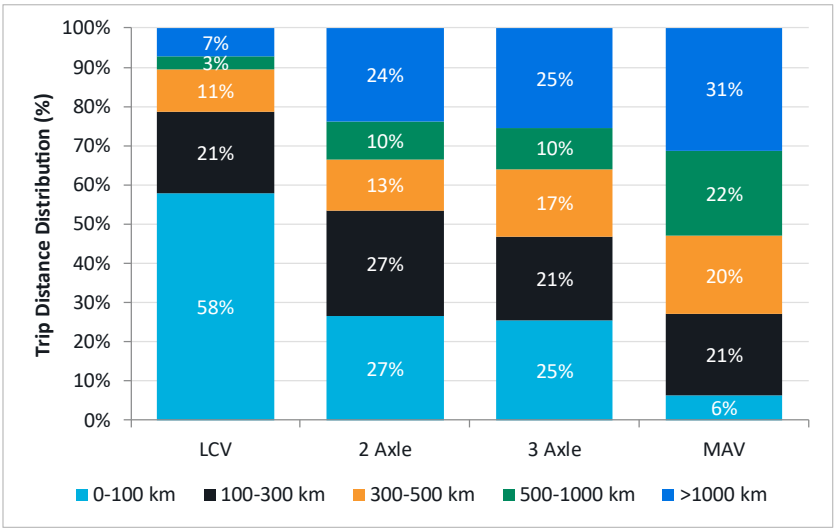
3.35 As observed in the Internal-External analysis, trips at the toll plaza are largely influenced by both internal or local zones and external zones. The same is validated by Figure 3.10, as the share of local and short-distance trips (up to 300 km) is considerably high in all the categories, ranging from 27% for MAVs to 79% for LCVs.

3.36 Medium-distanced trips gain greater share as the vehicles grow heavier from 11% in LCVs to 20% in MAVs. In terms of long-distance and very-long-distance trips (greater than 500 km), LCVs do not have any significant proportion, as has been seen across other Asset around the country. As expected, MAVs show a much higher share, up to 22% for 500-1000 km and 31% for >1000 km trips. These vehicles are travelling largely between East and North India.

3.37 We have seen in Figure 3.5 how the Asset serves to connect these two parts of the country; the trip length analysis also validates this assertion by showing such distribution. It is to be noted that for the category MAV, the proportions of E-E trips in Internal – External Analysis, East-Northeast and North India influence in Zonal Analysis, and >1000 km trips in the Trip Length Analysis are very similar, ranging around ~30%.

[12] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: https://developers.google.com/maps/documentation/distance-matrix/start. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3.10: Trip length distribution at TP1 Pundag



Source: Steer analysis of OD data

Table 3.12: Average trip length (in km)

	LCV	2 Axle	3 Axle	MAV
Average trip length	234	545	574	768

Source: Steer analysis of OD data

Conclusions

3.38 In summary, as per the traffic volume data, CJVs contribute to the highest share in traffic around 67% followed by MAVs with 16% share. Even though CJVs make up for the highest share in traffic, MAVs are the biggest revenue contributor.

3.39 Both, CJV and MAV category vehicles, predominantly buy single tickets. However, with the onset of strict FASTag implementation, the share of single journeys has reduced across the categories as the share of return journey tickets increased especially in CJV's. For MAVs Single, tickets have remained dominant, holding a share of close to 90% across the months at the plaza. However, with the ongoing demand for construction material in the region with alternate NH320 construction driving daily local travel the share of return ticket in heavy vehicles has increased as witnessed in MAV in FY26YTD with 8% increase. The proportion of local personal tickets as well as exemptions has remained constant over the months. The Asset observes almost negligible non-paying traffic.

3.40 The TVC data shows minor variation on the TMS data, where at a total level, the TVC data is approximately 3% higher than the TMS data. However, the difference is negligible for the larger revenue generating categories (3A, MAV, and OSV combined), 0.4% at a total level. This gives us confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

3.41 The OD analysis indicates that in terms of zonal influence, the Asset has high share of traffic originating/ending at IAOI areas and hence, the Asset serves largely local traffic, more so for CJVs: Local and IAOI zonal influence ranges from 43% for MAVs to 90% for CJVs. The key commodities transported on the Asset include minerals, groceries, and

manufactured products, which when combined, make up around 54% of the commodity share for MAV traffic. Agricultural products also contribute an average 9% share across all goods vehicle's categories.

3.42 When considering the internal and external distribution, it is observed that healthy mix of internal and external traffic is observed. I-I and I-E trips dominate for 3A and MAV categories suggesting Jharkhand as a significant origin of truck traffic. Since, majority of the traffic is attributed to Internal zones, it can be inferred that the traffic is greatly local in nature, and the growth of traffic is directly proportional to the growth of state. In terms of through traffic, 28% of MAVs have both ends of trip external to the Asset, in terms of trip length analysis this makes up for 31% of trips traveling >1000 km. These vehicles are travelling largely between East and North India.

3.43 In summary, analysing the vehicle share on the Asset and understanding the OD analysis, CJVs are the dominant vehicle class and as found by the zonal influence, internal-external and trip length analysis and are greatly contributing to the local traffic. Heavy goods vehicles, although accounting for 16% of the traffic, are the largest revenue generator for the Asset.

4 Socio economic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the roads are in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions in the region where the Asset is located and the country. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Asset.

4.2 In turn, the change in the relative competitive position of the Asset (and thus of the traffic capture they can achieve) derives from how the relative offer for the roads changes, i.e. the service offered, and the tolls charged on the project roads, in comparison to that on competing roads; and whether any competing road facilities are planned.

4.3 In this chapter, we have assessed the trends of the above growth drivers, as indicators of the socio-economic conditions in the regions surrounding the Asset.

Population Growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in Jharkhand state, where the Asset is located.

National level

4.5 The total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of Population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State level

4.6 Table 4.2 below shows the evolution of population in Jharkhand state compared to that of the country. Overall, as can be seen, the trend observed at the country level is also noticeable at the state level, namely, a move towards urban agglomeration with the growth in rural population being slower than that of urban population. Further, the state has grown at a higher rate than the country average, in the decade between 2001 and 2011.

Table 4.2: Population Growth in India (2012-2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Jharkhand	33.3	39.7	1.5%
India	1,210	1,395	1.2%

Source: Ministry of Statistics and Program Implementation estimates

4.7 Due to the complexities of the patterns in which urbanisation takes place, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide a socio-economic context of the trend in the region in which the Asset is located.

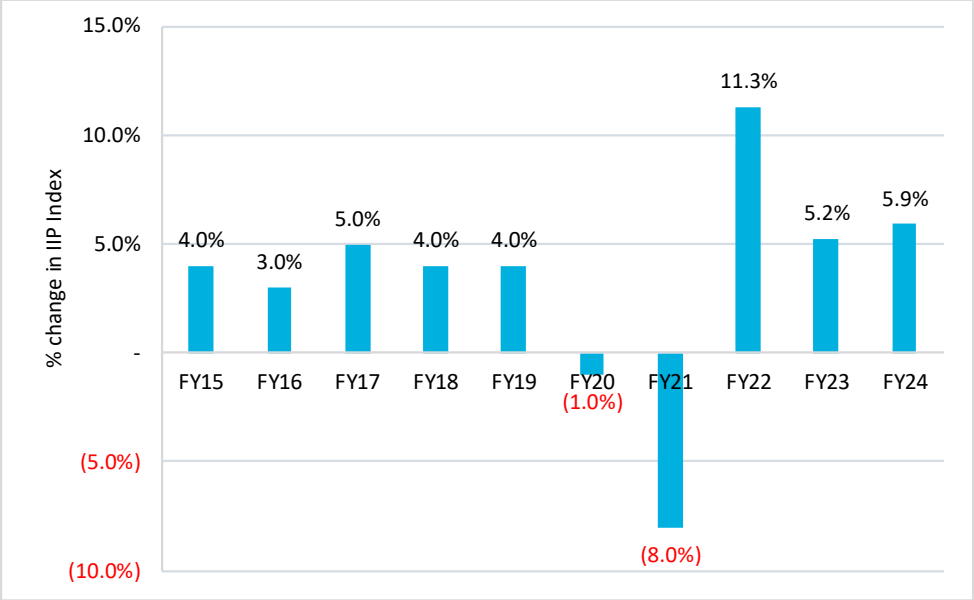
Economic Indicators

Industrial Production

4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.9 As seen in Figure 4.1 below, at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Since then, however, with the gradual opening up of economy, and recovery in consumption demand, industrial activity also recovered with time with IIP recording growth of 5% in FY23 and 6% in FY24.

Figure 4.1: Annual growth – Index of Industrial Production



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.10 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle ownership

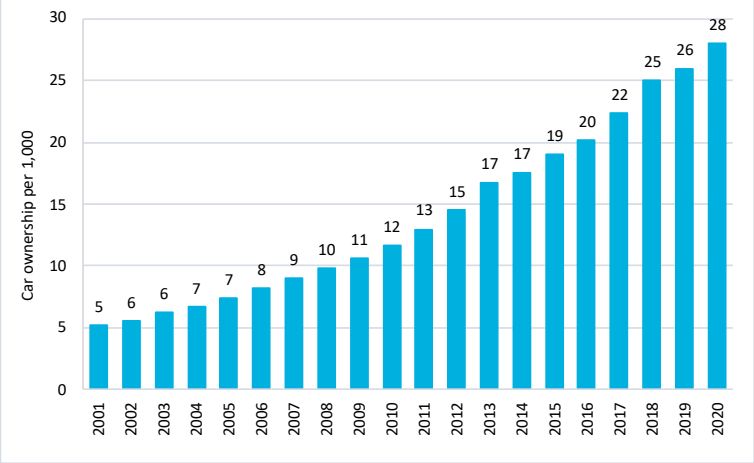
4.11 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[13]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4.2 below, between 2007-17, number of cars per 1,000 people has more than doubled and increased at a CAGR of about 11%.

4.12 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[14]

[13] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[14] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4.2: Car Ownership in India per 1,000 population

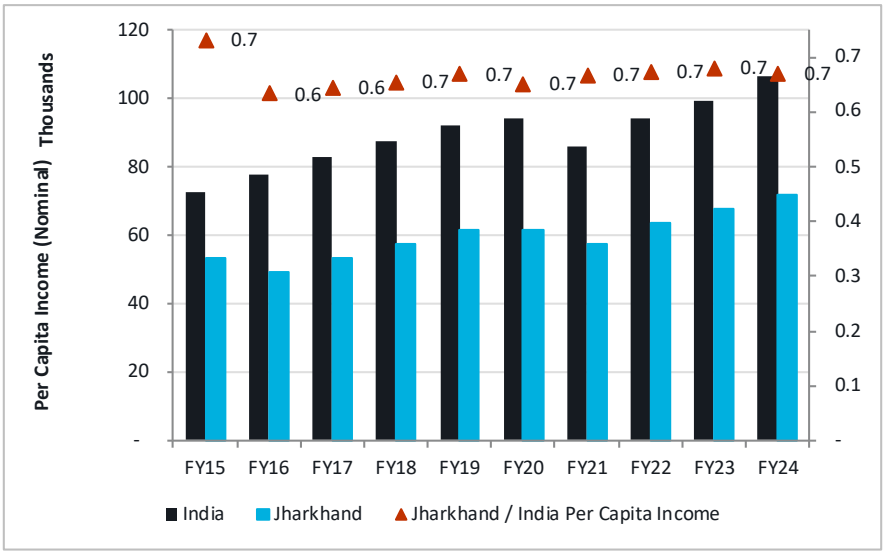


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.13 The state of Jharkhand where the Asset lies has a per capita income significantly lower than that of India as a whole. It has been hovering at nearly 67% of the national average for the past few years (FY22-24). Thus, the state is at a very early stage of consumption curve. Going forward, we therefore expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

Figure 4.3: Per Capita Income



Source: Steer analysis of MoSPI data

4.14 However, given the difficulty in obtaining granular district level PCI data it is not advisable to use this as a growth driver. Also, the long-term forecast for PCI is not available we therefore refrain from using it to forecast traffic.

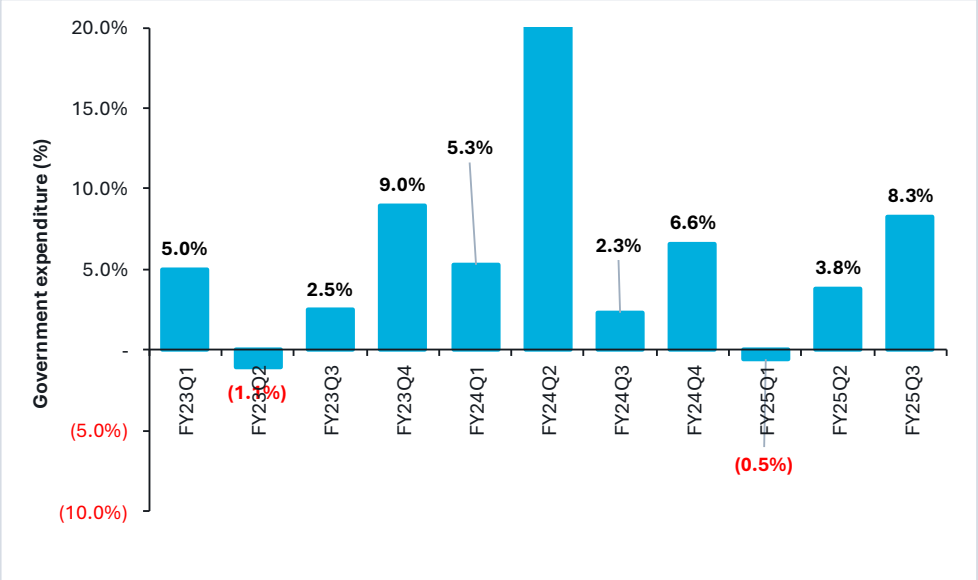
Economic growth

India's Performance

4.15 India's economic performance has shown signs of recovery in the recent months despite a slowdown experienced in H1FY25, as the latest Second Advance Estimates (SAE) released show the GDP growth in FY25 to be 6.5% - which is lower than the 9.2% growth observed in FY24 [15].

4.16 This deceleration can be attributed to a downturn in industrial output – specially manufacturing, electricity, and mining (as shown in Figure 4-6 below) – along with a decline in government capital expenditure in FY25 (presented in Figure 4-4 below). Contributing factors also include the impact of the 2024 general elections on central infrastructure spending, state-level fiscal constraints and rising global uncertainties such as Russia-Ukraine war and Gaza-Israel conflict which have had impact on global supply chains.

Figure 4-4: Government final consumption expenditure

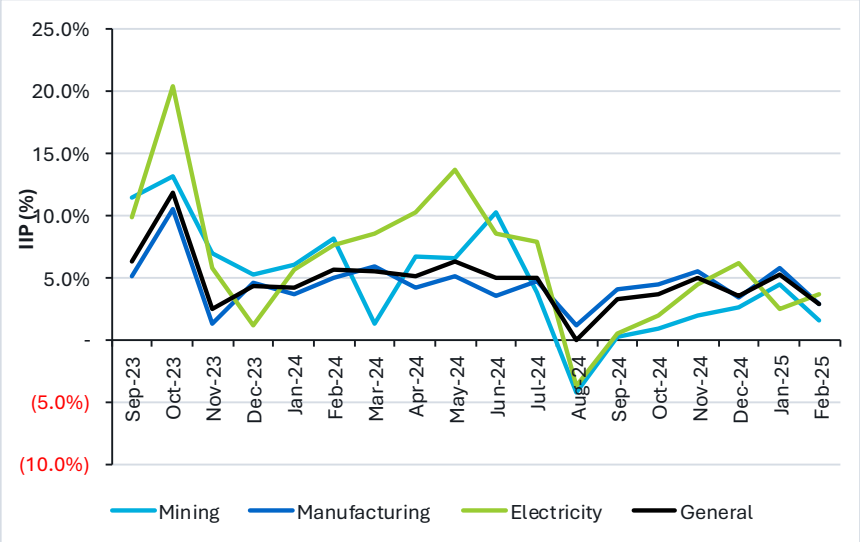


Source: Steer Analysis of MOSPI data

4.17 Weaker industrial activity, as reflected in lower IIP (Figure 4-5) and GVA contribution (Figure 4-6), directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. At the same time, muted government capex had an influence on both construction-linked activity and industrial output which impacted the commercial traffic growth carrying construction material and industrial goods. Export oriented corridors across the country have also seen muted traffic performance in FY25 due to global supply chain disruptions and the Red-Sea crisis, with exported commodities like manufactured goods, marble, and ceramics experiencing declines as well.

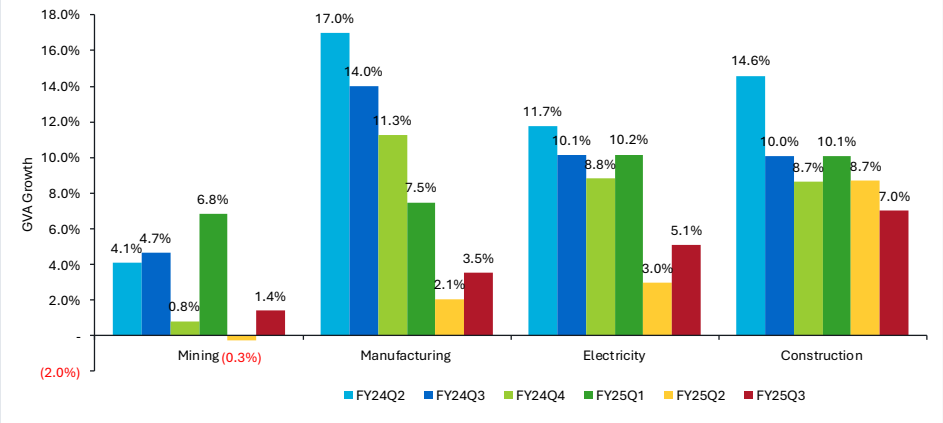
[15] Press Release: SAE of Annual GDP FY25 (Press Information Bureau)

Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI data

Figure 4-6: Industrial components of GVA



Source: Steer Analysis of MOSPI data

GDP and GSDP Growth

4.18 Over the period FY12-FY24, the Indian economy grew at a CAGR of approximately 6% aided by growth in the tertiary sector which grew at a CAGR of 6.9% over the same period

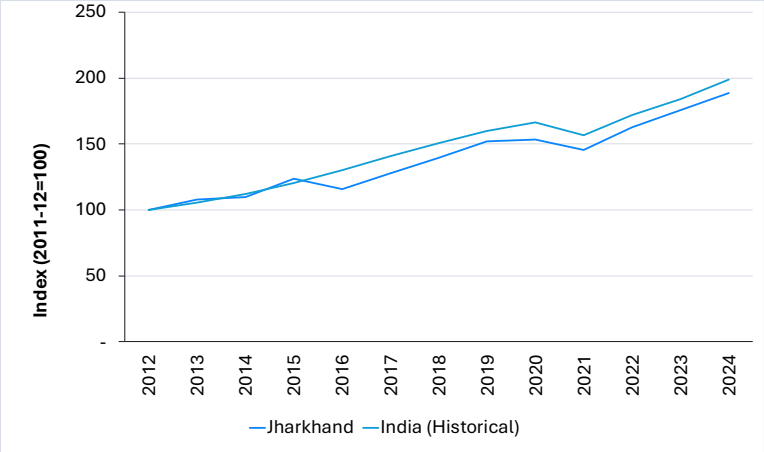
4.19 The Asset lies in the state of Jharkhand. Jharkhand is one of the richest mineral zones in the country with a share of around 40% of India's mineral resources and occupies the first position in the presence of coal reserves.[16] Due to its large mineral reserves, mining and mineral extraction are the major industries driving the state economy. The state houses the country's oldest and one of the largest steel plants, operated by the Tata Steel, in Jamshedpur. Another important steel plant at Bokaro, operated by Steel Authority of India Limited (SAIL) is also present in the state of Jharkhand. Since Jharkhand's economy is largely dependent upon the mining, the state GSDP growth rate fell rapidly after growing by over 10% in FY15 to -6% in FY16, with the ban on illegal mining. Jharkhand's GSDP (at

[16] Minerals | Government of Jharkhand State

constant prices) grew at a CAGR of 5.4% between FY12-24 and contributed 1.6% to India's GDP in FY24.

4.20 Figure 4.7 below illustrates the evolution of the GSDP of Jharkhand with the national GDP between FY12-24.

Figure 4.7: Evolution of Jharkhand's GSDP and the National GDP



Source: Steer Analysis of MOSPI data

4.21 The official historical GDP and GSDP data for India are released by the Ministry of Statistics and Program Implementation (MoSPI). The GDP forecasts for India are available from various reliable sources such as Oxford Economics and Consensus Economics[17], but state-specific GSDP forecasts are not published by any such sources. To derive state GSDP forecasts, we rely on past trends of the relationship between GDP and GSDP and develop GSDP forecasts as a function of our assumed GDP forecasts[18].

4.22 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.23 Following the discussion in Chapter 4 on the nature of economic activity in the state of Jharkhand, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth on the Asset.

4.24 We have based our forecasts of the GSDP of Jharkhand based on the forecasts of GDP as provided by the Client.

[17] **Consensus Economics - Economic Forecasts and Indicators**

[18] Assuming that the historical long-term relationship between GSDP and GDP sustains over the short-term, we project future growth in GSDP as a function of our GDP growth forecast. We taper the relationship of GSDP growth to converge to GDP growth gradually over the long-term.

National GDP

4.25 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[19]

4.26 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 (as per the SAE) before slowing down to 6.5% in FY25 due to several domestic and external factors.

4.27 Figure 4.8 below shows Client-provided GDP projections for India. The forecast provided expects the Indian GDP to grow at 6.5% between FY25-FY27[20] and gradually tapering down to 5.2% by FY50. The India GDP forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[21] in the short term Going forward, the forecast provided expects the Indian GDP to grow at an average of 6.5% between FY25-FY27, 5.9% between FY31-FY40 and gradually tapering down to 4.9% by FY51, end of concession.

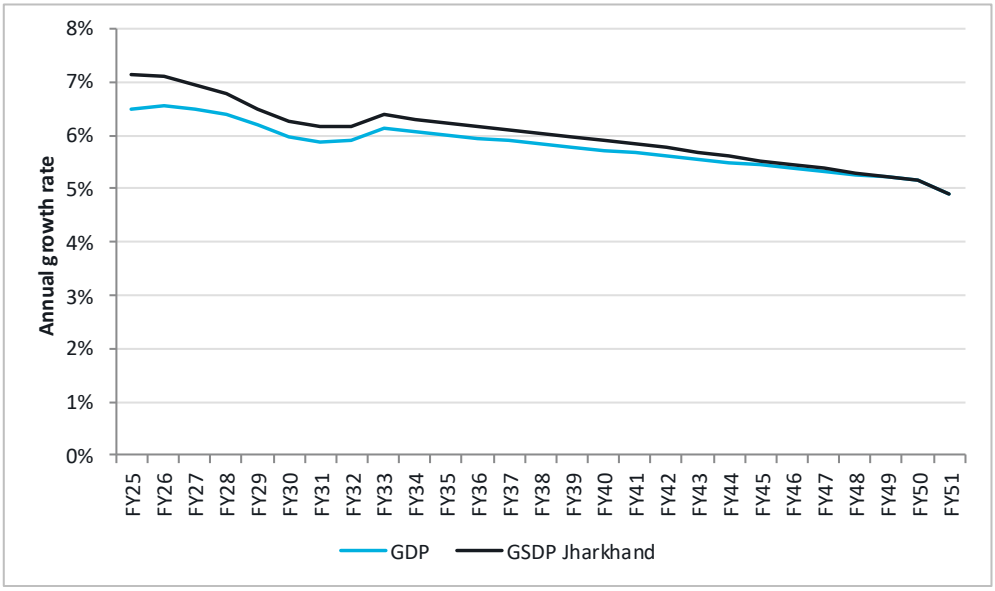
4.28 Since Jharkhand is largely a mineral and manufacturing (iron & steel) dependent economy, the state is largely impacted by the fluctuations in these sectors. During the last decade, the mining industry was badly impacted by bans, new mining policy and change in steel and iron market scenario due to overall economic fluctuations. However, going forward, we expect as Jharkhand grows its economy stabilises overtime with magnitude of these cycles coming down.

[19] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[20] Based on Asia Pacific Consensus Forecasts (December 2024)

[21] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

Figure 4.8: GDP-GSDP forecast



Source: GDP forecast provided by the Client

5 FY26 Base year AADT and Traffic growth Analysis

Introduction

5.1 In this section, we present our approach, assumptions, and estimates for base year AADT and background traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 While comprehensive historical data on the asset is not available, we have access to six years of records. Despite some inconsistencies, this dataset provides a reasonable foundation for analysis. As a result, statistical methods to estimate background growth relationships could not be applied. Instead, we conducted a benchmarking exercise, supported by trip length and origin-destination (OD) analysis, to derive elasticity estimates. These are discussed in detail below.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.5 As described previously in Chapter 3; to establish the base year (FY26) traffic position, we utilized information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

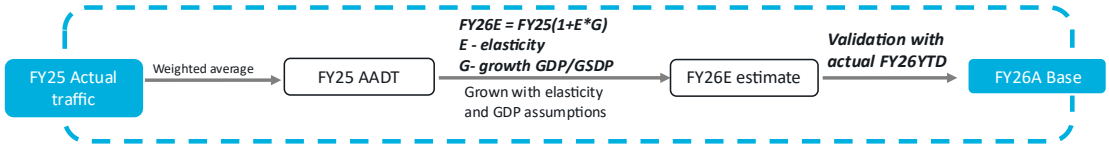
Methodology

5.6 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at estimated FY26 (FY26E).

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April 2025 to September 2025) of FY26 (FY26YTD). The Adopted FY26 AADT (FY26A) is derived by making necessary adjustments to FY25E to reflect the outturn traffic in FY26YTD (adjusted for seasonality).

5.8 The methodology is represented using the below schematic:

Figure 5.1: FY25 Base Estimation methodology



Source: Steer Analysis

5.9 The two key inputs to estimate the base year FY26 traffic are FY25 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.10 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.11 To normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.12 Historical traffic data was available for all toll vehicle categories starting October 2020 up-to January 2025. Therefore, in absence of longer-term historical data for the Asset where FY21 and FY22 are COVID-19 impacted years, we assume FY24 and FY25 to be the normal year which is considered for FY26 base year estimation.

5.13 Table 5.1 presents the FY24 and FY25 average SCF used to estimate the AADT for the Asset's Toll Plaza:

Table 5.1: SCF Values for TP1 Pundag

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.04	1.02	0.97	1.08	1.12	1.13	1.08	0.96	0.92	0.98	0.88	0.95
LCV	0.85	1.30	0.96	1.05	1.09	1.07	1.03	1.04	0.93	0.96	1.09	0.92
Bus	1.09	1.10	1.03	1.04	1.15	1.07	1.01	0.92	0.90	1.02	0.89	0.89
2A	1.06	0.98	1.04	1.04	1.02	1.01	1.03	1.09	1.04	1.08	0.87	0.90
3A	1.01	1.01	1.02	1.05	1.14	1.11	1.02	1.00	0.94	0.97	0.89	0.93
MAV	1.08	1.09	1.07	1.10	1.09	1.07	1.04	0.99	0.92	0.92	0.88	0.90

Source: Steer analysis based on FY24 and FY25 data

Adopted base estimates

6.1 Based on the above methodology and inputs, the adopted base for the Asset has been shown below:

Table 5.2: Adopted base estimates: TP1 Pundag

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	10,928	11,949	12,551	14.5%
LCV	363	390	386	6.4%
Bus	797	896	964	20.8%
2A	1,023	1,026	1,041	2.4%
3A	555	553	580	0.6%
MAV	2,557	2,687	2,894	14.0%
OSV	2	2	2	-
Total	**16,224**	**17,503**	**18,417**	**13.5%**
PCUs	**28,245**	**30,099**	**31,805**	**12.6%**

Source: Steer analysis: FY25 actual full year, FY26YTD includes 6 months of FY26, FY26A is adopted base for FY26.

5.14 As seen from Table 5.2, there is estimated to be a 12.5% PCU growth in the adopted FY26 base (FY26A) over FY25. All vehicle categories showcase healthy growth over FY25.

5.15 In the case of LCV and Bus we observe a change in the categorization of minibuses. Prior to FY25 the classification was based on "Gross Vehicle Weight" which has been changed to passenger-based system resulting in tolling of minibuses into the bus category.

5.16 The continued high growth in both PCU and across vehicle categories is driven by temporary traffic shift to the Asset post Jun'23 with the construction on Ormanjhi-Gola-Bokaro section of NH 320. However, we believe this shift is temporary and not a part of the Asset's traffic hence, necessary adjustments in forecast and segmentation are made as reflected later in this report.

Estimation of background elasticities

Overview

5.17 For brownfield Asset, where sufficient historical traffic evolution is available, it is common practice to use regression model analysis to determine the relationship, expressed as elasticity, between traffic growth and key socioeconomic drivers. This relationship is then applied to assumptions of future socio-economic evolution to estimate future traffic growth.

5.18 As for the Asset under consideration, a consistent historical trend was not available. Therefore, we undertook a benchmark to estimate our forecast elasticities, Sources used included our understanding of the Asset, the elasticities used during the bid for TOT3 package by the client and the subsequent lender study that was undertaken by the Client. We have also undertaken a regional benchmarking against Asset having similar traffic profiles, which give us reasonable confidence the relationships proposed.

5.19 In terms of selection of growth drivers for vehicle types, in general we have assumed state GDP as the key driving factor for the passenger traffic given this traffic is generally driven by the local economies of the cities and state containing the Asset. The heavier commercial vehicles generally ply long-distance, and the underlying growth is governed by the general economies of several states or nation as whole.

5.20 The below table presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.3: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP Jharkhand
Car		100%
LCV		100%
Bus		100%
2A	100%	
3A	100%	
MAV	100%	

Source: Steer

5.21 Further to developing estimates for FY25 AADT, the Asset has operational history between FY22 and FY25, proving us four years of traffic growth on the Asset. The table below summarises the volume growth across each of the vehicle categories. For this comparison we have normalised the FY22 AADT for COVID19 by adopting seasonally corrected H2FY22 as the FY22 normalised (FY22N), as can be seen in Table 5.4 below

Table 5.4: Passenger and Commercial growth with normalised FY22

	FY22N	FY23	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	9,618	8,935	9,879	10,928	12,551	6.9%
LCV	511	445	488	363	386	(6.8%)
Bus	570	583	594	797	964	14.0%
2A	629	681	845	1,023	1,041	13.4%
3A	460	480	529	555	580	6.0%
MAV	1,639	1,690	1,950	2,557	2,894	15.3%
OSV	1	2	2	2	2	-
Total	**13,427**	**12,814**	**14,287**	**16,224**	**18,417**	**8.2%**
PCUs	**21,545**	**21,209**	**23,876**	**28,245**	**31,805**	**10.2%**
Passenger	10,187	9,518	10,472	11,725	13,514	7.3%
Commercial	2,728	2,850	3,324	4,135	4,515	13.4%

Source: Steer Analysis; Note; Passenger includes CJV and Bus traffic whereas Commercial includes 2A/3A/MAV traffic

5.22 Asset is growing at 10% from FY22N to FY26 at the PCU level, whereas commercial and passenger is growing at a CAGR of 13.4% and 7.3% respectively. Passenger traffic, which includes CJV and buses, is projected based on the state's GSDP, as the growth is driven by the regional local economy. Meanwhile, commercial traffic (2A/3A/MAV) is growing in relation to GDP, as the Asset lies on the NH20 corridor, which primarily facilitates north-south movement between Bihar and southern West Bengal and south. Any growth observed on the Asset is influenced by regions along this route.

5.23 The sections below detail out the reasoning for selection of respective growth driver(s) for each vehicle category.

5.24 It must be understood that, in recent historical traffic performance across national highway corridors, a notable trend has emerged: there is a discernible shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in the Assets FY24 and FY25 performance as well. Consequent of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

Table 5.5: Elasticity Recommendations for the Asset

Vehicle Category	Proposed	Growth Driver	Comments
CJV	1.0	Jharkhand GSDP	The cars predominantly commute between Ranchi, Ramgarh, Hazaribagh and other local destinations along the Asset. With the increase in urbanisation and trip generators along the Asset, cars are expected to grow faster in the near future, therefore we have assumed a 1 relationship to GSDP for cars.
Mini LCV	0.6	Jharkhand GSDP	As discussed in chapter 3, the trip lengths for Mini LCV and LCV category (up to 70%) are predominantly short distance <300Km and caters to local demand. Hence, elasticity of 0.6 is assumed which is higher than LCV's.
Buses	0.5	Jharkhand GSDP	Buses are local and interstate, around 85% of the buses have one end of their trip in Jharkhand, while 10% of trip have one end of their trip in Bihar. It seems that buses currently are serving local intercity demand. As these cities grow, the buses are also expected to respond to the increasing demand however only at a 0.3 relationship to GSDP.
LCV	0.4	Jharkhand GSDP	As discussed in chapter 3, the trip lengths of LCV and 2A category (up to 70%) are predominantly short distance <300Km. Which confirms the understanding that the movements cater to local demand. Considering the above observations, and our experience across other toll roads in the region, we believe that elasticities of 0.4 and 0.7 with respect to state GSDP and GDP for LCV and 2As resp. are considered reasonable.
2A	0.7	GDP India	
3A	0.3	GDP India	The Asset observes traffic between Haryana, Rajasthan, Jamshedpur, as well as the Bokaro Steel Plant. 55% of all MAVs cover >300 Kms, and ~30% cover >1000 Kms journeys. The long-distance character, in addition to the proximity of steel plants catering to nation-wide demand shape the critical link between the Asset and the national economy. We assume this relationship to influence a healthy growth profile for traffic on the Asset in the future as well.
MAV	0.9	GDP India	

Source: Steer Analysis

6 Forecasts: Network overlays and forecasts

Introduction

6.1 Following the discussion on our forecast of background growth rates in the previous chapter, this chapter first covers the potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years.

Analysis of potential network/developmental impacts

6.2 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed in earlier Chapters, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

Four laning of NH320

6.3 The alternate route NH320 for Dhanbad-Bokaro-Ranchi trips, passing via Ormanjhi and Gola is currently undergoing upgradation to 4 lanes. This stretch is being upgraded in two packages with construction starting in late June 2023 with a 24-month duration of work. Given the ongoing construction on the highway, there has been a ban on heavy commercial vehicles using the road, which has led to a proportion of the traffic to divert to the Asset Road. This diverted traffic is expected to return to the alternate road when the construction activity is completed, and the ban is lifted.[22]

6.4 Basis the conversations with the toll plaza manager and secondary research, the construction of Gola – Oramanjhi stretch is expected to be completed by Jun'25. However, the remaining stretch of the NH320 i.e Gola – Bokaro is expected to be completed by Dec'25. Given this impact we expect a large share of the additional traffic to shift back to NH320 starting FY27, with full impact realising by FY28.

6.5 The following table shows the extent of the impact of the completion of four laning on NH320.

[22] ttps://www.livehindustan.com/jharkhand/bokaro/story-villagers-protest-nh-320-road-construction-in-lepo-mauja-demand-underpass-201741001945578.html

Table 6.1: Impact of ongoing four lane expansion of NH320 (Oramanjhi Gola Bokara section)

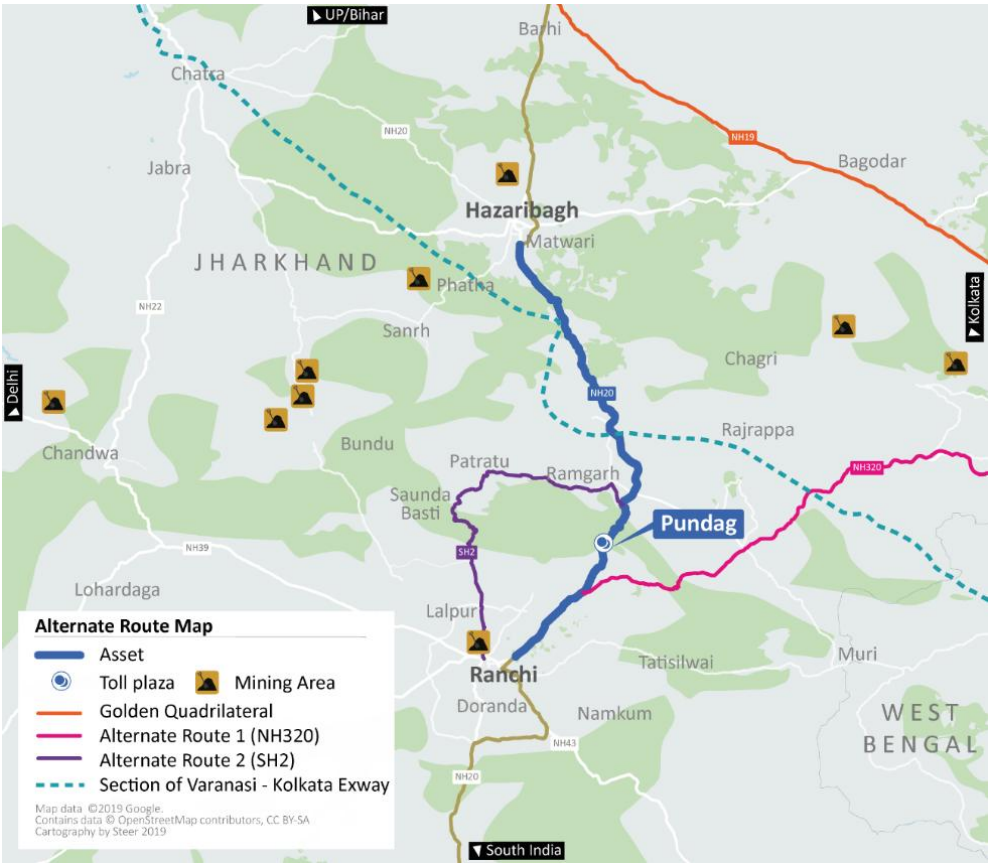
Vehicle category	FY27	FY28 onwards
Staging	*80%*	*100%*
CJV	(6.8%)	(8.6%)
Bus	(13.5%)	(16.9%)
2A	(12.2%)	(15.2%)
3A	(5.1%)	(6.3%)
MAV	(20.3%)	(25.3%)

Source: Steer analysis

Varanasi Kolkata Expressway

6.6 The NHAI is currently building a greenfield 4/6 lane access-controlled expressway between Varanasi and Kolkata with a spur to Kharagpur. So far 13 packages for the Asset in states of Uttar Pradesh, Bihar and Jharkhand have been awarded. The above-mentioned packages were awarded in March 2023. The expressway section in Jharkhand covers 203km across four districts, costing around Rs 10,000 crore. Designed for speeds of 120 km/hour, it includes measures like wildlife underpasses and interchanges. This expressway will intersect with the Asset at Bongabar, north of Ramgarh. It is expected to have some impact on the Asset once complete, as it can act as a feeder route providing access to Ranchi and Hazaribagh from the west and east respectively. Its impact is illustrated in the below table.

Figure 6.1: NH320 and Varanasi Kolkata Expressway



Source: Steer cartography using OpenStreetMap data

Table 6.2: Varanasi-Kolkata Expressway Impact

Vehicle category	FY28	FY29	FY30 onwards
Staging	*25%*	*75%*	100%
CJV	0.3%	0.8%	1.0%
2A	0.3%	0.8%	1.0%
MAV	0.3%	0.8%	1.0%

Source: Steer analysis

6 laning LOS improvement

6.7 As per the concession agreement as soon as the Asset hits 40,000 PCU's the Asset is eligible for capacity augmentation. The PCU level need to be maintained above the 40,000 levels for three consecutive years, and two years will be earmarked for DPR preparation. After that a three-year period is factored in for construction, during which the Year one of construction toll rates will be maintained at 75% and will remain flat at 75% for the duration of construction. After the construction is over the toll rates will be calculated as normal, as they should have been in that year.

6.8 On the Asset, it is expected based on our forecasts that traffic volumes will go beyond the 40,000 PCUs mark in FY35, thus breaching the Level of Service requirements set out in the concession agreement. We expect the level of service on the Asset to improve post capacity augmentation by FY43. To calculate this impact, we have employed a GJC based approach.

6.9 A comparison of generalised journey costs (GJC) provides how different elements of cost and time affect traffic. This comparison was done for both light and heavy vehicles. Lower GJCs correspond to higher induced traffic. Based on Steer's studies and research in India, we have found that for every 1% reduction in the GJCs, the traffic increases by a factor of 0.3. We then applied the difference of GJCs to the elasticity of 0.3 to get net influence on the traffic.

6.10 The improvement in GJC is translated into the impact on that share of local + IAOI OD movements using a linear inverse relationship. Therefore, the impact of improvement in level of service is applied on the corresponding shares of traffic, which were extracted from OD data.

6.11 The table below shows the extent of the LOS impact and the expected timelines of the impact on the Asset.

Table 6.3: Impact of 6 laning LOS improvement

Vehicle category	FY43 onwards
CJV	2.3%
LCV	2.0%
2A	1.6%
3A	1.4%

Vehicle category	FY43 onwards
MAV	0.9%

Source: Steer analysis

Revenue forecasting assumptions

6.12 To forecast the revenues for a particular financial year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While "trip factors" provide the conversion factor to the former, i.e., traffic (trips) to tickets sold, "toll segmentation" provides the latter i.e., the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Toll segmentation

6.13 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles.[23]

6.14 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
% CJV using Annual pass	5%	9%	11%

6.15 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.16 In FY26, the share of CJVs using the Annual Pass is projected at **10%** (on an annual basis) with a March 2026 estimate of around **24**%, which from FY27, expected to stabilize at March'26 levels.

Table 6.4: Toll segmentation for FY26 onwards

Ticket type	CJV FY26	CJV FY27	Mini LCV	LCV	Bus	2A	3A	MAV
Single	25%	20%	29%	42%	8%	64%	67%	86%
Return	47%	37%	53%	51%	91%	34%	30%	14%

[23] Annual Pass

Ticket type	CJV FY26	CJV FY27	Mini LCV	LCV	Bus	2A	3A	MAV
Monthly	-	-	-	-	-	-	-	-
Local commercial	2%	2%	2%	5%	1%	0%	4%	0%
Local personal	7%	7%	6%	1%	1%	2%	1%	-
Exemption	10%	10%	10%	1%	1%	2%	1%	0%
Violation	-	-	-	-	-	-	-	-
Annual Pass	10%	24%	-	-	-	-	-	-

Source: Steer analysis of Client TMS data; ticket segmentation for all vehicle categories other than CJVs are from FY26 onwards

6.17 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.5 presents the Annual pass compensation computed for the toll plaza.

Table 6.5: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY28	FY33	FY38	FY43	FY51
Pundag	4.5	12.1	21.1	35.6	60.3	130.5

Source: Steer Analysis

Trip factors

6.18 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY26YTD data available and listed in the table below:

Table 6.6: Trip factors at TP1 Pundag

Forecast	CJV/ Mini LCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	14	46	50	50	45	45
Local commercial	1	17	1	1	1	1
Local Personal	20	-	-	-	-	-

Source: Steer analysis of Client TMS data

Toll evolution

6.19 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.20 We have used actual toll rates from the FY26 toll notifications and FY26 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the

Client's WPI forecasts, as shown in the table below. These forecasts provided by the Client expect the Indian WPI to grow at an average of 4.2% between FY25-FY51. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client.

Table 6.7: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: Client inputs used for WPI FY27 onwards.

Revenue reconciliation

6.21 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a daily level for the Asset. To reconcile we have used the FY26YTD segmentation, FY26YTD AADT and compared it with the reported revenue for the year. The exercise was undertaken at an annual level. The comparison, as shown in the table below, depicts the modelled revenue and the reported revenue and the difference between the two is within 0.1%, this validates the assumptions around segmentation and trip factors used for estimating forecasting revenue.

Table 6.8: FY25 Revenue Reconciliation AADC (INR lakhs/daily)

Modelled	Reported	Delta
33.88	33.9	(0.01%)

Source: Steer comparison between modelled and reported revenue

Traffic and Revenue forecasts

6.22 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the forecast period for the Asset. The table below presents the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix B presents the AADT and revenues for the forecast period.

Table 6.9: Final traffic forecast for TP1 Pundag

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	11,306	11,836	16,175	21,819	29,688	44,930
Mini LCV	1,245	1,349	1,623	1,947	2,312	2,972
Bus	964	857	1,000	1,164	1,344	1,658
LCV	386	407	461	521	596	705
2A	1,041	967	1,198	1,470	1,819	2,431

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
3A	580	565	618	675	745	844
MAV	2,894	2,426	3,189	4,139	5,371	7,783
OSV	2	3	3	5	6	8
AADT	**18,417**	**18,410**	**24,268**	**31,738**	**41,880**	**61,332**
PCUs	**31,805**	**30,121**	**38,977**	**50,097**	**64,893**	**93,145**

Source: Steer analysis

Table 6.10: Traffic CAGR (%) for TP1 Pundag

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	2.3%	6.4%	6.2%	6.4%	5.7%
Mini LCV	4.1%	3.8%	3.7%	3.5%	3.5%
Bus	(5.7%)	3.1%	3.1%	2.9%	2.2%
LCV	2.7%	2.5%	2.5%	2.7%	2.4%
2A	(3.6%)	4.4%	4.2%	4.4%	3.5%
3A	(1.3%)	1.8%	1.8%	2.0%	1.5%
MAV	(8.4%)	5.6%	5.4%	5.3%	4.0%
OSV	5.8%	5.4%	5.4%	5.1%	5.2%
AADT	**(0.0%)**	**5.7%**	**5.5%**	**5.7%**	**4.9%**
PCUs	**(2.7%)**	**5.3%**	**5.1%**	**5.3%**	**4.4%**

Source: Steer analysis

Table 6.11: Revenue forecast for TP1 Pundag (INR crores) including Annual Pass Compensation revenue for CJV

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	37.6	42.8	74.3	124.8	212.0	458.4
Mini LCV	4.1	4.9	7.5	11.1	16.5	30.3
Bus	11.9	11.5	16.9	24.5	35.4	62.7
LCV	2.4	2.8	4.0	5.6	8.0	13.6
2A	15.0	15.3	23.8	36.4	56.4	108.3
3A	9.2	9.8	13.5	18.4	25.4	41.4
MAV	70.6	64.5	106.4	172.4	280.2	582.5
OSV	0.1	0.1	0.1	0.2	0.4	0.8
Total Revenue	**151.0**	**151.7**	**246.4**	**393.4**	**634.3**	**1,297.9**

Source: Steer analysis

Table 6.12: Revenue growth CAGR (%) for TP1 Pundag

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	6.7%	11.7%	10.9%	11.2%	10.5%
Mini LCV	8.9%	8.8%	8.3%	8.2%	8.3%
Bus	(1.7%)	8.0%	7.7%	7.6%	6.9%
LCV	7.7%	7.3%	7.0%	7.4%	7.2%
2A	0.7%	9.3%	8.9%	9.1%	8.2%
3A	3.2%	6.5%	6.4%	6.6%	6.2%

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
MAV	(4.4%)	10.5%	10.1%	10.2%	8.8%
OSV	10.2%	10.4%	10.2%	9.9%	10.0%
Total revenue	**0.2%**	**10.2%**	**9.8%**	**10.0%**	**9.0%**

Source: Steer analysis

6.23 As presented in the tables above, traffic CAGRs (PCUs) for the traffic forecast (with impacts) on the Asset over the concession period is around 4.4% and corresponding revenue CAGR is around 9%. This growth is majorly driven by both CJVs and MAVs, as discussed in the historical section, this Asset connects major urban settlements of Hazaribagh, Ramgarh and Ranchi and because of which CJVs on the Asset are expected to grow with increasing per capita income levels of the region and are expected to grow at a healthy rate for a longer period, given the low car ownership levels in the state. While for the strong growth of the MAVs can be attributed to the growing industrial landscape in the vicinity of the Asset which includes steel plants, power plants and mining activities.

Target revenues and modification of concession period

6.24 As per the concession agreement, the target revenue should be 15.80 Cr for the month of March 2030 first calculation of target revenue and 38.02 Cr for the month of March 2040 for the second calculation of target revenue. The traffic sampling will be undertaken for a continuous period of 7 days during anytime within 15 days prior to the date on the specified year, previous year and following year. The average thereof will be deemed as 'actual revenue.'

6.25 If the target revenue falls short or exceeds by 20% and 30% for extensions 1 and 2 respectively, the concession period shall be deemed to be modified using the laid-out conditions in the concession agreement. The table below presents the summary of the analysis.

Table 6.13: Target Revenues for Extension 1

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		INR Cr	2029	2030	2031		
HR	Mar-30	15.80	15.00	16.53	18.20	16.58	4.9%

Source: Steer analysis

Table 6.14: Target Revenues for Extension 2

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		INR Cr	2039	2040	2041		
HR	Mar-40	38.02	28.84	30.25	31.72	30.27	(20.4%)

Source: Steer analysis

6.26 We have used the average AADT forecast for target year, previous year and following year as a proxy for 'actual traffic.' We have forecast seasonality of March month to adjust for seasonal trends and arrive at March traffic from AADT traffic, which is then segmented according to the forecast toll segmentation and trip factors and multiplied with respective estimated toll rates to get to a monthly revenue collection.

6.27 As seen from the table above, the difference lies within the 20% and 30% thresholds, no modification of concession period is expected on the Asset.

Upside and Downside cases

Upside and Downside scenario assumptions

6.28 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.29 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.30 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.15: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.31 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.32 The upside case impacts included in forecasts are summarised in below.

Table 6.16: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
6 laning LOS improvement	FY40	+25% of base case	CJV: 2.9%

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
			LCV: 2.5% 2A: 2.0% 3A: 1.7% MAV: 1.1%
Four laning of NH320	FY27*		-
Varanasi Kolkata Expressway	FY28* (25%) FY30 – Full Impact		CJV: 1.25% 2A: 1.25% MAV: 1.25%

Source: Steer analysis; * Same as base case timeline

Impacts-Downside Case

6.33 The downside case impacts included in forecasts are summarised in below.

Table 6.17: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
6 laning LOS improvement	FY46	-25% of base case	CJV: 1.7% LCV: 1.5% 2A: 1.2% 3A: 1.0% MAV: 0.7%
Four laning of NH320	FY27*		CJV: (10.7%) Bus: (21.1%) 2A: (19.0%) 3A: (7.9%) MAV: (31.7%)
Varanasi Kolkata Expressway	FY28* (25%) FY30 – Full Impact		CJV: 0.75% 2A: 0.75% MAV: 0.75%

Source: Steer analysis; * Same as base case timeline

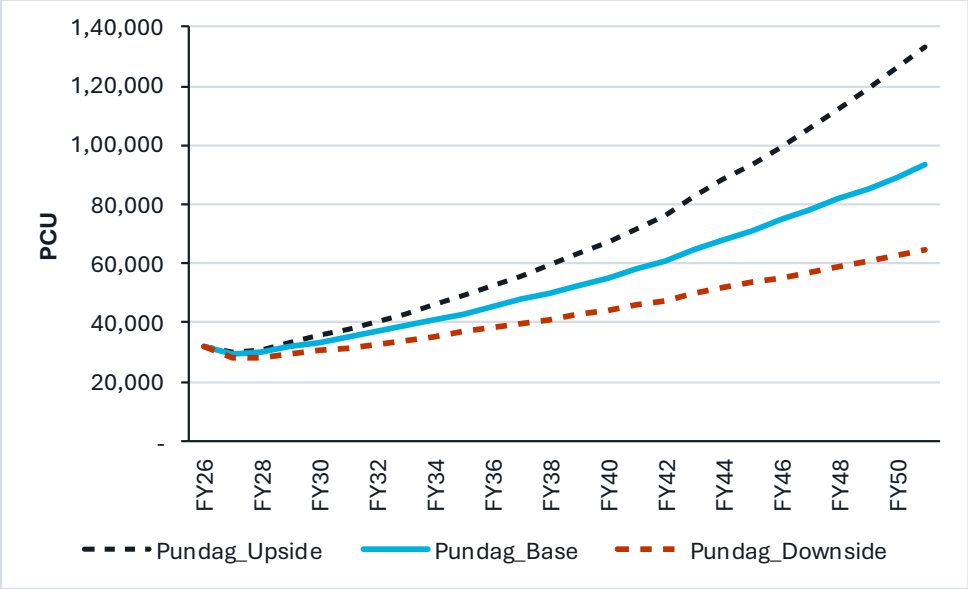
6.34 Based on the above assumptions for upside and downside scenarios, the following table summarizes the upside potential and downside risks associated with the PCU and the revenue for Pundag toll plaza at the end of the concession i.e. FY51.

Table 6.18: Upside potential and Downside PCU scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Pundag	43.1%	(30.3%)

Source: Steer Analysis of client data

Figure 6.2: Long term PCU forecasts for Pundag TP including upside and downside scenario



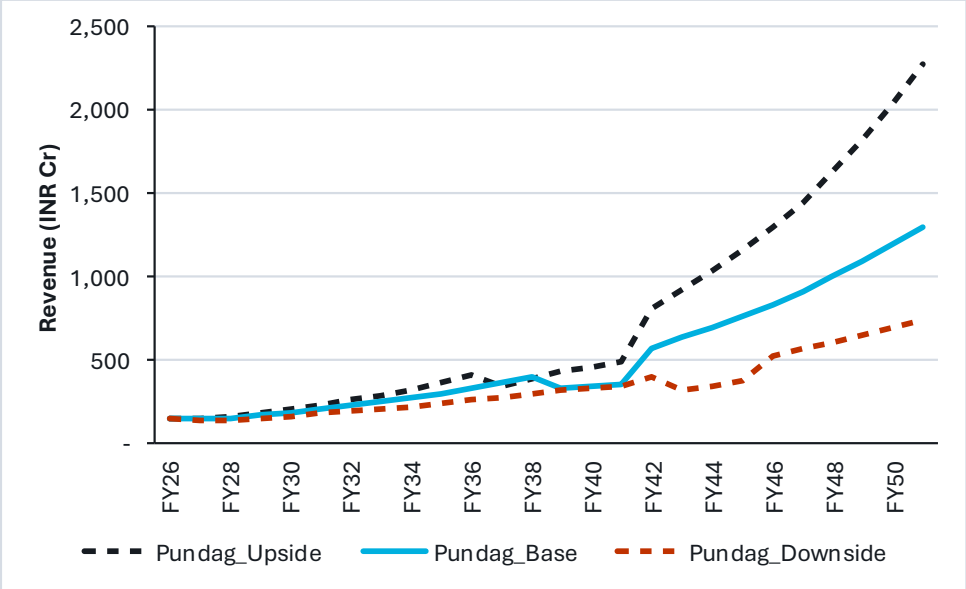
Source: Steer Analysis

Table 6.19: Upside potential and Downside Revenue scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Pundag	75.2%	(42.9%)

Source: Steer Analysis of client data

Figure 6.3: Long term Revenue forecasts for Pundag TP including upside and downside scenario



Source: Steer Analysis

6.35 Revenue projections exhibit variability in both the upside and downside cases, driven by fluctuations in macro-economic factors such as WPI, GDP/GSDP, elasticities and the network impacts.

Summary outlook

6.36 Passenger movement on the Asset is largely local in nature, connecting the cities of Ranchi to Patratu, Ramgarh, Hazaribagh over the short distance and northern regions of Delhi NCR, Uttar Pradesh, Patna, Gaya and Barhi to Jamshedpur, Rourkela, and further southern cities. Cars, the dominating vehicle category on the Asset, are expected to see a healthy growth on the Asset following the overall behavioural shift of users away from public transport.

6.37 Groceries, agricultural and manufacturing goods being transported form a part of essential commodities and are expected to show a healthy growth in the future years as well. Since the Asset is located in mineral and steel rich state of Jharkhand with numerous mines in the vicinity, the Asset is bound to grow with the growth of industrial sector as well as the overall growth of the country.

6.38 The strategic importance and geographic location of this Asset, connecting the key movement between north India and Bihar to the Jharkhand, Odisha, and West Bengal, is expected to continue driving a healthy traffic growth rate in the forecast years.

6.39 The MAV traffic on the Asset is largely influenced by the mineral industries along its alignment, which also contributes to the overall stability of MAV volumes across different time periods. Recent evidence from various industry players suggests a rebound in Steel production and consumption led by economic activity and urbanization which is expected to boost demand for steel in India to between 240-260 million metric tons by 2035. [24] [25] These factors support the growth prospects of the Steel related industry and traffic in the future. Beyond these natural growth factors, higher than usual growth was observed on Asset due to the work on the alternate NH320 as mentioned earlier.

6.40 Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by Client, feedback from Client meetings and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarised below.

6.41 Overall, we see a positive outlook for the region and the Asset, given that it serves major urban centres of Ranchi, Jamshedpur, Bokaro, Patna, Bhubaneswar, and Rourkela. The underlying growth drivers of the corridor are strong and are expected to deliver long term sustained growth driven by the industrial growth in the state backed by the potential of significant mining and mineral resources in the region.

[24] **Evolving with steel: Future growth and opportunities | McKinsey**

[25] **https://www.moneycontrol.com/news/sector/indian-steel-industry-tapered-now-tempered-for-future-thanks-to-improving-macros-10125481.html**

Appendices

A Top 10 OD Pairs

A.1 B.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below

TP1 Pundag

Table A.1: CJV top 10 OD pair shares at TP1 Pundag

	OD Pair	Share
1.	Ranchi-Ramgarh	34%
2.	Hazaribagh-Ranchi	24%
3.	Ranchi-Patna	10%
4.	Ormanjhi-Ramgarh	4%
5.	Ranchi-Bokaro	3%
6.	Ranchi-Kodarma	2%
7.	Ranchi-Dhanbad	2%
8.	Ranchi-Gola	2%
9.	Ranchi-Giridih	1%
10.	Ranchi-Chatra	1%

Table A.2: MAV and OSV top 10 OD pair shares at TP1 Pundag

	OD Pair	Share
1.	Ranchi-Patna	8%
2.	Ranchi-Ramgarh	4%
3.	Ranchi-Uttar Pradesh	4%
4.	Hazaribagh-Ranchi	3%
5.	Uttar Pradesh-Odisha	3%
6.	Ranchi-Bokaro	3%
7.	Patna-Odisha	3%
8.	Patna-Jamshedpur	3%
9.	Ranchi-Dhanbad	2%
10.	Jamshedpur-Uttar Pradesh	2%

B Data Collection Exercise

B.1 In order to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

7-day TVC Count

Table B.1: TVC counts at TP1

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	Total
27-01-2021	8,019	798	1,001	777	446	496	1,707	13,244
28-01-2021	7,354	903	1,162	776	457	551	1,698	12,901
29-01-2021	7,584	803	1,219	747	432	602	1,696	13,083
30-01-2021	7,910	927	1,204	757	479	606	1,720	13,603
31-01-2021	8,482	847	1,067	729	431	579	1,776	13,911
01-02-2021	7,901	849	1,081	759	387	523	1,725	13,225
02-02-2021	7,568	909	1,218	750	397	526	1,695	13,063

Source: Steer analysis

TVC vs TMS comparison

Table B.2: TVC and TMS WADT

Toll Plaza	Source	CJV+ Mini LCV	LCV	Bus	2 Axle	3 Axle+ MAV	OSV	Total
TP1	TVC	8,693	2,158	756	433	2,271	-	26,319
	TMS	8,593	2,996	632	563	2,259	5	25,646

Source: Steer analysis

Zone list

Table B.3: Zone list for TP1

Zone No	Zone name	State
1	Hazaribagh	Jharkhand

Zone No	Zone name	State
2	Babanbhai	Jharkhand
3	Morangi	Jharkhand
4	Barhi	Jharkhand
5	Chapwa	Jharkhand
6	Barasi	Jharkhand
7	Charhi	Jharkhand
8	Mandu	Jharkhand
9	Rewali	Jharkhand
10	Banadag	Jharkhand
11	Sakhiya	Jharkhand
12	Juljul	Jharkhand
13	Singhani	Jharkhand
14	Marai	Jharkhand
15	Chotha	Jharkhand
16	Huwag	Jharkhand
17	Topa	Jharkhand
18	Arka	Jharkhand
19	Sirka	Jharkhand
20	Orla	Jharkhand
22	Ranchi	Jharkhand
23	Mesra	Jharkhand
24	Getlatu	Jharkhand
25	Irba	Jharkhand
26	Dumardaga	Jharkhand
27	Lalpur	Jharkhand
28	Buti	Jharkhand
29	Ormanjhi	Jharkhand
30	Dardag	Jharkhand
31	Piska	Jharkhand
32	Chetar	Jharkhand
33	Chaha	Jharkhand
34	Gurgain	Jharkhand
35	Hujir	Jharkhand
36	Oyna	Jharkhand
37	Chuttu	Jharkhand

Zone No	Zone name	State
38	Hutup	Jharkhand
39	Boreya	Jharkhand
40	Turup	Jharkhand
41	Tatisilwai	Jharkhand
43	Ramgarh	Jharkhand
44	Kujju	Jharkhand
45	Kaitha	Jharkhand
46	Kankebar	Jharkhand
47	Seota	Jharkhand
48	Argada	Jharkhand
49	Huhua	Jharkhand
50	Barkakana	Jharkhand
51	Siur	Jharkhand
52	Kulhi	Jharkhand
53	Gola	Jharkhand
55	Bokaro	Jharkhand
56	Bokaro Steel City	Jharkhand
57	Phusro	Jharkhand
58	Gumia	Jharkhand
59	Chatra	Jharkhand
60	Deoghar	Jharkhand
61	Dhanbad	Jharkhand
63	Dumka	Jharkhand
64	Garhwa	Jharkhand
65	Bagodar	Jharkhand
66	Giridih	Jharkhand
67	Godda	Jharkhand
68	Gumla	Jharkhand
69	Jamtara	Jharkhand
70	Khunti	Jharkhand
71	Kodarma	Jharkhand
72	Jhumri Teleya	Jharkhand
73	Kolkata	West Bengal
74	Latehar	Jharkhand
75	Lohardaga	Jharkhand

Zone No	Zone name	State
76	Pakur	Jharkhand
77	Palamu	Jharkhand
78	Asansol	West Bengal
79	Pashchimi Singhbhum	Jharkhand
80	Patna	Bihar
80	Bihar	Bihar
81	Jamshedpur	Jharkhand
82	Purbi Singhbhum	Jharkhand
83	Sahibganj	Jharkhand
84	Saraikela-kharsawan	Jharkhand
85	Simdega	Jharkhand
86	Rourkela	Odisha
87	Andaman & Nicobar Island	Andaman & Nicobar Island
88	Andhra Pradesh	Andhra Pradesh
89	Arunanchal Pradesh	Arunanchal Pradesh
90	Assam	Assam
91	Chandigarh	Chandigarh
92	Chhattisgarh	Chhattisgarh
93	Dadara & Nagar Havelli	Dadara & Nagar Havelli
94	Daman & Diu	Daman & Diu
95	Goa	Goa
96	Gujarat	Gujarat
97	Haryana	Haryana
98	Himachal Pradesh	Himachal Pradesh
99	Jammu & Kashmir	Jammu & Kashmir
100	Leh	Leh
101	Karnataka	Karnataka
102	Kerala	Kerala
103	Lakshadweep	Lakshadweep
104	Madhya Pradesh	Madhya Pradesh
105	Maharashtra	Maharashtra
106	Manipur	Manipur
107	Meghalaya	Meghalaya
108	Mizoram	Mizoram
109	Nagaland	Nagaland

Zone No	Zone name	State
110	NCT of Delhi	NCT of Delhi
111	Puducherry	Puducherry
112	Punjab	Punjab
113	Rajasthan	Rajasthan
114	Sikkim	Sikkim
115	Tamil Nadu	Tamil Nadu
116	Telangana	Telangana
117	Tripura	Tripura
118	Uttar Pradesh	Uttar Pradesh
119	Uttarakhand	Uttarakhand
120	West Bengal	West Bengal
121	Odisha	Odisha
122	NEPAL	Nepal
123	Bangladesh	Bangladesh

Direction wise commodity distribution

Table B.4: Commodity distribution (towards Ranchi) at TP1

Commodity Category	LCV	2A	3A	MAV
Agriculture	3%	2%	2%	5%
Groceries	13%	11%	10%	13%
Construction	24%	9%	11%	14%
Petroleum	2%	14%	14%	11%
Manufacturing	4%	4%	3%	3%
Automobiles	1%	5%	3%	4%
Miscellaneous	8%	18%	13%	9%
Metals	2%	3%	6%	12%
Empty	44%	34%	37%	28%

Source: Steer analysis of OD data

Table B.5: Commodity distribution (towards Hazaribagh) at TP1

Commodity Category	LCV	2A	3A	MAV
Agriculture	4%	7%	6%	5%
Groceries	19%	15%	11%	9%
Construction	7%	5%	11%	7%
Petroleum	5%	10%	12%	10%

Commodity Category	LCV	2A	3A	MAV
Manufacturing	4%	6%	7%	2%
Automobiles	3%	7%	4%	5%
Miscellaneous	15%	20%	17%	12%
Metals	6%	8%	15%	37%
Empty	37%	21%	16%	12%

Source: Steer analysis of OD data

Trip length frequency

Table B.6: Trip length frequency at TP1

Distance range	LCV	2A	3A	MAV
0-100 km	58%	27%	25%	6%
100-300 km	21%	27%	21%	21%
300-500 km	11%	13%	17%	20%
500-1000 km	3%	10%	10%	22%
>1000 km	7%	24%	25%	31%

Source: Steer analysis of OD data

C Detailed Forecasts

C.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

C.2 This section presents the detailed traffic forecasts for the forecast period until FY51, year of expected close of the concession. The following two tables show the traffic growth rates and AADT, respectively.

Table C.1: Traffic Forecast (with impacts) over horizon years at TP1 Pundag

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY26	11,306	1,245	964	386	1,041	580	2,894	18,417	31,805
FY27	11,263	1,297	863	397	956	562	2,442	17,780	29,512
FY28	11,836	1,349	857	407	967	565	2,426	18,410	30,121
FY29	12,668	1,402	885	418	1,015	575	2,578	19,543	31,854
FY30	13,495	1,454	912	428	1,060	586	2,726	20,664	33,557
FY31	14,325	1,508	940	439	1,104	596	2,870	21,785	35,247
FY32	15,206	1,563	969	450	1,149	606	3,022	22,969	37,029
FY33	16,175	1,623	1,000	461	1,198	618	3,189	24,268	38,977
FY34	17,195	1,685	1,032	473	1,249	629	3,363	25,629	41,014
FY35	18,267	1,748	1,064	484	1,302	640	3,545	27,053	43,141
FY36	19,394	1,812	1,097	496	1,356	652	3,734	28,545	45,362
FY37	20,577	1,879	1,130	508	1,412	663	3,932	30,106	47,680
FY38	21,819	1,947	1,164	521	1,470	675	4,139	31,738	50,097
FY39	23,120	2,016	1,199	533	1,529	686	4,354	33,443	52,618
FY40	24,487	2,088	1,234	546	1,590	698	4,579	35,227	55,247
FY41	25,916	2,161	1,270	559	1,653	710	4,812	37,087	57,983
FY42	27,409	2,236	1,307	571	1,718	722	5,055	39,024	60,828
FY43	29,688	2,312	1,344	596	1,819	745	5,371	41,880	64,893
FY44	31,352	2,390	1,382	609	1,889	757	5,636	44,021	68,018
FY45	33,086	2,469	1,420	623	1,961	769	5,912	46,246	71,261
FY46	34,889	2,550	1,459	637	2,035	782	6,199	48,556	74,622

FY47	36,764	2,632	1,498	650	2,111	794	6,496	50,952	78,104
FY48	38,710	2,715	1,537	664	2,189	807	6,804	53,434	81,708
FY49	40,728	2,800	1,577	678	2,269	820	7,123	56,003	85,435
FY50	42,828	2,887	1,618	692	2,351	832	7,454	58,670	89,297
FY51	44,930	2,972	1,658	705	2,431	844	7,783	61,332	93,145

Table C.2: Forecasts (with impacts) for AADT growth rates (%) at TP1 Pundag

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY26	14.8%	14.8%	21.0%	6.3%	1.8%	4.5%	13.2%	**13.5%**	**12.6%**
FY27	(0.4%)	4.2%	(10.5%)	2.8%	(8.2%)	(3.2%)	(15.6%)	**(3.5%)**	**(7.2%)**
FY28	5.1%	4.1%	(0.7%)	2.7%	1.2%	0.6%	(0.6%)	**3.5%**	**2.1%**
FY29	7.0%	3.9%	3.2%	2.6%	4.9%	1.9%	6.3%	**6.2%**	**5.8%**
FY30	6.5%	3.7%	3.1%	2.5%	4.5%	1.8%	5.7%	**5.7%**	**5.3%**
FY31	6.2%	3.7%	3.1%	2.5%	4.1%	1.8%	5.3%	**5.4%**	**5.0%**
FY32	6.1%	3.7%	3.1%	2.5%	4.1%	1.8%	5.3%	**5.4%**	**5.1%**
FY33	6.4%	3.8%	3.2%	2.6%	4.3%	1.8%	5.5%	**5.7%**	**5.3%**
FY34	6.3%	3.8%	3.2%	2.5%	4.2%	1.8%	5.5%	**5.6%**	**5.2%**
FY35	6.2%	3.7%	3.1%	2.5%	4.2%	1.8%	5.4%	**5.6%**	**5.2%**
FY36	6.2%	3.7%	3.1%	2.5%	4.2%	1.8%	5.4%	**5.5%**	**5.1%**
FY37	6.1%	3.7%	3.1%	2.4%	4.1%	1.8%	5.3%	**5.5%**	**5.1%**
FY38	6.0%	3.6%	3.0%	2.4%	4.1%	1.8%	5.3%	**5.4%**	**5.1%**
FY39	6.0%	3.6%	3.0%	2.4%	4.0%	1.7%	5.2%	**5.4%**	**5.0%**
FY40	5.9%	3.5%	3.0%	2.4%	4.0%	1.7%	5.2%	**5.3%**	**5.0%**
FY41	5.8%	3.5%	2.9%	2.3%	4.0%	1.7%	5.1%	**5.3%**	**5.0%**
FY42	5.8%	3.5%	2.9%	2.3%	3.9%	1.7%	5.0%	**5.2%**	**4.9%**
FY43	8.3%	3.4%	2.8%	4.3%	5.9%	3.2%	6.2%	**7.3%**	**6.7%**
FY44	5.6%	3.4%	2.8%	2.2%	3.8%	1.6%	4.9%	**5.1%**	**4.8%**
FY45	5.5%	3.3%	2.8%	2.2%	3.8%	1.6%	4.9%	**5.1%**	**4.8%**
FY46	5.5%	3.3%	2.7%	2.2%	3.8%	1.6%	4.8%	**5.0%**	**4.7%**
FY47	5.4%	3.2%	2.7%	2.1%	3.7%	1.6%	4.8%	**4.9%**	**4.7%**
FY48	5.3%	3.2%	2.6%	2.1%	3.7%	1.6%	4.7%	**4.9%**	**4.6%**
FY49	5.2%	3.1%	2.6%	2.1%	3.6%	1.6%	4.7%	**4.8%**	**4.6%**
FY50	5.2%	3.1%	2.6%	2.1%	3.6%	1.5%	4.6%	**4.8%**	**4.5%**
FY51	4.9%	2.9%	2.5%	2.0%	3.4%	1.5%	4.4%	**4.5%**	**4.3%**

Source: Steer analysis

Revenue forecasts

Table C.3: Revenue forecast (INR Crores), for TP1 Pundag including the revenue for annual compensation

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY26	38	4	12	2	15	9	71	**151**
FY27	39	4	11	3	14	9	61	**142**

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY28	43	5	11	3	15	10	65	**152**
FY29	48	5	12	3	17	10	72	**168**
FY30	54	6	13	3	18	11	79	**185**
FY31	60	6	14	3	20	12	88	**204**
FY32	66	7	16	4	22	13	97	**224**
FY33	74	7	17	4	24	13	106	**246**
FY34	81	8	18	4	26	14	118	**270**
FY35	91	9	20	5	28	15	129	**297**
FY36	101	9	21	5	31	16	143	**327**
FY37	112	10	23	5	34	17	157	**359**
FY38	125	11	25	6	36	18	172	**393**
FY39	104	9	20	4	30	15	142	**324**
FY40	110	9	20	5	31	15	150	**341**
FY41	116	10	21	5	32	15	157	**356**
FY42	186	15	33	7	51	24	252	**568**
FY43	212	17	35	8	56	25	280	**634**
FY44	234	18	38	9	61	27	308	**695**
FY45	258	19	41	9	67	29	338	**761**
FY46	285	21	44	10	72	31	370	**833**
FY47	313	22	47	10	79	32	405	**910**
FY48	346	24	51	11	85	35	446	**999**
FY49	380	26	54	12	92	37	487	**1,089**
FY50	420	28	58	13	100	39	533	**1,192**
FY51	458	30	63	14	108	41	582	**1,298**

Source: Steer analysis

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Final Report

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Project Transit: Traffic Due Diligence of Jhansi-Lalitpur Tollways Limited

Cube Highways Fund Advisors Private Limited

Our ref: 23741310

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Table of Contents

	Disclaimer	i
Glossary Items		**iii**
1	**Introduction**	**1**
	The assignment	1
	Our Approach	2
	Contents of this report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Key economic activities	7
	Alternate Routes	8
3	**Traffic Description**	**10**
	Introduction	10
	Historical trends	11
	Key findings of the TVC data analysis	18
	Key findings of origin-destination analysis	20
	Conclusions	28
4	**Socio economic context and traffic growth**	**30**
	Introduction	30
	Population growth	30
	Economic Indicators	31
	Economic growth	34
	Forecasts for growth drivers	37
5	**FY26 Base year AADT and Traffic growth Analysis**	**39**
	FY26 Base year AADT estimates	39
	Estimation of background elasticities	42
	Overview	42
6	**Forecast: Network overlays and forecasts**	**46**
	Introduction	46
	Analysis of potential network/developmental impacts	46
	Revenue forecasting assumptions	49
	Traffic and Revenue forecasts	52
	Target revenues and modification of concession period	55
	Upside and Downside cases	56
	Summary outlook	59

Figures

Figure 2-1: Location of Jhansi-Lalitpur and corresponding toll plazas 4
Figure 2-2: Asset context 5
Figure 2-3: Road cross section of the Asset 6
Figure 3-1: Ticket segmentation for CJV at TP1 Babina 16
Figure 3-2: Ticket segmentation for MAV at TP1 Babina 16
Figure 3-3: Ticket segmentation for CJV at TP2 Vigakhet 17
Figure 3-4: Ticket segmentation for MAV at TP2 Vigakhet 17
Figure 3-5: Comparison between TVC and TMS daily traffic data on TP1 Babina 19
Figure 3-6: Comparison between TVC and TMS daily traffic data on TP2 Vigakhet 19
Figure 3-7: Comparison between vehicle shares from TVC and TMS WADTs 20
Figure 3-8: Zonal influence at TP1 Babina 22
Figure 3-9: Zonal influence at TP2 Vigakhet 23
Figure 3-10 Internal-external distribution at TP1 Babina 24
Figure 3-11 Internal-external distribution at TP2 Vigakhet 24
Figure 3-12: Commodity distribution at TP1 Babina 26
Figure 3-13: Commodity distribution at TP2 Vigakhet 26
Figure 3.14: Trip distance distribution at TP1 Babina 27
Figure 3.15: Trip distance distribution at TP2 Vigakhet 28
Figure 4.1: Annual growth – Index of Industrial Production 32
Figure 4.2: Car ownership in India per 1,000 population 33
Figure 4.3: Per capita income 33
Figure 4-4: Government final consumption expenditure 34
Figure 4-5: Month on Month IIP performance 35
Figure 4-6: Industrial components of GVA 35
Figure 4-7: Evolution of Uttar Pradesh's state GDP and national GDP 36
Figure 4-8: GDP-GSDP forecast 38
Figure 5-1: FY26 Base Estimation methodology 40
Figure 6.1: Alternate Route via Delhi Mumbai Expressway and Surat Solapur Chennai 47
Figure 6.2: Long term PCU forecasts for Babina TP including upside and downside scenario 58
Figure 6.3: Long term PCU forecasts for Vighkhet TP including upside and downside scenario 58
Figure 6.4: Long term Revenue forecasts for Babina TP including upside and downside scenario 59
Figure 6.5: Long term Revenue forecasts for Vighkhet TP including upside and downside scenario 59

Tables

Table 1-1: Scope of work and sources of data 1
Table 2-1: Summary of concession 6
Table 2-2: Single toll rates on the Asset (INR), applicable Apr 2025 to March 2026 7

Table 3-1: PCU factors	10
Table 3-2: Average Daily Traffic data of TP1 Babina	11
Table 3.3: Tollable Daily Traffic at TP1 Babina	11
Table 3-4: Traffic level at TP2 Vigakhet	12
Table 3.5: Tollable Traffic at TP2 Vigakhet	12
Table 3-6: Total Revenue (in INR Cr) at TP1 Babina, and AADC (in INR Lakhs/day)	13
Table 3-7: Total Revenue (in INR Cr) at TP2 Vigakhet and AADC (in INR Lakhs/day)	13
Table 3.8: Typical ticket types sold at NHAI plazas	14
Table 3-9: Ticket segmentation for LCV, Bus, 2A and 3A at TP1 Babina	16
Table 3-10: Ticket segmentation for LCV, Bus and 2A at TP2 Vigakhet	18
Table 3-11: Data collection exercise	18
Table 3-12: WADT from TVC counts	19
Table 3-13: Sample rates for OD data	21
Table 3-14: Zone aggregations for zonal influence analysis	21
Table 3-15: Aggregate commodity categories	24
Table 4-1: CAGR of population in India	30
Table 4-2: Population Growth in Uttar Pradesh and India (2012-2024)	31
Table 5-1 SCF values for JL TP1	40
Table 5-2: SCF Values for JL TP2	41
Table 5-3: Adopted base estimates: JL TP1	41
Table 5-4: Adopted base estimates: JL TP2	41
Table 5-5: Identified growth drivers to model traffic growth	42
Table 5.6: Passenger and Commercial growth with normalised FY22 – JL TP1	43
Table 5.7: Passenger and Commercial growth with normalised FY22 – JL TP2	43
Table 5-8: Elasticity recommendations for the Asset (both sections)	44
Table 6-1: Impact of DME and SCE for TP1	48
Table 6-2: Impact of DME and SCE for TP2	48
Table 6-3: Segmentation for forecast years, TP1 Babina	50
Table 6-4: Segmentation for forecast years, TP2 Vigakhet	50
Table 6.5: Annual pass compensation for CJVs (in Crore)	50
Table 6-6: Trip factors at TP1 Babina	51
Table 6-7: Trip factors at TP2 Vigakhet	51
Table 6-8: WPI growth forecast assumptions	51
Table 6-9: Revenue reconciliation summary TP Babina at AADC level (INR lakhs)	52
Table 6-10: Revenue reconciliation summary TP Vigakhet at AADC level (INR lakhs)	52
Table 6-11: Forecast traffic for TP1 Babina	52
Table 6-12: Forecast Traffic CAGR (%) for TP1 Babina	53
Table 6-13: Forecast Revenue for TP1 Babina (INR crores) including Annual Pass Compensation Revenue for CJV	53
Table 6-14: Forecast Revenue growth CAGR (%) for TP1 Babina	53
Table 6-15: Forecast traffic for TP2 Vigakhet	54

Table 6-16: Forecast Traffic CAGR (%) for TP2 Vigakhet 54
Table 6-17: Revenue Forecast for TP2 Vigakhet (INR crores) including Annual Pass Compensation Revenue for CJV 54
Table 6-18: Forecast Revenue growth CAGR (%) for TP2 Vigakhet 55
Table 6.19: Target Revenues for Extension 1 55
Table 6.20: Target Revenues for Extension 2 55
Table 6.21: Summary of Macro-economic Assumptions for upside and downside cases 56
Table 6.22: Summary of impacts on the Assets 57
Table 6.23: Summary of impacts on the Assets 57
Table 6.24: Upside potential and Downside PCU scenario – FY51 57
Table 6.25: Upside potential and Downside Revenue scenario – FY51 58

Appendices

A Top 10 OD Pairs

B Data Collection Exercise

C Detailed Forecasts

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
INR	Indian Rupees
km	Kilometre
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NHIIMPL	National Highways Infra Investment Managers Private Limited
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit: it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor
SH	State Highway

Acronym	Meaning
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Jhansi Lalitpur Tollway Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents a full update of the traffic and revenue forecasts based on recent network developments, actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Jhansi-Lalitpur consists of two toll road sections, each of which has a special purpose vehicle (SPV). For this report, we hereafter call the two SPVs together as a single Asset and the toll plazas on each section as TP1-2.

- Jhansi Lalitpur Tollways Limited: JLTL-: TP1 – Babina
- Jhansi Vigakhet Tollways Limited: JVTL-: TP2 - Vigakhet

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1-1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Oct'20 and Sept'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable.
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip Length Distribution	• Origin Destination (OD) surveys undertaken by Steer. The surveys were undertaken in 2024 on TP1 and in 2021 at TP2.
• Analysis of upcoming network improvements and other	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by

Scope of work	Data source
developments, that may have future impacts on traffic	Steer based on Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research, Asset historical traffic performance and Steer's in-house experience of working on toll roads on the corridor
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI); and latest Wholesale Price Index (WPI) trends as shared by the client

Our Approach

1.4 Our analysis follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset.

1.5 The analysis has focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.6 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources as given below:

- Client-provided secondary data, including:
- TMS data from October 2020 to September 2025
- Concession agreement and toll notifications for FY25 and FY26
- Previous studies related to traffic and revenue
- Steer-commissioned OD survey on 30th January to 31st January 2024 and TVC survey from 29th January to 31st January 2024 on TP1 Babina toll plaza as a part of study in earlier commission to validate any change in the growth drivers and travel pattern. Similarly, as a part our earlier commission Steer-commissioned TVC counts on TP2 Vigakhet from 18th January to 24th January 2021 and OD survey from 19th January to 20th January 2021.
- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by each of the toll plaza and subsequently match it to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.7 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against the six months of actual traffic (Apr-Sept) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of the concession. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.8 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analyses;
- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases

2 The Asset

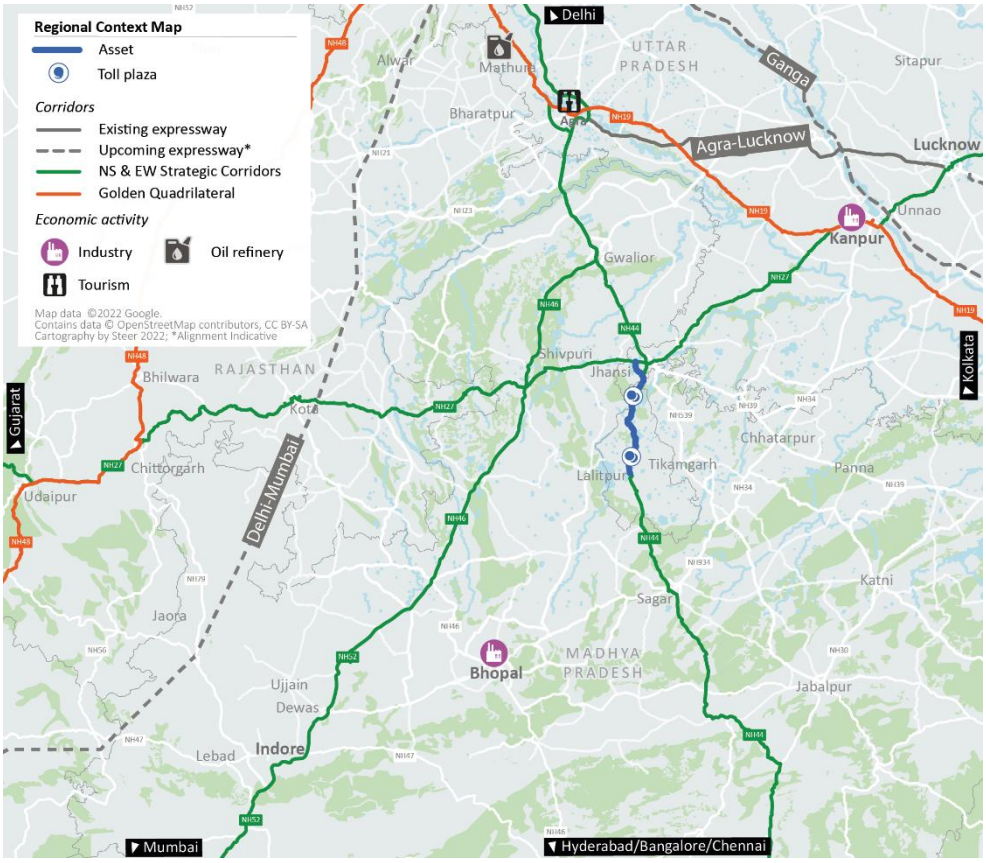
Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is in the state of Uttar Pradesh, connecting Jhansi and Lalitpur, on the NH 44 (old NH 25 and 26). NH44 caters to the North- South movement between Jammu and Kashmir, and Kanyakumari, connecting major centres of economic activity such as Delhi, Nagpur, Hyderabad, Bangalore, and Chennai. The following figure shows the regional road network in which the Asset is located.

Figure 2-1: Location of Jhansi-Lalitpur and corresponding toll plazas



Source: Steer Cartography

2.3 The Asset primarily caters to two different types of strategic movements:

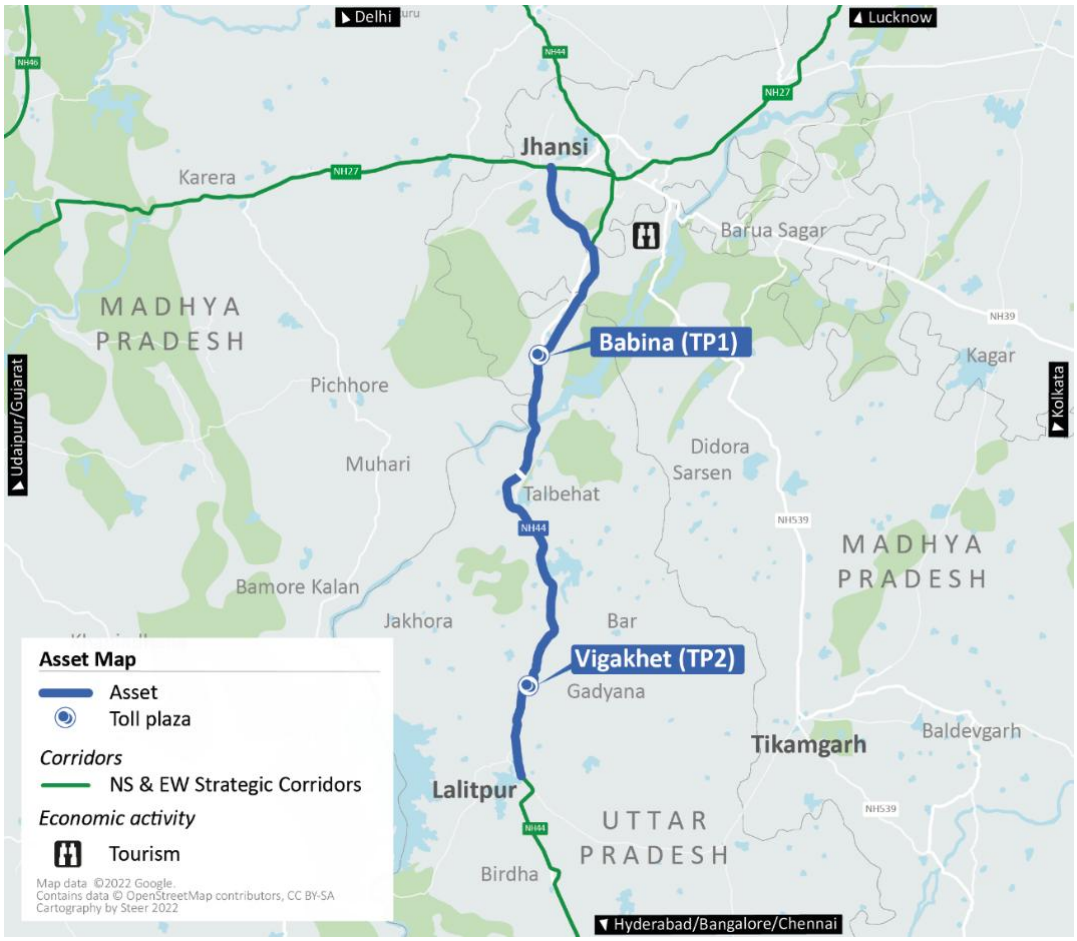
- **Short-distance trips** including leisure and business travel trips between some of the key tourist towns/cities around the Asset between Jhansi, Orchha, Talbehat, and Lalitpur.
- **Medium-distance and long-distance trips** by 3A and MAVs primarily between Delhi and north and Hyderabad/Bengaluru. The asset provides key link for the movement of goods between the states of Delhi, Haryana, Punjab in north India and Southern states of Telangana, Karnataka, Andhra Pradesh, and Tamil Nadu. Major long distance(>500kms) commodities include Automobile, Parcels, Manufacturing and Agri Commodities.

2.4 The Asset forms a 100.0 Km long contiguous section of toll roads which forms a part of NH 44 (old NH 25 and 26) in Uttar Pradesh. The following figure (Figure 2-2) provides a closer view of the Asset in the context of its immediate surrounding. Both the SPVs of the Asset are four-lane divided road with one toll plaza each namely,

- JLTL – TP1: Babina at km 32.100 and
- JVTL – TP2: Vigakhet at km 85.280.

2.5 TP1 Babina is near Jhansi whereas TP2 Vigakhet is near Lalitpur. The following figure provides a closer view of the Asset in the context of its immediate surroundings.

Figure 2-2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.6 TP1- Babina on the Asset has been operational since November 2014 whereas TP2- Vigakhet has been operational since March 2012. The Client took over the operations of the Asset in October 2020. There are still 25 years left in the concession period which ends in FY51. Table 2-1 presents a summary of the concession.

Table 2-1: Summary of concession

Particulars	Details
State	Uttar Pradesh
Highway and lane configuration	NH 44 (old NH 25 and 26), 4-lane divided
Toll plaza	• SPV 1: TP1: Babina • SPV 2: TP2: Vigakhet
Length (km) as per concession agreement, applicable	• TP1: 49.70 km • TP2: 49.31 km
Commencement of operations	• TP1: November 2014 • TP2: March 2012
Operated by Client since	20th October 2020
Concession period	30 years
Last year of concession	2051

Source: Client data

2.7 Following pictures show typical cross section of the Asset and toll plazas.

Figure 2-3: Road cross section of the Asset

Source: Steer site visit

2.8 The toll rates for single category are shown in Table 2-2. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling. Like the other National Highway plazas, the Asset has Single, Return, Local Commercial, Local Personal, Monthly, and Local Monthly tickets.

2.9 There is a difference in toll rates of both the toll plazas since the structure length and bypass length are shorter on TP2: Vigakhet toll plaza in comparison to TP1 Babina toll plaza.

2.10 Due to general elections in India from Apr-May'24 the toll rates on National highways across the country for next financial year were applicable Jun'24 onwards instead of Apr'24. For FY26 the toll rates changed from Apr'25.

Table 2-2: Single toll rates on the Asset (INR), applicable Apr 2025 to March 2026

Type of Vehicle	Single Journey Fee	
	TP1 Babina	TP2 Vigakhet
CJV	125	90
LCV	200	145
Bus/Truck	420	310
3A	460	335
MAV	660	485
OSV	800	590

Source: NHAI Revision of User fee Rate w.e.f 01.04.2025

Key economic activities

The Asset is situated in the state of Uttar Pradesh. Uttar Pradesh is the third largest economy and the most populous state in the country, accounting for 16% of India's total population which also makes its high consumer base a key factor that contributes to the GDP. Agriculture is the most important and the biggest sector in the state economy followed by the service sector comprising of travel, tourism, real estate, insurance, and the finance industry. State's real GSDP for 2023-24 was INR14.23 trillion, having grown at 5.7% CAGR between FY16 and FY24, contributing 8.2% to the national GDP.

Economic Activity Around Asset

2.11 The northern end of the Asset, Jhansi is a city of historical relevance in the Bundelkhand region. Being the only city with presence of both, East-West highway corridor (NH27) and North-South highway corridor (NH44), Jhansi has observed development in infrastructure and real estate sectors over the years. Jhansi is also one of six nodes identified as defence corridors where industries will be set up to meet the needs and requirements of the country's defence sector. A Defence Park is planned to be established in Jhansi for automobiles manufacturing for military, police modernization, forensics centres, aircraft/helicopter manufacturing/ assembling units, testing facilities for military equipment, drone manufacturing and testing facilities.

1. In October 2025, the Uttar Pradesh government announced multiple infrastructure and industrial initiatives in the Bundelkhand region, covering Jhansi and Lalitpur districts including three solar plants totalling 2,000 MW capacity, with Hinduja Group setting up a

600 MW plant in Jhansi and NTPC Green Energy developing a 600 MW plant in Lalitpur. The projects, worth ₹10,000 crore, are expected to be operational by December 2025, generating green energy.[1]

2.12 The UP State Industrial Development Authority is also developing a Bulk Drug Pharma Park over 1,472 acres with an anticipated investment of ₹12,000 crore and job creation for approximately 14,000 people. The park will feature advanced infrastructure and is expected to be operational within 2–2.5 years.[2]

2.13 Concrete and granite stone mines are present throughout the state and are used for construction. Stone crusher plants are present at Bijoli, 12 km from Jhansi along the Asset, which produce aggregate for construction. The same is transported to the rest of the state. Bijoli is also home to cement, bricks and pipes as well as machine parts industries.

2.14 There are two thermal power plants present near the Asset namely, Parichha Thermal Power Plant (near Jhansi) and Lalitpur Power Plant (near Lalitpur).

2.15 Diamond Cement Factory has a grinding unit at Jhansi where one of the raw materials, fly ash, is transported from Lalitpur power plant using the Asset.

2.16 Since the economy of Uttar Pradesh is mainly based on agriculture and around 65% of the population is dependent on agriculture, the Asset observes Agri-products as a key commodity transported. Agriculture related Pradeshik Co-operative Federation warehouse is also located near Vigakhet which is further expected to generate Agri-related traffic on the Asset.

2.17 Being a part of the long-distance strategic corridor of NH44, key commodities moving on the Asset include tomato, rice, potato, manufacturing products, parcels, and a small proportion of automobile traffic.

Alternate Routes

2.18 An alternate route between Jhansi and Sagar via Tikamgarh is also present and bypasses the toll plazas. The route is 32 km longer than the Asset route. This alternate is of an uneven width for the most part. The route is also closed during the rainy season as water flows over the low-level bridge near Orchha. Due to this reason, the route isn't preferred by general traffic and is not considered to be impacting the traffic on the Asset.

2.19 The National Highway Authority of India (NHAI) is building an ~1382km long greenfield expressway connecting Delhi and Mumbai. It is an 8-lane access-controlled route with 4 lanes in each direction connecting Delhi-Noida Direct (DND) Flyway in Delhi with the Jawaharlal Nehru Port Trust (JNPT) in Mumbai. A few sections of the greenfield expressway have been made operational with Sohna-Dausa-Lalsot section (Feb'23), Madhya Pradesh section (Sep'23), Vadodara-Bharuch section (Feb'24), Lalsot-Sawai-Madhopur section (Feb'24) and the Kota-Bundi Section (Dec'24) already being operationalised. The project is currently suffering from construction delays, mainly on the Gujarat stretch. The timeline for completion of the expressway has been revised several

[1] **Solar Plants in Bundelkand**

[2] **Pharma Plant in Lalitpur**

times and is now expected to be completed by 2027 as per reports[3]. It is key to note that while certain sections of the Rajasthan expressway lack direct connectivity, they are effectively linked via state highways.

2.20 Like the DME, the ~1,271 km long Surat-Solapur-Chennai Expressway will connect Surat and Chennai via Solapur, Kurnool, Kadapa, and Tirupati. Once the expressway is constructed, traffic coming from Delhi/ north and travelling to Kurnool/south will have the option to use DME till Indore followed by NH52 till Solapur followed by SCE (Surat Chennai Expressway) from Solapur to Kurnool and beyond. This new alternative will provide the option of using expressways for ~60% of the total journey distance and hence, a share of Delhi-Kurnool and south specifically Chennai bound traffic is expected to have an alternate route choice.

2.21 Further, DME provides a faster access to Indore and post which the users can reach Solapur via Dhule – Aurangabad. After Solapur, the route to reach Chennai can either be via Surat Solapur Chennai expressway.

2.22 Currently the existing sections between Indore and Hyderabad are getting widened from two lanes to four lanes as part of Indore Hyderabad Economic Corridor.

- The sector between Indore and Khandwa (164 Km) is getting upgraded as a part of brownfield expansion.
- The section between Khandwa and Akola (146 Km) is proposed to upgrade as a part of greenfield expansion (however very limited information is available on this greenfield development).
- The section between Akola and Hyderabad (NH161) is majorly four-laned.
- The 40 km long Kandi to Ramsanpalle section of NH161which was two laned has been recently inaugurated by Prime Minister in Mar'25 after it's completion of four laning[4].

2.23 Once the widening of the existing alignment is completed, the route via Indore, Akola, Nanded will provide an alternate route traveling between Madhya Pradesh/ North and Hyderabad/South.

2.24 Thus, the Indore-Hyderabad Economic Corridor will act in conjunction with the Delhi-Mumbai Expressway and the Surat-Chennai Expressway to form an alternate route to the Asset for North-South traffic. The detailed impact of this composite alternate is discussed in Chapter 6.

2.25 The 4 laning of Satna-Chitrakoot-Prayagraj section of NH30 is a lane augmentation project on the east of the Asset. It will have impact on traffic between Lucknow and north and Nagpur and south. There is no official information to suggest when this project may be completed. Reports online suggests the project is expected to start construction in 2025. Once the 4-laning is completed, this section will act as an alternate to our Asset for the traffic commuting between Lucknow - Nagpur.

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[3] https://infra.economictimes.indiatimes.com/news/roads-highways/delhi-mumbai-e-way-unlikely-to-be-completed-before-2027/118236682

[4] **Hon'ble Prime Minister today inaugurated the 40 km long four-lane #Kandi-#Ramsanpalle section of NH-161 in #Telangana**

3 Traffic Description

Introduction

3.1 This chapter outlines the current traffic and revenues on the Asset, as well as our analysis of origin-destination (OD) data and traffic count data. This covers data which was collected as a part of the study in the previous commission, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data is typically provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU Factor assumption for reporting

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'.[5] For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2024 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3-1: PCU factors

Vehicle Category	PCU Factor
CJV/ Mini LCV	1.0
LCV	1.5
Bus/2A	3.0
3A	3.0
MAV*	3.4
OSV	4.5

Source: Steer analysis and IRC64,1990, * Rigid-Trailer combined PCU

[5] IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas

Historical trends

3.5 Table 3-2 illustrates the traffic data over the period of 5 years from October 2020 – September 2025 (provided by the Client) at a plaza level. There is lack of long-term historical data available on the Asset since tolling was started by the client only in October 2020 and both the available years of data, FY21 and FY22 were impacted by COVID-19 related restrictions. Therefore, starting FY23 traffic on the Asset has started to get normalised with normal travel patterns recorded FY24 onwards.

Table 3-2: Average Daily Traffic data of TP1 Babina

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23 -25
CJV	2,794	2,872	3,040	3,157	3,353	3,484	5.0%
LCV	241	220	236	253	311	328	14.8%
Bus	189	163	167	191	185	174	5.4%
2A	808	969	1,123	1,226	1,422	1,542	12.6%
3A	1,211	1,248	1,313	1,325	1,280	1,413	(1.3%)
MAV	1,498	1,611	1,761	1,818	2,010	1,823	6.8%
OSV	2	2	1	2	2	2	-
Total	**6,743**	**7,085**	**7,641**	**7,971**	**8,563**	**8,766**	**5.9%**
PCU	**14,914**	**15,860**	**17,232**	**17,987**	**19,364**	**19,606**	**6.0%**

Source: Steer analysis of Client data, (*12 days of data was available for Oct'20) FY26YTD consists of 6 months of data from Apr'25 to Sept'25

Table 3.3: Tollable Daily Traffic at TP1 Babina

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23 -25
CJV	2,570	2,511	2,696	2,770	2,962	3,078	4.8%
LCV	240	207	231	247	305	324	14.8%
Bus	239	150	163	186	182	172	5.7%
2A	741	885	1,093	1,206	1,389	1,515	12.7%
3A	1,272	1,239	1,301	1,316	1,364	1,411	2.4%
MAV	1,583	1,579	1,758	1,815	1,917	1,820	4.4%
OSV	1	2	1	2	2	2	3.9%
Tollable AADT	**6,646**	**6,571**	**7,244**	**7,541**	**8,120**	**8,321**	**5.9%**
Tollable PCU	**15,106**	**15,051**	**16,734**	**17,480**	**19,284**	**19,560**	**5.9%**

Source: Steer analysis of Client data, (*12 days of data was available for Oct'20 FY26YTD consists of 6 months of data from Apr'25 to Sept'25; Tollable traffic excludes exemptions and violations

3.6 As per the reported data, it can be observed CJVs make up 40% of traffic in FY25 which can be attributed to short distance movement from Jhansi and surrounding region in proximity. Whereas 2A, 3A and MAV account for a total of nearly 55% of the traffic as the Asset is a part of the traditional North-South long-distance corridor and caters to many goods vehicles doing long distance North-South movement between Delhi/North and Nagpur/South.

3.7 3A category has largely growth at a 2% CAGR flat in the FY21-25 period. The reduction/stagnation in 3A volume is a result of the declining demand for 3A vehicles, which are being replaced by 2A and MAVs. MAVs offer higher tonnage capacity making them more cost-effective for transporters. While the increase in 2A volume reflects the growing preference for these vehicles due to favourable changes in the legal permissible loads for 2As and their suitability for e-commerce-related freight, particularly high-value, low-volume goods over medium to long distances. This is consistent with our discussion with various transporters and OEMs across the country who are favouring 2A and 5A vehicles for commodity movement due to better unit economics.

3.8 Based on the FY26YTD data provided by the client, movement of MAVs has declined by 9.4% compared to FY25. This reduction is primarily attributed to the diversion of north–south traffic onto the Delhi–Mumbai Expressway, as well as the rerouting of traffic from East Uttar Pradesh towards Nagpur and southern regions via NH30 (Rewa–Katni–Jabalpur–Nagpur), following the completion of the Katni Bypass in June 2025.

3.9 Generally the second half of the year is higher in volume terms for commercial vehicles hence the YTD performance is expected to improve for MAVs on a full year basis.

3.10 2A and 3A continues to be positive in FY26YTD as well signalling a strong demand generated by cities such as Nagpur, Bangalore, Chennai originating from Gwalior and North Indian states like Delhi NCR, Punjab and Haryana and vice-versa. Traffic volumes observed at Vigakhet toll plaza are presented below.

Table 3-4: Traffic level at TP2 Vigakhet

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23 -25
CJV	2,279	2,284	2,376	2,447	2,575	2,608	4.1%
LCV	233	201	222	243	303	320	16.8%
Bus	143	148	148	176	168	158	6.4%
2A	806	929	1,073	1,178	1,379	1,492	13.4%
3A	1,202	1,230	1,301	1,310	1,305	1,409	0.2%
MAV	1,435	1,541	1,689	1,713	1,865	1,732	5.1%
OSV	-	-	1	1	2	2	-
Total	**6,098**	**6,333**	**6,811**	**7,068**	**7,595**	**7,720**	**5.6%**
PCU	**13,991**	**14,778**	**16,058**	**16,670**	**17,969**	**18,195**	**5.8%**

Source: Steer analysis of Client data, (*12 days of data was available for Oct'20) FY26YTD consists of 6 months of data from Apr'25 to Sept'25

Table 3.5: Tollable Traffic at TP2 Vigakhet

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23 -25
CJV	2,127	1,984	2,102	2,155	2,268	2,287	3.9%
LCV	212	196	219	237	298	316	16.5%
Bus	139	130	147	173	166	158	6.1%
2A	793	851	1,054	1,162	1,355	1,473	13.3%
3A	1,259	1,236	1,298	1,308	1,358	1,407	2.3%
MAV	1,515	1,526	1,686	1,710	1,805	1,730	3.5%
OSV	2	2	1	1	2	2	

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23 -25
Total	6,047	5,925	6,507	6,747	7,250	7,374	5.6%
PCU	14,209	14,157	15,700	16,297	17,998	18,249	5.6%

Source: Steer analysis of Client data, (*12 days of data was available for Oct'20). FY26YTD consists of 6 months of data from Apr'25 to Sept'25; Tollable traffic excludes exemptions and violations

3.11 Historically the traffic on TP2 as well has shown a healthy growth across categories with ~5.8% overall PCU growth for the period between FY23-FY25.

3.12 TP2 Vigakhet plaza lies south of Babina toll plaza and is a contiguous section. The traffic trends at both plazas are similar with similar seasonal impact as explained above. This is also validated with the toll plaza also reporting a very similar behaviour in the evolution of traffic since October 2020. There has been a growth in the 2A volume FY25 compared to FY24 due to increased category demand for long-distance movement. The tollable traffic at Vigakhet shows similar trend as the Babina Plaza.

3.13 Increase of approximately 11% has been observed in 2A vehicle traffic across both plazas, reflecting a broader trend along the corridor. Conversely, 3A vehicle growth has remained subdued, primarily attributed to an axle shift from 3A vehicles to MAVs.

Historical Revenue

3.14 In terms of revenue, CJVs contributes ~10% to the total revenue, while commercial traffic (2A, 3A and MAV) contribute ~86% in terms of revenue on Babina toll plaza with remaining shares by Bus and LCV.

3.15 Table 3-6 and Table 3-7 show the revenue by each vehicle type at the toll plaza at an annual level and at daily level.

Table 3-6: Total Revenue (in INR Cr) at TP1 Babina, and AADC (in INR Lakhs/day)

Year	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC %
FY21*	3.6	0.6	1.1	3.9	7.4	12.9	0.0	**29.5**	**17**	**-**
FY22	7.3	1.2	1.4	10.7	16.7	29.7	0.0	**67.0**	**19**	**11.8%**
FY23	8.3	1.5	1.7	14.7	19.2	36.4	0.0	**81.8**	**22**	**15.8%**
FY24	9.0	1.7	2.1	17.0	20.4	39.5	0.0	**89.7**	**25**	**13.6%**
FY25	9.7	2.1	2.1	20.3	20.4	44.7	0.0	**99.4**	**27**	**11.0%**
FY26YTD	4.9	1.2	1.0	11.5	11.8	21.3	0.0	**51.7**	**28.1**	**4.0%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD is data for 6 months from Apr'25 to Sept'25.

Table 3-7: Total Revenue (in INR Cr) at TP2 Vigakhet and AADC (in INR Lakhs/day)

Year	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC %
FY21*	2.3	0.4	0.4	3.1	5.4	9.2	0.0	**20.7**	**12**	**-**
FY22	4.5	0.8	1.0	7.6	12.2	21.2	0.0	**47.2**	**13**	**8.3%**
FY23	5.1	1.0	1.2	10.4	14.0	25.7	0.0	**57.7**	**16**	**23.1%**
FY24	5.5	1.2	1.6	12.1	14.9	27.5	0.0	**62.8**	**17**	**6.3%**
FY25	**5.8**	**1.5**	**1.5**	**14.6**	**15.2**	**30.5**	**0.0**	**69.2**	**19**	**10.4%**

FY26YTD	2.8	0.8	0.7	8.3	8.5	14.9	0.0	**36.1**	**19.6**	**3.0%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD is data for 6 months from Apr'25 to Sept'25.

3.16 It can be inferred from the data that major contributor to the revenue on the Asset is the MAV category which has a share ranging ~45% of overall revenue across the Asset.

3.17 The Babina toll plaza reported an AADC of ~INR 27 Lakhs in FY25 as compared to Vigakhet toll plaza which reported an AADC of ~INR 19 lakhs. Both the plazas observed a ~10% increase in per day collection in FY25 which is mainly contributed by increased volume of LCV, 2A and MAV on the Asset. Since, both Asset carry similar traffic volumes, most of the revenue differences can be explained by the difference in toll rates charged, which in turn is due to the difference in tollable lengths.

3.18 The drop in AADC for FY26YTD can be attributed to drop in the MAV traffic which is the major contributor to the overall revenue at the asset.

Toll Frequencies

3.1 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the client. The most common ticket categories observed on a typical National Highway are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these passes instead of evading toll.

3.2 The following are the types of tickets being sold at the plazas of the Asset.

Table 3.8: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows for a return journey within a day with a 50% discount on the return trip.
Monthly Pass	Discounted single entry ticket for users who undertake multiple trips within a month can buy the monthly pass.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.3 Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For some Assets, the Exemption and violations are at time reported together.

3.4 Generally, over the period the shares of single/return/monthly tickets tend to stabilise within 2-3 years of Asset operations. Only in the cases where trip patterns are expected to

change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns.

3.5 Further, FY21 was impacted due to the mandatory implementation of FASTag as a mode of payment, where users were now paying via an online payment system instead of cash payments at the toll plaza. Additionally, in FY22 traffic and travel patterns were impacted by the second wave of COVID-19 in Q1 and Q2. With FY21 and FY22 being impacted these external events, the segmentation began to stabilise from FY23 onwards and reached steady state starting FY24

3.6 *Introduction of Annual pass for CJVs*

3.7 The National Highway Authority of India launched the "The FASTag Annual Pass" on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.8 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

The Annual Pass aims to:

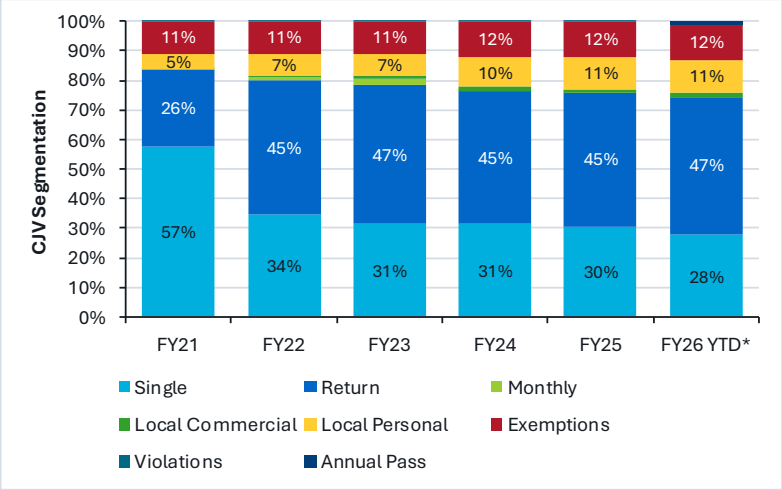
- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll road

Share of traffic by payment type

3.19 Since the Asset is located closer to urban clusters, it caters to a considerable number of daily commuters. This local movement results in multiple CJV trips through the plaza, leading to a higher share of return tickets for CJVs. On TP1, the level of exemptions is influenced by the higher share of local traffic on the plaza.

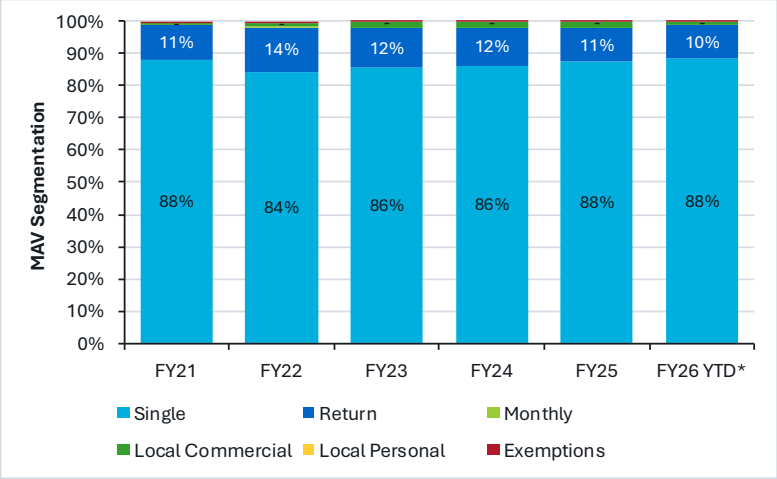
3.20 The CJV segmentation has decreased for single ticket type from FY22 to FY23 by approximately 3%, while the return ticket share increased by 2%. This minor shift can be attributed to the increasing adoption of FASTag by CJV users over the last three years. Post FY23, segmentation for CJVs has remained largely stable.

Figure 3-1: Ticket segmentation for CJV at TP1 Babina



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD is data for 5 months from Apr'24 to Aug'25

Figure 3-2: Ticket segmentation for MAV at TP1 Babina



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD is data for 6 months from Apr'25 to Sept'25

3.21 The trends observed in MAV segmentation for TP1 Babina are consistent between FY24 and FY26YTD. A considerable proportion of MAVs buying single tickets can be attributed to long-distance movement of traffic observed on the Asset. The same was verified from the OD data analysis with nearly 50% MAVs having trip lengths longer than 1,000kms and 50% MAVs having both ends of the trips out of Asset.

3.22 Table 3-9 presents data for FY26YTD (Apr'25 – Aug'25) segmentation for LCV, Bus, 2A and 3A category for Babina Toll Plaza:

Table 3-9: Ticket segmentation for LCV, Bus, 2A and 3A at TP1 Babina

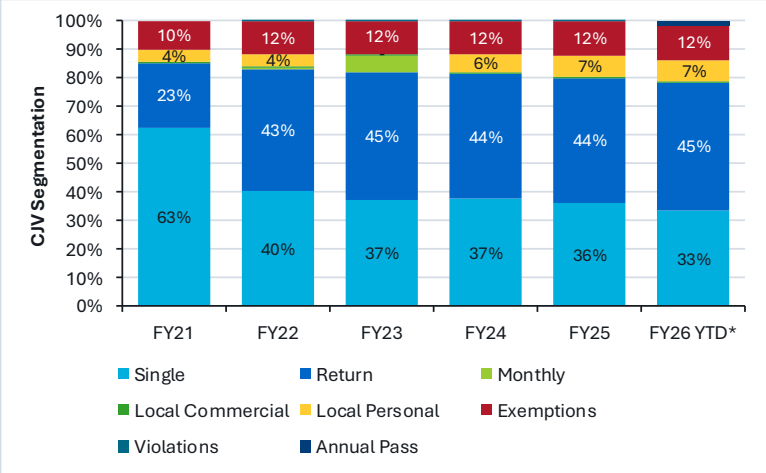
Ticket Category	LCV	Bus	2A	3A
Single	89%	34%	92%	96%
Return	10%	33%	6%	4%
Local commercial	0%	32%	0%	0%

Ticket Category	LCV	Bus	2A	3A
Exemption	1%	1%	2%	0%

Source: Steer analysis of Client data

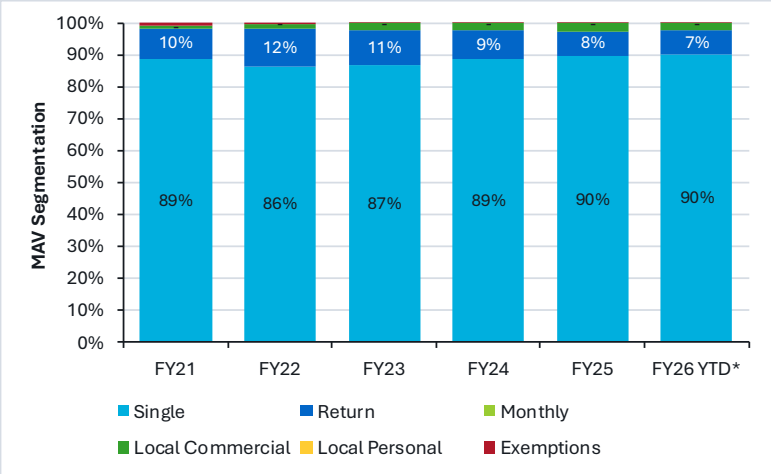
3.23 The segmentation for TP2, Vigakhet toll plaza is presented below:

Figure 3-3: Ticket segmentation for CJV at TP2 Vigakhet



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD is data for 5 months from Apr'25 to Aug'25

Figure 3-4: Ticket segmentation for MAV at TP2 Vigakhet



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD is data for 5 months from Apr'25 to Aug'25

3.24 Observations pertaining to ticket segmentation are similar on both toll plazas. The CJV segmentation shares have largely been consistent from FY23 and FY26YTD. On TP2 Vigakhet MAVs have exhibited similar trends when compared with previous years where single is dominant ticket category with more than ~85% share. These trips are primarily travelling between north and south India between Delhi NCR towards Bangalore and Chennai with trip lengths longer than 1,000kms.

3.25 Table 3-10 presents data for FY26YTD (Apr'25 – Sept'25) segmentation for LCV, Bus, 2A and 3A category for Vigakhet toll plaza:

Table 3-10: Ticket segmentation for LCV, Bus and 2A at TP2 Vigakhet

Ticket Category	LCV	Bus	2A	3A
Single	90%	39%	94%	96%
Return	9%	54%	4%	3%
Local commercial	1%	7%	0%	1%
Exemption	1%	0%	1%	0%

Source: Steer analysis of Client data

Data Collection exercise

3.26 As mentioned previously, to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset in earlier commissions, comprising the surveys listed in the table below. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3-11: Data collection exercise

Toll Plaza	3/7-day videography-based TVC			1-day OD survey	
	Start date	End date	Time (hrs)	Start date	Start time
TP1 Babina	29 Jan 2024	31 Jan 2024	0000-2359	30 Jan 2024	0900 hours
TP2 Vigakhet	18 Jan 2021	24 Jan 2021	0000-2359	19 Jan 2021	0900 hours

Source: Steer analysis of TVC data

3.27 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, to fully understand the impact of this weekly fluctuation on the Asset, we collected three and seven-day counts respectively at each toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.28 Taking an average of the seven-day TVC counts (18th Jan – 24th Jan 2021, 0000-2359) at Vigakhet and three-day TVC count (29th Jan – 31st Jan 2024, 0000-2359) at Babina, we obtained the following average daily traffic (WADT) for each toll plaza. This WADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Table 3-12: WADT from TVC counts

Toll Plaza	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
TP1 Babina	3,238	623	390	151	1,118	1,140	1,731	**8,395**
TP2 Vigakhet	2,156	289	306	126	814	1,337	1,508	**6,536**

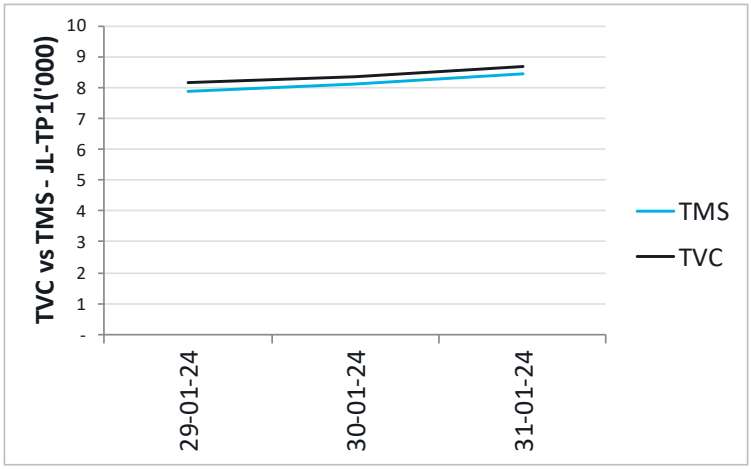
Source: Steer analysis of TVC data; Babina average is of 3 days and Vigakhet average is for 7 days of data

TVC v/s TMS analysis

3.29 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those days, as provided by the Client.

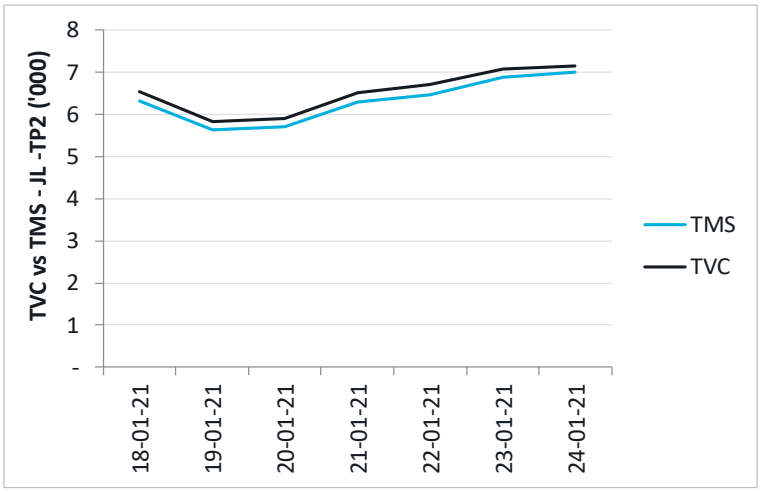
3.30 The following figures show the comparison between the daily traffic observed by TVC and TMS for the two toll plazas.

Figure 3-5: Comparison between TVC and TMS daily traffic data on TP1 Babina



Source: Steer analysis of TVC and Client TMS data

Figure 3-6: Comparison between TVC and TMS daily traffic data on TP2 Vigakhet

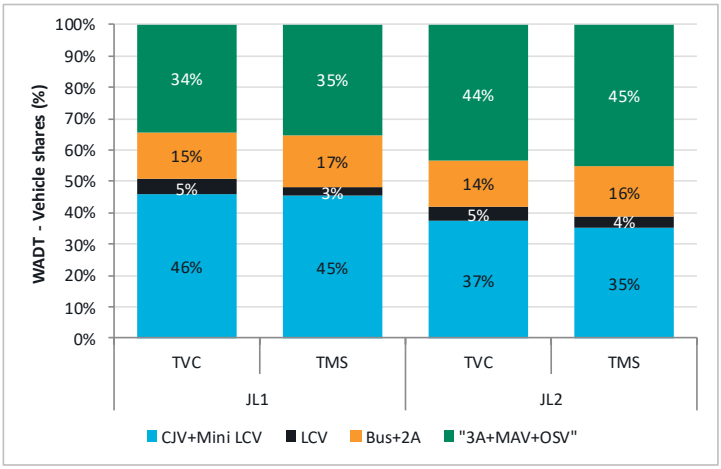


Source: Steer analysis of TVC and Client TMS data

3.31 Figure 3-7 compares the shares of vehicle types at both toll plazas observed by the TVC and TMS data. As can be seen, whilst the share of CJVs and 3A+MAV+OSV is marginally

higher in TMS compared to TVC, it is lower for bus/2A and LCV category. This difference can be attributed to common misclassification of vehicle categories.

Figure 3-7: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.32 It is seen that on both the TP when the TVC and TMS are compared to each other, the major category of 3A and MAV taken together are within 1% on each day of the TVC. This suggests that the TMS is reliable and can be used to build further forecasts of the Asset.

Key findings of origin-destination analysis

Overview

3.33 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. As mentioned previously, the OD analysis presented here has been based on the data collected on 30th-31st January 2024 at TP1 and 27th-28th January 2021 at TP2.

3.34 As part of our previous assignment, we have analysed the regional drivers of demand based on the following analyses:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.35 While zonal analysis and the list of top OD pairs help to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.36 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TMS data) during the same time period. The Table 3-13 below presents the sample rates for key vehicle type aggregations

at the toll plaza. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3-13: Sample rates for OD data

Vehicle type	TP1 Babina	TP2 Vigakhet
Passenger (CJV+Bus)	18%	27%*
Goods (LCV+2A+3A+MAV)	62%	61%

Source: Steer analysis of OD data, *The surveys at TP2 took place during the COVID-19 pandemic due to which the vehicles were reluctant to stop and answer the enumerators which led to lower sample rate in passenger vehicles. While the surveys at TP1 took place during a spell of intense fog across north India due to which there was lower traffic appearing and sample collection.

Zone categories

3.37 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states, and regions in the vicinity of the Asset, we have aggregated zonal data as described in Table 3-14 below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Asset being studied.

Table 3-14: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of Uttar Pradesh	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Madhya Pradesh	Madhya Pradesh state
Delhi	Delhi State, including New Delhi
North India	Uttarakhand, Haryana, Punjab, Jammu and Kashmir
West India	Rajasthan, Gujarat
Central India	Chhattisgarh
East and North-eastern India	West Bengal, Jharkhand, and Northeast Indian states
South India	Tamil Nadu, Karnataka, Kerala, Andhra Pradesh

Source: Steer analysis

Zonal influence

3.38 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence at each toll plaza of each Asset, based on zonal aggregation listed in the previous sub-section. It should be noted that zonal influence is analysed on trip ends and not trips.[6]

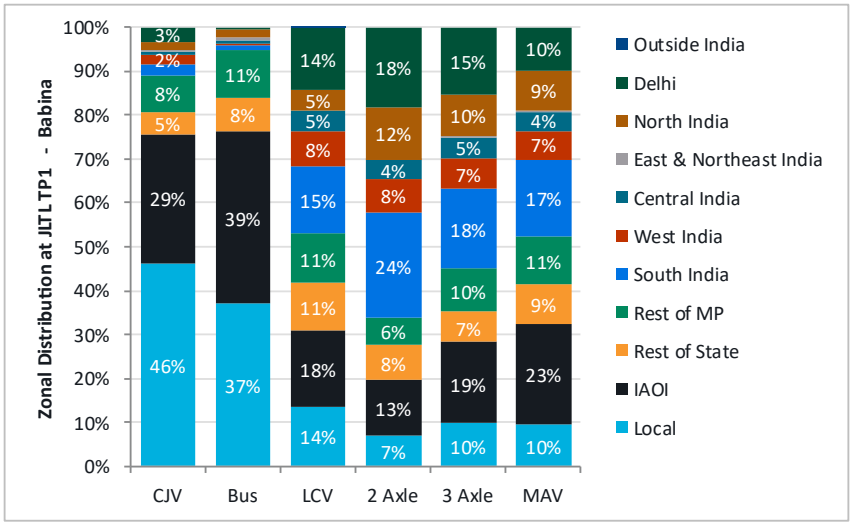
[6] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad would

3.39 It can be seen from the figures below that CJV and Minibus/Bus categories are dominated by local and IAOI trips on both the toll plazas. The share of local trips for CJVs is more on TP1 as it is in close vicinity of Jhansi whereas Vigakhet is comparably distant from Lalitpur. Moreover, Babina itself is economically more developed when compared to Vigakhet. Similarly, since Lalitpur is near Madhya Pradesh, significant number of Madhya Pradesh trips also get added on TP2.

3.40 Since the Asset lies on the preferred route for traffic commuting between Delhi-NCR and Bangalore, the southern India zones and the Delhi zones have the highest and the second highest proportion respectively on both the toll plazas across all goods categories. The shares of other zones are comparable across all the categories. Since TP1 is near NH27 (East-West corridor), the share of Northern India trips is higher on TP1 than TP2. Similarly, since TP2 is near Madhya Pradesh which witnesses the higher share of Madhya Pradesh trips.

3.41 In the charts shown below, it will be noticed that TP1 and TP2 despite being adjoining, show slightly different influences for MAVs. With the proximity to TP1 to Army base camp in Babina for goods traffic and Jhansi for passenger traffic, the influence of local movement is higher on TP1 Babina. For this same reason, the share of Delhi/North bound trips on TP2 Vigakhet is higher around 28% than TP1 of 19%. Another reason which has affected the long-distance traffic results is the surveys undertaken on TP1 in 2024 was during January which was impacted due to dense fog situation. Therefore, resulting in affected long distance traffic movement.

Figure 3-8: Zonal influence at TP1 Babina

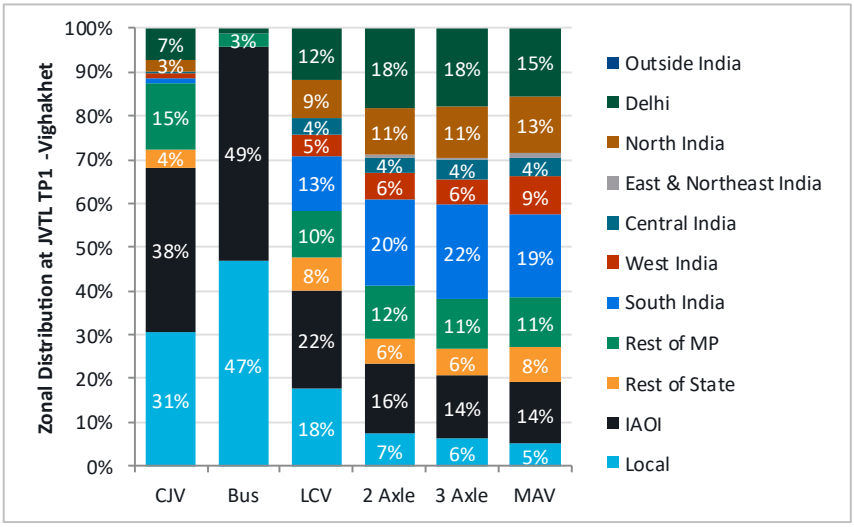


Source: Steer analysis of OD data

3.9 In comparison to our previous OD results, it was found that influence of local movement and trips have increased on TP1 Babina where the share of Rest of State and Internal trips increased by 14% for MAVs. In terms of commodity distribution, the Agriculture and Grocery share has decreased from 28% to 20%, while the Manufacturing share has also increased by 5% from 14% in 2024 OD results when compared to 2023.

be 50% since one end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

Figure 3-9: Zonal influence at TP2 Vigakhet



Source: Steer analysis of OD data

3.42 Given the strategic nature of the Asset, facilitating north-south movements via NH44 a, the zonal influence of this Asset is diverse. Significant zonal influence of Delhi-NCR, North India (UP, Haryana), South India (Tamil Nadu, and Karnataka) is observed for heavy vehicles (2A+3A+MAV).

3.43 Zones that are located within Uttar Pradesh, collectively contribute to 25-30% in case of 3A and MAV. The remaining 75% is a diverse mix of other zones, including Delhi, Haryana, Rajasthan, south India, Maharashtra, among others. The long-distance nature of this Asset is evident from ~25% share of zonal influence of South India in case of 2A/3A vehicles, followed by major shares of Delhi, Haryana, and Maharashtra.

Internal External analysis

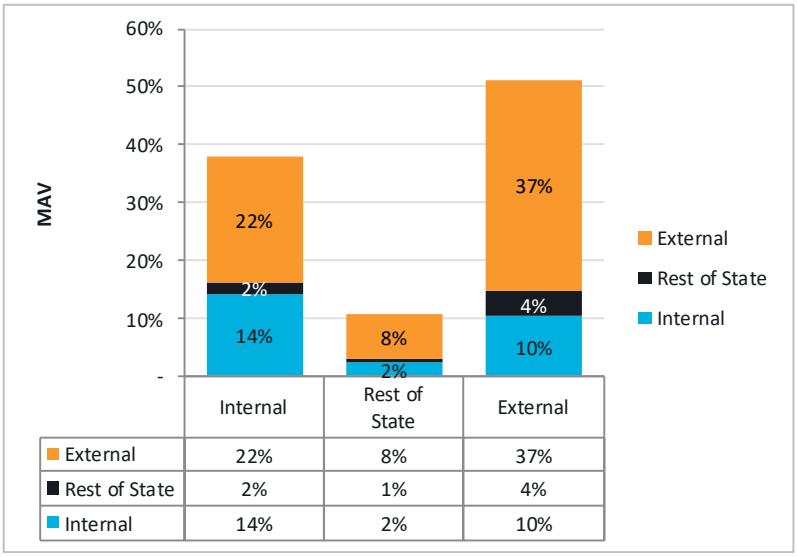
3.44 Internal-External analysis helps in identifying the trips which have both the origin and destination on the Asset (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). 'Internal' zones are those that were analysed as 'local' in the zonal influence analysis, i.e., lying on the Asset, while 'External' zones are all other zones.

3.45 The figures below show the distribution of trips for MAV for both TP1: Babina and TP2: Vigakhet. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation.

3.46 The internal-external distribution further validates the strategic nature of the asset, with 60% influence pertaining to zones that are external at both the plazas. This is further to the zonal distribution that showed that Local and Rest of the State had relatively less influence on the Asset, while aggregate of the remaining zones categorized as External exert the significant proportion of influence on the traffic. This validates that the long-distance nature of the Asset, facilitating long distance through movement—that is trips that originate and end outside of Uttar Pradesh, traversing via the Asset. However, there is a difference in the External-External share at Babina is 18% lower for MAV than at Vigakhet. The high share of external trips infers the presence of majorly through long

distance traffic on the Asset. The Asset is used by through traffic commuting between Uttar Pradesh/Delhi/northern state and southern states of Karnataka and Chennai.

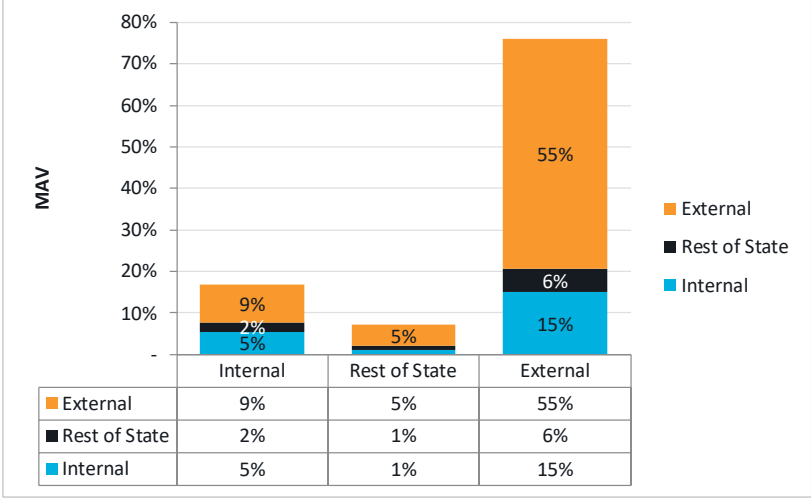
Figure 3-10 Internal-external distribution at TP1 Babina



	Internal	Rest of State	External
External	22%	8%	37%
Rest of State	2%	1%	4%
Internal	14%	2%	10%

Source: Steer analysis of OD data

Figure 3-11 Internal-external distribution at TP2 Vigakhet



	Internal	Rest of State	External
External	9%	5%	55%
Rest of State	2%	1%	6%
Internal	5%	1%	15%

Source: Steer analysis of OD data

Commodity distribution

3.47 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the Table 3-15 below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3-15: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane,Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, ghoat, cow,cattle food etc)	LIV	

Commodity Description	Code	Combined codes used for charts
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread,cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids,Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood,Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, House hold items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

3.48 The following figures present the commodity distribution for goods vehicles at the toll plaza at the total level and split by direction, towards Jhansi and towards Lalitpur.

3.49 As observed during our site visit, majority of the 2As and 3As at both the plazas were carrying miscellaneous commodities (parcels, couriers, household items). This is due to the fact the Asset connects Delhi-NCR to the Central India (Nagpur) and the e-commerce hub in Chennai, Bangalore, and Hyderabad. It must be noted that the trucks carrying such miscellaneous items are largely carrying e-commerce deliveries from various hubs.

3.50 Automobiles are another significant commodity, with over 10% share of MAV on both plazas. This is because there are automobile manufacturing hubs both north (Delhi NCR) and south (Chennai, Bangalore) of the Asset.

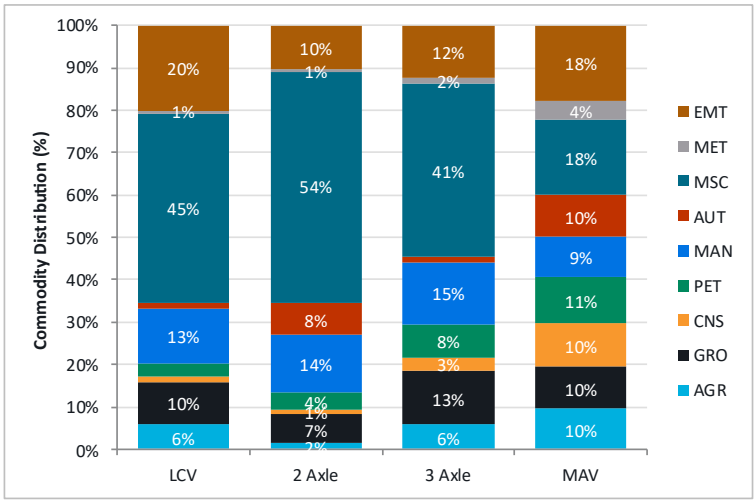
3.51 Manufactured items are the second most common commodity being transported using 3A and MAV trucks whereas automobiles are the second highest commodity of 2A. According to the OD analysis, manufactured items are transported using this route as it connects major hubs like Delhi-NCR, Chandigarh, Nagpur, Bhopal, Raipur, Bangalore, Hyderabad, and Kolkata.

3.52 Groceries also account for significant proportion of commodities transported on the Asset. It accounts for over 20% of the goods being carried on both the plazas. Since the

asset links cities such as Jhansi, Gwalior, Agra, Sagar and other key cities in Uttar Pradesh and Madhya Pradesh, these daily consumption items are observed in high proportion.

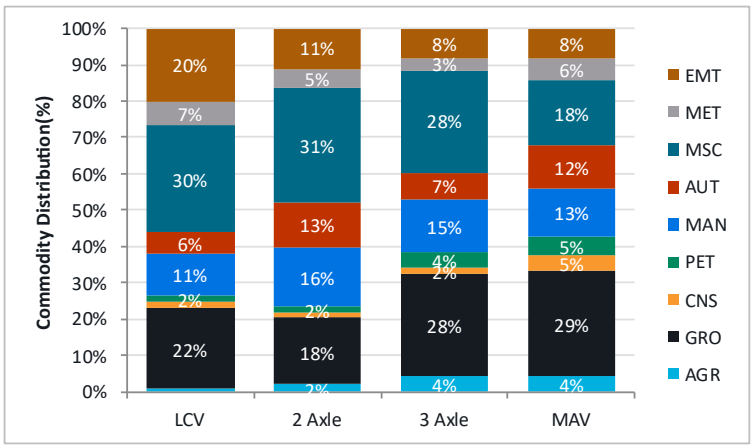
3.53 Commodities such as apples, wheat, potato, and mango are carried from northern states such as Uttar Pradesh, Punjab, Himachal Pradesh for consumption in southern states of Karnataka, Tamil Nadu and Telangana. Whereas commodities such as rice and banana are carried from southern cities of Bangalore, Puducherry, and Chennai for consumption in norther states of Delhi, Uttar Pradesh, Punjab.

Figure 3-12: Commodity distribution at TP1 Babina



Source: Steer analysis of OD data

Figure 3-13: Commodity distribution at TP2 Vigakhet



Source: Steer analysis of OD data

Trip length analysis

3.54 Trip-length distribution provides the distance-based profile of various vehicle types. This aids in validating assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorized distances into 5 groups – local (0-100km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance (+1,000 km). The trip

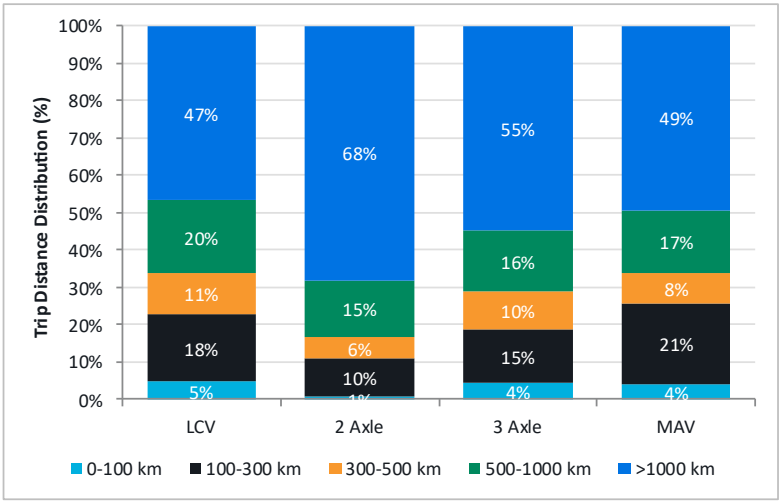
distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[7]

3.55 As observed in Internal-External analysis, the Asset is majorly being used by through traffic for goods vehicle categories. The same is validated by the figures below as for 2A/3A/MAV trucks, trips which cover greater than 1000 km distance have the highest proportion on both the toll plazas. These trips are majorly between Delhi NCR/Punjab/Uttar Pradesh on one end and Nagpur, Hyderabad, Bangalore and Chennai on the other end.

3.56 As understood from the zonal distribution and commodities' distribution, that the strategic nature of this Asset serves long-distance north-south/west movements. Accordingly, over 60% of the trip distances of 2 Axle, 3 Axle and MAV are traveling very long-distance movement of over 1,000 km.

3.57 There is clear difference between the proportion of MAV travelling over 1000 km on both the plazas, with TP1 at 49% and TP2 at 60% respectively. This is because of the effect of the dense fog over north India which affected long distance traffic movement.

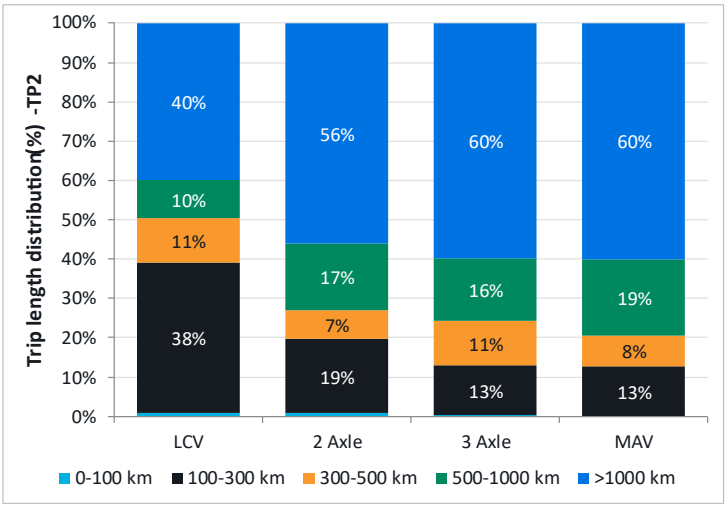
Figure 3.14: Trip distance distribution at TP1 Babina



Source: Steer analysis of OD data

[7] **Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link:** https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by Figure 3.using macro-enabled Excel, R, etc.**

Figure 3.15: Trip distance distribution at TP2 Vigakhet



Source: Steer analysis of OD data

Conclusions

3.58 Traffic on the Asset is dominated by CJVs which make up approximately 40% of the total composition on both the toll plazas. 3A and MAVs, collectively, make up around 40% of the total composition on both the toll plazas. Apart from the mentioned categories, both the toll plazas observe around 18% 2A, 2% Bus, and 4% LCV traffic. In terms of revenue, CJVs contribute around 10% to the total revenue, while commercial traffic (2A, 3A and MAV) contribute ~87% in terms of revenue.

3.59 For MAVs Single tickets have remained dominant, holding a share of over ~85% across years at both the plazas. The proportion of exemptions and local personal in CJV has remained constant ~10-12% and ~6-12% on both the plazas over the years. An analysis of LCV segmentation reveals an increasing share of single-ticket transactions by 1.8% and 1.4% at Babina and Vigakhet resp., suggesting a trend toward longer trip distances. The Asset observes almost negligible violations.

3.60 The TVC data shows minor variation on the TMS data, where at the total level of TVC is approximately 3% higher than the TMS data. However, the difference is negligible for the larger revenue generating categories (3A, MAV, and OSV combined), 0.4% at a total level.

3.61 The OD analysis found that in terms of zonal influence, both TP1 and TP2 observe high share of local and IAOI trips for CJV and bus categories. On the other hand, maximum trips for goods vehicles are originated/destined out of the state and hence both the toll plazas have average 26% local and IAOI trips only for MAVs vehicles. The key commodities transported on the Asset includes parcels, couriers, and manufactured products, which when combined, make up around 42% of the commodity share for MAV traffic on both the toll plazas. Automobiles are another category which contribute nearly 10% of MAV traffic.

3.62 When considering the internal and external distribution, it is observed that External/Through trips dominate for 3A and MAV categories suggesting rest of states as origin and destination of truck traffic. Since, majority of the traffic is attributed to external zones, it can be inferred that the traffic is greatly through in nature and the growth of traffic is directly proportional to the growth of other influencing state. The trip analysis

supports these findings, with 3A traffic having 55% and 60% share and MAV traffic having 49% and 60% share of trips ending post 1000 km distance on TP1 and TP2 respectively.

3.63 Overall, the Asset has benefitted from the strong traffic volumes observed on the NH44/7 corridor connecting Delhi in the north to cities like Nagpur, Hyderabad, Bangalore and Chennai in the central and southern region.

4 Socio economic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the roads are in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions in the regions where the Asset are located and the country. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Asset.

4.2 In turn, the change in the relative competitive position of the Asset (and thus of the traffic capture they can achieve) derives from how the relative offer for the roads changes, i.e. the service offered, and the tolls charged on the project roads, in comparison to that on competing roads; and whether any competing road facilities are planned.

4.3 In this chapter, we have assessed the trends of the above growth drivers, as indicators of the socio-economic conditions in the regions surrounding the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in the Uttar Pradesh state, where the Asset are located.

National level

4.5 Table 4-1 below shows that the total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4-1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 – 1985]	2.3%	1.9%	3.8%
1985 – 2000	2.0%	1.7%	2.9%
2000 – 2015	1.5%	1.0%	2.6%

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth.

State level

4.6 Table 4-2 shows the evolution of population in Utter Pradesh state compared to that of the country. Overall, as can be seen, the trend observed at the country level is also noticeable at the state level, namely, a move towards urban agglomeration with the growth in rural population being slower than that of urban population. Further, the state has grown at a higher rate than the country average, between 2012-2024.

Table 4-2: Population Growth in Uttar Pradesh and India (2012-2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Uttar Pradesh	201	237	**1.4%**
India	1,210	1,395	**1.2%**

Source: MoSPI Estimates

4.7 Due to the complexities of the patterns in which urbanisation takes place, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide a socio-economic context of the state/trends in the regions in which the Asset are located.

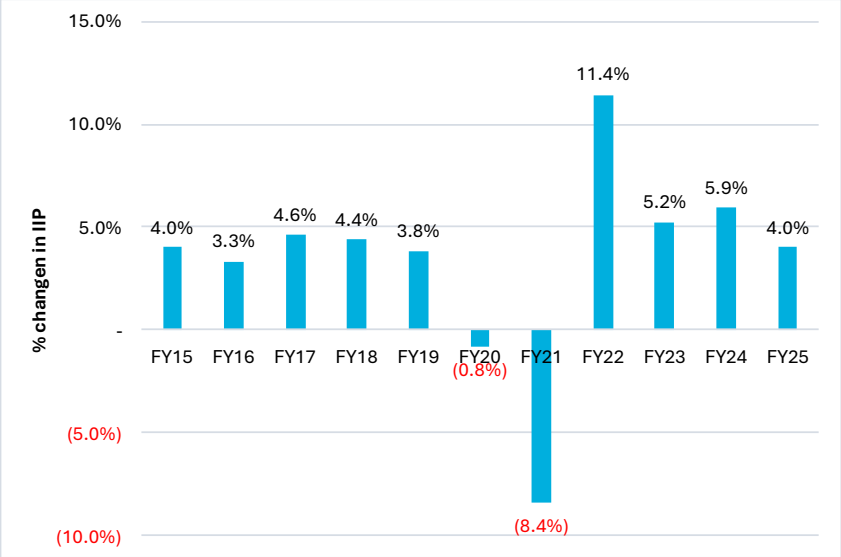
Economic Indicators

4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.9 At an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20 (as presented in Figure 4.1 below). In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. However, with the gradual opening up of economy post the pandemic, and recovery in consumption demand, industrial activity also recovered with time with IIP recording growth of 5% in FY23 and 6% in FY24.

4.10 The figure below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

Figure 4.1: Annual growth – Index of Industrial Production



Source: Steer analysis of MoSPI data

4.11 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle Ownership

4.12 Car ownership in India has traditionally been very low at 22 cars per 1000 individuals, compared to developed countries like the United States, which has approximately 980 cars per 1,000 individuals.[8] However this is slowly changing with the increasing per capita income levels. As can be seen in Figure 4.2 below, between 2007-17, the number of cars per 1,000 people more than doubled from 9 in 2007 to 22 in 2017 growing at a CAGR of approximately 11%. The corresponding ownership rates for urban cities like Delhi, Mumbai, Bengaluru, and Chennai are over 100 cars per 1,000 people[9] (GoI 2011; MoRTH 2012).

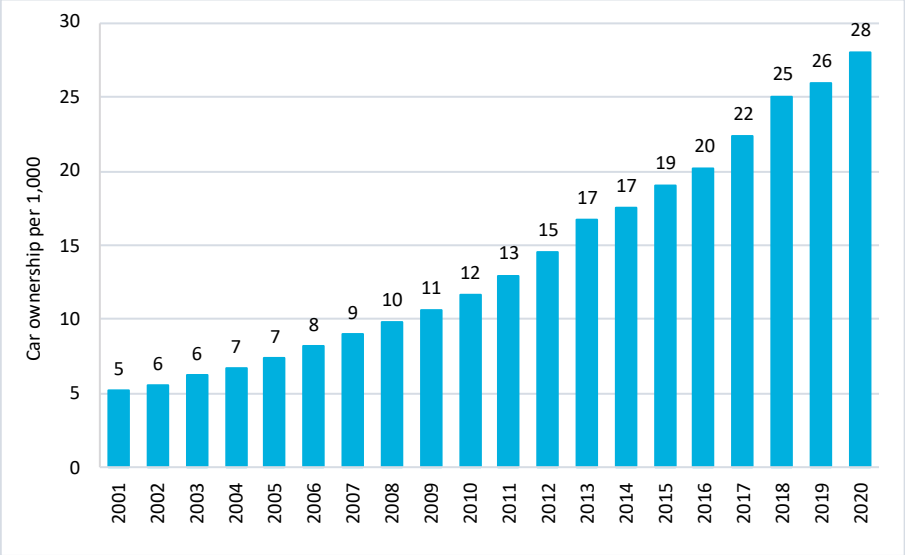
4.13 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[10]

[8] India has 22 cars per 1,000 individuals

[9] Proliferation of Cars in Indian Cities

[10] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4.2: Car ownership in India per 1,000 population

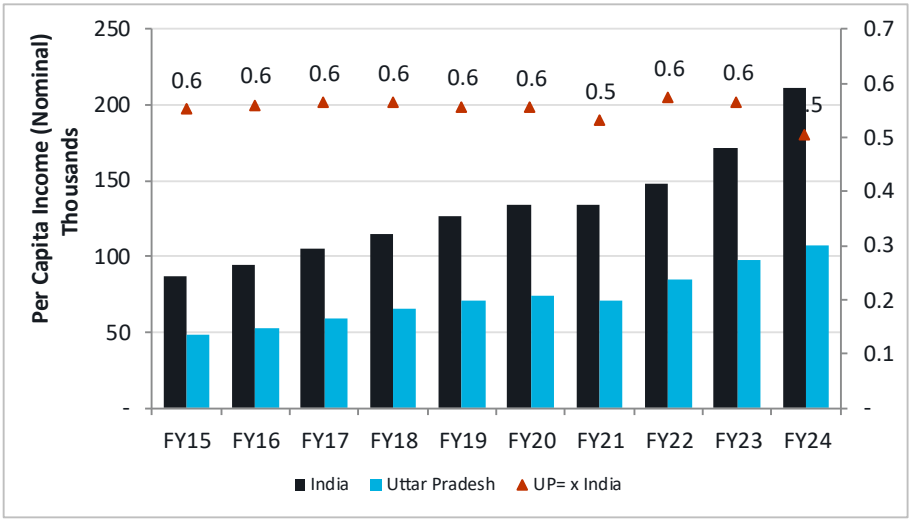


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.14 The per capita income of the state where the Assets lies i.e., Uttar Pradesh is lower as compared to the national average. In dollar terms, PCI of just $1,000 per head indicates that the state is at a very early stage of consumption curve. Going forward, we therefore expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

Figure 4.3: Per capita income



Source: Steer Analysis of MoSPI data

4.15 However, given the difficulty in obtaining granular district level PCI data it is not advisable to use this as a growth driver. Also, the long-term forecast for PCI is not available we therefore refrain from using it to forecast traffic.

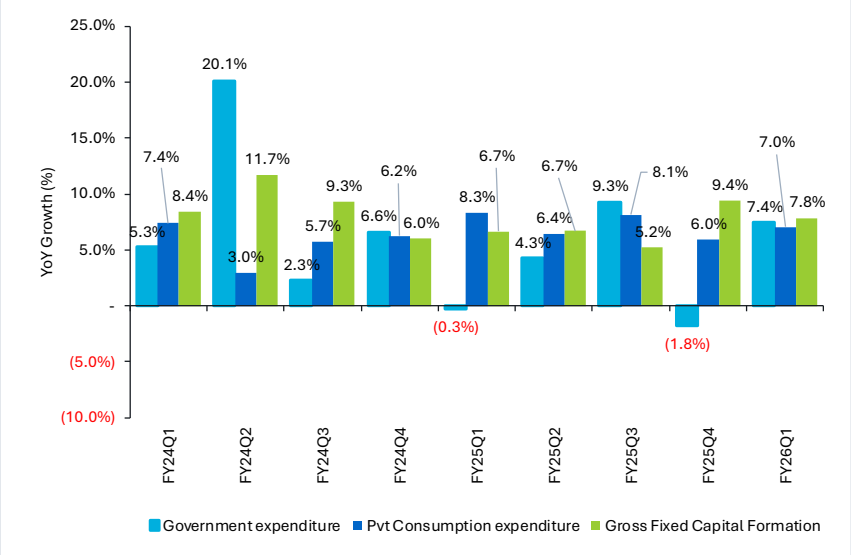
Economic growth

India's Performance

4.16 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[11].

4.17 The figure below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: Government final consumption expenditure



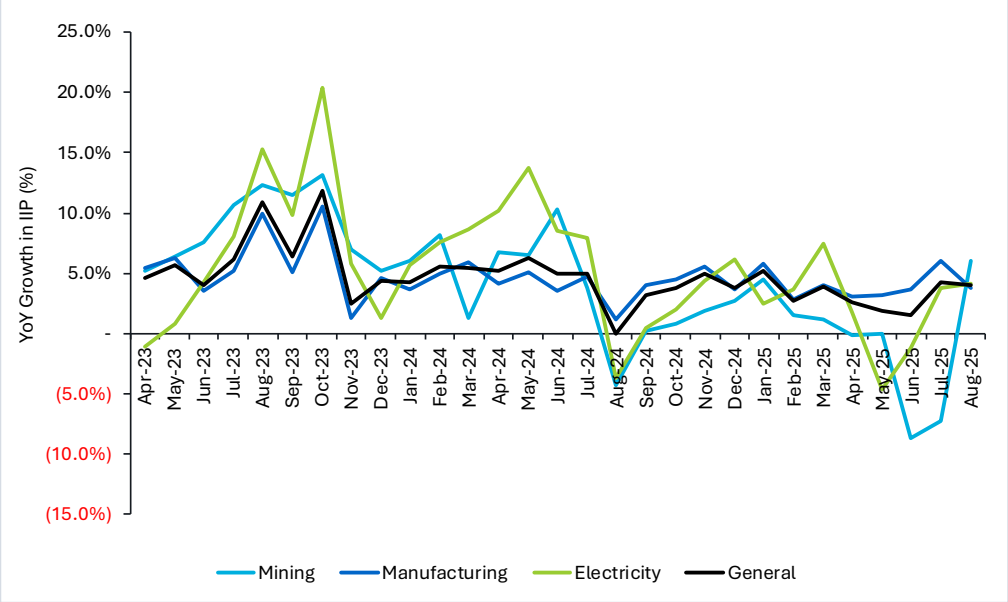
Source: Steer Analysis of MOSPI Data

4.18 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.19 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In the figure below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

[11] Government of India, PIB Release Oct 1 '25

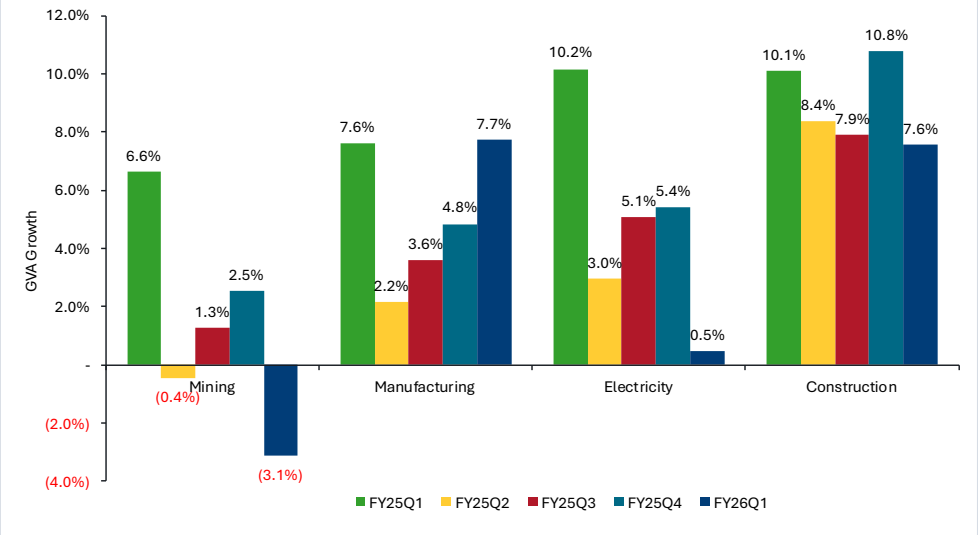
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.20 In addition to monthly trends in IIP, the figure below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. While overall economic growth has remained resilient as of FY26YTD, performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

GDP and GSDP Growth

4.21 Over the period FY12-FY24, the Indian economic has grown at a CAGR of approx. 6% aided by growth in the tertiary sector which grew at a CAGR of approx. 6.9% over the same

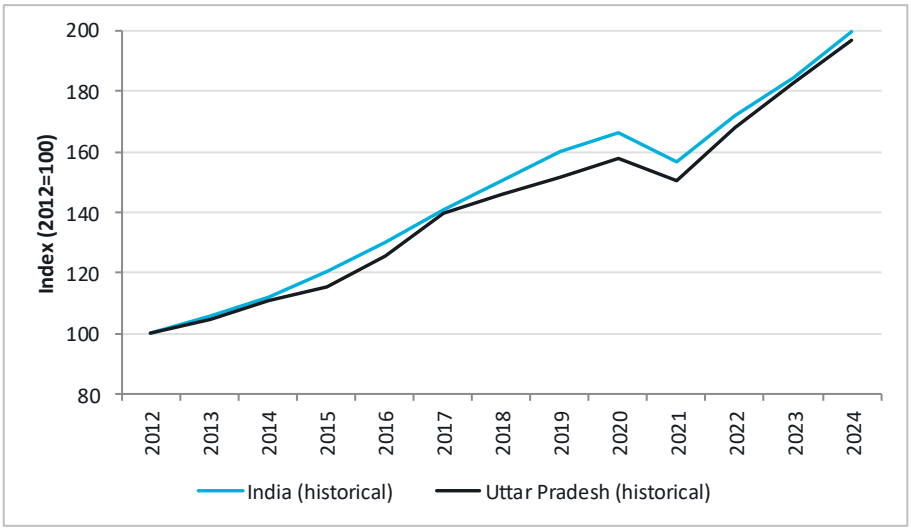
period. The economic growth of Uttar Pradesh (GSDP) has been slightly slower than the country overall. Uttar Pradesh's GSDP CAGR was 5.8% between FY12-24. Uttar Pradesh approximately contributes 8% to the India's GDP. In terms of per capita income, Uttar Pradesh's has lower per capita income than the country.

4.22 In terms of sectoral contribution to the state GDP, tertiary sector has the highest share (47%) followed by secondary (27%) and primary (24%), with the sectoral shares remaining stable over the last few years.

4.23 Uttar Pradesh is the most populous state in India with a population of ~237 million people. The state has a large pool of skilled, semi-skilled and unskilled labour. Uttar Pradesh is also considered the largest consumer base in the country. The tertiary sector has the highest sectoral contribution to the state GDP followed by the secondary and primary sectors. These shares have remained stable for the past decade.

4.24 The tourism and transport sector constitute a majority of the state's tertiary sector. Uttar Pradesh is considered a favoured tourist destination in India, with key tourist attractions being Agra, Varanasi, Mathura and Prayagraj. In 2023, the state contributed 16% share to national tourism pie which is second highest after Tamil Nadu12. The state holds third position in the country in foreign tourist arrivals with over 3.78 million[13]. Also, the state recorded a tourist footfall of 64.90 crore in 2024, a significant increase of over 17 crore from 2023 as per Union Ministry of Tourism[14]. Overall, Uttar Pradesh has 8.2% contribution to national GDP as per 2024 statistics.

Figure 4-7: Evolution of Uttar Pradesh's state GDP and national GDP



Source: Steer Analysis of MOSPI Data

4.25 In terms of secondary sector, the state has key industrial areas in Khurja (Ceramic); Moradabad (Metals); Meerut, Bareilly, Mirzapur and Lucknow (Handloom & Handicrafts);

[12] 'UP is 2nd biggest contributor to domestic tourism' | Lucknow News - Times of India (indiatimes.com)

[13] http://tourism.gov.in/sites/default/files/Other/India%20Tourism%20Statistics%20at%20a%20Glance%202019.pdf

[14] up-sees-65-crore-tourists-in-2024-over-17-crore-more-from-2023

and Kanpur and Noida (Leather and tannery). The state also has an oil refinery in Mathura, operated by Indian Oil Corporation.

4.26 Uttar Pradesh has very fertile Gangetic land with a large share of population dependent upon agriculture sector for the livelihood. The key primary industries in the state include food processing, crop production and horticulture. The state is mainly known for production of wheat, sugarcane, potato and mango.

4.27 The official historical GDP and GSDP data for India are released by the Ministry of Statistics and Program Implementation (MoSPI). The GDP forecasts for India are available from various reliable sources such as Oxford Economics and Consensus Economics[15], but state-specific GSDP forecasts are not published by any such sources. To derive state GSDP forecasts, we rely on past trends of the relationship between GDP and GSDP, and develop GSDP forecasts as a function of our assumed GDP forecasts[16].

4.28 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.29 Following the discussion in Chapter 2 on the nature of economic activity in the state of Uttar Pradesh, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth. Particularly, we have based our forecast on GSDP using forecasts of GDP as provided by the Client.

National GDP

4.30 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[17]

4.31 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over

[15] **Consensus Economics - Economic Forecasts and Indicators**

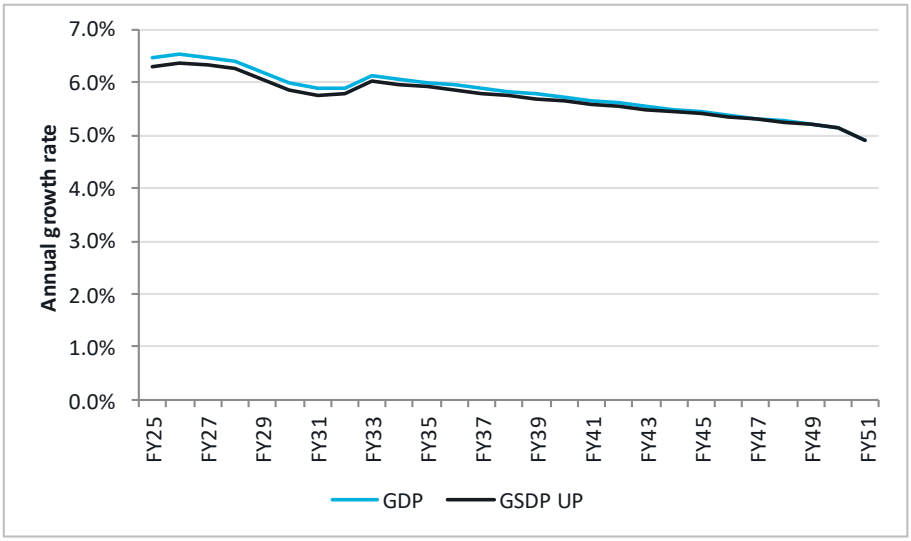
[16] Assuming that the historical long-term relationship between GSDP and GDP sustains over the short-term, we project future growth in GSDP as a function of our GDP growth forecast. We taper the relationship of GSDP growth to converge to GDP growth gradually over the long-term.

[17] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

FY21), and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 and 6.5% in FY25 (as per the SAE) before slowing down over the past year due to several domestic and external factors.

4.32 Figure 4-8 below shows client provided GDP projections for India. The forecast provided by the Client expects the Indian GDP to grow at 6.5% between FY25-FY27[18] and gradually tapering down to 5.2% by FY51, end of concession. The India GDP growth forecast provided by the Client is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[19] in the medium term.

Figure 4-8: GDP-GSDP forecast



Source: GDP forecast provided by the Client

[18] Based on Asia Pacific Consensus Forecasts (December 2024)

[19] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

5 FY26 Base year AADT and Traffic growth Analysis

Introduction

5.1 In this section, we present our approach, assumptions, and estimates for base year AADT and background traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 In the absence of Historical data on the Asset, the option of running statistical method to estimate background growth relationships was not available, therefore we have undertaken a detailed benchmarking exercise, coupled with trip length and OD analysis to estimate the elasticities. These are discussed in detail below.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

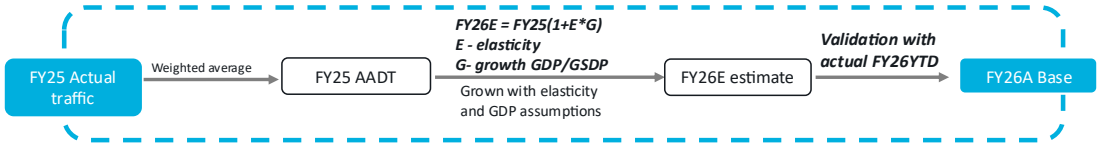
5.5 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

Methodology

5.6 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at estimated FY26 (FY26E).

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April 2025 to September 2025) of FY26 (FY26YTD). The Adopted FY26 AADT (FY26A) is derived by making necessary adjustments to FY26E to reflect the outturn traffic in FY26YTD (adjusted for seasonality). The methodology is represented using the below schematic:

Figure 5-1: FY26 Base Estimation methodology



Source: Steer Analysis

5.8 The two key inputs to estimate the base year FY26 traffic are: FY25 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.9 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.10 To normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.11 Historical traffic data was available for all toll vehicle categories starting October 2020 up-to September 2025. Therefore, in absence of longer-term historical data for the Asset where FY21 and FY22 are COVID-19 impacted years, we assume FY23 onwards to be normal years, thus average FY23 to FY25 seasonality is considered for FY26 base year estimation for all the vehicle categories except for MAVs. For MAVs average FY23-FY24 SCF are used due to impacted traffic in Feb'25 and Mar'25.

5.12 Table 5-1 and Table 5-2 below present the average FY23-FY25 SCF used to estimate the AADT for both the toll plazas:

Table 5-1 SCF values for JL TP1

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.03	0.98	1.00	1.08	1.04	1.11	1.02	0.95	0.94	1.01	0.90	1.00
LCV	1.06	1.07	1.02	1.01	1.04	0.95	0.96	1.02	0.97	1.04	0.95	0.94
Bus	0.97	0.98	1.05	1.00	1.01	1.04	1.05	1.04	0.98	1.04	0.90	0.99
2A	1.04	1.03	1.05	1.04	1.03	0.95	0.93	1.04	1.01	1.03	0.93	0.94
3A	1.01	0.96	1.00	1.00	0.99	0.97	0.99	1.06	1.02	1.08	0.96	0.97
MAV	1.03	1.00	1.01	1.06	1.05	1.03	1.02	0.99	0.96	1.02	0.91	0.94

Table 5-2: SCF Values for JL TP2

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.99	0.92	0.94	1.08	1.11	1.17	1.09	0.97	0.93	1.01	0.90	0.98
LCV	1.08	1.07	1.02	1.01	1.04	0.95	0.94	1.03	0.97	1.03	0.95	0.93
Bus	0.97	0.97	1.04	1.00	1.02	1.03	1.05	1.04	0.99	1.06	0.92	0.99
2A	1.06	1.04	1.05	1.04	1.03	0.94	0.92	1.04	1.01	1.02	0.92	0.94
3A	1.01	0.96	1.01	1.00	0.99	0.97	1.00	1.06	1.01	1.07	0.96	0.97
MAV	1.03	1.00	1.01	1.05	1.04	1.02	1.01	0.99	0.97	1.03	0.92	0.96

Source: Steer analysis based on benchmarks

Adopted base estimates

5.13 Based on the above methodology and inputs, the adopted base for both toll plazas have been shown below:

Table 5-3: Adopted base estimates: JL TP1

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	3,353	3,484	3,604	7.5%
LCV	311	328	336	7.9%
Bus	185	174	175	(5.6%)
2A	1,422	1,542	1,577	10.9%
3A	1,280	1,413	1,397	9.2%
MAV	2,010	1,823	1,910	(5.0%)
OSV	2	2	2	-
Total	**8,563**	**8,766**	**9,000**	**5.1%**
PCUs	**19,364**	**19,606**	**20,094**	**3.8%**

Source: Steer analysis; FY25 actual full year, FY26YTD includes 6 months of FY26, FY26A is adopted base for FY26

Table 5-4: Adopted base estimates: JL TP2

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	2,575	2,608	2,698	4.8%
LCV	303	320	329	8.6%
Bus	168	158	158	(5.8%)
2A	1,379	1,492	1,531	11.1%
3A	1,305	1,409	1,395	6.9%
MAV	1,865	1,732	1,800	(3.5%)
OSV	2	1	2	
Total	**7,595**	**7,720**	**7,913**	**4.2%**
PCUs	**17,969**	**18,195**	**18,607**	**3.6%**

Source: Steer analysis; FY25 actual full year, FY26YTD includes 6 months of FY26, FY26A is adopted base for FY26

5.14 As can be seen from Table 5-3 and Table 5-4 above, the PCU growth for FY26A compared to FY25 is 4.1% on TP1 and 3.8% at TP2. This increase is mostly driven by 2A and LCV and reflects the recent rapid development of the 2A using the corridor. Demand produced by places like Nagpur, Hyderabad, Bangalore, and Chennai has been the key driver of growth on this corridor. The success of 2A and LCVs along the NH44 routes has contributed to their growth. Hence, increase of approximately ~12% has been observed in 2A vehicle traffic across both plazas, reflecting a broader trend along the corridor. Conversely, the MAV growth has remained subdued, primarily attributed to traffic shift to Delhi Mumbai Expressway and the NH-30.

Estimation of background elasticities

Overview

5.15 For brownfield Asset, where sufficient historical traffic evolution is available, it is common practice to use regression model analysis to determine the relationship, expressed as elasticity, between traffic growth and key socioeconomic drivers. This relationship is then applied to assumptions of future socio-economic evolution to estimate future traffic growth.

5.16 As for the Asset under consideration, a historical trend was not available since the Asset started tolling by the client in Oct-2020 and both FY21 and FY22 have been affected by Covid19 related disruptions. Therefore, we undertook a benchmarking exercise in order to estimate our forecast elasticities, Sources used included historical vehicle wise traffic growth on the Asset, outputs from the analysis of the OD data (refer chapter 3 for Commodity and trip length analysis) collected on the toll plaza. We have also undertaken a regional benchmarking against Asset having similar traffic profiles, which give us reasonable confidence the relationships proposed.

5.17 In terms of selection of growth drivers for vehicle types, in general we have assumed state GSDP as the key driving factor for the passenger traffic given this traffic is generally driven by the local economies of the cities and state containing the Asset. The heavier commercial vehicles generally ply long-distance, and the underlying growth is governed by the general economies of several states or nation as whole.

5.18 Given the nascent stage of India's logistics sector, characterized by a highly fragmented trucking industry (95% of operators owning fewer than five trucks) and low car ownership rates (30-35 per 1000 people), the forecast elasticities are projected to remain constant throughout the concession period. This assumption is grounded in historical trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away.

5.19 Table 5-5 below presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5-5: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP Uttar Pradesh
Car		100%
LCV		100%
Bus		100%

Vehicle type	GDP India	GSDP Uttar Pradesh
2A	100%	
3A	100%	
MAV	100%	

Source: Steer Analysis

5.20 Further to developing estimates for FY25 AADT, the Asset has operational history between FY22 and FY25, proving us three years of traffic growth on the Asset. Table 5.6and Table 5.7 below summarise the volume growth across each of the vehicle categories. For this comparison we have normalised the FY22 AADT for COVID19 by adopting seasonally corrected H2FY22 as the FY22 normalised (FY22N).

Table 5.6: Passenger and Commercial growth with normalised FY22 – JL TP1

Vehicle type	FY22N	FY23	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	2,872	3,040	3,157	3,353	3,604	5.8%
LCV	220	236	253	311	336	11.1%
Bus	163	167	191	185	175	1.8%
2A	969	1,123	1,226	1,422	1,577	13.0%
3A	1,248	1,313	1,325	1,280	1,397	2.9%
MAV	1,611	1,761	1,818	2,010	1,910	4.3%
OSV	2	1	2	2	2	-
Total	**7,085**	**7,641**	**7,971**	**8,563**	**9,000**	**6.2%**
PCUs	**15,861**	**17,232**	**17,987**	**19,364**	**20,094**	**6.1%**
Passenger	3,034	3,207	3,348	3,538	3,779	5.6%
Commercial	3,828	4,197	4,369	4,712	4,884	6.3%

Source: Steer Analysis; Note; Passenger includes CJV and LCV traffic whereas Commercial includes LCV/2A/3A/MAV traffic

Table 5.7: Passenger and Commercial growth with normalised FY22 – JL TP2

Vehicle type	FY22N	FY23	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	2,284	2,376	2,447	2,575	2,698	4.3%
LCV	201	222	243	303	329	13.1%
Bus	148	148	176	168	158	1.6%
2A	929	1,073	1,178	1,379	1,531	13.3%
3A	1,230	1,301	1,310	1,305	1,395	3.2%
MAV	1,541	1,689	1,713	1,865	1,800	3.9%
OSV	2	1	1	2	1	-
Total	**6,335**	**6,811**	**7,068**	**7,595**	**7,913**	**5.7%**
PCUs	**14,787**	**16,058**	**16,670**	**17,969**	**18,607**	**5.9%**
Passenger	2,432	2,525	2,623	2,743	2,856	4.1%
Commercial	3,700	4,063	4,201	4,548	4,726	6.3%

Source: Steer Analysis; Note; Passenger includes CJV and LCV traffic whereas Commercial includes LCV/2A/3A/MAV traffic

5.21 Babina toll plaza is growing at 6.0% from FY22N to FY26 at the PCU level, whereas Vigakhet is growing at 5.9%. Passenger traffic, which includes CJV and buses, is projected based on the state's GSDP, as the growth is driven by the regional local economy. Meanwhile, commercial traffic (2A/3A/MAV) is growing in relation to GDP, as the Asset lies on the NH44 corridor, which primarily facilitates north-south movement between Delhi and north and Chennai and south. Any growth observed on the Asset is influenced by regions along this north-south route.

5.22 The sections below detail out the reasoning for selection of respective growth driver(s) for each vehicle category.

5.23 It must be understood that, in recent historical traffic performance across national highway corridors, a notable trend has emerged: there is a discernible shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in the Assets FY24 and FY25 performance as well. Consequent of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

Table 5-8: Elasticity recommendations for the Asset (both sections)

Vehicle Category	Proposed	Growth Driver	Comments
CJV	1.0	Uttar Pradesh GSDP	CJV traffic is predominantly catering to the local demand of towns of Jhansi and Lalitpur. Generally, we would expect that in fast-growing economies, car traffic growth rates are in line with growth in GSDP/GDP i.e., suggesting elasticities at or just above 1.0.
Mini LCV	0.6	Uttar Pradesh GSDP	Mini LCV traffic is predominantly catering to the local demand of towns of Jhansi and Lalitpur. Historical growth observed is similar to LCVs on all plazas hence the same elasticity is assumed as LCVs.
Buses	0.4	Uttar Pradesh GSDP	Buses tend to grow as the intercity connections improves. With Uttar Pradesh being a large state, buses tend to play an important role linking key cities in the state. A large majority of trips are within 100-300 km.
LCV	0.5	Uttar Pradesh GSDP	As discussed in chapter 3, the trip lengths of LCV and 2A category (up to 72%) are predominantly long-distance trips. The origins and destinations are similar to those of 3A and MAVs on the Asset. These trucks are special trucks which carry commodities such as courier/parcel, and automobile and ancillary parts as well. In addition to long distance movement, they also made short distance local trips feeding into the local demand generated by the cities nearby. Therefore, considering the above observations, and our experience across other toll roads in the region, we believe that elasticities of 0.5 for LCV with respect to state GSDP are considered reasonable.
2A	0.9 tapered to 0.8 by FY35	GDP India	2A/3A/MAV are primarily long-distance traffic carrying a healthy mix of commodities. Agriculture products and groceries are the key commodities moving on the Asset. However, this Asset is becoming a key link between Delhi,

Vehicle Category	Proposed	Growth Driver	Comments
3A	0.3	GDP India	Nagpur, Bangalore and Chennai forming part of the strategic NH7/44 corridor. Trip lengths for almost 55% of the MAV are more than 1000km, signifying long distance nature of the traffic. Therefore, a relation of 1 to GDP is considered reasonable for MAV. We believe 3A to grow slower as compared to MAV as there is an increasing preference to use MAVs for long-distance movements.
MAV	1.0	GDP India	

Source: Steer Analysis

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6 Forecast: Network overlays and forecasts

Introduction

6.1 Following the discussion on our forecast of background growth rates in the previous chapter, this chapter first covers the potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years.

Analysis of potential network/developmental impacts

6.2 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed in earlier Chapters, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

Impact of DME and Surat Solapur Chennai on Delhi- Chennai traffic

6.3 The National Highway Authority of India (NHAI) is building 1350km long greenfield expressway connecting Delhi and Mumbai. It is an 8-lane access-controlled route with 4 lanes in each direction connecting Delhi-Noida Direct (DND) Flyway in Delhi with the Jawaharlal Nehru Port Trust (JNPT) in Mumbai. At 1350km long, it will drastically reduce travel length and times from Delhi to Mumbai. With this alignment, it is expected that once it's completed, the Delhi-Mumbai Expressway could attract long-distance traffic from the north including Delhi/North of Delhi regions and going that is presently using the asset.

6.4 As mentioned in Chapter 2, a few sections of the greenfield expressway have been made operational with Sohna-Dausa-Lalsot section (Feb'23), Madhya Pradesh section (Sep'23), Vadodara-Bharuch section (Feb'24), Lalsot-Sawai-Madhopur section (Feb'24) and the Kota-Bundi Section (Dec'24) already being operationalised. The project is currently suffering from construction delays, mainly on the Gujarat stretch. The timeline for completion of the expressway has been revised several times and is now expected to be completed by 2027 as per reports. It is key to note that while certain sections of the Rajasthan expressway lack direct connectivity, they are effectively linked via state highways.

Figure 6.1: Alternate Route via Delhi Mumbai Expressway and Surat Solapur Chennai

Source: Steer Cartography

6.5 Further, the existing alignment between Indore and Hyderabad is currently being upgraded to 4 lanes throughout. Once the widening of the existing alignment is completed, the route via Indore, Khandwa, Muktainagar, Akola, Nanded will provide an alternate route traveling between Madhya Pradesh/ North and Hyderabad/South. An alternate route of this mentioned OD pairs already exists via NH52. The widening of the section will improve the LOS of the existing alternate route.

6.6 There are currently two key options for north south traffic movement between Delhi/north and Kurnool/south via:

- using NH19/NH44 via Delhi-Agra-Gwalior-Sagar-Nagpur-Hyderabad-asset-Kurnool-Karnataka/Chennai
- using NE4/NH52/SCE via Delhi-Lalsot-Indore-Dhule-Aurangabad-Solapur-Kurnool-Karnataka/Chennai.

6.7 Currently, the traffic is using NH44 corridor as it is cheaper and shorter for north-south travel. The proposed upgrades on NH52 coupled with upcoming Delhi-Mumbai Expressway (DME) and Surat-Solapur-Chennai Expressway (SCE) will improve the alternate route's overall attractiveness as long-distance corridor for traffic moving north and south. For this expressway 2 out of 13 packages have been awarded and rest are under bidding[20].

6.8 The users travelling from Delhi/north to Kurnool/south will have the option to divert to DME at Delhi instead of taking NH44/NH52. The users can then exit from DME at Indore where they can travel till Solapur on an upgraded 4-lane highway (NH52). At Solapur, the users can divert on the upcoming SCE to reach Chennai. Hence, the route via DME-NH52-SCE, which will be a mix of expressways and upgraded NH, will act as a competing route for the Asset.

6.9 The In-scope trips considered include movements between

- Delhi and north India including states of Haryana, Punjab, and
- parts of Tamil Nadu such as Chennai and Puducherry.

6.10 The benefits will also be most valued by long distance users which can make end to end movements as compared to those users with intermittent destinations. Given the novelty of the expressway and its expected impacts on a fragmented logistics market, we have assumed that 50% of impact will be realised within the first year of its completion whereas the 100% will occur in FY32 when the SCE becomes operationalised.

Table 6-1: Impact of DME and SCE for TP1

Vehicle category	FY27	FY32 onwards
Staging	*50%*	*100%*
2A	(5.3%)	(12.0%)
3A	(5.1%)	(11.5%)
MAV	(2.7%)	(6.1%)

Source: Steer analysis, 90% impact will be applicable from FY32, while impact will be applicable in a phased manner from FY27.

Table 6-2: Impact of DME and SCE for TP2

Vehicle category	FY27	FY32 onwards
Staging	*50%*	*100%*
2A	(5.5%)	(12.3%)
3A	(5.1%)	(11.6%)
MAV	(2.9%)	(6.4%)

Source: Steer analysis, 90% impact will be applicable from FY32, while impact will be applicable in a phased manner from FY27.

6.11 We expect such shifts to take place over course of time once the benefits of the expressway are fully visible and could be influenced by three factors:

[20] https://infrainfohub.com/surat-chennai-expressway-route-map-cost-progress-and-latest-updates/

- the last and first mile connectivity; and
- roadside facilities typically seen along the national highway network such as truck stops, rest/refresh areas, affordable food/drink facilities; and
- fuel and repair shops coming up along the expressway network.

Revenue forecasting assumptions

6.12 To forecast the revenues for a particular financial year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While "trip factors" provide the conversion factor to the former, i.e., traffic (total trips) to tickets sold, "toll segmentation" provides the latter i.e., the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Toll segmentation

6.13 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles. To access the document, refer to the following link.

6.14 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

%CJV using Annual pass	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
TP1 Babina	12.7%	20.8%	23.8%
TP2 Vigakhet	14.2%	21.2%	24.2%

6.15 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.16 For Babina, In FY26, the share of CJVs using the Annual Pass is projected at **18%** (on a full year basis), ramping upto 37% by March 26, which is expected to be the baseline adoption for FY27, for TP2 Vigakhet this is expected to be 19% for FY26 and 39% by March 26.

6.17 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period.

Table 6-3: Segmentation for forecast years, TP1 Babina

Ticket type	CJV FY26	CJV FY27	Mini LCV	Bus	LCV	2A	3A	MAV
Single	21%	14%	28%	34%	89%	92%	96%	88%
Return	36%	24%	47%	33%	10%	6%	4%	10%
Monthly	-	-	-	-	-	-	0%	0%
Local commercial	1%	1%	1%	32%	0%	0%	0%	1%
Local personal	11%	12%	11%	-	-	-	-	-
Exemptions	12%	12%	12%	1%	1%	2%	0%	0%
Annual Pass	18%	37%	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6-4: Segmentation for forecast years, TP2 Vigakhet

Ticket type	CJV FY26	CJV FY27	Mini LCV	Bus	LCV	2A	3A	MAV
Single	26%	17%	34%	39%	90%	94%	96%	90%
Return	35%	23%	46%	54%	9%	4%	3%	7%
Monthly	-	-	-	-	-	-	-	-
Local Commercial	1%	1%	1%	7%	1%	0%	1%	2%
Local Personal	7%	7%	7%	-	-	-	-	-
Exemptions	13%	13%	12%			1%	0%	0%
Annual Pass	19%	39%						

Source: Steer analysis of Client TMS data

6.18 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.6 presents the Annual pass compensation computed for the toll plaza.

Table 6.5: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY28	FY33	FY38	FY43	FY51
Babina	2.1	5.5	9.2	15.1	25.0	54.0
Vigakhet	1.2	3.3	5.5	9.0	14.9	32.2

6.19 Source: Steer Analysis

Trip factors

6.20 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY23 data available and listed in the tables below:

Table 6-6: Trip factors at TP1 Babina

Forecast	CJV/Mini LCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	45	45	7	45	45	50
Local commercial/Annual Pass	1	1	1	1	1	1
Local Personal	22	-	-	-	-	-

Source: steer analysis of Client TMS data

Table 6-7: Trip factors at TP2 Vigakhet

Forecast	CJV/Mini LCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	45	45	50	45	45	45
Local commercial/Annual Pass	1	1	1	1	1	1
Local Personal	17	-	-	-	-	-

Source: steer analysis of Client TMS data

Toll evolution

6.21 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.22 We have used actual toll rates from the FY25 toll notifications and FY26 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in the table below. These forecasts provided by the Client expect the Indian WPI to grow at an average of 4.2% between FY25-FY51. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client.

Table 6-8: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%

FY31	4.4%
FY32 onwards	4.1%

Source: Client inputs used for WPI FY27 onwards.

Revenue reconciliation

6.23 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a monthly level for the Asset. To reconcile we have used the FY26YTD (April 2025 to August 2025) segmentation, FY26YTD AADT and compared it with the reported revenue at the AADC (Annual Average Daily Collection) for the year. The exercise was undertaken at an annual level. The comparison, as shown in Table 6-9 and Table 6-10 below, depicts the modelled revenue vs the reported revenue difference, and the difference lies within 0.5% for both, this gives us the confidence in the assumptions around segmentation and trip factors for future forecast purposes.

Table 6-9: Revenue reconciliation summary TP Babina at AADC level (INR lakhs)

Modelled	Reported	Delta
24.10	24.12	(0.1%)

Source: Steer comparison between modelled and reported revenue

Table 6-10: Revenue reconciliation summary TP Vigakhet at AADC level (INR lakhs)

Modelled	Reported	Delta
16.94	16.93	(0.0%)

Source: Steer comparison between modelled and reported revenue

Traffic and Revenue forecasts

6.24 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the forecast period for the Asset. The tables below present the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix B presents the AADT and revenues for the forecast period.

Table 6-11: Forecast traffic for TP1 Babina

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	3,105	3,509	4,673	6,212	8,156	12,287
Mini LCV	499	538	640	760	897	1,150
Bus	175	184	206	232	259	306
LCV	336	357	413	477	548	674
2A	1,577	1,666	1,981	2,501	3,122	4,345
3A	1,397	1,378	1,405	1,535	1,670	1,893
MAV	1,910	2,118	2,741	3,659	4,820	7,272
OSV	2	2	3	3	4	7
AADT	9,000	9,750	12,062	15,379	19,475	27,933
PCU	**20,094**	**21,516**	**26,096**	**33,022**	**41,532**	**58,983**

Source: Steer analysis

Table 6-12: Forecast Traffic CAGR (%) for TP1 Babina

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	6.3%	5.9%	5.9%	5.6%	5.7%
Mini LCV	3.8%	3.5%	3.5%	3.4%	3.4%
Bus	2.5%	2.4%	2.3%	2.2%	2.3%
LCV	3.2%	2.9%	2.9%	2.8%	2.8%
2A	2.8%	3.5%	4.8%	4.5%	4.1%
3A	(0.7%)	0.4%	1.8%	1.7%	1.2%
MAV	5.3%	5.3%	5.9%	5.7%	5.5%
OSV	4.1%	4.3%	5.0%	4.8%	4.6%
AADT	3.5%	3.9%	4.8%	4.7%	4.4%
PCUs	6.3%	5.9%	5.9%	5.6%	5.7%

Source: Steer analysis

6.25

Table 6-13: Forecast Revenue for TP1 Babina (INR crores) including Annual Pass Compensation Revenue for CJV

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	9.3	11.4	19.1	31.5	52.1	112.3
Mini LCV	1.5	1.7	2.6	3.9	5.8	10.5
Bus	2.0	2.3	3.3	4.6	6.4	10.8
LCV	2.4	2.8	4.0	5.8	8.3	14.6
2A	23.4	26.8	40.2	63.6	99.2	197.8
3A	23.2	24.9	31.9	43.5	59.1	96.3
MAV	44.5	53.6	87.6	145.4	240.1	520.1
OSV	0.0	0.1	0.1	0.2	0.3	0.6
Total	**106.3**	**123.7**	**188.8**	**298.4**	**471.1**	**963.1**

Source: Steer analysis

Table 6-14: Forecast Revenue growth CAGR (%) for TP1 Babina

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	10.8%	10.9%	10.5%	10.6%	10.5%
Mini LCV	8.0%	8.5%	8.2%	8.2%	8.1%
Bus	7.0%	7.2%	7.0%	6.9%	7.0%
LCV	8.3%	7.6%	7.7%	7.4%	7.6%
2A	7.1%	8.4%	9.6%	9.3%	8.9%
3A	3.7%	5.1%	6.4%	6.3%	5.9%
MAV	9.8%	10.3%	10.7%	10.5%	10.3%
OSV	11.1%	11.0%	10.7%	10.5%	10.6%
Total	**7.9%**	**8.8%**	**9.6%**	**9.6%**	**9.2%**

Source: Steer analysis

Table 6-15: Forecast traffic for TP2 Vigakhet

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	2,379	2,688	3,580	4,759	6,248	9,414
Mini LCV	319	344	409	487	574	736
Bus	158	166	187	210	234	277
LCV	329	350	404	467	536	660
2A	1,531	1,615	1,916	2,419	3,019	4,202
3A	1,395	1,375	1,402	1,531	1,666	1,889
MAV	1,800	1,992	2,572	3,434	4,523	6,824
OSV	2	2	2	3	4	6
AADT	**7,913**	**8,532**	**10,473**	**13,310**	**16,806**	**24,008**
PCU	**18,607**	**19,848**	**23,919**	**30,186**	**37,877**	**53,614**

Source: Steer analysis

Table 6-16: Forecast Traffic CAGR (%) for TP2 Vigakhet

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	6.3%	5.9%	5.9%	5.6%	5.7%
Mini LCV	3.8%	3.5%	3.5%	3.4%	3.4%
Bus	2.5%	2.4%	2.3%	2.2%	2.3%
LCV	3.2%	2.9%	2.9%	2.8%	2.8%
2A	2.7%	3.5%	4.8%	4.5%	4.1%
3A	**(0.7%)**	0.4%	1.8%	1.7%	1.2%
MAV	5.2%	5.2%	5.9%	5.7%	5.5%
OSV	3.8%	4.2%	4.9%	4.8%	4.5%
AADT	**3.3%**	**3.8%**	**4.8%**	**4.6%**	**4.3%**
PCUs	**6.3%**	**5.9%**	**5.9%**	**5.6%**	**5.7%**

Source: Steer analysis

Table 6-17: Revenue Forecast for TP2 Vigakhet (INR crores) including Annual Pass Compensation Revenue for CJV

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	5.5	6.8	11.3	18.8	31.0	66.9
Mini LCV	0.7	0.9	1.3	1.9	2.9	5.3
Bus	1.5	1.7	2.4	3.3	4.7	7.9
LCV	1.7	2.0	2.8	4.1	5.9	10.6
2A	16.9	19.3	29.0	45.6	70.9	142.1
3A	16.8	18.1	23.2	31.7	43.2	70.4
MAV	30.8	37.1	60.5	100.7	165.6	358.3
OSV	0.0	0.0	0.1	0.1	0.2	0.4
Total	74.0	86.0	130.6	206.4	324.4	661.9

Source: Steer analysis

Table 6-18: Forecast Revenue growth CAGR (%) for TP2 Vigakhet

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	11.9%	10.6%	10.7%	10.5%	10.5%
Mini LCV	9.5%	8.1%	8.3%	8.2%	8.2%
Bus	6.9%	7.2%	6.9%	6.9%	6.9%
LCV	8.5%	7.6%	7.6%	7.7%	7.6%
2A	6.9%	8.5%	9.5%	9.2%	8.9%
3A	3.8%	5.1%	6.4%	6.4%	5.9%
MAV	9.7%	10.3%	10.8%	10.4%	10.3%
OSV	11.0%	10.9%	10.9%	10.4%	10.6%
Total	**7.8%**	**8.7%**	**9.6%**	**9.5%**	**9.2%**

Source: Steer analysis

Target revenues and modification of concession period

6.26 As per the concession agreement, the target revenue for TP1 and TP2 should be 7.9 Cr and 5.3 Cr for the month of March 2030 first calculation of target revenue and 18.9Cr and 12.8Cr for the month of March 2040 for the second calculation of target revenue. The traffic sampling will be undertaken for a continuous period of 7 days during anytime within 15 days prior to the date on the specified year, previous year and following year. The average thereof will be deemed as 'actual revenue.' If the target revenue for any section falls short or exceeds by 2.5%, the concession period shall be deemed to be modified using the laid-out conditions in the concession agreement. Table 6.19 and Table 6.20 below presents the summary of the analysis.

Table 6.19: Target Revenues for Extension 1

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2029	2030	2031		
JL TP1	Mar-30	7.87	12.27	13.54	14.79	13.53	72.0%
JL TP2	Mar-30	5.28	8.52	9.40	10.25	9.39	77.8%

Source: Steer analysis

Table 6.20: Target Revenues for Extension 2

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2039	2040	2041		
JL TP1	Mar-40	18.89	29.52	32.28	35.44	32.41	71.6%
JL TP2	Mar-40	12.81	20.37	22.29	24.46	22.37	74.7%

Source: Steer analysis

6.27 We have used the average AADT forecast for target year, previous year and following year as a proxy for 'actual traffic.' We have forecast seasonality of March month to adjust for seasonal trends and arrive at March traffic from AADT traffic, which is then segmented according to the forecast toll segmentation and trip factors and multiplied with respective estimated toll rates to get to a monthly revenue collection.

6.28 As seen from the tables above, the difference between actual and targeted revenue lies above the permitted 2.5% excess, a renegotiation of the length of the concession agreement is expected. As per the concession agreement, for every 1% excess target revenue, the concession period shall be decreased by 1.5%, with a capping at 20%. Therefore, for the excess traffic on these toll plazas, the concession period, originally 30 years, is expected to be decreased by 5 years from FY51, potentially reducing the last date of concession to FY45.

Upside and Downside cases

Upside and Downside scenario assumptions

6.29 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.30 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.31 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.21: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.32 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.33 The upside case impacts included in forecasts are summarised in below.

Table 6.22: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP Babina	TP Vigakhet
Impact of DME and Surat Solapur Chennai on Delhi- Chennai traffic	FY27*; (40% impact) FY32 - full impact	+25% of base case	2A: (10.0%) 3A: (9.6%) MAV: (5.0%)	2A: (10.3%) 3A: (9.6%) MAV: (5.4%)

Source: Steer analysis; *Same as the base case timeline

Impacts-Downside Case

6.34 The downside case impacts included in forecasts are summarised in below.

Table 6.23: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP Babina	TP Vigakhet
Impact of DME and Surat Solapur Chennai on Delhi-Chennai traffic	FY27*; (40% impact) FY32 - full impact	-25% of base case	2A: (16.6%) 3A: (16.0%) MAV: (8.4%)	2A: (17.1%) 3A: (16.1%) MAV: (8.9%)

Source: Steer analysis; *Same as the base case timeline

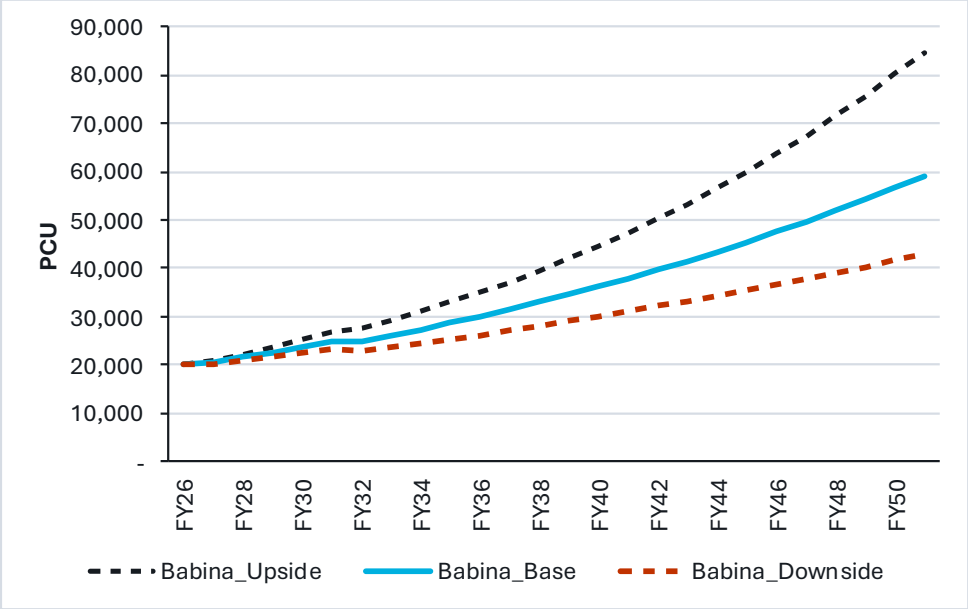
6.35 Based on the above assumptions for upside and downside scenarios, the following table summarizes the upside potential and downside risks associated with the PCU and the revenue for Babina and Vighkhet toll plazas at the end of the concession i.e. FY51.

Table 6.24: Upside potential and Downside PCU scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Babina	43.7%	(27.4%)
Vighakhet	43.5%	(27.3%)

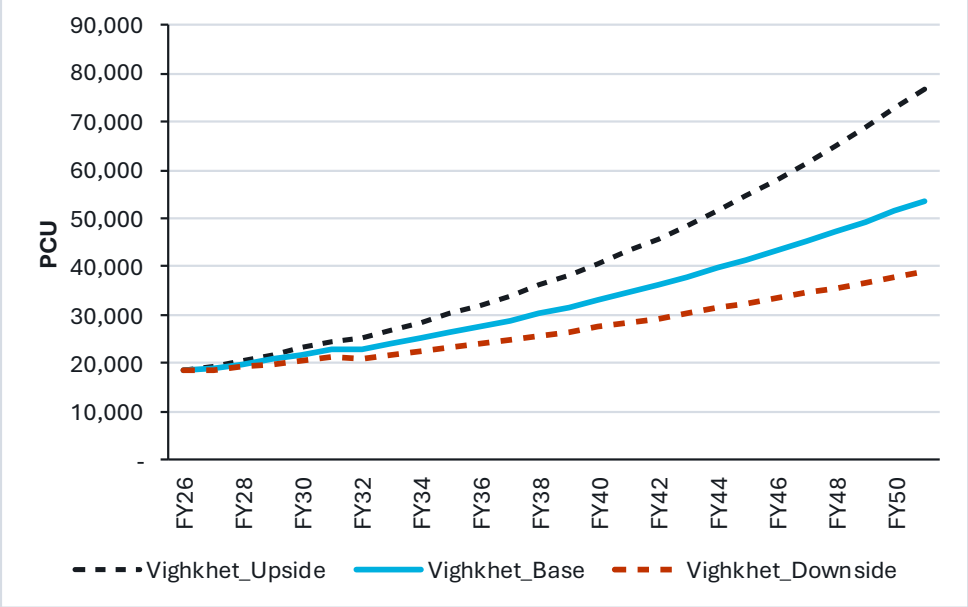
Source: Steer Analysis

Figure 6.2: Long term PCU forecasts for Babina TP including upside and downside scenario



Source: Steer Analysis

Figure 6.3: Long term PCU forecasts for Vighkhet TP including upside and downside scenario



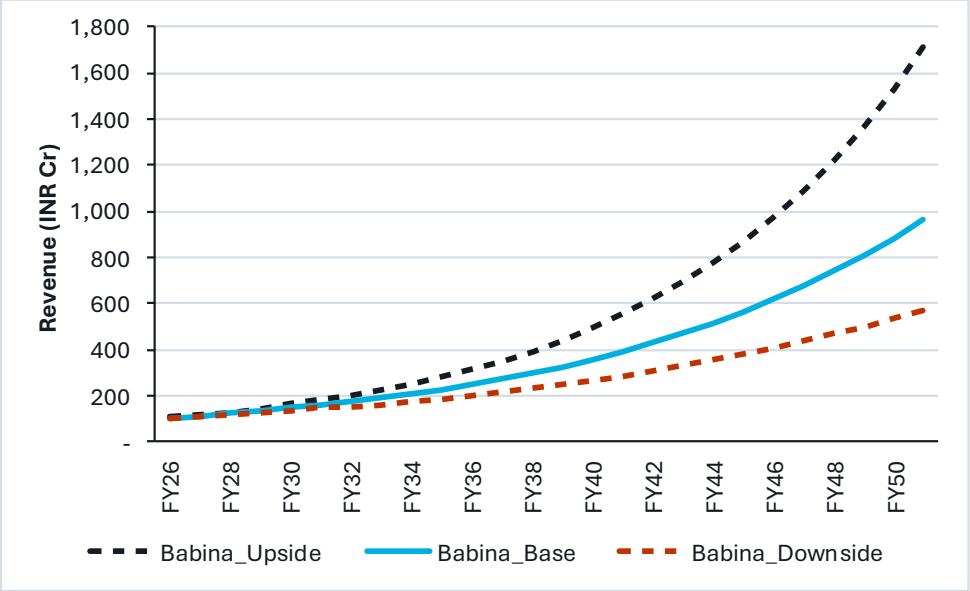
Source: Steer Analysis

Table 6.25: Upside potential and Downside Revenue scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Babina	77.4%	(40.5%)
Vighakhet	77.1%	(40.6%)

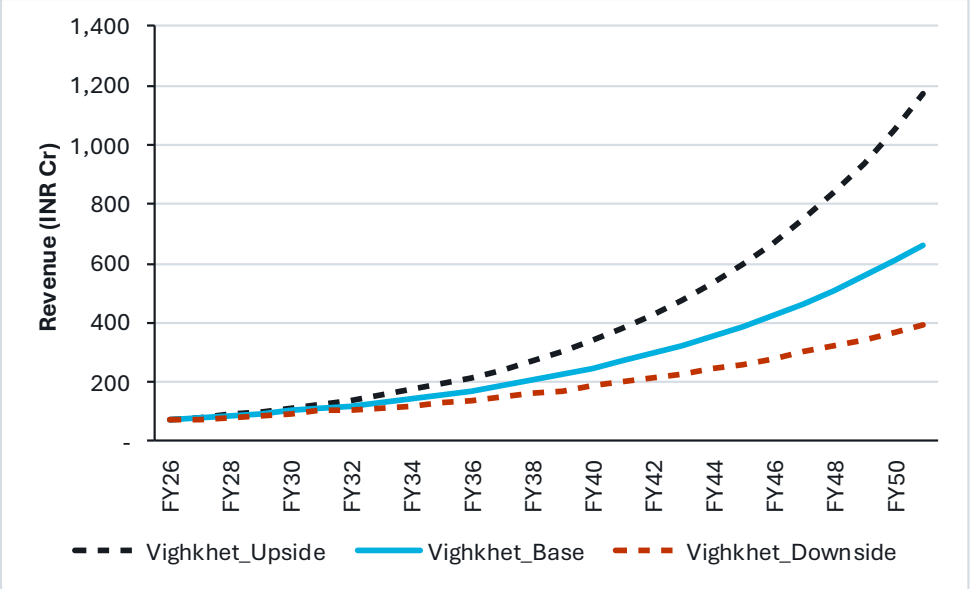
Source: Steer Analysis

Figure 6.4: Long term Revenue forecasts for Babina TP including upside and downside scenario



Source: Steer Analysis

Figure 6.5: Long term Revenue forecasts for Vighkhet TP including upside and downside scenario



Source: Steer Analysis

6.36 Revenue projections exhibit variability in both the upside and downside cases, driven by fluctuations in macro-economic factors such as WPI, GDP/GSDP, elasticities and the network impacts.

Summary outlook

6.37 Passenger movement on the Asset is largely local in nature, connecting the cities of Jhansi to Lalitpur over the short distance and northern cities of Kanpur and Lucknow to Sagar and Nagpur. Cars are expected to see a healthy growth on the Asset following the overall growth in income level and growth in the economy.

6.38 The biggest advantage for this Asset lies in its geographic location and strategic context, connecting the key movement between north India to the southern states of Madhya Pradesh, Karnataka, Telangana and Tamil Nadu. The overall network has been recently upgraded and provides a seamless connectivity for users. This is also demonstrated by the fact that almost 80% of truck users on this Asset cover distances of more than 500km.

6.39 Delhi Mumbai Expressway and Solapur Chennai Expressway is a key risk that has been identified which will impact the traffic on the corridor. As discussed in this chapter, a phased approach is taken to access the impact of DME, with 50% of estimated traffic loss in the first year of operation and the complete impact in the subsequent years.

6.40 Overall, we see a positive outlook for the region and the Asset, given that it caters to long distance movement to/from Chennai, Bangalore, Hyderabad etc to Delhi NCR. The underlying growth drivers of the corridor are strong and are expected to deliver long term sustained growth.

6.41 Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by Client, feedback from Client meetings and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarised below.

Appendices

A. Top 10 OD Pairs

6.42 Further to the OD analysis presented in Chapter 3, this appendix presents the top 10 OD pairs at each toll plaza. The tables below showcase data for both CJVs as well as MAVs and OSVs combined.

TP1 Babina

Table A.1: CJV top 10 OD pair shares at TP1 Babina

	OD Pair	Share
1.	Lalitpur-Karera	29%
2.	Lalitpur-Babina	10%
3.	Talbehat-Karera	10%
4.	Talbehat-Babina	5%
5.	Lalitpur-Kanpur nagar	3%
6.	Karera-Sagar	3%
7.	Babina-Betul	2%
8.	Kanpur nagar-Indore	2%
9.	Lalitpur-NCT of Delhi	1%
10.	Karera-Betul	1%

Source: Steer analysis of OD data

Table A.2: MAV and OSV top 10 OD pair shares at TP1 Babina

	OD Pair	Share
1.	Lalitpur-Karera	7%
2.	Tikamgarh-Sagar	5%
3.	Hyderabad-NCT of Delhi	5%
4.	Raipur-NCT of Delhi	4%
5.	Karera-Sagar	4%
6.	Nagpur-NCT of Delhi	3%
7.	Lalitpur-Tikamgarh	3%
8.	Bangalore-NCT of Delhi	3%
9.	Chennai-NCT of Delhi	2%
10.	Nagpur-Haryana	2%

Source: Steer analysis of OD data

TP1 Vigakhet

Table A.3: CJV top 10 OD pair shares at TP1 Vigakhet

	OD Pair	Share
1.	Lalitpur-Jhansi	40%
2.	Jhansi-Sagar	12%
3.	Lalitpur-NCT of Delhi	5%
4.	Sagar-NCT of Delhi	4%
5.	Lalitpur-Karera	4%
6.	Lalitpur-Gwalior	3%
7.	Gwalior-Etawah	2%
8.	Lalitpur-Talbehat	2%
9.	Lalitpur-Agra	2%
10.	Gwalior-Sagar	1%

Source: Steer analysis of OD data

Table A.4: MAV and OSV top 10 OD pair shares at TP1 Vigakhet

	OD Pair	Share
1.	Bangalore-NCT of Delhi	5%
2.	Nagpur-NCT of Delhi	5%
3.	Hyderabad-NCT of Delhi	5%
4.	Lalitpur-Jhansi	4%
5.	Sagar-NCT of Delhi	4%
6.	Jhansi-Sagar	4%
7.	Raipur-NCT of Delhi	2%
8.	NCT of Delhi-Tamil Nadu	2%
9.	Bangalore-Haryana	2%
10.	Chennai-NCT of Delhi	2%

Source: Steer analysis of OD data

B. Data collection exercise

6.43 In order to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

3/7-day TVC counts

Table B.1: TVC counts at TP1

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
29-01-2024	2,963	665	366	146	1,117	1,147	1,741	4	8,149
30-01-2024	3,373	601	366	154	1,073	1,091	1,691	2	8,351
31-01-2024	3,379	602	439	154	1,165	1,183	1,762	2	8,686

Source: Steer analysis

Table B.2: TVC counts at TP2

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
18-01-2021	2,179	291	264	127	816	1,379	1,487	-	6,543
19-01-2021	2,016	297	261	125	691	1,126	1,322	-	5,838
20-01-2021	2,046	316	257	123	685	1,111	1,367	-	5,905
21-01-2021	2,017	283	304	130	816	1,397	1,582	-	6,529
22-01-2021	2,077	321	356	121	878	1,431	1,519	-	6,703
23-02-2021	2,427	310	335	135	884	1,410	1,574	-	7,075
24-02-2021	2,328	208	368	119	927	1,503	1,704	-	7,157

Source: Steer analysis

TVC vs TMS comparison

Table B.3: TVC and TMS WADT

Toll Plaza	Source	CJV+ Mini LCV	LCV	Bus	2 Axle	3 Axle+ MAV	OSV	Total
TP1	TVC	3,861	390	151	1,118	2,872	3	8,395
	TMS	3,690	233	187	1,156	2,872	1	8,140
TP2	TVC	2,445	306	126	814	2,845	-	6,536

	TMS	2,245	225	137	865	2,866	1	6,338

Source: Steer analysis

Zone list

Table B.4: Zone list

Zone No	Zone name	State
1	Lalitpur	Uttar Pradesh
2	Ronda	Uttar Pradesh
3	Maharra	Uttar Pradesh
4	Ander	Uttar Pradesh
5	Saurai	Uttar Pradesh
6	Daulta	Uttar Pradesh
7	Terai	Uttar Pradesh
8	Bijrotha	Uttar Pradesh
9	Talbehat	Uttar Pradesh
10	Pawa	Uttar Pradesh
11	Sukwan	Uttar Pradesh
12	Babina	Uttar Pradesh
13	Rasoi	Uttar Pradesh
14	Tilak Nagar	Uttar Pradesh
15	Khailar	Uttar Pradesh
16	Safa	Uttar Pradesh
17	Bijoli	Uttar Pradesh
18	Saiyar	Uttar Pradesh
19	Dongri	Uttar Pradesh
20	Bamair	Uttar Pradesh
21	Parasai	Uttar Pradesh
22	Orchha	Uttar Pradesh
23	Jeron Khalsa	Madhya Pradesh
24	Jakhora	Uttar Pradesh
25	Sirsee	Uttar Pradesh
26	Dailwara	Uttar Pradesh
27	Gadyana	Uttar Pradesh
28	Kalyanpura	Uttar Pradesh
29	Dawani	Uttar Pradesh
30	Chiglaua	Uttar Pradesh

Zone No	Zone name	State
31	Bar	Uttar Pradesh
32	Kathwar	Uttar Pradesh
33	Chanderi	Madhya Pradesh
34	Tikamgarh	Madhya Pradesh
35	Karera	Madhya Pradesh
36	Jhansi	Uttar Pradesh
37	Gwalior	Madhya Pradesh
38	Pichhore	Madhya Pradesh
39	Gwalior	Madhya Pradesh
40	Agra	Uttar Pradesh
41	Bhopal	Madhya Pradesh
42	Agra	Uttar Pradesh
43	Agra	Uttar Pradesh
44	Allahabad	Uttar Pradesh
45	Ambedkar Nagar	Uttar Pradesh
46	Amethi	Uttar Pradesh
47	Amroha	Uttar Pradesh
48	Auraiya	Uttar Pradesh
49	Azamgarh	Uttar Pradesh
50	Badaun	Uttar Pradesh
51	Baghpat	Uttar Pradesh
52	Bahraich	Uttar Pradesh
53	Ballia	Uttar Pradesh
54	Balrampur	Uttar Pradesh
55	Banda	Uttar Pradesh
56	Barabanki	Uttar Pradesh
57	Bareilly	Uttar Pradesh
58	Basti	Uttar Pradesh
59	Bijnor	Uttar Pradesh
60	Bulandshahr	Uttar Pradesh
61	Chandauli	Uttar Pradesh
62	Chitrakoot	Uttar Pradesh
63	Deoria	Uttar Pradesh
64	Etah	Uttar Pradesh
65	Etawah	Uttar Pradesh

Zone No	Zone name	State
66	Faizabad	Uttar Pradesh
67	Farrukhabad	Uttar Pradesh
68	Fatehpur	Uttar Pradesh
69	Firozabad	Uttar Pradesh
70	Gautam Buddha Nagar	Uttar Pradesh
71	Ghaziabad	Uttar Pradesh
72	Ghazipur	Uttar Pradesh
73	Gonda	Uttar Pradesh
74	Gorakhpur	Uttar Pradesh
75	Hamirpur	Uttar Pradesh
76	Hapur	Uttar Pradesh
77	Hardoi	Uttar Pradesh
78	Hathras	Uttar Pradesh
79	Jalaun	Uttar Pradesh
80	Jaunpur	Uttar Pradesh
81	Jhansi	Uttar Pradesh
82	Kannauj	Uttar Pradesh
83	Kanpur Dehat	Uttar Pradesh
84	Kanpur nagar	Uttar Pradesh
85	kasganj	Uttar Pradesh
86	Kaushambi	Uttar Pradesh
87	Kushinagar	Uttar Pradesh
88	Lakhimpur Kheri	Uttar Pradesh
89	Lalitpur	Uttar Pradesh
90	Lucknow	Uttar Pradesh
91	Mahamaya Nagar	Uttar Pradesh
92	Maharajganj	Uttar Pradesh
93	Mahoba	Uttar Pradesh
94	Mainpuri	Uttar Pradesh
95	Mathura	Uttar Pradesh
96	Mau	Uttar Pradesh
97	Meerut	Uttar Pradesh
98	Mirzapur	Uttar Pradesh
99	Moradabad	Uttar Pradesh
100	Muzaffarnagar	Uttar Pradesh

Zone No	Zone name	State
101	Pilibhit	Uttar Pradesh
102	Pratapgarh	Uttar Pradesh
103	Raebareli	Uttar Pradesh
104	Rampur	Uttar Pradesh
105	Saharanpur	Uttar Pradesh
106	Sambhal	Uttar Pradesh
107	Sant Kabir Nagar	Uttar Pradesh
108	Sant Ravi Das Nagar(bhadohi)	Uttar Pradesh
109	Shahjahanpur	Uttar Pradesh
110	Shamli	Uttar Pradesh
111	Shrawasti	Uttar Pradesh
112	Siddharth Nagar	Uttar Pradesh
113	Sitapur	Uttar Pradesh
114	Sonbhadra	Uttar Pradesh
115	Sultanpur	Uttar Pradesh
116	Unnao	Uttar Pradesh
117	Varanasi	Uttar Pradesh
118	Alirajpur	Madhya Pradesh
119	Anuppur	Madhya Pradesh
120	Ashoknagar	Madhya Pradesh
121	Balaghat	Madhya Pradesh
122	Barwani	Madhya Pradesh
123	Betul	Madhya Pradesh
124	Bhind	Madhya Pradesh
125	Bhopal	Madhya Pradesh
126	Burhanpur	Madhya Pradesh
127	Chhatarpur	Madhya Pradesh
128	Chhindwara	Madhya Pradesh
129	Damoh	Madhya Pradesh
130	Datia	Madhya Pradesh
131	Dewas	Madhya Pradesh
132	Dhar	Madhya Pradesh
133	Dindori	Madhya Pradesh
134	East Nimar	Madhya Pradesh
135	Guna	Madhya Pradesh

Zone No	Zone name	State
136	Harda	Madhya Pradesh
137	Hoshangabad	Madhya Pradesh
138	Indore	Madhya Pradesh
139	Jabalpur	Madhya Pradesh
140	Jhabua	Madhya Pradesh
141	Katni	Madhya Pradesh
142	Mandla	Madhya Pradesh
143	Mandsaur	Madhya Pradesh
144	Morena	Madhya Pradesh
145	Narsimhapur	Madhya Pradesh
146	Neemuch	Madhya Pradesh
147	Panna	Madhya Pradesh
148	Raisen	Madhya Pradesh
149	Rajgarh	Madhya Pradesh
150	Ratlam	Madhya Pradesh
151	Rewa	Madhya Pradesh
152	Sagar	Madhya Pradesh
153	Satna	Madhya Pradesh
154	Sehore	Madhya Pradesh
155	Seoni	Madhya Pradesh
156	Shahdol	Madhya Pradesh
157	Shajapur	Madhya Pradesh
158	Sheopur	Madhya Pradesh
159	Shivpuri	Madhya Pradesh
160	Sidhi	Madhya Pradesh
161	Singrauli	Madhya Pradesh
162	Ujjain	Madhya Pradesh
163	Umaria	Madhya Pradesh
164	Vidisha	Madhya Pradesh
165	West Nimar	Madhya Pradesh
166	Anantapur	Andhra Pradesh
167	Nagpur	Maharashtra
168	Nashik	Maharashtra
169	Dhule	Maharashtra
170	Hyderabad	Telangana

Zone No	Zone name	State
171	Vijayawada	Andhra Pradesh
172	Guntur	Andhra Pradesh
173	Pune	Maharashtra
174	Mumbai	Maharashtra
175	Chennai	Tamil Nadu
176	Bangalore	Karnataka
177	Jaipur	Rajasthan
178	Visakhapatnam	Andhra Pradesh
179	Bilaspur	Chhattisgarh
180	Raipur	Chhattisgarh
181	Korba	Chhattisgarh
182	Andhra Pradesh	Andhra Pradesh
183	Arunanchal Pradesh	Arunanchal Pradesh
184	Assam	Assam
185	Bihar	Bihar
186	Chandigarh	Chandigarh
187	Chhattisgarh	Chhattisgarh
188	Dadara & Nagar Havelli	Dadara & Nagar Havelli
189	Daman & Diu	Daman & Diu
190	Goa	Goa
191	Gujarat	Gujarat
192	Haryana	Haryana
193	Himachal Pradesh	Himachal Pradesh
194	Jammu & Kashmir	Jammu & Kashmir
195	Chhattisgarh	Jharkhand
196	Karnataka	Karnataka
197	Kerala	Kerala
198	Maharashtra	Maharashtra
199	Manipur	Manipur
200	Meghalaya	Meghalaya
201	Mizoram	Mizoram
202	Nagaland	Nagaland
203	NCT of Delhi	NCT of Delhi
204	Puducherry	Puducherry
205	Punjab	Punjab

Zone No	Zone name	State
206	Rajasthan	Rajasthan
207	Sikkim	Sikkim
208	Tamil Nadu	Tamil Nadu
209	Telangana	Telangana
210	Tripura	Tripura
211	Uttarakhand	Uttarakhand
212	West Bengal	West Bengal
213	Odisha	Odisha

Direction wise commodity distribution

Table B.5: Commodity distribution (towards Lalitpur) at TP1

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	3%	0%	5%	10%
Groceries	12%	4%	11%	5%
Construction	1%	1%	4%	20%
Petroleum	4%	3%	7%	12%
Manufacturing	13%	16%	15%	12%
Automobiles	1%	10%	2%	11%
Miscellaneous	43%	57%	45%	21%
Metals	1%	0%	1%	2%
Empty	22%	8%	9%	8%

Source: Steer analysis

Table B.6: Commodity distribution (towards Jhansi) at TP1

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	8%	5%	7%	9%
Groceries	8%	13%	15%	13%
Construction	1%	2%	2%	3%
Petroleum	3%	5%	8%	10%
Manufacturing	13%	7%	14%	8%
Automobiles	1%	2%	1%	9%
Miscellaneous	46%	46%	36%	15%
Metals	1%	1%	2%	6%
Empty	19%	18%	16%	26%

Source: Steer analysis

Table B.7: Commodity distribution (towards Lalitpur) at TP2

Commodity Category	Mini LCV + LCV	2A	3A	MAV + OSV
Agriculture	-	2%	2%	4%
Groceries	24%	19%	29%	32%
Construction	3%	1%	3%	6%
Petroleum	3%	2%	4%	6%
Manufacturing	15%	18%	16%	14%
Automobiles	8%	19%	10%	15%
Miscellaneous	20%	25%	24%	12%
Metals	9%	5%	2%	5%
Empty	19%	8%	9%	8%

Source: Steer analysis

Table B.8: Commodity distribution (towards Jhansi) at TP2

Commodity Category	Mini LCV + LCV	2A	3A	MAV + OSV
Agriculture	3%	2%	7%	5%
Groceries	17%	18%	27%	23%
Construction	-	1%	0%	3%
Petroleum	-	2%	4%	4%
Manufacturing	3%	14%	13%	12%
Automobiles	-	4%	4%	8%
Miscellaneous	53%	40%	33%	27%
Metals	-	5%	5%	8%
Empty	23%	15%	7%	9%

Source: Steer analysis

Trip length frequency

Table B.9: Trip length frequency at TP1

Distance range	LCV	2 Axle	3 Axle	MAV
0-100 km	5%	1%	4%	4%
100-300 km	18%	10%	15%	21%
300-500 km	11%	6%	10%	8%
500-1000 km	20%	15%	16%	17%
>1000 km	47%	68%	55%	49%

Source: Steer analysis of OD data

Table B.10: Trip length frequency at TP2

Distance range	LCV	2 Axle	3 Axle	MAV
0-100 km	1%	1%	0%	0%
100-300 km	38%	19%	13%	13%
300-500 km	11%	7%	11%	8%
500-1000 km	10%	17%	16%	19%
>1000 km	40%	56%	60%	60%

Source: Steer analysis of OD data

C. Detailed forecasts

6.44 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

6.45 This section presents the detailed traffic forecasts for the forecast period until FY51, year of expected close of the concession. The following two tables show the traffic growth rates and AADT, respectively.

Table C.1: Forecasts for (background + impacts) traffic – TP1 Babina

	CJV	Mini LCV	Bus	LCV	2A	3A	MAV	OSV	Total	PCU
FY26	3,105	499	175	336	1,577	1,397	1,910	2	9,000	20,094
FY27	3,302	518	179	346	1,578	1,352	1,985	2	**9,262**	**20,463**
FY28	3,509	538	184	357	1,666	1,378	2,118	2	**9,750**	**21,516**
FY29	3,722	557	188	368	1,754	1,403	2,252	2	**10,246**	**22,578**
FY30	3,940	577	193	379	1,844	1,428	2,386	2	**10,748**	**23,650**
FY31	4,167	597	197	390	1,935	1,453	2,527	2	**11,268**	**24,756**
FY32	4,408	617	202	401	1,887	1,379	2,583	2	**11,479**	**24,875**
FY33	4,673	640	206	413	1,981	1,405	2,741	3	**12,062**	**26,096**
FY34	4,952	663	211	425	2,079	1,430	2,907	3	**12,669**	**27,368**
FY35	5,244	686	216	438	2,178	1,456	3,082	3	**13,304**	**28,693**
FY36	5,552	710	221	451	2,282	1,482	3,265	3	**13,966**	**30,076**
FY37	5,874	735	227	464	2,390	1,508	3,457	3	**14,657**	**31,518**
FY38	6,212	760	232	477	2,501	1,535	3,659	3	**15,379**	**33,022**
FY39	6,566	786	237	491	2,617	1,561	3,871	4	**16,132**	**34,589**
FY40	6,936	813	242	505	2,737	1,588	4,092	4	**16,917**	**36,221**
FY41	7,324	840	248	519	2,861	1,615	4,324	4	**17,735**	**37,921**
FY42	7,731	868	253	533	2,989	1,642	4,567	4	**18,587**	**39,691**
FY43	8,156	897	259	548	3,122	1,670	4,820	4	**19,475**	**41,532**
FY44	8,600	926	265	563	3,259	1,697	5,085	5	**20,399**	**43,447**
FY45	9,065	956	270	578	3,401	1,725	5,362	5	**21,361**	**45,438**
FY46	9,550	987	276	593	3,547	1,753	5,650	5	**22,362**	**47,506**
FY47	10,057	1,018	282	609	3,699	1,781	5,951	6	**23,402**	**49,654**
FY48	10,586	1,050	288	625	3,855	1,809	6,265	6	**24,483**	**51,883**
FY49	11,138	1,083	294	641	4,015	1,837	6,592	6	**25,607**	**54,196**
FY50	11,712	1,117	300	658	4,181	1,866	6,931	6	**26,771**	**56,594**
FY51	12,287	1,150	306	674	4,345	1,893	7,272	7	**27,933**	**58,983**

Source: Steer analysis

Table C.2: Forecasts for (background + impacts) growth rates (%) – TP1 Babina

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total	PCU
FY27	7.5%	7.5%	(5.5%)	7.9%	10.9%	9.2%	(5.0%)	5.1%	3.8%
FY28	6.3%	3.8%	2.5%	3.2%	0.1%	(3.3%)	3.9%	2.9%	1.8%
FY29	6.3%	3.8%	2.5%	3.1%	5.6%	1.9%	6.7%	5.3%	5.1%
FY30	6.1%	3.6%	2.4%	3.0%	5.3%	1.9%	6.3%	5.1%	4.9%
FY31	5.9%	3.5%	2.3%	2.9%	5.1%	1.8%	6.0%	4.9%	4.7%
FY32	5.8%	3.5%	2.3%	2.9%	4.9%	1.8%	5.9%	4.8%	4.7%
FY33	5.8%	3.5%	2.3%	2.9%	(2.5%)	(5.1%)	2.2%	1.9%	0.5%
FY34	6.0%	3.6%	2.4%	3.0%	5.0%	1.8%	6.1%	5.1%	4.9%
FY35	6.0%	3.6%	2.4%	3.0%	4.9%	1.8%	6.1%	5.0%	4.9%
FY36	5.9%	3.5%	2.4%	3.0%	4.8%	1.8%	6.0%	5.0%	4.8%
FY37	5.9%	3.5%	2.3%	2.9%	4.8%	1.8%	5.9%	5.0%	4.8%
FY38	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.9%	5.0%	4.8%
FY39	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.8%	4.9%	4.8%
FY40	5.7%	3.4%	2.3%	2.9%	4.6%	1.7%	5.8%	4.9%	4.7%
FY41	5.6%	3.4%	2.3%	2.8%	4.6%	1.7%	5.7%	4.9%	4.7%
FY42	5.6%	3.4%	2.2%	2.8%	4.5%	1.7%	5.7%	4.8%	4.7%
FY43	5.5%	3.3%	2.2%	2.8%	4.5%	1.7%	5.6%	4.8%	4.7%
FY44	5.5%	3.3%	2.2%	2.7%	4.4%	1.7%	5.6%	4.8%	4.6%
FY45	5.5%	3.3%	2.2%	2.7%	4.4%	1.6%	5.5%	4.7%	4.6%
FY46	5.4%	3.2%	2.2%	2.7%	4.4%	1.6%	5.4%	4.7%	4.6%
FY47	5.4%	3.2%	2.1%	2.7%	4.3%	1.6%	5.4%	4.7%	4.6%
FY48	5.3%	3.2%	2.1%	2.7%	4.3%	1.6%	5.3%	4.7%	4.5%
FY49	5.3%	3.2%	2.1%	2.6%	4.2%	1.6%	5.3%	4.6%	4.5%
FY50	5.2%	3.1%	2.1%	2.6%	4.2%	1.6%	5.2%	4.6%	4.5%
FY51	5.2%	3.1%	2.1%	2.6%	4.1%	1.5%	5.2%	4.5%	4.4%

Source: Steer analysis

Table C.3: Forecasts for (background + impacts) traffic – TP2 Vigakhet

	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	Total	PCU
FY26	2,379	319	158	329	1,531	1,395	1,800	2	**7,913**	**18,607**
FY27	2,530	332	162	339	1,530	1,349	1,867	2	**8,110**	**18,887**
FY28	2,688	344	166	350	1,615	1,375	1,992	2	**8,532**	**19,848**
FY29	2,851	357	170	360	1,701	1,401	2,118	2	**8,960**	**20,817**
FY30	3,019	369	174	371	1,787	1,426	2,245	2	**9,393**	**21,793**
FY31	3,193	382	178	381	1,876	1,451	2,377	2	**9,840**	**22,800**
FY32	3,377	395	182	392	1,825	1,376	2,424	2	**9,975**	**22,813**
FY33	3,580	409	187	404	1,916	1,402	2,572	2	**10,473**	**23,919**
FY34	3,794	424	191	416	2,010	1,427	2,728	3	**10,993**	**25,071**
FY35	4,018	439	196	429	2,107	1,453	2,892	3	**11,536**	**26,270**
FY36	4,253	454	200	441	2,207	1,479	3,064	3	**12,102**	**27,522**
FY37	4,500	470	205	454	2,311	1,505	3,245	3	**12,693**	**28,826**

	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	Total	PCU
FY38	4,759	487	210	467	2,419	1,531	3,434	3	**13,310**	**30,186**
FY39	5,030	503	214	480	2,531	1,558	3,632	3	**13,953**	**31,604**
FY40	5,314	520	219	494	2,647	1,585	3,840	4	**14,623**	**33,079**
FY41	5,612	538	224	508	2,767	1,612	4,058	4	**15,321**	**34,615**
FY42	5,923	556	229	522	2,891	1,639	4,285	4	**16,048**	**36,214**
FY43	6,248	574	234	536	3,019	1,666	4,523	4	**16,806**	**37,877**
FY44	6,589	593	239	551	3,152	1,693	4,772	4	**17,594**	**39,605**
FY45	6,945	612	244	566	3,289	1,721	5,032	5	**18,414**	**41,402**
FY46	7,317	632	250	581	3,431	1,749	5,303	5	**19,266**	**43,268**
FY47	7,705	652	255	596	3,577	1,777	5,585	5	**20,152**	**45,205**
FY48	8,111	672	260	612	3,728	1,805	5,879	5	**21,073**	**47,215**
FY49	8,533	693	266	628	3,883	1,833	6,186	6	**22,029**	**49,300**
FY50	8,974	715	271	644	4,044	1,862	6,505	6	**23,020**	**51,461**
FY51	9,414	736	277	660	4,202	1,889	6,824	6	**24,008**	**53,614**

Source: Steer analysis

Table C.4: Forecasts for (background + impacts) growth rates (%) – TP2 Vigakhet

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total	PCU
FY27	4.8%	4.8%	(5.8%)	8.6%	11.1%	6.9%	(3.5%)	**4.2%**	**3.6%**
FY28	6.3%	3.8%	2.5%	3.2%	(0.1%)	(3.3%)	3.7%	**2.5%**	**1.5%**
FY29	6.3%	3.8%	2.5%	3.1%	5.6%	1.9%	6.7%	**5.2%**	**5.1%**
FY30	6.1%	3.6%	2.4%	3.0%	5.3%	1.9%	6.3%	**5.0%**	**4.9%**
FY31	5.9%	3.5%	2.3%	2.9%	5.1%	1.8%	6.0%	**4.8%**	**4.7%**
FY32	5.8%	3.5%	2.3%	2.9%	4.9%	1.8%	5.9%	**4.8%**	**4.6%**
FY33	5.8%	3.5%	2.3%	2.9%	(2.7%)	(5.1%)	2.0%	**1.4%**	**0.1%**
FY34	6.0%	3.6%	2.4%	3.0%	5.0%	1.8%	6.1%	**5.0%**	**4.9%**
FY35	6.0%	3.6%	2.4%	3.0%	4.9%	1.8%	6.1%	**5.0%**	**4.8%**
FY36	5.9%	3.5%	2.4%	3.0%	4.8%	1.8%	6.0%	**4.9%**	**4.8%**
FY37	5.9%	3.5%	2.3%	2.9%	4.8%	1.8%	5.9%	**4.9%**	**4.8%**
FY38	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.9%	**4.9%**	**4.7%**
FY39	5.8%	3.5%	2.3%	2.9%	4.7%	1.8%	5.8%	**4.9%**	**4.7%**
FY40	5.7%	3.4%	2.3%	2.9%	4.6%	1.7%	5.8%	**4.8%**	**4.7%**
FY41	5.6%	3.4%	2.3%	2.8%	4.6%	1.7%	5.7%	**4.8%**	**4.7%**
FY42	5.6%	3.4%	2.2%	2.8%	4.5%	1.7%	5.7%	**4.8%**	**4.6%**
FY43	5.5%	3.3%	2.2%	2.8%	4.5%	1.7%	5.6%	**4.7%**	**4.6%**
FY44	5.5%	3.3%	2.2%	2.7%	4.4%	1.7%	5.6%	**4.7%**	**4.6%**
FY45	5.5%	3.3%	2.2%	2.7%	4.4%	1.6%	5.5%	**4.7%**	**4.6%**
FY46	5.4%	3.2%	2.2%	2.7%	4.4%	1.6%	5.4%	**4.7%**	**4.5%**
FY47	5.4%	3.2%	2.1%	2.7%	4.3%	1.6%	5.4%	**4.6%**	**4.5%**
FY48	5.3%	3.2%	2.1%	2.7%	4.3%	1.6%	5.3%	**4.6%**	**4.5%**
FY49	5.3%	3.2%	2.1%	2.6%	4.2%	1.6%	5.3%	**4.6%**	**4.4%**
FY50	5.2%	3.1%	2.1%	2.6%	4.2%	1.6%	5.2%	**4.5%**	**4.4%**
FY51	5.2%	3.1%	2.1%	2.6%	4.1%	1.5%	5.2%	**4.5%**	**4.4%**

Source: Steer analysis

Revenue forecasts

Table C.5: Forecasts revenue (INR crores) – TP1 Babina

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	Total
FY26	9	1	2	2	23	23	45	0	106
FY27	10	2	2	2	24	23	48	0	112
FY28	11	2	2	3	27	25	54	0	124
FY29	13	2	2	3	30	27	60	0	136
FY30	14	2	3	3	33	28	67	0	150
FY31	16	2	3	3	36	30	74	0	164
FY32	17	2	3	4	37	30	79	0	173
FY33	19	3	3	4	40	32	88	0	189
FY34	21	3	3	4	44	34	97	0	207
FY35	23	3	4	5	48	36	107	0	227
FY36	26	3	4	5	53	38	119	0	249
FY37	29	4	4	5	58	41	132	0	273
FY38	32	4	5	6	64	43	145	0	298
FY39	35	4	5	6	69	46	161	0	327
FY40	39	5	5	7	76	49	178	0	359
FY41	43	5	6	7	83	52	197	0	393
FY42	47	5	6	8	91	55	217	0	430
FY43	52	6	6	8	99	59	240	0	471
FY44	58	6	7	9	108	63	266	0	517
FY45	63	7	7	10	118	67	292	0	564
FY46	70	7	8	10	129	71	322	0	618
FY47	77	8	8	11	140	76	355	0	676
FY48	85	8	9	12	153	81	392	0	741
FY49	94	9	9	13	167	85	431	0	808
FY50	103	10	10	14	182	91	474	1	883
FY51	112	11	11	15	198	96	520	1	963

Source: Steer analysis

Table C.6: Forecasts revenue (INR crores) – TP2 Vigakhet

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	Total
FY26	5	1	1	2	17	17	31	0	74
FY27	6	1	2	2	17	17	33	0	78
FY28	7	1	2	2	19	18	37	0	86
FY29	8	1	2	2	21	19	41	0	94
FY30	8	1	2	2	24	21	46	0	104
FY31	9	1	2	2	26	22	51	0	114
FY32	10	1	2	3	26	22	55	0	119

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	OSV	Total
FY33	11	1	2	3	29	23	60	0	131
FY34	13	1	3	3	31	25	67	0	143
FY35	14	2	3	3	34	26	74	0	157
FY36	16	2	3	4	38	28	82	0	172
FY37	17	2	3	4	42	30	91	0	188
FY38	19	2	3	4	46	32	101	0	206
FY39	21	2	4	4	50	34	111	0	226
FY40	23	2	4	5	54	36	123	0	248
FY41	26	2	4	5	60	38	136	0	271
FY42	28	3	4	6	65	41	150	0	296
FY43	31	3	5	6	71	43	166	0	324
FY44	34	3	5	6	78	46	184	0	356
FY45	38	3	5	7	84	49	202	0	389
FY46	42	4	6	7	92	52	222	0	425
FY47	46	4	6	8	101	55	245	0	465
FY48	51	4	7	9	110	59	270	0	509
FY49	55	5	7	9	120	62	297	0	556
FY50	61	5	7	10	130	66	327	0	607
FY51	67	5	8	11	142	70	358	0	662

Source: Steer analysis

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Final Report
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Project Transit: Traffic Due Diligence for Jaipur Mahua Toll way Limited

Cube Highways Fund Advisors Private Limited
Our ref: 23741310
Client ref: Transit 10.0

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Table of Content

Disclaimer		**v**
Glossary Items		**vii**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Key economic activities	7
	Alternate Routes	9
3	**Traffic description**	**12**
	Introduction	12
	Historical trends	12
	Data collection and validation	21
	Key findings of the TVC data analysis	22
	Key findings of origin-destination analysis	24
	Conclusions	32
4	**Socio Economic Context**	**33**
	Introduction	33
	Population growth	33
	Economic Indicators	34
	Economic growth	37
	Forecasts for growth drivers	40
5	**FY26 Base year AADT and Traffic growth analysis**	**42**
	Introduction	42
	FY26 Base year AADT estimates	42
	Estimation of background elasticities	45
	Forecasts for background elasticities	48
6	**Forecasts: Network overlays and forecasts**	**50**
	Introduction	50
	Analysis of potential network/developmental impacts	50
	Revenue forecasting assumptions	55
	Traffic and Revenue forecasts	59
	Upside and Downside cases	62
	Summary outlook	66

Figures

Figure 2.1: Asset location in the regional network context	4
Figure 2.2: Asset context	5
Figure 2.3: Toll plazas on the Asset	6
Figure 3.1: Passenger Traffic trends on the Asset in FY25 and FY26YTD	14
Figure 3.2 Ticket-segmentation for CJV at TP1 Sikandra	17
Figure 3.3 Ticket-segmentation for MAV at TP1 Sikandra	18
Figure 3.4 Ticket-segmentation for CJV at TP2 Rajadhok	18
Figure 3.5: Ticket-segmentation for MAV at TP2 Rajadhok	18
Figure 3.6 WADT at TP1 and TP2	22
Figure 3.7 Comparison between TVC and TMS daily traffic data on TP1 Sikandra	23
Figure 3.8: Comparison between TVC and TMS daily traffic data on TP2 Rajadhok	23
Figure 3.9 Comparison between vehicle shares from TVC and TMS WADTs	24
Figure 3.10 Zonal influence at TP1 Sikandra	26
Figure 3.11 Zonal influence at TP2 Rajadhok	27
Figure 3.12 Internal-external distribution at TP1 Sikandra	28
Figure 3.13 Internal-external distribution at TP2 Rajadhok	28
Figure 3.14 Commodity distribution at TP1 Sikandra (Both directions)	30
Figure 3.15 Commodity distribution at TP2 Rajadhok (Both directions)	30
Figure 3.16 Trip length distribution TP1 Sikandra	31
Figure 3.17 Trip length distribution TP2 Rajadhok	31
Figure 4.1: Annual growth – Index of Industrial Production	35
Figure 4.2: Car ownership in India per 1,000 population	36
Figure 4.3: Relative Per Capita Income (FY15-FY25)	36
Figure 4-4: Private and Government Consumption and Business Investment Expenditures	37
Figure 4-5: Month on Month IIP performance	38
Figure 4-6: Industrial components of GVA	38
Figure 4.7: Evolution of Rajasthan's state GDP and national GDP, FY12-25	39
Figure 4.8: GDP-GSDP forecast	41
Figure 5.1: FY26 Base Estimation methodology	43
Figure 5.2: Relationship between CJV traffic and Rajasthan GSDP	46
Figure 5.3: Relationship between Bus+LCV+2A combined traffic and Rajasthan GSDP	47
Figure 5.4: Relationship between 3A+MAV combined traffic and India GDP:	48
Figure 6.1: Alternate routes and Asset route shown against the regional network context	51
Figure 6.2: Traffic and growth rates for forecast PCUs - Background and final, TP1 Sikandra	61
Figure 6.3: Traffic and growth rates for forecast PCUs - Background and final, TP2 Rajadhok	62

Tables

Table 1.1: Scope of work and sources of data	1
Table 2.1: Summary of concession	6
Table 2.2: Single toll rates on the Asset (INR), applicable in FY26	7
Table 2.3: Section Wise Delhi Mumbai Expressway status	10
Table 3.1: PCU factors	12
Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Sikandra	13
Table 3.3: Historical evolution in Tollable AADT by vehicle class at TP1 – Sikandra	13
Table 3.4: Historical evolution in AADT by vehicle class at TP2 – Rajadhok	13
Table 3.5: Historical evolution in Tollable AADT by vehicle class at TP2: Rajadhok	14
Table 3.6: Historical revenue collection (in INR crores) and AADC (in INR Lakh) :	16
Table 3.7: Typical ticket types sold at NHAI plazas	16
Table 3.8: Historical ticket segmentation at TP1 Sikandra (LCVs)	19
Table 3.9: Historical ticket segmentation at TP1 Sikandra (Bus)	19
Table 3.10: Historical ticket segmentation at TP1 Sikandra (2 Axle)	19
Table 3.11: Historical ticket segmentation at TP2 Rajadhok (LCV)	20
Table 3.12: Historical ticket segmentation at TP2 Rajadhok (Bus)	20
Table 3.13: Historical ticket segmentation at TP2 Rajadhok (2 Axle)	20
Table 3.14: Overloading shares for FY19, FY20, FY22, FY23 and FY24	21
Table 3.15: Data collection schedule	21
Table 3.16: TVC TMS Comparison	24
Table 3.17: Sample rates for OD data	25
Table 3.18: Zone aggregations for zonal influence analysis	25
Table 3.19: Aggregate commodity categories	28
Table 4.1: CAGR of population in India	33
Table 4.2: Population Growth in Rajasthan and India (2012-2024)	34
Table 5.1: Seasonality correction factors for TP1 Sikandra	43
Table 5.2: Seasonality correction factors for TP2 Rajadhok	44
Table 5.3: Adopted base estimates: TP1 Sikandra	44
Table 5.4: Adopted base estimates: TP2 Rajadhok	44
Table 5.5: Identified growth drivers to model traffic growth at Asset level	45
Table 5.6: Derived implied elasticities and assumed forecast elasticities for background growth	49
Table 6.1: List of network/other developments	50
Table 6.2: Impact due to completion of Delhi-Mumbai Expressway Spur, TP1 Sikandra	52
Table 6.3: Impact due to completion of Delhi-Mumbai Expressway Spur, TP2 Rajadhok	53
Table 6.4: Impact due to completion of pending section on Agra Ring Road, TP1 Sikandra	53
Table 6.5: Impact due to completion of pending section on Agra Ring Road, TP2, Rajadhok	53
Table 6.6: Completion of Agra-Gwalior Construction	54
Table 6.7: Summary of impact assessments	54
Table 6.8: Trip factors at TP1 Sikandra	55

Table 6.9: Trip factors at TP2 Rajadhok	55
Table 6.10: Annual pass adoption between 15th August and 30th September 2025	56
Table 6.11: Forecast toll segmentation, FY26 onwards- TP1 Sikandra	56
Table 6.12: Forecast toll segmentation, FY26 onwards- TP2 Rajadhok	57
Table 6.13: Overloading assumptions for forecast years FY26 onwards	57
Table 6.14: WPI growth forecast assumptions	58
Table 6.15: Revenue reconciliation for FY26YTD	59
Table 6.16: Traffic forecasts (with impacts) forecast for TP1 Sikandra	59
Table 6.17: Traffic forecasts (with impacts) CAGR (%) for TP1 Sikandra	59
Table 6.18: Revenue forecast for TP1 Sikandra (INR crores)	59
Table 6.19: Revenue growth CAGR (%) for TP1 Sikandra	60
Table 6.20: Traffic forecast (with impacts) for TP2 Rajadhok	60
Table 6.21: Traffic forecast (with impacts) CAGR (%) for TP2 Rajadhok	60
Table 6.22: Revenue forecast for TP2 Rajadhok (INR crores)	61
Table 6.23: Revenue growth rates (%) for TP2 Rajadhok	61
Table 6.24: Summary of Macro-economic Assumptions for upside and downside cases	62
Table 6.25: Summary of impacts on the Assets	63
Table 6.26: Summary of impacts on the Assets	63

Appendices

A	**Developments in sandmining**
B	**Top 10 OD Pairs**
C	**Detailed forecasts**
D	**Data Collection Exercise**

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Over sized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Jaipur Mahua Toll Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic, and network assumptions.

1.2 The Asset Jaipur-Mahua consists of a single stretch of toll road with two toll plazas. For the purpose of this report, we hereafter call the toll plazas present on the Asset as TP1 and TP2 respectively.

- TP1 – Sikandra
- TP2 – Rajadhok

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Origin-Destination (OD) data, Vendor reports and documents	• Provided by client for the period between April 2009 and September 2025 for TP1 and September 2010 and September 2025 in case of TP2
• Historical analysis and forecasts for baseline growth, including; — Background growth, — Seasonality	• Historical toll plaza data provided by Client
• Validation of Revenue reported in FY26YTD	• TMS data provided by Client. • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue.
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer on Rajadhok in Jan'25 and on Sikandra in June 2023 under previous study.
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by

Scope of work	Data source
	Steer based on Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research and Steer's in-house experience of working in the vicinity of the Asset
• Toll revenue estimation for the entire concession including toll evolution	• Toll evolution based on toll notification published by National Highway Authority of India (NHAI); and Gross Domestic Product (GDP) & Wholesale Price Index (WPI) trends as shared by the client

Our approach

1.4 The approach employed by Steer in the preparation of these forecasts was developed to take advantage of existing knowledge of the Asset and available data from various sources made available by the Client as well as publicly sourced. It follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset.

1.5 The analysis focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.6 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data starting from FY09 up to September 2025
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous studies related to traffic and revenue
  - Steer-commissioned OD surveys on the two plazas of the Asset to validate any change in growth drivers and travel patterns. The latest survey on TP1 was conducted on 26th June 2023 and on TP2 on 22nd Jan'25.
  - Steer-commissioned a 4-day TVC counts on TP1 Sikandra from 26th June to 29th June 2023 in the previous study in 2023 and a 3-day TVC counts on TP2 Rajadhok from 22nd Jan'25to 24th Jan'25.
- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by each of the toll plaza and subsequently match it to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.7 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against the six months of actual traffic (Apr-Sep) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.8 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases.

2 The Asset

Introduction

2.1 This chapter provides a description of the Asset, based on concession agreement, site observations, our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of Rajasthan, connecting the state capital Jaipur to Mahua on the east, near the border of Rajasthan with Uttar Pradesh (UP). The Asset carries considerable passenger volumes between the three nodes of India's Golden Triangle - Delhi, Jaipur and Agra engaged in tourism and related activities. Figure 2.1 shows the regional road network in which the Asset is located.

Figure 2.1: Asset location in the regional network context

Source: Steer cartography using OpenStreetMap data

2.3 This Asset primarily caters to three types of strategic movements:

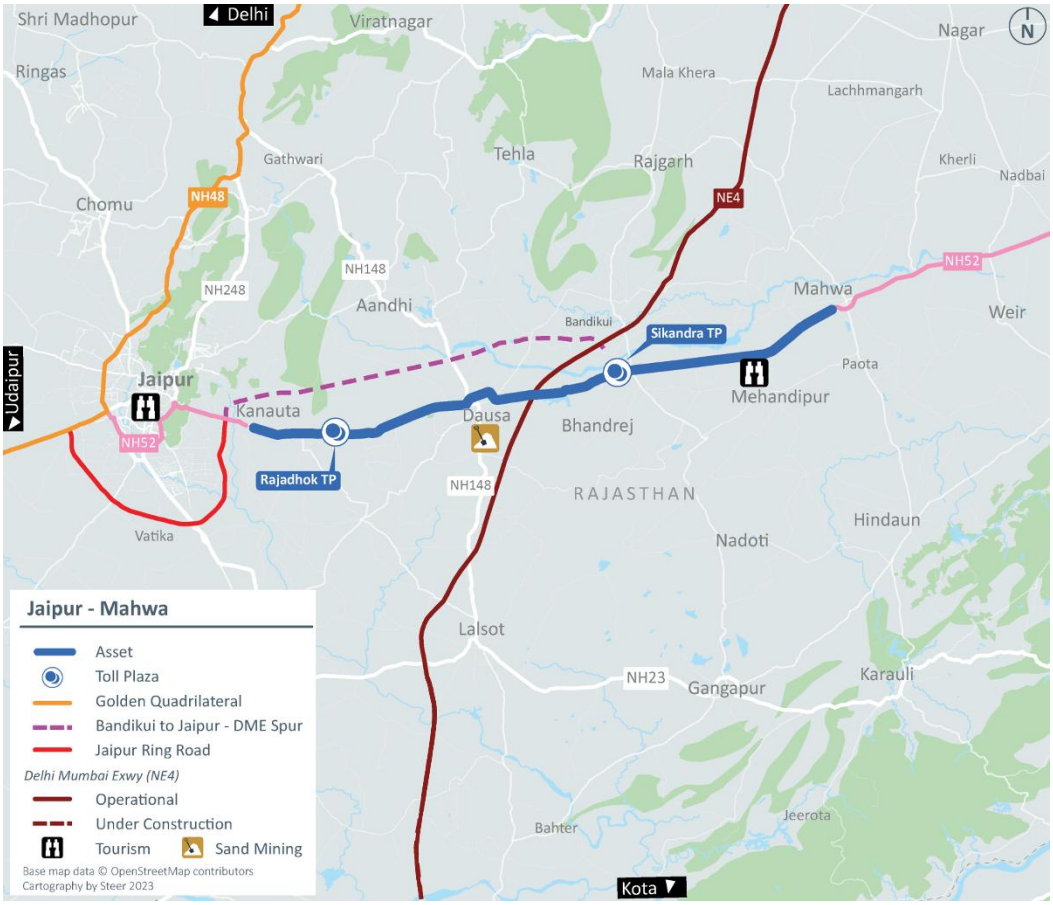
Short-distance trips including tourism and leisure trips between some of the key tourist destinations in India. Such trips are mostly comprising of CJVs which are either local or run between key tourist locations of Agra and Bharatpur at one end and Jaipur on the other.

Medium-distance trips between Rajasthan and Uttar Pradesh connect marble and sandstone processing sites of Rajasthan to its consumption sites in Uttar Pradesh. The Asset also transports significant number of manufactured products across the states of UP and Rajasthan.

Long-distance trips between Gujarat and southern Rajasthan, and UP/East India connects ports and industries of western India to major consumption and production centres in North India.

2.4 The Asset is a 109.09-km toll road which forms a part of the NH 21 (Jaipur – Agra – Bareilly) in Rajasthan and Uttar Pradesh. It is a four-lane Asset with two toll plazas, namely, Sikandra (TP1) at Km 156.6 (closer to Mahua) and Rajadhok (TP2) at Km 204.7 (closer to Jaipur). Figure 2.2 provides a closer view of the Asset in the context of its immediate surroundings and location of toll plazas.

Figure 2.2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.5 The toll plazas on the Asset have been operational since April (TP1) and September (TP2) 2009 and the Client took over its operations in May 2015. There are 7 years left in the concession period which ends in FY31. Table 2.1 table presents a summary of the concession.

Table 2.1: Summary of concession

Particulars	Details
State	Rajasthan
Highway and lane configuration	NH 21 four lane
Toll plazas	• TP1: Sikandra • TP2: Rajadhok
Length (km) as per concession agreement, applicable	• TP1: 54.73 km • TP2: 54.36 km
Commencement of operations	• TP1: April 2009 • TP2: September 2009
Operated by Client since	May 2015
Concession period	25 years
Last year of concession	FY32

Source: Client data

2.6 The figure below shows a typical cross-section of the Asset and its toll plazas.

Figure 2.3: Toll plazas on the Asset

Source: Steer site visit

2.7 The tolls on the Asset are collected for following vehicle categories with rates as shown in Table 2.2. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling.

Table 2.2: Single toll rates on the Asset (INR), applicable in FY26

Type of Vehicle	Single Journey Fee	
	TP1 Sikandra	TP2 Rajadhok
CJV	80	80
LCV	140	140
Bus/Truck	285	280
3A/MAV	455	450
HCM/EME/OSV	455	450

Source: NHAI Revision of User fee Rate w.e.f 01.07.2025

2.8 The Asset currently issues tickets including single, local commercial, monthly, and local personal under NHAI concession. There are no return tickets issued on either of the two toll plazas, but TP2 Rajadhok plaza issues local passes. The local personal ticket category is a discounted single-entry pass issued to trips originating within 10kms of the Asset. Whereas local commercial is another single-entry discounted pass issued at the Asset Plaza to commercial vehicles registered within the Asset district. Further, detailed information on this have been provided in Chapter 3 of the report.

Key economic activities

2.9 Rajasthan is the largest state in India by area, sharing borders with five major states- Uttar Pradesh, Haryana, Punjab, Madhya Pradesh and Gujarat. It is rich in natural resources particularly minerals and produces about 57 different minerals.[1] Predominantly an agrarian economy and a major producer of grains, oilseeds and edible oil, the recent

[1] http://www.mines.rajasthan.gov.in/dmgcms/page?menuName=YzCjPSj/AU7RGgRfpUoY5A==#:~:text=Rajasthan%20is%20the%20richest%20state,zinc%20ores%2C%20selenite%20and%20wollastonite.

times has seen a high rise in the service sector growth wherein the sector contributed to 45% to state's GSDP in 2024-25 followed by agriculture at 30% and industries at 25%.[2]

Urban centres, business and tourism

2.10 The state of Rajasthan and its bordering cities in UP (e.g. Agra and Mathura) are known for their tourist destinations. This contributes significantly to high passenger traffic volumes both within cities and on highways. The Bharatpur area with the Keoladeo Ghana National Park is a major attraction for tourists, known for its birds. The capital city of Jaipur, located on one end of the Asset, is a thriving urban city which is the main centre of administration, governance, culture, education, business, and service sector in the state. It is a prominent tourism destination contributing majorly to the flourishing hospitality industry in the state. This reflects in considerable passenger volumes between the three nodes of India's Golden Triangle - Delhi, Jaipur and Agra – observed on the Asset engaged in tourism and related activities. In recent times, the city has also emerged as a promising hub for global outsourcing and IT industry. Jaipur's strategic location on the golden quadrilateral connects it with major industrial, agricultural, and cultural centres of Chennai, Kolkata, Delhi, and Mumbai.

Marble, cement, and sand

2.11 The State is also a leading producer of Masonry stone with around 136.1 million tonnes of production in FY24.[3] Places like Kishangarh, Kota and Dausa produce stone and sand, apart from being a hub of major marble processing centres, with a history of supplying marble to the rest of India.

2.12 Rajasthan accounts for 70 per cent of the country's stone production. There are 4,920 mining leases in the state[4]. Rajasthan produces 90 percent of the marble and sandstone in the country. In terms of Granite, in FY24 Rajasthan produced more than 10.4 million tonnes compared to 9.3 million tonnes in FY23[5]. This is due to the increased export demand from countries like US, China and Europe.

2.13 Sandmining in India has long faced issues of corruption involving local mafias and a lack of proper implementation of mining policies by the government. In November FY18, when Supreme Court order ruled the requirement of environmental clearances for all sand mines, including those less than five hectares of size, there was a reported drop in traffic carrying construction-related commodities on the Asset, particularly sand. However, in 2020, following the implementation of the Major and Minor Mineral Policy, the mining industry in the state was regularized by imposing a ban on illegal mining activities. Additionally, sand mining leases were reduced to two years, with an improved replenishment cycle. The policy also mandated the use of 25% M-Sand (manufactured sand) as an alternative to riverbed sand for construction activities in Rajasthan.

2.14 After the policy implementation, the combination of reduced legalized sand mining, award of leases, and increasing demand for construction material for local activities led

[2]MoSPI data

[3]**Minor mineral production in Rajasthan**

[4] **70% of stone production in India comes from Rajasthan: RIICO Chairman (knnindia.co.in)**

[5] **Granite production in Rajasthan**

to a continued demand for sand and other construction materials in the region. In terms of lease tenure related to this commodity within the Rajasthan mining policy:

- Sand mining leases- 2 years (re-award of new leases after 2 years): Additionally, to reduce illegal mining and allow for the full replenishment cycle of rivers in the region, the state government has reduced the validity of sand mining leases from the existing five years to two years.
- Aggregate mining leases- 5 years (re-award of new leases after 5 years)

2.15 While the main sand mining policy came in 2020, a revised version is issued in 2024. in which the Rajasthan government introduced the Rajasthan Mineral Policy 2024 and the M-Sand Policy 2024 to address illegal mining and promote sustainable practices. To strengthen enforcement, 27 monitoring teams were deployed across the state. Therefore, there is no ban on sandmining/construction material mining; however illegal mining is prohibited.

Alternate Routes

2.16 For long-distance trips connecting Gujarat and southern Rajasthan to Uttar Pradesh and other eastward states, there is an alternative route along NH 27 that joins Udaipur and Kanpur via Chittorgarh-Kota-Jhansi. Majority of travel patterns are already well established and the choice between using NH27 vs. NH48 and the Asset for east-west movements has been established over a number of years. However, for a small proportion of traffic on NH27; the route via the Asset is expected to become more attractive as the key feeders of the Asset improve.

2.17 In Chapter 6, we have discussed how the completion of southern bypass of Agra Ring Road improves the relative level of service on the Asset corridor and has a positive impact. The traffic impact of Jaipur Ring Road is already part of the current volumes appearing on the Asset and no further adjustments have been made to the traffic forecasts.

2.18 The Dausa-Lalsot corridor connects to the Asset between the two toll plazas. It acts as a feeder to the Asset. As For medium-distance trips between southern Rajasthan and east of Dausa, there is an alternate road that bypasses TP2 Rajadhok through the Tonk-Lalsot-Dausa connection. This corridor is operational since 2021 with a positive impact of increasing traffic on Sikandra plaza of the Asset with a slight traffic dip on Rajadhok plaza. This traffic started appearing on the Asset in FY23 volumes and no further adjustments have been made to the traffics.

Delhi-Mumbai Expressway

2.19 The Delhi-Mumbai Expressway is a 1290-KM long greenfield expressway that has been developed to provide an improved 8-lane route to long-distance traffic between North/Western India to Mumbai. The competing movements which may choose to take the DME are as follows:

1. Traffic originating near Lalsot destined to Alwar
   i. Vehicles making trips between Lalsot and Alwar, which earlier made the trip via Dausa – Sikandra – Mahwa – Laxmangarh – Alwar, now has an alternative available in the form of the DME which provides direct connectivity from Lalsot – Dausa – Alwar via NE4.
2. Traffic originating near Lalsot destined to Faridabad/North

i. Trips originating near Lalsot destined to regions in Faridabad/north including Delhi, Ghaziabad, Gurugram, which earlier made the trip via Dausa – Sikandra – Bharatpur – Mathura via SH33 – Faridabad, will now have an alternative route available.
ii. The alternative route will materialise as a conjunction of the DME and the Faridabad bypass. It will provide connectivity from Dausa – NE4 – Faridabad bypass at Kaligaon.
iii. By virtue of the route being supplemented by the Faridabad bypass, traffic destined to Delhi and north will get access to smoother passage by being able to avoid entering the city altogether.

2.20 The section of DME between Delhi and Lalsot (Rajasthan) was made operational on 14th Feb 2023, the section in Madhya Pradesh passing through Ratlam was made operational in June 2023. The sections until Surat are expected to be made operational by Mar'25, and the remaining sections are expected to be completed by end-FY26. Commencement of operations of the Delhi-Sohna-Dausa-Lalsot section has already been materialising it's influence on the Asset. The potential shift of traffic that was expected on this stretch has already been witnessed on TP1 Sikandra in goods vehicles. The NE4 in conjunction with the Faridabad bypass now provides a better alternative to vehicles moving between Lalsot, Jaipur, Faridabad, Delhi, Gurugram, etc. However, Sikandra has seen an increase in CJV volume due to the presence of famous temples near Sikandra, therefore CJV traffic from DME is crossing the Sikandra plaza to visit the popular pilgrimage destination Shri Khatu Shayam Temple and Mehendipur Balaji Temple.

2.21 The alignment of the DME and the Bandikui spur has led to a traffic dropping on TP2 Rajadhok, since the spur acts as an effective alternate route for vehicles travelling to/from Jaipur using the DME, thereby bypassing the Delhi-Jaipur NH48 section to reach Jaipur directly.

2.22 In absence of an official update on the construction status of DME, based on the publicly available information, the section wise update on the Delhi Mumbai Expressway section is given below:

Table 2.3: Section Wise Delhi Mumbai Expressway status

S. No	Section	Length (in km)	Sub-Section	State	Status	Expected Data of Completion
1	Delhi-Faridabad-KMP	59	Faridabad-KMP	Delhi, Haryana	Operational	Opened Nov'24
2	Sohna-KMP-Vadodara	844	Sohna – Sawai Moadhopur	Haryana	Operational	Opened Sept'23
			Sawai-Madhopur-Jhalawar	Sawai-Madhopur-Jhalawar	Under Construction	Expected end of FY26 (75-90%

S. No	Section	Length (in km)	Sub-Section	State	Status	Expected Data of Completion
						construction completed)[67]
			Jhalawar-Timarwani	Jhalawar-Timarwani	Operational	Opened Sept'23
			Timarwani-Vadodara	Madhya Pradesh, Gujarat	Under Construction	Expected Dec 2025 (75-80% construction completed)[8]
3	Vadodara – Virar	354	Vadodara-Bharuch	Gujarat	Operational	Opened Feb'24
			Bharuch-Virar	Gujarat, Maharashtra	Under Construction	Expected October 2025 (50-60% construction completed)[9]
4	Virar- JNPT	92	Virar- JNPT	Maharashtra	Under Construction	Expected FY28
Spur Development						
5	Jaipur – Bandikui Expressway	67	Jaipur – Bandikui	Rajasthan	Operational	Operational since July 2025

2.23 No major micro-diversions through local roads were observed close to the toll plazas.

[6] Infra News India (INI) on X: "**Delhi-Mumbai Expressway Package-wise status update**. Looking at the current status, significant sections of the expressway would become operational in the next 6 months! The package 5 in Vadodara Virar section from Ankleshwar to Kim https://t.co/poPFxWOFFe" / X

[7] **Delhi Mumbai Expressway** Route, Map, & Latest Updates

[8] Infra News India (INI) on X: "**Delhi-Mumbai Expressway Package-wise status update**. Looking at the current status, significant sections of the expressway would become operational in the next 6 months! The package 5 in Vadodara Virar section from Ankleshwar to Kim https://t.co/poPFxWOFFe" / X

[9] Infra News India (INI) on X: "**Delhi-Mumbai Expressway Package-wise status update**. Looking at the current status, significant sections of the expressway would become operational in the next 6 months! The package 5 in Vadodara Virar section from Ankleshwar to Kim https://t.co/poPFxWOFFe" / X

3 Traffic description

Introduction

3.1 This chapter outlines the historical and current traffic and revenues on the Asset, as well as our analysis of origin-destination (OD) data and traffic volume count (TVC) data. This includes data collected as a part of this study and previous studies of this Asset, as well as data provided by the Client.

3.2 Traffic data is generally collected and analysed to understand the volume and vehicle composition of traffic currently using the Asset, while OD data is used to obtain a better understanding of commodity movements, travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset as well as the commodities being moved by the goods vehicle. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data is typically provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU factors considered for reporting

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2023 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV	1.0
Mini LCV	1.0
LCV	1.5
Bus/2A/3A	3.0
MAV	4.06
OSV	4.5

Source: Steer analysis and IRC64,1990

Historical trends

3.5 The following table presents the historical variation in traffic volume at both the Asset plazas, in terms of total AADT, vehicle shares and yearly volume growth. TP1 Sikandra

started operation in April FY10 while TP2 started September FY11. The table below shows the traffic evolution on TP1 and TP2 of recent years FY16-26YTD.

Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Sikandra

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25	CAGR FY16-25
CJV	6,613	6,299	6,541	6,663	6,744	7,402	8,356	10,046	10,588	11,580	11,138	8.5%	6.4%
LCV	1,547	1,519	1,249	1,206	1,135	709	428	424	373	364	328	(16.1%)	(14.8%)
Bus/2A	865	923	1,053	1,078	1,200	1,294	1,754	1,869	1,783	1,986	2,353	5.1%	6.6%
3A/MAV	3,671	3,900	4,297	3,679	3,692	3,930	3,947	3,896	3,814	3,933	3,847	(1.3%)	0.8%
Total	**13,151**	**13,009**	**13,751**	**13,204**	**13,229**	**13,553**	**14,611**	**16,490**	**16,940**	**18,230**	**17,667**	**4.1%**	**3.7%**
PCU	**27,367**	**27,829**	**30,349**	**27,945**	**27,978**	**28,496**	**30,201**	**32,416**	**32,682**	**34,694**	**33,859**	**1.5%**	**2.3%**

Source: Steer analysis of Client data; FY26YTD is from Apr-September 2025; Note: On this toll plaza, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the plaza

Table 3.3: Historical evolution in Tollable AADT by vehicle class at TP1 – Sikandra

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25	CAGR FY16-25
CJV	5,195	5,093	5,565	5,980	6,287	6,909	7,974	9,644	10,159	11,118	10,678	10.4%	8.8%
LCV	1,460	1,413	1,154	1,125	1,078	686	412	414	364	355	324	(15.5%)	(14.5%)
Bus/2A	1293	1245	1650	1640	1647	1495	1865	2,048	2,112	2,335	2,344	5.1%	6.8%
3A/MAV	3,615	3,776	4,270	3,655	3,678	3,928	3,931	3,881	3,800	3,917	3,841	(1.2%)	0.9%
Total	**11,563**	**11,527**	**12,639**	**12,400**	**12,690**	**13,019**	**14,182**	**15,988**	**16,435**	**17,725**	**17,187**	**4.9%**	**4.9%**
PCU	**25,517**	**25,837**	**29,083**	**26,998**	**27,347**	**27,913**	**29,687**	**32,182**	**32,484**	**34,572**	**33,806**	**1.9%**	**2.9%**

Source: Steer analysis of Client data; FY26YTD is from Apr-Sep'25; tollable traffic excludes exemptions and violations

Table 3.4: Historical evolution in AADT by vehicle class at TP2 – Rajadhok

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25	CAGR FY16-25
CJV	8,205	8,375	8,921	8,641	8,691	8,982	9,686	11,764	16,447	18,299	15,280	10.8%	9.3%
LCV	1,335	1,388	1,293	1,190	1,086	663	416	442	461	484	410	(13.1%)	(10.7%)
Bus/2A	1248	1230	1547	1474	1441	1242	1521	1797	2124	2,418	2,263	6.6%	7.6%
3A/MAV	2,675	2,650	2,763	2,548	2,550	2,713	2,725	2,737	3,331	3,553	3,091	3.7%	3.1%
Total	**13,404**	**13,398**	**14,524**	**13,853**	**13,788**	**13,631**	**14,349**	**16,740**	**22,363**	**24,753**	**21,043**	**7.9%**	**7.0%**
PCU	**24,423**	**24,279**	**26,394**	**24,893**	**24,724**	**24,437**	**25,617**	**28,940**	**37,047**	**40,373**	**34,946**	**5.8%**	**5.3%**

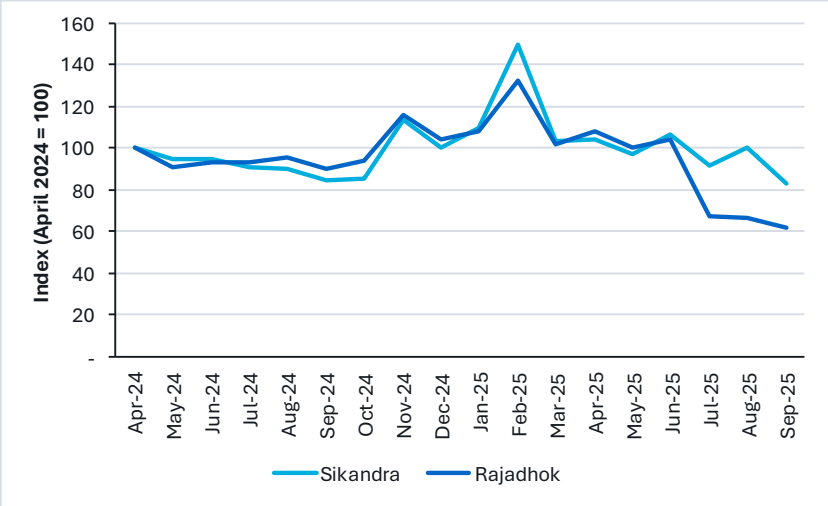
Source: Steer analysis of Client data; FY26YTD is from Apr-Sep'25; Note: On this toll plaza, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the plaza.

Table 3.5: Historical evolution in Tollable AADT by vehicle class at TP2: Rajadhok

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY18-25	CAGR FY16-25
CJV	7,134	7,324	8,148	8,191	8,291	8,541	9,419	11,432	16,004	17,714	14,692	11.7%	10.6%
LCV	1,291	1,331	1,266	1,173	1,075	647	406	435	455	476	405	(13.0%)	(10.5%)
Bus/2A	1224	1189	1531	1460	1434	1227	1508	1,599	1,999	2,399	2,251	6.6%	7.8%
3A/MAV	2,658	2,630	2,753	2,536	2,541	2,706	2,720	2,730	3,324	3,543	3,081	3.7%	3.2%
Total	**12,307**	**12,474**	**13,698**	**13,359**	**13,340**	**13,121**	**14,053**	**16,196**	**21,783**	**24,131**	**20,430**	**8.4%**	**7.8%**
PCU	**23,221**	**23,257**	**25,493**	**24,327**	**24,222**	**23,861**	**25,277**	**27,976**	**36,192**	**40,021**	**34,574**	**6.1%**	**5.8%**

Source: Steer analysis of Client data; FY26YTD is from Apr-Sep'25; tollable traffic excludes exemptions and violations

Figure 3.1: Passenger Traffic trends on the Asset in FY25 and FY26YTD



Source: Steer analysis of Client data

3.6 On the Asset, a slowdown was observed between FY19 and FY20, driven by a combination of factors:

- Completion of large construction activities in the vicinity (Agra-Lucknow expressway) – negative traffic impact due to construction
- Construction activity on a key feeder route (Dausa-Lalsot) - traffic loss due to construction
- Construction of Jaipur ring road - negative traffic impact due to construction
- Revision in axle load norms and economic slowdown - observed over seven quarters starting FY19 up to Q3 FY20 resulting a negative impact on Asset's traffic

3.7 In terms of vehicle composition, CJVs are biggest contributor on the Asset with a share of over 60% on TP1 and 70% on TP2 since FY16 except for a slight dip in FY21 due to COVID-19. Traffic growth on TP2 Rajadhok plaza of this Asset has been stronger than TP1, primarily due to its proximity to Jaipur and is driven by the rapid car growth influenced by the urban characteristic of Jaipur which generates heavy daily passenger trips.

3.8 Additionally, there's notable rise in car volumes during Jan'25, as seen in Figure 3.1 above, driven by increased travel to the 2025 Maha Kumbh Mela in Prayagraj [10]. As a result, passenger traffic on the Asset witnessed a substantial increase in pilgrim-related volumes during Jan 2025 on both toll plazas

3.9 However, since FY23 traffic volumes have increased significantly on TP2 Rajadhok especially in CJV category resulting from operationalisation of DME till Lalsot in Feb'23 which led to a notable increase in traffic on the Asset till July '25.

3.10 On JMTL, 2A and Buses have the same toll rates (INR 275 and INR 280 for a single ticket at TP1 and TP2 respectively in FY26) and so do 3A and MAV (INR 455 and INR 450 for TP1 and TP2 respectively for a single ticket in FY26).

3.11 On Sikandra, this growth is primarily attributed to the increase in CJV volume due to the presence of famous temples near the toll plaza. Consequently, CJV traffic from the DME is crossing the Sikandra Plaza to visit popular pilgrimage destinations such as Shri Khatu Shyam Temple and Mehandipur Balaji Temple. Additionally, there has been a decline in MAV traffic from FY23 onwards due to the diversion of Alwar-bound traffic coming from Jaipur and west, earlier used to cross both Rajadhok and Sikandra toll plazas, but it now takes the DME route, crossing only the Rajadhok toll plaza, resulting in a loss.

3.12 Rajadhok, on the other hand, recorded a healthy growth across all vehicle categories. With DME now becoming operational between Sohna and Dausa in Feb'23, the Rajadhok plaza has observed incremental traffic which is influenced by regions such as Jaipur, Ajmer, Kishangarah and parts of Gujarat. In FY26YTD, Rajadhok saw a 13.6% drop in traffic in PCU terms from FY25. This is attributable to the opening of the Bandikui spur. The spur provides an effective alternate route for traffic travelling between Jaipur and Delhi NCR via the DME.

3.13 Overall on the Asset level, CJV witnessed a nine-year traffic growth of 2.3% from FY16-25 at TP1 and 5.3% at TP2 respectively. It is mostly driven by increased tourism activity in Rajasthan and re-opening of tourist places which increased daily CJV trips where TP1 witnessed higher growth due to its proximity to popular pilgrimage destinations in close vicinity to the Asset. TP2 is expected to witness a drop in traffic from FY26 onwards due to diversion of traffic from Rajadhok to the Bandikui spur from July 2025.

3.14 LCVs on the Asset have observed a negative variance between FY16 and FY25. This trend could be attributed to the misclassification of Mini LCVs, LCVs, Buses and 2As prior to the implementation of FASTag.

3.15 Although 2A and Buses share the same toll rate, the current TMS reports them as separate categories. In contrast, 3A and MAV are combined into a single category. However, post FASTag implementation there has been a reclassification of Buses and 2As

[10] **The Maha Kumbh Mela, held once every 144 years, is regarded as a once-in-a-lifetime spiritual event, significantly influencing regional traffic patterns.**

which are now tolled basis their vehicle mapping. To accurately assess the historical growth of these categories and adjust for any discrepancies due to this reclassification, we have combined the 2A and Bus categories for our analysis.

3.16 To further validate individual growth of each category (Bus/2A/3A/MAV), we conducted independent counts at various points in time to ensure the true representation of individual volumes for the asset. The results of the split are presented in the 'Key findings of the TVC data analysis' section of Chapter 3 of the report. Therefore, the split that we have derived from our counts is the split we are using in our projection to forecast the growth of each individual category for this Asset.

Historical Revenue

3.17 Table 3.6 presents the reported historical revenue of the Asset.

Table 3.6: Historical revenue collection (in INR crores) and AADC (in INR Lakh) :

		FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (FY16-25)
TP1	Total	66.1	64.0	78.7	74.2	79.1	77.3	94.9	109.0	114.0	120.5	60.4	-
	AADC	18.1	17.5	21.5	20.3	21.6	21.2	25.9	29.9	31.1	33.0	32.8	6.9%
TP2	Total	56.2	53.3	63.9	62.5	64.4	61.1	74.2	89.0	120.8	132.7	58.2	-
	AADC	15.4	14.6	17.5	17.1	17.6	16.7	20.3	24.4	33.0	36.3	31.6	10.0%
Total(Cr)		**122.4**	**117.3**	**142.5**	**136.7**	**143.5**	**138.4**	**169.0**	**198.0**	**234.8**	**253.2**	**-**	**8.4%**

Source: Steer analysis of the Client data. *FY26YTD includes six months revenue till Sep-25.

3.18 The Asset has demonstrated a strong compound annual growth rate (CAGR) of 8.4% from FY16 to FY25, with the YoY growth in FY23 and FY24 surpassing the YoY revenue growth of both FY22 and FY21. This growth can be attributed to various factors, including increased traffic volumes resulting from network enhancements including operationalisation of DME till Lalsot in Feb'23 which led to positive traffic increase. Positive tick in revenue prior FY23 is due to post-pandemic recovery, as discussed earlier. Particularly noteworthy is the positive traffic impact observed on TP2 Rajadhok post the opening of DME in FY23.

3.19 Furthermore, an increase in overloading revenue has contributed to higher revenue receipts from FY22 onwards. In FY25, the daily overloading collection at Rajadhok is INR 0.61 lakhs, while at Sikandra, it stands at INR 0.87 lakhs.

Toll Frequencies

3.20 Table below shows the toll segmentation assumed for the period of forecast. The following are the types of tickets being sold at the plazas of the Asset.

Table 3.7: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Local Personal	Discounted single entry pass only for private cars of residents within 10km radius of toll plaza

Category	Description
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

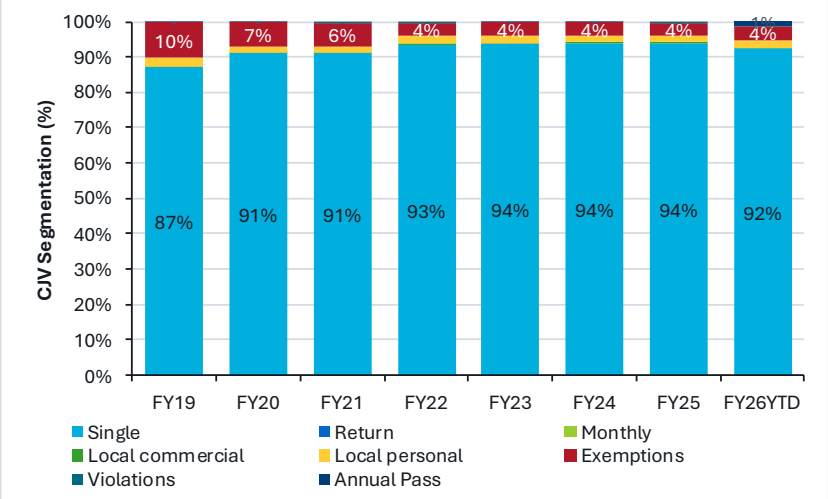
3.21 In addition to the above ticket categories, a special category pass of "Monthly" is also being sold on Rajadhok plaza the Asset for CJV and LCV vehicle category. Under this, the user is charged 1/3rd the fee of Single ticket applicable on the plaza for 50 allowed trips.

Traffic Segmentation

3.22 FY22 was impacted by 2nd wave of COVID-19 in Q1 and Q2 of FY22. Hence, during this period, travel patterns were also disrupted, with more shorter trips being undertaken since several states implemented state entry barriers, resulting in an increase in the proportion of short distance trips. With FY21 and FY22 being Covid-19 impacted, it is observed that traffic patterns have begun to return to their previous segmentation levels. Moreover, the segmentation has stabilised from FY23 following the decision to make FASTag mandatory for all vehicle categories in February 2021. The resultant segmentation, therefore, has been assumed as the forecast segmentation as well.

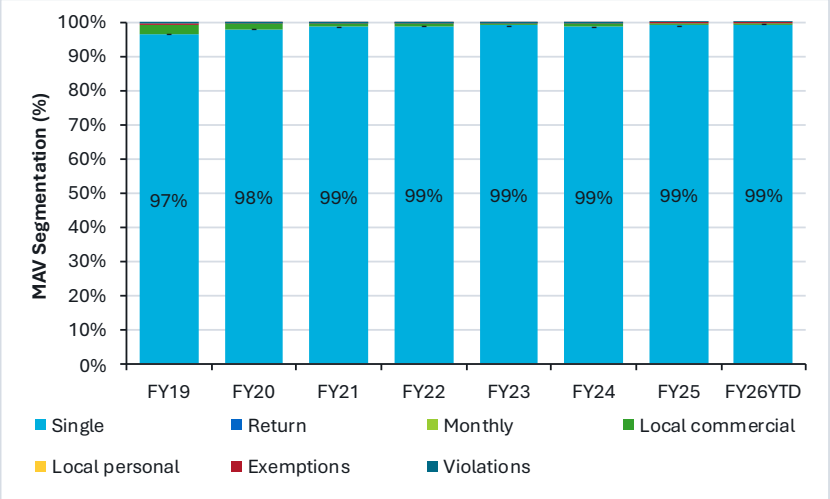
3.23 Figure 3.2 through Figure 3.5 below present the toll segmentation for the historical years FY19- FY26 YTD at TP1 Sikandra and TP2 Rajadhok for CJVs and MAVs. Table 3.8 through Table 3.13 below present the same for all other vehicle categories.

Figure 3.2 Ticket-segmentation for CJV at TP1 Sikandra



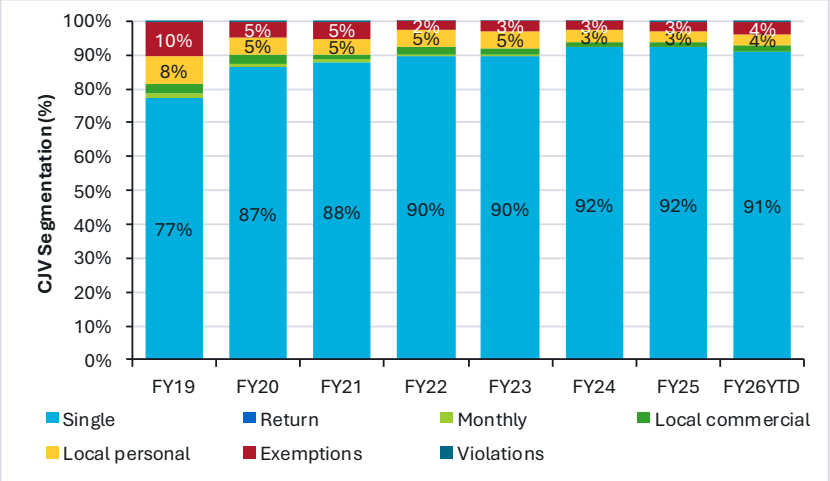
Source: Steer analysis of the Client data, FY26 YTD includes 5 months of data from Apr-Aug'25

Figure 3.3 Ticket-segmentation for MAV at TP1 Sikandra



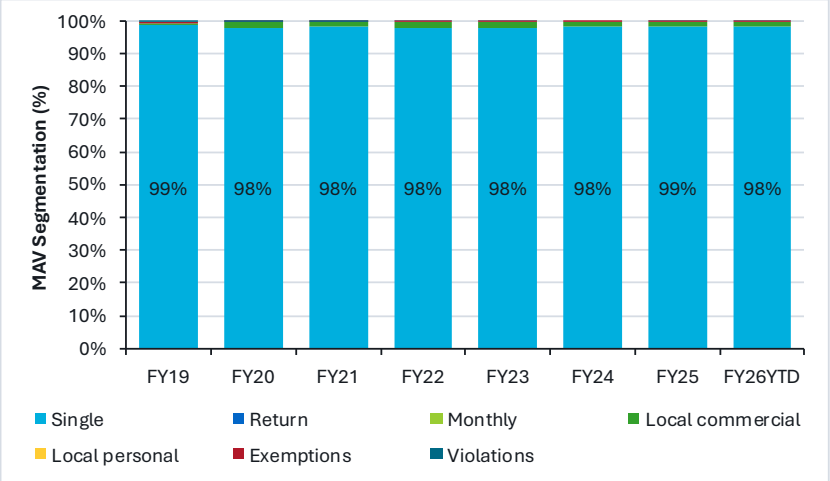
Source: Steer analysis of the Client data, FY26 YTD includes 5 months of data from Apr-Aug'25

Figure 3.4 Ticket-segmentation for CJV at TP2 Rajadhok



Source: Steer analysis of the Client data, FY26 YTD includes 5 months of data from Apr-Aug'25

Figure 3.5: Ticket-segmentation for MAV at TP2 Rajadhok



Source: Steer analysis of the Client data, FY26 YTD includes 5 months of data from Apr-Aug'25

3.24 The traffic segmentation charts indicate that the pattern observed in FY26YTD remains broadly consistent with previous years. As illustrated in the Figure 3.2 and Figure 3.4, in FY26YTD, the share of single-ticket transactions for CJVs at TP1 is ~92%, while at TP2, it stands at approximately 91%. This clearly establishes "Single" as the predominant ticket category issued for CJVs at the Asset plaza. It is important to note that the Asset does not offer a return ticket option, which explains the disproportionately high proportion of single-ticket transactions in the toll segmentation. Furthermore, CJVs operating on the Asset typically undertake short- to medium-distance trips, generally within a 300 km radius, as reflected in the OD analysis Figure 3.16 and Figure 3.17 below. A significant proportion of these CJV trips originate from locations beyond 10 km of the Asset, rendering them ineligible for a discounted local pass. This aligns with the nature of the Asset, which functions as a key tourism-driven corridor attracting passengers from surrounding regions. However, with the introduction of annual pass, a section of the single traffic is expected to shift to annual pass trips. This is explained further in Chapter 5.

3.25 Most MAVs at both TP1 and TP2 are observed to have high shares of single tickets with the share of MAVs buying single tickets, reaching as high as 99% at TP1 and 98% at TP2 in FY26YTD in line with previous years. This reflects the long-distance and through nature of heavy truck movement on the Asset. The high share of single ticket type is due to other tickets such as return and monthly being not available as per the toll notification. As expected, there is a negligible share of violations for MAVs.

3.26 From above figures it is observed that for CJVs there has been a steady decline in the number of exemptions reported on the Asset starting FY16 towards FY25YTD from 10% to 4% at TP1 and 10% to 3% at TP2. This decline is also attributed to the local nature of the Asset and its proximity to the tourist city of Jaipur, which experiences heavy daily traffic movement.

Table 3.8: Historical ticket segmentation at TP1 Sikandra (LCVs)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	86.7%	90.0%	94.5%	94.5%	95.6%	96.0%	95.9%	96.9%
Local commercial	6.5%	4.5%	2.0%	2.4%	2.1%	1.5%	1.6%	1.8%
Violation	0.1%	0.1%	0.1%	0.5%	0.1%	0.1%	0.2%	0.0%
Exemption	6.7%	5.4%	3.3%	2.6%	2.2%	2.5%	2.3%	1.3%

Table 3.9: Historical ticket segmentation at TP1 Sikandra (Bus)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	98.4%	98.8%	98.6%	99.4%	99.4%	99.2%	98.5%	98.8%
Local commercial	0.9%	0.8%	0.3%	0.4%	0.5%	0.5%	0.7%	0.8%
Violation	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Exemption	0.6%	0.4%	1.0%	0.2%	0.1%	0.3%	0.6%	0.4%

Table 3.10: Historical ticket segmentation at TP1 Sikandra (2 Axle)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	97.4%	97.5%	95.1%	89.3%	94.1%	96.1%	98.5%	98.8%

Local commercial	1.2%	0.8%	1.7%	4.9%	2.4%	1.4%	0.7%	0.8%
Violation	0.2%	0.2%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%
Exemption	1.2%	1.4%	3.1%	5.7%	3.6%	2.4%	0.6%	0.4%

Source: Steer analysis of the Client data, FY26 YTD includes 6 months of data from Apr'25-Aug'25

Table 3.11: Historical ticket segmentation at TP2 Rajadhok (LCV)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	80.0%	82.6%	87.4%	76.0%	77.5%	80.9%	84.7%	82.7%
Local commercial	16.0%	12.8%	7.8%	17.0%	16.7%	15.7%	13.4%	16.1%
Monthly	1.9%	3.1%	2.1%	5.1%	4.4%	2.1%	0.3%	-
Violation	0.3%	0.1%	0.2%	0.2%	0.1%	0.2%	0.0%	0.0%
Exemption	1.8%	1.4%	2.5%	1.7%	1.3%	1.1%	1.5%	1.1%

Table 3.12: Historical ticket segmentation at TP2 Rajadhok (Bus)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	93.4%	95.6%	96.6%	97.3%	97.5%	97.8%	97.4%	97.7%
Local commercial	6.1%	4.2%	2.5%	2.6%	2.5%	2.1%	1.8%	1.8%
Violation	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exemption	0.4%	0.2%	0.9%	0.1%	0.0%	0.2%	0.8%	0.5%

Table 3.13: Historical ticket segmentation at TP2 Rajadhok (2 Axle)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	92.5%	92.5%	88.4%	77.7%	79.1%	89.5%	97.4%	97.7%
Local commercial	4.1%	4.3%	5.5%	14.4%	9.8%	4.6%	1.8%	1.8%
Violation	0.2%	0.4%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Exemption	3.2%	2.7%	4.9%	7.8%	11.0%	5.9%	0.8%	0.5%

Source: Steer analysis of the Client data, FY26 YTD includes 5 months of data from Apr'25-Aug'25

Overloading

3.27 The Asset being a part of NHAI concession follows the NHAI Overloading policy released in 2016 which bans the overloading of commercial vehicle on any NHAI toll plaza. In case of non-compliance, overloaded vehicles on the Asset are charged twice the toll fee they would otherwise pay for a Single ticket at the toll plaza.

3.28 The plaza currently charges overloading under single and local commercial category. These shares are determined using the total single journey traffic and total local commercial traffic. Table 3.14 shows the share of overloaded vehicles until FY25YTD paying twice the Single journey toll fee on each toll plaza.

Table 3.14: Overloading shares for FY19, FY20, FY22, FY23 and FY24

Overloading shares														
Single Overloading shares					**TP1 Sikandra**					**TP2 Rajadhok**				
	FY19	**FY20**	**FY22**	**FY23**	**FY24**	**FY25**	**FY26 YTD**	**FY19**	**FY20**	**FY22**	**FY23**	**FY24**	**FY25**	**FY26 YTD**
LCV	-	1.6%	5.9%	2.9%	1.8%	3.1%	3.0%	0.5%	2.0%	4.7%	3.5%	1.2%	1.4%	1.2%
2A	-	2.9%	16.8 %	4.9%	2.0%	4.3%	4.2%	0.4%	1.8%	20.8 %	5.6%	2.2%	3.0%	2.6%
3A/ MAV	-	4.5%	7.3%	3.5%	2.6%	4.2%	4.3%	0.7%	2.8%	6.7%	4.5%	4.1%	3.6%	3.5%
Local Commercial Overloading shares														
LCV	-	-	2.4%	1.7%	0.0%	0.0%	0.0%	-	-	-	0.1%	0.0%	0.0%	0.0%
2A	-	-	4.3%	4.6%	0.1%	0.3%	0.0%	-	-	0.5%	0.4%	0.0%	0.0%	0.0%
3A/ MAV	-	-	2.4%	16.2 %	0.1%	0.0%	0.0%	-	-	4.6%	1.4%	0.0%	0.0%	0.0%

Source: Steer review of Client TMS data, FY26 YTD includes 5 months of data from Apr-Sep'25

Data collection and validation

Overview

3.29 As mentioned previously, in order to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset, comprising the surveys listed in Table 3.15 below. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.15: Data collection schedule

TP	**4-day videography-based TVC**			**1-day OD survey**	
	Start date	**End date**	**Time (hrs)**	**Start date**	**State time**
TP1 Sikandra	26th June 2023	29th June 2023	0000-2359	26th June 2023	0800 hours
TP2 Rajadhok	22nd January 2025	24th January 2025	0000-2359	22nd January 2025	0800 hours

Source: Steer analysis

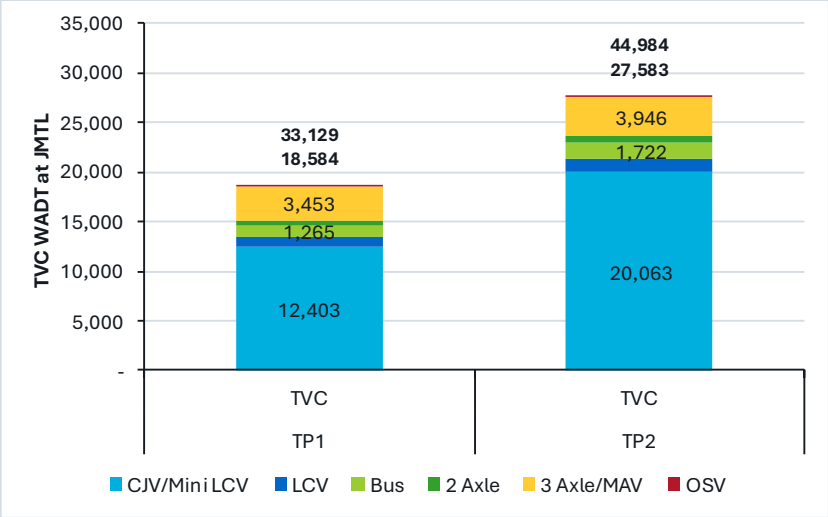
3.30 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, in order to fully understand the impact of this weekly fluctuation on the Asset, we collected four-day counts at each toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.31 Taking an average of the three-day TVC counts (26th June – 29th June 2023, 0000-2359 hours) at TP1 and at TP2 (22nd Jan – 24th Jan 2025, 0000-2359 hours), we obtained the following weekly average daily traffic (WADT) for each toll plaza. This WADT excludes non-toll able vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Figure 3.6 WADT at TP1 and TP2



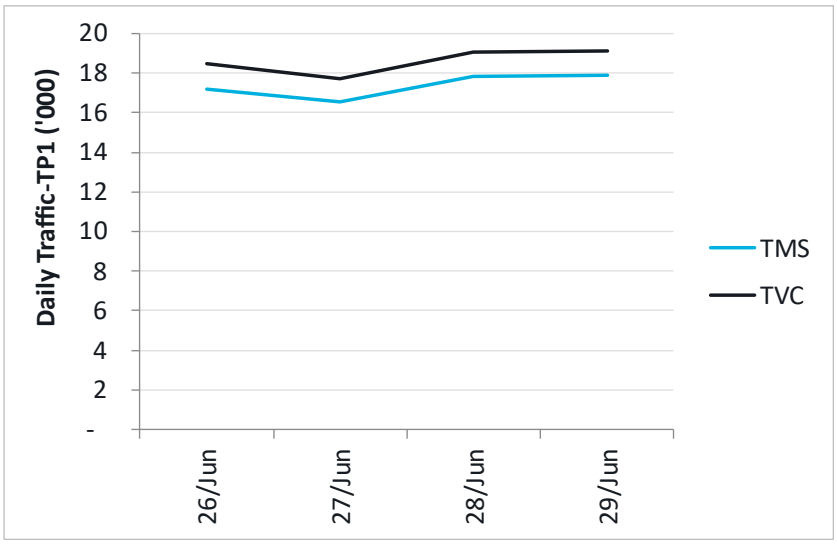
Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.32 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those particular days, as provided by the Client.

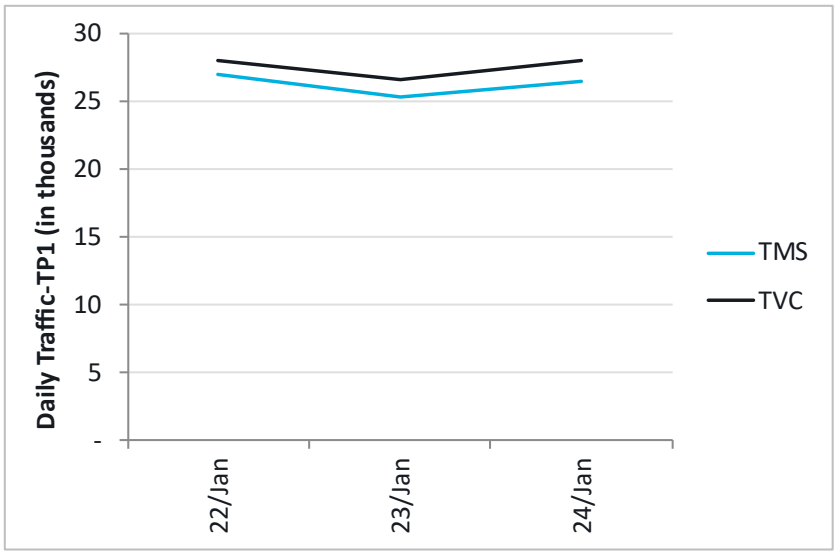
3.33 The following figures show the comparison between the daily traffic observed by TVC and TMS for the two toll plazas. As shown in Figure 3.7 and Figure 3.8 below, the TVC and TMS overall are within the acceptable range of variation. The vehicle category which is causing this variation is CJV which is attributable to a small proportion of local users who are not being captured by the TMS.

Figure 3.7 Comparison between TVC and TMS daily traffic data on TP1 Sikandra



Source: Steer analysis of TVC and Client TMS data

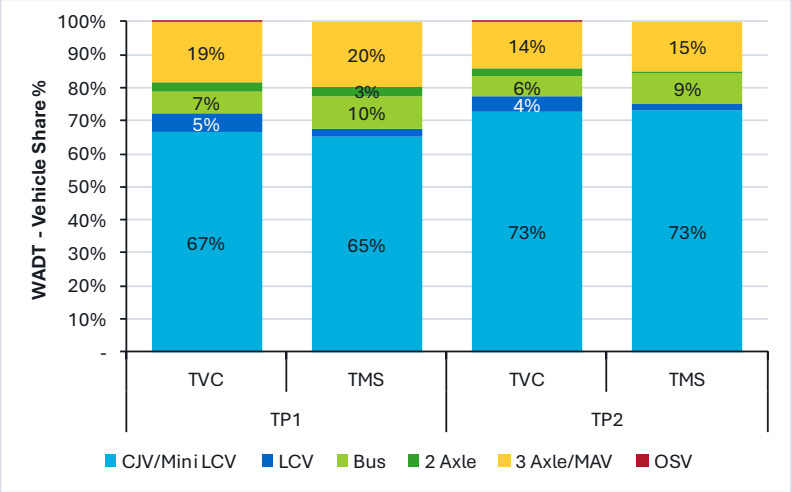
Figure 3.8: Comparison between TVC and TMS daily traffic data on TP2 Rajadhok



Source: Steer analysis of TVC and Client TMS data

3.34 The Figure 3.9 below compares the shares of vehicle types at both toll plazas observed by the TVC and TMS data. However, this difference varies across different vehicle categories. As can be seen, whilst the share of CJVs is higher for TVC compared to TMS, it is vice-versa for other vehicle categories. This difference can be attributed to common misclassification of vehicle categories.

Figure 3.9 Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

Table 3.16: TVC TMS Comparison

	TVC	TMS	Delta
CJV	20,063	19,202	4.5%
LCV	1,232	542	127.4%
Bus/2A	2336	2527	8.2%
3A/MAV	3,946	3,990	(1.1%)
Total	**27,583**	**26,261**	**5.0%**

Source: Steer analysis

3.35 Considering the smaller variation between the TVC and TMS data for the largest revenue generator 3A+MAVs, and an overall match in the traffic volumes, TVC-TMS analysis gives us the confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

3.36 As mentioned earlier, the current TMS reports 2A and Bus as separate categories. However, for comparison purposes, their volumes are being combined, as ETC single-ticket 2A volumes have declined since March 2024, while Bus volumes have increased in a manner that suggests potential misclassification. This misclassification is evident from the Table 3.16 above, which highlights discrepancies in the TMS data for Buses and 2A.

3.37 Therefore, the split that we have derived from our counts is the split we are using in our projection to forecast the growth of each individual category for this Asset.

Key findings of origin-destination analysis

Overview

3.38 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. The OD analysis presented here is based on data collected on behalf of the Client in June 2023 at TP1 and January 2025 at TP2. More recent OD survey

on TP1 was not undertaken as it has a long operational history and we did not believe material changes in these patterns would have occurred during this period.

3.39 We have analysed the regional drivers of demand based on the following analyses:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.40 While zonal analysis and the list of top OD pairs help to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported on this Asset. Trip length distribution shows 'how far' vehicles and people travel, and goods get transported. This set of analysis is used to estimate key drivers of traffic and aid in making informed forecasting assumptions related to traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.41 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TMS data) during the same period. Table 3.17 below presents the sample rates for key vehicle type aggregations at both toll plazas. We believe that the sample rates of the OD data are reasonable for the analysis required and that the high sample rate for goods traffic at TP1 could be due to Mini LCV-CJV related difference in classification in the TMS data.

Table 3.17: Sample rates for OD data

Traffic type	TP1	TP2
Passenger (CJV+Bus)	19%	16%
Goods (LCV+2A+3A+MAV)	72%	57%

Source: Steer analysis of OD data

Zone categories

3.42 To facilitate better understanding of key regional traffic drivers as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in Table 3.18 below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Assets being studied.

Table 3.18: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of Rajasthan	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Rest of Uttar Pradesh	Uttar Pradesh excluding parts of Uttar Pradesh which are a part of IAOI
Rest of North India	Uttarakhand, Haryana, Punjab, Jammu and Kashmir
Central NCR	Delhi State, including New Delhi
Gujarat & Maharashtra	Gujarat and Maharashtra (including Mumbai)

Central India	Madhya Pradesh, Chhattisgarh
South India	Tamil Nadu, Karnataka, Kerala, Andhra Pradesh
East & Northeast India	West Bengal, Orissa, Jharkhand and Northeast Indian states
Outside India	Nepal, Bhutan, Bangladesh

Zonal influence

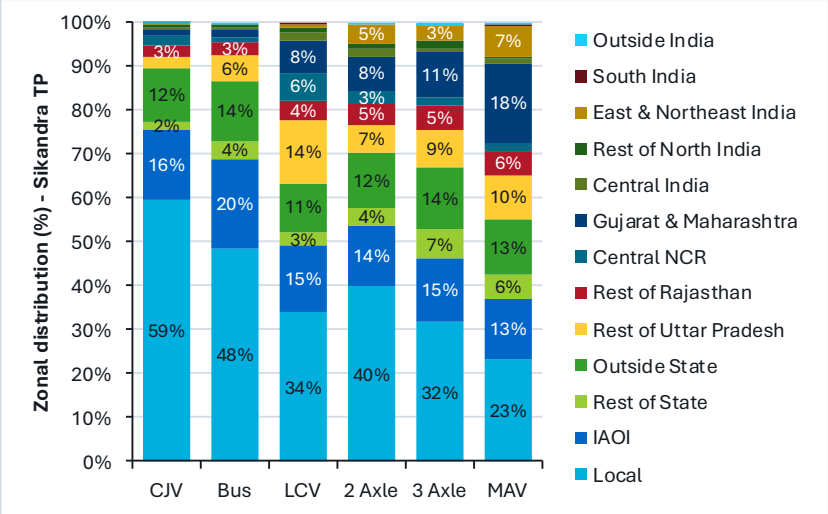
3.43 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence at each toll plaza of each Asset, based on zonal aggregation listed in the previous sub-section. it should be noted that zonal influence is analysed based on trip ends and not trips.

3.44 From Figure 3.10 and Figure 3.11 below, it can be seen that the local category (trip ends lying on the Asset) has one of the highest shares across vehicle types. TP2 Rajadhok has a higher share of local trips with 41% for MAV to 78% for CJV, whereas TP1 Sikandra has only 23% local MAV trips and 59% local CJV trips. TP2 is closer to Jaipur and hence the toll plaza is surrounded by an area of high urban population density, resulting in a higher local influence at the plaza.

3.45 High zonal influence from Gujarat/Maharashtra and Uttar Pradesh is observed in 2A, 3A and MAVs. TP1 and TP2 have 10% and 18% trips to or from UP and 18% and 18% to or from Gujarat for their MAVs.

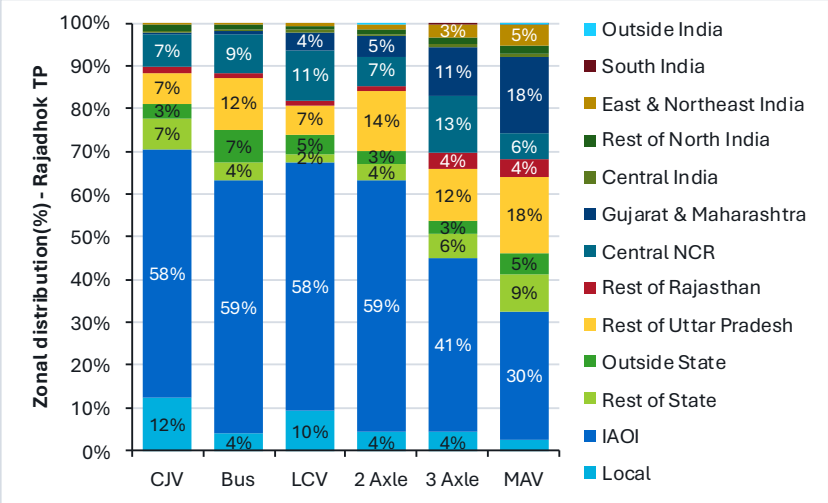
3.46 With DME becoming operational between Sohna and Dausa, the Rajadhok plaza has observed 6% of the Central NCR MAV traffic whereas Sikandra observes 2% of the Central NCR MAV traffic.

Figure 3.10 Zonal influence at TP1 Sikandra



Source: Steer analysis of OD data

Figure 3.11 Zonal influence at TP2 Rajadhok



Source: Steer analysis of OD data

Internal External analysis

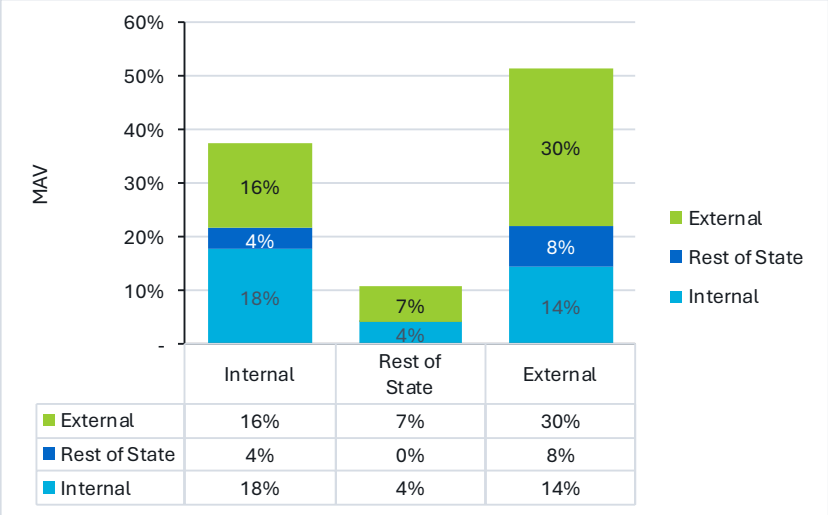
3.47 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e. local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e. through trips (External-External or E-E). RoS here represents areas within the state which are neither local nor IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e. lying on the Asset, while 'External' zones are areas lying outside the state.

3.48 Figure 3.12 and Figure 3.13 below show the distribution of trips based on these categories. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation.

3.49 We see that TP1 and TP2 has about 30% and 31% of E-E trips for MAVs. As discussed earlier in Chapter 2, this is partly due to TP1 having a higher share of long-distance traffic that joins the Asset through Dausa. These are strategic movements moving between western and eastern regions in the immediate vicinity of the corridor, e.g. North Gujarat-Wester Uttar Pradesh, and therefore prefer using the Asset due to the connectivity it offers to these regions.

3.50 Overall, at a PCU level this analysis shows that the share of E-E trips is less than 10% (averaged across both toll plazas) which is consistent with commodity analysis and confirms that the key growth driver are local economic centres of Jaipur, Agra, Bharatpur, Alwar as well as regional feeders of Dausa-Lalsot. This also confirm that a vast majority of the traffic is 'sticky' to the Asset.

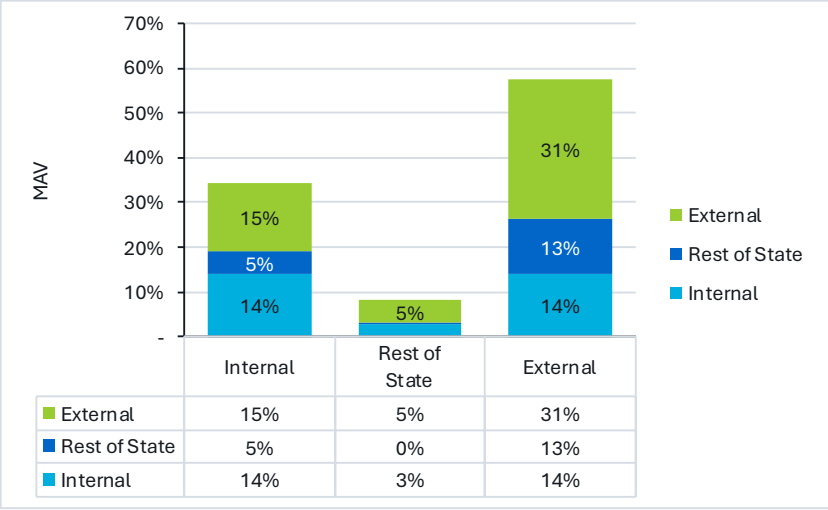
Figure 3.12 Internal-external distribution at TP1 Sikandra



	Internal	Rest of State	External
External	16%	7%	30%
Rest of State	4%	0%	8%
Internal	18%	4%	14%

Source: Steer analysis of OD data

Figure 3.13 Internal-external distribution at TP2 Rajadhok



	Internal	Rest of State	External
External	15%	5%	31%
Rest of State	5%	0%	13%
Internal	14%	3%	14%

Source: Steer analysis of OD data

3.51 Furthermore, in Chapter 6 we present the impacts analysis which gives an estimation of captive traffic. The non-captive traffic is a minority share, with the impacts being insignificant for all but the impact of Delhi-Mumbai expressway on TP2 Rajadhok.

Commodity distribution

3.52 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in Table 3.19 below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3.19: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane,Maize etc.)	AGR	**AGR**

Cattle Food / Live Stock (sheep, ghoat, cow,cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	**GRO**
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	**CNS**
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	**PET**
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	**MAN**
Raw Wood, Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	**AUT**
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	**MET**
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	**EMT**
Container	CTR	**MSC**
Miscellaneous (Parcel, Courier, Household items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

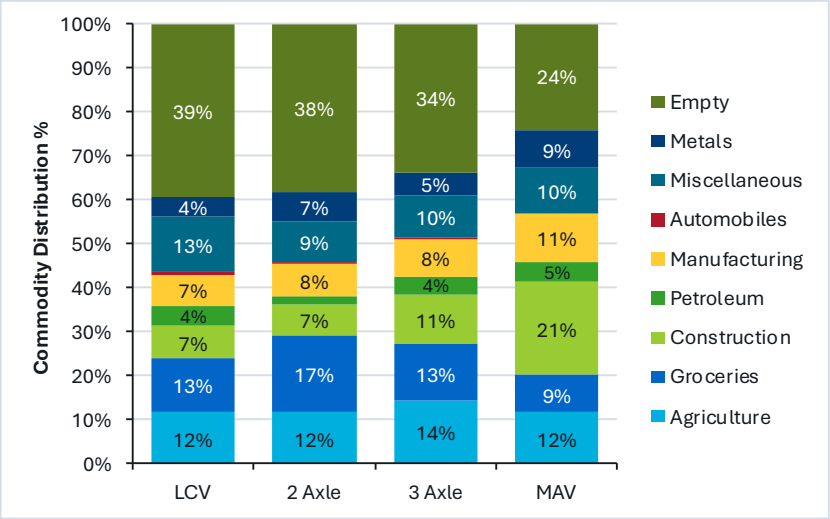
Source: Steer analysis

3.53 Figure 3.14 and Figure 3.15 present the commodity distribution for goods vehicles at the two toll plazas, at the total level as well as split by direction, towards Jaipur and Agra. As observed during our site visit, the figures below indicate that agricultural products make up about 30% of commodity share across the two toll plazas. MAVs also carry a significant share of a variety of manufactured goods between Udaipur and Gujarat at one end and Uttar Pradesh, Bihar and the rest of eastern India at the other end. Construction goods have 25% and 24% share respectively at TP1 and TP2, which includes marble being transported from Rajasthan and Gujarat towards Uttar Pradesh, Bihar, Odisha etc. Agricultural produce is mostly transported within the state of Rajasthan and manufactured products have Rajasthan, Uttar Pradesh and Delhi NCR as the top origins or destinations.

3.54 Looking by direction, a greater share of vehicles also travels empty towards Jaipur, than those travelling in the opposite direction towards Agra. Also, agricultural and grocery

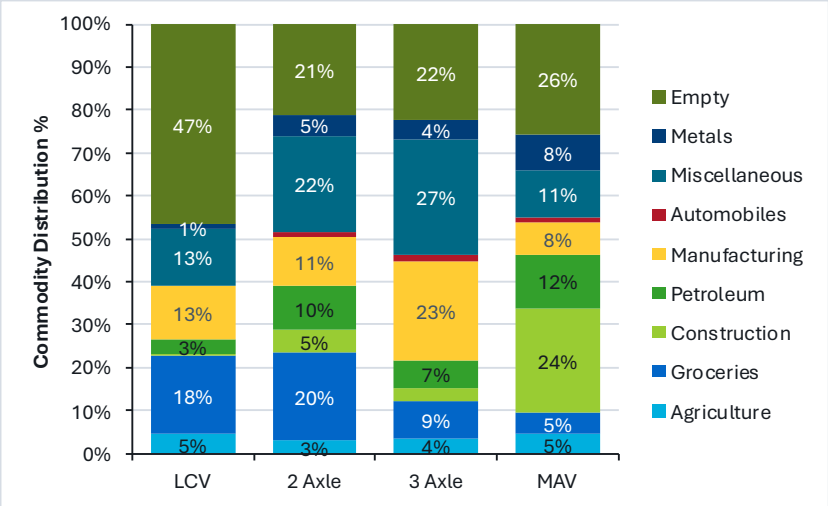
products make up a significant commodity shares for vehicles travelling towards Jaipur, then those travelling towards Agra. However, other commodity groups hold a greater commodity share in the direction towards Agra as compared to Jaipur, including stone, construction and petroleum products. The above is true for both TP1 and TP2.

Figure 3.14 Commodity distribution at TP1 Sikandra (Both directions)



Source: Steer analysis of OD data

Figure 3.15 Commodity distribution at TP2 Rajadhok (Both directions)



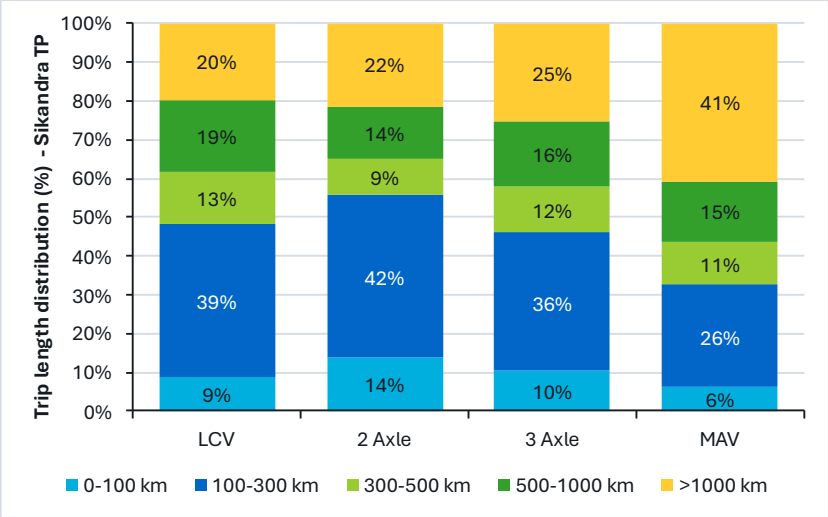
Source: Steer analysis of OD data

Trip length analysis

3.55 Trip-length distribution provides the distance-based profile of various vehicle categories. This aids in validating assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into 5 groups – local (0-100km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance

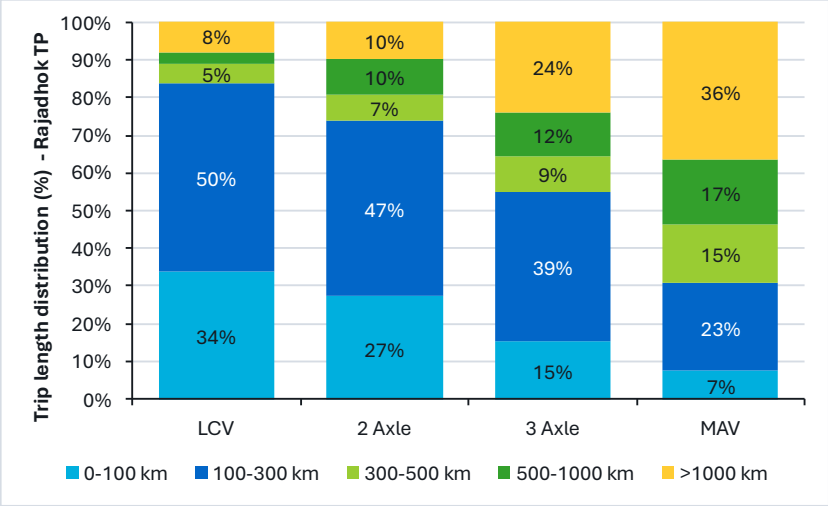
(+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[11]

Figure 3.16 Trip length distribution TP1 Sikandra



Source: Steer analysis of OD data

Figure 3.17 Trip length distribution TP2 Rajadhok



Source: Steer analysis of OD data

3.56 As observed in above figures and the internal-external analysis, TP2 has a large share of local and short-medium-distance trips (up to 300 km), ranging from 31% for MAVs to 84% for LCVs, this share is lower at TP1 Sikandra, ranging from 29% for MAVs to 43% for LCVs .

3.57 In terms of long-distance and very-long-distance trips more than 500 km long, CJVs understandably do not have a significant proportion, as has been seen across other

[11] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Assets around the country. As expected, MAVs show a much higher share, up to 56% at TP1 and 51% at TP2 due to long distance movements between western and eastern India. 2A vehicles at TP2 have 20% share of trips being greater than 500 km.

Conclusions

3.58 In summary, in FY26YTD the Asset has witnessed an AADT of 17,667 at TP1 Sikandra and an AADT of 21,043 at TP2 Rajadhok. Looking at the vehicle shares of this Asset, the dominant vehicle class is CJV, holding 62% of vehicle share at TP1 and 74% at TP2. Further, MAVs at TP1 has a higher share (22% compared to 15% at TP2). Shares of other vehicle category volumes are consistent between the two toll plazas. Traffic has shown significant recovery starting FY22 when the Dausa-Lalsot section and Jaipur Ring Road was commissioned resulting in improved connectivity to Delhi and South.

3.59 Rajadhok's traffic in PCU terms reduced by 13.4% between FY25 and FY26YTD due to the opening of Bandikui spur in July 2025, leading to traffic diversion to Delhi Mumbai Expressway away from Rajadhok.

3.60 Passenger traffic has seen a significant growth in the month of Jan'25 on both TP1 and TP2 due to the 2025 Maha Kumbh Mela. Necessary adjustment to downturn this additional temporary gain in traffic observed in Q4 for FY25 due to Maha Kumbh mela has been made in the forecast to reflect the true nature of future traffic on the Asset.

3.61 The TVC counts does show variation on the TMS, at the total level TMS is 6% lower than TVC at TP1, and 5% lower than TVC at TP2, primarily attributable to local CJV users. However, the differences are smaller for the larger revenue generating categories (3A, MAV and OSV combined), 1% and -4% at TP1 and TP2 respectively, which gives us confidence in the data moving forward.

3.62 The OD analysis found that in terms of zonal influence, TP2 had a higher share of local trips compared to TP1, which is explained by TP2's proximity to Jaipur and a higher urban population density. CJV and Bus traffic driven with origins and destinations at both ends of the Asset corridor is seen to be driven by the urban population and tourism related drivers. The key commodities transported on the Asset on 3A/MAV trucks include agricultural products, which make up around 30% of the commodity share at both plazas. Stone also holds a respectable share, at 9% and 13% at TP1 and TP2 respectively. Majority of the traffic is sticky to the Asset with only 8% being external-external in PCU terms which is using the Asset as it offers excellent connectivity to the regions in the immediate vicinity of the corridor.

3.63 The overall characteristic of the Asset is strategic is nature connecting several key urban and economic activity centres of Jaipur, Agra, Bharatpur in immediate vicinity with wider generators and attractors of south Rajasthan, Gujarat, Maharashtra to Uttar Pradesh and Delhi NCR also being connected by the Asset. Urban population and tourism linked growth is seen as an added advantage for CJV and Bus traffic.

4 Socio Economic Context

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions of the region where the Asset is located and conditions on a national scale. These include:

Changes in factors such as population, economic growth (regional and national) and industrial production; and
Other local factors such as strategic port growth, and growth in local industries near the Assets.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available.

4.3 In this chapter, we assess the socio-economic indicators relevant to traffic growth on the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in the state of Rajasthan where the Asset is located.

National Level

4.5 The total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.6 As Table 4.2 shows, the populations of Rajasthan has grown at a faster pace compared to that of India, between FY12 and FY24. As of FY24, accounts for 5.8% f India's population

4.7 Table 4.2 shows the evolution of population in the state of Rajasthan (containing the Asset), compared to that of the country.

4.8 As Table 4.2 shows, the populations of Rajasthan has grown at a faster pace compared to that of India, between FY12 and FY24. As of FY24, accounts for 5.8% f India's population

Table 4.2: Population Growth in Rajasthan and India (2012-2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Rajasthan	69.1	82.4	1.4%
India	1,210	1,395	1.2%

Source: MoSPI estimates

4.9 Due to the complexities of patterns of urbanisation, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide the underlying socio-economic context of the state/trends in the regions in which the Asset is located.

Economic Indicators

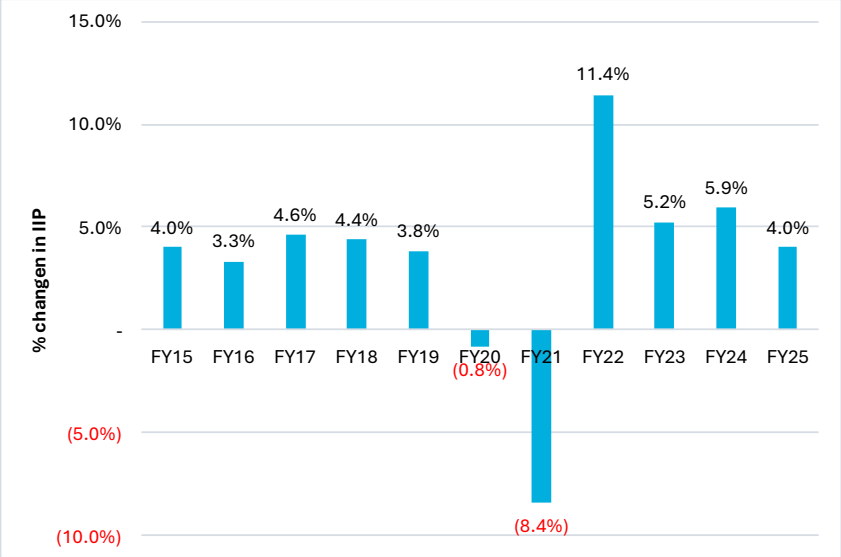
Industrial Production

4.10 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.11 At an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20 (as presented in Figure 4.1 below). In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. However, with the gradual opening up of economy post the pandemic, and recovery in consumption demand, industrial activity also recovered with time with IIP recording growth of 5% in FY23 and 6% in FY24.

4.12 The figure below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

Figure 4.1: Annual growth – Index of Industrial Production



Source: Steer analysis of MoSPI data

4.13 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle Ownership

4.14 Car ownership in India has traditionally been very low at 22 cars per 1000 individuals, compared to developed countries like the United States, which has approximately 980 cars per 1,000 individuals.[12] However this is slowly changing with the increasing per capita income levels. As can be seen in Figure 4.2 below, between 2007-17, the number of cars per 1,000 people more than doubled from 9 in 2007 to 22 in 2017 growing at a CAGR of approximately 11%. The corresponding ownership rates for urban cities like Delhi, Mumbai, Bengaluru, and Chennai are over 100 cars per 1,000 people[13] (GoI 2011; MoRTH 2012).

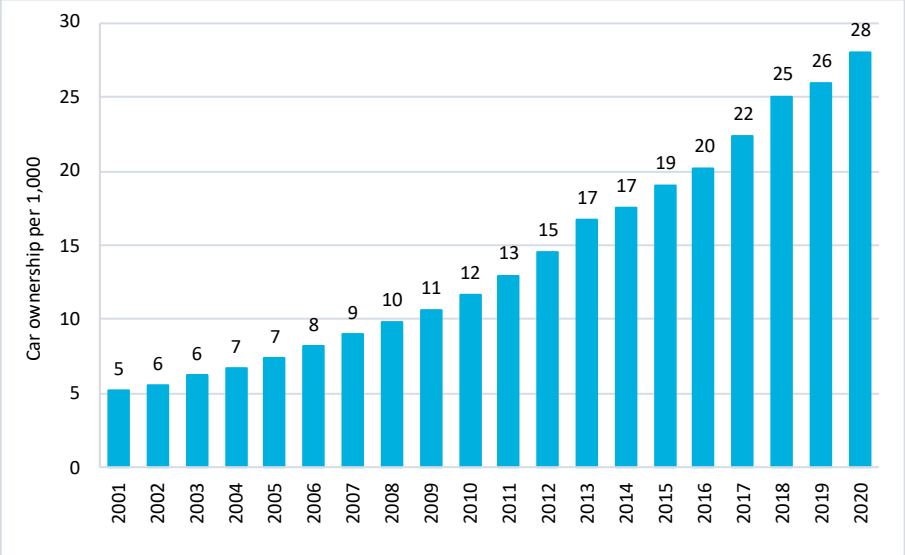
4.15 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[14]

[12] India has 22 cars per 1,000 individuals

[13] Proliferation of Cars in Indian Cities

[14] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4.2: Car ownership in India per 1,000 population

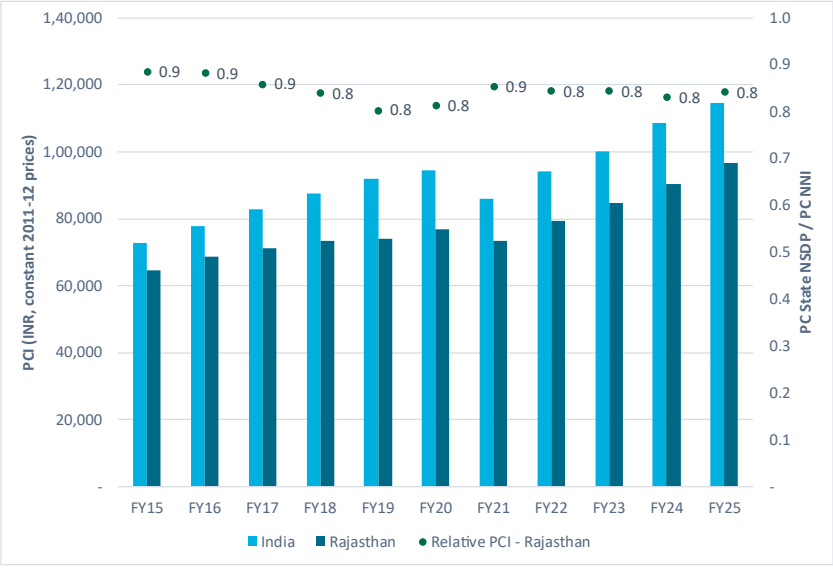


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.16 The per capita income of the state where the Asset lies (i.e., Rajasthan) has historically varied slightly below the national average, trending at 80-90% of the national per capita income over the period FY15-FY25. While the statewide per capita income has remained below the national average, incomes near and around the Asset are higher given its proximity to Jaipur city (the state's capital). In recent years (FY22-FY25), Rajasthan recorded higher per capita income growth than observed pre-COVID (FY12-FY19) owing to strong consumption growth in the state. Going forward, we expect strong local consumption demand to drive growth in both passenger and commercial traffic.

Figure 4.3: Relative Per Capita Income (FY15-FY25)



Source: Steer analysis of MoSPI data

4.17 However, given the difficulty in obtaining granular district level PCI data it is not advisable to use this as a growth driver. Also, the long-term forecast for PCI is not available we therefore refrain from using it to forecast traffic.

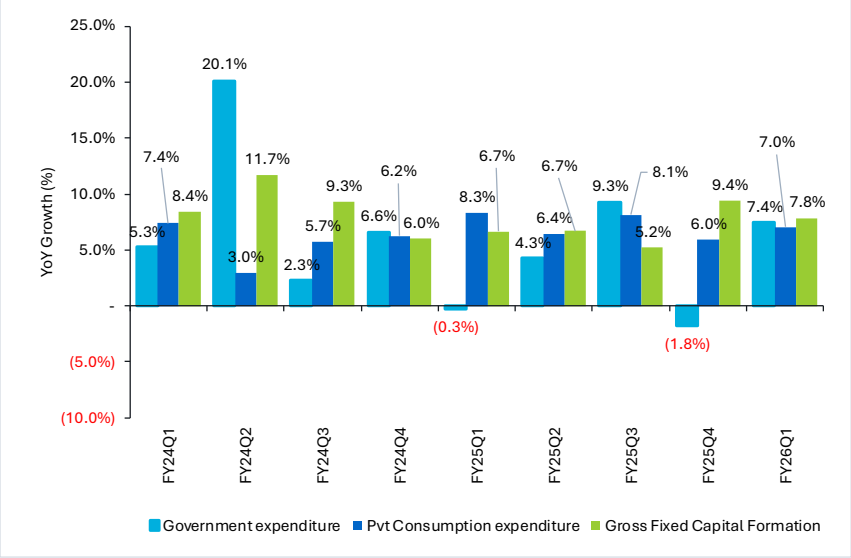
Economic growth

India's Performance

4.18 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[15].

4.19 The figure below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: Private and Government Consumption and Business Investment Expenditures



Source: Steer Analysis of MOSPI Data

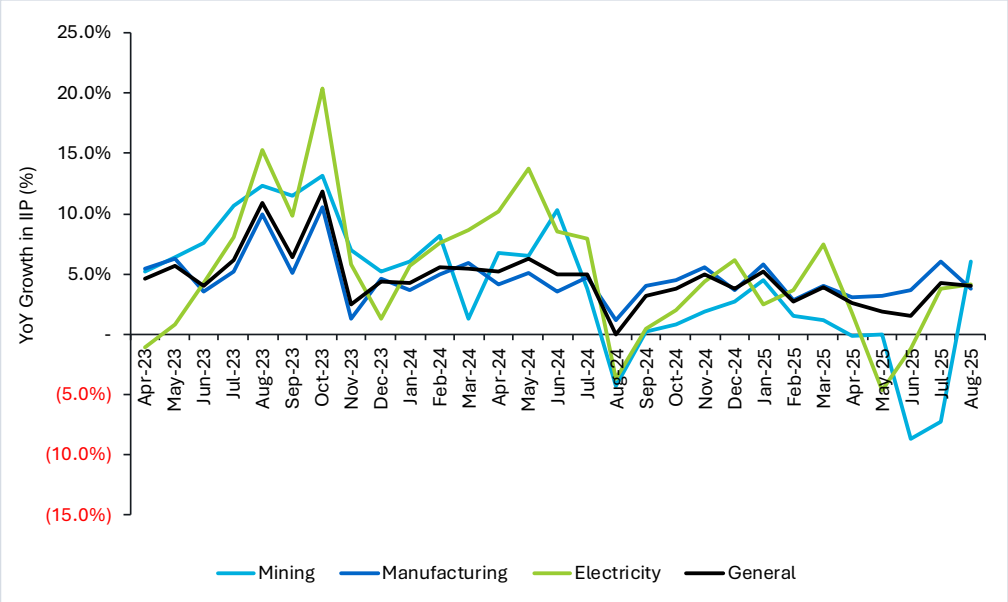
4.20 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.21 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In the figure below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the

[15] Government of India, PIB Release Oct 1 '25

two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

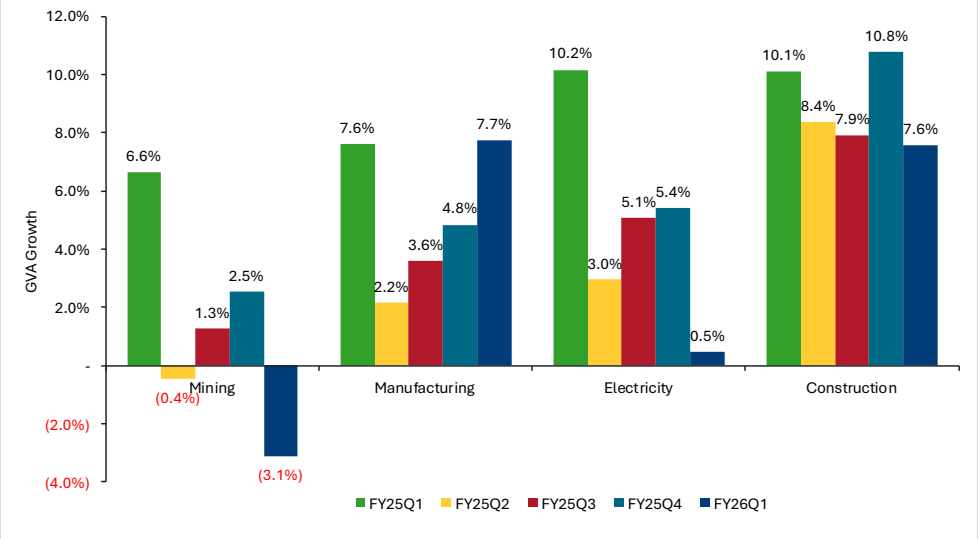
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.22 In addition to monthly trends in IIP, the figure below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. While overall economic growth has remained resilient as of FY26YTD, performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



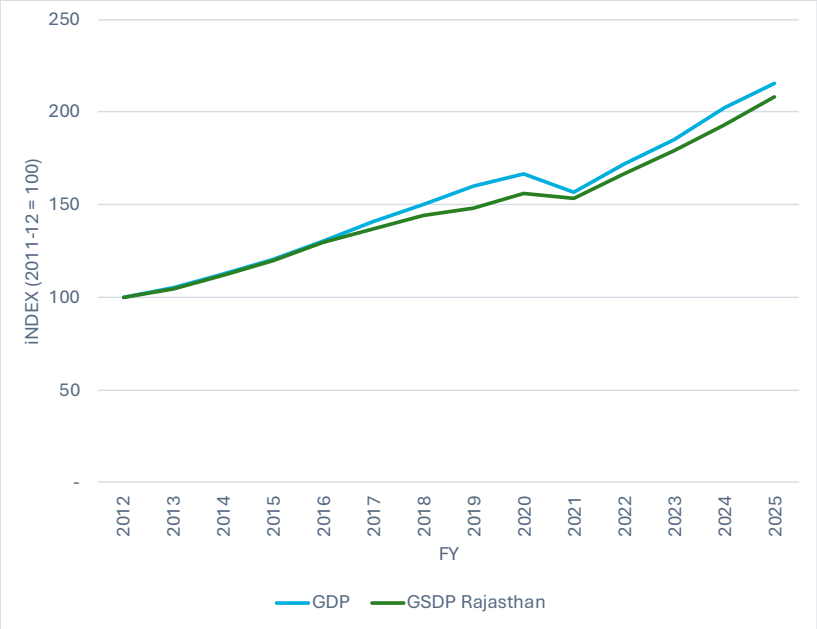
Source: Steer Analysis of MOSPI Data

GDP and GSDP Growth

4.23 Over the period FY12-FY25, the Indian economic has grown at a CAGR of approx. 6% aided by growth in the tertiary sector which grew at a CAGR of approx. 6.9% over the same period. The economic growth of Rajasthan (state GSDP) has been somewhat slower than the country overall for the past 5 years but it seems to have caught up with the national rate since the COVID19 pandemic. [16]

4.24 The Asset Jaipur - Mahua, lies in the state of Rajasthan. The state contributes approximately 5% to India's GDP. Figure 4.7 illustrates the evolution of India and Rajasthan GDP.

Figure 4.7: Evolution of Rajasthan's state GDP and national GDP, FY12-25



Source: Ministry of Statistics and Program Implementation (MoSPI)

Economic activity in the state

4.25 Rajasthan, the largest (area-wise) state in India, is in the north-western part of the country. In terms of sectoral contribution to the state GDP, tertiary sector has the highest share followed by primary and secondary, with the shares remaining stable during the last six years (i.e., 2019-2025).

4.26 The tourism and transport sector constitutes a major share of state's tertiary sector, accounting for roughly 15% of the state's economy as of 2024[17]. Rajasthan is considered a favoured tourist destination in India, with key tourist destinations being Jaipur, Jodhpur, Jaisalmer, Bharatpur and Udaipur. In 2018, the state attracted over 50 million domestic

[16] GSDP is the Gross State Domestic Product i.e., the GDP equivalent for a particular state, it is the final value of goods and services produced by a particular state

[17] Rajasthan Tourism sector

tourist arrivals in the country whereas, in terms of foreign tourist arrivals it holds fifth position in the country with over 1.7 million[18] tourist visiting state every year.

4.27 In terms of secondary sector, the state has key industrial areas in Kishangarh (marble); Manesar (automobile), Pali and Jodhpur (textiles), Chittorgarh -Neemuch (cement), Kota (stone). Rajasthan is one of the largest minerals producing state in India and is the sole producer of lead and zinc ores in India. The state has one of the largest limestone reserves, making it a hub for cement industries. In terms of agricultural produce, the state is largely known for its production of wheat, cotton, cereals and pulses.

Forecasts for growth drivers

4.28 Following the discussion in Chapter 4 on the nature of economic activity in the state of Rajasthan, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth. Particularly, we have based our forecast on GSDP using forecasts of GDP as provided by the Client.

National GDP

4.29 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[19]

4.30 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 and 6.5% in FY25 before slowing down over the past year due to several domestic and external factors.

4.31 Figure 4.8 below shows client provided GDP projections for India. The forecast provided by the Client expects the India GDP to grow at 6.5% between FY25-FY27 and gradually tapering down to 4.1% by FY32, end of concession. The India GDP growth forecast provided by the Client is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[20] in the medium term.

[18] http://tourism.gov.in/sites/default/files/Other/India%20Tourism%20Statistics%20at%20a%20Glance%202019.pdf

[19] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

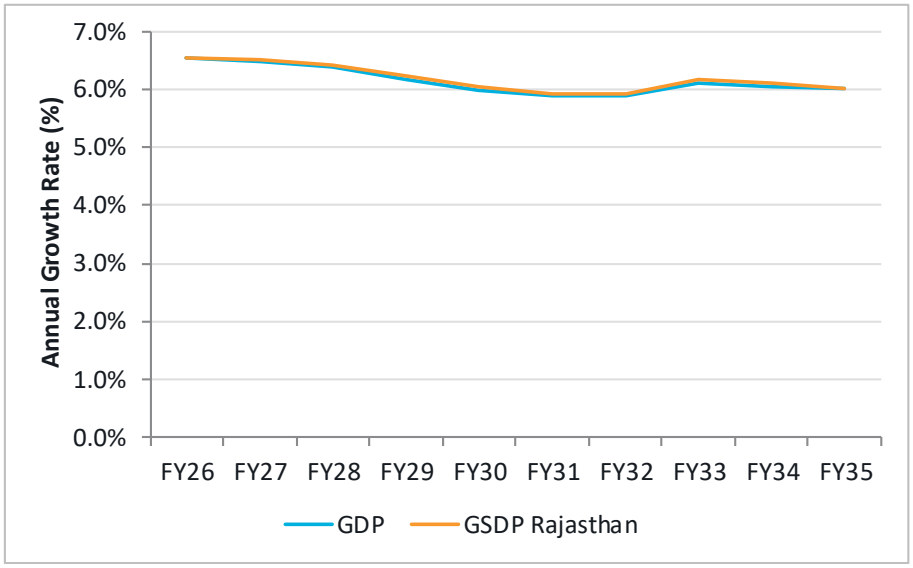
[20] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

4.32 Over the near term, Rajasthan's GSDP growth assumes to continue outpacing the national GDP throughout the concession period. We believe this is a realistic position based on the current and future development plans of local and state governments.

4.33 There are significant investments expected to take place as part of the state's plan and Rajasthan is expected to receive a significant proportion of these investments, given its leading position in industrial investments. Higher than expected GSDP growth rate across the concession period could be achieved if such investments were realised as they are expected to give an additional boost to Rajasthan's state economy.

4.34 In the long term, we believe that as other smaller state economies of India catch up with the national economic growth, the gap between growth rates of larger state economies, such as Gujarat, Maharashtra and Karnataka, and the national GDP growth rate will start reducing.

Figure 4.8: GDP-GSDP forecast



Source: GDP forecast provided Client, GSDP based on Steer analysis

5 FY26 Base year AADT and Traffic growth analysis

Introduction

5.1 In this chapter, we present our approach, assumptions, and results for base (or background) traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'. To understand the historical traffic trends in relation to these growth drivers, we carry out regression analysis to determine the historical relationship between traffic belonging to each major vehicle category and its macroeconomic growth driver at each toll plaza. The traffic demand is the dependent variable while the one or more identified growth drivers are the independent or explanatory variables.

5.3 Typically, passenger and light commercial vehicles like cars, buses, LCVs and 2-axle trucks grow in line with the GSDP of the state where the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This is because most light vehicles tend to travel shorter distances within the state, whereas a significant proportion of heavy vehicles carry commodities for long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and therefore relate more with GDP growth.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.5 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

Methodology

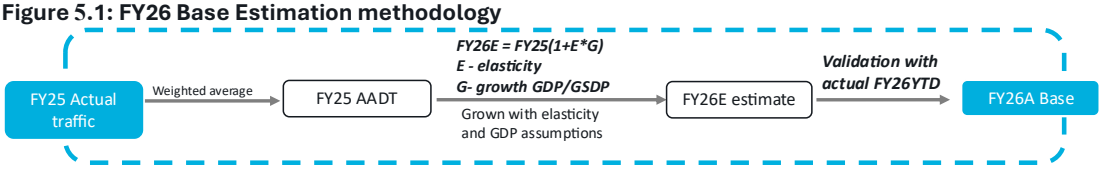
5.6 The base traffic for FY25 has been estimated utilizing the normal months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual

FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at estimated FY26 (FY26E).

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April to September) of FY26 (FY26YTD). The Adopted AADT FY26A is calculated by adjusting FY26E to match FY26YTD outturn traffic, accounting for seasonality.

5.8 The methodology is represented using the below schematic:

Figure 5.1: FY26 Base Estimation methodology



Source: Steer Analysis

5.9 The two key inputs to estimate the base year FY26 traffic are FY25 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.10 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.11 In order to normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.12 To achieve this, we studied the seasonality between monthly average daily traffic (MADT) – We have analysed the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling (as described in Chapter 3), excluding the years that were impacted by specific events. This averaged seasonality trend is then applied to the monthly traffic to obtain AADT as mentioned in the previous sections.

5.13 Table 5.1 and Table 5.2 present the assumptions in SCF used to estimate the AADT:

Table 5.1: Seasonality correction factors for TP1 Sikandra

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.99	1.02	1.00	1.07	1.07	1.14	1.12	0.92	0.98	1.00	0.85	0.95
LCV	0.90	0.98	1.00	1.10	1.12	1.09	1.00	0.97	1.00	1.06	0.87	1.02

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Bus /2A	1.02	1.01	1.00	1.08	1.08	1.04	1.00	0.95	0.98	1.02	0.90	0.96
3A/ MAV	1.01	1.02	1.02	1.08	1.12	1.05	1.01	1.03	0.93	0.96	0.89	0.94

Source: Steer analysis of Client historical TMS data

Table 5.2: Seasonality correction factors for TP2 Rajadhok

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.03	1.06	1.06	1.11	1.08	1.13	1.05	0.93	0.99	0.99	0.81	0.89
LCV	0.97	1.01	1.04	1.09	1.06	1.03	0.97	0.97	1.00	1.05	0.86	1.00
Bus /2A	1.07	1.04	1.01	1.07	1.06	1.01	0.98	0.95	0.98	1.02	0.89	0.94
3A/ MAV	1.03	1.06	1.05	1.10	1.11	1.03	0.99	1.04	0.95	0.95	0.87	0.90

Source: Steer analysis of Client historical TMS data

Adopted FY26 base estimates

6.1 Based on the above methodology and inputs, the adopted base for toll plaza has been shown below:

Table 5.3: Adopted base estimates: TP1 Sikandra

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	11,580	11,138	11,607	0.2%
LCV	364	328	344	(5.7%)
Bus/2A	2,353	2,353	2,438	3.6%
3A/MAV	3,933	3,847	4,067	3.4%
Total	**18,230**	**17,667**	**18,456**	**1.2%**
PCUs	**34,694**	**33,859**	**35,473**	**2.2%**

Table 5.4: Adopted base estimates: TP2 Rajadhok

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	18,299	15,280	14,565	(20.4%)
LCV	484	410	403	(16.7%)
Bus/2A	2,418	2,263	2,235	(7.6%)
3A/MAV	3,553	3,091	3,130	(11.9%)
Total	**24,753**	**21,043**	**20,333**	**(17.9%)**
PCUs	**40,373**	**34,946**	**34,293**	**(15.1%)**

Source: Steer analysis; FY25 actual full year, FY26YTD includes 6 months (Apr-Sep) of FY26, FY26A is adopted base for FY26

5.14 As we can see from Table 5.3 and Table 5.4, FY26A AADT estimates are 6.8% higher and 12.1% lower than FY25 AADT for TP1 Sikandra and TP2 Rajadhok respectively. Rajadhok's adopted base traffic in FY26 is lower than FY25 as the diversion of traffic from the Asset to Bandikui spur of the Delhi Mumbai expressway towards Jaipur.

5.15 Sikandra's CJV volume in FY26 is expected to remain at FY25 levels in in FY26 as FY25 witnessed high traffic on account of the Mahakumbh resulting in an one-time increase in volumes on both Sikandra and Rajadhok toll plaza .

5.16 We have combined Bus and 2A volumes for our base estimation because as mentioned before, TMS reports discrepancies in the data. Therefore, the split that we have derived from our counts is the split we are using in our projection to forecast the growth of each individual category for this Asset.

Estimation of background elasticities

5.17 Elasticities, in the case of traffic growth are the relationships between traffic and growth drivers. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide the forecasts of background traffic growth rates.

5.18 The below table presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.5: Identified growth drivers to model traffic growth at Asset level

Vehicle type	GDP India	GSDP Rajasthan
Car		100%
LCV		100%
Bus		100%
2A	100%	
3A	100%	
MAV	100%	

Source: Steer analysis of Client data

5.19 The TMS data for the Asset reports 3A and MAV together where Bus and 2A reported separately, hence splits were required to understand the 3A and MAV growth pattern. For this Asset Car, Bus and LCV do more regional movement as validate from OD trip length and zonal analysis hence the growth of this vehicle category is more influenced by Rajasthan GSDP. Whereas 2A, 3A and MAV carry heavy commodities like construction material and agricultural products from Rajasthan across states and internationally hence more linked to GDP growth.

5.20 For the purpose of regression analysis we have considered the period of FY16-25. FY16 and before were chequered period for the Asset with combination of illegal mining and overloading ban. The commercial traffic did not witness significant negative impact on volumes except for first nation-wide lockdown in March and April 2021. Hence we have considered FY21 and FY22 for the regression analysis.

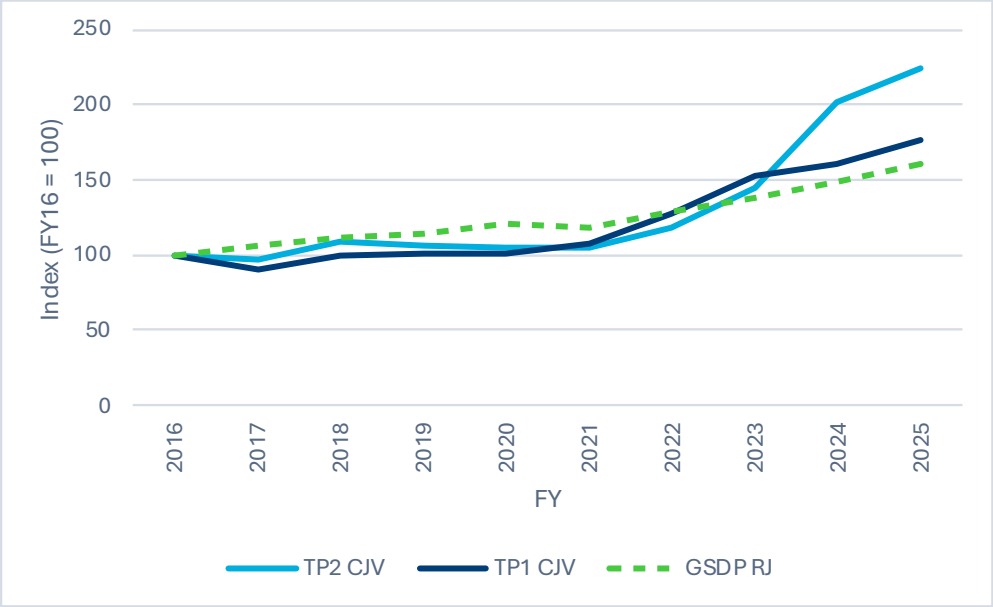
5.21 In recent historical traffic performance across national highway corridors, a notable trend has emerged: there is a noticeable shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in the Assets FY23 and FY24 performance as well, which has been discussed in detail in the

subsequent sections. As a consequence of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

CJV

5.22 It was observed from the OD data, that CJVs primarily cater to regional movements between Jaipur, Bharatpur, Agra and other towns lying in the vicinity of the Asset. We have therefore assumed Rajasthan GSDP to be the growth driver for modelling growth of CJV traffic. Figure 5.2 shows the relationship between indexed values of CJV traffic and Rajasthan GSDP at TP1 Sikandra and TP2 Rajadhok. CJV traffic on TP1 has shown 6% growth from FY16-24 while for the same period TP2 recorded 9%.

Figure 5.2: Relationship between CJV traffic and Rajasthan GSDP



Source: Steer analysis of Client TMS data and publicly available GSDP data

5.23 Generally, we would expect that in fast-growing economies with relatively low car ownership levels, car traffic growth rates are often in line with or are slightly higher than growth in GSDP/GDP (i.e. suggesting elasticities just above 1.0). Further, the opening of the Delhi Mumbai section upto Lalsot has had a significant impact on Car traffic on the corridor on both toll plazas adding additional impetus to car growth. This has also increased the influence of tourism related movement on the Asset, due to the significant volumes contributed by DME onto the corridor and hence it is expected that car growth will remain robust on the Asset. In addition there is an expected increase in car ownership proportion of overall population as the economy grows.

5.24 Taking note of the positive outlook for passenger traffic on the tourism-driven Asset we have assumed a forecast background elasticity of 1.10 with respect to Rajasthan GSDP for CJV at both the toll plazas.

LCV, Bus, 2A

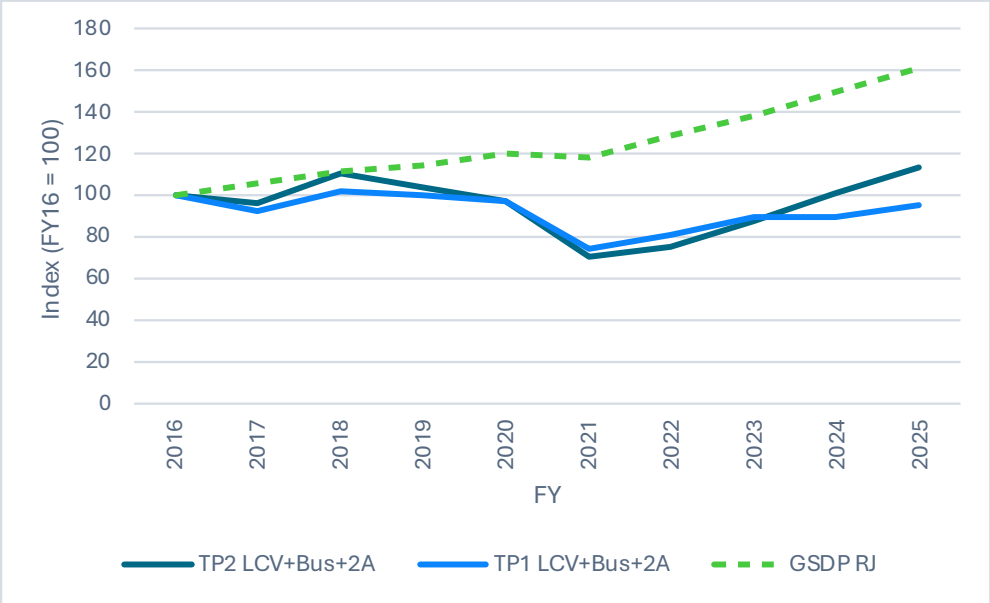
5.25 As discussed in the OD data analysis, LCV, Buses, and 2As are employed for more regional travels within the state - Rajasthan in this example - than heavier vehicles such as 3A and MAV. More than 80% of LCVs and Buses, and 70% of 2As, complete their

journey in Rajasthan. As a result, we assumed that the Rajasthan GSDP would be a better growth driver to predict the increase in Bus+LCV traffic. Figure 5.3 below depicts the link between the indexed values of combined Bus+LCV traffic and Rajasthan's GSDP.

5.26 In many sections of the country, bus growth is entirely supply-driven, with new buses purchased and deployed by the government at varying intervals. According to our experience across the country, buses on inter-urban and tourism corridors have elasticities ranging from 0.4 to 0.6 in relation to the GSDP. We estimated an elasticity of 0.5 with regard to GSDP Rajasthan based on the regression results and benchmarks.

5.27 Between 2016 and 2024, the growth rate of Bus+2A+LCV remained flat. During this time period, it was noticed that disaggregate traffic for LCVs rose slower than traffic for Buses and 2As. This could be attributable to a variety of factors, one of which is the reclassification of LCVs and 2As, which has been seen as a prevalent tendency across the country's toll highways. However, beginning in 2022, the combined volume of Bus+LCV+2A has began to show indications of recovery, as shown in the graph below.

Figure 5.3: Relationship between Bus+LCV+2A combined traffic and Rajasthan GSDP



Source: Steer analysis of Client TMS data and publicly available GSDP data

5.28 Based on the results of the regression, analysis of historical trends on the Asset, as well as our previous experience on benchmark Assets the elasticity assumption for LCVs is 0.3 on both TPs, and for Bus which have witnessed relatively stronger growth is 0.5 for both toll plazas. 2A have benefited from increase in Courier/Parcel movement and continued on a positive growth profile over the last 3-4 years and are expected to have an 0.8 elasticity to GDP.

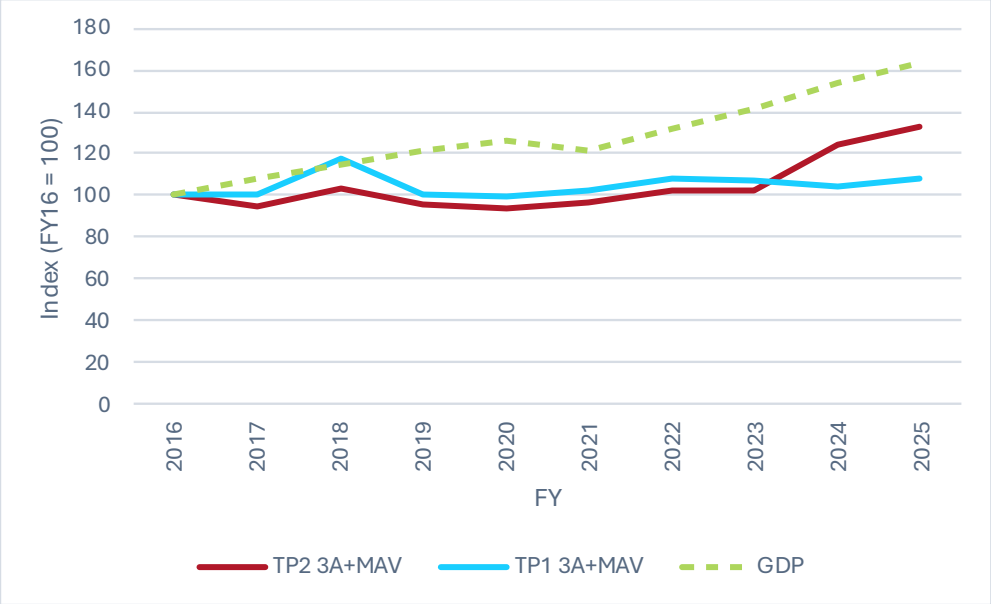
3A/MAV Trucks

5.29 In comparison to lighter vehicles such as LCV and 2A, 3A and MAV have more national or long-distance movements that span multiple states. Given that manufacturing-related commodities tend to dominate commodity distribution, resulting in traffic growth in 3A and MAV vehicle categories to be dependent on industry demand-supply ecosystems spread across the country, we have assumed GDP as the growth driver to model traffic

growth in 3A and MAV vehicle categories. Figure 5.4 below depicts the relationship between the indexed values of 3A+MAV combined traffic and India's GDP.

5.30 Historically, 3A+MAV combined traffic grew positively in the FY16-18 period at 8.2% at TP1 Sikandra and 1.4% at TP2, before losing volumes in FY19 and FY20.

Figure 5.4: Relationship between 3A+MAV combined traffic and India GDP:



Source: Steer analysis of Client TMS data and publicly available GDP data

5.31 Major reasons associated with this slower growth is implementation of stringent sand mining policy 2020 in Rajasthan which reduced the illegal sand mining and associated 3A and MAV traffic (FY18-FY20) in the region. Completion of Jaipur Ring Road improving access of regions beyond Jaipur. Opening of DME, which resulted in higher 3A and MAV traffic on Rajadhok plaza, whereas the Sikandra plaza lost commercial traffic which as destined to Alwar which earlier used to cross the Sikandra plaza but now diverts via DME. Between FY23 and FY25 the Asset registered negative 2% 3A+MAV growth on Sikandra and 21% on Rajadhok. Since DME is now operational for more than 12 months now, we expect very minimal loss on Sikandra and return of normal traffic growth on Rajadhok plaza.

5.32 The Asset reports 3A+MAV combined, in our experience of other toll roads, 3As to grow slower than MAVs due to an increasing preference seen for MAVs instead of 3As for long-distance movements. This is because MAVs have higher load capacity which generate economies of scale resulting in lower costs. However, it is unlikely that 3A trucks will disappear from the market completely as there are best suited for certain commodities or movements.

5.33 Based on the above points, we have assumed elasticities of 0.40 and 0.85 for 3A and MAV trucks respectively, with respect to India GDP growth.

Forecasts for background elasticities

5.34 Table 5.6 presents a summary of the results of the regression analysis carried out on historical toll plaza data and the macroeconomic (GDP/GDSP) growth, along with the assumed forecast elasticities for background traffic growth.

5.35 The forecast elasticities are assumed to remain constant over the concession period as the logistics sector in still in early stages of development in India (95% of trucks still owned by operators owning less than 5 trucks). Car ownership levels are still around 30-35 per 1000 people, and it is likely to take a few years before the market reaches maturity. These trends are based on a long-term understanding of historical relationships and an overall outlook on the growth of the region and the country.

Table 5.6: Derived implied elasticities and assumed forecast elasticities for background growth

Vehicle type	Growth driver	History		Forecast	
		Derived elasticity	Period Considered (Without Dummy)	Assumed forecast elasticity	Evolution of elasticity
TP1 Sikandra					
Car	GSDP Rajasthan	1.20	FY16-25	1.10	No change
LCV*	GSDP Rajasthan	(0.10) *(LCV+2A+Bus)*	FY16-25	0.30	No change
Bus*	GSDP Rajasthan		FY16-25	0.50	No change
2A*	GDP		FY16-25	0.80	No change
3A*	GDP	0.15 (3A+MAV)	FY16-25	0.20	No change
MAV*	GDP			0.85	No change
TP2 Rajadhok					
Car	GSDP Rajasthan	1.73	FY16-25	1.10	No change
LCV*	GSDP Rajasthan	0.25 *(LCV+2A+Bus)*	FY16-25	0.30	No change
Bus*	GSDP Rajasthan		FY16-25	0.50	No change
2A*	GDP		FY16-25	0.80	No change
3A*	GDP	0.57 (3A+MAV)	FY16-25	0.20	No change
MAV*	GDP			0.85	No change

Source: Steer analysis of Client data; *The results of the regression yielded insignificant results based on the t stat values of the analysis.

6 Forecasts: Network overlays and forecasts

Introduction

6.1 Following the discussion on estimated and assumed forecast background growth rates in the previous chapter, this chapter first deals with the forecasting assumptions around base year AADT and potential impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and growth of toll rates for the forecast period which have been used to forecast revenues as derived from forecast traffic. This chapter summarises traffic growth rates for the forecast years.

6.2 All traffic is presented as AADT for vehicle category at each plaza, for financial years (April-March). All revenue is presented in INR (nominal terms). Though FY32 is the last year of concession, we have developed our forecasts until FY32 for the Client's reference.

Analysis of potential network/developmental impacts

Summary of alternate routes and planned changes

6.3 This section details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed in previous chapters, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

6.4 We have estimated impacts of potential network changes and developments around the Asset. These are indicated in Table 6.1.

Table 6.1: List of network/other developments

	Development	Route affected	Year of completion	Impact (+/-)	Plaza
1.	Completion of pending sections on Agra Ring Road	Asset route: Bhilwara/Udaipur-Jaipur-Asset-Agra-Kanpur Alternate route: Bhilwara/Udaipur-Chittorgarh-Kota-Jhansi-Kanpur	FY27	+ve	TP1 & TP2
2.	Completion of construction of Delhi-Mumbai Expressway	Asset route: Delhi-Dausa+Dausa-Kota+Dausa-Godhra	FY26 (however, FY27 is	-ve	TP2

	Development	Route affected	Year of completion	Impact (+/-)	Plaza
		Alternate route: Jaipur-Delhi via DME Spur	expected to see a further diversion)		
3	Completion of Agra-Gwalior Construction		FY27	+ve	TP1 & TP2

Source: Steer analysis.

6.5 The map below shows the immediate road network surrounding the Asset.

Figure 6.1: Alternate routes and Asset route shown against the regional network context

Source: Steer analysis and cartography

Impact assessment for network/other developments

6.6 As seen in the previous sub-section, the assessed impacts primarily fall into either the category of road network developments or development in other modes of transport. Under network developments, changes in the road network could be either brownfield (upgrade to existing road) or greenfield (development of new road). We typically assess impacts of the changes in costs and travel time on routes in these networks using binary logit models that compare generalised journey costs (GJC) between Asset and alternate routes. However, each impact is dealt individually in its own network or industry context.

6.7 'Summary of impact assessments' below include a narrative of each of the improvements, and impacts associated from each of these on our traffic forecasts. Please note that all traffic volumes for impacts were estimated, and impact rates were applied on FY25 AADT.

Diversion due to the Delhi-Mumbai Expressway

6.8 The Delhi-Mumbai Expressway is a greenfield expressway being developed to provide an improved level of service to long-distance traffic between North and Western India, compared to the existing network of national highways that are already operating at high levels of utilisation. Though the Asset currently does not directly serve north-south movement (e.g., Delhi-Jaipur and Jaipur-Gujarat) as the NH8 directly provides connectivity to them, the Delhi-Lalsot section of the expressway has been operationalized since Q4 FY23 which provides faster and unhindered connectivity through an interchange with the Asset near Dausa at km-169. As illustrated in the alternate route map, the diverted traffic through the expressway would pass only through TP2 Rajadhok.

6.9 We have considered the following three types of north-south movements for this impact:

- **Delhi-Jaipur**: These movements currently use the NH8 via Neemrana. The route through the proposed expressway via Dausa provides a competitive alternate with high time savings and good end-to-end connectivity, despite higher toll rates.
- **Gujarat and southern Gujarat-Jaipur**: These movements currently use the NH8 via Kishangarh. The route through proposed expressway via Dausa does not provide a competitive alternate given the Chittorgarh-Kota non-expressway section slows down the journey.
- **Southern Rajasthan-Jaipur**: These movements currently use the NH8 via Kishangarh. The route through the proposed expressway via Dausa provides a competitive alternate with high time savings and good end-to-end connectivity, despite higher toll rates.

6.10 Key sections of the expressway are already open to traffic, including the Sohna–Dausa–Lalsot segment (inaugurated February 2023), the Madhya Pradesh section (opened September 2023), the Vadodara–Bharuch segment (opened February 2024), and the Kota–Bundi section (opened December 2024). Additionally, the 67-km Bandikui to Jaipur Ring Road spur is anticipated to become operational end of 2025. Despite these advancements, the overall project has faced delays due to factors such as slow contractor progress, land acquisition challenges, and force majeure events, particularly affecting a 140-km stretch between Surat and the Gujarat-Maharashtra border.

6.11 A 67-KM Spur of DME between Jaipur and Dausa known as Badnikui spur has been discussed, and its construction contract was awarded in Mar'22. This has been open to the public from July 2025 and is expected to lead to a further decline in traffic on Rajadhok as it provides a faster alternate route. While FY26A base traffic of Rajadhok accounts for the expected decline in the forecast months of FY26 (October 2025 to March 2026), FY27 is likely to see a further decline over FY26 as the impact did not fully play out in FY26. We have accordingly assumed a further decline in traffic from FY27. Since the Bandikui spur allows traffic to bypass Rajadhok and not Sikandra, the magnitude of the impact at Rajadhok is larger.

Table 6.2: Impact due to completion of Delhi-Mumbai Expressway Spur, TP1 Sikandra

Vehicle type	FY27 onwards

2A	(0.4%)
3A	(0.4%)
MAV	(0.3%)

Table 6.3: Impact due to completion of Delhi-Mumbai Expressway Spur, TP2 Rajadhok

Vehicle type	FY27 onwards
CJV	(9.2%)
LCV	(6.0%)
Bus	(2.9%)
2A	(2.9%)
3A	(4.9%)
MAV	(4.9%)

Source: Steer analysis

Diversion due to completion of pending sections on the Agra Ring Road

6.12 As shown in Figure 6.1**Error! Reference source not found.** above, the Asset is part of a long-distance east-west corridor connecting southern Rajasthan (Udaipur, Bhilwara, Chittorgarh), Uttar Pradesh (Kanpur, Lucknow) and the east. While the route using the Asset passes through Jaipur (NH8), Jaipur-Mahua-Asset and Agra, the alternate route passes through NH27 via Kota and Jhansi. Currently, movements through Agra are limited due to the incomplete Agra ring road and congestion inside Agra city on NH19. Completion of the pending section of the Agra Ring Road is expected to improve connectivity for long-distance traffic which will allow them to bypass Agra city and provide direct access to Agra Lucknow expressway, thereby significantly improving the access for traffic destined to Kanpur/Lucknow and east.

6.13 Based on our Generalised Journey Cost (GJC) based diversion analysis from the strategic route discussed above, we believe the upgrade to Agra Ring Road will result in a partial positive impact on the Asset route in FY27, and full impact from FY28 onwards, as summarised in the table below.

Table 6.4: Impact due to completion of pending section on Agra Ring Road, TP1 Sikandra

Vehicle type	FY27	FY28 onwards
Staging	*80%*	*100%*
LCV	0.3%	0.4%
2A	1.5%	1.8%
3A	2.5%	3.1%
MAV	3.8%	4.8%

Source: Steer analysis of OD data, Client TMS data and publicly available information

Table 6.5: Impact due to completion of pending section on Agra Ring Road, TP2, Rajadhok

Vehicle type	FY27	FY28 onwards
Staging	*80%*	*100%*

Vehicle type	FY27	FY28 onwards
LCV	0.2%	0.2%
2A	1.3%	1.6%
3A	2.1%	2.7%
MAV	2.7%	3.3%

Source: Steer analysis of OD data, Client TMS data and publicly available information

Completion of Agra-Gwalior Construction

6.14 Additional construction material required for the Agra-Gwalior Expressway will be transported through the JMTL Asset, which will further increase MAV traffic from FY26 onwards. However, we assume that this impact will taper off by FY29, as the expressway construction is expected to be completed by then. The phasing of the impact will see partial impact in FY27, and 100% of the impact playing out in FY28.

Table 6.6: Completion of Agra-Gwalior Construction

Impact	TP1 Sikandra		TP2 Rajadhok	
	FY27	FY28	FY27	FY28
MAV	1.4%	1.4%	1.2%	1.5%

Source: Steer analysis of OD data, Client TMS data and publicly available information

Summary of impact assessments

6.15 Table 6.7 below summarises the potential impacts on the Asset due to the various ongoing and planned road network changes, and other related regulatory developments.

Table 6.7: Summary of impact assessments

Impact	Year of impact	Probability/ scale of impact	Magnitude of impact	
			TP1 Sikandra	TP2 Rajadhok
Jaipur spur of Delhi-Mumbai Expressway: Delhi-Jaipur connection through the expressway via Dausa interchange is expected to provide faster connectivity and improved level of service on the alternate	FY27 onwards	High/High	2A: (0.4%) 3A: (0.4%) MAV: (0.3%)	CJV: (9.2%) LCV: (6.0%) Bus: (2.9%) 2A: (2.9%) 3A: (4.9%) MAV: (4.9%)
Positive diversion due to completion of Agra Ring Road: Completion of pending sections would improve connectivity – both seamless and without time restrictions	FY27 onwards	Medium/ Medium	LCV: 0.4% 2A: 1.8% 3A: 3.1% MAV: 4.8%	LCV: 0.2% 2A: 1.6% 3A: 2.7% MAV: 3.3%
Completion of Agra-Gwalior Construction – Additional construction material required for	FY27 onwards	Medium/ Medium	MAV: 1.4%	MAV: 1.5%

Impact	Year of impact	Probability/ scale of impact	Magnitude of impact	
			TP1 Sikandra	TP2 Rajadhok
the Agra-Gwalior Expressway will be sourced from Alwar and transported via JMTL				

Source: Steer analysis of OD data, GJC analysis and Client TMS data and publicly available information

Revenue forecasting assumptions

6.16 To forecast the revenues for a particular year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While “trip factors” provide the conversion factor to the former, i.e., traffic (trips) to tickets sold, “toll segmentation” provides the latter i.e. the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecasts.

Trip factors

6.17 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and listed in the table below:

Table 6.8: Trip factors at TP1 Sikandra

Forecast	CJV/Mini LCV	LCV	Bus	2A	3A/MAV
Single	1	1	1	1	1
Return	2	2	2	2	2
Monthly	45	45	45	45	45
Local commercial	1	1	1	1	1
Local Personal	1	1	1	1	1

Source: Steer analysis of Client TMS data

Table 6.9: Trip factors at TP2 Rajadhok

Forecast	CJV/Mini LCV	LCV	Bus	2A	3A/MAV
Single	1	1	1	1	1
Return	2	2	2	2	2
Monthly	45	45	45	45	45
Local commercial	1	1	1	1	1
Local Personal	1	1	1	1	1

Source: Steer analysis of Client TMS data

Toll segmentation and trip factors

6.18 As discussed in Chapter 3, segmentation trends have largely been stabilising over the years, with FY26 (shown in the following Table 6.11and Table 6.12) indicating the recent performance of the Asset. Table 6.11 and Table 6.12 below provide the toll segmentation assumed for the period of forecast. For the traffic and revenue forecast, FY26YTD (Apr-

Aug) as discussed in the earlier sections, can be considered a normal period. Therefore, we believe the FY26YTD segmentation is representative of the travel patterns on the Asset and the same has been assumed for forecast years as well. Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

Table 6.10: Annual pass adoption between 15th August and 30th September 2025

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
Sikandra	11.0%	17.0%	19.3%
Rajadhok	10.5%	15.7%	18.0%

Source: Steer analysis of TMS data

6.19 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.20 In FY26, the share of CJVs using the Annual Pass on Sikandra is projected at 14% (on an annual basis) with a March 2026 estimate of around 28%, which from FY27, expected to stabilize at March 2026 levels. On Rajadhok, the share of CJVs using annual pass is projected at 13% (on an annual basis) with March 2026 estimated to be around 27%, which from FY27 is expected to stabilize at March 2026 levels.

6.21 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period.

6.22 The tables below summarise the forecast segmentation assumptions for each of the toll plazas.

Table 6.11: Forecast toll segmentation, FY26 onwards- TP1 Sikandra

Ticket type	CJV (FY26)	CJV (FY27)	Mini LCV	LCV	Bus	2A	3A/MAV
Single	79.6%	65.4%	93.5%	96.9%	98.8%	98.8%	99.4%
Local commercial	0.4%	0.4%	0.4%	1.8%	0.0%	0.8%	0.4%
Local personal	2.0%	2.0%	2.0%	0.0%	0.4%	0.0%	0.0%
Exemptions	4.1%	4.1%	4.1%	1.3%	0.0%	0.4%	0.1%
Violations	0.1%	0.1%	0.1%	0.0%	98.8%	0.0%	0.0%

Ticket type	CJV (FY26)	CJV (FY27)	Mini LCV	LCV	Bus	2A	3A/MAV
Annual Pass	13.9%	28.1%	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.12: Forecast toll segmentation, FY26 onwards- TP2 Rajadhok

Ticket type	CJV (FY26)	CJV (FY27)	Mini LCV	LCV	Bus	2A	3A/MAV
Single	77.8%	63.8%	91.2%	82.7%	97.7%	97.7%	98.4%
Monthly	0.3%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%
Local commercial	1.7%	1.7%	1.4%	16.1%	1.8%	1.8%	1.3%
Local personal	3.7%	3.7%	3.4%	0.0%	0.0%	0.0%	0.0%
Exemptions	3.8%	3.8%	3.7%	1.1%	0.5%	0.5%	0.3%
Violations	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Annual Pass	12.6%	26.5%	-	-	-	-	-

Source: Steer analysis of Client TMS data

Overloading

6.23 Overloaded vehicles on the Asset are charged twice the toll fee they would otherwise pay for a Single ticket at the toll plaza. We have considered FY25 actual overloading shares and assumed that they would continue in the forecast years. Table 6.13 shows the assumptions for share of overloaded Single journey vehicles that are considered to pay twice the Single journey toll fee due to overloading.

Table 6.13: Overloading assumptions for forecast years FY26 onwards

Vehicle type	Single	Local Commercial
TP1 Sikandra		
LCV	3.0%	0.0%
Bus	1.6%	0.0%
2A	4.2%	0.0%
3A/MAV	4.3%	0.0%
TP2 Rajadhok		
LCV	1.2%	0.0%
Bus	0.8%	0.0%
2A	2.6%	0.0%
3A/MAV	3.5%	0.0%

Source: Steer analysis of Client data

Toll evolution

6.24 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is July) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.25 We have used actual toll rates from the FY26 toll notifications and latest print WPI for the month of March'25[21] for FY26 to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in Table 6.14 below. The upward trend in inflation is expected to continue in the medium term, before gradually tapering to 4.1% by FY32 when the concession period ends.

6.26 These WPI forecasts provided by the Client. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the Client.

Table 6.14: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32	4.1%

Source: FY27 onwards WPI print as per client inputs

Revenue reconciliation

6.27 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue against the modelled revenue. For the Asset we have reconciled daily level reported revenue for FY26YTD with the modelled revenue based on FY26YTD MADT and forecast assumptions on toll segmentation, trip factors and toll rates.

6.28 The comparison, as shown in Table 6.15 below, shows that modelled revenue overall is within a variation of 0.2-0.3% on average from the reported revenue. This gives us confidence that the revenues estimated using the traffic data in our forecasts are accurately representing the revenues being reported from the Asset.

[21] **Latest release WPI**

Table 6.15: Revenue reconciliation for FY26YTD

Toll Plaza	Steer modelled daily revenue (INR lakhs)	Reported daily revenue (INR lakhs)	Difference (%)
TP1 Sikandra	32.8	32.7	0.2%
TP2 Rajadhok	32.7	32.6	0.3%

Source: Steer comparison between modelled and reported revenue for FY26YTD

Traffic and Revenue forecasts

6.29 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue for the forecast period for the Asset. The table below presents the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix C presents the AADT and revenues for the forecast period.

Table 6.16: Traffic forecasts (with impacts) forecast for TP1 Sikandra

Vehicle Type	FY26	FY27	FY28	FY30	FY32
CJV	10,491	11,242	12,038	13,721	15,572
Mini LCV	1,116	1,152	1,189	1,263	1,339
LCV	344	351	358	372	385
Bus	1,784	1,842	1,901	2,020	2,142
2A	654	695	734	807	884
3A	462	478	487	499	510
MAV	3,605	3,990	4,245	4,633	5,108
AADT	**18,456**	**19,751**	**20,953**	**23,314**	**25,941**
PCU's	**35,473**	**38,182**	**40,382**	**44,343**	**48,854**

Source: Steer analysis

Table 6.17: Traffic forecasts (with impacts) CAGR (%) for TP1 Sikandra

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	7.2%	7.1%	6.8%	6.5%	6.8%
Mini LCV	3.3%	3.2%	3.1%	3.0%	3.1%
LCV	2.3%	2.0%	1.8%	1.8%	1.9%
Bus	3.3%	3.2%	3.1%	3.0%	3.1%
2A	6.4%	5.5%	4.9%	4.7%	5.2%
3A	3.4%	1.9%	1.2%	1.2%	1.7%
MAV	10.7%	6.4%	4.5%	5.0%	6.0%
AADT	**7.0%**	**6.1%**	**5.5%**	**5.5%**	**5.8%**
PCU's	**7.6%**	**5.8%**	**4.8%**	**5.0%**	**5.5%**

Source: Steer analysis

Table 6.18: Revenue forecast for TP1 Sikandra (INR crores)

Vehicle Type	FY26	FY27	FY28	FY30	FY32
CJV	28.9	32.5	35.3	44.4	55.9
Mini LCV	3.1	3.3	3.5	4.1	4.8
LCV	1.8	1.9	2.0	2.3	2.5

Vehicle Type	FY26	FY27	FY28	FY30	FY32
Bus	18.5	19.6	21.1	24.6	28.5
2A	7.0	7.6	8.4	10.1	12.1
3A	7.6	8.0	8.6	9.7	10.8
MAV	61.9	70.0	78.1	93.8	112.6
Total	**128.7**	**142.8**	**156.9**	**188.9**	**227.3**

Source: Steer analysis

Table 6.19: Revenue growth CAGR (%) for TP1 Sikandra

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	12.6%	8.5%	12.2%	12.2%	11.6%
Mini LCV	8.1%	5.1%	8.1%	8.4%	7.7%
LCV	5.0%	5.9%	7.9%	5.3%	6.2%
Bus	5.5%	8.0%	7.9%	7.7%	7.5%
2A	8.7%	10.4%	9.8%	9.5%	9.6%
3A	5.7%	6.9%	6.2%	5.6%	6.0%
MAV	13.1%	11.6%	9.6%	9.6%	10.5%
Total	**11.0%**	**9.8%**	**9.7%**	**9.7%**	**9.9%**

Source: Steer analysis

Table 6.20: Traffic forecast (with impacts) for TP2 Rajadhok

Vehicle Type	FY26	FY27	FY28	FY30	FY32
CJV	13,507	13,146	14,078	16,045	18,210
Mini LCV	1,058	1,093	1,128	1,198	1,270
LCV	403	387	395	409	424
Bus	1,648	1,652	1,705	1,811	1,920
2A	587	608	641	705	772
3A	284	280	285	292	299
MAV	2,846	2,972	3,164	3,446	3,799
AADT	**20,333**	**20,136**	**21,394**	**23,906**	**26,695**
PCU's	**34,293**	**34,511**	**36,545**	**40,283**	**44,530**

Source: Steer analysis

Table 6.21: Traffic forecast (with impacts) CAGR (%) for TP2 Rajadhok

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	(2.7%)	7.1%	6.8%	6.5%	5.1%
Mini LCV	3.3%	3.2%	3.1%	3.0%	3.1%
LCV	(4.0%)	2.0%	1.8%	1.8%	0.9%
Bus	0.2%	3.2%	3.1%	3.0%	2.6%
2A	3.5%	5.5%	4.9%	4.7%	4.7%
3A	(1.6%)	1.8%	1.2%	1.2%	0.8%
MAV	4.4%	6.5%	4.4%	5.0%	4.9%
AADT	**(1.0%)**	**6.2%**	**5.7%**	**5.7%**	**4.6%**
PCU's	**0.6%**	**5.9%**	**5.0%**	**5.1%**	**4.4%**

Source: Steer analysis

Table 6.22: Revenue forecast for TP2 Rajadhok (INR crores)

Vehicle Type	FY26	FY27	FY28	FY30	FY32
CJV	36.4	35.4	40.0	50.9	64.0
Mini LCV	2.9	3.0	3.2	3.8	4.5
LCV	1.9	1.9	2.0	2.3	2.5
Bus	16.6	17.2	18.4	21.7	25.0
2A	6.0	6.4	7.1	8.6	10.2
3A	4.6	4.7	5.0	5.6	6.2
MAV	47.6	51.3	57.0	68.1	81.9
Total	**116.1**	**119.8**	**132.6**	**161.1**	**194.4**

Source: Steer analysis

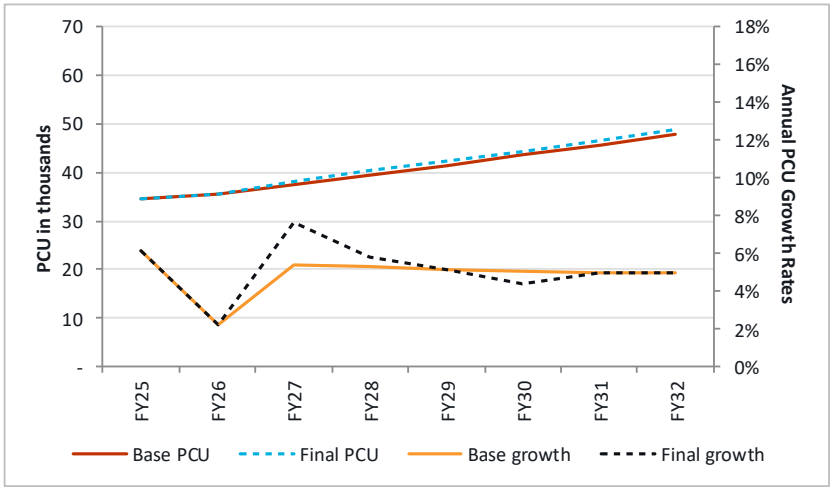
Table 6.23: Revenue growth rates (%) for TP2 Rajadhok

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	(2.7%)	12.9%	12.8%	12.1%	9.8%
Mini LCV	3.3%	8.4%	9.0%	8.4%	7.7%
LCV	(0.8%)	6.0%	6.9%	6.3%	5.2%
Bus	3.4%	7.1%	8.6%	7.1%	7.0%
2A	6.7%	9.4%	10.5%	8.9%	9.2%
3A	1.5%	6.3%	6.1%	5.7%	5.2%
MAV	7.6%	11.1%	9.4%	9.6%	9.5%
Total	**3.2%**	**10.6%**	**10.2%**	**9.8%**	**9.0%**

Source: Steer analysis

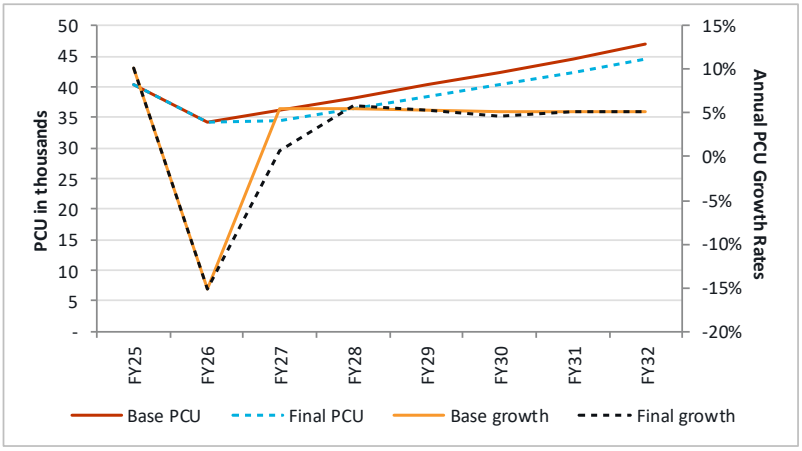
6.30 As presented in the table above, CAGRs (FY26-FY32) in terms of PCUs for traffic forecasts (plus impacts) growth rates is 5.5% at TP1 Sikandra, and 4.4% at TP2 Rajadhok.

Figure 6.2: Traffic and growth rates for forecast PCUs - Background and final, TP1 Sikandra



Source: Steer analysis

Figure 6.3: Traffic and growth rates for forecast PCUs - Background and final, TP2 Rajadhok



Source: Steer analysis

Upside and Downside cases

Upside and Downside scenario assumptions

6.31 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.32 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.33 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.24: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.34 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.35 The upside case impacts included in forecasts are summarised in below.

Table 6.25: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Sikandra	TP2 Rajadhok
Completion of pending sections on Agra Ring Road	FY27*	+25% of base case	Same as Base Case	Same as Base Case
Completion of construction of Delhi-Mumbai Expressway	FY27*		Same as Base Case	Same as Base Case
Completion of Agra-Gwalior Construction	FY27*		MAV: 1.8%	MAV: 1.9%
Bandikui Spur	FY27			No Change

Source: Steer analysis, * Same as base case timeline

Impacts-Downside Case

6.36 The downside case impacts included in forecasts are summarised in below.

Table 6.26: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Sikandra	TP2 Rajadhok
Completion of pending sections on Agra Ring Road	FY27*	-25% of base case	LCV: 0.3% 2A: 1.4% 3A: 2.4% MAV: 3.6%	LCV: 0.2% 2A: 1.2.% 3A: 2.0% MAV: 2.5%
Completion of construction of Delhi-Mumbai Expressway	FY27*		2A: (0.5%) 3A: (0.5%) MAV: (0.3%)	CJV: (11.5%) LCV: (8.0%) Bus: (3.7%) 2A: (3.7%) 3A: (6.2%) MAV: (6.2%)
Completion of Agra-Gwalior Construction	FY27*		MAV: 1.1%	MAV: 1.1%
Bandikui Spur	FY27			CJV: (11.5%) LCV: (7.5%) Bus: (3.7%) 2A: (3.7%) 3A: (6.2%) MAV: (6.2%)

Source: Steer analysis, * Same as base case timeline

Upside and Downside Forecasts

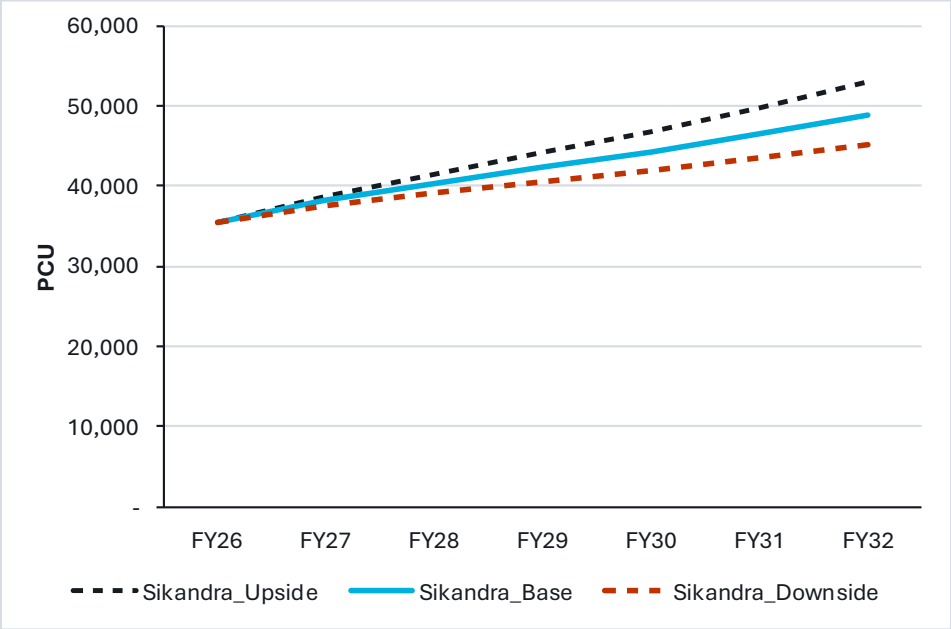
6.37 Based on the above assumptions for upside and downside scenarios, the following table summarizes the upside potential and downside risks associated with the PCU and the revenue for Sikandra and Rajadhok toll plazas at the end of the concession i.e. FY32.

Table 6.27: Upside potential and Downside PCU scenario - FY32

Toll Plaza	Upside Potential	Downside Risk
Sikandra	8.5%	(7.6%)
Rajadhok	8.8%	(9.1%)

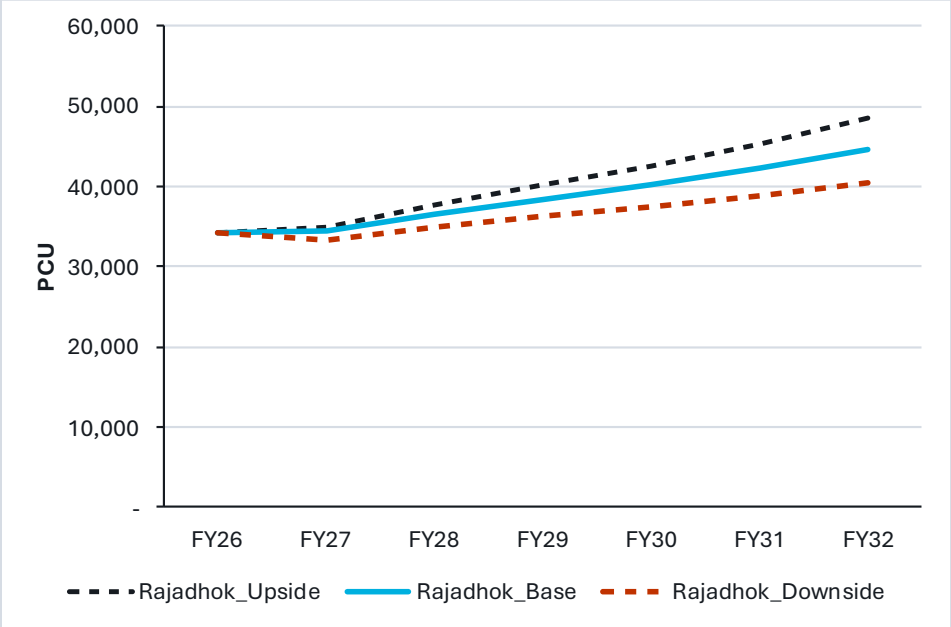
Source: Steer Analysis of client data

Figure 6.4: Long term PCU forecasts for Sikandra TP including upside and downside scenario



Source: Steer Analysis

Figure 6.5: Long term PCU forecasts for Rajadhok TP including upside and downside scenario



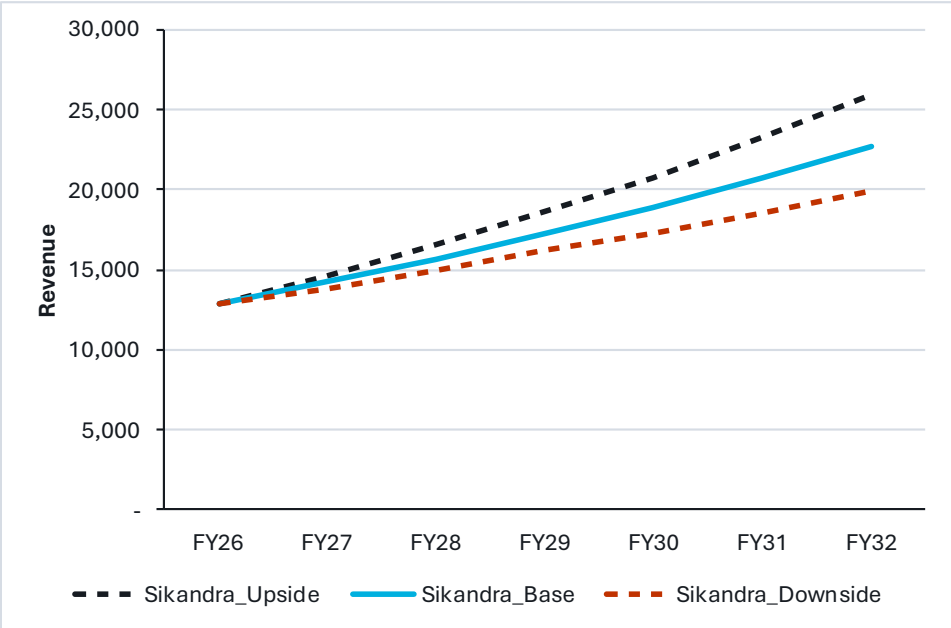
Source: Steer Analysis

Table 6.28: Upside potential and Downside Revenue scenario - FY32

Toll Plaza	Upside Potential	Downside Risk
Sikandra	14.2%	(12.2%)
Rajadhok	14.5%	(13.5%)

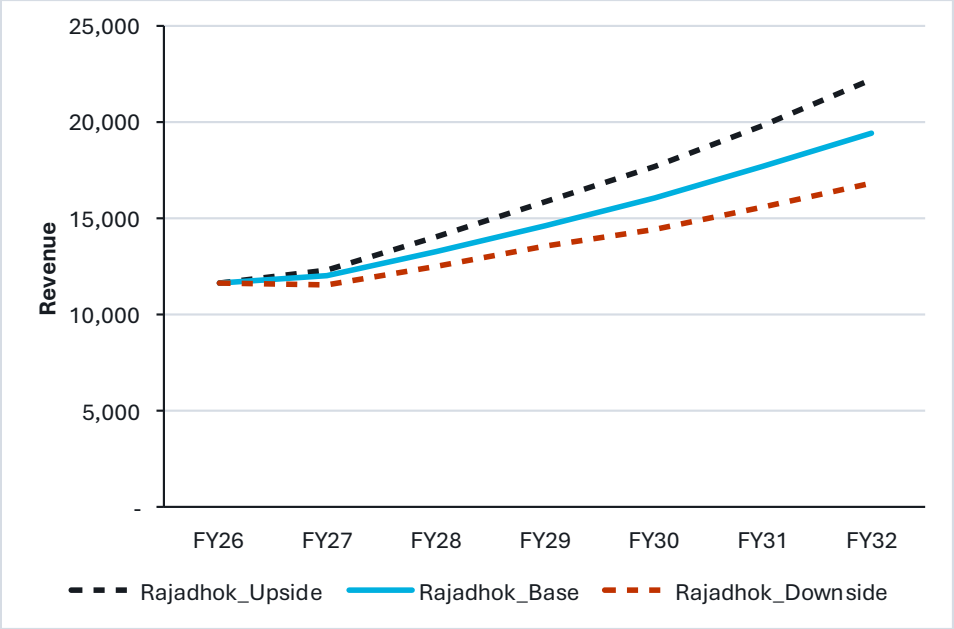
Source: Steer Analysis of client data

Figure 6.6: Long term Revenue forecasts (INR Lakhs) for Sikandra TP including upside and downside scenario



Source: Steer Analysis

Figure 6.7: Long term Revenue forecasts (INR Lakhs) for Rajadhok TP including upside and downside scenario



Source: Steer Analysis

Summary outlook

6.38 Passenger traffic on the Asset is driven by local movements connecting key urban centers of Jaipur, Agra, Alwar, and Bharatpur. Tourism and leisure travel between Jaipur at one end and Bharatpur and Agra at the other also contributes to passenger and bus movements, as the Asset is part of the Golden Triangle corridor (Delhi NCR, Agra, Jaipur). Even though the recent pandemic impacted passenger and tourism-related traffic, the trend of increased use of personal vehicles has led to a good recovery of car traffic in recent months. TP2 Rajadhok has shown stronger traffic growth, especially in the CJV category, due to its proximity to Jaipur and the operationalization of the DME spur to Lalsot in February 2023 and until Sawai Madhopur in September 2024, enhancing connectivity to Delhi. However, with the new 67-km Bandikui to Jaipur Ring Road spur (part of the DME) opening in July 2025 this incremental traffic for TP2 has diverted to the spur (as can be seen in the FY26YTD traffic at Rajadhok), as the new link offers a faster and shorter route between Delhi and Jaipur.

6.39 Goods traffic is driven by agricultural commodities, construction-related traffic including stone and sand, apart from a good spread of consumption-related commodities meeting urban demand. The completion of large-scale construction activity in the vicinity of the Asset, combined with limited sand movement and network developments like the construction of the Delhi Mumbai Expressway, had temporarily caused a slowdown in the Asset's traffic growth. These effects have largely receded in recent years. As the economic recovery gathers pace, the Asset is expected to see traffic growth aligned with the historical trends observed in the long term. The strong recovery in recent months has shown underlying strength in the traffic growth drivers along the Asset corridor, which is expected to continue driving growth. Heavy vehicles (3A/MAV) primarily cater to long-distance movements between western and eastern India.

6.40 Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys (including OD surveys from June 2023 at TP1 and January 2025 at TP2) and the toll management system (both historical and current, up to January 2025), macroeconomic assumptions prescribed by the Client, feedback from Client meetings, and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarized.

6.41 Overall, we see a positive outlook for the region and the Asset, given that it serves major urban centers of Jaipur, Agra, Bharatpur, Alwar, and Delhi NCR. It is also the primary route on the tourism corridor connecting Jaipur with Bharatpur and Agra. The underlying growth drivers of the corridor are strong and are expected to deliver long-term sustained growth.

Appendices

A Developments in sandmining

A.1 This appendix provides a chronological account of developments – policy, regulatory and judicial – in sandmining applicable across India and particularly in Rajasthan. Please note that this list is not exhaustive and is meant to gain a high-level understanding of the issues surrounding sandmining that affect movement of sand on the Asset.

Table A.1: History of policy and regulatory changes, and court judgements affecting sandmining

Event	Timeline
National	
Recommendations of MoEF core group	2010
SC ruling - Orders MoEF to formulate guidelines for sustainable sand - mining	Feb FY12
MoEFCC Sustainable Sand Mining Management Guidelines - Calls for site-specific surveys by district administration - Environmental clearance mandatory for all sand mines - DEAC and DEIAA committees for less than 5-hectare mines Stop of mining during monsoon months (June-September)	Mar FY16
Amendment of EIA Notification 2006 - EI clearance mandatory for all small-scale sand mines Treat cluster mines within 500 m as single mine	May FY17
SC ban on sandmining; prohibits 82 large sandmining lease holders	Nov FY18
SC refuses to remove ban	Jan, Aug FY19
Rajasthan	
Mining policy	2015
NGT: Even existing licence holders need to get environmental clearance	Jan FY15
Not clear if manufactured sand can meet demand and quality needs	FY19
"Mining ban give rise to sand mafia"	Oct FY19
SC stays Rajasthan HC order that allowed sandmining at mines with issued LoIs	May FY20
Manufactured sand policy being considered and licences for small plots being allowed	Sept FY19, Jul FY20
Replenishment study of sand mines to be taken up	Aug FY20
Rajasthan HC asks PS (RJ) to issue compounding fee on vehicle – apply consistent approach	Sept FY20
Rajasthan M-sand policy announced	2020
Revised M-sand policy and 27 monitoring teams deployed across the state	2024

Source: Steer research

B Top 10 OD pairs

B.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1 Sikandra

Table B.1: CJV top 10 OD pair shares at TP1 Sikandra

	OD Pair	Share
1.	Agra-Jaipur	10.46%
2.	Jaipur-Sikandra	9.79%
3.	Dausa-Sikandra	6.68%
4.	Bharatpur-Jaipur	5.85%
5.	Jaipur-Mahwa	4.19%
6.	Mathura-Jaipur	3.53%
7.	Alwar-Jaipur	3.07%
8.	Alwar-Dausa	3.07%
9.	Mahwa-Dausa	3.07%
10.	Agra-Dausa	2.78%

Source: Steer analysis of OD data

Table B.2: MAV and OSV top 10 OD pair shares at TP1 Sikandra

	OD Pair	Share
1.	Agra-Jaipur	7.22%
2.	Bhuj-Agra	5.13%
3.	Jaipur-Sikandra	2.79%
4.	Bharatpur-Jaipur	2.75%
5.	Bhuj-Kolkata	2.60%
6.	Bhuj-Kanpur Nagar	1.80%
7.	Bhuj-Lucknow	1.72%
8.	Alwar-Jaipur	1.58%
9.	Bhuj-Bharatpur	1.43%
10.	Ajmer-Agra	1.43%

Source: Steer analysis of OD data

TP2 Rajadhok

Table B.3: CJV top 10 OD pair shares at TP2 Rajadhok

	OD Pair	Share
1.	Dausa-Jaipur	20.05%
2.	New Delhi-Jaipur	10.39%
3.	Firozabad-Jaipur	10.22%
4.	Jaipur-Bharatpur	4.03%
5.	Alwar-Jaipur	3.75%
6.	Agra-Jaipur	3.60%
7.	Ajmer-Dausa	2.84%
8.	Dausa-Bassi	2.56%
9.	Jaipur-Mahwa	2.48%
10.	Ajmer-Firozabad	1.75%

Source: Steer analysis of OD data

Table B.4: MAV and OSV top 10 OD pair shares at TP2 Rajadhok

	OD Pair	Share
1.	Dausa-Jaipur	5.71%
2.	Firozabad-Jaipur	5.06%
3.	Bhuj-Firozabad	4.73%
4.	Agra-Jaipur	2.85%
5.	Ajmer-Firozabad	2.57%
6.	New Delhi-Jaipur	2.36%
7.	Jaipur-Bharatpur	2.16%
8.	Bhuj-New Delhi	2.04%
9.	Alwar-Jaipur	1.92%
10.	Kachchh-Firozabad	1.67%

Source: Steer analysis of OD data

C Detailed forecasts

C.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts (with Impacts)

C.2 This section presents the detailed traffic forecasts for the forecast period until FY32, year of expected close of the concession. The following two tables show the traffic growth rates and AADT, respectively.

Table C.1: Traffic forecasts (base + impacts) traffic – TP1 Sikandra

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	10,491	1,116	344	1,784	654	462	3,605	**18,456**	**35,473**
FY27	11,242	1,152	351	1,842	695	478	3,990	**19,751**	**38,182**
FY28	12,038	1,189	358	1,901	734	487	4,245	**20,953**	**40,382**
FY29	12,866	1,226	365	1,961	770	493	4,469	**22,149**	**42,469**
FY30	13,721	1,263	372	2,020	807	499	4,633	**23,314**	**44,343**
FY31	14,617	1,301	378	2,080	845	505	4,864	**24,590**	**46,539**
FY32	15,572	1,339	385	2,142	884	510	5,108	**25,941**	**48,854**

Table C.2: Traffic forecasts (base + impacts) traffic – TP2 Rajadhok

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	13,507	1,058	403	1,648	587	284	2,846	**20,333**	**34,293**
FY27	13,146	1,093	387	1,652	608	280	2,972	**20,136**	**34,511**
FY28	14,078	1,128	395	1,705	641	285	3,164	**21,394**	**36,545**
FY29	15,045	1,163	402	1,758	672	288	3,330	**22,659**	**38,500**
FY30	16,045	1,198	409	1,811	705	292	3,446	**23,906**	**40,283**
FY31	17,093	1,234	417	1,865	738	295	3,618	**25,259**	**42,349**
FY32	18,210	1,270	424	1,920	772	299	3,799	**26,695**	**44,530**

Source: Steer analysis

Revenue forecasts (with Impacts)

C.3 The following table presents the year-wise annual revenue forecasts for the forecast period until FY32.

Table C.3: Forecasts revenue (INR crores) – TP1 Sikandra

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	28.9	3.1	1.8	18.5	7.0	7.6	61.9	**128.7**
FY27	32.5	3.3	1.9	19.6	7.6	8.0	70.0	**142.8**
FY28	35.3	3.5	2.0	21.1	8.4	8.6	78.1	**156.9**
FY29	39.4	3.7	2.1	22.8	9.2	9.1	86.2	**172.6**
FY30	44.4	4.1	2.3	24.6	10.1	9.7	93.8	**188.9**
FY31	49.8	4.4	2.4	26.5	11.0	10.3	103.1	**207.5**
FY32	55.9	4.8	2.6	28.6	12.1	10.8	112.6	**227.4**

Source: Steer analysis

Table C.4: Forecasts revenue (INR crores) – TP2 Rajadhok

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	36.4	2.9	1.9	16.6	6.0	4.6	47.6	**116.1**
FY27	35.4	3.0	1.9	17.2	6.4	4.7	51.3	**119.8**
FY28	40.0	3.2	2.0	18.7	7.1	5.0	57.0	**132.9**
FY29	45.2	3.5	2.1	20.2	7.8	5.2	62.7	**146.8**
FY30	50.9	3.8	2.3	21.7	8.6	5.6	68.1	**161.1**
FY31	57.1	4.1	2.4	23.4	9.4	5.9	74.9	**177.3**
FY32	64.0	4.5	2.5	25.2	10.3	6.3	82.5	**195.3**

Source: Steer analysis

D Data collection exercise

D.1 To validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

7 days TVC count

Table D.1: 7-day TVC counts at TP1 Sikandra

Date	Toll Plaza	Source	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
26-06-23	TP1	TVC	11,027	1,297	937	1,303	388	404	3,105	7	**18,468**
27-06-23	TP1	TVC	10,281	1,237	1,004	1,293	478	404	3,002	7	**17,706**
28-06-23	TP1	TVC	11,585	1,255	1,069	1,269	453	363	3,061	7	**19,062**
29-06-23	TP1	TVC	11,843	1,085	994	1,194	506	398	3,075	6	**19,101**

Source: Steer analysis

Table D.2: 7-day TVC counts at TP2 Rajadhok

Date	Toll Plaza	Source	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
22-01-25	TP1	TVC	19,340	1,493	1,194	1,683	613	341	3,342	6	**28,012**
23-01-25	TP1	TVC	17,456	1,450	1,204	1,715	633	362	3,820	9	**26,649**
24-01-25	TP1	TVC	19,019	1,430	1,298	1,769	595	371	3,602	5	**28,089**

Source: Steer analysis

Table D.3: Weekly average daily traffic of TVC vs TMS

Toll plaza	Source	CJV+MLCV	LCV	Bus	2 Axle	3A+MAV	OSV	Total
TP1 Sikandra	TVC	12,403	1,001	1,265	456	4,904	8	**17,300**
	TMS	11,359	365	1,705	467	4,965	-	**16,191**
TP2 Rajadhok	TVC	20,063	1,232	1,722	614	3,946	7	**27,583**
	TMS	19,202	542	2,377	150	3,990	-	**26,261**

Source: Steer analysis, TMS=Traffic data shared by Client

Zone list

Table D.4: Zone list used for OD analysis

Zone No	Zone Name	State
1	Andaman & Nicobar Island	Andaman & Nicobar Island

Zone No	Zone Name	State
2	Visakhapatnam	
3	Itanagar	
4	Assam	Assam
5	Bihar	Bihar
6	Chandigarh	Chandigarh
7	Chhattisgarh	Chhattisgarh
8	Dadara & Nagar Havelli	Dadara & Nagar Havelli
9	Daman & Diu	Daman & Diu
10	Goa	Goa
11	Bhuj	
12	Julana	
13	Shmila	
14	Srinagar	
15	Jharkhand	Jharkhand
16	Karnataka	Karnataka
17	Kochi	
18	Lakshadweep	Lakshadweep
19	Hanumana	
20	Maharashtra	Maharashtra
21	Manipur	Manipur
22	Meghalaya	Meghalaya
23	Mizoram	Mizoram
24	Nagaland	Nagaland
25	Rest of NCT of Delhi	Rest of NCT of Delhi
26	Puducherry	Puducherry
27	Punjab	Punjab
28	Rawatbhata	
29	Sikkim	Sikkim
30	Chennai	
31	Telangana	Telangana
32	Tripura	Tripura
33	Robertsganj	
34	Dehradun	
35	Kolkata	
36	Odisha	Odisha
37	Jhalawar	Rajasthan
38	Agra	Uttar Pradesh

Zone No	Zone Name	State
39	Jhansi	Uttar Pradesh
40	Ahmadabad	Gujarat
41	Sheopur	Madhya Pradesh
42	Jhunjhunun	Rajasthan
43	Jodhpur	Rajasthan
44	Ajmer	
45	Shivpuri	Madhya Pradesh
46	Junagadh	Gujarat
47	Shrawasti	Uttar Pradesh
48	Jyotiba Phule Nagar	Uttar Pradesh
49	Kachchh	Gujarat
50	Aligarh	Uttar Pradesh
51	Alirajpur	Madhya Pradesh
52	Siddharth Nagar	Uttar Pradesh
53	Kaithal	Haryana
54	Allahabad	Uttar Pradesh
55	Sidhi	Madhya Pradesh
56	Sikar	Rajasthan
57	Alwar	
58	Ambala	Haryana
59	Ambedkar Nagar	Uttar Pradesh
60	Singrauli	Madhya Pradesh
61	Amreli	Gujarat
62	Sirohi	Rajasthan
63	Sirsa	Haryana
64	Kannauj	Uttar Pradesh
65	Anand	Gujarat
66	Sitapur	Uttar Pradesh
67	Kanpur Dehat	Uttar Pradesh
68	Kanpur Nagar	Uttar Pradesh
69	Kansiram Nagar	Uttar Pradesh
70	Anuppur	Madhya Pradesh
71	Sonbhadra	Uttar Pradesh
72	Ashoknagar	Madhya Pradesh
73	Sonipat	Haryana
74	Auraiya	Uttar Pradesh
75	Delhi	

Zone No	Zone Name	State
76	Karnal	Haryana
77	Azamgarh	Uttar Pradesh
78	Katni	Madhya Pradesh
79	Baghpat	Uttar Pradesh
80	Delhi	
81	Kaushambi	Uttar Pradesh
82	Bahraich	Uttar Pradesh
83	Balaghat	Madhya Pradesh
84	Sultanpur	Uttar Pradesh
85	Kheda	Gujarat
86	Ballia	Uttar Pradesh
87	Surat	Gujarat
88	Kheri	Uttar Pradesh
89	Balrampur	Uttar Pradesh
90	Surendranagar	Gujarat
91	Banas Kantha	Gujarat
92	Banda	Uttar Pradesh
93	Banswara	Rajasthan
94	The Dangs	Gujarat
95	Bara Banki	Uttar Pradesh
96	Baran	Rajasthan
97	Bareilly	Uttar Pradesh
98	Barmer	Rajasthan
99	Tikamgarh	Madhya Pradesh
100	Barwani	Madhya Pradesh
101	Basti	Uttar Pradesh
102	Kota	Rajasthan
103	Tonk	Rajasthan
104	Betul	Madhya Pradesh
105	Udaipur	Rajasthan
106	Kurukshetra	Haryana
107	Bharartpur	
108	Bharuch	Gujarat
109	Kushinagar	Uttar Pradesh
110	Bhavnagar	Gujarat
111	Ujjain	Madhya Pradesh
112	Bhilwara	Rajasthan

Zone No	Zone Name	State
113	Bhind	Madhya Pradesh
114	Umaria	Madhya Pradesh
115	Bhiwani	Haryana
116	Lalitpur	Uttar Pradesh
117	Unnao	Uttar Pradesh
118	Bhopal	Madhya Pradesh
119	Bijnor	Uttar Pradesh
120	Vadodara	Gujarat
121	Bikaner	Rajasthan
122	Valsad	Gujarat
123	Varanasi	Uttar Pradesh
124	Lucknow	Uttar Pradesh
125	Vidisha	Madhya Pradesh
126	Budaun	Uttar Pradesh
127	Bulandshahr	Uttar Pradesh
128	Maharajganj	Uttar Pradesh
129	Bundi	Rajasthan
130	Burhanpur	Madhya Pradesh
131	Mahendragarh	Haryana
132	Delhi	
133	Mahesana	Gujarat
134	Delhi	
135	Mahoba	Uttar Pradesh
136	Mainpuri	Uttar Pradesh
137	West Nimar	Madhya Pradesh
138	Chandauli	Uttar Pradesh
139	Mandla	Madhya Pradesh
140	Mandsaur	Madhya Pradesh
141	Mathura	
142	Chhatarpur	Madhya Pradesh
143	Yamunanagar	Haryana
144	Mau	Uttar Pradesh
145	Chhindwara	Madhya Pradesh
146	Jind	Haryana
147	Dausa	Rajasthan
148	Karauli	
149	Meerut	Uttar Pradesh

Zone No	Zone Name	State
150	Sawai Madhopur	Rajasthan
151	Mewat	Haryana
152	Mirzapur	Uttar Pradesh
153	Chitrakoot	Uttar Pradesh
154	Chittaurgarh	Rajasthan
155	Moradabad	Uttar Pradesh
156	Churu	Rajasthan
157	Morena	Madhya Pradesh
158	Tapi	Gujarat
159	Muzaffarnagar	Uttar Pradesh
160	Damoh	Madhya Pradesh
161	Nagaur	
162	Datia	Madhya Pradesh
163	Deoria	Uttar Pradesh
164	Dewas	Madhya Pradesh
165	Narmada	Gujarat
166	Narsimhapur	Madhya Pradesh
167	Dhar	Madhya Pradesh
168	Navsari	Gujarat
169	Dhaulpur	Rajasthan
170	Neemuch	Madhya Pradesh
171	New Delhi	NCT of Delhi
172	Delhi	
173	Dindori	Madhya Pradesh
174	Delhi	
175	Dohad	Gujarat
176	Delhi	
177	Dungarpur	Rajasthan
178	Delhi	
179	Pali	Rajasthan
180	Palwal	Haryana
181	Panch Mahals	Gujarat
182	Panchkula	Haryana
183	East Nimar	Madhya Pradesh
184	Panipat	Haryana
185	Panna	Madhya Pradesh

Zone No	Zone Name	State
186	Etah	Uttar Pradesh
187	Etawah	Uttar Pradesh
188	Faizabad	Uttar Pradesh
189	Faridabad	Haryana
190	Patan	Gujarat
191	Farrukhabad	Uttar Pradesh
192	Fatehabad	Haryana
193	Fatehpur	Uttar Pradesh
194	Firozabad	Uttar Pradesh
195	Pilibhit	Uttar Pradesh
196	Porbandar	Gujarat
197	Gandhinagar	Gujarat
198	Pratapgarh	Rajasthan
199	Ganganagar	Rajasthan
200	Gautam Bhuddha Nagar	
201	Ghaziabad	Uttar Pradesh
202	Ghazipur	Uttar Pradesh
203	Rae Bareli	Uttar Pradesh
204	Gonda	Uttar Pradesh
205	Gorakhpur	Uttar Pradesh
206	Raisen	Madhya Pradesh
207	Rajgarh	Madhya Pradesh
208	Guna	Madhya Pradesh
209	Rajkot	Gujarat
210	Rajsamand	Rajasthan
211	Gurgaon	Haryana
212	Gwalior	Madhya Pradesh
213	Hamirpur	Uttar Pradesh
214	Rampur	Uttar Pradesh
215	Hanumangarh	Rajasthan
216	Harda	Madhya Pradesh
217	Ratlam	Madhya Pradesh
218	Hardoi	Uttar Pradesh
219	Mahamaya Nagar	Uttar Pradesh
220	Rewa	Madhya Pradesh
221	Rewari	Haryana

Zone No	Zone Name	State
222	Rohtak	Haryana
223	Hisar	Haryana
224	Hoshangabad	Madhya Pradesh
225	Sabar Kantha	Gujarat
226	Sagar	Madhya Pradesh
227	Saharanpur	Uttar Pradesh
228	Indore	Madhya Pradesh
229	Jabalpur	Madhya Pradesh
230	Jaipur	Rajasthan
231	Jaisalmer	Rajasthan
232	Jalaun	Uttar Pradesh
233	Sant Kabir Nagar	Uttar Pradesh
234	Sant Ravi Das Nagar(bhadohi)	Uttar Pradesh
235	Jalor	Rajasthan
236	Satna	Madhya Pradesh
237	Jamnagar	Gujarat
238	Sehore	Madhya Pradesh
239	Seoni	Madhya Pradesh
240	Shahdol	Madhya Pradesh
241	Jaunpur	Uttar Pradesh
242	Jhabua	Madhya Pradesh
243	Shahjahanpur	Uttar Pradesh
244	Jhajjar	Haryana
245	Shajapur	Madhya Pradesh
246	Agra	Uttar Pradesh
247	Fatehpur Sikri	Uttar Pradesh
248	Vrindavan	Uttar Pradesh
t249	Mehandipur	Rajasthan
250	Bharatpur	Rajasthan
251	Mandwar	Rajasthan
252	Jaipur	Rajasthan
253	Mahwa	Rajasthan
254	Balaheri	Rajasthan
255	Bandikui	Rajasthan
256	Banetha	Rajasthan
257	Banskho	Rajasthan

Zone No	Zone Name	State
258	Bhangarh	Rajasthan
259	Brahmbad	Rajasthan
260	Chandrana	Rajasthan
261	Chomu	Rajasthan
262	Dhanawar	Rajasthan
263	Dhiradi	Rajasthan
264	Dolika	Rajasthan
265	Hindaun	Rajasthan
266	Kherli	Rajasthan
267	Kumher	Rajasthan
268	Merta	Rajasthan
269	Nadoti	Rajasthan
270	Neemrana	Rajasthan
271	Nihalpura	Rajasthan
272	Paparda	Rajasthan
273	Arauda	Rajasthan
274	Bagrana	Rajasthan
275	Bamanpura	Rajasthan
276	Bassi	Rajasthan
277	Baswa	Rajasthan
278	Bayana	Rajasthan
279	Bhainsa	Rajasthan
280	Bhandana	Rajasthan
281	Bhandrej	Rajasthan
282	Bhot	Rajasthan
283	Bhusawar	Rajasthan
284	Binua	Rajasthan
285	Chainpura	Rajasthan
286	Chaksu	Rajasthan
287	Dausa	Rajasthan
288	Deeg	Rajasthan
289	Doodhli	Rajasthan
290	Dopur	Rajasthan
291	Dubbi	Rajasthan
292	Geejgarh	Rajasthan
293	Halena	Rajasthan

Zone No	Zone Name	State
294	Helak	Rajasthan
295	Jasota	Rajasthan
296	Jhar	Rajasthan
297	Jhera	Rajasthan
298	Kalera	Rajasthan
299	Kanauta	Rajasthan
300	Kanjoli	Rajasthan
301	Khairwal	Rajasthan
302	Khan Bhankri	Rajasthan
303	Kharkara	Rajasthan
304	Kishangarh	Rajasthan
305	Kolwa	Rajasthan
306	Kumha	Rajasthan
307	Lalwas	Rajasthan
308	Lotwara	Rajasthan
309	Lulhara	Rajasthan
310	Luniawas	Rajasthan
311	Madoli	Rajasthan
312	Mariyada	Rajasthan
313	Mehandipur	Rajasthan
314	Mitrapura	Rajasthan
315	Nadbai	Rajasthan
316	Paharsar	Rajasthan
317	Paota	Rajasthan
318	Pipalkhera	Rajasthan
319	Ramshighpura	Rajasthan
320	Raniwas	Rajasthan
321	Rohtaspura	Rajasthan
322	Sainthal	Rajasthan
323	Sikindra	Rajasthan
324	Sindoli	Rajasthan
325	Singwara	Rajasthan
326	Sinpini	Rajasthan
327	Somara	Rajasthan
328	Sujanpura	Rajasthan

Zone No	Zone Name	State
329	Sukhawali	Rajasthan
330	Todabhim	Rajasthan
331	Vamanpura	Rajasthan
332	Weir	Rajasthan
333	Rajadhok	Rajasthan
334	Sikandra	Rajasthan
335	Myanmar	Myanmar
336	Bhutan	Bhutan
337	Bangladesh	Bangladesh
338	Noida	Uttar Pradesh
339	Bhutan	Bhutan
340	Chokawada	Chattisgarh

Source: Steer Analysis

Direction-wise commodity distribution

Table D.5: Commodity distribution towards Jaipur for TP1 Sikandara

Commodity Category	Mini LCV + LCV	2A Truck	3A Truck	MAV + OSV
Agriculture	15%	16%	20%	20%
Groceries	19%	17%	15%	9%
Construction	5%	10%	8%	10%
Petroleum	2%	-	4%	3%
Manufacturing	-	4%	5%	4%
Automobiles	-	-	1%	0%
Miscellaneous	10%	8%	9%	6%
Metals	-	2%	3%	7%
Empty	49%	44%	37%	41%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

Table D.6: Commodity distribution towards Agra for TP1 Sikandara

Commodity Category	Mini LCV + LCV	2A Truck	3A Truck	MAV + OSV
Agriculture	8%	7%	8%	5%
Groceries	6%	18%	11%	8%
Construction	11%	12%	19%	36%
Petroleum	8%	3%	5%	6%
Manufacturing	15%	12%	13%	15%
Automobiles	2%	1%	-	0%

Miscellaneous	15%	10%	8%	13%
Metals	8%	5%	6%	5%
Empty	28%	32%	31%	11%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

Table D.7: Commodity distribution towards Jaipur for TP2 Rajadhok

Commodity Category	Mini LCV + LCV	2A Truck	3A Truck	MAV + OSV
Agriculture	13%	8%	9%	14%
Groceries	17%	19%	11%	10%
Construction	6%	8%	5%	11%
Petroleum	7%	7%	11%	6%
Manufacturing	6%	8%	5%	7%
Automobiles	0%	1%	-	1%
Miscellaneous	38%	2%	21%	11%
Metals	4%	5%	9%	6%
Empty	9%	42%	29%	34%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

Table D.8: Commodity distribution towards Agra for TP1 Rajadhok

Commodity Category	Mini LCV + LCV	2A Truck	3A Truck	MAV + OSV
Agriculture	11%	3%	10%	8%
Groceries	30%	17%	28%	22%
Construction	15%	33%	15%	27%
Petroleum	7%	11%	10%	8%
Manufacturing	9%	8%	6%	8%
Automobiles	0%	-	2%	1%
Miscellaneous	23%	3%	20%	17%
Metals	4%	6%	5%	5%
Empty	1%	19%	4%	4%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

Trip length distribution

Table D.9:Trip length frequency for TP1 Sikandra

Distance range	LCV	2 Axle	3 Axle	MAV
0-100 km	9%	14%	10%	6%

Distance range	LCV	2 Axle	3 Axle	MAV
100-300 km	39%	42%	36%	26%
300-500 km	13%	9%	12%	11%
500-1000 km	19%	14%	16%	15%
>1000 km	20%	22%	25%	41%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

Table D.10: Trip length frequency for TP2 Rajadhok

Distance range	LCV	2 Axle	3 Axle	MAV
0-100 km	24%	6%	18%	13%
100-300 km	36%	20%	35%	33%
300-500 km	11%	11%	11%	13%
500-1000 km	12%	19%	10%	17%
>1000 km	18%	44%	25%	25%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer Analysis

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Table of Contents

Disclaimer		**iv**
Glossary Items		**vi**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Key economic activities	7
3	**Traffic description**	**11**
	Introduction	11
	Historical trends	12
	Key findings of the TVC data analysis	18
	Key findings of the origin-destination analysis	19
	Conclusions	26
4	**Socioeconomic context and traffic growth**	**28**
	Introduction	28
	Population growth	28
	Economic Indicators	29
	Economic Growth	32
	Forecasts for growth drivers	35
5	**FY26 Base year AADT and Traffic growth Analysis**	**38**
	Introduction	38
	FY26 Base year AADT estimates	38
	Estimation of background elasticities	40
	Forecasts for background elasticities	44
6	**Forecasts: Network overlays and forecasts**	**46**
	Introduction	46
	Analysis of potential network/developmental impacts	46
	Revenue forecasting assumptions	47
	Revenue reconciliation	49
	Upside and Downside cases	51
	Summary outlook	54

Figures

Figure 2-1: Asset location in the regional network context 4

Figure 2-2: Asset context 5
Figure 2-3: Typical cross-sections and toll plazas on the Asset 6
Figure 3-1: Ticket-segmentation for CJV at TP Pampampallam 16
Figure 3-2: Ticket-segmentation for MAV at TP Pampampallam 16
Figure 3-3: Comparison between TVC and TMS daily traffic data on TP Pampampallam 18
Figure 3-4: Comparison between vehicle shares from TVC and TMS WADTs 19
Figure 3-5: Zonal influence at TP Pampampallam 21
Figure 3-6: Internal-external distribution at TP Pampampallam 22
Figure 3-7: Commodity distribution at TP Pampampallam (Total) 24
Figure 3-8: Commodity distribution at TP Pampampallam (towards Palakkad) 24
Figure 3-9: Commodity distribution at TP Pampampallam (towards Coimbatore) 25
Figure 3-10: Trip length distribution TP Pampampallam 26
Figure 4-1: Annual growth – Index of Industrial Production 30
Figure 4-2: Car ownership in India per 1,000 population 31
Figure 4-3: Per Capita Income in Kerala and India (FY15 – FY24) 31
Figure 4-4: Government final consumption expenditure 32
Figure 4-5: Month on Month IIP performance 33
Figure 4-6: Industrial components of GVA 33
Figure 4-7: Evolution of Kerala's state GDP and national GDP, FY12-24 34
Figure 4-8: Sectoral contribution to Kerala's GSDP in FY24 35
Figure 4-9: GDP-GSDP forecast 37
Figure 5-1: FY25 Base Estimation methodology 39
Figure 5-2: Relationship between CJV traffic and GSDP of Kerala & Tamil Nadu 42
Figure 5.3: Relationship between Bus traffic with GSDP of Kerala & Tamil Nadu 43
Figure 5-4: Relationship between LCV and 2A with GSDP of Kerala 43
Figure 5-5: Relationship between 3A + MAV and GDP India 44
Figure 6-1: Traffic and growth rates for forecast PCUs - Background and final, TP1 Pampampallam 51

Tables

Table 1-1: Scope of work and sources of data 1
Table 2-1: Summary of concession 6
Table 2-2: Single toll rates on the Asset (INR), applicable April 2025 to March 2026 7
Table 2-3: Category-wise cargo handled at Kochi Port (in '000 Tonnes) 10
Table 3-1: PCU factors 11
Table 3-2: Historical evolution in AADT by vehicle class at TP Pampampallam 12
Table 3-3: Historical evolution in tollable traffic levels at TP Pampampallam 12
Table 3-4: Total revenue (INR Cr) and AADC (in INR Lakhs) at TP1 Pampampallam 14
Table 3-5: Typical ticket types sold at TP Pampampallam 14
Table 3-6: Ticket-segmentation for LV, Bus, 2A and 3A Categories at TP Pampampallam 17
Table 3-7: Data collection schedule 17

Table 3-8: ADT at TP Pampampallam	18
Table 3-9: Sample rates for OD data	20
Table 3-10: Zone aggregations for zonal influence analysis	20
Table 3-11: Aggregate commodity categories	22
Table 3-12: Average Trip Length	26
Table 4-1: CAGR of population in India	28
Table 4-2: Population Growth in Kerala and India (FY12 – FY24)	29
Table 5-1: Seasonality correction factors for TP1 Pampampallam	39
Table 5-2: Adopted base AADT for FY26	40
Table 5-3: Identified growth drivers to model traffic growth	41
Table 5-4: Adopted forecast elasticities for background growth	45
Table 6-1: Impact of Recovery in Construction for TP1	46
Table 6-2: WPI growth forecast assumptions	47
Table 6-3: Forecast toll segmentation from FY26 onwards	48
Table 6.4: Annual pass compensation for CJVs (in Crore)	48
Table 6-5: Trip factors for the forecast years	49
Table 6-6: FY26YTD AADC (April – September) Revenue reconciliation summary (INR lakhs)	49
Table 6-7: Forecast (background plus impacts) AADT for TP1 Pampampallam	50
Table 6-8: Forecast (background plus impacts) AADT CAGR (%) TP1 Pampampallam	50
Table 6-9: Forecast (background plus impacts) revenue (INR crores) forecast for TP1 Pampampallam	50
Table 6-10: Forecast (background plus impacts) revenue CAGR (%) for TP1 Pampampallam	50
Table 6-11: Summary of Macro-economic Assumptions for upside and downside cases	52
Table 6.12: Summary of impacts on the Assets	52
Table 6.13: Summary of impacts on the Assets	52

Appendices

A	**Top 10 OD Pairs**
B	**Data collection exercise**
C	**Detailed forecasts**

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
Km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Walayar-Vadakkencherry Expressway Private Limited (hereafter called the "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on primary surveys undertaken in 2023 and 2024, and actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset consists of a 53.5 km single toll road section of the NH544 between Walayar and Vadakkencherry in Kerala, with a single toll plaza (hereafter, referred to as "TP1" or "Pampampallam") located west of Palakkad and east of the Kerala-TN state border.

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
Review of historical Traffic Management System (TMS) data, Vendor reports and documents	Provided by client for the period between May 2015 and September 2025
Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable.
Validation of revenue reported in FY25YTD	TMS data provided by Client Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	Origin Destination (OD) surveys undertaken by Steer in 2024
Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by Steer based on Generalised Journey Cost spreadsheet-based analysis
Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors,	Calculated from historical data provided by Client

— Overloading shares	
Final traffic growth forecasts including baseline growth rates and potential future impacts	Elasticity based base growth and potential impacts from secondary research, Asset historical traffic performance and Steer's in-house experience of working on toll roads on the corridor Gross Domestic Product (GDP) forecast assumptions provided by Client
Toll revenue estimation for the entire concession, including toll evolution	Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI) and latest actual Wholesale Price Index (WPI) trends as shared by the Client. Assumptions of WPI forecasts and future tolling length changes provided by Client Revenues estimated as a product of traffic forecasts and toll evolution

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis is focused on two sets of issues, namely:

Understanding the traffic that is currently using the Asset; and
Identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
- TMS data from May 2015 to September 2025
- Concession agreement and toll notifications for FY25 and FY26
- Previous studies related to traffic and revenue
- Steer-commissioned OD survey on 6th February 2024 at Pampampallam toll plaza to validate any change in growth drivers and travel patterns.
- Steer-commissioned TVC survey from 28th June to 30th June 2023 at Pampampallam plaza.
- We undertook revenue reconciliation for FY26YTD (April 2025 to August 2025) by building up revenue from the traffic reported by the toll plaza and subsequently matching it to the reported revenue for FY26YTD using the prevailing toll rates and reported segmentation/toll-frequencies for FY26YTD. This is a key part of our analysis to validate our future segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for the toll plaza.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against six months of actual traffic (April-September 2025) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by Client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future.
- Preparing traffic and revenue forecasts for the Asset for the complete length of concession. The analysis here includes the specific impacts of network or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.7 The report has been divided into the following chapters:

1. Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
2. Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
3. Chapter 3 summarises the current and historical traffic trends on the Asset, including results from the TMS, TVC and OD analysis;
4. Chapter 4 presents the socio-economic context of India, the corridor and region/state containing the Asset, along with our approach and results on estimating background along with our key forecasting assumptions,
5. Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
6. Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases.

2 The Asset

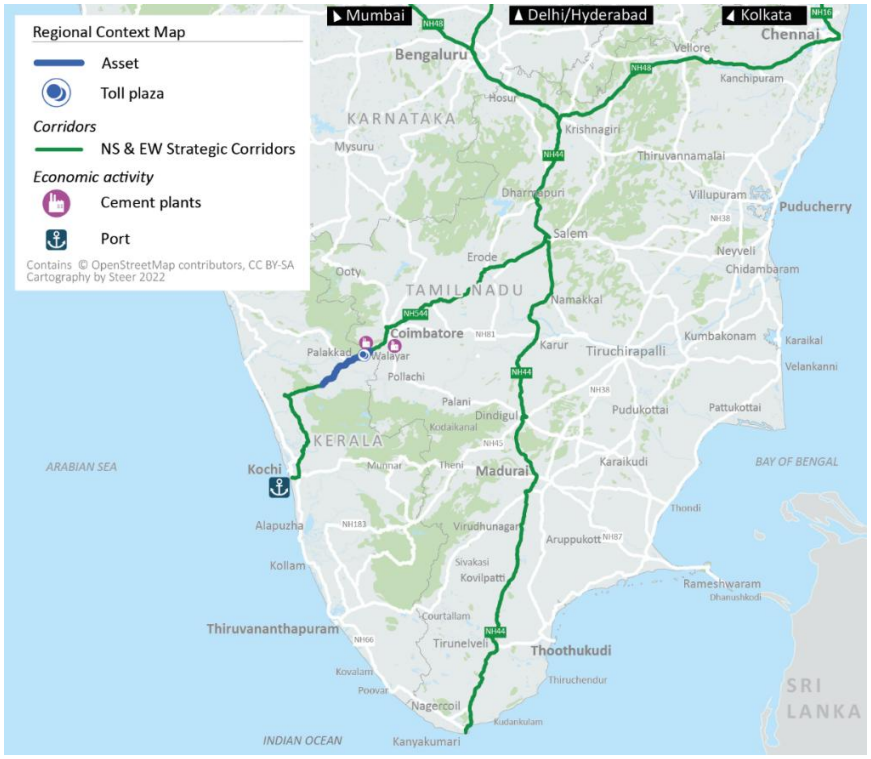
Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the Asset's strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of Kerala, connecting Walayar, a town located on the Tamil Nadu-Kerala border and Vadakkancherry, a town in the Palakkad district of Kerala. The Asset is a section of the strategic NH544 which itself is a spur of the NH44 running that runs north-south across the country (Srinagar-Kanyakumari). The section where the Asset is located serves as a key entry point for Kerala from its eastern end, through Palakkad, which is a stretch of low-lying passes between the mountain ranges of the Nilgiris and the Western Ghats. Figure 2-1 below shows the regional road network in which the Asset is located.

Figure 2-1: Asset location in the regional network context



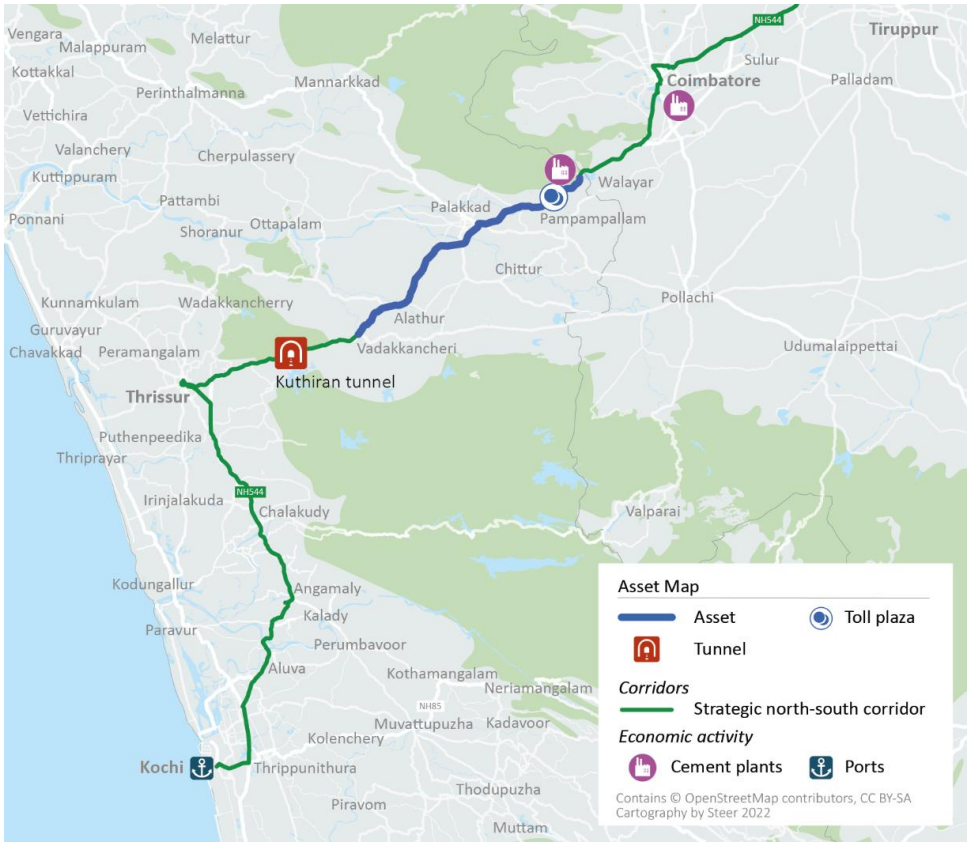
Source: Steer cartography using OpenStreetMap data

2.3 This Asset primarily caters to three different types of strategic movements:

- **Short-distance trips** undertaken largely by passenger vehicles for work/business trips wherein the movement is predominantly local in nature, between Walayar and other areas in the Palakkad district.
- **Medium-distance trips** made by both passenger and goods vehicles covering places such as Ernakulam/Kochi in Kerala, to Erode and Salem in Tamil Nadu.
- **Long-distance trips** predominantly by MAVs catering to Kerala's demand for consumption goods and cement, from areas lying outside the state such as Chennai, Bangalore, Vijayawada, and the rest of the country.

2.4 The Asset is a 53.5 km toll road which forms a part of the NH544, a key highway connecting Salem in Tamil Nadu to Kochi in Kerala. It is a four-lane road with one toll plaza, namely, Pampampallam Hamlet (Pampampallam) at km 189.4 (closer to Walayar). Figure 2-2 below provides a closer view of the Asset in the context of its immediate surroundings.

Figure 2-2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.5 The toll plaza on the Asset has been operational since May 2015, and the Client took over its operations on 29th September 2020. There are 13 years remaining in the concession period which ends in FY38. Table 2.1 below presents a summary of the concession.

Table 2.1: Summary of concession

	Particulars
State	Kerala
Highway and lane configuration	NH544; 4-laned
Toll plazas	TP1: Pampampallam
Length (km) as per concession agreement, applicable	TP1: 53.5 km
Commencement of operations	May 2015
Operated by Client since	29th September 2020
Concession period	22 years
Last year of concession	FY38

Source: Client data

2.6 Figure 2-3 below shows a typical cross-section of the Asset and its toll plazas.

Figure 2-3: Typical cross-sections and toll plazas on the Asset

Source: Steer site visit

2.7 Tolls on the Asset are collected as shown in Table 2.2 below. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling. Toll rates applicable for FY26 are provided in the following table.

Table 2.2: Single toll rates on the Asset (INR), applicable April 2025 to March 2026

Type of Vehicle	Single Journey Fee
CJV	80
LCV	130
Bus/2A	275
3A/MAV	430
OSV	525

Source: NHAI Revision of User fee Rate w.e.f 01.04.2025

2.8 Apart from single tickets, the typical NHAI ticket categories like return, monthly, local personal and local commercial passes are also available on the Asset.

Key economic activities

Tourism

2.9 Kerala, one of the two south Indian states forming the southern tip of the Indian peninsula (the other state being Tamil Nadu), and commonly called as "God's Own Country", is known for its largely consumption-based and tourism-centred economy. It is known as the 'Land of Spices' and is a leading producer of pepper, cardamom, and rubber. Other items such as coffee, rice, coconut, tea, cashew, and spices also make up for a share in the state's agricultural output which is distributed to various parts of the country.

2.10 Its rich culture and natural landscape have put the state on the world map as a major tourist destination wherein this sector contributes to 10% to the state GSDP[1]. The city of Thrissur which lies along the strategic north-south corridor (see Figure 2-2: Asset context) is a key tourist destination in the state and is a seat of culture hosting significant festivals.[2]

2.11 Kerala's image as a prime tourist destination is evident by the fact that it attracted 22.3 million tourists in CY 2024, marking a substantial increase of 21% from the pre-pandemic period[3]. The state government has announced the K-Homes project in the 2025-26 budget to increase accommodation for tourists – this is expected to take the state's tourism sector to new heights.[4]

2.12 Given Kerala has very limited entry points from the rest of the country, the Asset forms an integral part of the NH544 east-west corridor and is the only four laned national highway that provides connectivity and a point of entry into the state from Tamil Nadu. Some of the major settlements along the Asset include Walayar, Kanjikode, Palakkad, Alathur and

[1] ECONOMIC REVIEW 2017 | State Planning Board, Thiruvananthapuram, Kerala, India

[2] Major festivals include Attukal Pongala (February), Eid al-Fitr (March), Eid al-Adha (June) and Onam (August-September)

[3] As per the Ministry for Tourism and Public Works, Government of Kerala

[4] Kerala attracts over 2.22 crore tourists in 2024 - tourismindiaonline.com

Vadakkancherry whereas long-distance traffic on the road serves cities in other states such as Coimbatore, Salem, Bangalore, and Chennai.

Cement and Construction

2.13 The construction industry contributes a significant share of Kerala's overall state GSVA, at approximately 14% of the state GSDP as of FY24.The industry has also grown consistently over the last ten years, at roughly 3.5% per year between FY14 and FY24 [5]. This consistent growth has been driven by the continued push towards construction projects in Kerela, such as - the widening of NH66[6], other infrastructure such as construction of the Lulu Mall in Kottayam [7]and the construction of Government Medical College, Idukki [8].

2.14 The Kerela Infrastructure Investment Fund Board (KIIFB) has been established by the Government of Kerala to mobilize funds for infrastructure development. Major projects that have been taken up by the KIIFB include a Petrochemical and Pharma Park in Kochi & a Coastal and Hill Highway, connecting different cities within Kerala [9]

2.15 The state of Kerala is also rich with mineral deposits; there were around 643 active quarries and 1,433 active mineral depots within the state as of September 2023[10]. A majority of these units deal with the extraction and processing of granite deposits to cater to construction demand. A considerable number of crushers are present south of the Asset. In additional to stone quarries within the state, construction material is also sourced from the state of Tamil Nadu via Coimbatore. Currently, most of the construction material in Kerala is sourced from mines in Tamil Nadu, particularly in Coimbatore.

2.16 Walayar, part of the Palakkad district in Kerala and situated on one end of the Asset is a small industrial town at the state border between Kerala and Coimbatore, Tamil Nadu. It is home to the state-owned Malabar Cements Limited (MCL) which is the one of the state's largest public sector undertakings (PSU) in cement production, with a production capacity of 6.6 lakh MT per annum.[11]

2.17 The cement produced by MCL caters to 6-8% of the requirement for the whole of Kerala. Future plans include raising the market share to 25% and augmenting the capacity from 0.66 to 0.8 MMTA (million metric tonne per annum) along with an addition of 1 MTA grinding facility and modernisation of the mill at the Walayar plant.[11]

2.18 Kanjikode, situated in the middle of the Asset, is one of the largest industrial areas in Kerala. It is home to the manufacturing base for companies such as Bharat Earth Movers, Pepsico, PPS Steel Pvt. Ltd, Marico, United Breweries and Empee Distilleries.

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[5] **Gross State Value Added by Economic Activity - Kerala**

[6] **Completion of NH 66 Six-Laning Project Expected by End of 2025 | Thiruvananthapuram News - The Times of India**

[7] **Kottayam Lulu Mall inaugurated, opens to public** (December 2024)

[8] **Collector asks company to finish Idukki medical college works immediately (May 2024)**

[9] **KERALA INFRASTRUCTURE INVESTMENT FUND BOARD**

[10] **DMG Dashboard (kerala.gov.in)**

[11] **Malabar Cements**

2.19 While construction of Lulu Mall in Kottayam has been completed in December 2024, the widening of NH66 and construction of GMC, Idukki has been largely completed, thereby causing a drop in construction traffic on the Asset.

2.20 Due to a combination of demand and supply-side disruptions, the movement of construction material from Tamil Nadu into Kerala has significantly reduced. This decline is largely attributed to regulatory and logistical challenges, including the imposition of a mineral-bearing land tax of ₹90/tonne on crushed stone by Tamil Nadu's mining department in April 2025, which triggered strikes by quarry and lorry associations in Coimbatore. Although the strikes were short-lived, the tax remains in force, discouraging outbound quarry traffic. On the Kerala side, material shortages have been exacerbated by border permit issues, as noted in March 2025 reports. In response, Kerala has granted preliminary consent for 885 new quarries—a 160% increase—indicating a strategic push towards self-sufficiency. We expect these dynamics to stabilise over the next year, after which the movement of construction vehicles between Tamil Nadu and Kerala should increase, bringing some traffic volumes back to the Asset.

Refinery

2.21 Kochi Refinery operated by the Bharat Petroleum Corporation Limited (BPCL), the country's second-biggest fuel retailer, lies within the region of influence of the Asset and produces all fuel-based refinery products - benzene, sulphur, white spirit for the domestic market, and fuel oil for exports.

2.22 BPCL plans to expand the capacity of the Kochi refinery from 15.5 million tons per year (tpy) to 18 million tpy by 2028, as a part of wider expansion plans.[12] This expansion includes upgrading to produce higher-value products and integrating petrochemical facilities, including producing more niche petrochemicals[13]

Ports

2.23 Kerala has a coastline of approximately 590km. The state also has 20 ports (2 major and 18 minor ports), with Kochi port being the largest freight handling port.[14]

2.24 The Asset is located ~110 km from the Kochi port and caters to port-bound traffic. The key commodities handled at the port include petroleum products, crude oil, chemicals, foodgrains, and containers. As per FY24 figures, Kochi which is the largest commercial port in Kerela handled around 36 million metric tonnes of cargo. The port handled all major categories of cargo including liquid bulk, dry bulk, break and containers.

2.25 The historical cargo handling performance of the port till FY25 is presented in Table 2.3 below. The traffic handled at the port has grown at a healthy 6.1% CAGR between FY16 – FY25.

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[12] **India's BPCL plans to expand refining capacity by 2028 | Reuters**

[13] **BPCL in talks with lenders to raise about Rs 32,000 crore for refinery expansion, petchem projects:**

[14] The major ports are Cochin and Vizinjham. The minor ports in Kerala are: Quilon, Calicut, Valiyathura, Neendakara, Kayamkulam, Aleppey, Manakkodam, Kottayam, Kodungallur, Ponnani, Beypore, Koyilandy, Thalassery, Kannur, Azhikkal, Nileshwaram, Kasargod and Manjeswaram.

Table 2.3: Category-wise cargo handled at Kochi Port (in '000 Tonnes)

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	CAGR (FY16-FY25)
Liquid Bulk	14,707	16,665	19,963	22,430	23,810	20,163	22,609	22,870	24,830	25,097	6.1%
Dry Bulk	1,544	1,467	1,420	1,417	1,480	1,633	1,553	2,363	1,167	1,232	-2.5%
Break Bulk	62	35	63	59	120	157	110	136	139	149	10.2%
Containers	5,785	6,840	7,692	8,116	8,628	9,550	10,278	9,986	10,179	11,267	7.7%
Total	22,098	25,007	29,138	32,022	34,038	31,503	34,550	35,256	36,315	37,745	6.1%
YoY Growth	2.3%	13.2%	16.5%	9.9%	6.3%	(7.4%)	9.7%	2.0%	3.0%	4%	

Source: Steer analysis of **Cochin Port Authority** data

3 Traffic description

Introduction

3.1 This chapter presents historical and current traffic and revenue trends on the Asset, as well as our analysis of origin-destination (OD) survey data and traffic count data. This covers data which was collected as a part of this study and in previous studies, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of traffic currently using an Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes, and areas of influence in the vicinity of the Asset, as well as the commodities being moved by the goods vehicles via the Asset. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data is provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU Factor assumption

3.4 The PCU values considered in Table 3.1 below are as per IRC64 1990[15]. Based on discussions with the Client, for reporting purposes, we have referred to the Rigid and Trailer truck splits in the TVC counts for calculating the effective PCU for MAV trucks. For Rigid trailer trucks we have assumed a PCU factor of 3, whereas for Trailer trucks we have assumed a PCU factor of 4.5 as defined in IRC64 1990[16]

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV	1.0
LCV	1.5
Bus/2A/3A	3.0
MAV	3.6
OSV	4.5

Source: Steer analysis and IRC64,1990

[15] IRC 064: Guidelines for Capacity of Roads in Rural Areas

[16] On this Asset, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the Asset (conducted in Jun 2023)

Historical trends

3.5 Table 3.2 and Table 3.3 below present historical total traffic, and historical tollable traffic volumes (by each vehicle category) observed at TP Pampampallam between FY18 and FY25 (respectively). FY26YTD volumes were calculated using actual traffic data available for the period April 2025 through September 2025.

Table 3.2: Historical evolution in AADT by vehicle class at TP Pampampallam

	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	FY18 - FY25 (CAGR %)
Car	9,188	9,743	10,672	6,658	7,971	12,985	14,190	14,974	16,128	7.2%
LCV	1,696	2,325	2,375	1,542	1,544	1,805	1,810	1,954	2,173	2.0%
Bus	960	928	974	329	366	972	1,076	1,127	1,041	2.3%
2A	681	920	964	974	1,231	1,362	1,445	1,536	1,539	12.3%
3A/MAV	2,132	2,537	2,631	2,732	2,939	3,536	3,710	3,312	3,122	6.5%
OSV	2	2	3	2	3	3	2	3	2	3.5%
Total AADT	**14,658**	**16,455**	**17,619**	**12,237**	**14,054**	**20,662**	**22,232**	**22,905**	**24,005**	**6.6%**
Total PCU	**26,268**	**30,229**	**31,835**	**24,726**	**28,319**	**34,894**	**37,264**	**37,320**	**38,242**	**6.5%**

Source: Steer analysis of the Client data; FY26YTD consists of data from Apr'25 to Sep'25

Table 3.3: Historical evolution in tollable traffic levels at TP Pampampallam

	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	FY18 - FY25 (CAGR %)
Car	8,924	9,187	10,240	6,361	7,734	12,711	13,885	14,700	15,717	7.4%
LCV	1,649	2,248	2,343	1,519	1,534	1,800	1,806	1,949	2,146	2.4%
Bus	330	315	376	177	317	969	1,068	1,107	1,009	18.9%
2A	673	890	948	968	1,229	1,360	1,441	1,532	1,533	12.5%
3A/MAV	2,116	2,483	2,564	2,715	2,929	3,532	3,708	3,310	3,137	6.6%
OSV	2	1	3	2	3	3	2	3	2	5.1%
Tollable AADT	**13,693**	**15,124**	**16,473**	**11,741**	**13,745**	**20,372**	**21,911**	**22,601**	**23,543**	**7.4%**
Tollable PCU	**21,707**	**24,738**	**26,574**	**21,438**	**24,777**	**34,587**	**36,913**	**37,733**	**38,112**	**8.2%**

Source: Steer analysis of the Client data; FY26YTD consists of data from Apr'25 to Sep'25; Tollable traffic excludes exemptions and violations

3.6 Historically, CJVs have accounted for the highest share of total traffic observed on the Asset; as of FY26YTD, they accounted for 67% of total traffic on the Asset. This is consistent with expectations, given the Asset's proximity to the major urban centres of Walayar and Palakkad, where there exists high demand for passenger transportation to school or work, and for tourism-related, and medical services. Overall, CJV traffic has observed annual growth of about CAGR of 7.6% between FY18 and FY25, relative to

Kerala's GSDP growth of 4.1% per year over the same period. This trend has continued in FY26 as well, with a 10% increase in FY26 YTD.

3.7 Trucks on the Asset largely cater to construction demand within the state of Kerala as well as consumption demand arising from local and regional activity centres within the state. Key commodities on the Asset comprise stone and cement which are carried by heavy goods vehicles (3A/MAV). The stone movement happens round the year, with lower movement observed in June and July due to heavy rains. Between FY18 and FY25, MAV traffic grew at an average 6.6% per year, while construction GVA in the state grew at 4.2% per year over the same period.

3.8 As of FY26YTD, 3A and MAV volumes on the Asset observed a decline of 6% over FY25 levels. This is mainly due to reduced movement of construction material into Kerala from Tamil Nadu post border-cess introduction in Tamil Nadu in October 2022[17] as well as a crackdown on illegal stone and sand mining in Tamil Nadu in recent years[18], effectively reducing the supply of construction materials available to transport to Kerala. In April 2025, the mining department of Tamil Nadu had also introduced a mineral-bearing land tax of INR 90/tonne on crushed stone[19]. This corresponded with the mining and geology department of Kerala granting permission for 885 quarries in Kerala[20].

3.9 As a result, the demand for aggregate and construction material from Tamil Nadu's quarries has reduced along with an increase in supply of the same from Kerala. This is expected to impact stone-carrying traffic on the Asset. Given the historical demand of construction material in kerela; it is expected that the ongoing issue of reduced supply from Tamil Nadu is expected to improve over the next 12-18 months,

3.10 Bus traffic at Pampampallam toll plaza has grown at a 1.9% CAGR, between FY18 and FY24. Buses have experienced a rebound post the pandemic-impacted years of FY21 and FY22, due to the region's resurgence in tourism post-pandemic. As per data from Kerala's Department of Tourism, approximately 70% of the tourists frequenting popular destinations were from the state itself, as of CY 2024.[21] with additional influence from people in the nearby states of Tamil Nadu, Karnataka, Andhra Pradesh and Telangana.

3.11 Bus traffic plying on the Asset grew by 166% in FY23 and a further 11% in FY24, highlighting the post-COVID recovery. Between FY18 and FY25, buses have grown at a CAGR of 2.3%, with recovery continuing at a steady pace.

3.12 Tollable traffic on the Asset has shown marginally faster growth than observed for total traffic. The observed CAGR of tollable PCU for FY18-25 is 8.2 % which is higher than the growth observed for PCU at total (tollable + non-tollable) level of 6.5%.

3.13 Table 3.4 below present total revenue (in INR Lakhs) by each vehicle category at TP1 Pampampallam plaza over the period FY21 through FY25YTD. It can be noticed that the AADC has grown year on year with the FY25YTD AADC being 1.3% higher than that in

[17] **Vehicles coming to TN can now pay permit fees, road tax online**

[18] **ED in letter to TN DGP says sand mining happening in massive scale, demands action**

[19] **Owners of quarries, crusher units and trucks begin indefinite strike in TN**

[20] **Mining and Geology dept grants permission for 885 quarries in Kerala**

[21] **Keralites account for 69% of domestic tourist footfall in State - The Hindu**

FY24. This is in line with the increase in traffic as well as the revision in toll rates post-elections in June 2024.

Table 3.4: Total revenue (INR Cr) and AADC (in INR Lakhs) at TP1 Pampampallam

Year	Total revenue (INR Cr)	*AADC (INR lakhs)	AADC Growth (%)
FY21	41.2	11.3	
FY22	65.6	18.0	**59.3%**
FY23	96.6	26.5	**47.0%**
FY24	106.8	29.2	**10.2%**
FY25	109.3	29.9	**2.7%**
FY26YTD	48.7	26.6	**-**

Source: Client data *AADC represents Average Annual Daily Collection and FY26YTD represents data for 6 months (April 2025-September 2025);

Toll Frequencies

3.14 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy that is part of the Asset concession agreement. As a part of our historical data analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the Client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these category passes instead of evading toll.

3.15 Understanding the toll frequency gives insights into the nature of traffic plying on the Asset. CJVs generally have higher shares of return passes or local monthly passes because they travel for short to medium distances, while heavy trucks mostly have single tickets since they travel longer distances. Toll roads catering to short distance local traffic generally observe high shares of return tickets or other local monthly passes, while the other roads that cater to strategic long-distance traffic generally observe higher shares of single ticket traffic.

3.16 Table 3.5 below summarize the types of tickets being sold at TP Pampampallam.

Table 3.5: Typical ticket types sold at TP Pampampallam

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows the vehicle to cross the plaza twice in a day at discounted rates.
Monthly Pass	Discounted single ticket pass users issued at toll plaza for users who intend to undertake multiple single trips within a month. 50 trips are given at a discounted rate
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.17 In addition to the above ticket categories, toll plazas generally also record violations, which are non-paying users, and who are not officially allowed under the exemptions category but are forced exemptions. For the Asset, the segmentation discussed below reports Exemptions and violations together.

3.18 As a general pattern, the shares of single/return/monthly tickets tend to stabilise within 2-3 years of the commencement of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns. During FY21 and FY22 however, two key events impacted traffic patterns throughout the country: COVID-19 and government mandated FASTag implementation.

Introduction of Annual pass for CJVs

3.19 The National Highway Authority of India launched the "The FASTag Annual Pass" on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.20 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag. The Annual Pass aims to:

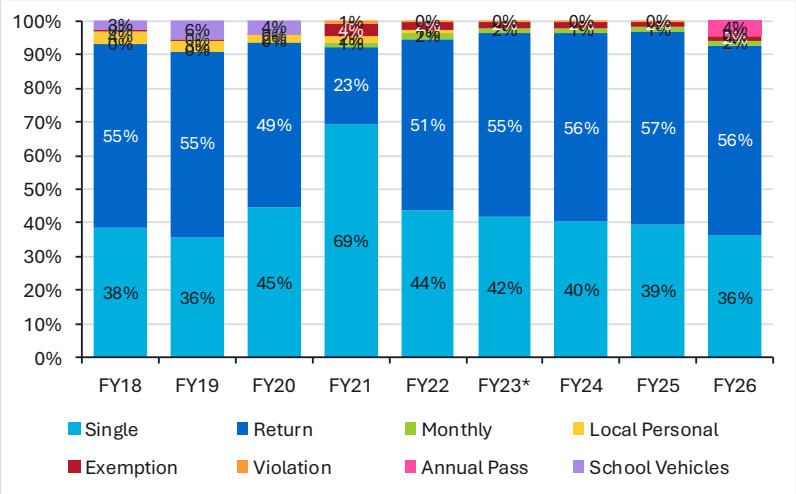
- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls

Share of traffic by payment type

3.21 In FY21, there was a change in ticket patterns across most toll roads in the country (including the Asset) due to the mandatory implementation of FASTag as a mode of payment for road users, as well as changes in travel behaviours induced by lockdowns due to the Covid-19 pandemic. As trip patterns stabilised from the mandatory implementation of FASTag, FY22 was further impacted by the 2nd wave of Covid-19 in Q1 and Q2, resulting in an extended period of travel disruption, where the share of shorter distance trips increased as several states implemented state entry barriers.

3.22 Figure 3-1 and Figure 3-2 below show ticket segmentation for CJV and MAV categories from FY18 to FY26YTD.

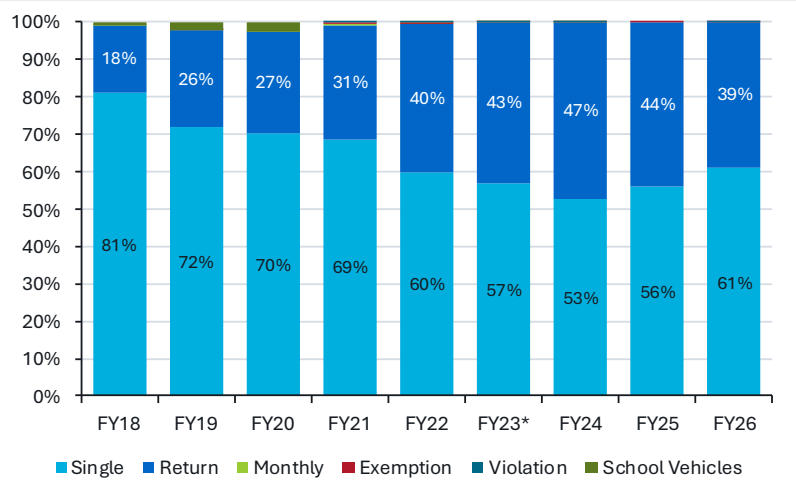
Figure 3-1: Ticket-segmentation for CJV at TP Pampampallam



Source: Steer analysis of the Client data; FY26YTD contains data from Apr-Aug'25; issuance of annual passes commenced from 15 August 2025

3.23 Over the historical period (except FY20-22 when Covid-19 and FASTag implementation resulted in changes to travel behavior), "Return" tickets formed the majority of CJV trips on the Asset, accounting for roughly 55-57% of the total every year. This is due to proximity of the Asset to densely populated centres such as Palakkad, Walayar, and Coimbatore.

Figure 3-2: Ticket-segmentation for MAV at TP Pampampallam



Source: Steer analysis of the Client data; FY26YTD is from Apr'25 to Aug'25

3.24 For MAVs, single journey tickets decreased from 69% to 53% between FY21 and FY24 and has risen to 61% as of FY26YTD. Over the same period, return journey tickets increased from 31% to 39%. This trend is due to various events in the state of Kerala:

- The closure of quarries after the expiration of permits in January 2024 [22]and illegal quarries being shut down by the Ministry of Environment and Forests (MoEF) in

[22] 300 quarries in state to be shut; Challenges for construction sector in Kerala

November 2024 has led to the setting-up of various dumping yards near Palakkad.[23] These dumping yards observe a high share of movement from areas like Coimbatore, which has also influenced the return share increasing year-on-year for MAVs on the Asset. Similar movement from Coimbatore is also observed for construction purposes, which caters to demand on alternate routes from our Asset.

- With the increasing ETC penetration, the share of return traffic has increased as the traffic which returns within 24-hour is eligible for return ticket automatically.

3.25 Table 3.6 below presents the FY26YTD (April to September) segmentation for LCV, Bus and 2A category.

Table 3.6: Ticket-segmentation for LV, Bus, 2A and 3A Categories at TP Pampampallam

Ticket Category	LCV	Bus	2A	3A
Single	35.5%	42.9%	56.5%	60.9%
Return	55.0%	28.9%	43.3%	39.1%
Monthly	9.2%	27.5%	0.0%	0.0%
Local Personal	0.0%	0.0%	0.0%	0.0%
Violations	0.0%	0.0%	0.0%	0.0%
Exemptions	0.3%	0.4%	0.2%	0.1%

Source: Steer analysis of the Client data

Data Collection exercise

3.26 To validate and inform various inputs used in our forecasting, we undertook primary data collection on the Assets, comprising the surveys listed in Table 3.7 below. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.7: Data collection schedule

3-day videography-based TVC			1-day OD survey			
Start date	End date	Time (hrs)	Start date	Start Time	End Date	End Time
28th Jun 2023	30th Jun 2023	0000-2359	6th Feb 2024	0900 hours	7th Feb 2024	0900 hours

Source: Steer analysis

3.27 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic

[23] MoEF Cracks Down on Illegal Quarries in Kerala with New EC Guidelines | Kochi News - Times of India

counts are generally recommended, and hence, to fully understand the impact of this weekly fluctuation on the Asset, we collected three-day counts at the toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.28 Taking an average of the 4-day TVC counts (28th Jun – 30th Jun 2023, 0000-2359), we obtained the following average daily traffic (ADT). This ADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Table 3.8: ADT at TP Pampampallam

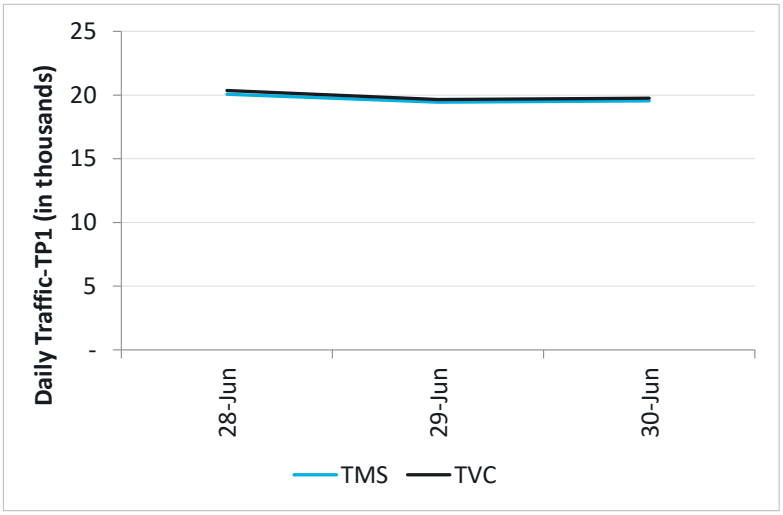
Toll Plaza	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
TP1 Pampampallam	11,180	1,447	2,368	934	1,183	555	2,252	3	**19,921**

Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.29 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those particular days, as provided by the Client. The following figures show the comparison between the daily traffic observed by TVC and TMS for the toll plaza.

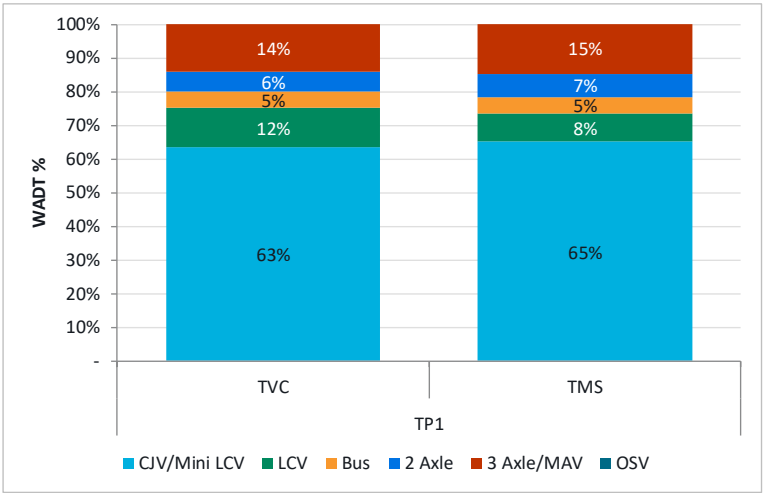
Figure 3-3: Comparison between TVC and TMS daily traffic data on TP Pampampallam



Source: Steer analysis of TVC and Client TMS data

3.30 As can be seen from Figure 3-3 above, the difference between daily traffic from both sources is minimal. Figure 3-4 below compares the shares of vehicle types at both toll plazas observed by the TVC and TMS data. In terms of individual vehicle categories as well, the difference is minimal (1-3%) which could be attributed to common misclassification of vehicle categories between CJV, Mini LCV, LCV and 2A.

Figure 3-4: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.31 Considering the smaller variation between the TVC and TMS data for the largest revenue generators-CJV and 3A+MAVs, and an overall good fit in the traffic volumes, TVC-TMS analysis gives us the confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

Key findings of the origin-destination analysis

Overview

3.32 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. We have analysed the regional drivers of demand based on the following analysis:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.33 While zonal analysis and the list of top OD pairs help to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported on this Asset. Trip length distribution shows 'how far' vehicles and people travel, and goods get transported. This set of analyses is used to estimate key drivers of traffic and aid in making informed forecasting assumptions related to traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.34 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples by the TVC count observed on the same date for each vehicle category at the toll plaza. Table 3.9 below presents the sample rates for key vehicle type aggregations at the toll plaza. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3.9: Sample rates for OD data

Vehicle type	TP Pampampallam
Passenger (CJV+Bus)	28%
Goods (LCV+2A+3A+MAV+OSV)	53%

Source: Steer analysis of OD data

3.35 Low sample rates for passenger vehicles are due to short stop times at the toll plaza post implementation of FASTag where the queuing at plazas have decreased and time to record survey responses, especially for private vehicles (CJVs) have also reduced.

Zone Categories

3.36 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states, and regions in the vicinity of the Asset, we have aggregated zonal data as described Table 3.10 below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Assets being studied.

Table 3.10: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of State (RoS)	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Tamil Nadu	Parts of Tamil Nadu not belonging to local or IAOI aggregations
Karnataka	Karnataka
North India	Uttarakhand, Uttar Pradesh, Rajasthan, Delhi, Haryana, Punjab, Jammu and Kashmir
Central India	Madhya Pradesh, Chhattisgarh
West India	Gujarat, Maharashtra, Goa
Rest of South India	South Indian states other than Kerala, Karnataka, and Tamil Nadu
East & Northeast India	West Bengal, Bihar, Orissa, Jharkhand, and Northeast Indian states

Source: Steer analysis

Zonal influence

3.37 The zonal influence is the contribution of the zone or the zonal aggregation to trips on the Asset for a given vehicle type. This section presents the zonal influence of these zones/zone aggregates on the Asset as retrieved from the OD survey data, and as based on zonal aggregation list presented in Table 3.10 above. [24] It should be noted that zonal

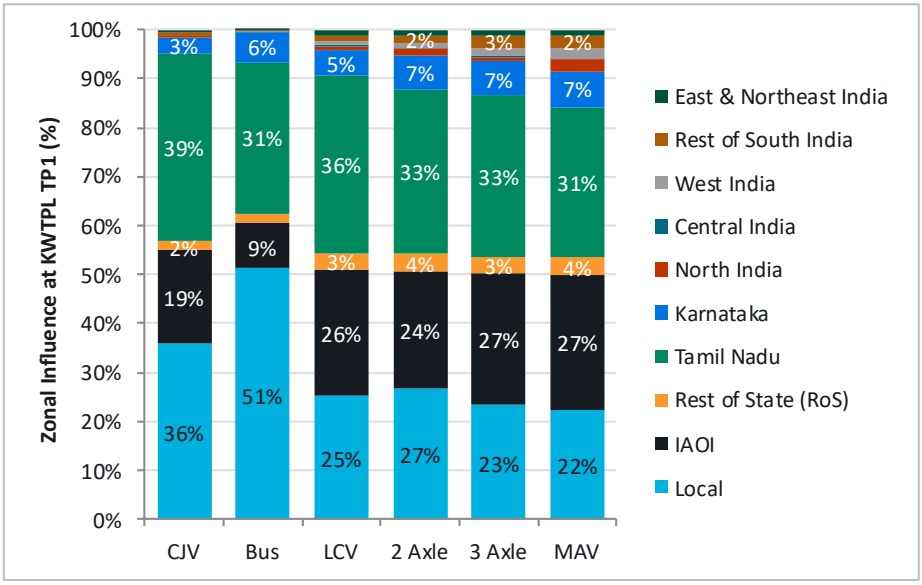
[24] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad would be 50% since one end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

influence is analysed on trip ends and not trips. The zonal Influence analysis outputs are presented in Figure 3-5 below.

3.38 As the Asset is located on the border of Kerala and Tamil Nadu and serves as the gateway to the former, we see a large proportion of trips across all vehicle categories influenced by locations in Kerala. There is a higher share of local trips for the passenger vehicles wherein more than 50% of the influence for CJVs is from local and IAOI zones such as Walayar, Coimbatore, Thrissur and other areas in Palakkad district. This analysis is in line with our understanding during the site visit wherein heavy influence of the surrounding local areas was observed on passenger traffic volumes. Light goods traffic is significantly influenced by local and IAOI areas such as Coimbatore, Thrissur and Annur whereas the heavy goods traffic had a relatively greater influence of medium distant locations like Rest of South India and Karnataka. As the number of axles increase the influence of local areas on traffic volumes on the Asset decrease.

3.39 Outside Kerala, areas in Tamil Nadu such as Salem, Chennai, Thanjavur and Erode contribute to both light and heavy goods traffic on the Asset, followed by Bangalore in Karnataka. Supporting this analysis, the top OD pairs analysis (see Top 10 OD Pairs) shows that the majority of passenger trips originate and end in local and IAOI areas whereas for goods traffic, the rest of the state and areas outside the state such as Ernakulam, Bangalore and Salem feature in the top OD pairs list.

Figure 3-5: Zonal influence at TP Pampampallam



Source: Steer analysis of OD data

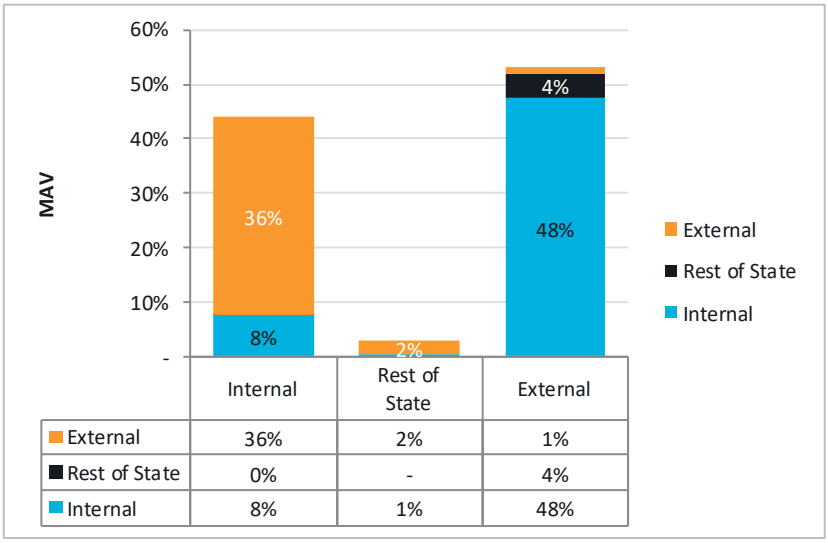
Internal External analysis

3.40 Internal-External analysis helps in identifying the trips which have both an origin and destination on or near the Asset i.e., local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). RoS here represents areas within the state which are neither local nor IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e., lying on the Asset, while 'External' zones are areas lying outside the state.

3.41 Figure 3-6 below shows the distribution of trips based on the categories described above. The results from the I-E analysis support our observations from the zonal influence analysis presented above, but at a higher level of aggregation. The following observations can be made from the I-E analysis:

1. Overall, a significant share (36%) of the MAVs originates from external areas and end their trips in Kerala which could be attributed to Kerala's dependency on other states for meeting its consumption demand. Similarly, 48% of the MAV traffic has its origin within the Local areas and are destined for places in external areas such as Tamil Nadu and Karnataka.
2. External to external movement accounts for a small share of overall MAV traffic on the Asset, highlighting that the Asset is primarily used by the vehicles which have one end in the state, with minimal through movement.

Figure 3-6: Internal-external distribution at TP Pampampallam



Source: Steer analysis of OD data

Commodity distribution

3.42 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in Table 3.11 below. Figure 3-7 below presents the outputs of the commodity distribution analysis at the aggregated commodity categories.

Table 3.11: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, goat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cold drinks, beer etc.)	GRO	

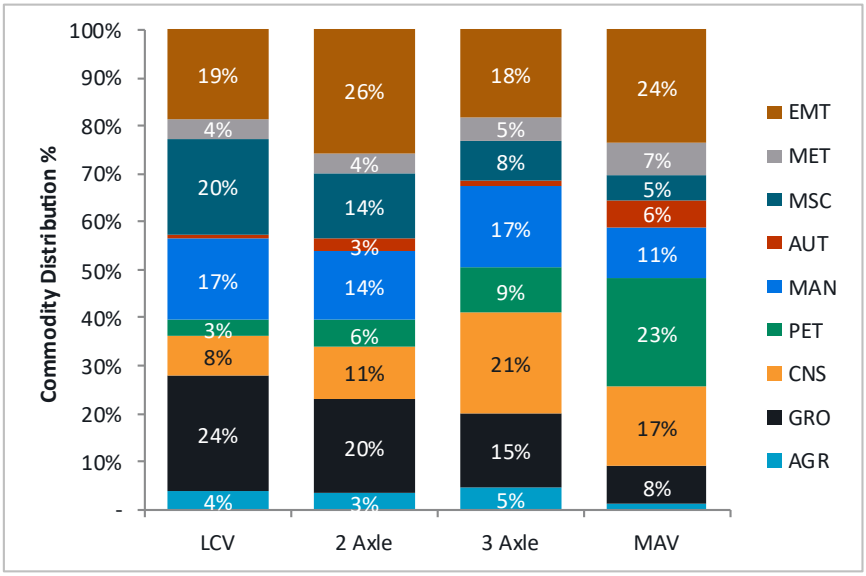
Commodity Description	Code	Combined codes used for charts
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood, Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, Household items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

Source: Steer Analysis

3.43 With the ongoing upgradation of NH66 in, the key commodity appearing on the Asset is construction material, destined for the sections along Kerala's coastline (Thuravoor-Paravoor stretch and Kadampattukonam-Kazhakkoottam stretch)[25]. The dominant commodities moved by 3As and MAVs include groceries (15% and 8% respectively) and manufactured items like plastic, paper & medecines. Around 23% of MAVs use the Asset to transport petroleum products. A high proportion (17%) of MAVs that carried cement and other construction materials on the Asset can be attributed to the presence of the state-owned Malabar Cement plant at Walayar and various other ancillary units along the Asset alignment. Agricultural and grocery items, largely consisting of household products were the key commodities moved by LCVs on the Asset and accounted for roughly 28% of the total.

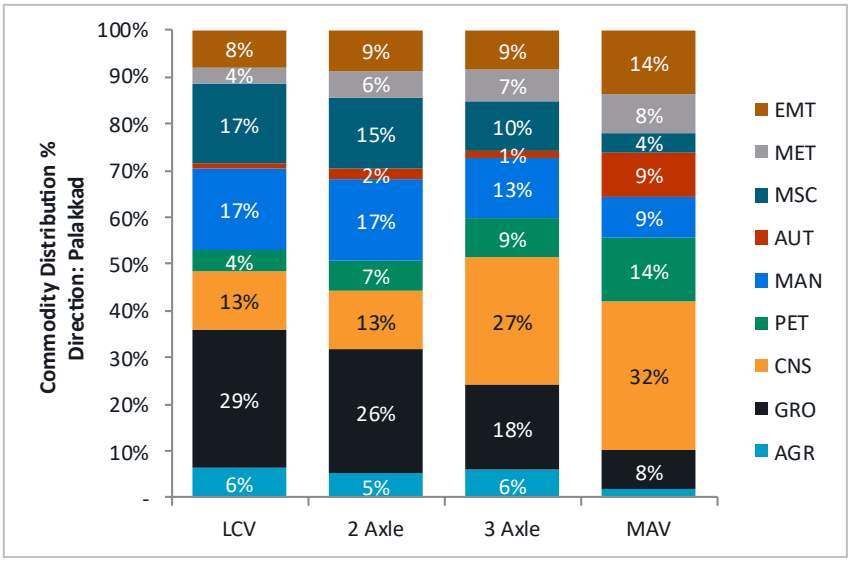
[25] **Completion of NH 66 Six-Laning Project Expected by End of 2025** (December 2024)

Figure 3-7: Commodity distribution at TP Pampampallam (Total)



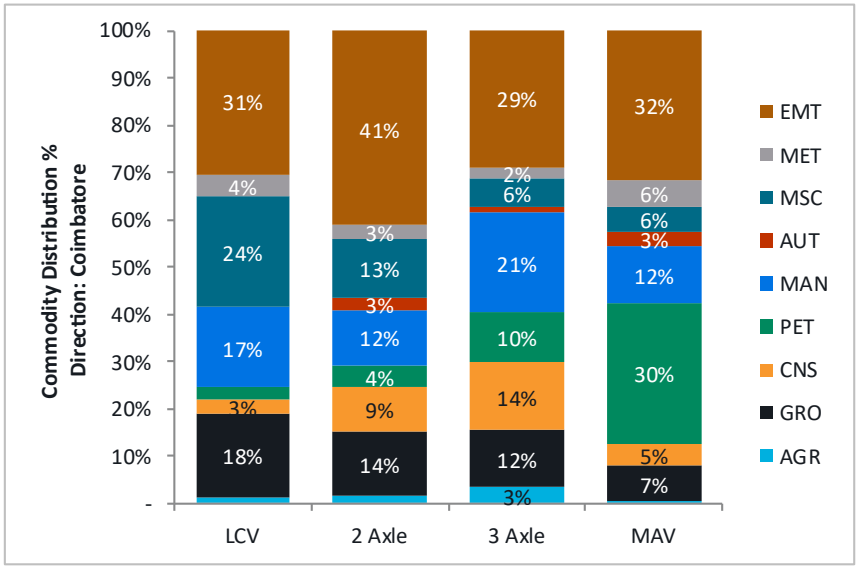
Source: Steer analysis of OD data

Figure 3-8: Commodity distribution at TP Pampampallam (towards Palakkad)



Source: Steer analysis of OD data

Figure 3-9: Commodity distribution at TP Pampampallam (towards Coimbatore)



Source: Steer analysis of OD data

3.44 Looking by direction, it is seen that around 30-40% of the goods traffic is empty while travelling towards Coimbatore whereas those going in the direction of Palakkad carry a mixture of commodities with the largest proportion of the light goods vehicles transporting groceries and agricultural products. The heavy goods vehicles, on the other hand, are observed to have carried construction material, manufacturing items and cement.

3.45 The difference in the characteristics of direction-wise commodity distribution can be attributed to Kerala's dependency on other states for meeting its demand for agricultural products and construction material. The commodity distribution shows that 32% of the MAV's carry construction related goods in the direction of Palakkad (Figure 3-8)compared to 5% of the MAV's moving towards Coimbatore (Source: Steer analysis of OD data

3.46 Figure 3-9). This directionality in construction related traffic is due to the presence of the Malabar Cement plant in Walayar.

3.47 A similar difference can be observed in the number of petroleum-carrying trucks. The proportion of trucks carrying petroleum products towards Coimbatore (30%) is more than double that in the opposite direction (14%). This high proportion of petroleum is travelling from the refinery in Kochi to the industrial centre of Coimbatore.

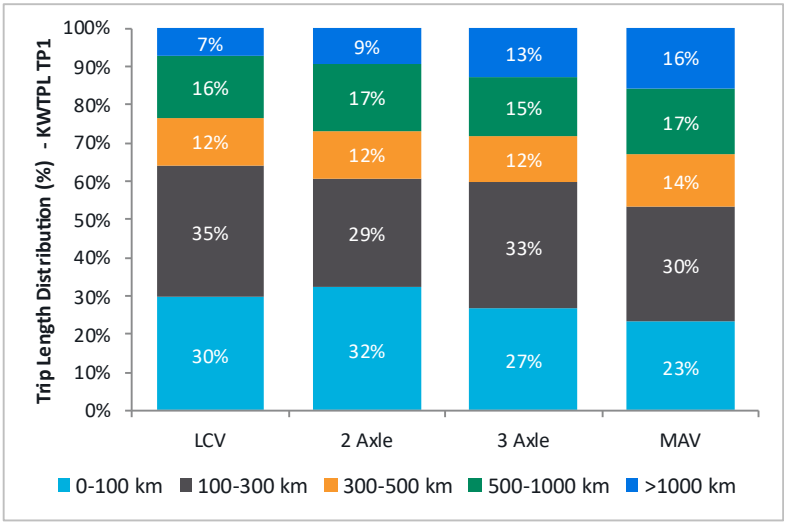
Trip length analysis

3.48 Trip-length distribution provides the distance-based trip profiles of various vehicle categories. This aids in validating assumptions around the share of macro-economic drivers, inputs from our zonal influence analysis and toll segmentation. For ease of interpretation, we have categorised distances into 5 groups – local (0-100km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and

very-long-distance (+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[26]

3.49 Supporting the observations made in the zonal and internal-external analysis in the previous sections, Figure 3-6 below highlights that the Asset primarily caters to short and medium distance trips. More than 50% of heavy goods vehicles (3 axles & MAVs) travel shorter distances (<300 kms), contributing to the local movement observed on the Asset. This rises to ~65% for the LCVs. This local and short distance nature of traffic on the Asset is also observed from the average trip lengths shown in Table 3.12 below.

Figure 3-10: Trip length distribution TP Pampampallam



Source: Steer analysis of OD data

Table 3.12: Average Trip Length

	LCV	2 Axle	3 Axle	MAV
Average trip length Km	398	439	462	564

Source: Steer Analysis of OD data

Conclusions

3.50 In summary, the Asset's AADT in FY25 at Pampampallam toll plaza was 22,905 in terms of absolute traffic volumes and 37,320 in terms of PCUs. The Asset has witnessed significant growth in recent years (AADT PCU CAGRs of 6.5% between FY18-25 and 13.8% between FY22-25). This growth has been bolstered by positive impacts of the underlying economic activities driving traffic on the Asset – tourism, port-related movement and the influence of construction material.

3.51 The 3A/MAV category has observed a degrowth of 5.7% in FY26YTD. This is due to the continued slowdown in movement of construction material from Tamil Nadu after the

[26] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

introduction of the border tax in FY23, and a recent crackdown on illegal sand mining in Tamil Nadu, which has reduced the availability of transportable construction material to Kerala. However, we expect these trends to stabilise over the near term and construction material related traffic to recover as demand for construction material will remain strong in Kerala going forward

3.52 The TVC data shows minor variation on the TMS data, where at a total level, the TVC data is approximately 1.2% higher than the TMS data. Higher difference at vehicle category is due to mis classification between CJV, Mini LCV, 2A and Bus.

3.53 The OD analysis found that in terms of the zonal influence, local and IAOI areas such as Walayar and Coimbatore highly influence the movement of passenger traffic on the Asset whereas the heavy goods vehicle traffic is significantly influenced by areas in the Rest of the State such as Kochi, Thiruvananthapuram, and Ernakulam. Outside Kerala, states such as Tamil Nadu and Karnataka have a high influence on the movement of both light and heavy goods traffic on the Asset. The internal and external distribution highlights that majority of the passenger traffic originates from and is destined to places within the internal areas i.e., local and IAOI zones thereby contributing to the local movement on the Asset whereas a high proportion of heavy goods vehicle originate from external areas and end their trips in Kerala.

3.54 The key commodities transported on the Asset includes manufacturing items such as rubber, container, petroleum, groceries, plastic as well as construction goods like cement for the heavy goods traffic and grocery/agricultural items by light goods vehicle. It is also observed that a higher share of vehicles across all categories are empty travelling towards Coimbatore whereas given Kerala's high consumption demand, which is met by other states, there is a higher share of traffic carrying a mix of commodities including cement towards Palakkad, due to the presence of the Malabar Cement plant in Walayar. This is consistent with the underlying economic trends where Kerala is predominantly a destination for various consumption linked commodities as it has relatively few industries located there.

4 Socioeconomic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions of the region where the Asset is located and conditions on a national scale. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Asset.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available. In this chapter, we assess the socio-economic indicators relevant to traffic growth on the Asset.

Population growth

4.3 We have analysed the key socioeconomic drivers of the background traffic demand in the state of Kerala where the Asset is located.

National Level

4.4 Table 4.1 below shows that the total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in the table below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 – 1985	2.3%	1.9%	3.8%
1985 – 2000	2.0%	1.7%	2.9%
2000 – 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.5 Table 4.2 shows the evolution of population in Kerela state, compared to that of the country. The CAGR of population in Kerela has been considerably slower vis-à-vis that of India.

Table 4.2: Population Growth in Kerala and India (FY12 – FY24)

State	FY12 Population (m)	FY24 Population (m)	CAGR (FY12 – FY24)
Kerala	33.5	36.1	**0.6%**
India	1,210	1,395	**1.2%**

Source: MoSPI estimates

4.6 Due to the complexities of patterns of urbanisation, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide the underlying socio-economic context of the state/trends in the regions in which the Asset is located.

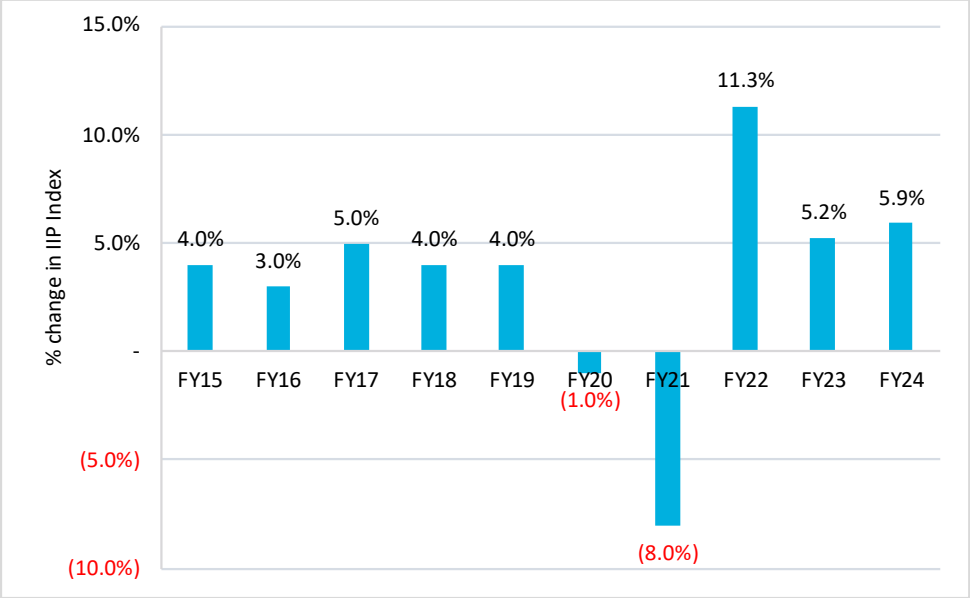
Economic Indicators

Industrial Production

4.7 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.8 Figure 4-1 below that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. However, with the gradual opening up of the economy post the pandemic, and recovery in consumption demand, industrial activity also recovered with time with IIP recording growth of 5% in FY23 and 6% in FY24.

Figure 4-1: Annual growth – Index of Industrial Production



Source: Steer Analysis of MoSPI data

4.9 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We, however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, IMF.

Vehicle Ownership

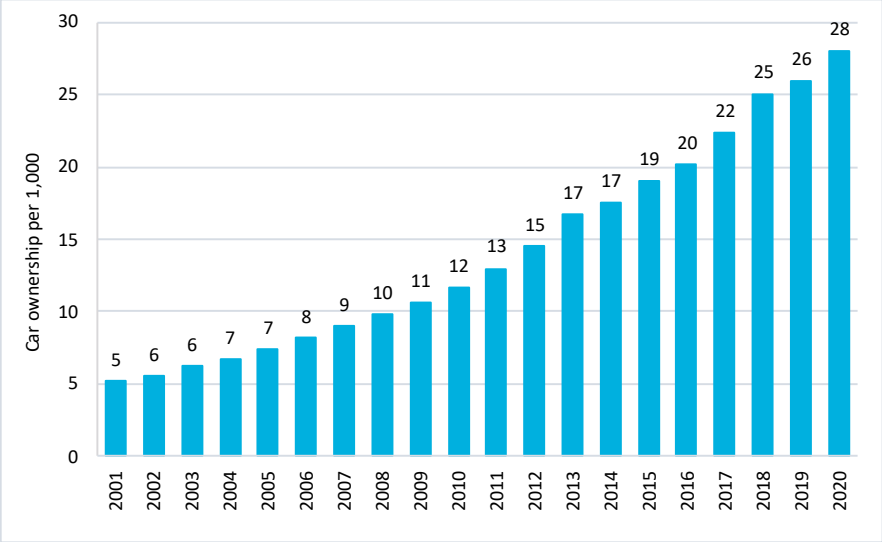
4.10 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[27]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled (from 7 in 2007 to 22 in 2017) and increased at a CAGR of about 11%.

4.11 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[28]

[27] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[28] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4-2: Car ownership in India per 1,000 population

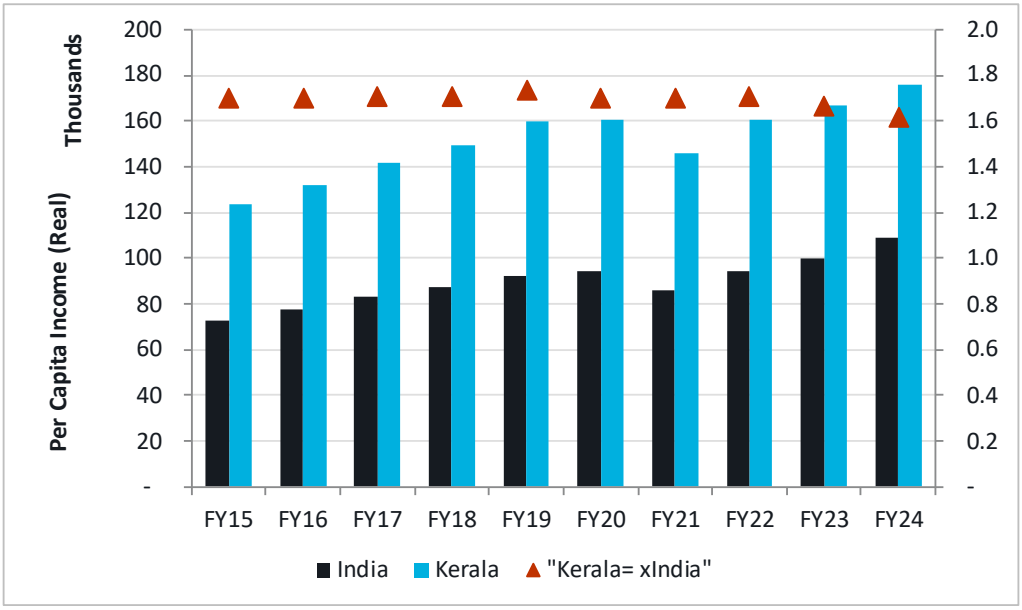


Source: International Energy Agency (IEA))

Per Capita Income (PCI)

4.12 Kerala is one of the richer states of India whose per capita income has been consistently higher than the national average as seen in the Figure 4-3 below. As of FY24, the per capita income of the state was approximately 1.6 times that of the national average.

Figure 4-3: Per Capita Income in Kerala and India (FY15 – FY24)



Source: Steer Analysis of MoSPI data

Economic Growth

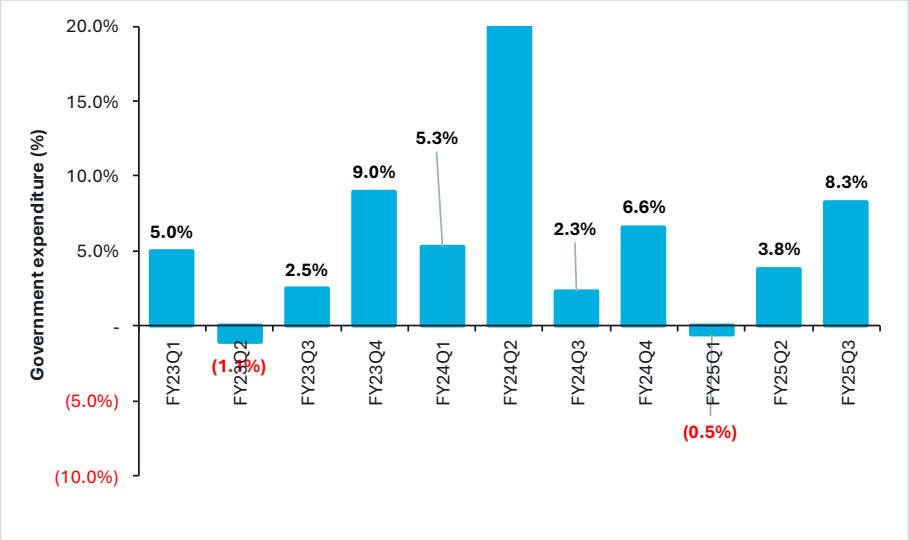
India's Performance

4.13 India's economic performance has shown signs of recovery in the recent months despite a slowdown experienced in H1FY25, as the latest Second Advance Estimates (SAE) released show the GDP growth in FY25 to be 6.5% - which is lower than the 9.2% growth observed in FY24.[29]

4.14 As shown in Figure 4-4 below, the recovery in government expenditure has been recent (FY25Q3 experienced an 8.3% year-on-year growth), while the first two quarters in FY25 observed lower growth rates than the corresponding periods in FY24 (0.5% degrowth in FY25Q1 and 3.8% growth in FY25Q2, compared to 5.3% and 20.1% growth in the respective periods in FY24).

4.15 Other contributing factors also include the impact of the 2024 general elections on central infrastructure spending, state-level fiscal constraints and rising global uncertainties such as Russia-Ukraine war and Gaza-Israel conflict which have had impact on global supply chains.

Figure 4-4: Government final consumption expenditure

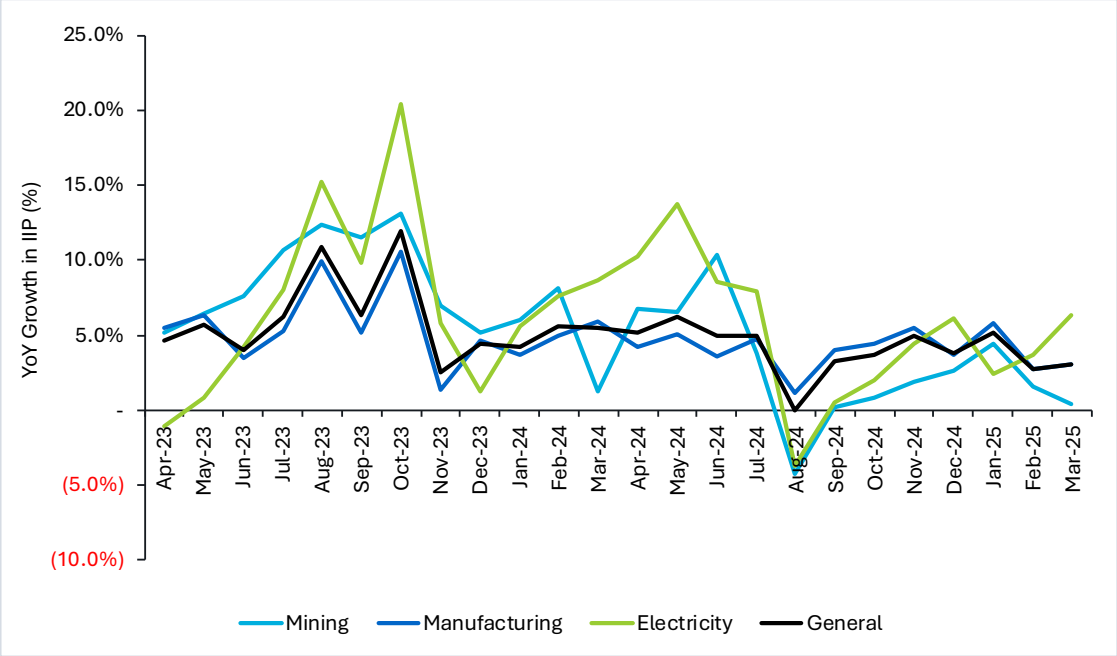


Source: Steer Analysis of MOSPI Data

4.16 Weaker industrial activity, as reflected in lower IIP (Figure 4-5 below) and GVA contribution (Figure 4-6 below), directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. At the same time, muted government capex had an influence on both construction-linked activity and industrial output which impacted the commercial traffic growth carrying construction material and industrial goods.

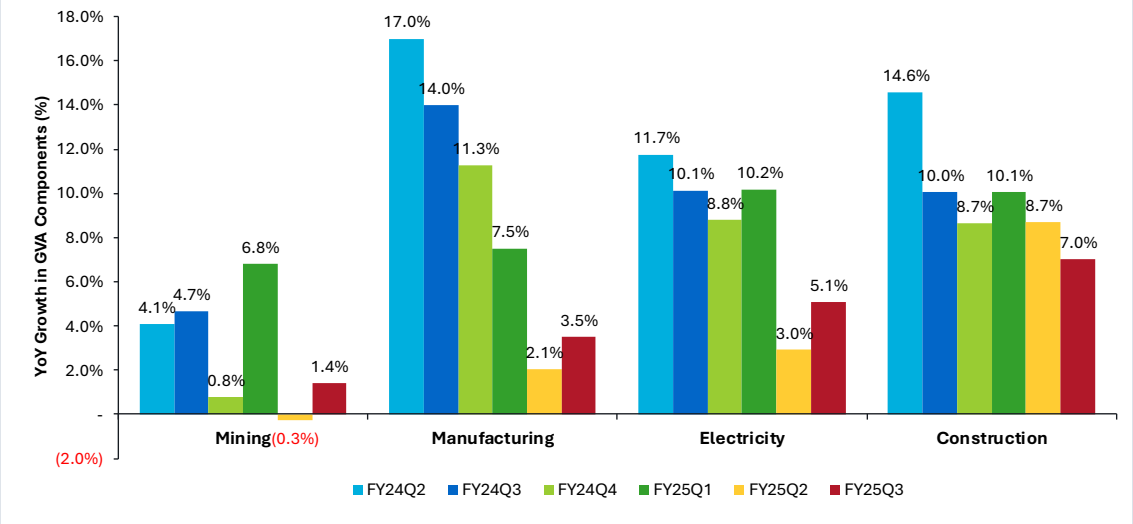
[29] Press Release: SAE of Annual GDP FY25 (Press Information Bureau

Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

Figure 4-6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

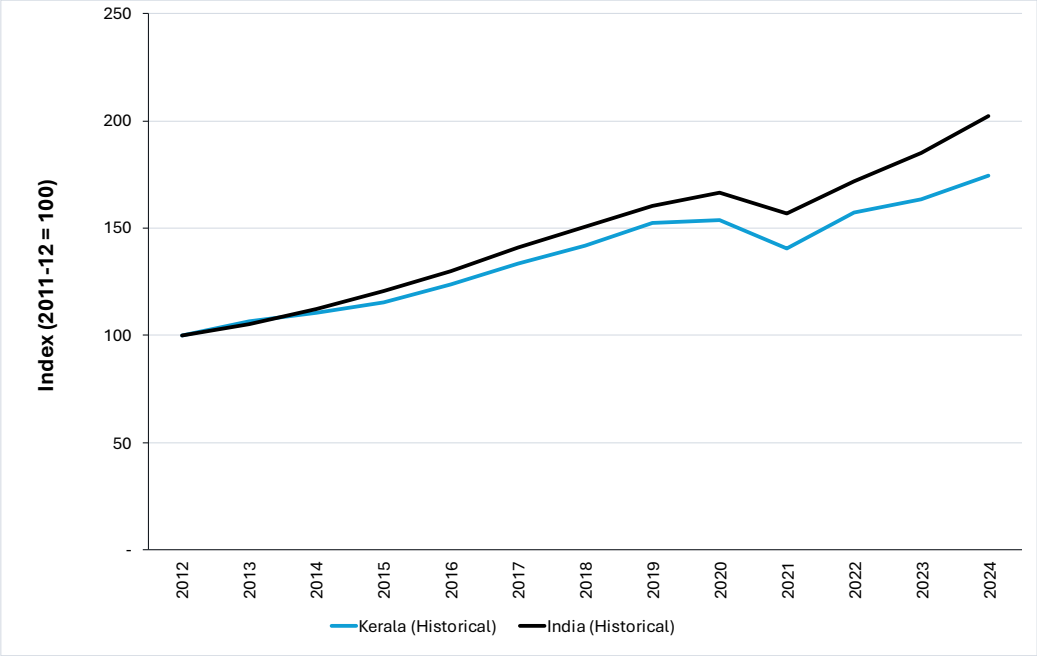
GDP and GSDP Growth

4.17 Figure 4-7 below illustrates the evolution of Kerala GSDP, with respect to the GDP of India. Between the period of FY12 and FY24, the Indian economy has grown at a CAGR of 6.0%- aided by a strong growth in the services/tertiary sector, which grew at a CAGR of 6.9% over the same period. Kerala grew at 4.7% between FY12 and FY24, with the state growing at a slower rate than the national average.

4.18 As shown in Table 4.2 above, Kerala accounted for 2.6% of national population in FY24. In terms of national economic contribution, Kerala contributed approximately 3.6% to India's GDP in FY24. Therefore, Kerala's per capita GDP contribution highlights the

importance of the region in driving consumption demand and regional traffic growth near the Asset.

Figure 4-7: Evolution of Kerala's state GDP and national GDP, FY12-24



Source: Ministry of Statistics and Program Implementation

Economic activity in the state

4.19 Kerala is a relatively small state situated in Southern India with an area of 38,863 sq.km and a population of 3.61 crore people. The share of primary sector in the state's economy has declined over the years – from 15.2% in FY12 to 8.5% in FY24, but it is a leading producer of cash crops such as coconut, rubber, coffee, pepper, cashew, and tea. Other key agricultural products include spices such as cardamom, vanilla, nutmeg, and cinnamon.[30]

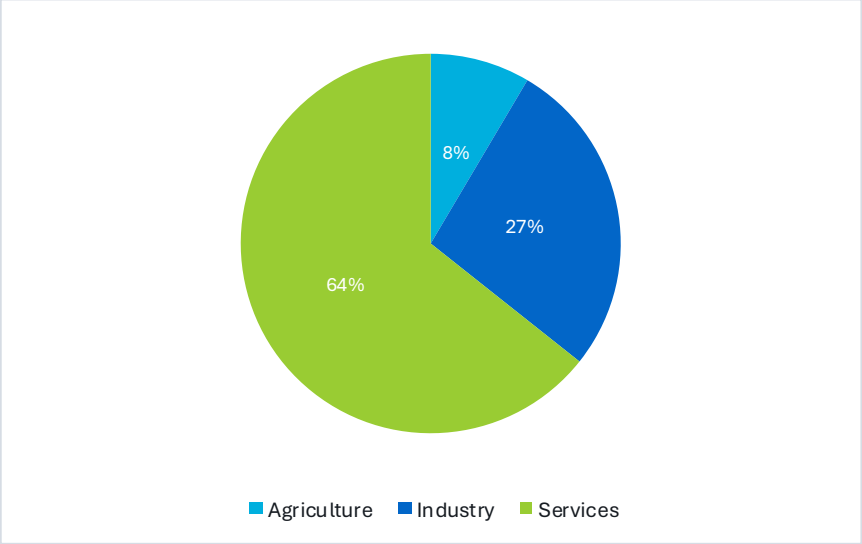
4.20 Kerela is a relatively high-income state with per capita GSDP 62% higher than the national average as per 2024 estimates[5]. Services is a dominant contributor to the State's incomes, with over 60% contribution to GSDP. Leading contributors to this sector include tourism, Ayurveda and medicinal services, pilgrimage, IT services, financial services, and education.

4.21 Major containerised traffic is routed through Cochin port and dispatched to final destinations via road. Cochin port handled total traffic of 36 million tonnes in FY24 (Table 2.3) Tea, coffee, cashew kernels, seafood, coir products and spices are major commodities exported via the port. The port also handles major import items for the State such as fertilisers, raw materials, iron and steel products, machinery and petroleum, oil and lubricants (POL).

4.22 In terms of sectoral contribution, the services sector is the biggest contributor (64%), followed by secondary (27%) and primary sector (8%), as of FY24[5]

[30] Economic Review 2024 - Government of Kerala

Figure 4-8: Sectoral contribution to Kerala's GSDP in FY24



Source: Steer Analysis of MoSPI data

4.23 The official historical GDP and GSDP data for India are released by the Steer Analysis of MoSPI data. The GDP forecasts for India are available from various reliable sources such as Oxford Economics and Consensus Economics[31], but state-specific GSDP forecasts are not published by any such sources. To derive state GSDP forecasts, we rely on past trends of the relationship between GDP and GSDP, and develop GSDP forecasts as a function of our assumed GDP forecasts[32].

4.24 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.25 Following the discussion in Chapter 4 on the nature of economic activity in the state of Kerala, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth.

4.26 We have based our forecast of the GSDP for Kerala based on the forecasts of the GDP of India as provided by the Client.

National GDP

4.27 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP

[31] Consensus Economics - Economic Forecasts and Indicators

[32] Assuming that the historical long-term relationship between GSDP and GDP sustains over the short-term, we project future growth in GSDP as a function of our GDP growth forecast. We taper the relationship of GSDP growth to converge to GDP growth gradually over the long-term.

growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[33]

4.28 The Covid-19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23 and 9.2% in FY24, before showing signs of slowdown again in FY25 (a 6.5% growth rate, as per the SAE) due to several domestic and external factors.

4.29 Figure 4-8 below shows Client-provided GDP projections for India. The forecast provided projects the Indian GDP to grow at 6.5% between FY25-FY27[34] and gradually tapering down to 5.8% by FY38. The GDP growth forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[35] in the medium term.

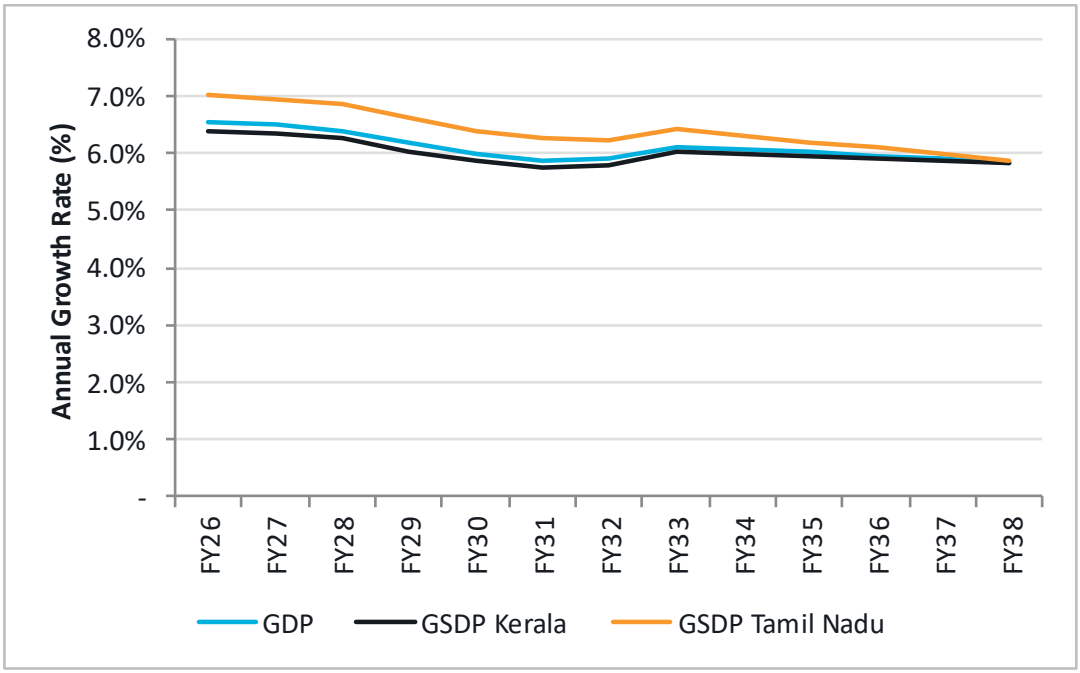
4.30 We have assumed the GSDP growth of Kerala to continue to stay below the national GDP throughout the concession period. There has been increasing government expenditure and push towards infrastructure development in southern India. This is expected to push the economy of the region and lead Tamil Nadu to grow faster than the national growth in the next 15 years.

[33] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[34] Based on Asia Pacific Consensus Forecasts (December 2024)

[35] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

Figure 4-9: GDP-GSDP forecast



Source: GDP and GSDP forecast provided by Client

5 FY26 Base year AADT and Traffic growth Analysis

Introduction

5.1 In this section, we present our approach, assumptions, and results for base (or background) traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 To understand the historical traffic trends in relation to these growth drivers, we carry out regression analyses to determine the historical relationship between each traffic belonging to each major vehicle category and its macroeconomic growth driver at each toll plaza. The dynamics of traffic demand is the dependent variable while the dynamics of one or more identified growth drivers are the independent or explanatory variables. Typically, passenger and light commercial vehicles like Cars, Buses, LCVs and 2-axle trucks grow in line with the GSDP of the state where the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This is because most light vehicles tend to travel shorter distances within the state, whereas a significant proportion of heavy vehicles carry commodities for long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and therefore relate more with GDP growth.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.5 To establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

Methodology

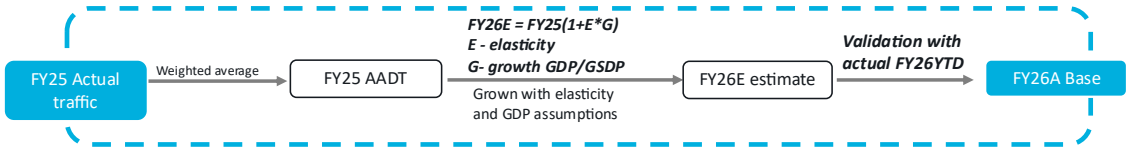
5.6 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual

FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at FY26E.

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the 6 months (Apr to Sep) of FY26. The adopted AADT FY26A is arrived at by making necessary adjustments to FY26E to reflect the outturn traffic in FY26YTD (adjusted for seasonality).

5.8 The methodology is represented using the below schematic:

Figure 5-1: FY25 Base Estimation methodology



Source: Steer Analysis

Seasonality Correction factors

5.9 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.10 In order to normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.11 To achieve this, we studied the seasonality between monthly average daily traffic (MADT) – We have analysed the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling excluding the years that were impacted by specific events. This averaged seasonality trend is then applied to the monthly traffic to obtain AADT as mentioned in the previous sections.

5.12 Table 5.1 below presents the average of the FY23 and FY25 SCFs, used to arrive at the FY26 base estimates (only FY23 SCFs were used for LCV and Bus categories).

Table 5.1: Seasonality correction factors for TP1 Pampampallam

Vehicle	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.03	0.94	1.04	1.08	1.05	0.97	1.00	1.02	0.87	0.92	1.04	1.11
LCV	0.98	1.05	1.04	1.07	0.99	1.02	1.07	0.99	0.97	0.98	0.94	0.92
Bus	1.06	0.93	1.07	1.10	1.10	1.03	1.01	0.95	0.90	0.94	0.96	0.99
2A	1.04	1.05	0.99	0.99	0.94	1.00	1.05	1.03	1.01	1.01	0.97	0.95

3A/MAV	1.03	1.06	0.99	1.06	0.95	1.06	1.09	0.98	0.95	1.01	0.93	0.93

Source: Steer analysis of Client historical TMS data

Adopted FY26 base estimates

5.13 Based on the above methodology and inputs, the adopted base for toll plaza is shown in Table 5.2 below:

Table 5.2: Adopted base AADT for FY26

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	14,974	16,128	16,324	9.0%
LCV	1,954	2,173	2,181	11.6%
Bus	1,127	1,041	1,095	(2.8%)
2A	1,536	1,539	1,552	1.0%
3A/MAV	3,312	3,122	3,214	(2.9%)
OSV	3	2	2	
Total	**22,905**	**24,005**	**24,368**	**6.4%**
PCUs	**37,320**	**37,898**	**38,626**	**3.4%**

Source: Steer analysis: FY26YTD includes Apr-25 to Sep-25; FY26A is the adopted base traffic

5.14 From Table 5.2 above we see that FY26A is estimated to observe a 3.4% growth from the actual FY25 traffic on PCU terms. This growth is driven by a strong turnout of CJVs and LCVs on account of growing tourism and local activity near the Asset.

5.15 Several factors likely contributed to the lower-than-expected performance of 3A+MAVs on the Asset, including restricted construction material supply from Tamil Nadu following new regulations on illegal mining[36]; the development of new mining sites in Palakkad catering to Kerala's demand; and a decline in petroleum product shipments from Kerala to Tamil Nadu and other regions.

Estimation of background elasticities

5.16 Elasticities, in the case of traffic growth are the relationships between traffic and growth drivers. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide the forecasts of background traffic growth rates.

5.17 As the TMS data did not provide a breakup between the individual vehicle categories for the toll categories 3A/MAV, we have used recent TVC 2023 split. Typically, we rely on national GDP as a growth driver for 3A/MAV trucks, given their characteristics of travelling across multiple states and carrying varied types of commodities which contribute to national GDP.

[36] ED in letter to TN DGP says sand mining happening in massive scale, demands action

[36] Keralites account for 69% of domestic tourist footfall in State - The Hindu

5.18 Table 5.3 below presents the growth drivers identified to model the background traffic growth rates.

Table 5.3: Identified growth drivers to model traffic growth

Vehicle type	GSDP Kerala	GSDP Tamil Nadu
Car	50%	50%
LCV	100%	
Bus	50%	50%
2A	100%	
3A	100%	
MAV	100%	

Source: Steer analysis of Client data

5.19 To understand the traffic growth on the Asset, we undertook regression analysis from FY16-24 for all vehicles categories of the plazas.

5.20 This Asset has shown variable growth trends every year (for the reasons described in Chapter 3), due to which econometric regression analysis did not provide robust enough results of elasticities to growth drivers. We have therefore, analysed trends of each vehicle category and compared with the growth of key drivers, as described below.

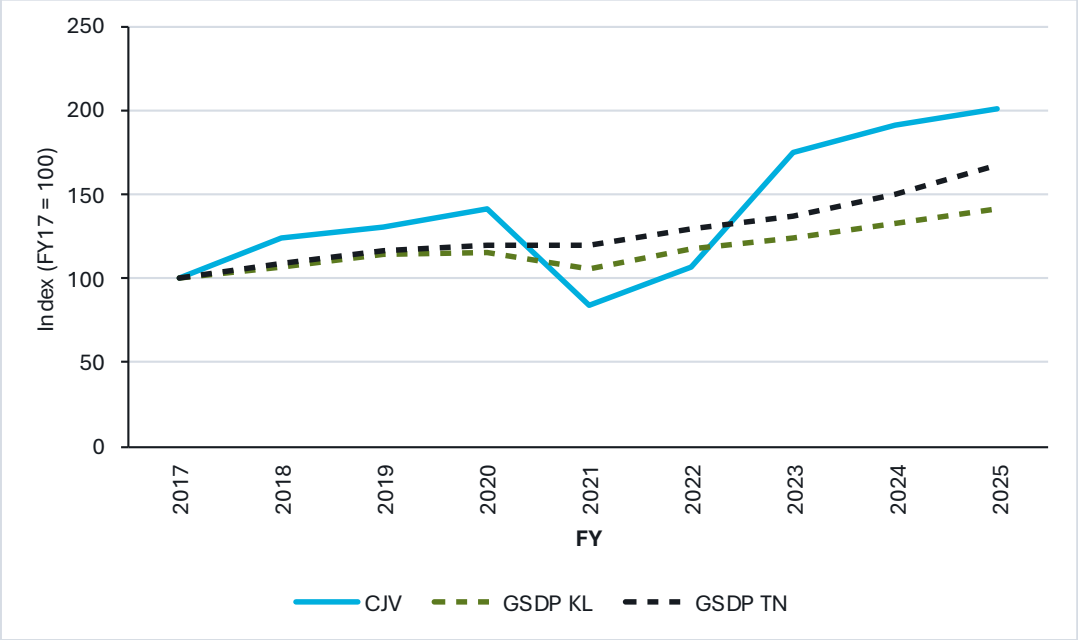
CJV

5.21 As can be seen from Figure 5-2 below, cars have shown strong growth on this Asset except in FY21 and FY22 with 9% car increase in FY24 from FY23 levels 7% increase in FY25YTD. As seen from the OD survey results from the analysis conducted in 2024, car traffic on the Asset is driven by local trips between the urban centres of Walayar, Coimbatore, Thrissur, and other areas in Palakkad district, as well as high contribution of tourism, work and educational trips.

5.22 Generally, we would expect that in fast-growing economies with relatively low car ownership levels, car traffic growth rates are often in line with or slightly higher than growth in GSDP/GDP (i.e., suggesting elasticities at or just above 1.0). Further, there is an expected increase in car ownership proportion of overall population as the economy grows. In this case with proximity from Tamil Nadu state and high share of Tamil Nadu trips, the Asset Car growth is dependent on both Kerela and Tamil Nadu.

5.23 Historically, the CJV traffic on the Asset had shown strong growth of ~14% in the FY16-FY20 period; the growth in this category slightly moderated in the recent years and saw a degrowth of 13% between FY20 and FY22. However, it has bounced back to achieve a 33% CAGR from FY22 to FY24, mainly driven by a significant post-pandemic ramp up in traffic in FY23.

Figure 5-2: Relationship between CJV traffic and GSDP of Kerala & Tamil Nadu



Source: Steer analysis of Client TMS data and publicly available GSDP data

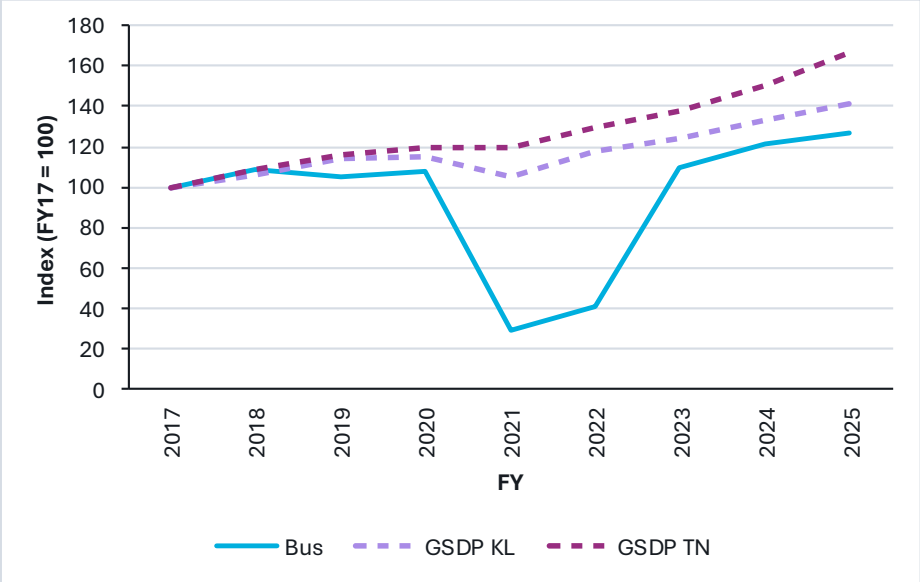
5.24 Nevertheless, the relationship to GSDP suggests that during more stable years post pandemic, CJVs have grown with a background traffic growth elasticity of 1.1. Considering the tourism-oriented nature of passenger traffic on the Asset, we have assumed a forecast background elasticity of 1.2 with the GSDPs of Kerala and Tamil Nadu.

Bus

5.25 Bus growth tends to be largely supply-driven in many parts of the country, with new buses being bought and deployed by the government at intervals of time. Based on our experience across the country, buses on inter-urban and tourism corridors show elasticities of 0.20 to 0.50 with respect to the GSDP.

5.26 The bus traffic trend on this Asset showed a modest growth rate of 3.8% from FY16-20. However, during Covid bus traffic was significantly impacted given prolonged lockdown in the state impacting tourism and leisure-bound bus traffic which recovered back to pre-covid levels in FY23. We expect the buses on this Asset to have an overall stable low growth in the forecast, with a relationship lower than benchmark states, to reflect this slower growth observed in recent years, and have used an elasticity of 0.4 to GSDP

Figure 5-3: Relationship between Bus traffic with GSDP of Kerala & Tamil Nadu



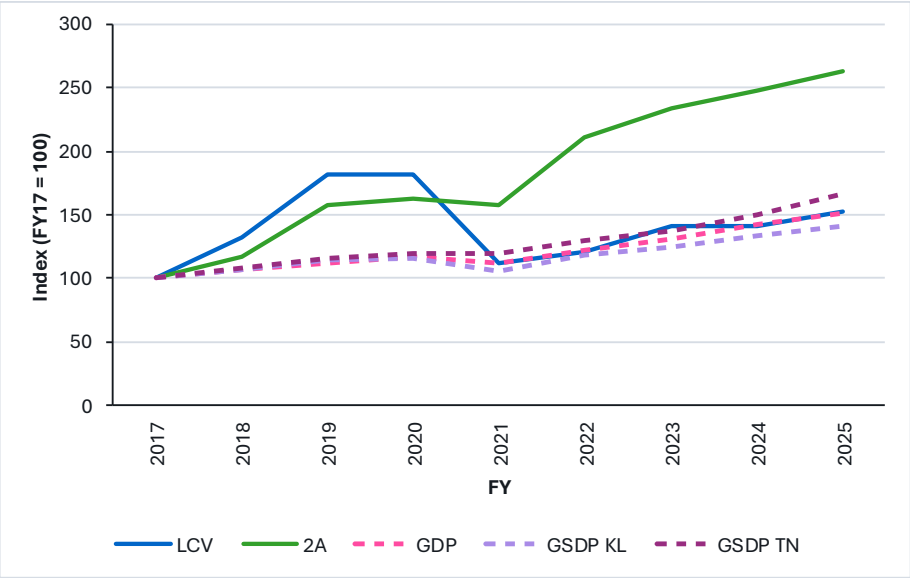
Source: Steer analysis of Client TMS data and publicly available GDP and GSDP data

LCV, 2A

5.27 Despite similar traffic characteristics regarding commodities and distance (as detailed above, in the Key findings of the origin-destination analysis), 2A and LCV vehicle segments showed divergent growth between FY18 and FY24. Notably, 2A trucks experienced a substantial 13.4% increase, while LCVs grew by a comparatively lower 1.1%. In addition to the typical influence of GDP and consumption demand-led growth, 2As have benefitted from the shifting preference of truckers from 3As - as a result of better unit economics – which has been observed on Assets across the country.

5.28 Therefore, looking forward, we have assumed lower elasticity of 0.40 for LCV and a higher elasticity of 0.80 for 2A with respect to GDP India, which is within the range of benchmarks observed in other parts of the country.

Figure 5-4: Relationship between LCV and 2A with GSDP of Kerala



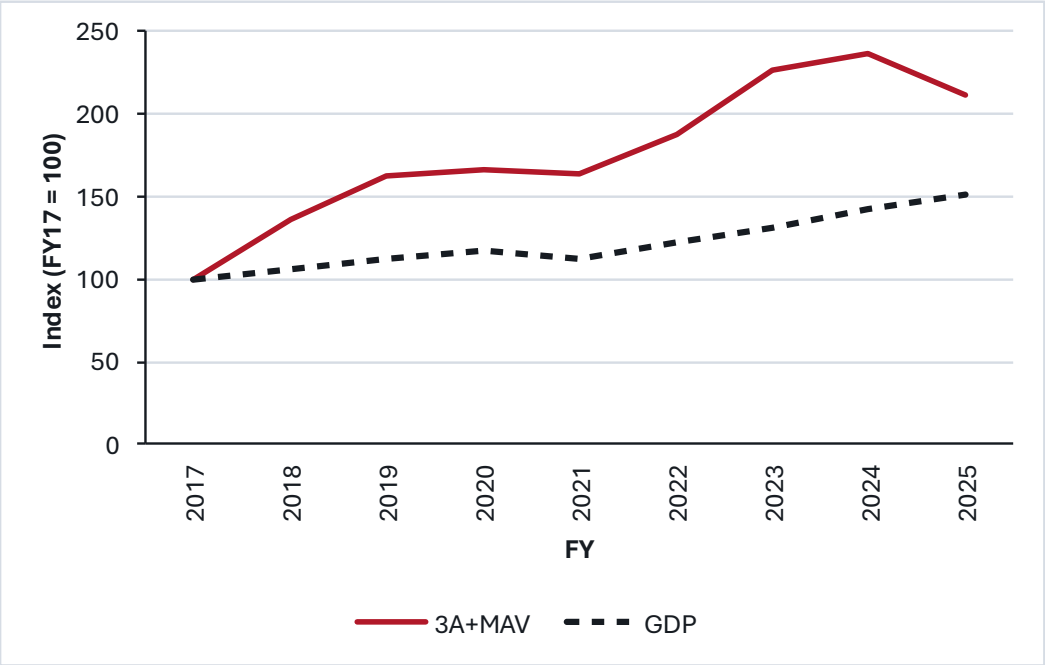
Source: Steer analysis of Client TMS data and publicly available GDP and GSDP data

3A/MAV Trucks

5.29 In general, across the country, we have observed that 3As grow slower than MAVs due to a shift between these categories, as there is an increasing preference observed for MAVs among truck operators (instead of 3As). This is because MAVs have higher load capacity which generate economies of scale and therefore lower transportation costs for high volume goods relative to 3A trucks. It is however unlikely that 3A trucks will disappear from the market completely due to this observed trend as certain commodities or movements are still (and will continue to remain) best served by 3As.

5.30 Based on these trends, we have assumed elasticities of 0.20 and 0.90 for 3A and MAV trucks respectively, with respect to GDP India, which are in line with benchmarks observed across the country.

Figure 5-5: Relationship between 3A + MAV and GDP India



Source: Steer analysis of Client TMS data and publicly available GSDP data

Forecasts for background elasticities

5.31 Table 5.4 below presents a summary of the results of the regression analysis carried out on historical toll plaza data and the macroeconomic drivers (GDP/GDSP), along with the assumed forecast elasticities for forecasting our background traffic growth.

5.32 3A category has largely remained flat in the FY22-26 YTD period. The reduction in 3A volume is partly a result of the declining demand for 3A vehicles itself, which are being replaced by 2A and MAV trucks. MAVs offer higher tonnage capacity making them more cost-effective for transporters. While the increase in 2A volume reflects the growing preference for these vehicles due to favourable changes in the legal permissible loads for 2As and their suitability for e-commerce-related freight, particularly high-value, low-volume goods over medium to long distances. This is consistent with our discussion with

various transporters and OEMs across the country who are favouring 2A and 5A vehicles for commodity movement due to better unit economics.

5.33 As a consequence of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

Table 5.4: Adopted forecast elasticities for background growth

Vehicle type	Growth driver	Historical Derived Elasticity	Period Considered	Forecast	
				Adopted Elasticity	Evolution of elasticity
Car	GSDP Kerala	0.74	FY17-24	1.20	reduced to 1.10 from FY30 and 1.00 from FY35 onwards
	GSDP Tamil Nadu		FY17-24		
LCV	GSDP Kerala	3.46	FY17-24	0.4	No change
Bus	GSDP Kerala	2.16	FY17-24	0.4	No change
	GSDP Tamil Nadu		FY17-24		
2A	GDP India	N/A*	FY17-24	0.8	No change
3A+MAV#	GDP India	3.06	FY17-24	0.2 for 3A & 0.9 for MAV	No change

Source: Steer analysis of Client data; *regression analysis yielded invalid results, hence not reported; #regression was run on 3A-MAV combinedly

6 Forecasts: Network overlays and forecasts

Introduction

6.1 Following the discussion on our forecast of base growth rates in the previous chapter, this chapter first covers the forecasting assumptions around base year AADT and potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentations, trip factors and evolution of toll rates for the concession period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years.

Analysis of potential network/developmental impacts

6.2 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed earlier in Chapter 2, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

Construction Recovery

6.3 Throughout FY24 and FY25, the construction activities on the expansion of road network in the southern parts of Kerala have been negatively impacted due to unavailability of materials like aggregate and sand, since these regions source their construction material from Tamil Nadu. Changes in the quarrying landscape of the region in Tamil Nadu in Q2 and Q3 of FY24, which continued in FY25 and FY26, also affected the movement of construction materials on the project road.

6.4 We have therefore assumed a recovery profile in construction related traffic as presented in Table 6.1 below. This recovery in construction activity is expected to largely affect the 3A and MAV categories which have historically carried construction related goods:

Table 6.1: Impact of Recovery in Construction for TP1

Vehicle category	FY27	FY28	FY29 Onwards
Staging	*20%*	*80%*	*100%*
3A	0.4%	1.4%	1.8%
MAV	1.0%	4.0%	5.0%

Source: Steer analysis

Revenue forecasting assumptions

6.5 To forecast the revenues for a forecast year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate. While toll segmentation provides the breakup of trips paying each ticket type, trip factors provide the conversion factor to convert from traffic (trips) to tickets sold. This section discusses assumptions related to toll segmentation, trip factors and toll rates for the forecast period.

Toll evolution

6.6 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.7 We have used actual toll rates from the FY25 and FY26 toll notifications and FY27 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown Table 6.2 below. The upward trend in inflation is expected to continue in the medium term, before gradually tapering to 4.1% in the long term.

Table 6.2: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: Client inputs used for WPI FY27 onwards

Toll segmentation

6.8 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles. To access the document, refer to the following **link**.

6.9 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
%CJV using Annual pass	6.0%	8.5%	10.2%

6.10 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.11 In FY26, the share of CJVs using the Annual Pass is projected at **9%** (on an annual basis) with a March 2026 estimate of around 19%, which from FY27, expected to stabilize at March'26 levels.

6.12 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period.

6.13 Table below shows the toll segmentation assumed for the period of forecast.

Table 6.3: Forecast toll segmentation from FY26 onwards

Ticket type	CJV (FY26)	CJV (from FY27)	Mini LCV	Bus	LCV	2A	3A/MAV	OSV
Single	34%	30%	38%	43%	35%	57%	61%	47%
Return	54%	47%	59%	29%	55%	43%	39%	53%
Monthly	2%	2%	2%	27%	9%	-	-	-
Annual Pass	9%	19%	-	-	-	-	-	-
Local personal	-	-	-	-	-	-	-	-
Violations	0%	0%	0%	0%	0%	0%	0%	-
Exemptions	2%	2%	2%	0%	0%	0%	0%	0%

Source: Steer analysis of Client TMS data; ticket segmentation for all vehicle categories other than CJVs are from FY26 onwards

6.14 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.6 presents the Annual pass compensation computed for the toll plaza.

Table 6.4: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY27	FY30	FY35	FY38
Pampampallam	3.0	7.8	10.6	18.6	26.1

Source: Steer Analysis

Trip factors

6.15 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and listed in Table 6.5 below:

Table 6.5: Trip factors for the forecast years

Ticket Category	CJV/Mini LCV	LCV	Bus	2A	3A/MAV	OSV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	4,357	48	48	227	34	45
Local Commercial	1	1	1	1	1	1
Local Personal	18	1	103	1	1	1
Exemptions	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Revenue reconciliation

6.16 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a daily level for the Asset against our modelled revenue.

6.17 To reconcile our modelled revenue with reported revenue, we used the FY26YTD (April to September) toll segmentation and MADT of the month, comparing it with the reported revenue for that month. The Steer revenue calculations have been built up from monthly raw traffic data files, containing monthly data and ticket type information; and the toll notifications – all shared by the client.

6.18 As shown in Table 6.6 below, depicts the difference between modelled revenue and the reported revenue is within 1%, which gives us confidence in the historical traffic and revenue data provided by the Client as well as our forecasting assumptions around the toll escalation mechanism. This analysis also validates our segmentation and trip factor assumptions used for forecasting.

Table 6.6: FY26YTD AADC (April – September) Revenue reconciliation summary (INR lakhs)

Vehicle Category	Modelled	Actual	Difference (%) Modelled vs Actual
	FY26YTD	FY26YTD	
Total	30.65	30.60	**(0.2%)**

Source: Steer comparison between modelled and reported revenue for FY26YTD (April to September)

Traffic and Revenue forecasts

6.19 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled traffic and revenue forecasts for the Asset over its full concession period. Table 6.7 below presents the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix C (Detailed forecasts) presents the AADT and revenues for the forecast period.

Table 6.7: Forecast (background plus impacts) AADT for TP1 Pampampallam

Vehicle Type	FY26	FY27	FY30	FY35	FY38
CJV	14,454	15,566	19,115	26,390	31,846
Mini LCV	1,871	1,945	2,175	2,602	2,890
LCV	2,181	2,250	2,460	2,844	3,102
Bus	1,095	1,131	1,242	1,443	1,575
2A	1,552	1,630	1,879	2,365	2,714
3A	636	646	679	720	746
MAV	2,579	2,753	3,515	4,344	5,069
AADT	**24,366**	**25,921**	**31,064**	**40,709**	**47,940**
PCU's	**38,614**	**40,899**	**48,880**	**62,296**	**72,520**

Source: Steer analysis;

Table 6.8: Forecast (background plus impacts) AADT CAGR (%) TP1 Pampampallam

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY38	FY26-FY38
CJV	7.7%	7.1%	6.7%	6.5%	6.8%
Mini LCV	4.0%	3.8%	3.7%	3.6%	3.7%
LCV	3.2%	3.0%	2.9%	2.9%	3.0%
Bus	3.3%	3.2%	3.0%	3.0%	3.1%
2A	5.1%	4.8%	4.7%	4.7%	4.8%
3A	1.6%	1.7%	1.2%	1.2%	1.3%
MAV	6.8%	8.5%	4.3%	5.3%	5.8%
AADT	**6.4%**	**6.2%**	**5.6%**	**5.6%**	**5.8%**
PCUs	**5.9%**	**6.1%**	**5.0%**	**5.2%**	**5.4%**

Source: Steer analysis

Table 6.9: Forecast (background plus impacts) revenue (INR crores) forecast for TP1 Pampampallam

Vehicle Type	FY26	FY27	FY30	FY35	FY38
CJV	34.5	39.1	54.5	94.4	132.9
Mini LCV	4.5	4.9	6.2	9.3	12.1
LCV	8.6	9.3	11.6	16.9	21.1
Bus	9.2	9.8	12.5	18.0	22.6
2A	13.8	15.1	20.1	31.5	41.4
3A	9.0	9.5	11.5	15.3	18.1
MAV	36.5	40.4	59.6	92.3	123.3
Total Revenue	**116.1**	**128.0**	**176.2**	**277.8**	**371.5**

Source: Steer analysis; CJV revenue is inclusive of annual pass compensation)

Table 6.10: Forecast (background plus impacts) revenue CAGR (%) for TP1 Pampampallam

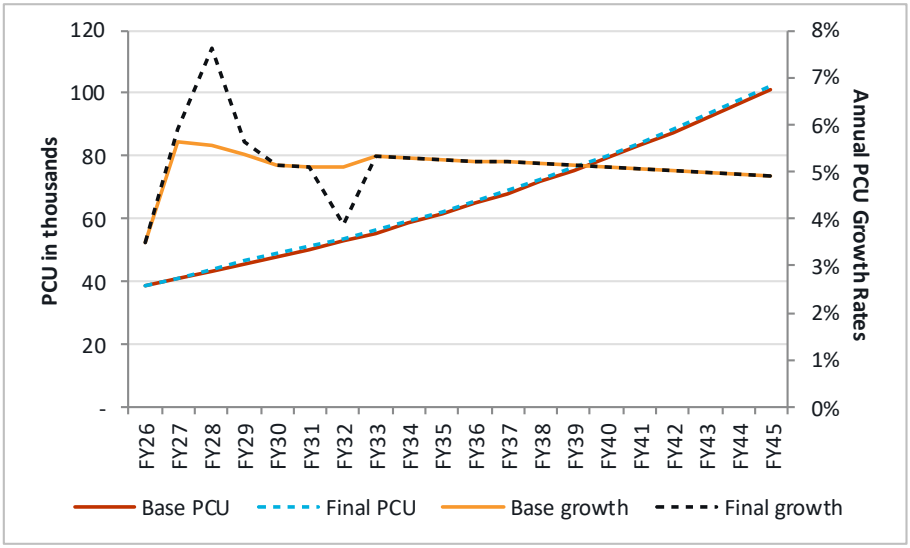
Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY38	FY26-FY38
CJV	13.3%	11.7%	11.6%	12.1%	11.9%
Mini LCV	9.3%	8.4%	8.4%	9.0%	8.6%
LCV	7.8%	7.9%	7.7%	7.6%	7.8%

Vehicle Type	FY26-FY27	FY27-FY30	FY30-FY35	FY35-FY38	FY26-FY38
Bus	7.0%	8.4%	7.6%	7.7%	7.8%
2A	8.9%	10.2%	9.4%	9.6%	9.6%
3A	5.3%	6.8%	5.8%	5.8%	6.0%
MAV	10.6%	13.9%	9.1%	10.1%	10.7%
Total revenue	**10.3%**	**11.2%**	**9.5%**	**10.2%**	**10.2%**

Source: Steer analysis

6.20 As presented in Table 6.8 above, CAGRs (FY26-FY38) in terms of PCUs for the final (background plus impacts) growth rates is 5.4% for the period of the concession.

Figure 6-1: Traffic and growth rates for forecast PCUs - Background and final, TP1 Pampampallam



Source: Steer analysis

Upside and Downside cases

Upside and Downside scenario assumptions

6.21 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.22 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.23 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside

(pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions

6.24 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.11: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.25 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.26 The upside case impacts included in forecasts are summarised in below.

Table 6.12: Summary of impacts on the Assets

Development	Year of Impact	Change in impact w.r.t base case	Magnitude of impact TP1 Pampampallam
Construction Recovery	FY27*	Same as base case	3A: 1.8% MAV: 5.0%

Source: Steer analysis of OD data; *same timeline as base scenario

Impacts-Downside Case

6.27 The downside case impacts included in forecasts are summarised in below.

Table 6.13: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact TP1 Pampampallam
Construction Recovery	FY27*	-100% of the base case	3A: 0% MAV: 0%

Source: Steer analysis of OD data; *same timeline as base scenario

Upside and Downside Case Forecasts

6.28 Table 6.14 below presents the difference between the Upside and Downside Case forecasts relative to the Base Case forecasts in FY38 (i.e., the concession end year) for the Asset. Figure 6-2 and Figure 6-3 below plot the Upside and Downside Case forecasts

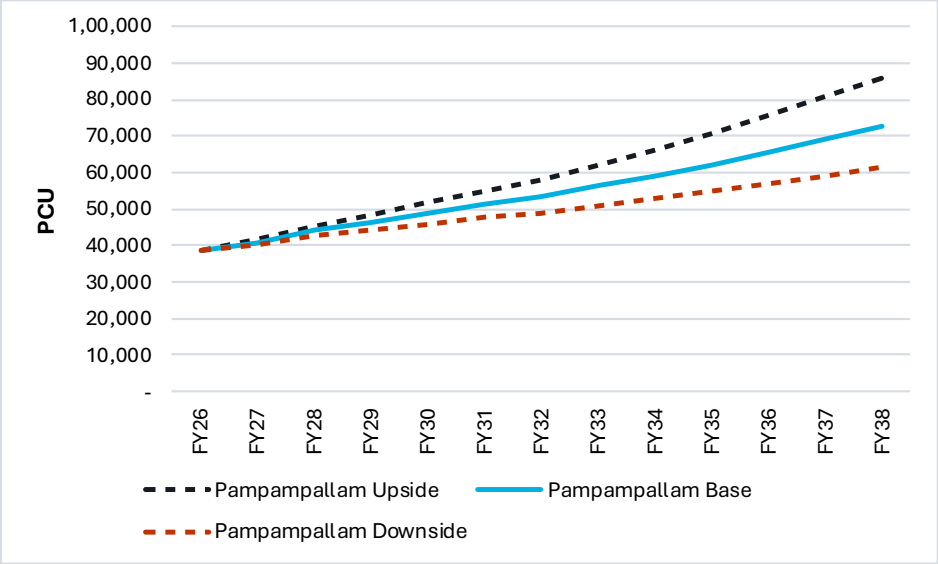
relative to the Base Case forecasts for the Asset over its full concession period (FY26-FY38).

Table 6.14: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts – FY38

Case	Measure	TP Pampampallam
Upside Case	Traffic (PCU)	18.9%
Downside Case		(15.3%)
Upside Case	Revenue	28.8%
Downside Case		(23.0%)

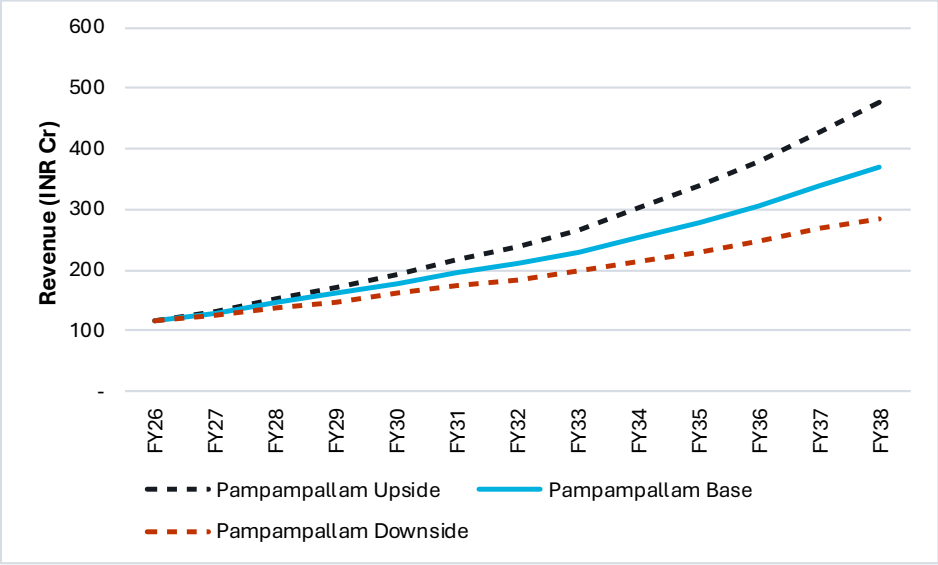
Source: Steer

Figure 6-2: Upside and Downside Case PCU Forecasts - TP Pampampallam



Source: Steer Analysis

Figure 6-3: Upside and Downside Case Revenue Forecasts - TP Pampampallam



Source: Steer Analysis

Summary outlook

6.29 Kerala is largely a consumption driven economy, and the state has significant cement and other construction material demand carried in commercial vehicles due to large scale construction activities undertaken in the State. Given the presence of Cochin international port, and the BPCL refinery at Kochi, POL items move between Coimbatore (Tamil Nadu) and Kochi (Kerala) as well.

6.30 The state's per capita income has historically remained higher than national per capita income levels. As of FY24, this ratio stood at 1.6 times the national benchmark[1], highlighting Kerala's growth story as largely driven by the services sector, (that contributed to 64% of state GSVA in FY24). The tertiary sector's high contribution consists primarily of tourism- and pilgrimage-related traffic, as well as the rapidly growing financial services sector. While the sub-sector of hotels and restaurants has grown at a CAGR of 6.5% between FY12 and FY24, the corresponding growth in the financial services sector has been 6.8%.

6.31 Overall, passenger traffic on the Asset is primarily driven by tourism and leisure travel from nearby states such as Tamil Nadu and Karnataka. After being significantly impacted during FY20 and FY21 due Covid-19 lockdowns across the state and country, passenger traffic rebounded strongly post reopening of the state after easing of Covid-19 restrictions, with tourist arrivals registered at over 2.2 crores in 2024.[4] Bus traffic also returned along with cars during that time, further adding to overall traffic recovery on the Asset post easing of the pandemic-related restrictions.

6.32 Commercial traffic observed on the Asset is driven by demand for construction material in various parts of Kerala where materials are sourced from neighbouring Tamil Nadu. This movement is also related to POL products moving out of Kochi and into Tamil Nadu and other parts of the country further north and east of the Asset.

6.33 The demand for construction materials has remained strong due to several infrastructure projects that have been taken up in the vicinity of the Asset – the widening of NH66[6], construction of the Lulu Mall in Kottayam[7] and the construction of Government Medical College, Idukki[8]

6.34 Overall, we retain a positive outlook for the Asset as it serves as the primary route for tourism-related travel in Kerela and Tamil Nadu. The positive outlook for the underlying growth drivers on the corridor also include construction activity within the state, which we expect to remain strong over the medium term as major construction activities and infrastructure projects in the state will continue to keep demand buoyant. Finally, the continued focus of the state government on harnessing Kerala's tourism potential also bode well for the Asset and will both directly and indirectly allow for sustained growth on the Asset – both for passenger vehicles, as well as construction related truck volumes

Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by Client, feedback from Client meetings and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarised below

Appendices

A Top 10 OD Pairs

A.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and Bus and, 3 Axles and MAVs combined below.

Table A.1: Top 10 OD pair shares at TP1 Pampampallam: CJVs and Buses

	OD Pair	Share
1.	Palakkad-Coimbatore	33%
2.	Palakkad-walayar	7%
3.	Thrissur-Coimbatore	7%
4.	Ernakulam-Coimbatore	4%
5.	Coimbatore-COCHIN	4%
6.	Palakkad-Chennai	3%
7.	Kanjikode-walayar	3%
8.	Kanjikode-Coimbatore	3%
9.	Chennai-Thrissur	2%
10.	Palakkad-Bengaluru	2%

Source: Steer analysis

Table A.2: Top 10 OD pair shares at TP1 Pampampallam: MAVs

	OD Pair	Share
1.	Palakkad-Coimbatore	12%
2.	Coimbatore-COCHIN	7%
3.	Ernakulam-Coimbatore	5%
4.	Kanjikode-Coimbatore	5%
5.	Thrissur-Coimbatore	3%
6.	Bengaluru-COCHIN	3%
7.	Palakkad-walayar	3%
8.	Palakkad-Bengaluru	2%
9.	Salem-COCHIN	2%
10.	Kollam-Coimbatore	2%

B Data collection exercise

B.1 To validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

3 days TVC count

Table B.1: 3-day TVC counts at TP1 Pampampallam

Date	Source	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
28-06-2023	TVC	10,954	1,718	2,590	941	1,286	588	2,270	4	20,351
29-06-2023	TVC	11,741	1,150	2,108	908	1,131	558	2,054	2	19,652
30-06-2023	TVC	10,844	1,473	2,406	952	1,132	519	2,432	3	19,761

Source: Steer analysis

Table B.2: WADT TVC vs TMS

	Source	CJV +Mini LCV	LCV	Bus	2A	3A+ MAV	OSV	Total
TP1	TVC	12,627	2,368	934	1,183	2,807	3	19,921
	TMS	12,845	1,644	960	1,352	2,888	2	19,690

Source: Steer analysis

Zone list

Table B.3: Zone list used for OD analysis

Zone No	Zone name	Description/State
1	Alathur	Palakkad
2	Erimayur	Palakkad
3	Kunissery	Palakkad
4	Vadakacherry	Palakkad
5	Puthucode	Palakkad
6	Chittlamcherry	Palakkad

Zone No	Zone name	Description/State
7	kavaserri	Palakkad
8	Tarur	Palakkad
9	Kuzhalmannam	Palakkad
10	Vilayannur	Palakkad
11	Kottai	Palakkad
12	Nenmara	Palakkad
13	Parali	Palakkad
14	Pirayiri	Palakkad
15	Palakkad	Palakkad
16	Thenkurissi	Palakkad
17	kannadi	Palakkad
18	mathur	Palakkad
19	mampad	Malappuram
20	Kannambara	Palakkad
21	Kuthiran	Thrissur
22	Pallatheri	Palakkad
23	Kanjikode	Palakkad
24	Kava	Palakkad
25	Elapully	Palakkad
26	pampampallam	Palakkad
27	attapalam	Palakkad
28	pampubara	Idukki
29	kozhiparra	Palakkad
30	elippara	Palakkad
31	walayar	Palakkad
32	pichanur	Coimbatore
33	solakarai	Coimbatore
34	ettimadal	Coimbatore
35	boluvampatti	Coimbatore
36	mundur	Palakkad
37	chittur	Palakkad
38	kollengode	Palakkad
39	pazhayannur	Thrissur
40	chelakkara	Thrissur
41	pattikad	Thrissur
42	pallasana	Palakkad
43	Krishnagiri	Krishnagiri

Zone No	Zone name	Description/State
44	Mysuru	Mysuru
45	Bengaluru	Bangalore Urban
46	Erode	Erode
47	Salem	Salem
48	Chennai	Chennai
49	Karnataka	Karnataka
50	Alappuzha	Kerala
51	Ernakulam	Kerala
52	Idukki	Kerala
53	Kannur	Kerala
54	Kasaragod	Kerala
55	Kollam	Kerala
56	Kottayam	Kerala
57	Kozhikode	Kerala
58	Malappuram	Kerala
59	Pathanamthitta	Kerala
60	Thiruvananthapuram	Kerala
61	Thrissur	Kerala
62	Wayanad	Kerala
63	Meghalaya	Meghalaya
64	Manipur	Manipur
65	West Bengal	West Bengal
66	Tripura	Tripura
67	Madhya Pradesh	Madhya Pradesh
68	Mizoram	Mizoram
69	Uttar Pradesh	Uttar Pradesh
70	Haryana	Haryana
71	Odisha	Odisha
72	Bihar	Bihar
73	Telangana	Telangana
74	Maharashtra	Maharashtra
75	Punjab	Punjab
76	Sikkim	Sikkim
77	Uttarakhand	Uttarakhand
78	Kerala	Kerala
79	Andhra Pradesh	Andhra Pradesh
80	Nagaland	Nagaland

Zone No	Zone name	Description/State
81	Jharkhand	Jharkhand
82	Rajasthan	Rajasthan
83	Gujarat	Gujarat
84	Delhi	Delhi
85	Chhattisgarh	Chhattisgarh
86	Himachal Pradesh	Himachal Pradesh
87	Goa	Goa
88	Assam	Assam
89	Jammu and Kashmir	Jammu and Kashmir
90	Arunachal Pradesh	Arunachal Pradesh
91	Ladakh	Ladakh
92	Puducherry	Puducherry
93	Daman and Diu	Daman and Diu
94	Mangaluru	Karnataka
95	Coimbatore	Tamil Nadu
96	Lakshadweep	Lakshadweep
97	Mumbai	Maharashtra
98	Thanjavur	Tamil Nadu
99	Dindigul	Tamil Nadu
100	Tiruchirapalli	Tamil Nadu
101	Dadra and Nagar Haveli	Dadara & Nagar Havelli
102	Nagercoil	Tamil Nadu
103	Andaman and Nicobar Islands	Andaman and Nicobar Islands
104	COCHIN	Kerala

Source: OD data

Direction-wise commodity distribution

Table B.4: Commodity distribution towards Coimbatore at TP1 Pampampallam

Commodities	LCV	2 Axle	3 Axle	MAV
Agriculture	1%	2%	3%	1%
Groceries	18%	14%	12%	7%
Construction	3%	9%	14%	5%
Petroleum	2%	4%	10%	30%
Manufacturing	17%	12%	21%	12%
Automobiles	-	3%	1%	3%
Miscellaneous	24%	13%	6%	6%
Metals	4%	3%	2%	6%

Commodities	LCV	2 Axle	3 Axle	MAV
Empty	31%	41%	29%	32%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Table B.5: Commodity distribution towards Palakkad at TP1 Pampampallam

Commodities	LCV	2 Axle	3 Axle	MAV
Agriculture	6%	5%	6%	2%
Groceries	29%	26%	18%	8%
Construction	13%	13%	27%	32%
Petroleum	4%	7%	9%	14%
Manufacturing	17%	17%	13%	9%
Automobiles	1%	2%	1%	9%
Miscellaneous	17%	15%	10%	4%
Metals	4%	6%	7%	8%
Empty	8%	9%	9%	14%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Trip length distribution

Table B.6: Trip length frequency for TP1 Pampampallam

Distance range	LCV	2 Axle	3 Axle	MAV
0-100 km	30%	32%	27%	23%
100-300 km	35%	29%	33%	30%
300-500 km	12%	12%	12%	14%
500-1000 km	16%	17%	15%	17%
>1000 km	7%	9%	13%	16%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

C Detailed forecasts

C.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

C.2 This section presents the detailed traffic forecasts for the forecast period until FY38, year of expected close of the concession. The following two tables show the traffic growth rates and AADT, respectively.

Table C.1: Forecasts for (background + impacts) AADT at TP1 Pampampallam

Vehicle Category	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	14,454	1,871	2,181	1,095	1,552	636	2,579	24,368	38,626
FY27	15,566	1,945	2,250	1,131	1,630	646	2,753	25,923	40,911
FY28	16,727	2,022	2,320	1,168	1,712	661	3,138	27,749	44,023
FY29	17,911	2,098	2,390	1,205	1,795	671	3,339	29,412	46,494
FY30	19,115	2,175	2,460	1,242	1,879	679	3,515	31,067	48,891
FY31	20,376	2,254	2,531	1,279	1,965	687	3,697	32,791	51,379
FY32	21,716	2,335	2,604	1,318	2,056	695	3,712	34,437	53,376
FY33	23,194	2,422	2,682	1,359	2,155	703	3,913	36,430	56,219
FY34	24,751	2,511	2,762	1,400	2,258	712	4,124	38,520	59,195
FY35	26,390	2,602	2,844	1,443	2,365	720	4,344	40,712	62,307
FY36	28,117	2,696	2,928	1,486	2,477	729	4,575	43,010	65,565
FY37	29,934	2,792	3,014	1,530	2,593	737	4,816	45,420	68,971
FY38	31,846	2,890	3,102	1,575	2,714	746	5,069	47,943	72,531

Source: Steer analysis

Table C.2: Forecasts for (background +impacts) AADT growth rates (%) at TP1 Pampampallam

Vehicle Category	CJV	Mini LCV	LCV	Buses	2A	3A	MAV	Total	PCU
FY26	9.0%	9.0%	11.6%	(2.8%)	1.0%	(2.9%)	(2.9%)	6.4%	3.5%
FY27	7.7%	4.0%	3.2%	3.3%	5.1%	1.6%	6.8%	6.4%	5.9%
FY28	7.5%	3.9%	3.1%	3.3%	5.0%	2.3%	14.0%	7.0%	7.6%
FY29	7.1%	3.8%	3.0%	3.2%	4.8%	1.6%	6.4%	6.0%	5.6%
FY30	6.7%	3.7%	2.9%	3.1%	4.7%	1.2%	5.3%	5.6%	5.2%
FY31	6.6%	3.6%	2.9%	3.0%	4.6%	1.2%	5.2%	5.5%	5.1%
FY32	6.6%	3.6%	2.9%	3.0%	4.6%	1.2%	0.4%	5.0%	3.9%
FY33	6.8%	3.7%	3.0%	3.1%	4.8%	1.2%	5.4%	5.8%	5.3%
FY34	6.7%	3.7%	3.0%	3.1%	4.8%	1.2%	5.4%	5.7%	5.3%

Vehicle Category	CJV	Mini LCV	LCV	Buses	2A	3A	MAV	Total	PCU
FY35	6.6%	3.6%	3.0%	3.0%	4.8%	1.2%	5.3%	5.7%	5.3%
FY36	6.5%	3.6%	3.0%	3.0%	4.7%	1.2%	5.3%	5.6%	5.2%
FY37	6.5%	3.6%	2.9%	3.0%	4.7%	1.2%	5.3%	5.6%	5.2%
FY38	6.4%	3.5%	2.9%	2.9%	4.7%	1.2%	5.2%	5.6%	5.2%

Source: Steer analysis

Revenue forecasts

C.3 The following table presents the year-wise annual revenue forecasts for the forecast period until FY38.

Table C.3: Forecasts for (background +impacts) revenue at TP1 Pampampallam (in INR Cr)

Vehicle Category	CJV	Mini LCV	LCV	Buses	2A	3A	MAV	Total
FY26	34.5	4.5	8.6	9.2	13.8	9.0	36.5	116.1
FY27	39.1	4.9	9.3	9.8	15.1	9.5	40.4	128.0
FY28	44.3	5.3	10.2	10.7	16.7	10.3	48.7	146.1
FY29	50.3	5.9	10.9	11.5	18.3	10.9	54.0	161.8
FY30	54.5	6.2	11.6	12.5	20.1	11.5	59.6	176.2
FY31	61.6	6.9	12.6	13.5	22.1	12.2	65.7	194.5
FY32	68.6	7.4	13.6	14.5	24.1	13.0	69.3	210.5
FY33	76.0	8.0	14.6	15.6	26.3	13.7	76.0	230.1
FY34	85.3	8.7	15.8	16.8	28.9	14.5	84.0	254.1
FY35	94.4	9.3	16.9	18.0	31.5	15.3	92.3	277.8
FY36	105.6	10.2	18.3	19.5	34.7	16.2	101.8	306.4
FY37	119.8	11.2	19.6	21.0	37.9	17.1	111.8	338.4
FY38	132.9	12.1	21.1	22.6	41.4	18.1	123.3	371.5

Source: Steer analysis

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October 2025

Project Transit: Traffic Due Diligence of Lucknow-Raebareli Tollway Limited

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Our ref: 23741310

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Table of Contents

	Disclaimer	iv
Glossary Items		**vi**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Alternate Routes	8
3	**Traffic description**	**10**
	Introduction	10
	Historical Trends	10
	Key findings of the TVC data analysis	17
	Key findings of origin-destination analysis	18
	Conclusions	24
4	**Socio economic context and traffic growth**	**26**
	Introduction	26
	Population growth	26
	Economic Indicators	27
	Economic growth	30
	Forecasts for growth drivers	33
5	**FY26 Base year AADT and Traffic growth Analysis**	**36**
	FY26 Base year AADT estimates	36
	Estimation of background elasticities	39
	Overview	39
6	**Forecast: Network overlays and forecasts**	**42**
	Introduction	42
	Analysis of potential network/developmental impacts	42
	Revenue forecasting assumptions	44
	Traffic and Revenue forecasts	47
	Target revenues and modification of concession period	49
	Upside and Downside cases	49
	Summary outlook	53

Figures

Figure 2-1: Asset location in the regional network context 4

Figure 2-2: Asset context 5
Figure 2-3: Typical cross-sections and toll plazas on the Asset 6
Figure 3-1:Ticket-segmentation for CJV at TP1 Dakhina Sekhpur 15
Figure 3-2: Ticket-segmentation for MAV at TP1 Dakhina Sekhpur 15
Figure 3-3 :Comparison between TVC and TMS daily traffic data on TP1 Dakhina Sekhpur 17
Figure 3-4: Comparison between vehicle shares from TVC and TMS WADTs 18
Figure 3-5: Zonal influence at TP1 Dakhina Sekhpur 20
Figure 3-6: Internal-external distribution at TP1 Dakhina Sekhpur 21
Figure 3-7: Commodity distribution at TP1 Dakhina Sekhpur 23
Figure 3-8: Trip length distribution TP1 Dakhina Sekhpur 24
Figure 4-1: Annual growth – Index of Industrial Production 28
Figure 4-2: Car Ownership in India per 1,000 population 29
Figure 4-3: Per Capita Income 29
Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures 30
Figure 4-5: Month on Month IIP performance 31
Figure 4-6: Industrial components of GVA 31
Figure 4-7: Evolution of Uttar Pradesh's state GDP and national GDP 32
Figure 4-8: Sectoral Distribution of GSDP of Uttar Pradesh for 2024 33
Figure 4-9: GDP-GSDP forecast 35
Figure 5-1: FY25 Base Estimation methodology 37
Figure 6-1: Alternate routes and Asset shown against the regional network context 42
Figure 6-2 Forecast PCUs and growth rates at TP1 Dakhina Sekhpur 48

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Summary of concession 6
Table 2.2: Single toll rates on the Asset (INR), applicable FY26 7
Table 3.1: PCU factors 10
Table 3.2: Average Daily Traffic at TP1 Dakhina Sekhpur 11
Table 3.3: Revenue (in INR Cr) at TP1 Dakhina Sekhpur, and AADC (in INR Lakhs) 12
Table 3.4: Typical ticket types sold at NHAI plazas 13
Table 3.5: Ticket segmentation for LCV, Bus, 2A and 3A at TP1 Dakhina Sekhpur 16
Table 3.6 Data collection schedule 16
Table 3.7 WADT from TVC counts 17
Table 3.8: Sample rates for OD data 19
Table 3.9: Zone aggregations for zonal influence analysis 19
Table 3.10: Average Trip Length (in km) 24
Table 4.1: CAGR of population in India 26
Table 4.2: Population Growth in Uttar Pradesh and India (2012-2024) 27
Table 5.1: SCF values for TP1 Dakhina Sekhpur 37
Table 5.2: Adopted base estimates AADT 38

Table 5.3: Identified growth drivers to model traffic growth	39
Table 5.4: Passenger and Commercial growth with normalised FY22 – TP Dakhina	40
Table 5.5: Elasticity recommendations for the Asset (Lucknow-Raebarelli)	40
Table 6.1: Toll & Time Comparison between Asset and Alternate	43
Table 6.2: Impact of Ganga Expressway	43
Table 6.3: Increase in Car and Bus traffic due to Kumbh Mela	44
Table 6.4: Post-Construction Impact on the Asset	44
Table 6.5: Trip factors at TP1 Dakhina Sekhpur	45
Table 6.6: Segmentation for forecast years, TP1 Dakhina Sekhpur	45
Table 6.7: Annual pass compensation for CJVs (in Crore)	46
Table 6.8: WPI growth forecast assumptions	46
Table 6.9: FY26YTD Revenue reconciliation summary	47
Table 6.10: Forecast traffic forecast for TP1 Dakhina Sekhpur	47
Table 6.11: Forecast Traffic CAGR (%) for TP1 Dakhina Sekhpur	47
Table 6.12: Forecast Revenue for TP1 Dakhina Sekhpur (INR crores), including the Annual Pass Compensation revenue for CJV	48
Table 6.13: Forecast Revenue growth CAGR (%) for TP1 Dakhina Sekhpur	48
Table 6.14: Target Revenues for Extension 1	49
Table 6.15: Target Revenues for Extension 2	49
Table 6.16: Summary of Macro-economic Assumptions for upside and downside cases	50
Table 6.17: Summary of impacts on the Assets	50
Table 6.18: Summary of impacts on the Assets	51

Appendices

A	**Top 10 OD Pairs**
B	**Data Collection Exercise**
C	**Detailed Forecasts**

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While the estimates contained in the Report are not precise forecasts, they do represent, in our view a reasonable expectation of the future, based on information we have been provided with or sourced. However, the estimates necessarily rely on numerous assumptions and judgements, and circumstances may occur over the timeframe of the project that go counter to these assumptions and judgements and that affect the project's realized revenues. Actual events may differ from those assumed, and events are subject to change. Therefore, Steer makes or provides no warranty, whether implied or otherwise, as to the accuracy of forward-looking information presented. Further, it is important to note that forecasts presented represent long term growth profiles; the results for individual time periods may vary from forecasted values.

Traffic Consultant developed the relationships in the models used to produce the forecasts for the projects based on data available through September 2025. This report does not consider variations in traffic performance due to changing macro and force majeure events such (but not limited to) as global wars, economic uncertainty (high inflation, global recession), and changes in the regulatory environment. The situation remains dynamic and is subject to significant change in the short and medium term. In this challenging context, Traffic Consultant has produced base forecasts with a view on a possible scenario for the traffic forecasts. However, it is important to note that this is only one view, and there continues to remain uncertainty as to the short-term, intermediate or prolonged effects of and responses to such macro-economic/force majeure events. As a result, no assurance can be provided by Traffic Consultant that the scenarios and assumptions Traffic Consultant has identified will prove to be accurate. Given the uncertainty inherent in this scenario, Traffic Consultant advises that all readers of the Report consider the Report in the context of their own assessment of the impact of such events.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE LIABILITY OF THE TRAFFIC CONSULTANT FOR ANY LOSS, DAMAGE, COST OR EXPENSE SUFFERED OR INCURRED BY ALL PERSONS OR ENTITIES AND FOR ALL CLAIMS RESPECTING ITS WORK PERFORMED IN CONNECTION WITH THE ISSUE OR THE REPORTS IS HEREBY LIMITED IN THE AGGREGATE TO THE AMOUNT OF FEES ACTUALLY PAID BY THE CLIENT TO THE TRAFFIC CONSULTANT IN RESPECT OF THE REPORTS AND CONNECTED SERVICES.

Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
km	Kilometre
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit: it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Lucknow Raebareli Toll Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on primary surveys undertaken in 2024, actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Lucknow Raebareli consists of the single toll road section with its own special purpose vehicle (SPV). For the purpose of this report, we hereafter call the toll plaza on the Asset as TP1.

- Lucknow Raebareli Tollway Limited: LRTL: TP1 – Dakhina Sekhpur

1.3 Our scope of work for the traffic and revenue forecasts process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Oct'20 and Sept'25
• Historical analysis and forecasts for baseline growth, including; – Background growth, and – Seasonality trends	• Historical toll plaza data provided by Client and benchmarks from Asset in the vicinity wherever long time series historical data was not available
• Validation of revenue reported FY26 YTD	• TMS data provided by the Client • Revenue reconciliation is done using toll plaza traffic and ticket type data to calculate revenue and to reconcile it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: – Zonal influence and Top OD pairs – Commodity distribution – Trip length distribution	• Origin Destination (OD) surveys undertaken by a survey agency appointed by Steer. The surveys were undertaken in the year 2024.
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and Steer's in-house experience of working in the vicinity of the Asset. Impact analysis conducted by Steer based on

Scope of work	Data source
	Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including: – Toll segmentation and trip factors – Overloading shares	• Calculated from historical data provided by the Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research, Asset historical traffic performance and Steer's in-house experience of working on toll roads on the corridor
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based latest on toll notification published by National Highway Authority of India (NHAI); and the latest Wholesale Price Index (WPI) trends as shared by the client.

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis has focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data starting October 2020 to September 2025.
  - Concession agreement and toll notifications for FY25 and FY26.
  - Previous studies related to traffic and revenue
  - Steer-commissioned OD survey on 26th June 2023 to validate any change in growth drivers and travel patterns as part of earlier commission.
  - Steer-commissioned TVC survey in 2021 as part of earlier commission
- We undertook revenue reconciliation for FY26 YTD, by building up revenue from the traffic reported by each of the toll plazas and subsequently matching them to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD. This has been a key part of our analysis to validate the segmentation/toll-frequency assumptions, and the Annual Average Daily Traffic (AADT) reported for each of the toll plazas.

1.6 The estimation of future traffic demand on the Asset was undertaken using:

- Estimating the FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The FY25 AADT thus computed was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the estimates for FY26, the expected FY26 traffic was validated against the six months

of actual FY26 traffic (Apr to Sept) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and the progress of ongoing developments on the Asset.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against Steer's knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by the client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network such as expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts on traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in the trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

The report has been divided into the following chapters:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of the corridor and the region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside case

2 The Asset

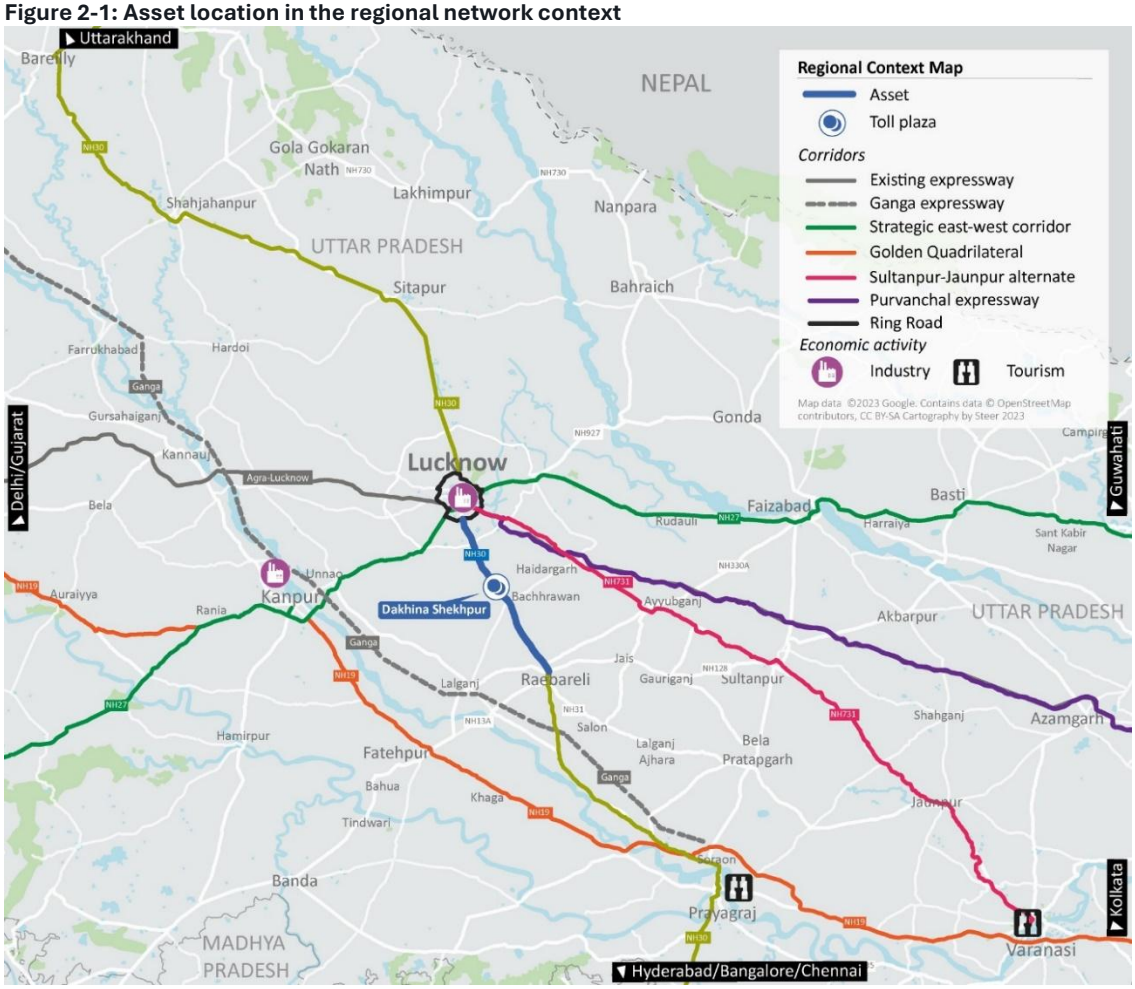
Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. It covers the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of Uttar Pradesh, connecting the state capital Lucknow to Raebareli in the south-central part of the state. The following figure shows the regional road network in which the Asset is located.

Figure 2-1: Asset location in the regional network context



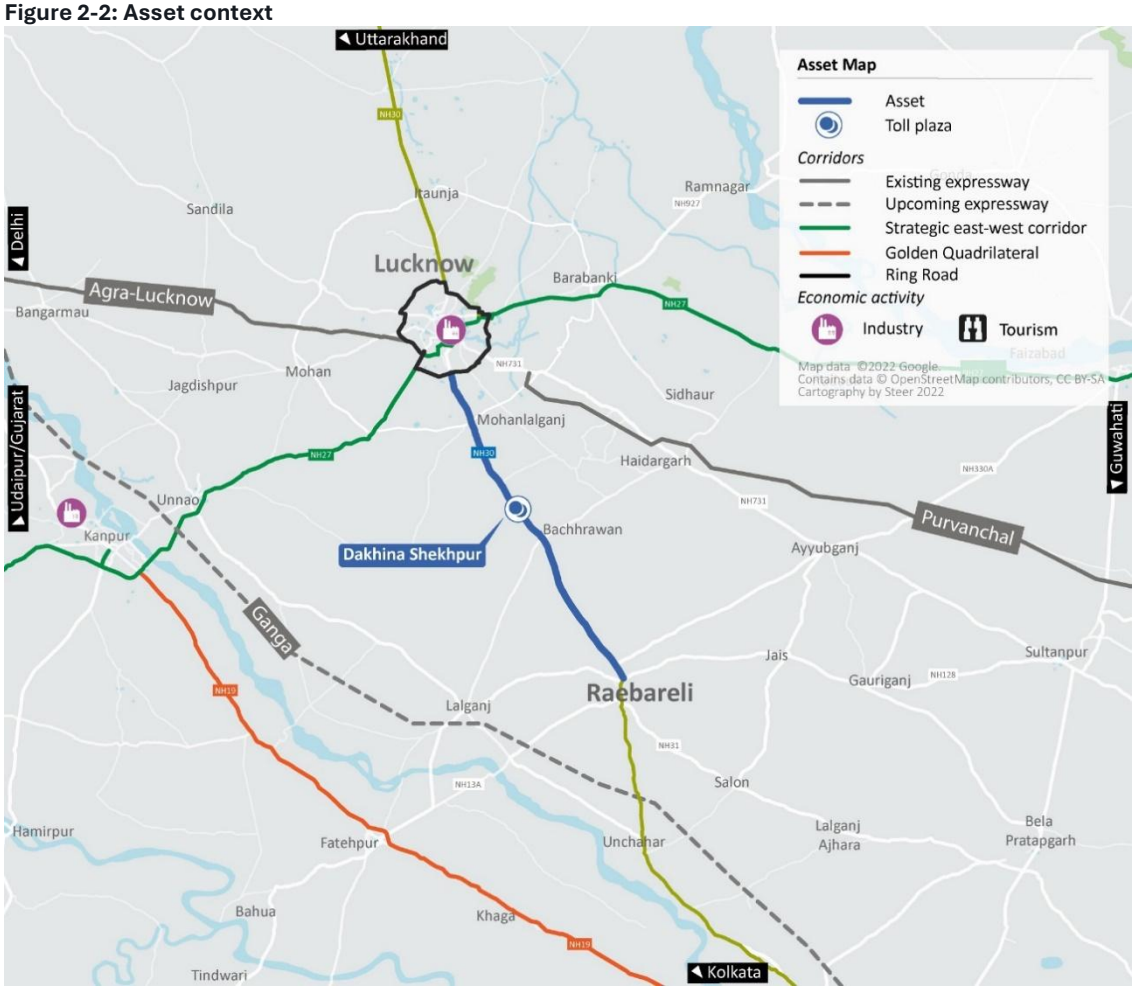
Source: Steer cartography using OpenStreetMap data

2.3 This Asset primarily caters to two different types of movements:

- **Short-distance trips** undertaken majorly by passenger vehicles such as cars for work/business and tourism/pilgrimage purposes wherein the movement is predominantly local between Lucknow, Raebareli, Prayagraj, Varanasi and Mirzapur. Further, LCVs cater to the local demand generated by two large consumption centres – Lucknow and Raebareli. Short-distance trips made by MAVs feeds into the local consumption demand and carries significant amount of Cement from the cement factories (Birla Cement, ACC Cement) in the vicinity.
- **Long-distance trips** undertaken by heavy trucks between Punjab, Haryana, Uttar Pradesh, West Bengal, and Jharkhand, traversing through this route, carrying a mix of commodities such as agriculture/grocery items, metal, cement, petroleum, and manufacturing items.

2.4 This Asset is a 70 km long toll road which forms part of the NH 30 in Uttar Pradesh. It is a four-lane road with one toll plaza, namely, **Dakhina Sekhpur (TP1)** at Km 42.5 (closer to Lucknow). The following figure provides a closer view of the Asset in the context of its immediate surroundings.

Figure 2-2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.5 The toll plaza on the Asset has been operational since March 2015, and the client took over its operations in October 2020. There are still 25 years left in the concession period which ends in FY51. The following table presents a summary of the concession.

Table 2.1: Summary of concession

Particulars	Details
State	Uttar Pradesh
Highway and lane configuration	NH 30 four lane
Toll plazas	TP1: Dakhina Sekhpur
Length (km) as per concession agreement, applicable	TP1: 70 km
Commencement of operations	TP1: March 2015
Operated by Client since	October 2020
Concession period	30 years
Last year of concession	FY51

Source: Client data and Concession agreement

Figure 2-3: Typical cross-sections and toll plazas on the Asset

Source: Steer site visit

Tolls are collected across various vehicle categories as per toll notification and rates as shown in the following table. The toll plaza has dedicated ETC/FASTag lanes for electronic tolling. Like the other National Highway plazas, the Asset has Single, Return, Local Commercial, Local Personal, Monthly and Local Monthly tickets.

Table 2.2: Single toll rates on the Asset (INR), applicable FY26

Type of Vehicle	Single Journey Fee
CJV	120
LCV	190
Bus/Truck	400
3A	435
HCM/EME/MAV	625
OSV	765

Source: NHAI Revision of User Fee Rate w.e.f 01.04.2025

Key economic activities

2.6 Uttar Pradesh remains the most populous state in India, accounting for approximately 17% of the country's total population. This large consumer base continues to be a significant driver of economic activity and a key contributor to the national GDP. The state's real GSDP for FY25 is estimated at INR 29.6 trillion, reflecting robust growth from previous years. Between FY12 and FY25, Uttar Pradesh's real GSDP has grown at a CAGR of 6.1%, indicating a steady upward trajectory. In FY25, the state contributed 8.9% to India's national GDP, up from 8.2% in FY24[1]

2.7 Agriculture is the most important and the biggest sector in the state economy followed by the services sector comprising of travel, tourism, real estate, insurance and the finance industry.

2.8 The capital city of Lucknow, which is on one end of the Asset and a major traffic generator, is the main centre of administration, governance, commerce, technology, culture and tourism in the state with the presence of major IT companies, automotive industry, handicrafts sector (which accounts for 60% of the total exports from the state), education sector and research and development institutes. In recent times, it has emerged to become a growing IT hub, wherein the UP government has awarded the IT Special Economic Zone project to HCL Technologies in Lucknow.

2.9 With the vision of the current government to make UP a $1 trillion economy, the capital city Lucknow has received more than 2000 crore of investments to open 1000 acres integrated textile park under PM Mitra Park[2]. In the E-commerce sector, over 400 crore worth of investments from players like Amazon, Flipkart have been made in Lucknow in 2023 largely to create warehousing facilities.[3]

2.10 The fact that the city connects to five national highways and several districts, the Lucknow Outer Ring Road (ORR) recently constructed will ease congestion and improve connectivity.

2.11 Raebareli, situated on the other end of the Asset, is a centrally located city in the state which is well connected to other parts of the state as well as the country, with four

[1] As per data from the Ministry of Statistics and Program Implementation (MoSPI)

[2] PM Mitra Park in Lucknow and Hardoi to provide employment opportunities to skilled manpower of UP : Shri Goyal - India Shipping News

[3] India warehousing: Warehouse leasing in Lucknow on the rise: CBRE - The Economic Times (indiatimes.com)

national highways traversing through the city. It is home to some of the major industries such as the Rail Coach Factory at Lalganj, National Thermal Power Corporation (NTPC) power plant at Unchahar, where the coal for the plant is supplied from Jharkhand and MP Birla Cement Plant at Raebareli and at Kundanganj.

2.12 The existing cement plants in the region, have the potential to propel growth of the cement industry in the surrounding areas of the Asset. For instance,- MP Birla group has a cement plant in Raebareli with a capacity of over 1.3 million tonnes per annum (MTPA) as per 2023 figures, it has also acquired a plant in Kundanganj to augment the capacity from 1.2 MTPA to 3.6 MTPA.[45] ACC limited has a plant in Tikaria at distance of 50 km from Raebareli with plans to further augment capacity. The Asset enables the transport of cement from Varanasi and Prayagraj to the western region of the state and caters to the movement of cement trucks from plants located in Mirzapur, Sonbhadra and Raebareli to their Lucknow regional offices or distributors in Lucknow.

2.13 The Asset plays an integral part in connecting the rest of the country and the state to two of the key cities of great religious importance-- Prayagraj known for the confluence of the rivers Ganga, Yamuna and Saraswati (Triveni Sangam), Magh Mela and Kumbh Mela, and Varanasi known for its temples and famous ghats along river Ganga. Varanasi is also known for commercial activities such as silk sarees and clothing. These two destinations also attract people from other parts of the world.

2.14 Evidently, the Asset is a key enabler of movement of both the passenger and commercial traffic within the state wherein the local car movement makes up for majority of the trips between places such as Lucknow, Raebareli, Bachhrawan, Fatehpur, Varanasi and Lalganj to name a few.

Alternate Routes

2.15 Several network developments have taken place in the recent past which have affected traffic volumes on the Asset. These include phase-wise (1 and 2) completion of Varanasi Ring Road, and six laning of Kanpur – Prayagraj- Varanasi highway (NH19). Further, state highway network in the region went through upgradation. For example, the SH-13 which intersects with the Asset at Bachhrawan was upgraded from a level crossing to a road over-bridge (ROB). This has enabled sand carrying trucks from Banda to easily access areas like Barabanki and Bahraich, which are located to the northeast of the Asset.

2.16 The Raebareli–Unchahar section of NH-30, located south of the project corridor, is currently undergoing upgradation to a 4-lane configuration[6]. The project is part of the NHAI's broader initiative to enhance key stretches of the National Highway network, with the objective of improving regional connectivity, reducing travel time, and facilitating safer and more efficient movement of goods and passengers across UP. However, the ongoing construction works have led to diversion of long-distance traffic from the project road to alternate routes, primarily NH-731 and the Purvanchal Expressway, resulting in a

[4] **List of MP Birla Cement Factories in India - best cement in india**

[5] **https://economictimes.indiatimes.com/industry/indl-goods/svs/cement/birla-corp-looks-to-scale-up-cement-capacity-by-over-60-per-cent/articleshow/70672908.cms?from=mdr,** accessed on 24 March 2021

[6] **https://www.informalnewz.com/raebareli-prayagraj-highway-106km-is-being-widened-these-districts-will-benefit/**

temporary decline in traffic volumes on the asset. The official date of completion of the said project was December 2024. However, the project has faced constant delays in construction. Online sources[7] suggest the project is anticipated to be completed by June'2025. Presently, there is no official information to suggest when this project may be completed.

2.17 Further, as a part of road infrastructure development in the state, India's longest six-lane access-controlled expressway, the Ganga Expressway is set to complete by end of 2025. This expressway will significantly reduce travel time and improve LOS moving from Eastern to Western part of the state. With a section of expressway running parallel to the Asset, we assume share of Asset's traffic to shift once the expressway opens. Hence, an impact of this shift has been assumed in Chapter 6. For the sections including Varanasi-Sultanpur, Purvanchal expressway we assume that the expected shift has already happened. Hence no further impact has been assumed.

[7] **The Uttar Pradesh Index** (January 2025)

3 Traffic description

Introduction

3.1 This chapter outlines the current traffic and revenues on the Asset, as also Steer's analysis of origin-destination (OD) data and traffic count data. This covers data, which was collected as a part of this study, previous studies, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the vehicle distribution and volume of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as also the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data is typically provided by the Client and independently analysed and validated by Steer using traffic volume count (TVC) information.

PCU Factor assumption for reporting

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2023 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV/ Mini LCV	1.0
LCV	1.5
Bus/2A/3A	3.0
MAV*	3.4
OSV	4.5

Source: Steer analysis and IRC64,1990, * Rigid-Trailer PCU

Historical Trends

3.5 The following table explains the historical traffic recorded by vehicle class from October 2020 to September 2025 (as provided by the client). There is lack of long-term historical data available on the Asset since tolling was started by the client only in October 2020 and both the available years of data, FY21 and FY22 were impacted by COVID-19 related restrictions. Therefore, starting FY23 traffic on the Asset has started to get normalised with similar travel patterns recorded in FY24-25. Q3 and Q4 of FY25 were impacted by

MahaKumbh-2025, thereby leading to increase in the traffic on the Asset. FY26 YTD exhibits similar travel pattern as FY24.

3.6 As discussed in chapter 2, the Asset is located between two major cities, with Lucknow being a major traffic generator for the Asset. Thus, the Asset observes healthy proportion of passenger traffic.

Table 3.2: Average Daily Traffic at TP1 Dakhina Sekhpur

Vehicle category	FY21*	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23-25
CJV	10,832	10,031	10,351	10,747	12,358	11,874	9.3%
LCV	715	587	452	402	404	371	(5.4%)
Bus	664	604	656	689	778	733	8.9%
2A	616	623	523	450	444	430	(7.9%)
3A	636	526	371	237	186	184	(29.2%)
MAV	1,460	1,146	794	691	694	669	(6.5%)
Total	**14,924**	**13,518**	**13,147**	**13,218**	**14,864**	**14,262**	**6.3%**
PCU	**22,561**	**20,024**	**18,347**	**17,803**	**19,520**	**18,721**	**3.1%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till September'25

Table 3-3: Tollable Traffic at TP1 Dakhina Sekhpur

Vehicle category	FY21*	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23-25
CJV	9,531	9,193	9,499	9,810	11,230	10,755	8.7%
LCV	694	528	437	397	398	367	(4.5%)
Bus	662	601	654	687	776	732	8.9%
2A	610	615	516	443	438	424	(7.9%)
3A	634	517	370	235	182	181	(29.8%)
MAV	1,456	1,141	791	689	690	665	(6.6%)
Tollable AADT	**13,587**	**12,596**	**12,267**	**12,263**	**13,716**	**13,125**	**5.7%**
Tollable PCU	**21,183**	**19,022**	**17,433**	**17,605**	**18,337**	**17,552**	**2.6%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25

3.7 As per the table above, it can be observed that 2A/3A/MAV traffic on the Asset showed a consistent decline/flatlining trend between FY21-26YTD.

3.8 The exceptional increase in CJV and Bus volumes observed in FY25 can be attributed as a temporary increase, due to the Mahakumbh Mela held in January – February 2025. CJV volumes in FY26YTD continues to growth at a steady rate on month-on-month basis.

The trend of tollable traffic on the Asset has largely followed that of total traffic where Cars and Bus category recorded 3-5% growth in FY25 compared to FY24, due to the temporary increase because of the Mahakumbh mela, as discussed above.

3.9 3A category has declined in the FY21-26 YTD period. The reduction in 3A volume is a result of the declining demand for 3A vehicles, which are being replaced by 2A and MAV's. MAVs offer higher tonnage capacity making them more cost-effective for transporters. While the increase in 2A volume reflects the growing preference for these vehicles due to favourable changes in the legal permissible loads for 2As and their suitability for e-commerce-related freight, particularly high-value, low-volume goods over medium to long distances. This is consistent with our discussion with various transporters and OEMs across the country who are favouring 2A and 5A vehicles for commodity movement due to better unit economics.

3.10 Based on the OD results it is observed that the share of North India/Western UP moving to Eastern UP using the Asset has reduced by ~20%, which has led to fall in traffic in FY23-24. The same is validated by the comparison of trip lengths where the share of 3A and MAV's travelling over 500kms has reduced by ~20% and ~30% in the latest set of surveys which were carried out. Our observation is that this traffic has shifted to existing alternate routes by virtue of improved connectivity and quality upgradation, including:

- Lucknow – Kanpur - Prayagraj – Varanasi six lane corridor via NH19
- Lucknow – Sultanpur- Varanasi four lane corridor via NH731
- Lucknow – Purvanchal Expressway- Sultanpur- Varanasi via Expressway and NH731

3.11 These sections offer better level of service to truck users. Further the local traffic dependent on cement factories feeding into local construction in the region has also been impacted due to construction completion and covid related disruptions resulting in non-revival of such traffic on the Asset.

3.12 A combination of all the above-mentioned factors has resulted in lower volumes of traffic on the Asset and, accordingly, a necessary adjustment has been made to reflect the new base AADT position. This has been explained further in Chapter 6 as well.

Historical Revenue

3.13 The CJVs are the biggest revenue contributors on the Asset, with a ~54% share in FY25 followed by MAVs (21% share). Lower per day collection in FY22 compared to FY21 can be attributed to COVID-19 with restricted traffic movements. FY23 and FY24 recorded a similar average per day collection of INR 17 lakhs. A recovery to an AADC of ~INR 19 lakhs daily can be seen in FY25 with AADC increasing in the months of November to March majorly driven by increase in the CJV traffic due to MahaKumbh.

3.14 The following table shows the reported revenue by vehicle type at each toll plaza for period FY21 to FY26YTD:

Table 3.3: Revenue (in INR Cr) at TP1 Dakhina Sekhpur, and AADC (in INR Lakhs)

	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY21	13.8	1.6	2.8	2.9	3.4	11.3	-	**35.8**	**21.3**	**-**
FY22	25.9	2.6	5.6	6.7	6.2	19.9	0.0	**66.8**	**18.3**	**(14.1%)**
FY23	29.0	2.3	6.6	6.1	4.7	14.7	0.0	**63.5**	**17.4**	**(4.9%)**

	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY24	30.9	2.2	7.2	5.4	3.0	13.2	0.0	**62.0**	**16.9**	**(2.9%)**
FY25	36.7	2.3	8.5	5.4	2.4	13.7	0.0	**68.9**	**18.9**	**4.1%**
FY26 YTD	17.6	1.1	4.1	2.8	1.2	6.9	0.0	**33.7**	**18.3**	**(2.8%)**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD includes data till Sept'25 without the Annual Pass compensation revenue.

Toll Frequencies

3.15 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the client. The most common ticket categories observed on a typical National Highway are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these passes instead of evading toll.

3.16 The following are the types of tickets being sold at the plazas of the Asset.

Table 3.4: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows for a return journey within a day with a 50% discount on the return trip.
Monthly Pass	Discounted single entry ticket for users who undertake multiple trips within a month can buy the monthly pass.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.17 Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For some Assets, the Exemption and violations are at time reported together.

3.18 Generally, over the period the shares of single/return/monthly tickets tend to stabilise within 2-3 years of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns.

3.19 Further, FY21 was impacted due to the mandatory implementation of FASTag as a mode of payment, where users were now paying via an online payment system instead of cash payments at the toll plaza. Additionally, in FY22 traffic and travel patterns were impacted by the second wave of COVID-19 in Q1 and Q2. With FY21 and FY22 being impacted these

external events, the segmentation began to stabilise from FY23 onwards and reached steady state starting FY24.

Introduction of Annual pass for CJVs

3.20 The National Highway Authority of India launched the "The FASTag Annual Pass" on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.21 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at toll plazas
- Provide cost-effective travel for frequent users of NH/NE toll roads.

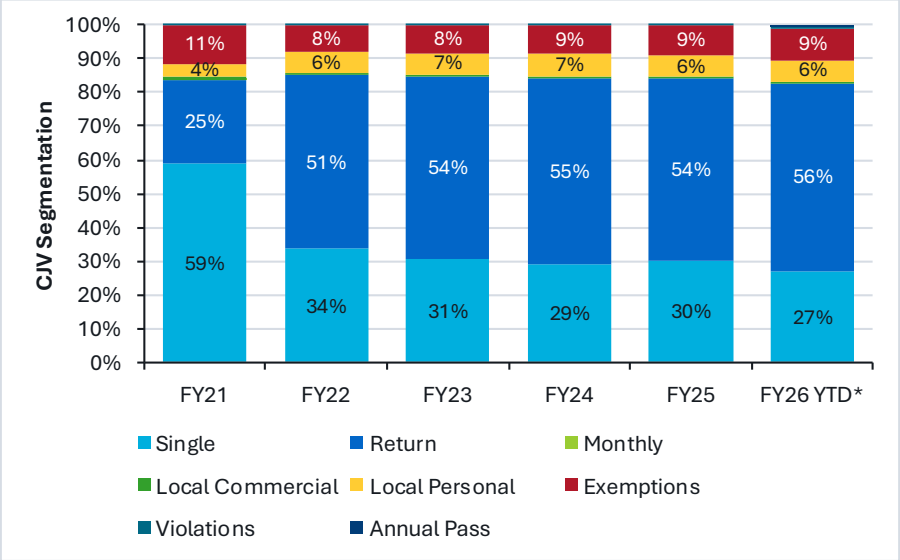
Share of traffic by payment type

3.22 The figures below show the ticket segmentation for CJV and MAV categories. It can be observed that both CJVs are dominated by return journeys whereas MAVs prefer single tickets.

3.23 FY23 onwards there have not been any pandemic related disruptions, or any one-time events which could affect traffic movement on the Asset. Hence, the segmentation as derived from the historical data of FY23 onwards has been considered as the normal segmentation on the Asset for all other vehicle categories except for the CJVs.

3.24 In case of the CJVs which dominate the traffic profile on the Asset the segmentation is computed considering the penetration of Annual Pass. CJV segmentation for FY26 and FY27 is detailed out in "Toll segmentation" section in Chapter 6.

Figure 3-1:Ticket-segmentation for CJV at TP1 Dakhina Sekhpur

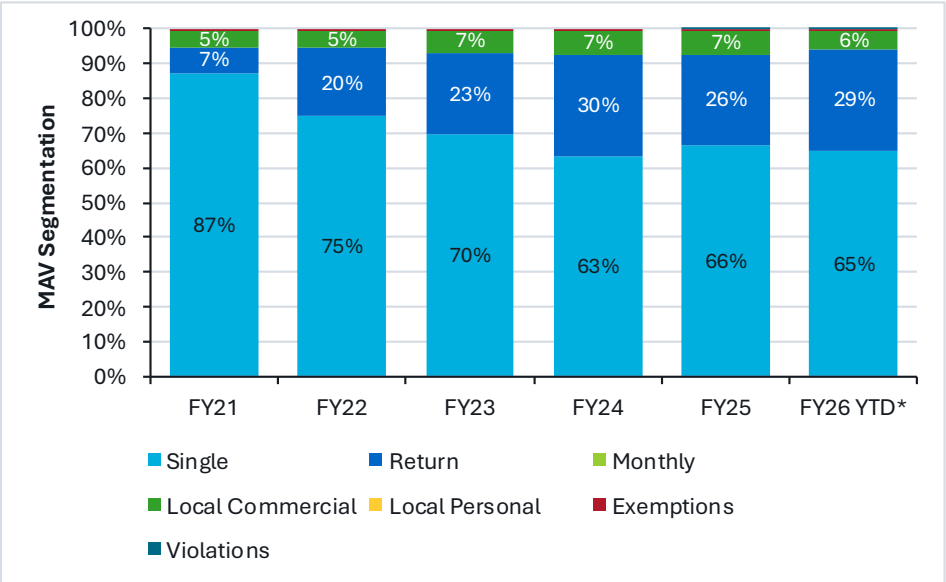


Source: Steer analysis of the Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD includes data till Aug'25

3.25 The share of single journeys on the Asset has exhibited a consistent decline, reducing from 59% in FY21 to 30% in FY25. Correspondingly, the share of return tickets has increased significantly from 25% in FY21 to 54% in FY25. This notable shift in journey segmentation became particularly evident in FY22, primarily driven by the implementation of FASTag in FY21, which enabled 24-hour return ticket to be availed.

3.26 The segmentation trends for Commercial Vehicle Journeys (CJVs) have remained relatively stable from FY23 onwards. Given the Asset's proximity to major urban clusters, it caters to a significant volume of daily commuters. This localised movement often results in multiple trips through the toll plaza within the same day, contributing to the higher share of return tickets among CJV users.

Figure 3-2: Ticket-segmentation for MAV at TP1 Dakhina Sekhpur



Source: Steer analysis of the Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD includes data till Aug'25

3.27 For MAVs, approximately 60-70% of all tickets sold on the Asset have been 'Single' tickets, after FY23. This can be attributed to the long-distance traffic observed on the Asset which can also be validated by higher average length of MAVs in the OD results. Around 30% of share of return and local commercial trips can be attributed to proximity of the Asset to the urban cluster of Lucknow. However, compared to FY22, FY25 observed a shift of MAVs from single to return category which can be attributed to shift of long-distance traffic on alternates, as discussed in sections above.

3.28 FY26YTD segmentation shows that LCVs, 2As and 3As trucks primarily use single tickets (44%, 56% and 46%), while buses overwhelmingly prefer return tickets (92%), reflecting their structured round-trip operations. Return ticket usage is also high for LCVs (53%), 2As (40%) and 3As (49%), indicating frequent round-trip freight movement. Local commercial and exemption categories remain minimal, while monthly and local personal passes see no recorded usage, suggesting that most vehicle movements are intercity rather than local.

Table 3.5: Ticket segmentation for LCV, Bus, 2A and 3A at TP1 Dakhina Sekhpur

Ticket Category	LCV	Bus	2A	3A
Single	44%	5%	58%	43%
Return	53%	94%	37%	55%
Local Commercial	1%	0.5%	3%	2%
Monthly	-	-	-	-
Local Personal	-	-	-	-
Violation	-	-	-	-
Exemption	1%	0.5%	1%	1%

Source: Steer analysis of Client data

Data Collection exercise

3.29 As mentioned previously, to validate and inform various inputs used in Steer's forecasting model, we undertook primary data collection on the Asset, comprising the surveys listed in the table below. Both, the OD and TVC surveys were commissioned by Steer to a third party. While the OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas the TVC data collection involves video-graphic capture of traffic crossing the toll plazas, followed by manual counting.

Table 3.6 Data collection schedule

TP	7-day videography-based TVC			1-day OD survey			
	Start date	End date	Time (hrs)	Start date	Start time	End Date	End Time
TP1 Dakhina Sekhpur	19 Jan 2021	25 Jan 2021	00:00-23:59	23 Jun 2023	0800 hours	24 Jun 2023	0800 hours

Source: Steer analysis

3.30 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variations, a three-seven-day traffic counts are generally recommended. Therefore, to fully understand the impact of this weekly fluctuation on the Asset, we collected seven-day counts at the toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.31 Taking an average of the seven-day TVC counts (19th Jan – 25th Jan 2021, 00:00-23:59), we obtained the following weekly average daily traffic (WADT) for each toll plaza. This WADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Table 3.7 WADT from TVC counts

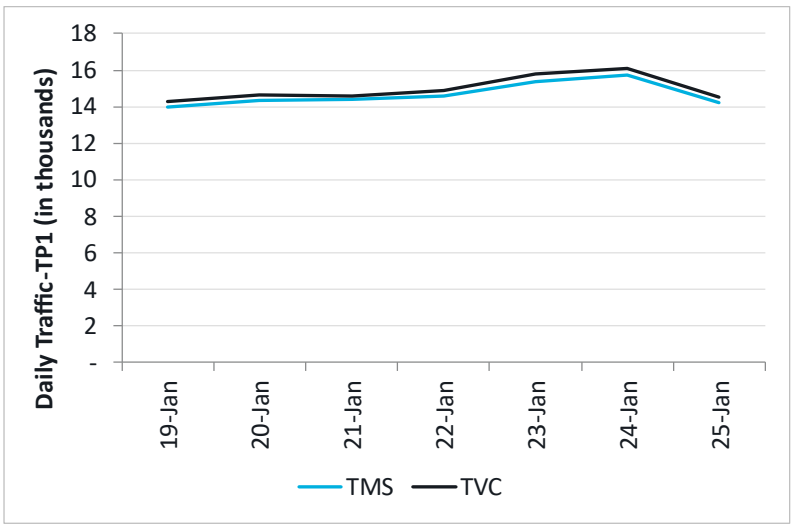
Toll Plaza	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
Dakhina Sekhpur	9,739	952	908	778	430	678	1,485	-	14,969

Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.32 Since we use the TMS data to estimate the base year MADT, we have used our TVC data to validate the TMS data on those days, as provided by the Client. The following figures show the comparison between the daily traffic observed by TVC and TMS for the toll plaza.

Figure 3-3 :Comparison between TVC and TMS daily traffic data on TP1 Dakhina Sekhpur

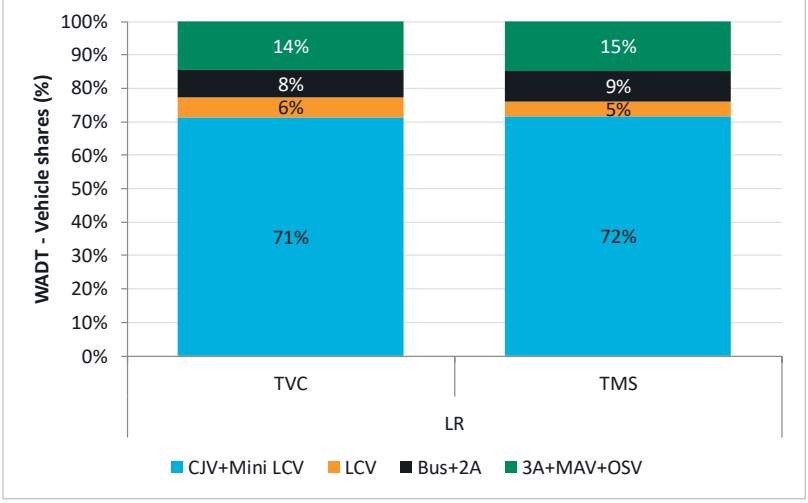


Source: Steer analysis of TVC and Client TMS data

3.33 Figure 3-4 below compares the shares of vehicle types at both toll plazas observed by the TVC and TMS data. As can be seen, whilst the share of CJVs and 3A+MAV+OSV is

marginally higher for TMS compared to TVC, it is equal for bus/2A and lower for LCV category. This difference can be attributed to common misclassification of vehicle categories.

Figure 3-4: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.34 Considering the smaller variation between the TVC and TMS data for the largest revenue generator 3A+MAVs, and an approximate match in the traffic volumes, TVC-TMS analysis gives us the confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

Key findings of origin-destination analysis

Overview

3.35 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. As mentioned previously, the OD analysis presented here has been based on the data collected on 23rd-24th June 2023.

3.36 We have analysed the regional drivers of demand based on the following analyses:

Zonal influence
Commodity distribution
Top OD pairs
Trip length distribution

3.37 While zonal analysis and the list of top OD pairs help to understand 'where to and from' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.38 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TMS data) during the same time. The table below presents the sample rates for key vehicle type aggregations at the toll

plaza. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3.8: Sample rates for OD data

Vehicle type	TP1 Dakhina Sekhpur
Passenger (CJV+Bus)	30%
Goods (LCV+2A+3A+MAV+OSV)	66%

Source: Steer analysis of OD data

Zone Categories

3.39 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in the table below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Assets being studied.

Table 3.9: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of State	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Delhi	Delhi NCR
North India	Uttarakhand, Haryana, Punjab, Jammu and Kashmir
Central India	Madhya Pradesh, Chhattisgarh
West India	Gujarat and Maharashtra
South India	Tamil Nadu, Karnataka, Kerala, Andhra Pradesh
East & Northeast India	West Bengal, Orissa, Jharkhand and Northeast Indian states

Source: Steer analysis

Zonal influence

3.40 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence[8] at each toll plaza of each Asset, based on zonal aggregation listed in the previous sub-section. It should be noted that zonal influence is analysed on where the trip ends and not trip origination.

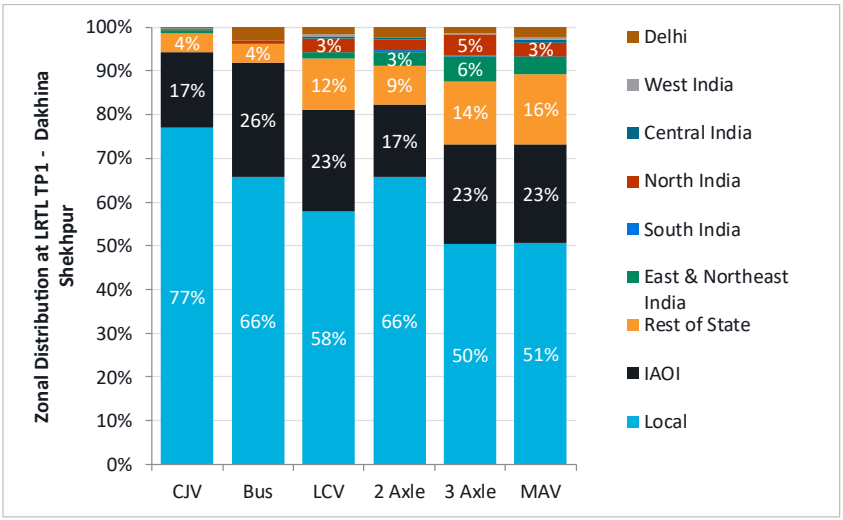
3.41 As can be seen from the figure below, there is a higher share of local trips for both the passenger and commercial vehicles wherein 77% of the influence for CJVs, 51% for MAVs and 50% for 3A vehicles are from areas near the Asset. This analysis is in line with our

[8] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad would be 50% since one end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

understanding gained from the site visit, wherein a heavy influence on the traffic from the surrounding local areas and rest of the state was observed. Also, the results of the top OD pair analysis, as given in the appendices, show that most of the trips originate and end in local and IAOI areas for Car, Bus and 2A trips, whereas for heavy goods traffic 3A and MAV, regions such as Kolkata, Punjab and Uttarakhand also make it to the Top OD pairs.

3.42 Outside the state of Uttar Pradesh, cities/towns in East & Northeast India such as Bihar, Jharkhand, Assam and West Bengal majorly influence the long-distance heavy goods traffic followed by those in the rest of north India such as Uttarakhand, Himanchal Pradesh, Punjab and Haryana. In short, North to East India is one of the key long-distance movements observed on the Asset, with trucks travelling from Punjab-Haryana-Moradabad-Lucknow to East India.

Figure 3-5: Zonal influence at TP1 Dakhina Sekhpur



Source: Steer analysis of OD data

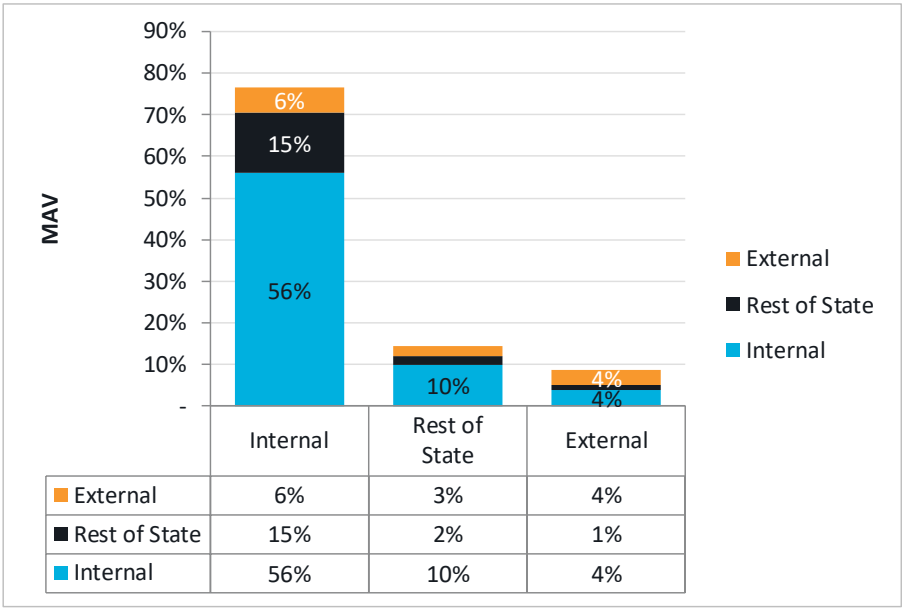
Internal External analysis

3.43 Internal-External analysis helps in identifying the trips which have both the origin and destination on the Asset (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e., lying on the Asset or in the "immediate area of influence", 'Rest of State' zones are those origins and destinations aggregated as "Rest of State" in the zonal analysis while 'External' zones are all other zones.

3.44 Figure 3.6 below show the distribution of trips based on these categories. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation.

3.45 We observed that there is very little external traffic of MAV on the Asset and that 56% of MAV are making Internal trips and 15% to the rest of the state. This indicates the local nature of the traffic on the Asset.

Figure 3-6: Internal-external distribution at TP1 Dakhina Sekhpur



	Internal	Rest of State	External
External	6%	3%	4%
Rest of State	15%	2%	1%
Internal	56%	10%	4%

Source: Steer analysis of OD data

Commodity distribution

3.46 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the table below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, goat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN

Raw Wood, Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, Household items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

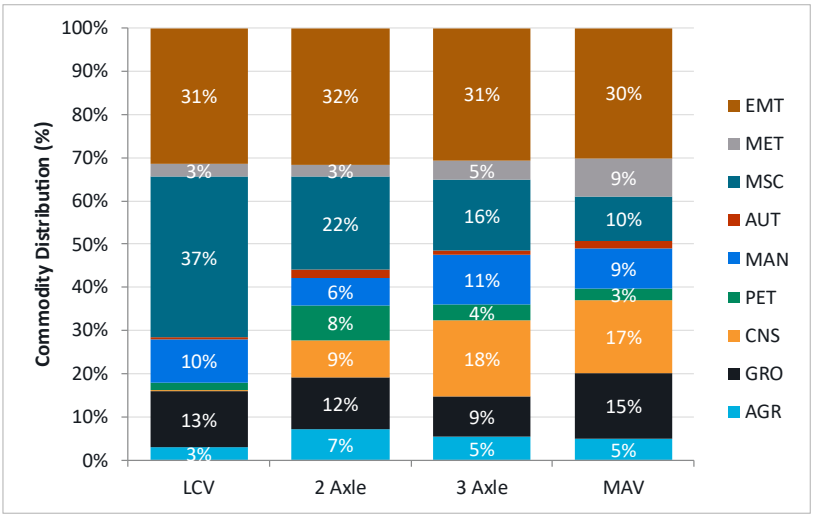
Source: Steer Analysis

3.47 The following figures present the commodity distribution for goods vehicles at the toll plaza, at the total level and also split by direction, towards Lucknow and towards Raebareli. Construction goods were the key commodity category moved by 3A vehicles accounting for 19% of the share followed by miscellaneous items like containers, parcels and couriers. The dominant commodity moved by MAVs includes construction and grocery, and around 9% of the MAVs used the Asset to transport manufactured goods. Miscellaneous goods like household items made up for the key commodity being carried by light-goods vehicles accounting for 37% and 22% respectively of both the 2A and LCV vehicle type followed by grocery items.

3.48 A high percentage of vehicles moving grocery and miscellaneous items are observed as this Asset connects two major cities in Uttar Pradesh and these cities have a large inherent demand of fast-moving consumer goods. The agricultural and grocery items are carried over both short-distances from and to local places such as Lucknow, Raebareli and Kanpur, and over long-distances such as Uttarakhand, Punjab and Delhi. A similar mix of short and long distances trips are observed for vehicles carrying manufactured goods.

3.49 On a direction towards Lucknow, we observe all vehicle categories except MAV are higher travelling empty. This is because MAV vehicles carrying construction material make up for a 34% share moving towards Lucknow. This higher share of construction in this direction can be probably attributed to cement being transported from the plants near Raebareli to Lucknow with 34% of MAVs and 27% 3A vehicles in this direction contributing to the construction share. Overall, vehicles moving towards Lucknow seem to carry a more diverse mix of commodities than those travelling in the direction of Raebareli.

Figure 3-7: Commodity distribution at TP1 Dakhina Sekhpur



Source: Steer analysis of OD data

Trip length analysis

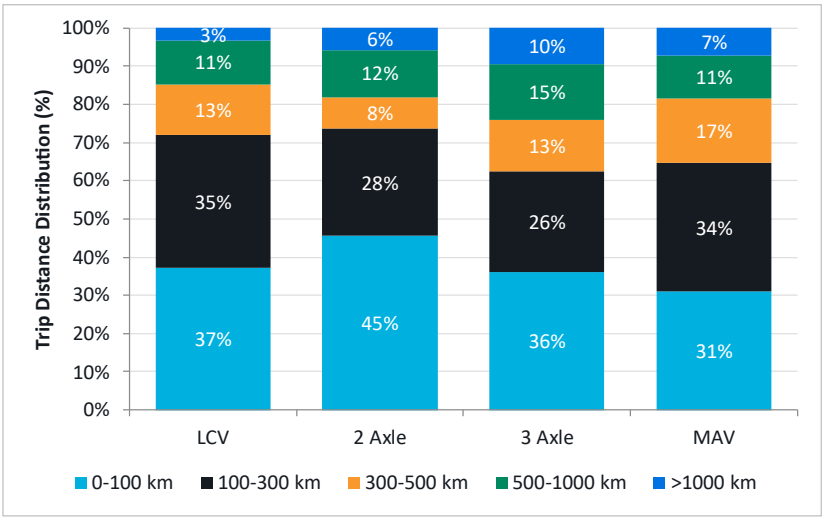
3.50 Trip-length distribution provides the distance-based profile of various vehicle types. This aids in validating assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into 5 groups – local (0-100 km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance (+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[9]

3.51 Supporting the observations made in zonal & internal-external analysis in the previous sections, Figure 3-8 below highlights that about 70% of light goods vehicles like LCVs and 2 Axles travel shorter distances up to 300 kms, largely contributing to the local movements on the Assets.

3.52 Even amongst heavier goods vehicles, 60-65% of the trips made by 3A and MAV are within 300km. It suggests that the Asset is largely local in nature. This is also observed in the internal-external analysis and is also brought out by the average trip lengths as shown in the Table 3.10.

[9] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3-8: Trip length distribution TP1 Dakhina Sekhpur



Source: Steer analysis of OD data

Table 3.10: Average Trip Length (in km)

	LCV	2 Axle	3 Axle	MAV
Average trip length (km)	272	279	363	339

Source: Steer analysis of OD data

Conclusions

3.53 In summary, CJVs, and 3A+MAV are the key contributors to the total revenue collected on the Asset. CJV's similarly hold the most significant share of the traffic volumes on the Asset.

3.54 The analysis on ticket-segmentation reflects that for CJVs, return is the most dominant category with 55%, while for MAVs, single is the most dominant category at 63% followed by single at 29% and return with 30% for CJV and MAV respectively. Compared to FY22, FY24 observed 15% shift of MAVs from single to return category which can be attributed to shift of long-distance traffic on alternates.

3.55 The TVC-TMS analysis highlights minor variation between the two datasets wherein at the total level, TVC is approximately 2% higher than the TMS data with the difference being negligible for the larger revenue generating categories (3A, MAV, and OSV combined) within 1%.

3.56 The OD analysis found that in terms of zonal influence, the passenger and commercial traffic is heavily influenced by local areas such as Lucknow, Raebareli, Prayagraj and Bachhrawan with the influence ranging from 77% for CJVs, 41% for MAVs and 40% for 3A vehicles, which is also in line with our understanding gained from the site visit. Further, places in East & Northeast India such as Bihar, Jharkhand, Assam, and West Bengal majorly influence the long-distance heavy goods traffic followed by places in the rest of north India such as Uttarakhand, Himanchal Pradesh, Punjab and Haryana.

3.57 The key commodities transported on the Asset includes grocery products, construction items, minerals, and agricultural commodities by the heavy goods vehicle and

grocery/agricultural items by light goods vehicle. It is also observed that an average of ~42% of heavy goods vehicles (3A, MAV) travel empty towards Raebareli with grocery and miscellaneous items being the top commodities with average shares of ~21% and 23% respectively towards Raebareli. In the direction towards Lucknow, 34% share of MAV and 27% 3A carry construction materials from plants near Raebareli.

3.58 Overall, across all categories it is seen that majority of the traffic is internal in nature and therefore it can be inferred that the growth of traffic is directly proportional to the growth of state GDP. This is further supported by the top 10 OD pairs for this Asset as well as the trip length distribution which reflect that majority of all traffic covers distances up to 300km. It can also be seen that the average trip length for all goods categories is below 400km, with 95% of MAVs having one end of the trip in the state and only ~5% of trips are through which are external.

3.59 Therefore, analysing the vehicle share on the Asset and understanding the OD analysis, CJVs make up for the highest share of traffic and significantly contributed to the local traffic share. Heavy goods vehicles, although accounting for around only ~15% of the traffic on an average over the months, contributes the most to the total revenue share, wherein construction items, and groceries are the top commodity being transported on the Asset by these vehicles.

4 Socio economic context and traffic growth

Introduction

4.1 The growth of traffic on any existing (brownfield) road depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the roads are in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions in the region where the Asset is located and the country. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Asset.

4.2 In turn, the change in the relative competitive position of the Asset (and thus of the traffic capture they can achieve) derives from how the relative offer for the roads changes, i.e. the service offered, and the tolls charged on the project roads, in comparison to that on competing roads; and whether any competing road facilities are planned.

4.3 In this chapter, we have assessed the trends of the above growth drivers, as indicators of the socio-economic conditions in the regions surrounding the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in Uttar Pradesh state, where the Asset is located.

National level

4.5 Table 4.1 below the total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in the table below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth.

State level

4.6 Uttar Pradesh represents approximately 17% of the country's population, with the total state population of 237 million, as of FY24. Table 4.2 shows the evolution of population in the state of Uttar Pradesh (containing the Asset), compared to that of the country.

Table 4.2: Population Growth in Uttar Pradesh and India (2012-2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Uttar Pradesh	201	237	**1.4%**
India	1,210	1,395	**1.2%**

Source: MoSPI Estimates

4.7 Due to the complexities of the patterns of urbanisation and migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. The same has been included in this section simply to provide a socio-economic context of the trend in the region in which the Asset is located.

Economic Indicators

Industrial Production

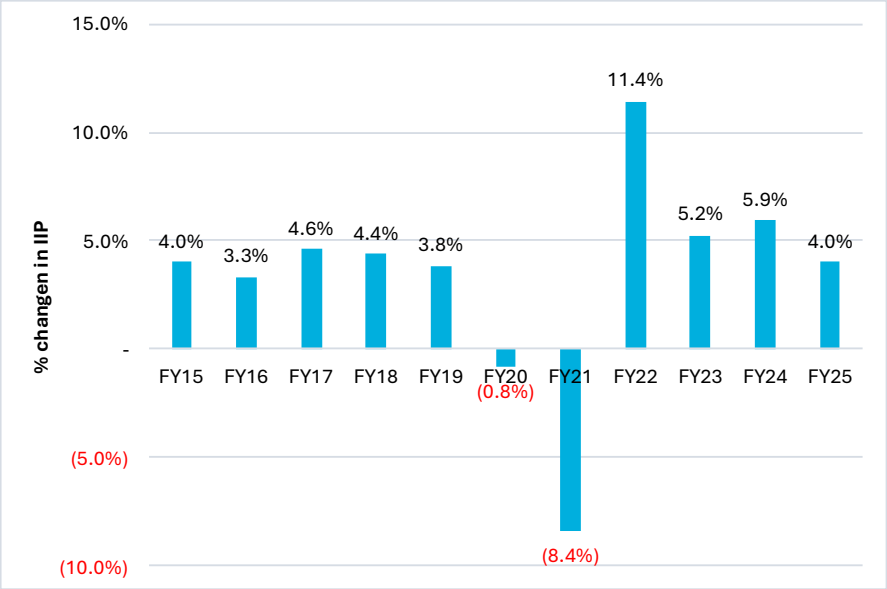
4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.9 **Figure 4-1** below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

4.10 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. However, we do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

4.11

Figure 4-1: Annual growth – Index of Industrial Production



Source: Ministry of Statistics and Program Implementation (MoSPI)

4.12 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle ownership

4.13 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[10]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled and increased at a CAGR of about 11%. The corresponding ownership rates for urban cities like Delhi, Mumbai, Bengaluru, and Chennai are over 100 cars per 1,000 people[11] (GoI 2011; MoRTH 2012). . The region where the Asset lie is highly urbanised, therefore the car ownership in Uttar Pradesh is higher than the India average with 50 cars per 1,000.

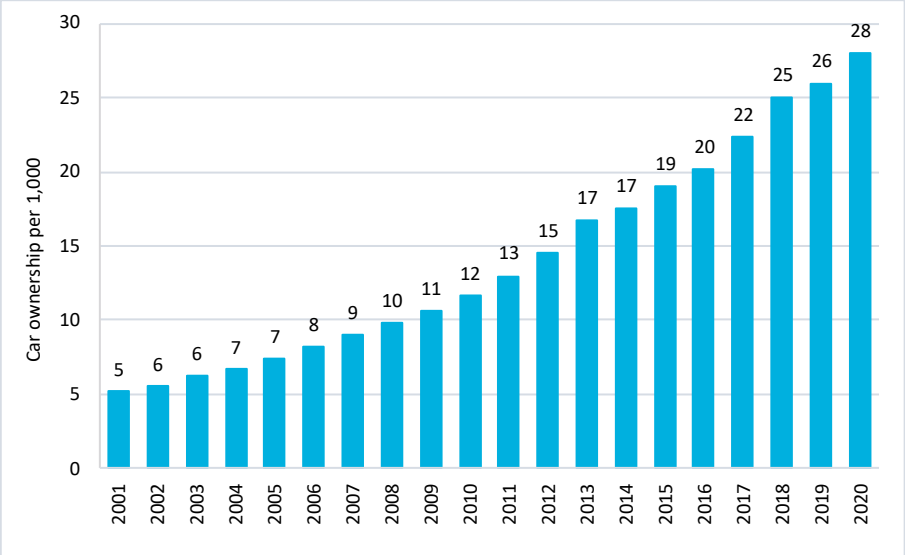
4.14 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy

[10] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[11] Proliferation of Cars in Indian Cities

Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[12]

Figure 4-2: Car Ownership in India per 1,000 population

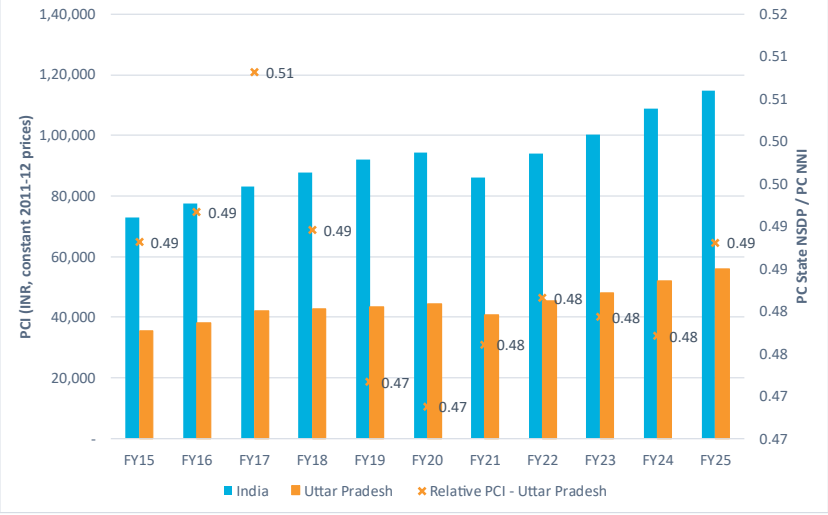


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.15 The per capita income of the state where the Assets lies i.e., Uttar Pradesh is lower as compared to the national average. In dollar terms, PCI of just $1,000 per head indicates that the state is at a very early stage of consumption curve. Going forward, we therefore expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

Figure 4-3: Per Capita Income



Source: Steer Analysis of MoSPI data

[12] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

4.16 Given that there is dearth of district level PCI data as also non-availability of long-term forecast for PCI we have not used this indicator as a growth driver.

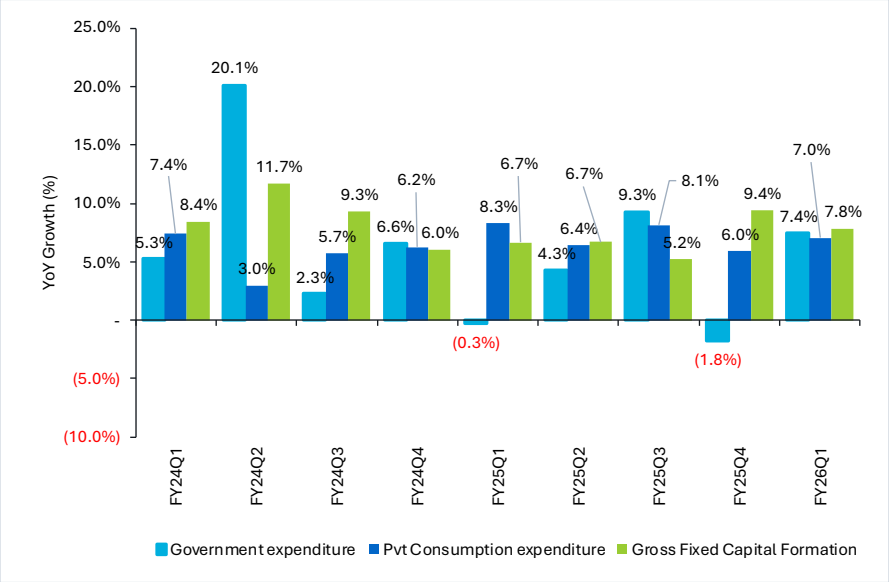
Economic growth

India's Performance

4.17 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[13].

4.18 In Figure 4-4 below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures



Source: Steer Analysis of MOSPI Data

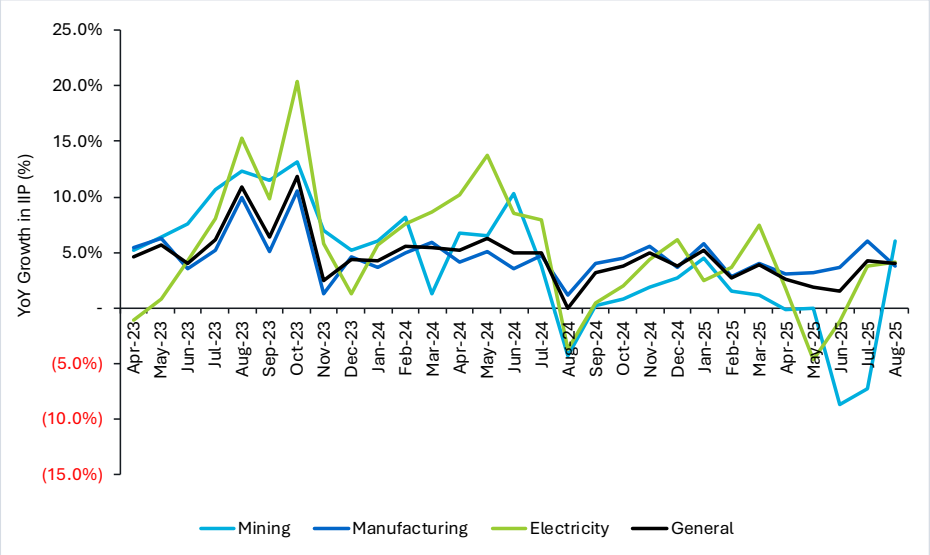
4.19 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.20 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In Figure 4-5 below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the

[13] Government of India, PIB Release Oct 1 '25

two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

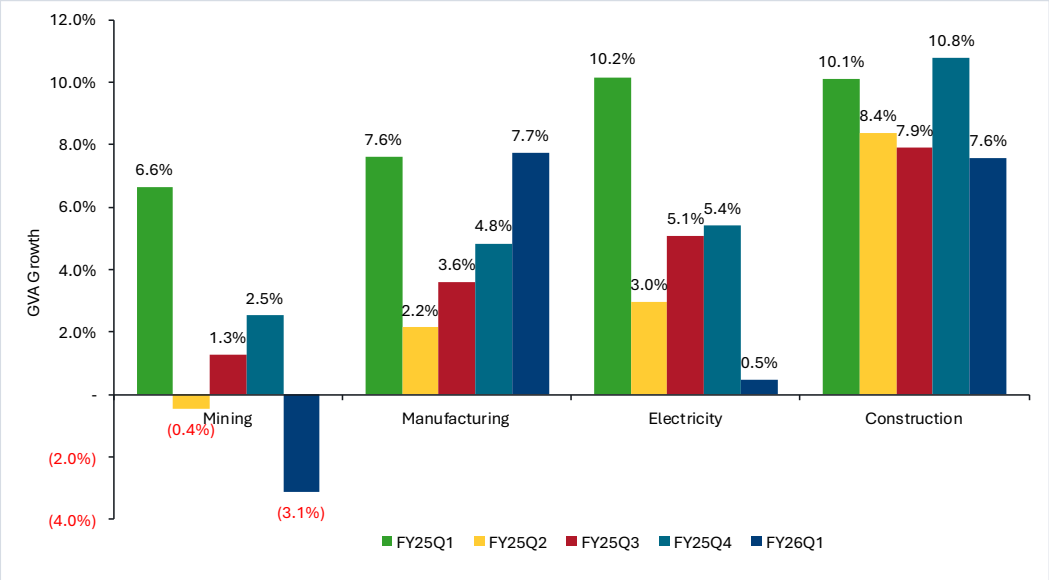
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.21 In addition to monthly trends in IIP, Figure 4-6 below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. Generally, economic growth has remained resilient as of FY26YTD, but performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

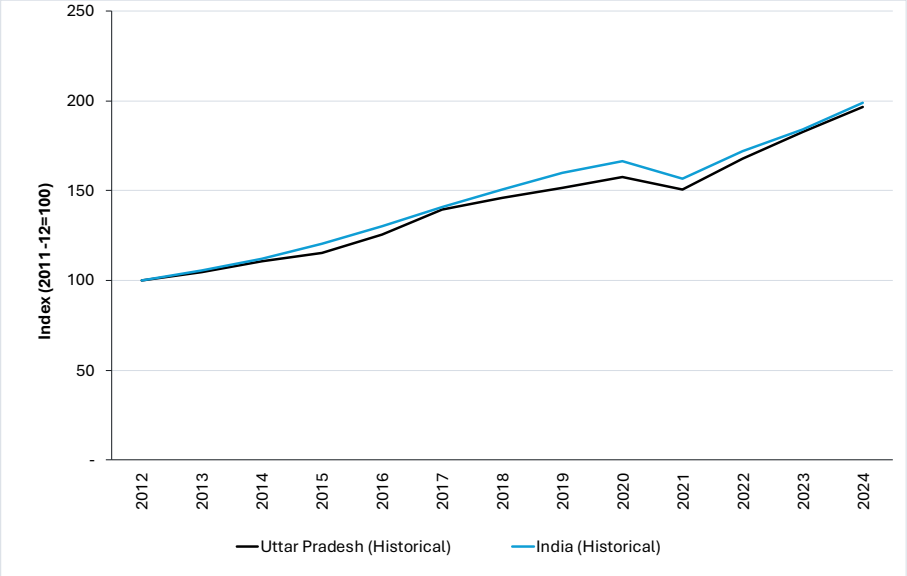
GDP and GSDP Growth

4.22 Over the period FY12-FY24, the Indian economic has grown at a CAGR of approx. 6% aided by growth in the tertiary sector which grew at a CAGR of approx. 6.9% over the same period.

4.23 The economic performance of Uttar Pradesh has been weaker than the country as a whole. The state contributes approximately 8% to India's GDP. In terms of sectoral contribution to the state GDP, tertiary sector has the highest share (47%) followed by secondary (28%) and primary (24%), with the sectoral shares remaining stable over the last few years.

4.24 The Figure 4-7 illustrates the evolution of Uttar Pradesh's GSDP.

Figure 4-7: Evolution of Uttar Pradesh's state GDP and national GDP



Source: Steer Analysis of MOSPI Data

4.25 Uttar Pradesh is the most populous state in India with a population of ~237 million people in FY24. The state has a large pool of skilled, semi-skilled and unskilled labour. Uttar Pradesh is also considered the largest consumer base in the country. The tertiary sector has the highest sectoral contribution to the state GDP followed by the secondary and primary sectors. These shares have remained stable for the past decade.

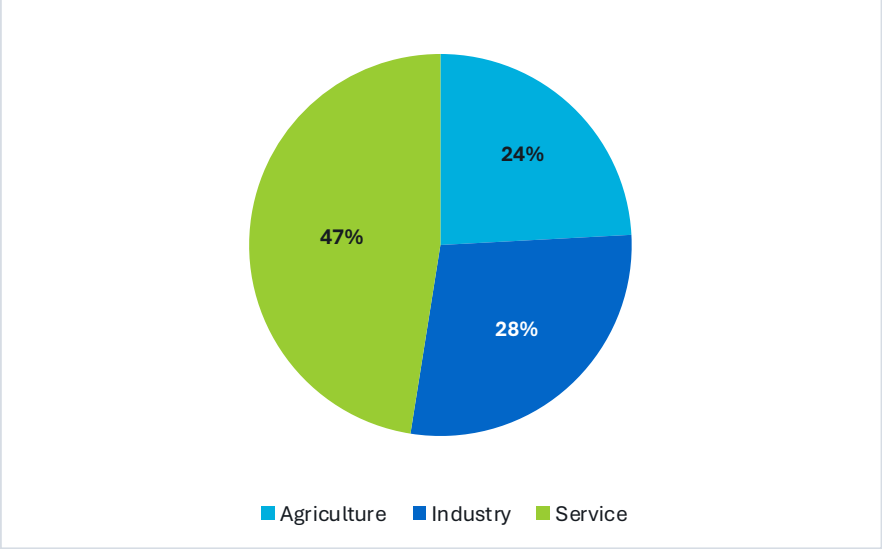
4.26 The tourism and transport sector constitute a majority of the state's tertiary sector. Uttar Pradesh is considered a favoured tourist destination in India, with key tourist attractions being Agra, Varanasi, Mathura and Prayagraj. In 2024, the state attracted the highest domestic tourist arrivals in the country with 649 million visits[14]. The state holds sixth position in the country in foreign tourist arrivals with over 2.3 million.

4.27 In terms of secondary sector, the state has key industrial areas in Khurja (Ceramic); Moradabad (Metals); Meerut, Bareilly, Mirzapur and Lucknow (Handloom & Handicrafts); and Kanpur and Noida (Leather and tannery). The state also has an oil refinery in Mathura, operated by Indian Oil Corporation.

[14] 'Tourist arrivals in U.P. surge by 17 cr in 2024 - Hindustan Times

4.28 Uttar Pradesh has very fertile Gangetic land with a large share of population dependent upon agriculture sector for the livelihood. The key primary industries in the state include food processing, crop production and horticulture. The state is mainly known for production of wheat, sugarcane, potato and mango.

Figure 4-8: Sectoral Distribution of GSDP of Uttar Pradesh for 2024



Source: Steer Analysis of MOSPI Data

4.29 The official historical GDP and GSDP data for India are released by the Ministry of Statistics and Program Implementation (MoSPI). The GDP forecasts for India are available from various reliable sources such as Oxford Economics and Consensus Economics[15], but state-specific GSDP forecasts are not published by any such sources. To derive state GSDP forecasts, we rely on past trends of the relationship between GDP and GSDP, and develop GSDP forecasts as a function of our assumed GDP forecasts[16].

4.30 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.31 Following the discussion in Chapter 4 on the nature of economic activity in the state of Uttar Pradesh, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth. Particularly, we have based our forecast on GDP and GSDP using forecasts of GDP as provided by the Client.

[15] Consensus Economics - Economic Forecasts and Indicators

[16] Assuming that the historical long-term relationship between GSDP and GDP sustains over the short-term, we project future growth in GSDP as a function of our GDP growth forecast. We taper the relationship of GSDP growth to converge to GDP growth gradually over the long-term.

National GDP

4.32 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[17]

4.33 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21), and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 and 6.5% in FY25 (as per the SAE) before slowing down over the past year due to several domestic and external factors.

4.34 Figure 4-9 below shows client provided GDP projections. The forecast provided by the Client expects the Indian GDP to grow at 6.5% between FY25-FY27[18] and gradually tapering down to 5.2% by FY51, end of concession. The India GDP growth forecast provided by the Client is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[19] in the medium term.

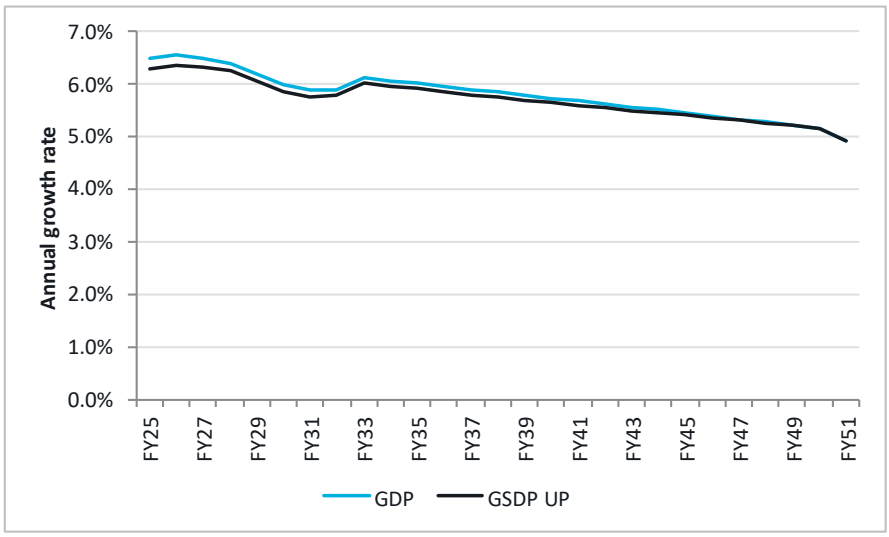
4.35 By comparing historical trends of regional GSDP growth with the national GDP growth we have established GSDP projections for each state. We assumed that as the Indian economy grows, the states which have historically grown at a faster pace will, over 10 years, see a slowdown in GSDP growth, tending to the national average, whereas the states that have grown slower than the national GDP will begin to pick-up. The GDP-GSDP gap would partially converge by 2040 and fully converge by 2049.

[17] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[18] Based on Asia Pacific Consensus Forecasts (December 2024)

[19] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

Figure 4-9: GDP-GSDP forecast



Source: GDP and GSDP forecast provided by the Client

5 FY26 Base year AADT and Traffic growth Analysis

Introduction

5.1 In this section, we present our approach, assumptions, and estimates for base year AADT and background traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 While comprehensive historical data on the asset is not available, we have access to six years of records. Despite some inconsistencies, this dataset provides a reasonable foundation for analysis. As a result, statistical methods to estimate background growth relationships could not be applied. Instead, we conducted a benchmarking exercise, supported by trip length and origin-destination (OD) analysis, to derive elasticity estimates. These are discussed in detail below.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.5 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilized information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

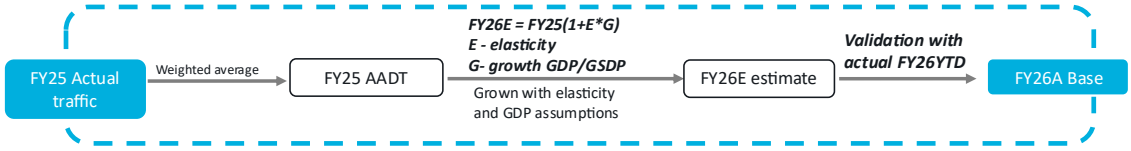
Methodology

5.6 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at estimated FY26 (FY26E).

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April 2025 to September 2025) of FY26. The Adopted FY26 AADT (FY26A) is derived by making necessary adjustments to FY26E to reflect the outturn in traffic in FY26YTD (adjusted for seasonality).

5.8 The methodology is represented using the flow chart given below:

Figure 5-1: FY25 Base Estimation methodology



Source: Steer Analysis

5.9 The two key inputs to estimate the base year FY25 traffic are FY24 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.10 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to specific festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is lower than the annual average. This is mainly because of the peak summer season followed by monsoons affecting the freight movement patterns in larger parts of the country, largely in the July-September period. In addition, there may be other seasonal variations specific to a particular Asset.

5.11 To normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.12 Historical traffic data was available for all toll vehicle categories starting October 2020 up-to Sept 2025.

5.13 The below table present the average of FY23 and FY24 SCF used to estimate the AADT for all categories except 3A and MAV for the Asset.

5.14 In the case of 3A and MAV FY23 SCF are considered since it better represents the actual seasonality of the traffic. FY25 is not considered due to construction activities occurring between Raebareli and Prayagraj thereby affecting the long-distance traffic on the Asset.

Table 5.1: SCF values for TP1 Dakhina Sekhpur

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.06	0.97	0.96	1.07	1.11	1.11	1.05	0.94	0.92	1.02	0.87	0.98
LCV	0.90	0.89	0.87	1.03	1.15	1.09	1.01	0.97	1.01	1.13	1.02	1.03
Bus	1.04	1.01	0.99	1.01	1.02	1.01	1.00	0.96	0.99	1.07	0.93	0.98
2A	0.96	0.90	0.83	1.05	1.15	1.10	1.03	1.02	0.97	1.08	0.98	1.04
3A	0.77	0.89	0.84	1.14	1.25	1.11	1.15	0.93	0.97	1.01	1.04	1.11
MAV	0.86	0.96	0.90	1.15	1.20	1.22	1.13	0.85	0.86	0.98	1.02	1.06

Source: Steer analysis based on benchmarks

Adopted base estimates

6.1 Based on the above methodology and inputs, the adopted base for the toll plaza has been shown below:

Table 5.2: Adopted base estimates AADT

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	12,358	11,874	12,361	0.0%
LCV	404	371	362	(10.4%)
Bus	778	733	741	(4.8%)
2A	444	430	423	(4.6%)
3A	186	184	179	(3.9%)
MAV	694	669	700	0.9%
Total	**14,864**	**14,262**	**14,767**	**(0.7%)**
PCU	**19,520**	**18,721**	**19,287**	**(1.2%)**

Source: Steer analysis: Steer analysis: FY25 actual full year, FY26YTD includes 06 months (Apr-Sept) of FY26, FY26A is adopted base for FY26

5.15 A comparison between the FY26 adopted estimates and the FY25 actual traffic shows a marginal decline of (0.7%) in AADT and (1.2%) in PCU. However, this apparent de-growth is not indicative of a negative trend, but rather a normalization of traffic volumes following an exceptional surge during the Maha Kumbh Mela held in January–February 2025.

5.16 The Asset, which serves as a key feeder route to the pilgrimage site of Prayagraj, experienced a temporary spike in traffic across all vehicle categories driven by heightened tourist and pilgrim activity from regions such as Lucknow, Sitapur, and other parts of Uttar Pradesh. The FY26 estimates reflect a return to typical traffic patterns post-event.

5.17 In terms of goods traffic, the degrowth in 2A/3A/MAV traffic (a combined decrease of ~3%, in FY26) is mainly due to several local network improvement activities around the Asset including Purvanchal Expressway, Lucknow – Sultanpur, Varanasi, construction of Varanasi ring road where some share of traffic has already shifted to these alternate routes from the Asset.

5.18 Furthermore (as discussed in section 2.16) the ongoing construction of Raebareli–Unchahar section of NH-30, located south of the asset has further led to a diversion of long-distance traffic to alternate routes, including NH-731 and the Purvanchal Expressway, resulting in a decline in traffic volumes on the asset in FY26.

5.19 Given the Asset's enhanced connectivity to Prayagraj, the host city of the Kumbh Mela held every 12 years we anticipate short- to medium-term growth in CJV traffic. Furthermore, with continued government investments and road infrastructure development in Lucknow (as detailed in Chapter 3), both CJV and Goods traffic on the Asset are expected to maintain healthy growth from FY26 onwards.

Estimation of background elasticities

Overview

5.20 For the brownfield Assets, where sufficient historical traffic evolution is available, it is common practice to use regression model analysis to determine the relationship, expressed as elasticity, between traffic growth and key socioeconomic drivers. This relationship is then applied to assumptions of future socio-economic developments to estimate future traffic growth.

5.21 Due to the absence of a consistent historical trend for this Asset, we used a benchmarking approach to estimate our forecast elasticities. This benchmarking relied on several sources: our internal understanding of the Asset, the elasticities the client used in their bid for the TOT3 package, and the client's subsequent lender study. Additionally, we conducted regional benchmarking against assets with similar traffic profiles, which provides us with reasonable confidence in the proposed relationships.

5.22 In terms of selection of growth drivers for vehicle types, in general we have assumed state GSDP as the key driving factor for the CJVs and Buses given this traffic is generally driven by the local economies of the cities and state containing the Asset. The heavier commercial vehicles such as generally ply long-distance, and the underlying growth is governed by the general economies of several states or nation as whole.

5.23 Given the nascent stage of India's logistics sector, characterized by a highly fragmented trucking industry (95% of operators owning fewer than five trucks) and low car ownership rates (30-35 per 1000 people), the forecast elasticities are projected to remain constant throughout the concession period. This assumption is grounded in historical trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away.

5.24 The below table presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.3: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP Uttar Pradesh
Car	-	100%
LCV	-	100%
Bus	-	100%
2A	100%	
3A	100%	-
MAV	100%	-

Source: Steer

5.25 Further to developing estimates for FY26 AADT, the Asset has operational history between FY22 and FY25, proving us three years of traffic growth on the Asset. The table below summarises the volume growth across each of the vehicle categories. For this comparison we have normalised the FY22 AADT for COVID19 by adopting seasonally corrected H2FY22 as the FY22 normalised (FY22N)

Table 5.4: Passenger and Commercial growth with normalised FY22 – TP Dakhina

	FY22N	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	10,834	10,747	12,358	12,361	4.5%
LCV	585	402	404	362	(12.3%)
Bus	652	689	778	741	3.2%
2A	608	450	444	423	(9.3%)
3A	497	237	186	179	(24.0%)
MAV	1,022	691	694	700	(8.8%)
OSV	-			-	-
Total	**14,198**	**13,218**	**14,864**	**14,767**	**1.7%**
PCUs	**20,418**	**17,803**	**19,520**	**19,287**	**(1.1%)**
Passenger	11,486	11,436	13,136	13,102	4.4%
Commercial	2,127	1,378	1,324	1,303	(12.0%)

Source: Steer Analysis; Note; Passenger includes CJV and Bus traffic whereas Commercial includes 2A/3A/MAV traffic

5.26 Asset observed a de-growth of 1% from FY22N to FY26 at the PCU level. Passenger traffic, which includes CJV and buses, is projected based on the state's GSDP, as the growth is driven by the regional local economy. Meanwhile, commercial traffic (2A/3A/MAV) is growing in relation to GDP, as the Asset lies on the NH30 corridor, which primarily facilitates movement between Delhi, Uttar Pradesh and Jharkhand. Any growth observed on the Asset is influenced by regions along this route.

5.27 The sections below detail out the reasoning for selection of respective growth driver(s) for each vehicle category.

Table 5.5: Elasticity recommendations for the Asset (Lucknow-Raebarelli)

Vehicle Category	Proposed Growth Driver	Elasticity	Comments
CJV	Uttar Pradesh GSDP	1.0	CJV cater to local movement (98% trips within state) between Lucknow, Raebareli and Allahabad. Strong car growth expected as these populous and big towns grow.
Mini LCV	Uttar Pradesh GSDP	0.4	The Mini LCV contribute largely to the local consumption demand of Lucknow-Raebareli region. These trips are predominantly short distance (under 300km). Considering this along with our experience across the toll roads in the region, we believe the assumption of 0.3 elasticity with the state GSDP to be appropriate.
Buses	Uttar Pradesh GSDP	0.5	It seems that buses currently are serving local intercity demand. As these cities grow, the buses are also expected to respond to the increasing demand however only at a 0.5 relationship to GSDP.

Vehicle Category	Proposed Growth Driver	Elasticity	Comments
LCV	Uttar Pradesh GSDP	0.4	LCV/2A contribute to the local consumption demand of Lucknow-Raebareli. The trip lengths of LCV and 2A category (up to 80%) are predominantly short distance <300Km. Which confirms the understanding that the movements cater to local demand. Considering the above observations, and our experience across other toll roads in the region, we believe that elasticities of 0.4 with respect to state GSDP are considered reasonable.
2A	GDP India	0.4	2A/3A/MAVs are primarily long-distance traffic carrying a healthy mix of commodities. Historically, the Asset saw a mix of medium and long-distance trips, with trip lengths for more than 80% of the MAV are more than 300km, signifying long distance nature of the movement. The Asset serves as a key connector for long-distance trucks travelling between Punjab, Haryana, Uttar Pradesh, West Bengal and Jharkhand. Therefor a relation of 0.5 to GDP has been considered to MAVs. We believe 3A to grow slower as compared to MAV as there is an increasing preference to use MAVs for long-distance movements, as discussed in Chapter 3 above.
3A	GDP India	0.3	
MAV	GDP India	0.5	

Source: Steer Analysis

6 Forecast: Network overlays and forecasts

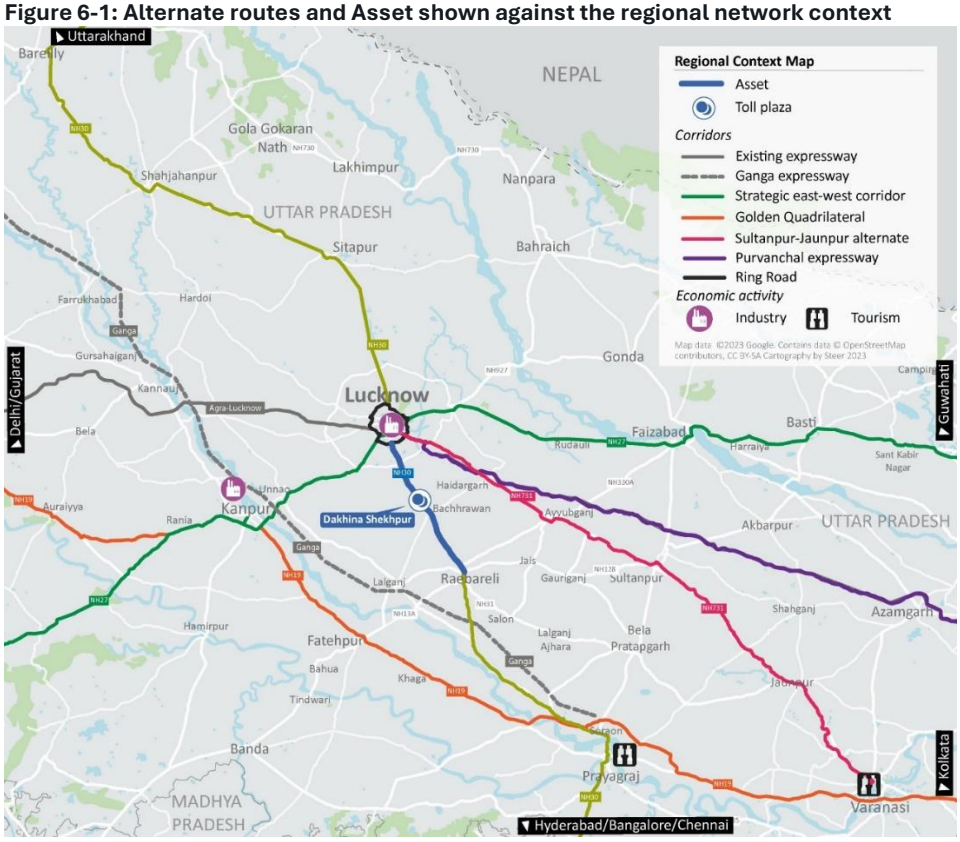
Introduction

6.2 Following the discussion on our forecast of background growth rates in the previous chapter, this chapter first covers the potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years.

Analysis of potential network/developmental impacts

6.1 This section details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed in previous Chapters, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

Figure 6-1: Alternate routes and Asset shown against the regional network context



Source: Steer cartography using OpenStreetMap data

Ganga Expressway

6.2 A 594km greenfield six-lane expressway is being developed by the Uttar Pradesh Expressways Industrial Development Authority (UPEIDA) connecting Meerut and Prayagraj. The expressway will pass through 12 districts in Uttar Pradesh including Meerut, Shahjahanpur, Kannauj, Unnao, Rae Bareli, Prayagraj etc.

6.3 The benefits will be mostly valued by long and medium distance users which make end to end movements and movement between important districts compared to short distance users. This expressway is expected to be operational by Q4 FY26.

6.4 The table below shows the comparison of the key input toll, and time comparison via Asset and alternate.

Table 6.1: Toll & Time Comparison between Asset and Alternate

Vehicle category	Toll		Time	
	Via Asset	***Via Alternate***	***Via Asset***	***Via Alternate***
CJV	720	1,366	12	8
LCV	1,140	2,168	14	10
2A	2,360	4,598	15	10
3A	3,150	5,031	16	11
MAV	3,645	7,229	16	11

Table 6.2: Impact of Ganga Expressway

Vehicle category	FY27 onwards
Car	(0.2%)
2A	(1.2%)
3A	(2.0%)
MAV	(0.8%)

Source: Steer analysis; Considering 50% of the full impact will be applicable from FY27

Increase in Passenger Traffic due to Ardha-Kumbh and Maha Kumbh Mela

6.5 The Lucknow-Raebareli Asset acts as a feeder to the important pilgrimage site of Prayagraj. This holy site plays host to the Kumbh Mela every 12 years, which attracts tens of millions of devotees. It also hosts the Ardha-Kumbh every six years after the Kumbh.

6.6 Due to this, the years when these festivals are held, witness increased tourist activities which is reflected in an increase in Car and Bus volumes travelling from Lucknow, Sitapur and other parts of the state and country to Prayagraj.

6.7 The table below shows the impact of the Kumbh Mela on traffic volumes. This impact will recur at six-year intervals for Kumbh and Ardha-Kumbh respectively:

Table 6.3: Increase in Car and Bus traffic due to Kumbh Mela

Vehicle category	FY31 onwards (every 6 years)
CJV	2.1%
Buses	2.2%

Source: Steer analysis

Post - Construction Recovery

6.8 The Raebareli–Unchahar section of NH-30, located south of the project corridor, is currently undergoing upgradation to a 4-lane configuration, as discussed in Chapters 2 and 3. However, the ongoing construction work has led to the diversion of long-distance traffic from the project road to alternate routes, primarily NH-731 and the Purvanchal Expressway. This has resulted in a temporary decline in traffic volumes on the asset.

6.9 Presently, there is no official information to suggest when this project may be completed. However, online sources suggest the project is anticipated to be completed by June'25[6]. We have assumed completion of the project by Dec'25 to allow for any unanticipated delay in its eventual completion.

6.10 Once construction is complete, the diverted traffic is expected to return to our Asset resulting in positive impact from FY27 onwards.

Table 6.4: Post-Construction Impact on the Asset

Vehicle category	FY27-FY28	FY29 onwards
2A	0.8%-1.4%	1.9%
3A	0.3%-0.6%	0.9%
MAV	0.8%-1.4%	1.9%

Source: Steer analysis

Revenue forecasting assumptions

6.11 To forecast the revenues for a particular financial year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While “trip factors” provide the conversion factor to the former, i.e., traffic (trips) to tickets sold, “toll segmentation” provides the latter i.e., the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Segmented traffic (CJV)= Total Traffic for CJV Segmentation share of CJV*

*Total revenue= Segmented traffic * Toll Rates a vehicle and ticket category/ Trip factor for a vehicle category*

Trip factors

6.12 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and listed in the table below:

Table 6.5: Trip factors at TP1 Dakhina Sekhpur

Forecast	CJV/MLCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	45	45	50	45	45	45
Local Commercial	1	1	1	1	1	1
Local Personal	59	20	20	20	20	20

Source: Steer analysis of Client TMS data

Toll segmentation

6.13 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles.[20]

6.14 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
% CJV using Annual pass	7.9%	12.9%	15.2%

6.15 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.16 In FY26, the share of CJVs using the Annual Pass is projected at **13%**, while from FY27, this share is expected to stabilize at **29%.**

Table 6.6: Segmentation for forecast years, TP1 Dakhina Sekhpur

Ticket type	CJV FY26	CJV FY27	MLCV	LCV	Bus	2A	3A	MAV
Single	23%	18%	27%	44%	5%	58%	43%	65%
Return	48%	37%	57%	53%	94%	37%	55%	29%
Local Commercial	0%	0%	-	1%	0.5%	3%	2%	6%
Local Personal	6%	7%	6%	-	-	-	-	-

[20] Annual Pass

Ticket type	CJV FY26	CJV FY27	MLCV	LCV	Bus	2A	3A	MAV
Exemptions	9%	10%	9%	1%	0.5%	1%	1%	1%
Annual Pass	**13%**	**29%**		-	-	-	-	-

Source: Steer analysis of Client TMS data; ticket segmentation for all vehicle categories other than CJVs are from FY26 onwards

6.17 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.7 presents the Annual pass compensation computed for the toll plaza.

Table 6.7: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY28	FY33	FY38	FY43	FY51
Dakina Shekpur	5.2	14.4	23.5	39.1	66.8	141.2

Source: Steer Analysis

Toll evolution

6.18 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.19 We have used actual toll rates from the FY25 toll notifications and FY26 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in the table below. The upward trend in inflation is expected to continue in the medium term, before gradually tapering to 4.1% in the long term.

Table 6.8: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: FY27 onwards WPI print as per client inputs

Revenue reconciliation

6.20 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a monthly level for the Asset.

6.21 The Steer revenue calculations have been built up from monthly raw traffic data files, containing monthly data and ticket type information; and the toll notifications – all shared by the client. The comparison, as shown in the table below, depicts the difference between modelled revenue and the reported revenue is within 0.3%, which gives us confidence in the long-term assumptions for trip segmentation and trip factors for revenue estimation.

Table 6.9: FY26YTD Revenue reconciliation summary

AADC Modelled (INR Lakhs)	AADC Reported (INR Lakhs)	Modelled vs Reported (Difference %)
18.7	18.8	(0.3%)

Source: Steer comparison between modelled and reported revenue

Traffic and Revenue forecasts

6.22 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the forecast period for the Asset. The table below presents the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix B presents the AADT and revenues for the forecast period.

Table 6.10: Forecast traffic forecast for TP1 Dakhina Sekhpur

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	11,261	12,702	16,918	22,488	30,135	44,483
Mini LCV	1,101	1,157	1,300	1,459	1,630	1,926
Bus	741	788	912	1,053	1,235	1,488
LCV	362	380	427	480	536	633
2A	423	437	508	575	643	760
3A	179	181	202	221	241	273
MAV	700	733	880	1,024	1,177	1,450
AADT	**14,767**	**16,379**	**21,147**	**27,300**	**35,598**	**51,012**
PCUs	**19,287**	**21,112**	**26,679**	**33,654**	**42,882**	**59,791**

Source: Steer analysis

Table 6.11: Forecast Traffic CAGR (%) for TP1 Dakhina Sekhpur

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	6.2%	5.9%	5.9%	6.0%	5.6%
Mini LCV	2.5%	2.4%	2.3%	2.2%	2.3%
Bus	3.2%	2.9%	2.9%	3.2%	2.8%
LCV	2.5%	2.4%	2.3%	2.2%	2.3%
2A	1.6%	3.1%	2.5%	2.3%	2.4%
3A	0.6%	2.2%	1.8%	1.7%	1.7%
MAV	2.3%	3.7%	3.1%	2.8%	3.0%
AADT	**5.3%**	**5.2%**	**5.2%**	**5.5%**	**5.1%**
PCUs	**4.6%**	**4.8%**	**4.8%**	**5.0%**	**4.6%**

Source: Steer analysis

Table 6.12: Forecast Revenue for TP1 Dakhina Sekhpur (INR crores), including the Annual Pass Compensation revenue for CJV

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	34.0	41.7	69.5	115.2	195.0	412.4
Mini LCV	3.3	3.8	5.4	7.6	10.6	18.0
Bus	8.2	9.5	13.8	20.0	29.4	50.8
LCV	2.1	2.4	3.5	4.9	6.8	11.5
2A	5.4	6.1	8.9	12.6	17.6	29.9
3A	2.4	2.6	3.7	5.1	6.9	11.2
MAV	14.3	16.3	24.7	35.9	51.5	91.1
Total Revenue	**69.8**	**82.5**	**129.5**	**201.2**	**317.9**	**625.1**

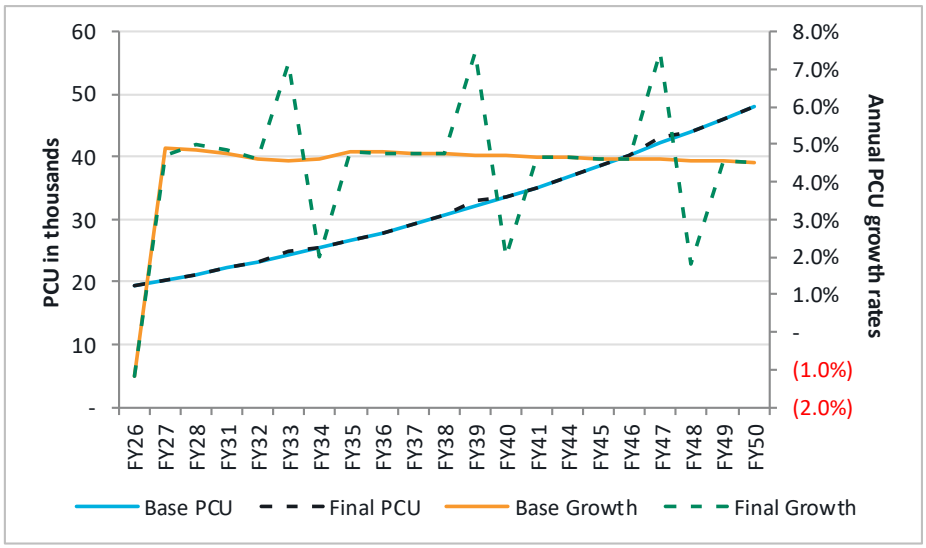
Source: Steer analysis

Table 6.13: Forecast Revenue growth CAGR (%) for TP1 Dakhina Sekhpur

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	10.7%	10.7%	10.7%	11.1%	10.5%
Mini LCV	6.9%	7.2%	7.0%	7.0%	7.0%
Bus	7.5%	7.8%	7.6%	8.0%	7.6%
LCV	6.8%	7.2%	7.1%	7.0%	7.0%
2A	6.0%	7.9%	7.1%	6.9%	7.1%
3A	5.1%	7.0%	6.4%	6.4%	6.4%
MAV	6.8%	8.6%	7.8%	7.5%	7.7%
Total revenue	**8.7%**	**9.4%**	**9.2%**	**9.6%**	**9.2%**

Source: Steer analysis

Figure 6-2 Forecast PCUs and growth rates at TP1 Dakhina Sekhpur



Source: Steer analysis

Target revenues and modification of concession period

6.23 As per the concession agreement, the target revenue should be 15.80 Cr for the month of March 2030 first calculation of target revenue and 38.02 Cr for the month of March 2040 for the second calculation of target revenue. The traffic sampling will be undertaken for a continuous period of 7 days during anytime within 15 days prior to the date on the specified year, previous year and following year. The average thereof will be deemed as 'actual revenue.'

6.24 If the target revenue falls short or exceeds by 20% and 30% for extensions 1 and 2 respectively, the concession period shall be deemed to be modified using the laid-out conditions in the concession agreement. The table below presents the summary of the analysis.

Table 6.14: Target Revenues for Extension 1

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2029	2030	2031		
LR TP1	Mar-30	9.1	7.9	8.6	9.6	8.7	(4.0%)

Source: Steer analysis

Table 6.15: Target Revenues for Extension 2

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2029	2030	2031		
LR TP1	Mar-40	21.6	19.0	20.7	22.6	20.8	(4.1%)

Source: Steer analysis

6.25 We have used the average AADT forecast for the target year, previous year and following year as a proxy for 'actual traffic.' We have forecast seasonality of March month to adjust for seasonal trends and arrive at March traffic from AADT traffic, which is then segmented according to the forecast toll segmentation and trip factors and multiplied with respective estimated toll rates to get to a monthly revenue collection.

6.26 As seen from the table above, the target revenue forecast for the Asset is lower than the concession agreement target revenue by around 4.0% for target date 1 and 4.1% for target date 2 respectively. As the difference below above the permitted threshold of 20% and 30% for target date 1 and 2 respectively, no change in the length of the concession agreement is expected.

Upside and Downside cases

Upside and Downside scenario assumptions

6.27 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the

assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.28 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.29 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.16: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.30 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.31 The upside case impacts included in forecasts are summarised in below.

Table 6.17: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
Ganga Expressway	FY27*	+25% of base case	CJV: (0.1%) 2A: (0.9%) 3A: (1.5%) MAV: (0.6%)
Increase in Passenger traffic due to Ardhakumbh and Mahakumbh Mela	FY31* (30% of the impact for Ardh-Kumbh) FY37* (60% of the impact for Mahakumbh		CJV: 8.6% Bus: 9.1%
Post -Construction Recovery	FY27*	No Change	No Change

Source: Steer analysis; * Same as base case timeline

Impacts-Downside Case

6.32 The downside case impacts included in forecasts are summarised in below.

Table 6.18: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
Ganga Expressway	FY27*	-25% of base case	CJV: (0.2%) 2A: (1.5%) 3A: (2.5%) MAV: (1.0%)
Increase in Passenger traffic due to Ardhakumbh and Mahakumbh Mela	FY31* (30% of the impact for Ardh-Kumbh) FY37* (60% of the impact for Mahakumbh		CJV: 5.2% Bus: 5.5%
Post -Construction Recovery	FY27-FY29* (-ve impact) FY30-FY33* (+ve impact) FY34 onwards* (+ve impact)		2A: (1.3%) -(0.7%) 3A: (1.0%) -(0.5%) MAV: (1.6%) -(0.8%) 2A: 0.6% -1.8% 3A: 0.2% -0.9% MAV: 0.6% -1.8% 2A: 2.3% 3A: 1.1% MAV: 2.3%

Source: Steer analysis; * Same as base case timeline

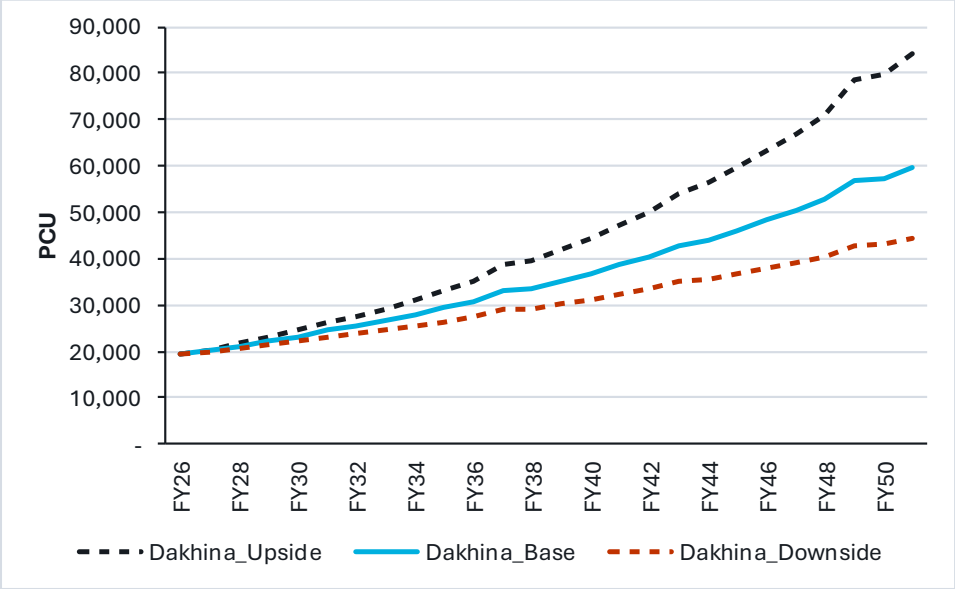
6.33 Based on the above assumptions for upside and downside scenarios, the following table summarizes the upside potential and downside risks associated with the PCU and the revenue for Dakhina Shekpur toll plazas at the end of the concession i.e. FY51.

Table 6.19: Upside potential and Downside PCU scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Dakhina Shekpur	40.9%	(25.9%)

Source: Steer Analysis of client data

Figure 6.3: Long term PCU forecasts for Dakhina Shekpur TP including upside and downside scenario



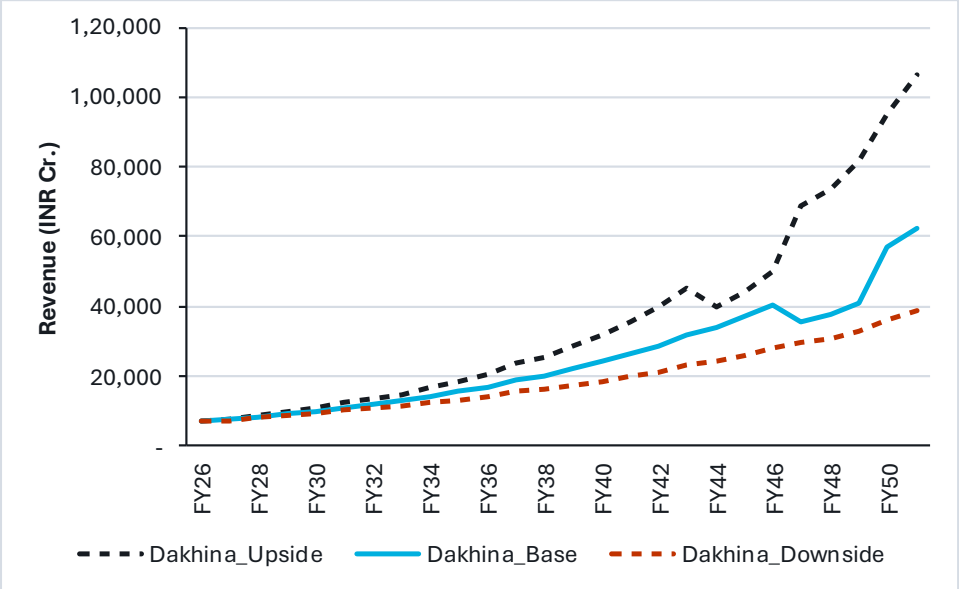
Source: Steer Analysis

Table 6.20: Upside potential and Downside Revenue scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Pundag	75.2%	(42.9%)

Source: Steer Analysis of client data

Figure 6.4: Long term Revenue forecasts for Dakhina Shekpur TP including upside and downside scenario



Source: Steer Analysis

6.34 Revenue projections exhibit variability in both the upside and downside cases, driven by fluctuations in macro-economic factors such as WPI, GDP/GSDP, elasticities and the network impacts.

Summary outlook

6.35 Passenger movement on the Asset is the largest share of traffic on this Asset. On one side is the state capital of Lucknow and on the other side is the state judicial capital and a major tourism/pilgrim centre of Prayagraj. Cars are expected to see a healthy growth on the Asset following the overall behavioural shift of users with the increasing per capita income.

6.36 The Asset benefits from its strategic location connecting the east-west movement of goods from Uttarakhand and Northern Uttar Pradesh towards South-eastern Uttar Pradesh, Jharkhand, and West Bengal. The 3A/MAV traffic on the Asset is a mix of regional and long-distance traffic carrying a variety of commodities ranging from agricultural products, manufacturing items and minerals. This portion of traffic is assumed to see a strong growth relationship with the national GDP and state GSDP.

6.37 Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by the Client, feedback gathered from Client meetings and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarised below:

6.38 Overall, we see a positive outlook for the region and the Asset, given that it serves major urban centres of Lucknow and Prayagraj and eastern Uttar Pradesh as a whole. The underlying growth drivers of the corridor are strong and are expected to deliver long term sustained growth.

Appendices

A Top 10 OD Pairs

A.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. For both CJVs and MAVs and OSVs the top OD Pairs are combined below:

Table A.1: CJV, Bus and Mini Bus top 10 OD pair shares at TP1 Dakhina Sekhpur

	OD Pair	Share
1.	Raebareli-Lucknow	32%
2.	Lucknow-Prayagraj	13%
3.	Bachhrawan-Lucknow	8%
4.	Bachhrawan-nigoha	3%
5.	Lalganj-Lucknow	2%
6.	Lucknow-Pratapgarh	2%
7.	Mohanlalganj-Raebareli	2%
8.	Lucknow-Fatehpur	2%
9.	Mohanlalganj-Bachhrawan	2%
10.	Lucknow-Lucknow	1%

Source: Steer analysis of OD data

Table A.2: 3A and MAV top 10 OD pair shares at TP1 Dakhina Sekhpur

	OD Pair	Share
1.	Raebareli-Lucknow	15%
2.	Lucknow-Prayagraj	11%
3.	Lucknow-Varanasi	5%
4.	Bachhrawan-Lucknow	4%
5.	kundanganj-Lucknow	4%
6.	Lucknow-Banda	3%
7.	Lalganj-Lucknow	2%
8.	Varanasi-NCT of Delhi	2%
9.	Kanpur-Prayagraj	1%
10.	Lucknow-Pratapgarh	1%

B Data collection exercise

B.1 To validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

7 days TVC count

Table C.1: 7-day TVC counts at TP1 Dakhina Sekhpur

Date	Toll Plaza	Source	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	Total
19-01-2021	TP1	TVC	8,998	1,003	929	772	392	670	1,505	**14,269**
20-01-2021	TP1	TVC	9,349	973	931	779	466	658	1,505	**14,661**
21-01-2021	TP1	TVC	9,077	995	966	780	447	694	1,612	**14,571**
22-01-2021	TP1	TVC	9,600	990	919	863	434	686	1,379	**14,871**
23-01-2021	TP1	TVC	10,465	991	893	760	489	654	1,512	**15,764**
24-01-2021	TP1	TVC	11,182	837	883	767	372	661	1,411	**16,113**
25-01-2021	TP1	TVC	9,499	874	835	725	411	721	1,472	**14,537**

Source: Steer analysis

Table C.2: WADT TVC vs TMS

	Source	CJV +Mini LCV	LCV	Bus	2A	3A+ MAV	OSV	Total
TP1	TVC	10,690	908	778	430	2,163	-	14,969
	TMS	10,488	670	665	678	2,157	0	14,659

Source: Steer analysis and Client data

Zone list

Table C.3: Zone list used for OD analysis

Zone No	Zone Name	State
1	Kalli Paschim	Uttar Pradesh
2	Mohanlalganj	Uttar Pradesh
3	Mastipur	Uttar Pradesh

Zone No	Zone Name	State
4	Churwa	Uttar Pradesh
5	Dehwa	Uttar Pradesh
6	malhipur	Uttar Pradesh
7	Bachhrawan	Uttar Pradesh
8	kundanganj	Uttar Pradesh
9	Kandawan	Uttar Pradesh
10	peerun	Uttar Pradesh
11	Harchandpur	Uttar Pradesh
12	Kathwara	Uttar Pradesh
13	Gangaganj	Uttar Pradesh
14	Thulendi	Uttar Pradesh
15	isiya	Uttar Pradesh
16	Dostpur	Uttar Pradesh
17	nigoha	Uttar Pradesh
18	uday pur	Uttar Pradesh
19	badan khera	Uttar Pradesh
20	purseni	Uttar Pradesh
21	Kankaha	Uttar Pradesh
22	Hilauli	Uttar Pradesh
23	Neewa	Uttar Pradesh
24	Asrenda	Uttar Pradesh
25	Nagram	Uttar Pradesh
26	Pariwan	Uttar Pradesh
27	Karora	Uttar Pradesh
28	Devi Khera	Uttar Pradesh
29	Tamanpur	Uttar Pradesh
30	Beraru	Uttar Pradesh
31	Sivli	Uttar Pradesh
32	Pahnasa	Uttar Pradesh
33	Barvaliya	Uttar Pradesh
34	Utranva	Uttar Pradesh
35	Raebareli	Uttar Pradesh
36	Maharajganj	Uttar Pradesh
37	Ayyubganj	Uttar Pradesh
38	Musafirkhana	Uttar Pradesh
39	Jais	Uttar Pradesh

Zone No	Zone Name	State
40	Gauriganj	Uttar Pradesh
41	Lalganj	Uttar Pradesh
42	purwa	Uttar Pradesh
43	Haidargarh	Uttar Pradesh
44	Unchahar	Uttar Pradesh
45	Salon	Uttar Pradesh
46	Nidhasan	Uttar Pradesh
47	Ajgain	Uttar Pradesh
48	Kanpur	Uttar Pradesh
49	Lucknow	Uttar Pradesh
50	Prayagraj	Uttar Pradesh
51	Agra	Uttar Pradesh
52	Aligarh	Uttar Pradesh
53	Ambedkar Nagar	Uttar Pradesh
54	Amethi	Uttar Pradesh
55	Amroha	Uttar Pradesh
56	Auraiya	Uttar Pradesh
57	Azamgarh	Uttar Pradesh
58	Badaun	Uttar Pradesh
59	Baghpat	Uttar Pradesh
60	Bahraich	Uttar Pradesh
61	Ballia	Uttar Pradesh
62	Balrampur	Uttar Pradesh
63	Banda	Uttar Pradesh
64	Barabanki	Uttar Pradesh
65	Bareilly	Uttar Pradesh
66	Basti	Uttar Pradesh
67	Bijnor	Uttar Pradesh
68	Bulandshahr	Uttar Pradesh
69	Chandauli	Uttar Pradesh
70	Chitrakoot	Uttar Pradesh
71	Deoria	Uttar Pradesh
72	Etah	Uttar Pradesh
73	Etawah	Uttar Pradesh
74	Faizabad	Uttar Pradesh
75	Farrukhabad	Uttar Pradesh

Zone No	Zone Name	State
76	Fatehpur	Uttar Pradesh
77	Firozabad	Uttar Pradesh
78	Gautam Buddha Nagar	Uttar Pradesh
79	Ghaziabad	Uttar Pradesh
80	Ghazipur	Uttar Pradesh
81	Gonda	Uttar Pradesh
82	Gorakhpur	Uttar Pradesh
83	Hamirpur	Uttar Pradesh
84	Hapur	Uttar Pradesh
85	Hardoi	Uttar Pradesh
86	Hathras	Uttar Pradesh
87	Jalaun	Uttar Pradesh
88	Jaunpur	Uttar Pradesh
89	Jhansi	Uttar Pradesh
90	Kannauj	Uttar Pradesh
91	Kanpur Dehat	Uttar Pradesh
92	Kanpur nagar	Uttar Pradesh
93	kasganj	Uttar Pradesh
94	Kaushambi	Uttar Pradesh
95	Kushinagar	Uttar Pradesh
96	Lakhimpur Kheri	Uttar Pradesh
97	Lalitpur	Uttar Pradesh
98	Mahamaya Nagar	Uttar Pradesh
99	Mahoba	Uttar Pradesh
100	Mainpuri	Uttar Pradesh
101	Mathura	Uttar Pradesh
102	Mau	Uttar Pradesh
103	Meerut	Uttar Pradesh
104	Mirzapur	Uttar Pradesh
105	Moradabad	Uttar Pradesh
106	Muzaffarnagar	Uttar Pradesh
107	Pilibhit	Uttar Pradesh
108	Pratapgarh	Uttar Pradesh
109	Rampur	Uttar Pradesh
110	Saharanpur	Uttar Pradesh
111	Sambhal	Uttar Pradesh

Zone No	Zone Name	State
112	Sant Kabir Nagar	Uttar Pradesh
113	Sant Ravi Das Nagar(bhadohi)	Uttar Pradesh
114	Shahjahanpur	Uttar Pradesh
115	Shamli	Uttar Pradesh
116	Shrawasti	Uttar Pradesh
117	Siddharth Nagar	Uttar Pradesh
118	Sitapur	Uttar Pradesh
119	Sonbhadra	Uttar Pradesh
120	Sultanpur	Uttar Pradesh
121	Unnao	Uttar Pradesh
122	Varanasi	Uttar Pradesh
123	Kolkata	West Bengal
124	Durgapur	West Bengal
125	Jamshedpur	Jharkhand
126	Kharagpur	West Bengal
127	Ranchi	Jharkhand
128	Aurangabad	Bihar
129	Patna	Bihar
130	Andhra Pradesh	Andhra Pradesh
131	Arunanchal Pradesh	Arunanchal Pradesh
132	Assam	Assam
133	Bihar	Bihar
134	Chandigarh	Chandigarh
135	Chhattisgarh	Chhattisgarh
136	Dadara & Nagar Havelli	Dadara & Nagar Havelli
137	Daman & Diu	Daman & Diu
138	Goa	Goa
139	Gujarat	Gujarat
140	Haryana	Haryana
141	Himachal Pradesh	Himachal Pradesh
142	Jammu & Kashmir	Jammu & Kashmir
143	Jharkhand	Jharkhand
144	Karnataka	Karnataka
145	Kerala	Kerala
146	Madhya Pradesh	Madhya Pradesh
147	Maharashtra	Maharashtra

Zone No	Zone Name	State
148	Manipur	Manipur
149	Meghalaya	Meghalaya
150	Mizoram	Mizoram
151	Nagaland	Nagaland
152	NCT of Delhi	NCT of Delhi
153	Puducherry	Puducherry
154	Punjab	Punjab
155	Rajasthan	Rajasthan
156	Sikkim	Sikkim
157	Tamil Nadu	Tamil Nadu
158	Telangana	Telangana
159	Tripura	Tripura
160	Uttarakhand	Uttarakhand
161	West Bengal	West Bengal
162	Odisha	North India
163	Nepal	East & North East of India
164	Dhaka	Odisha

Source: Steer analysis of OD data

Direction-wise commodity distribution

Table C.4: Commodity distribution towards Raebareli for TP1 Dakhina Sekhpur

Commodities	LCV	2A	3A	MAV
Agriculture	1%	3%	1%	3%
Groceries	23%	20%	19%	22%
Construction	-	2%	1%	6%
Petroleum	3%	8%	4%	3%
Manufacturing	10%	8%	9%	8%
Automobiles	-	2%	3%	2%
Miscellaneous	47%	21%	15%	9%
Metals	5%	1%	4%	6%
Empty	12%	35%	43%	40%

Source: Steer analysis of OD data

Table B.5: Commodity distribution towards Lucknow for TP1 Dakhina Sekhpur

Commodities	LCV	2A	3A	MAV
Agriculture	4%	11%	8%	7%
Groceries	6%	3%	4%	7%

Commodities	LCV	2A	3A	MAV
Construction	1%	16%	26%	30%
Petroleum	1%	8%	3%	2%
Manufacturing	11%	5%	12%	11%
Automobiles	1%	2%	-	1%
Miscellaneous	31%	23%	17%	12%
Metals	2%	4%	5%	12%
Empty	44%	28%	24%	18%

Source: Steer analysis of OD data

Trip length distribution

Table C.6: Trip length frequency for TP1 Dakhina Sekhpur

Distance range	LCV	2A	3A	MAV
0-100 km	37%	45%	36%	31%
100-300 km	35%	28%	26%	34%
300-500 km	13%	8%	13%	17%
500-1000 km	11%	12%	15%	11%
>1000 km	3%	6%	10%	7%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

C Detailed forecasts

Traffic forecasts

This section presents the detailed traffic forecasts for the forecast period until FY51, year of expected close of the concession. The following two tables show the AADT and traffic growth, respectively.

Table C.1: Forecasts for (background + impacts) AADT at TP1 Dakhina Sekhpur

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total	PCU
FY26	11,261	1,101	741	362	423	179	700	**14,767**	**19,287**
FY27	11,953	1,129	764	371	425	177	708	**15,528**	**20,118**
FY28	12,702	1,157	788	380	437	181	733	**16,379**	**21,112**
FY29	13,474	1,185	812	390	449	185	758	**17,252**	**22,128**
FY30	14,264	1,213	836	399	466	190	792	**18,160**	**23,212**
FY31	15,399	1,241	879	408	479	194	820	**19,419**	**24,662**
FY32	15,959	1,269	885	417	493	198	849	**20,071**	**25,434**
FY33	16,918	1,300	912	427	508	202	880	**21,147**	**26,679**
FY34	17,927	1,331	939	438	523	206	911	**22,275**	**27,980**
FY35	18,986	1,362	966	448	536	210	938	**23,447**	**29,310**
FY36	20,098	1,394	995	459	549	214	966	**24,674**	**30,698**
FY37	22,143	1,427	1,068	469	562	217	995	**26,881**	**33,158**
FY38	22,488	1,459	1,053	480	575	221	1,024	**27,300**	**33,654**
FY39	23,770	1,493	1,083	491	588	225	1,053	**28,703**	**35,227**
FY40	25,111	1,526	1,114	502	601	229	1,084	**30,167**	**36,863**
FY41	26,516	1,561	1,145	513	615	233	1,114	**31,697**	**38,568**
FY42	27,987	1,595	1,177	525	629	237	1,146	**33,294**	**40,344**
FY43	30,135	1,630	1,235	536	643	241	1,177	**35,598**	**42,882**
FY44	31,135	1,666	1,242	548	657	245	1,210	**36,702**	**44,117**
FY45	32,817	1,702	1,275	560	671	249	1,243	**38,516**	**46,119**
FY46	34,574	1,738	1,310	572	686	253	1,276	**40,408**	**48,201**
FY47	36,409	1,775	1,344	584	700	257	1,310	**42,379**	**50,365**

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total	PCU
FY48	38,324	1,813	1,380	596	715	261	1,345	**44,433**	**52,615**
FY49	41,987	1,850	1,478	609	730	265	1,380	**48,298**	**56,803**
FY50	42,402	1,889	1,452	621	745	269	1,415	**48,793**	**57,375**
FY51	44,483	1,926	1,488	633	760	273	1,450	**51,012**	**59,791**

Source: Steer analysis

Table C.2: Forecasts for (background +impacts) AADT growth rates (%) at TP1 Dakhina Sekhpur

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total	PCU
FY27	6.2%	2.5%	3.2%	2.5%	0.4%	(0.9%)	1.1%	5.2%	4.3%
FY28	6.3%	2.5%	3.1%	2.5%	2.8%	2.1%	3.5%	5.5%	4.9%
FY29	6.1%	2.4%	3.0%	2.4%	2.7%	2.0%	3.4%	5.3%	4.8%
FY30	5.9%	2.3%	2.9%	2.3%	3.8%	2.5%	4.5%	5.3%	4.9%
FY31	8.0%	2.3%	5.1%	2.3%	2.9%	2.1%	3.5%	6.9%	6.3%
FY32	3.6%	2.3%	0.7%	2.3%	2.9%	2.1%	3.5%	3.4%	3.1%
FY33	6.0%	2.4%	3.0%	2.4%	3.0%	2.1%	3.6%	5.4%	4.9%
FY34	6.0%	2.4%	3.0%	2.4%	3.0%	2.1%	3.6%	5.3%	4.9%
FY35	5.9%	2.4%	3.0%	2.4%	2.4%	1.8%	3.0%	5.3%	4.8%
FY36	5.9%	2.3%	2.9%	2.3%	2.4%	1.8%	3.0%	5.2%	4.7%
FY37	10.2%	2.3%	7.4%	2.3%	2.4%	1.8%	2.9%	8.9%	8.0%
FY38	1.6%	2.3%	(1.4%)	2.3%	2.3%	1.8%	2.9%	1.6%	1.5%
FY39	5.7%	2.3%	2.9%	2.3%	2.3%	1.7%	2.9%	5.1%	4.7%
FY40	5.6%	2.3%	2.8%	2.3%	2.3%	1.7%	2.9%	5.1%	4.6%
FY41	5.6%	2.2%	2.8%	2.2%	2.3%	1.7%	2.8%	5.1%	4.6%
FY42	5.5%	2.2%	2.8%	2.2%	2.2%	1.7%	2.8%	5.0%	4.6%
FY43	7.7%	2.2%	5.0%	2.2%	2.2%	1.7%	2.8%	6.9%	6.3%
FY44	3.3%	2.2%	0.5%	2.2%	2.2%	1.6%	2.7%	3.1%	2.9%
FY45	5.4%	2.2%	2.7%	2.2%	2.2%	1.6%	2.7%	4.9%	4.5%
FY46	5.4%	2.1%	2.7%	2.1%	2.2%	1.6%	2.7%	4.9%	4.5%
FY47	5.3%	2.1%	2.7%	2.1%	2.1%	1.6%	2.7%	4.9%	4.5%
FY48	5.3%	2.1%	2.6%	2.1%	2.1%	1.6%	2.6%	4.8%	4.5%
FY49	9.6%	2.1%	7.1%	2.1%	2.1%	1.6%	2.6%	8.7%	8.0%
FY50	1.0%	2.1%	(1.7%)	2.1%	2.1%	1.5%	2.6%	1.0%	1.0%
FY51	4.9%	2.0%	2.5%	2.0%	2.0%	1.5%	2.5%	4.5%	4.2%

Source: Steer analysis

Revenue forecasts

Table C.3: Forecasts for final (background +impacts) Revenue (INR Crores) including the annual pass compensation at TP1 Dakhina Sekhpur

Vehicle Type	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY26	34	3	8	2	5	2	14	70
FY27	37	4	9	2	6	2	15	75
FY28	42	4	10	2	6	3	16	83
FY29	46	4	10	3	7	3	18	90
FY30	51	4	11	3	7	3	19	99
FY31	58	5	12	3	8	3	21	110
FY32	63	5	13	3	8	3	23	119
FY33	69	5	14	3	9	4	25	130
FY34	78	6	15	4	10	4	27	142
FY35	85	6	16	4	10	4	29	154
FY36	95	7	17	4	11	5	31	169
FY37	110	7	19	5	12	5	33	190
FY38	115	8	20	5	13	5	36	201
FY39	127	8	22	5	13	5	39	219
FY40	141	9	23	6	14	6	42	240
FY41	155	9	25	6	15	6	45	261
FY42	172	10	27	6	17	6	48	286
FY43	195	11	29	7	18	7	52	318
FY44	210	11	31	7	19	7	56	341
FY45	230	12	33	8	20	8	60	371
FY46	255	13	36	8	22	8	64	406
FY47	236	10	29	7	17	7	52	357
FY48	252	11	29	7	18	7	53	376
FY49	281	11	31	7	18	7	54	409
FY50	373	17	47	11	28	11	85	572
FY51	412	18	51	12	30	11	91	625

Source: Steer analysis

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Contents

Project Transit: Traffic Due Diligence Mahua-Bharatpur Expressway Limited		**1**
Disclaimer		**i**
Glossary Items		**iii**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	6
	Key Economic activities	7
	Alternate Routes	8
3	**Traffic Description**	**11**
	Introduction	11
	Historical trends	12
	Data Collection exercise	22
	Overview	22
	Key findings of the TVC data analysis	23
	Key findings of origin-destination analysis	25
	Conclusions	32
4	**Socio Economic Context**	**34**
	Introduction	34
	Population growth	34
	Economic Indicators	35
	Economic growth	38
	Forecasts for growth drivers	40
5	**FY26 Base Year AADT and Traffic growth analysis**	**43**
	Introduction	43
	FY26 Base year AADT estimates	43
	Estimation of background elasticities	46
	Forecasts for background elasticities	49
6	**Forecasts: Network overlays and forecasts**	**51**
	Introduction	51
	Analysis of potential network/developmental impacts	52
	Revenue forecasting assumptions	56
	Traffic and Revenue forecasts	60
	Upside and Downside cases	62
	Summary outlook	66

Figures

Figure 2.1: Asset location in the regional network context 4
Figure 2.2: Asset context 5
Figure 2.3: Typical cross section of the Asset road and toll plazas 6
Figure 3.1: Passenger Traffic trends on the Asset (April 2024 to September 2025) 13
Figure 3.2 Ticket-segmentation for CJV at TP1 Amoli 18
Figure 3.3 Ticket-segmentation for MAV at TP1 Amoli 18
Figure 3.4 Ticket-segmentation for CJV at TP2 Ludhawai 19
Figure 3.5 Ticket Segmentation for MAV at TP2 Ludhawai 19
Figure 3.6 A2 TVC WADT- TP1 23
Figure 3.7 A2 TVC WADT- TP2 23
Figure 3.8: Comparison between TVC and TMS daily traffic data on TP1 Amoli 24
Figure 3.9: Comparison between TVC and TMS daily traffic data on TP2 Ludhawai 24
Figure 3.10 Comparison between vehicle shares from TVC and TMS WADTs- TP1 25
Figure 3.11 Comparison between vehicle shares from TVC and TMS WADTs- TP2 25
Figure 3.12: Zonal influence at TP1 Amoli 27
Figure 3.13: Zonal influence at TP2 Ludhawai 28
Figure 3.14: Internal-external distribution at TP2 Ludhawai 28
Figure 3.15: Commodity distribution at TP1 (Both directions) 30
Figure 3.16: Commodity distribution at TP2 (Both directions) 31
Figure 3.17: Trip length distribution, TP1 Amoli 31
Figure 3.18: Trip length distribution, TP2 Ludhawai 32
Figure 4.1: Annual growth – Index of Industrial Production 36
Figure 4.2: Car ownership in India per 1,000 population 37
Figure 4.3: Per Capita Income 37
Figure 4-4: Government final consumption expenditure 38
Figure 4-5: Month on Month IIP performance 39
Figure 4-6: Industrial components of GVA 39
Figure 4.7: Evolution of Rajasthan's state GDP and national GDP; FY12-24 40
Figure 4.8: GDP-GSDP forecast 42
Figure 5.1: FY26 Base Estimation methodology 44
Figure 5.2: Relationship between CJV traffic and Rajasthan GSDP 47
Figure 5.3: Relationship between LCV+Bus+2A combined traffic and Rajasthan GSDP 48
Figure 5.4: Relationship between 3A+MAV combined traffic and India GDP 49
Figure 6.1: Alternate routes and Asset route shown against the regional network context 52
Figure 6.2: Asset location on long-distance route option between Udaipur/Chittorgarh and Kanpur 54

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Summary of concession 6
Table 2.2: Single toll rates on the Asset (INR), applicable July 2025 to June 2026 7
Table 2.3: Section Wise Delhi Mumbai Expressway status 9
Table 3.1: PCU factors 11
Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Amoli 12
Table 3.3: Historical Tollable Traffic Levels at TP1 Amoli 12
Table 3.4: Historical Tollable Traffic Levels at TP2 Ludhawai 13
Table 3.5: Historical revenue evolution (in INR crores) and AADC (in INR Lakh) : 15
Table 3.6: Typical ticket types sold at NHAI plazas 16
Table 3.7: Timeline of national ETC implementation 17
Table 3.8: Historical ticket segmentation at TP1 Amoli (LCVs) 20
Table 3.9: Historical ticket segmentation at TP1 Amoli (Bus) 20
Table 3.10: Historical ticket segmentation at TP1 Amoli (2 Axle) 20
Table 3.11: Historical ticket segmentation at TP2 Ludhawai (LCV) 20
Table 3.12: Historical ticket segmentation at TP2 Ludhawai (Bus) 21
Table 3.13: Historical ticket segmentation at TP2 Ludhawai (2 Axle) 21
Table 3.14: Overloading shares for FY19 - FY26 22
Table 3.15: Data collection schedule 22
Table 3.16: Sample rates for OD data 26
Table 3.17: Zone aggregations for zonal influence analysis 26
Table 3.18: Aggregate commodity categories 29
Table 4.1: CAGR of population in India 34
Table 4.2: Population Growth in India (2001 – 2011) 35
Table 5.1: Seasonality correction factors for TP1 Amoli 45
Table 5.2: Seasonality correction factors for TP2 Ludhawai 45
Table 5.3 Adopted base estimates - TP1 Amoli 45
Table 5.4: Adopted base estimates- TP2 Ludhawai 45
Table 5.5: Identified growth drivers to model traffic growth 46
Table 5.6: Derived elasticities from regression analysis and assumed forecast elasticities for background growth 50
Table 6.1: Key intermediate and final outputs in the forecast 51
Table 6.2: List of network/other developments 53
Table 6.3: Impact due to completion of missing section on Agra Ring Road, TP1 Amoli 54
Table 6.4: Impact due to completion of missing section on Agra Ring Road, TP2 Ludhawai 55
Table 6.5 Impact due to Delhi Mumbai Expressway, TP1 Amoli 55
Table 6.6: Impact due to Delhi Mumbai Expressway, TP2 Ludhawai 55
Table 6.7: Completion of Agra-Gwalior Construction 56
Table 6.8: Trip factors on Asset 56
Table 6.9: Evolution of annual pass trips (15th August to 30th September 2025) 56

Table 6.10: Forecast toll segmentation, FY26 onwards at TP1 Amoli	57
Table 6.11: Forecast toll segmentation, FY26 onwards at TP2 Ludhawai	57
Table 6.4: Annual pass compensation for CJVs (in Crore)	58
Table 6.12: Overloading assumptions for forecast years FY26 onwards under various ticket categories	58
Table 6.13: WPI growth forecast assumptions	59
Table 6.14: Revenue reconciliation summary for FY26YTD	59
Table 6.15: Traffic forecasts (with impacts) AADT forecast for TP1 Amoli	60
Table 6.16: Traffic forecasts (with impacts) CAGR (%) for TP1 Amoli	60
Table 6.17: Revenue forecasts (INR crores) for TP1 Amoli	60
Table 6.18: Revenue forecasts CAGR (%) for TP1 Amoli	61
Table 6.19: Traffic forecasts (with impacts) AADT forecast for TP2 Ludhawai	61
Table 6.20: Traffic forecasts (with impacts) CAGR(%) for TP2 Ludhawai	61
Table 6.21: Revenue forecasts (INR crores) forecast for TP2 Ludhawai	62
Table 6.22: Revenue forecasts CAGR (%) for TP2 Ludhawai	62
Table 6.23: Summary of Macro-economic Assumptions for upside and downside cases	63
Table 6.24: Summary of impacts on the Assets	63
Table 6.25: Summary of impacts on the Assets	64
Table 6.26: CJV and Bus top 10 OD pair shares at TP2 Ludhawai	70
Table 6.27: Zone list used for OD analysis	72

Appendices

A	**Developments in sand-mining**
B	**Top 10 OD Pairs**
C	**Data Collection Exercise**

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Over sized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Mahua-Bharatpur Toll Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic, and network assumptions.

1.2 The Asset Mahua-Bharatpur consists of a single stretch of toll road with two toll plazas. For the purpose of this report, we hereafter call the toll plazas present on the Asset as TP1 and TP2 respectively.

- TP1 – Amoli
- TP2 – Ludhawai

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Origin-Destination (OD) data, Vendor reports and documents	• Provided by client for the period between Apr'09 and Sep'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, — Seasonality	• Historical toll plaza data provided by Client and benchmarks from Assets in the vicinity wherever long time series historical data was not available
• Validation of Revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue.
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer in 2019 (TP1) and 2023 (TP2) respectively
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by Steer based on

Scope of work	Data source
	Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares,	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts •	• Elasticity based base growth and potential impacts from secondary research and Steer's in-house experience of working in the vicinity of the Asset
• Toll revenue estimation for the entire concession including toll evolution	• Toll evolution based on toll notification published by National Highway Authority of India (NHAI); and Gross Domestic Product (GDP) & Wholesale Price Index (WPI) trends as shared by the client

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  - TMS data starting April FY09 to September 2025
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous studies related to traffic and revenue
  - Steer-commissioned OD survey on 27th June 2023 at TP2 of the Asset to validate any change in growth drivers and travel patterns.
  - Steer-commissioned TVC survey from 26th June 2023 to 29th June 2023 at TP2
- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by each of the toll plaza and subsequently match it to the reported revenue for FY26 using the prevalent toll rates and reported segmentation/toll-frequencies for FY26, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY26 AADT was calculated using the monthly traffic data for FY25 and FY26YTD. The annual FY26 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against six months of actual traffic (Apr-Sep 2025) and necessary adjustments were made where required.

- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.7 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases

2 The Asset

Introduction

2.1 This chapter provides a description of the Asset, primarily based on primary (site visits) data, our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of Rajasthan, connecting Mahua to Bharatpur, near the border of Rajasthan with south-western Uttar Pradesh (UP).

2.3 Figure 2.1 shows the regional road network in which the Asset is located.

Figure 2.1: Asset location in the regional network context

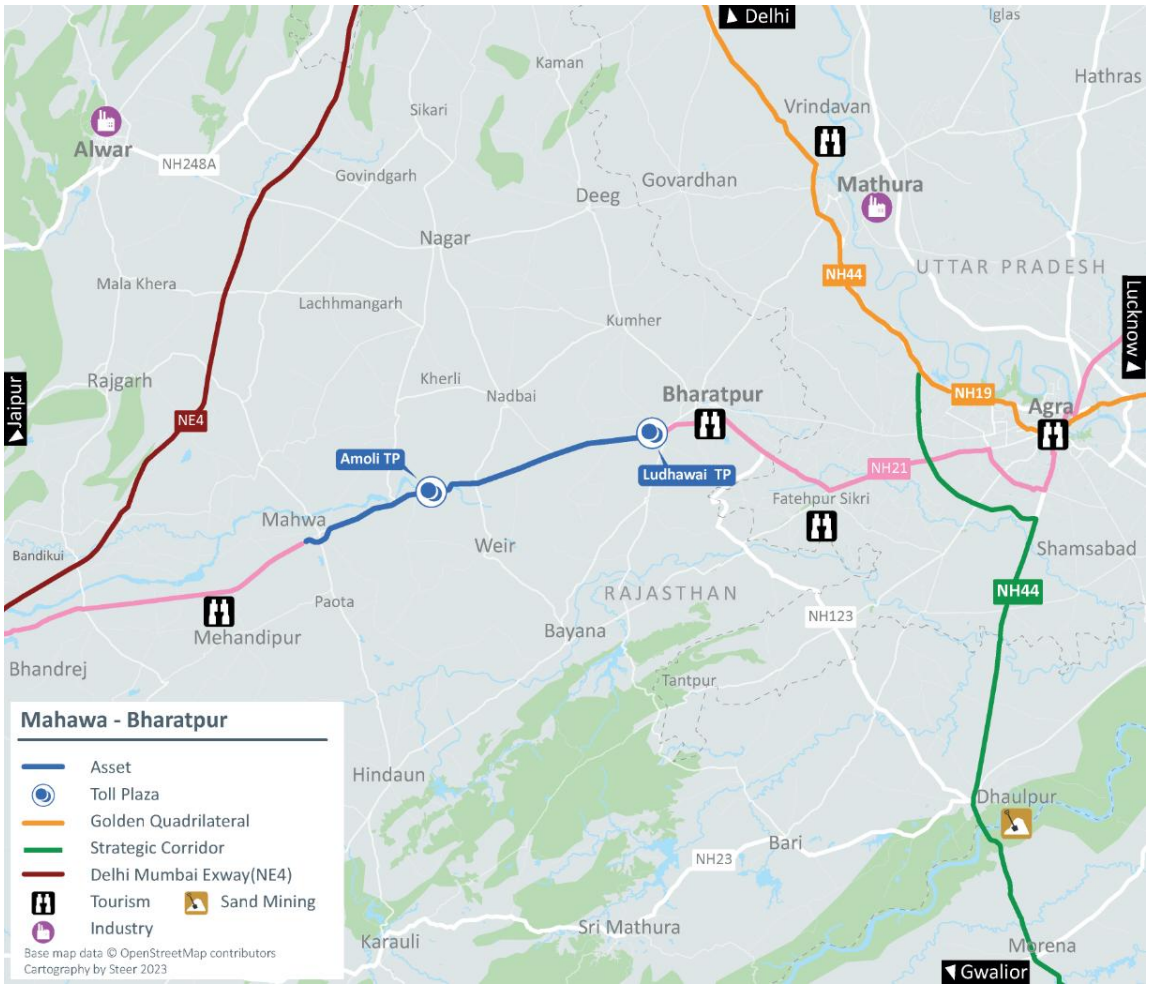
Source: Steer cartography using OpenStreetMap data

2.4 This Asset primarily caters to three different types of strategic movements:

- **Short-distance trips** including tourism and leisure trips between some of the most attractive tourist destinations in India. Such trips are mostly comprising of CJVs which are either local or run between key tourist locations of Agra and Bharatpur at one end and Jaipur on the other.
- **Medium-distance trips** between Rajasthan and Uttar Pradesh connect marble-processing sites of Rajasthan to its consumption sites in Uttar Pradesh. The Asset also transports significant number of manufactured products across the states of UP and Rajasthan.
- **Long-distance trips** between the region consisting of Gujarat and southern Rajasthan, and UP/East India connects ports and industries of western India to major consumption and production centres in North and East India.

2.5 The Asset is a 57.3 km toll road which forms a part of the NH 21 (Jaipur – Agra – Bareilly) in Rajasthan. This is a four-lane road with two toll plazas, namely, Amoli (TP1) at Km 98.5 (closer to Mahua) and Ludhawai (TP2) at Km 64.5 (closer to Bharatpur). Figure 2.2 provides a closer view of the Asset in the context of its immediate surroundings and location of toll plazas.

Figure 2.2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.6 The toll plaza on the Asset have been operational since April 2009 and the Client took over the operations in May 2015. There are 7 years left in the concession period with FY32 being the last year of concession period. Table 2.1 presents a summary of the Asset.

Table 2.1: Summary of concession

Particulars	Details
State	Rajasthan
Highway and lane configuration	NH 21 four lane
Toll plazas	• TP1: Amoli • TP2: Ludhawai
Length (km) as per concession agreement, applicable	• TP1: 38.65 Km • TP2: 18.65 Km
Commencement of operations*	May 2009
Operated by Client since	May 2015
Concession period	25 years
Last year of concession	FY32

Source: Client data

2.7 Figure 2.3 shows a typical cross-section of the Asset and its toll plazas.

Figure 2.3: Typical cross section of the Asset road and toll plazas

Source: Steer site visit

2.8 The tolls on the Asset are collected for the following vehicle category with rates as shown in Table 2.2 below. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling.

Table 2.2: Single toll rates on the Asset (INR), applicable July 2025 to June 2026

Type of Vehicle	Single Journey Fee	
	TP1 Amoli	TP2 Ludhawai
CJV	55	25
LCV	100	45
Bus/Truck	200	95
3A/MAV	320	155
HCM/EME/OSV	320	155

Source: NHAI Revision of User fee

2.9 The Asset currently issues tickets including single, local commercial, local personal and through ticket under NHAI concession. There are no return and monthly tickets issued on the Asset. The local commercial and local personal ticket categories are discounted single entry tickets for trips within 20kms and 10kms respectively. The Asset issues special category of "through ticket" where a user can buy a ticket for both plazas, a common ticket to cross the entire length, this ticket can be bought at either plaza which can be redeemed at another. Further, detailed information on this have been provided in Chapter 3 of the report.

Key Economic activities

2.10 Rajasthan is the largest state in India by area, sharing borders with five major states- Uttar Pradesh, Haryana, Punjab, Madhya Pradesh, and Gujarat. It is rich in natural resources particularly minerals and produces about 57 different minerals.[1] Predominantly an agrarian economy and a major producer of grains, oilseeds and edible oil, Rajasthan has seen a rise in the service sector recently wherein the sector contributed to 45% to state's GSDP in FY25 followed by agriculture at 30% and industries at 25%.[2]

Urban centres, business, and tourism

2.11 The state of Rajasthan and its bordering cities in UP (e.g. Agra and Mathura) are known for their tourist destinations. This contributes significantly to high passenger traffic volumes both within cities and on highways. The Bharatpur area with the presence of the Keoladeo Ghana National Park is a major attraction for tourists, known for its birds. The capital city of Jaipur, located on one end of the Asset, is a thriving urban city which is the main centre of administration, governance, culture, education, business and service sector in the state. It is a prominent tourism destination contributing majorly to the flourishing hospitality industry in the state. This reflects in considerable passenger volumes between the three nodes of India's Golden Triangle - Delhi, Jaipur and Agra – observed on the Asset engaged in tourism and related activities. In recent times, the city has also emerged as a promising hub for global outsourcing and IT industry. Jaipur's strategic location on the golden quadrilateral connects it with major industrial, agricultural, and cultural centres of Chennai, Kolkata, Delhi, and Mumbai.

[1] http://www.mines.rajasthan.gov.in/dmgcms/page?menuName=YzCjPSj/AU7RGgRfpUoY5A==#:~:text=Rajasthan%20is%20the%20richest%20state,zinc%20ores%2C%20selenite%20and%20wollastonite.

[2] Rajasthan State Economic Survey 2024

Marble, cement, and sand

2.12 The State is also a leading producer of Masonry stone with around 136.1 million tonnes of production in FY24.[3] Areas such as Kishangarh, Kota and Dausa produce stone and sand, apart from being a hub of major marble processing centres, with a history of supplying marble to the rest of India.

2.13 Rajasthan accounts for 70 per cent of the country's stone production. There are 4,920 mining leases in the state[4]. Rajasthan produces 90 percent of the marble and sandstone in the country. In terms of Granite, in FY24 Rajasthan produced more than 10.4 million tonnes compared to 9.3 million tonnes in FY23[5]. This is due to the increased export demand from countries like US, China and Europe.

2.14 Sandmining in India has long faced issues of corruption involving local mafias and a lack of proper implementation of mining policies by the government. In November FY18, when Supreme Court order ruled the requirement of environmental clearances for all sand mines, including those less than five hectares of size, there was a reported drop in traffic carrying construction-related commodities on the Asset, particularly sand. However, in 2020, following the implementation of the Major and Minor Mineral Policy, the mining industry in the state was regularized by imposing a ban on illegal mining activities. Additionally, sand mining leases were reduced to two years, with an improved replenishment cycle. The policy also mandated the use of 25% M-Sand (manufactured sand) as an alternative to riverbed sand for construction activities in Rajasthan.

2.15 After the policy implementation, the combination of reduced legalized sand mining, award of leases, and increasing demand for construction material for local activities led to a continued demand for sand and other construction materials in the region. In terms of lease tenure related to this commodity within the Rajasthan mining policy:

- Sand mining leases- 2 years (re-award of new leases after 2 years): Additionally, to reduce illegal mining and allow for the full replenishment cycle of rivers in the region, the state government has reduced the validity of sand mining leases from the existing five years to two years.
- Aggregate mining leases- 5 years (re-award of new leases after 5 years)

Alternate Routes

2.16 For long-distance trips connecting Gujarat and southern Rajasthan to Uttar Pradesh and other eastward states, there is an alternative route along NH 27 that joins Udaipur and Kanpur via Chittorgarh-Kota-Jhansi. Majority of travel patterns are already well established and the choice between using NH27 vs. NH48 and the Asset for east-west movements has been established over a number of years. However, for a small proportion of traffic on NH27; the route via the Asset is expected to become more attractive as the key feeders of the Asset improve. In Chapter 6, we have discussed how the completion of southern bypass of Agra Ring Road improves the relative level of service

[3] Minor mineral production in Rajasthan

[4] 70% of stone production in India comes from Rajasthan: RIICO Chairman (knnindia.co.in)

[5] Granite production in Rajasthan

on the Asset corridor and has a positive impact. The traffic impact of Jaipur Ring Road is already part of the current volumes appearing on the Asset and no further adjustments have been made to the traffic forecasts.

2.17 During our site visit to the Asset, no major micro-diversions through local roads were observed close to the toll plazas. Chapter 6 provides a discussion and estimation of potential impacts on the Asset.

Delhi-Mumbai Expressway

2.18 The Delhi-Mumbai Expressway is a 1290-KM long greenfield expressway that has been developed to provide an improved 8-lane route to long-distance traffic between North/Western India to Mumbai. The competing movements which may choose to take the DME are as follows:

Traffic originating near Uttar Pradesh and Rajasthan

- Vehicles making trips between Northern Uttar Pradesh i.e Moradabad, Bareilly, Haldwani going towards Jaipur/Alwar/Rajasthan which earlier made the trip via NH21 section of Moradabad- Aligarh- Mathura- Bharatpur- Amoli- Amoli – Mahwa – Laxmangarh – Alwar, now has an alternative available in the form of the DME which provides direct connectivity from Faridabad. The alternative route will materialise as a conjunction of the DME and the Faridabad bypass. It will provide connectivity from Dausa – NE4 – Faridabad bypass at Kaligaon.
- By virtue of the route being supplemented by the Faridabad bypass, traffic destined to Delhi and north will get access to smoother passage by being able to avoid entering the city altogether.

2.19 An additional spur has been constructed between Bandikui on NE4 and Bagrana on the Jaipur Ring Road (which is located west of TP1). This spur has been operational since July 2025. As a result, a significant part of the increase in volumes observed by virtue of the DME is expected to be lost since access to Jaipur will not require the passage of traffic via the Asset. Based on the site observation, the section wise update on the Delhi Mumbai Expressway section is given below:

Table 2.3: Section Wise Delhi Mumbai Expressway status

S. No	Section	Length (in km)	Sub-Section	State	Status	Expected Data of Completion
1	Delhi-Faridabad-KMP	59	Faridabad-KMP	Delhi, Haryana	Operational	Opened Nov'24
2	Sohna-KMP-Vadodara	844	Sohna – Sawai Moadhopur	Haryana	Operational	Opened Sept'23
			Sawai-Madhopur-Jhalawar	Sawai-Madhopur-Jhalawar	Under Construction	Expected end of FY26 (75-90%

S. No	Section	Length (in km)	Sub-Section	State	Status	Expected Data of Completion
						construction completed)[67]
			Jhalawar-Timarwani	Jhalawar-Timarwani	Operational	Opened Sept'23
			Timarwani-Vadodara	Madhya Pradesh, Gujarat	Under Construction	Expected Dec 2025 (75-80% construction completed)[8]
3	Vadodara – Virar	354	Vadodara-Bharuch	Gujarat	Operational	Opened Feb'24
			Bharuch-Virar	Gujarat, Maharashtra	Under Construction	Expected October 2025 (50-60% construction completed)[9]
4	Virar- JNPT	92	Virar- JNPT	Maharashtra	Under Construction	Expected FY28
Spur Development						
5	Jaipur – Bandikui Expressway	67	Jaipur – Bandikui	Rajasthan	Operational	Operational starting July 2025

[6] Infra News India (INI) on X: "**Delhi-Mumbai Expressway Package-wise status update**. Looking at the current status, significant sections of the expressway would become operational in the next 6 months! The package 5 in Vadodara Virar section from Ankleshwar to Kim https://t.co/poPFxWOFFe" / X

[7] **Delhi Mumbai Expressway** Route, Map, & Latest Updates

[8] Infra News India (INI) on X: "**Delhi-Mumbai Expressway Package-wise status update**. Looking at the current status, significant sections of the expressway would become operational in the next 6 months! The package 5 in Vadodara Virar section from Ankleshwar to Kim https://t.co/poPFxWOFFe" / X

[9] Infra News India (INI) on X: "**Delhi-Mumbai Expressway Package-wise status update**. Looking at the current status, significant sections of the expressway would become operational in the next 6 months! The package 5 in Vadodara Virar section from Ankleshwar to Kim https://t.co/poPFxWOFFe" / X

3 Traffic Description

Introduction

3.1 This chapter outlines the historical and current traffic and revenues on the Asset, as well as our analysis of origin-destination (OD) data and traffic volume count (TVC) data. This includes data collected as a part of this study and previous studies of this Asset, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of commodity movements, travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by goods vehicle. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand, on the Asset.

3.3 Actual toll plaza data is used as the primary basis from which the current/base year annual average daily traffic (AADT) is established. This data is typically provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU factors considered for reporting

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2023 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV	1.0
Mini LCV	1.0
LCV	1.5
Bus/2A/3A	3.0
MAV	3.99
OSV	4.5

Source: Steer analysis and IRC64,1990

Historical trends

3.5 The following table presents the historical variation in traffic volume at both the Asset plazas, in terms of total AADT, vehicle shares and yearly volume growth. The table below shows the traffic evolution on TP1 and TP2 of recent years FY16-25YTD.

Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Amoli

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (20-25)	CAGR (16-25)
CJV	4,085	3,930	4,125	4,313	4,453	5,023	5,660	7,077	7,417	8,260	7,961	13.1%	8.1%
LCV	1,069	1,060	1,085	966	867	454	303	295	293	293	268	(19.4%)	(13.4%)
Bus/2A	1099	970	1035	1156	1230	1111	1373	1614	1724	1,920	1,833	9.3%	6.4%
3A/MAV	3,594	3,705	4,229	3,506	3,512	3,640	3,540	3,715	3,852	3,978	3,888	2.5%	1.1%
Total	**9,847**	**9,665**	**10,474**	**9,941**	**10,062**	**10,229**	**10,875**	**12,701**	**13,286**	**14,451**	**13,999**	**7.5%**	**4.4%**
PCU	**22,915**	**22,789**	**25,249**	**22,817**	**23,054**	**23,147**	**23,952**	**26,760**	**27,958**	**29,878**	**29,812**	**5.3%**	**3.0%**

Source: Steer analysis of the Client data, FY26YTD includes data between April 2025 and September 2025;
Note: On this toll plaza, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the plaza

Table 3.3: Historical Tollable Traffic Levels at TP1 Amoli

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (20-25)	CAGR (16-25)
CJV	3,654	3,591	3,932	4,186	4,343	4,501	5,457	6,858	7,143	7,859	7,890	12.6%	8.9%
LCV	1,049	1,043	1,077	959	861	435	296	290	287	285	263	(19.8%)	(13.5%)
Bus/2A	1,039	954	1,025	1,147	1,224	1,096	1,360	1,605	1,711	1,905	1,888	9.2%	7.0%
3A/MAV	3,360	3,551	4,160	3,450	3,454	3,577	3,502	3,672	3,775	3,956	3,875	2.7%	1.8%
Tollable AADT	**9,102**	**9,139**	**10,194**	**9,742**	**9,881**	**9,610**	**10,615**	**12,423**	**12,914**	**14,004**	**13,917**	**7.2%**	**4.9%**
Tollable PCU	**21,367**	**21,782**	**24,748**	**22,438**	**22,691**	**22,308**	**23,553**	**26,335**	**27,334**	**28,556**	**28,211**	**4.7%**	**3.3%**

Source: Steer analysis of Client data; FY26YTD includes data between April 2025 and September 2025

3.6 Historical data for TP2 Ludhawai is presented below:

Table 3-2: Historical evolution in AADT by vehicle class at TP2 – Ludhawai

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (20-25)	CAGR (16-25)
CJV	4,266	4,278	4,588	4,876	5,208	5,837	6,916	8,421	8,724	9,557	9,341	12.9%	9.4%
LCV	1,250	1,219	1,253	1,134	1,050	464	330	359	334	310	281	(21.5%)	(14.4%)
Bus/2A	1076	985	1073	1164	1244	1142	1402	1653	1773	1,994	1,934	9.9%	7.1%
3A/MAV	3,442	3,753	4,335	3,493	3,505	3,625	3,526	3,695	3,801	3,976	3,899	2.5%	1.6%
Total	**10,034**	**10,236**	**11,249**	**10,667**	**11,007**	**11,069**	**12,174**	**14,129**	**14,631**	**15,836**	**15,455**	**7.6%**	**5.2%**
PCU	**22,709**	**23,609**	**26,486**	**23,607**	**24,100**	**24,009**	**25,283**	**28,242**	**29,272**	**31,413**	**30,678**	**5.5%**	**3.7%**

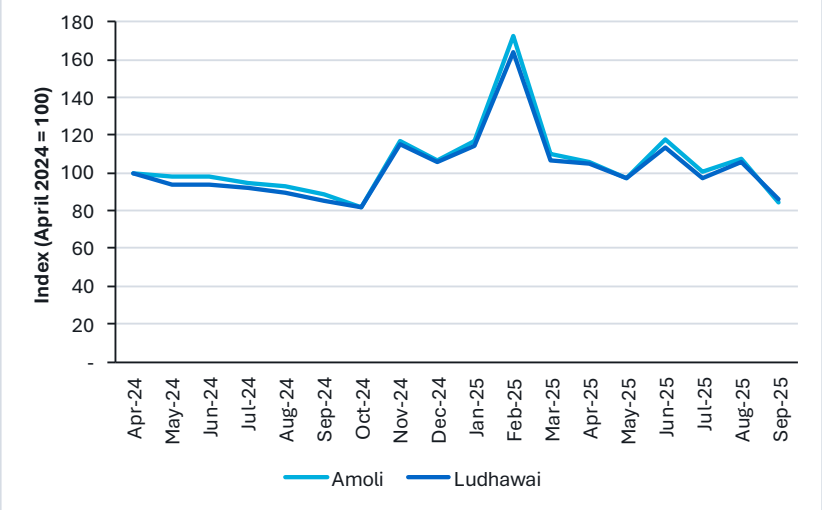
Source: Steer analysis of the Client data, FY26YTD includes data between April 2025 and September 2025;
Note: On this toll plaza, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the plaza

Table 3.4: Historical Tollable Traffic Levels at TP2 Ludhawai

Class	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (20-25)	CAGR (16-25)
CJV	4,001	3,933	4,328	4,741	5,089	5,413	6,694	8,207	8,484	9,215	8,978	12.6%	9.7%
LCV	1,239	1,202	1,234	1,125	1,043	453	325	354	329	304	276	(21.9%)	(14.5%)
Bus/2A	1056	969	1059	1155	1238	1129	1392	1647	1763	1,951	1,920	9.5%	7.1%
3A/MAV	3,397	3,637	4,200	3,403	3,439	3,607	3,521	3,687	3,774	3,962	3,893	2.9%	1.7%
Tollable AADT	**9,694**	**9,740**	**10,820**	**10,424**	**10,808**	**10,603**	**11,932**	**13,893**	**14,350**	**15,432**	**15,068**	**7.4%**	**5.3%**
Tollable PCU	**22,195**	**22,738**	**25,631**	**23,085**	**23,695**	**23,462**	**25,004**	**27,965**	**28,893**	**30,104**	**29,480**	**4.9%**	**3.4%**

Source: Steer analysis of Client data; FY26YTD includes data between April 2025 and September 2025

Figure 3.1: Passenger Traffic trends on the Asset (April 2024 to September 2025)



Source: Steer analysis of Client data

3.7 On the Asset, a slowdown was observed between FY19 and FY20, driven by a combination of factors:

- Completion of large construction activities in the vicinity (Agra-Lucknow expressway) – negative traffic impact due to construction
- Construction activity on a key feeder route (Dausa-Lalsot) - traffic loss due to construction
- Construction of Jaipur ring road - negative traffic impact due to construction
- Revision in axle load norms and economic slowdown - observed over seven quarters starting FY19 up to Q3 FY20 resulting a negative impact on Asset's traffic

3.8 As of FY26YTD, the Asset is recording ~30,000 PCUs, with both plazas witnessing similar trends on a PCU as well as vehicle level. In terms of vehicle composition, CJVs are the largest contributors, accounting for over 50% of the traffic, followed by MAVs with a share of around 30%.

3.9 In terms of traffic growth, FY26YTD (April-September) showed positive trends, with TP1 and TP2 experiencing PCU growth rates of 3.4% and 3.9% respectively compared to FY25. However, historical analysis from FY16-25 indicates a flat 3A/MAV growth trajectory, with TP1 (Amoli) registering a modest 1.1% CAGR and TP2 (Ludhawai) observing a slightly

higher 1.6% CAGR over the same period. This stagnant trend is attributed to various factors affecting goods vehicle growth, including the diversion of traffic due to the opening of the Delhi Mumbai Expressway in February 2023 and fluctuations caused by erratic rainfall and holiday seasons like Diwali, particularly evident in lower October traffic volumes. The DME/NE4 in conjunction with the Faridabad bypass now provides a better alternative to vehicles moving between Uttar Pradesh and Rajasthan.

3.10 3A+MAVs maintain significant importance as the second-largest traffic contributor on the Asset, both historically and in FY26YTD. They hold a substantial share of 27% at TP1 and 25% at TP2. This dominance in traffic is linked to the state's thriving marble and sand mining activities, which generate substantial demand for goods transportation services. Overall, the combination of historical trends and current insights highlights the dynamic nature of traffic patterns, influenced by infrastructural developments, regulatory changes, and regional economic activities.

3.11 For CJVs, TP1 witnessed a strong 8.1% CAGR between FY16 and FY25, while TP2 recorded a commendable 9.2% CAGR during the same period. This can be largely attributed to the upswing in tourism activity in Rajasthan, coupled with the reopening of popular tourist destinations. Notably, TP2 outpaced TP1 in growth due to its strategic proximity to pilgrimage sites such as Mahendipur Balaji, Mahua, and Agra, which experienced a surge in daily CJV trips. Additionally, TP2's direct connectivity to Morena and Gwalior via NH21 further bolstered the higher traffic volumes observed in this region.

3.12 Additionally, there's notable rise in car volumes during Jan'25, as seen Figure 3.1 above, driven by increased travel to the 2025 Maha Kumbh Mela in Prayagraj [10]. As a result, passenger traffic on the Asset witnessed a substantial increase in pilgrim-related volumes during Jan 2025 on both toll plazas. This is an one time increase and hence has been considered as an one time increase in our forecasts.

3.13 LCV's on both the plazas are witnessing a dropping trend historically (reduced by 13.4% CAGR at Amoli and 14.4% CAGR at Ludhawai) between FY16-25. This is attributed to the shift happening between LCV and 2A, and some mini-LCV counted under LCV category being now reclassified under the CJV category post implementation of FASTag.

3.14 On MBEL, 2A and Buses have the same toll rates. (INR 200 and INR 95 for TP1 and TP2 respectively for a single ticket in FY26) and so do 3A and MAV (INR 320 and INR 155 for TP1 and TP2 respectively for a single ticket in FY26). Although 2A and Buses share the same toll rate, the current TMS reports them as separate categories. In contrast, 3A and MAV are combined into a single category. However, post FASTag implementation there has been a reclassification of Buses and 2As which are now tolled basis their vehicle mapping. To accurately assess the historical growth of these categories and adjust for any discrepancies due to this reclassification, we have combined the 2A and Bus categories for our analysis.

3.15 To further validate individual growth of each category (Bus/2A/3A/MAV), we conducted independent counts at various points in time to ensure the true representation of individual volumes for the asset. The results of the split are presented in the 'Key findings of the TVC data analysis' section of Chapter 3 of the report. Therefore, the split that we

[10] The Maha Kumbh Mela, held once every 144 years, is regarded as a once-in-a-lifetime spiritual event, significantly influencing regional traffic patterns.

have derived from our counts is the split we are using in our projection to forecast the growth of each individual category for this Asset.

3.16 Overall, on the Asset level, CJV witnessed healthy five-year traffic growth of 13.1% from FY20-25 at TP1 and 12.9% at TP2 respectively. It is mostly driven by increased tourism activity in Rajasthan and re-opening of tourist places which increased daily CJV trips where TP2 witnessed higher growth due to its direct connectivity to Morena and Gwalior via NH21 further bolstered the higher traffic volumes observed in this region

3.17 The trend of tollable traffic on the Asset has largely followed that of total traffic. TP1 has recorded 3.3% tollable PCU growth in FY16-25 which is 3.2% in total whereas TP2 recorded 3.4% tollable PCU growth which is 3.8% in total.

Historical Revenue

3.18 Table 3.5 below presents the reported historical revenue on the Asset.

Table 3.5: Historical revenue evolution (in INR crores) and AADC (in INR Lakh) :

		FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (20-25)	CAGR (16-25)
Amoli	Total	31.9	31.5	41.0	39.1	42.8	44.0	53.5	62.7	68.6	74.2	30.8	-	-
	AADC	8.7	8.6	11.2	10.7	11.7	12.1	14.6	17.2	18.7	20.3	20.2	11.6%	9.8%
Ludhawai	Total	20.8	26.5	31.1	28.7	28.4	21.6	27.1	31.7	34.3	36.8	15.3	-	-
	AADC	5.7	7.3	8.5	7.9	7.8	5.9	7.4	8.7	9.4	10.1	10.0	5.3%	6.6%
Asset (Cr)		52.7	58.0	72.1	67.8	71.3	65.6	80.7	94.4	102.9	111.0	46.2	9.6%	8.7%

Source: Steer analysis of the Client data, FY25YTD included data till Sept'25

3.19 The revenue collection for the Asset has increased from INR 52.7 Cr in FY16 to INR 111.0 Cr in FY25, witnessing a CAGR of 8.7%. This is with the positive increase in 3A and MAV construction traffic on the Asset. Per day collection on the Asset has increased from INR 25.9 lakh in FY23 to INR 30.4 lakh in FY25 whereas FY26YTD (till September 2025) is reporting INR 30.2 Lakh. This growth can be attributed to various factors, including increased tourism activity in Rajasthan and re-opening of tourist places which led to positive revenue increase on the Asset. Positive tick in revenue prior FY23 is due to post-pandemic recovery, as discussed earlier.

3.20 Furthermore, an increase in overloading revenue has contributed to higher revenue receipts from FY22 onwards. In FY25, the daily overloading collection at Amoli is INR 0.91 lakhs, while at Ludhawai, it stands at INR 0.44 lakhs.

Toll Frequencies

3.21 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some Assets offer custom made local passes to attract the local commuters to opt for these category passes instead of evading toll. Brief description of different ticket-types is given in the subsequent table.

3.22 Understanding the toll frequency gives insights into the nature of traffic. CJVs generally have higher shares of return passes or monthly passes, while heavy trucks mostly have single tickets since they travel long distance. However, this varies from Asset to Asset or even toll plaza to toll plaza. The Asset catering to short distance local traffic generally observes high share of return or other local monthly passes while the Asset catering to strategic long-distance traffic generally observes high share of single ticket traffic. The same can be verified through OD data where the vehicle category with high single ticket shares would have longer trip length with one of their trip end outside the Asset state. Other reasons for high single shares include the absence of return, local passes, through in and through-out tickets issued on the Asset. This is especially post- FASTag implementation where the user is allowed to pay at each toll plaza.

3.23 Single ticket category is highest share across vehicle categories on both the plazas. In case of CJV, over 90% of trips are under single where 80% of CJV's appearing on the Asset have one of their trip end in Rajasthan, Uttar Pradesh or Gujarat. For MAV as well single is the highest ticket issued category which is justified by the trip length where at all plazas of the Asset more than 60% of MAV trips as reported in FY23 are over 500kms moving towards Gujarat, Central and North India. This is also verified by internal-external analysis where around 45% MAV trips have one of their ends outside the Asset state. Post FASTag implementation local passes like monthly, through in and through-out got discontinued on the Asset which is another possible behind increasing shares Single ticket for each vehicle category.

3.24 However, on this Asset since return and monthly passes are not available, 90% of the tickets issued are single. Primarily, the traffic which is not eligible for local personal and commercial passes have single ticket as the only option, which explains high share of single traffic on the Asset, as discussed in the next section.

3.25 The following are the types of tickets being sold at the plazas of the Asset.

Table 3.6: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Local Personal	Discounted monthly pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.
Through traffic	Allows vehicle to buy ticket one plaza of the Asset and get redeemed at another and vice versa

Introduction of Annual pass for CJVs

3.26 The National Highway Authority of India launched the "The FASTag Annual Pass" on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.27 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll roads

FASTag implementation

3.28 Government of India has introduced (and more recently, mandated) Electronic Toll Collection (ETC) across National Highways in India, collected via "FASTag". The timeline of ETC implementation is presented in the following table.

Table 3.7: Timeline of national ETC implementation

Date	ETC Development
2014	FASTag system set up as a pilot on the Ahmedabad to Mumbai stretch of the Golden Quadrilateral, in November 2014 it was also implemented on the Delhi to Mumbai stretch of the Quadrilateral.
December 2019	FASTag is made mandatory on all National Highways with only one lane on either side keep as a Cash lane, cash users entering ETC lanes were charged double the toll.
February 2021	FASTag is made mandatory for all vehicles at every toll plaza in the country starting 15th Feb 2021

Source: NHAI.gov.in and Wikipedia

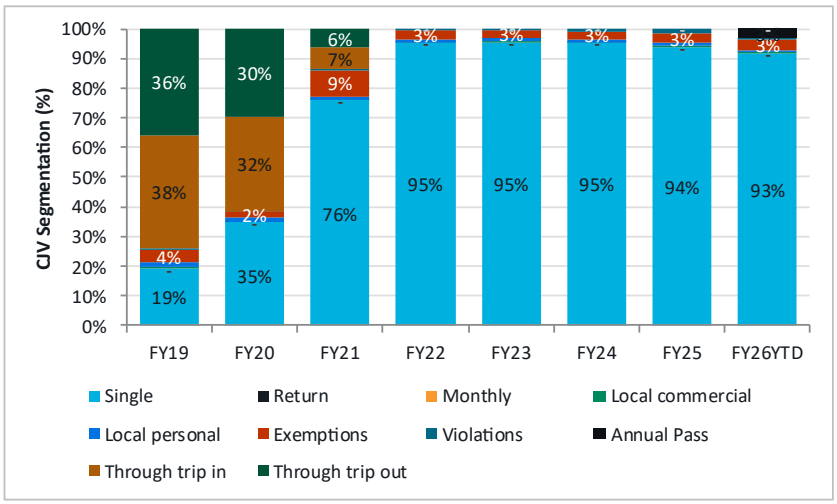
3.29 As we can see from Table 3.7 above most of the categories of vehicle types across the toll plaza are reporting more than 95% FASTag penetration, with CJV's also reporting more than 90% proportions. These high penetration levels improve the overall service levels of the toll plaza and reduces the transaction time.

Segmentation

3.30 FY21 was a partial year in terms of operation of the toll plazas. Further, there was a change in ticket patterns due to the mandatory implementation of FASTag as a mode of payment (share of single tickets increased in FY21). FY22 was also impacted by 2nd wave of COVID-19 in Q1 and Q2 of FY22. Hence during this period travel patterns were also disrupted, with more shorter trips being undertaken since several states implemented state entry barriers, resulting in an increase in the proportion of short distance trips. By Q3FY22 travel patterns returned to normal levels and hence, it is assumed that segmentation after FY22 is considered to be normal. With FY21 and FY22 being Covid-19 impacted it is assumed that segmentation of FY23 onwards is normal. The resultant segmentation, therefore, has been assumed as the forecast segmentation as well.

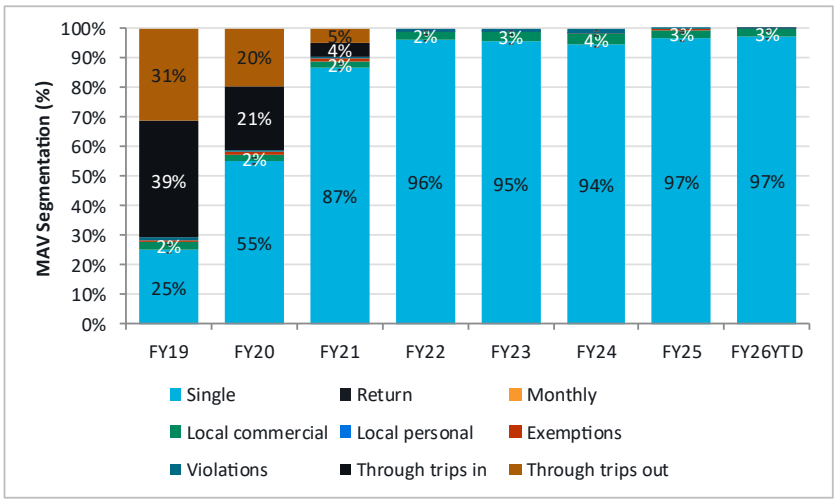
3.31 The following figures provide the toll segmentation for the historical years at TP1 Amoli and TP2 Ludhawai for CJV and MAV while the table provides the same for the remaining vehicle types.

Figure 3.2 Ticket-segmentation for CJV at TP1 Amoli



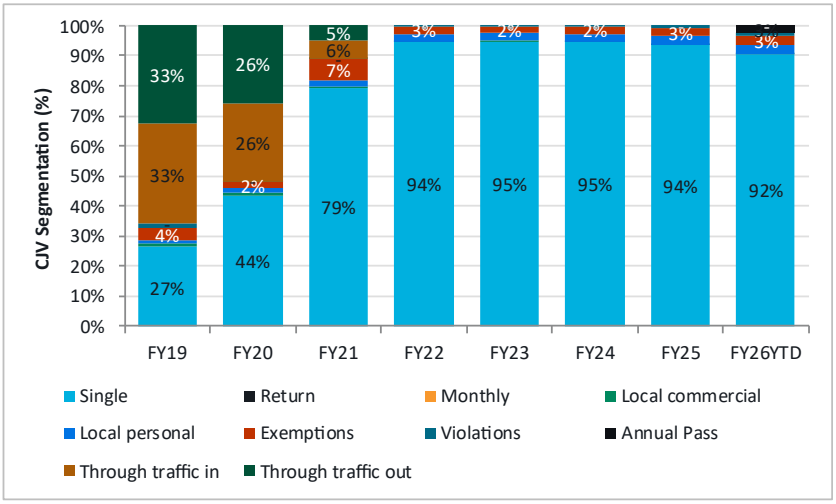
Source: Steer analysis of the Client data, FY26 YTD includes data till August'25; Segmentation does not include return trips

Figure 3.3 Ticket-segmentation for MAV at TP1 Amoli



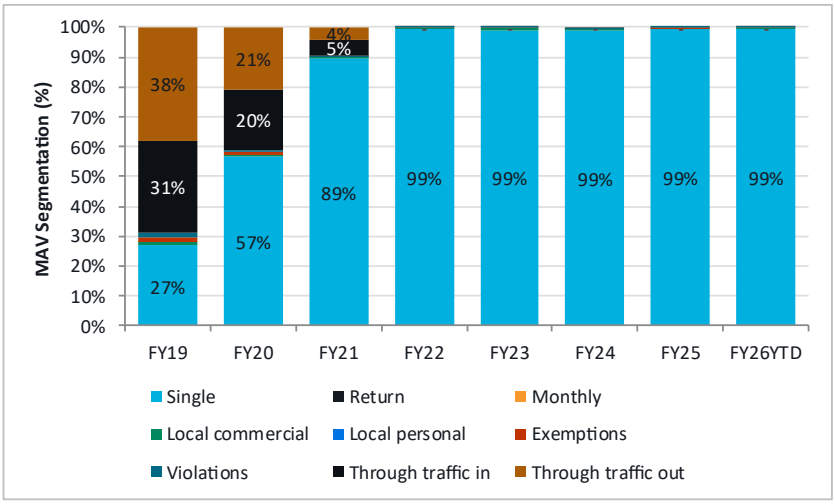
Source: Steer analysis of the Client data, * FY26 YTD includes data till August'25; Segmentation does not include return trips

Figure 3.4 Ticket-segmentation for CJV at TP2 Ludhawai



Source: Steer analysis of the Client data, FY26 YTD includes data till August'25; Segmentation does not include return trips

Figure 3.5 Ticket Segmentation for MAV at TP2 Ludhawai



Source: Steer analysis of the Client data, * FY26 YTD includes data till August'25; Segmentation does not include return trips

3.32 The traffic segmentation charts indicate that the pattern observed in FY26YTD remains broadly consistent with previous years. As illustrated in the figure and table below, in FY26YTD, the share of single-ticket transactions for CJVs at TP1and TP2 is 92% and 93% respectively.

3.33 The Asset does not have return ticket, explaining the very high proportion of single tickets in the toll segmentation. Also, the CJVs plying on the Asset are doing short-medium distanced movement within 300kms also in the Figure 3.17 and Figure 3.18 below. Major share of these CJV trips originate outside 10kms of the Asset making them non-valid for a discounted local pass. This is in line with the Asset being a major tourist driven corridor fetching passenger from other surrounding regions.

3.34 Ticket shares in FY23-FY26YTD are similar with 99% MAV taking single ticket travelling long distance to medium distance. In case of CJV at both the plaza the exemptions have

stabilised FY23 onwards with ~3% share of total trips. The ticket segmentation of other vehicle types is presented in Table 3.8 and Table 3.11 below. The declining exemption and violation shares starting FY22 towards FY26YTD is a result of FASTag implementation which has resulted with better management of traffic system and operations. Through traffic tickets were discontinued in FY22 as a result of FASTag implementation where the operators discontinued the discounted tickets which are not in accordance with NHAI concession.

Table 3.8: Historical ticket segmentation at TP1 Amoli (LCVs)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	25.3%	31.1%	66.0%	96.5%	97.2%	97.1%	96.8%	97.8%
Local commercial	1.8%	2.0%	2.1%	1.3%	0.9%	0.8%	0.6%	0.4%
Violation	0.2%	0.1%	0.5%	0.6%	0.3%	0.3%	96.8%	97.8%
Exemption	0.6%	0.6%	3.5%	1.6%	1.6%	1.8%	0.6%	0.4%
Through traffic in	35%	33%	15%	-	-	-	-	-
Through traffic out	35.6%	32.9%	13.5%	-	-	-	-	-

Table 3.9: Historical ticket segmentation at TP1 Amoli (Bus)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	12.7%	43.7%	92.5%	99.0%	99.0%	98.8%	98.4%	98.6%
Local commercial	1.2%	0.8%	0.9%	0.3%	0.5%	0.5%	0.8%	0.9%
Violation	0.7%	0.0%	0.0%	0.3%	0.1%	0.3%	0.3%	0.2%
Exemption	0.1%	0.2%	0.9%	0.4%	0.3%	0.4%	0.5%	0.3%
Through traffic in	39%	29%	3%	0%	0%	-	-	
Through traffic out	40.8%	26.5%	2.8%	-	-	-	-	

Table 3.10: Historical ticket segmentation at TP1 Amoli (2 Axle)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	36%	18%	32%	94%	91%	96.6%	98.4%	98.6%
Local commercial	2%	1%	2%	4%	7%	2.3%	0.8%	0.9%
Violation	0%	0%	1%	-	0%	0.1%	0.3%	0.2%
Exemption	1%	1%	2%	2%	3%	1.1%	0.5%	0.3%
Through traffic in	31%	41%	33%				-	-
Through traffic out	30%	39%	31%				-	-

Source: Steer analysis of the Client data, FY26 YTD includes 6 months of data from Apr'25-Sep'25

Table 3.11: Historical ticket segmentation at TP2 Ludhawai (LCV)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	33.3%	42.1%	67.9%	92.9%	93.1%	94.1%	92.9%	95.8%

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Local commercial	2.9%	2.7%	2.6%	5.7%	5.4%	4.4%	5.1%	2.5%
Violation	0.6%	0.1%	0.0%	0.1%	0.1%	0.1%	0.3%	0.3%
Exemption	0.9%	0.6%	2.4%	1.4%	1.5%	1.4%	1.6%	1.3%
Through traffic in	30%	28%	14%	0%	0%	-	-	-
Through traffic out	31.0%	26.8%	13.3%	-	-	-	-	-

Table 3.12: Historical ticket segmentation at TP2 Ludhawai (Bus)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	16.5%	45.2%	93.0%	99.3%	99.5%	99.0%	98.9%	98.5%
Local commercial	1.6%	0.8%	0.4%	0.3%	0.3%	0.6%	0.7%	1.3%
Violation	0%	-	0%	0%	0%	0.1%	0.1%	0.1%
Exemption	0%	0%	1%	1%	0%	0.3%	0.3%	0.1%
Through traffic in	35%	26%	3%	0%	0%	-	-	-
Through traffic out	41.8%	27.8%	2.7%	-	-	-	-	-

Table 3.13: Historical ticket segmentation at TP2 Ludhawai (2 Axle)

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Single	36%	16%	37%	99%	96%	98.6%	98.9%	98.5%
Local commercial	2%	0%	0%	0%	1%	0.4%	0.7%	1.3%
Violation	0%	0%	0%	0%	0%	0.1%	0.1%	0.1%
Exemption	2%	1%	1%	0%	3%	0.8%	0.3%	0.1%
Through traffic in	30%	41%	31%	-	-	-	-	-
Through traffic out	30%	41%	30%	-	-	-	-	-

Source: Steer analysis of the Client data, FY26 YTD includes 6 months of data from Apr'25-Sep'25

Overloading

3.35 The Asset being a part of NHAI concession follows the NHAI Overloading policy released in 2016 which bans the overloading of commercial vehicle on any NHAI toll plaza. In case of non-compliance, overloaded vehicles on the Asset are charged twice the toll fee they would otherwise pay for a Single ticket at the toll plaza.

3.36 The plaza currently charges overloading under single and local commercial category. These shares are determined using the total single journey traffic and total local commercial traffic. The table shows the share of overloaded vehicles paying twice the Single journey toll fee on each toll plaza upto FY25. FY25 reports a lower percentage of overloading shares as compared to FY24. This can be a result of strict regulatory implementation of less overloading and also the rainfall impact for most of the year on construction traffic which did not appear on the Asset.

Table 3.14: Overloading shares for FY19 - FY26

Vehicle	TP1 Amoli							TP2 Ludhawai						
	Single Overloading shares													
	FY19	FY20	FY22	FY23	FY24	FY25	FY26	FY19	FY20	FY22	FY23	FY24	FY25	FY26
LCV	1.4%	8.0%	7.0%	6.0%	3.9%	3.9%	3.9%	0.1%	1.6%	4.5%	3.4%	2.1%	2.2%	2.1%
2A	5.3%	12.2%	31.4%	22.3%	11.2%	8.1%	6.7%	0.5%	5.3%	9.9%	5.1%	6.1%	4.9%	4.6%
MAV	6.1%	11.0%	10.3%	8.2%	5.7%	5.7%	6.0%	0.7%	9.0%	10.5%	8.6%	5.6%	6.3%	6.5%
	Local Commercial Overloading shares													
LCV	1.2%	3.2%	27.9%	55.6%	0.0%	-	-	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	-
2A	15.2%	31.4%	9.3%	17.8%	0.0%	-	-	-	-	-	-	-	-	-
MAV	15.2%	38.3%	83.9%	83.7%	0.0%	-	-	0.1%	4.1%	32.4%	30.1%	0.1%	0.1%	-

Source: Steer review of Client TMS data

Data Collection exercise

Overview

3.37 To validate and inform our forecasts, we collected primary data on the Asset through the surveys listed in Table 3-11 below. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.15: Data collection schedule

TP	7-day videography-based TVC			1-day OD survey	
	Start date	End date	Time (hrs)	Start date	Start time
TP1	27 Jan2021	02 Feb 2021	0000-2359	09 July 2019	0900 hours
TP2	26 Jun 2023	29 Jun 2023	0000-2359	26 June 2023	27 June 2023

2Source: Steer analysis

3.38 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, in order to fully understand the impact of this weekly fluctuation on the Asset, we collected seven-day counts at each toll plaza.

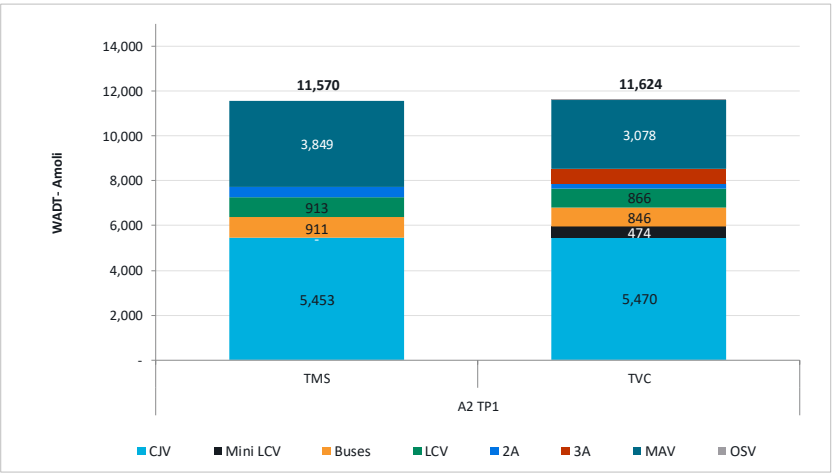
3.39 Please also note that current OD survey data was available only at Ludhawai toll plaza and not Amoli. Since Amoli and Ludhawai toll plazas show similar traffic profiles, as observed both from the historical data and our site visits, the OD findings seen at Ludhawai can be applied to Amoli as well.

Key findings of the TVC data analysis

WADT estimates

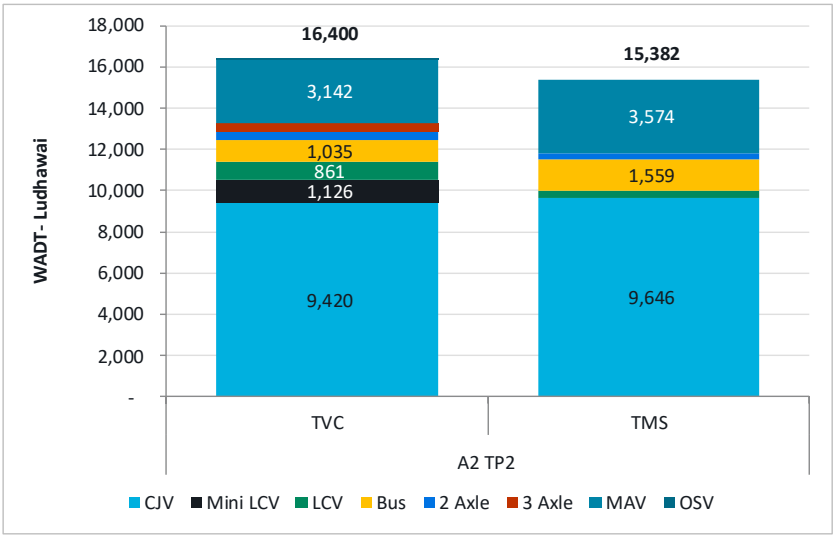
3.40 Taking an average of the seven-day TVC counts (27th Jan – 2nd Feb 2021, 0000-2359 hours) for TP1 and (26th Jun– 29th Jun 2023, 0000-2359 hours), we obtained the following weekly average daily traffic(WADT) for each toll plaza. This WADT excludes non-toll able vehicle such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicle, government vehicle and other vehicle types officially allowed as 'exempted' under the concession agreement.

Figure 3.6 A2 TVC WADT- TP1



Source: Steer analysis of TVC data

Figure 3.7 A2 TVC WADT- TP2



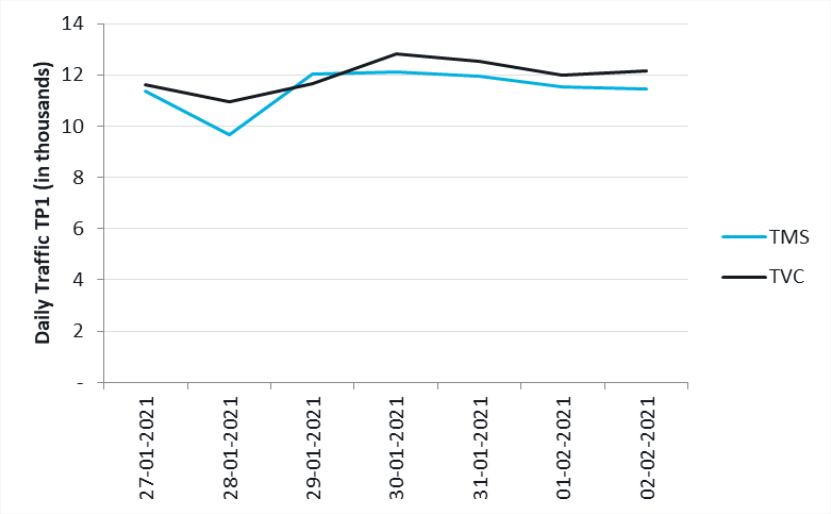
Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.41 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those particular days, as provided by the Client.

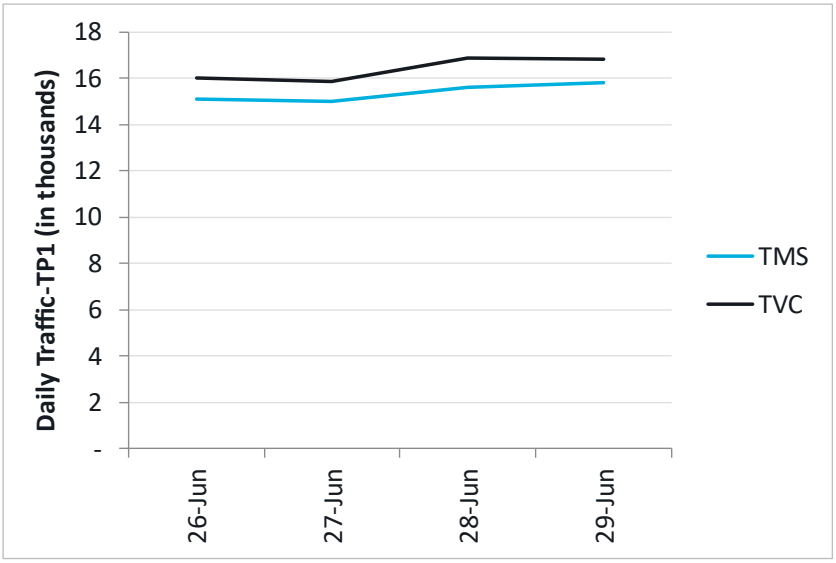
3.42 The following figures show the comparison between the daily traffic observed by TVC and TMS for the two toll plazas. As shown in Figure 3.8 and Figure 3.9 below, the TVC and TMS overall are within the acceptable range of variation.[11]

Figure 3.8: Comparison between TVC and TMS daily traffic data on TP1 Amoli



Source: Steer analysis of TVC and Client TMS data

Figure 3.9: Comparison between TVC and TMS daily traffic data on TP2 Ludhawai



Source: Steer analysis of TVC and Client TMS data

3.43 Figure 3.10 and Figure 3.11 below compare the shares of vehicle types at both plazas, between TVC and TMS data. It can be observed from the figure below, while shares of CJVs are higher for TVC compared to TMS, it is vice-versa for other vehicle categories. This difference can be attributed to common misclassification of vehicle categories.

[11] One of the reasons for the difference between TVC and TMS is the different time slots being considered. TMS data provided ranges from 0600 hrs to 0559 hrs whereas TVC data ranges from 0000 hrs to 1159 hrs.

Figure 3.10 Comparison between vehicle shares from TVC and TMS WADTs- TP1

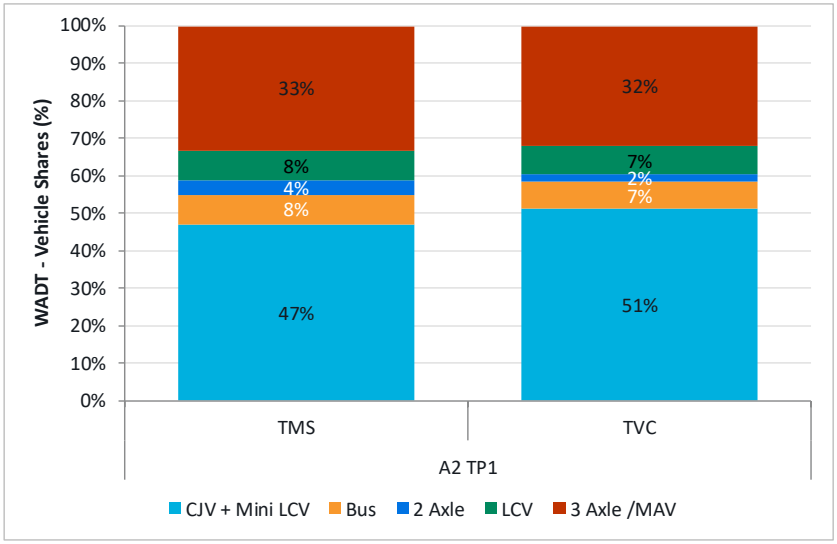
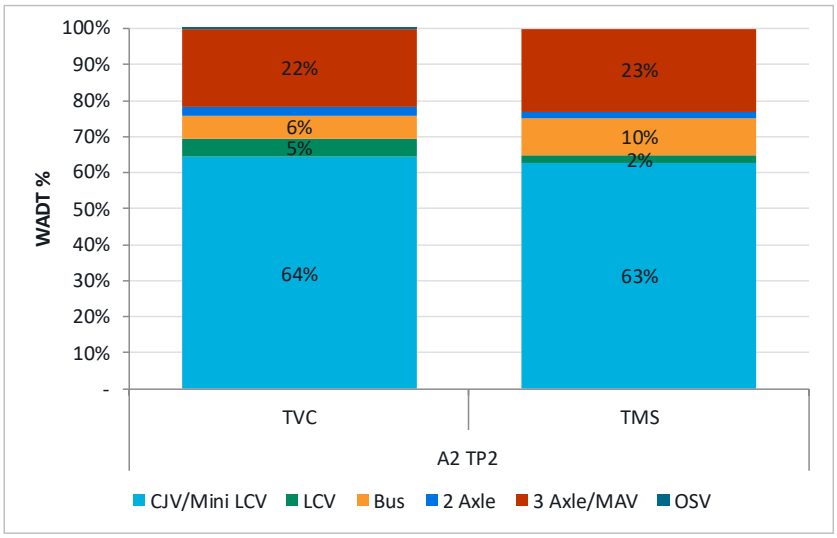


Figure 3.11 Comparison between vehicle shares from TVC and TMS WADTs- TP2



Source: Steer analysis of TVC and Client TMS data

3.44 Considering the above findings, the TVC-TMS analysis gives us the confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

Key findings of origin-destination analysis

Overview

3.45 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. The OD analysis presented here is based on data collected on behalf of the Client in July 2019. More recent OD surveys were not undertaken as this Asset has a long operational history and we did not believe material changes in these patterns would have occurred in this period.

3.46 We have analysed the regional drivers of demand based on the following analysis:

1. Zonal influence

2. Commodity distribution
3. Top OD pairs
4. Trip length distribution

3.47 While zonal analysis and the list of top OD pairs help us to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported on this Asset. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analysis is generally used to estimate key drivers of traffic and aid making informed forecasting assumptions related to traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.48 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TVC data) during the same time period. Table 3.16 below presents the sample rates for key vehicle type aggregations at TP1 Amoli. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3.16: Sample rates for OD data

Vehicle type	TP2 Ludhawai
Passenger (CJV+Bus)	31%
Goods (LCV+2A+3A+MAV)	68%

Source: Steer analysis of OD data

Zone categories

3.49 To facilitate better understanding of key regional traffic drivers as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in Table 3.17 below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Assets being studied.

Table 3.17: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of Rajasthan	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Rest of Uttar Pradesh	Uttar Pradesh (excluding parts of Uttar Pradesh which are a part of IAOI Agra, Mathura)
Rest of North India	Uttarakhand, Haryana, Punjab, Jammu and Kashmir
Central NCR	Delhi State, including New Delhi
Gujarat & Maharashtra	Gujarat and Maharashtra (including Mumbai)
Central India	Madhya Pradesh, Chhattisgarh
South India	Tamil Nadu, Karnataka, Kerala, Andhra Pradesh
East & Northeast India	West Bengal, Orissa, Jharkhand and Northeast Indian states

Aggregate Zone	Description
Outside India	Nepal, Bhutan, Bangladesh

Source: Steer analysis

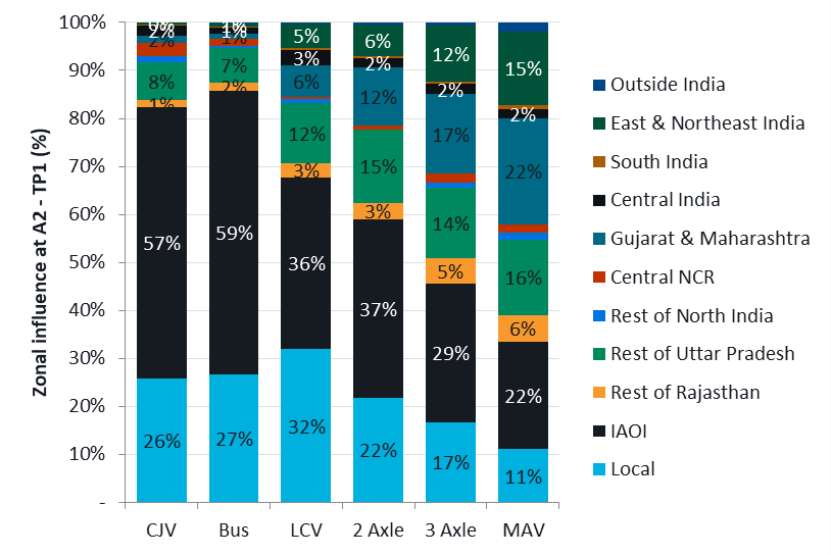
Zonal influence

3.50 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence at TP2 Ludhawai, aggregated based on zonal aggregation listed in the previous sub-section. Please note that zonal influence is analysed based on trip ends and not trips. [12]

3.51 As can be seen from Figure 3.12 and Figure 3.13 below, IAOI zones, followed by local zones, have the largest influence. IAOI trips range from 28% for MAV to 56% for CJV, with major zonal influence from Jaipur.

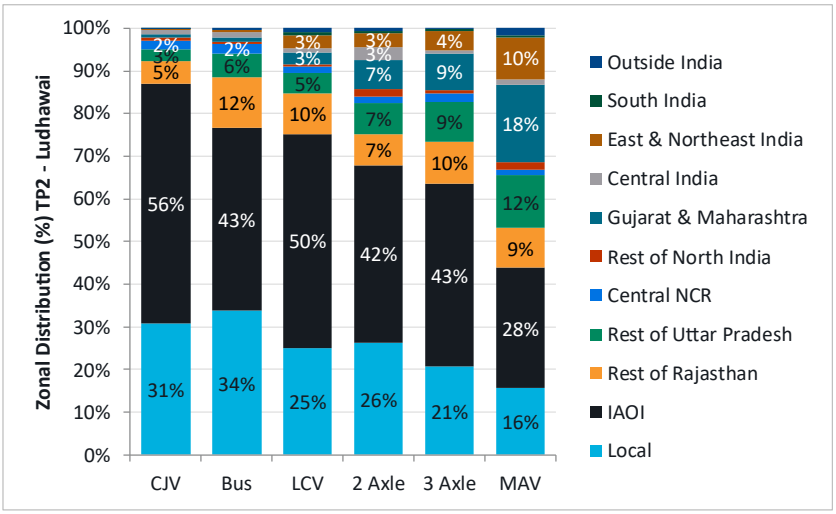
3.52 Besides IAOI and local zones, we see an equally high share of 'Rest of Uttar Pradesh' (7-12%), 'Gujarat & Maharashtra' (7-18%) and 'East & Northeast India' (3-10%) in the zonal influence of 2A, 3A and MAV categories. We assume a similar OD zonal influence at Amoli as well.

Figure 3.12: Zonal influence at TP1 Amoli



[12] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad would be 50% since one end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

Figure 3.13: Zonal influence at TP2 Ludhawai



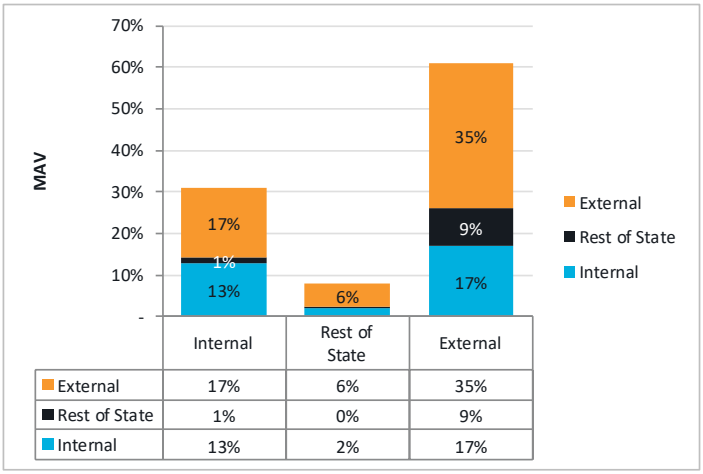
Source: Steer analysis of OD data

Internal External analysis

3.53 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e. through trips (External-External or E-E). RoS here represents areas within the state which are neither local or IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e. lying on the Asset, while 'External' zones are areas lying outside the state.

3.54 Figure 3.14 shows the distribution of trips based on these categories. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation but at a trip level.

Figure 3.14: Internal-external distribution at TP2 Ludhawai



	Internal	Rest of State	External
External	17%	6%	35%
Rest of State	1%	0%	9%
Internal	13%	2%	17%

Source: Steer analysis of OD data

3.55 We see that TP2 Ludhawai has about 35% of E-E trips for MAVs even though there is limited economic activity in the vicinity of the Asset, since the traffic on this Asset is largely non divertible due to absence of any other viable alternate roads. As expected,

CJVs, Bus, LCV and 2A show much lower E-E trips and more trips in the I-E, E-I and I-I mix as they travel shorter distances.

3.56 Since data is not available for TP1 Amoli, keeping in view the short length of the Asset and the fact that there are no major attractors or generators present along the Asset, it is assumed that TP1 Amoli has similar Internal-External distribution to TP2 Ludhawai.

Commodity distribution

3.57 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the table below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3.18: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane,Maize etc.)	AGR	**AGR**
Cattle Food / Live Stock (sheep, ghoat, cow,cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	**GRO**
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread,cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	**CNS**
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	**PET**
Chemicals / Fertilizers (Acids,Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	**MAN**
Raw Wood,Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	**AUT**
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	**MET**
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	**EMT**
Container	CTR	**MSC**
Miscellaneous (Parcel, Courier, House hold items etc.)	MSC	
Passengers	PAS	

Commodity Description	Code	Combined codes used for charts
Scrap	SCR	

Source: Steer analysis

3.58 Figure 3.16 below presents the commodity distribution for goods vehicles at TP2 Ludhawai, at the total level as well as by direction, towards Jaipur and towards Agra. As observed during our site visit, we see that at the total level (Figure 3.16) agricultural and grocery products make up the highest shares in the distribution at 13-32%, mostly comprising trips within Rajasthan. The second largest contributor is construction products, which have a share of 20% among MAVs. It majorly comprises of marble being transported from Kota, Kishangarh in Rajasthan towards Uttar Pradesh, Bihar, Odisha etc.

3.59 Looking by direction, a greater share of vehicles also travels empty towards Jaipur (29%-37%), than those travelling in the opposite direction towards Agra (4-12%). Another key difference is the share of construction products, which is much greater travelling towards Agra 27% among MAVs than travelling towards Jaipur 8%.

Figure 3.15: Commodity distribution at TP1 (Both directions)

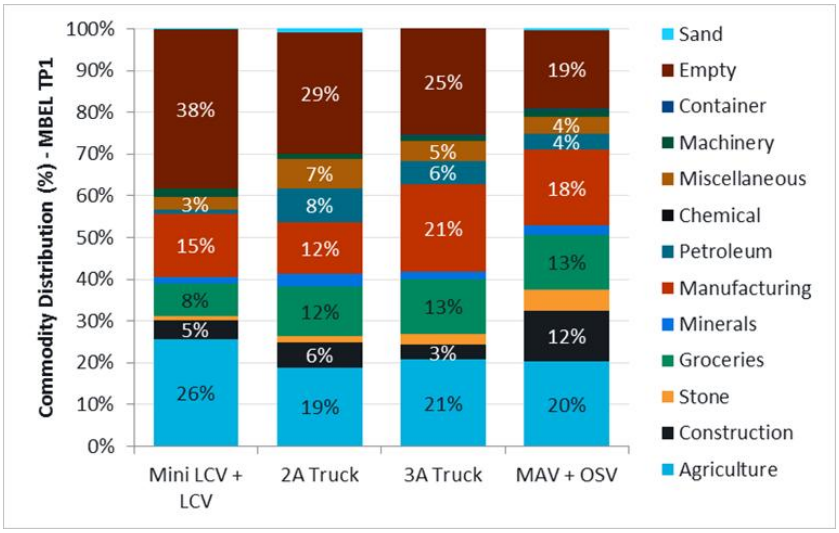
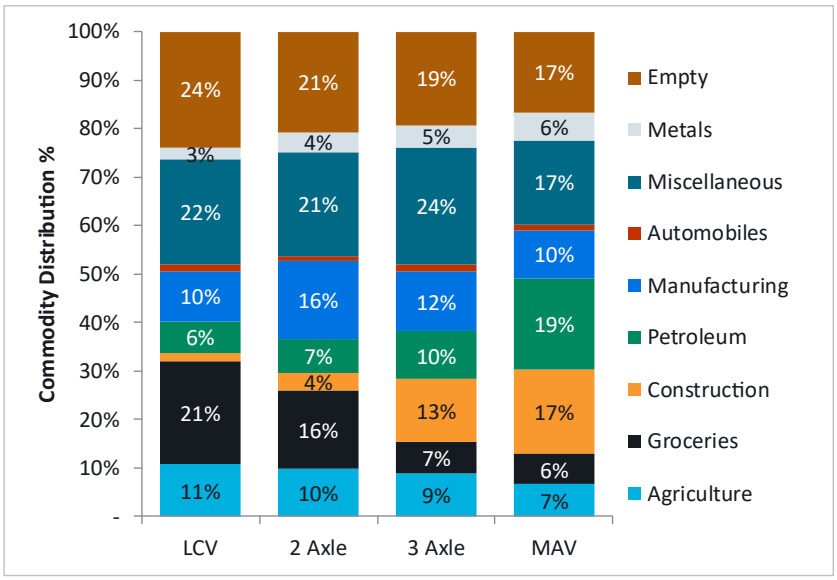


Figure 3.16: Commodity distribution at TP2 (Both directions)

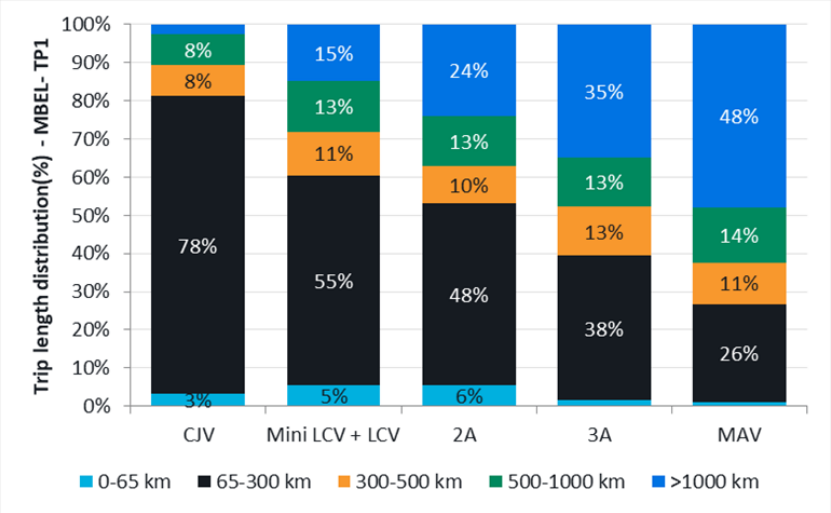


Source: Steer analysis of OD data

Trip length analysis

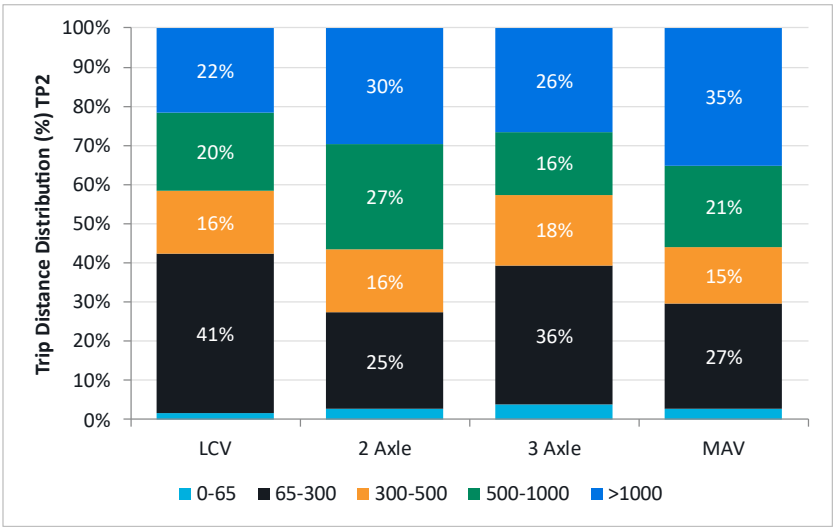
3.60 Trip-length distribution provides the distance-based profile of various vehicle categories. This helps to validate assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into 5 groups – local (0-65km), short-distance (65-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance (+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[13]

Figure 3.17: Trip length distribution, TP1 Amoli



[13] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3.18: Trip length distribution, TP2 Ludhawai



Source: Steer analysis of OD data

3.61 Figure 3.17 and Figure 3.18 above, a significant share of trips (especially for LCVs) are shorter than 300 km long as LCVs nature of movement is primarily short-distance. On the other hand, over half of MAV trips do trips longer than 500 km due to long distance movements between Gujarat at one end and Uttar Pradesh, east and north-eastern India at the other end. This has also been observed across other Assets in the country. These findings are in line with the zonal influence and top OD pairs observed on the Asset as well.

Conclusions

3.62 In summary, the vehicle shares of the Asset, the dominant vehicle class is CJVs, holding 50% of the vehicle class share followed by MAV holding approx. 30% of traffic share. Traffic has shown significant recovery starting FY22 and has continued in FY23 as a result of overall resumption in economic and travel activity and also a result of network changes such as completion of the Dausa-Lalsot section and Jaipur Ring Road resulting in improved connectivity to Delhi and South. Also, with the re-opening of tourist sites in Rajasthan and Delhi, the CJV traffic has increased. MAV's have also grown in the recent years driven by increase in sand mining traffic as one of the key reasons.

3.63 Passenger traffic has seen a significant growth in the month of Jan'25 on both TP1 and TP2 due to the 2025 Maha Kumbh Mela. Necessary adjustment to downturn this additional temporary gain in traffic observed in Q4 for FY25 due to Maha Kumbh mela has been made in the forecast to reflect the true nature of future traffic on the Asset.

3.64 The TVC counts does show some variation on the TMS, at the total level TMS is 4% lower than TVC at TP1, and 3% lower than TVC at TP2. However, the differences are small for larger revenue generating categories (3A, MAV and OSV combined), 1.4% and 0.5% at TP1 and TP2 respectively. Considering these findings and only slight variations, we are confident in the accuracy of using the Client TMS data.

3.65 Key takeaways from the OD analysis include a dominant influence of IAOI and local trips, particularly for CJVs which is largely influenced by Jaipur. Agricultural products and manufacturing products hold the greatest commodity shares. Following these, groceries

and stone also hold considerable shares (13% and 5% respectively). Majority of the traffic is sticky to the Asset with only 12% being external-external in PCU terms which is using the Asset as it offers excellent connectivity to the regions in the immediate vicinity of the corridor.

3.66 The overall characteristic of the Asset is strategic is nature connecting several key urban and economic activity centres of Jaipur, Agra, Bharatpur in immediate vicinity with wider generators and attractors of south Rajasthan, Gujrat, Maharashtra to Uttar Pradesh and Delhi NCR also being connected by the Asset. Urban population and tourism linked growth is seen as an added advantage for CJV and Bus traffic.

4 Socio Economic Context

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions of the region where the Asset is located and conditions on a national scale. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Assets.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available.

4.3 In this chapter, we assess the socio-economic indicators relevant to traffic growth on the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in the state of Rajasthan where the Asset is located.

National Level

4.5 The total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.6 Table 4.2 shows the evolution of population in the state of Rajasthan (containing the Asset), compared to that of the country. Overall, as can be seen, the trend observed at the country level is also noticeable at the state level, namely, a move towards urban agglomeration with the growth in rural population being slower than that of urban population. Further, Rajasthan has grown at a rate which is slightly higher than the country average, in the decade between 2001 and 2011.

Table 4.2: Population Growth in India (2001 – 2011)

State	2001 Population (m)			2011 Population (m)			CAGR (2001 – 2011)		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Rajasthan	56.5	43.3	13.2	68.5	51.5	17.0	2.0%	1.8%	2.6%
India	1,028	742	286	1,210	833	377	1.6%	1.2%	2.8%

Source: National Institution for Transforming India (NITI Aayog) – Census Data

4.7 Due to the complexities of patterns of urbanisation, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide the underlying socio-economic context of the state/trends in the regions in which the Asset is located.

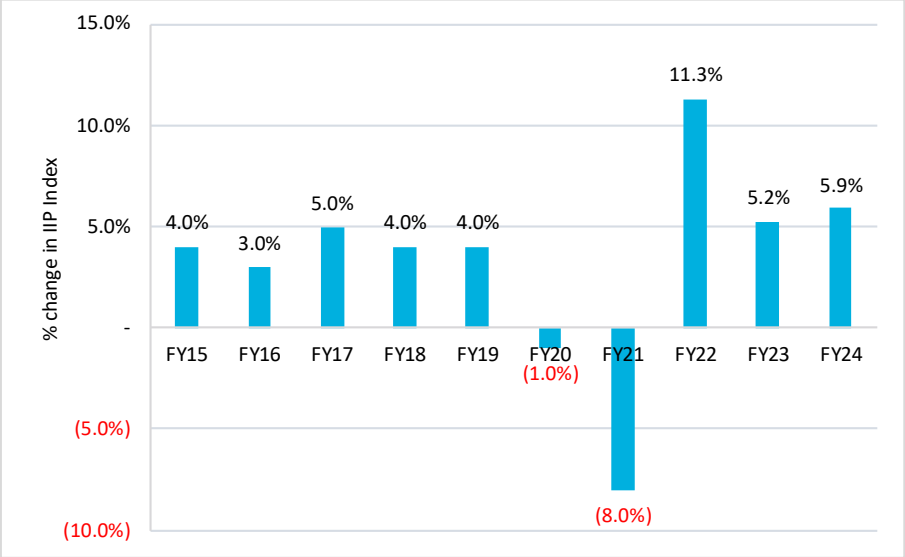
Economic Indicators

Industrial Production

4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.9 At an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20 (as presented in Figure 4.1 below). In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. However, with the gradual opening up of economy post the pandemic, and recovery in consumption demand, industrial activity also recovered with time with IIP recording growth of 5% in FY23 and 6% in FY24.

Figure 4.1: Annual growth – Index of Industrial Production



Source: Steer analysis of MoSPI data

4.10 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We, however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle Ownership

4.11 Car ownership in India has traditionally been very low at 22 cars per 1000 individuals, compared to developed countries like the United States, which has approximately 980 cars per 1,000 individuals.[14] However this is slowly changing with the increasing per capita income levels. As can be seen in Figure 4.2 below, between 2007-17, the number of cars per 1,000 people more than doubled from 9 in 2007 to 22 in 2017 growing at a CAGR of approximately 11%. The corresponding ownership rates for urban cities like Delhi, Mumbai, Bengaluru, and Chennai are over 100 cars per 1,000 people [15] (GoI 2011; MoRTH 2012).

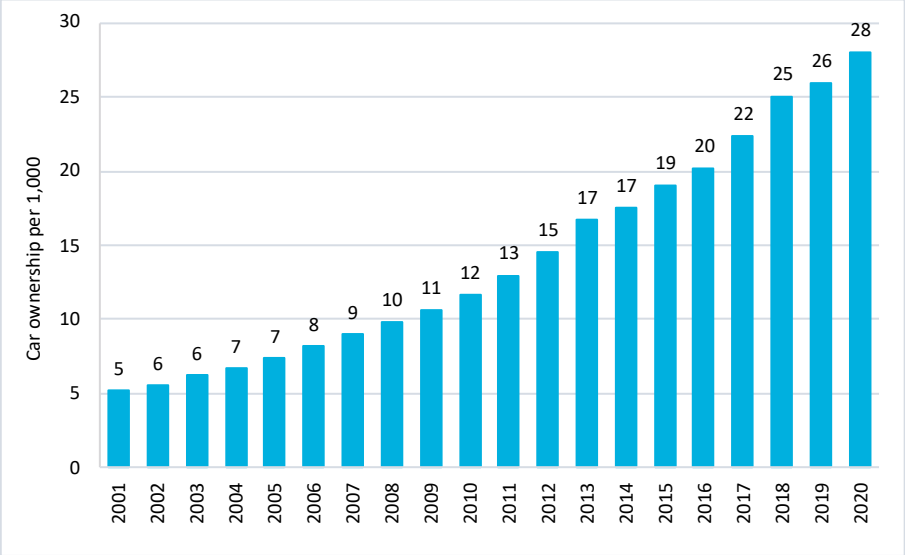
4.12 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[16]

[14] **India has 22 cars per 1,000 individuals**

[15] **Proliferation of Cars in Indian Cities**

[16] **https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf**

Figure 4.2: Car ownership in India per 1,000 population

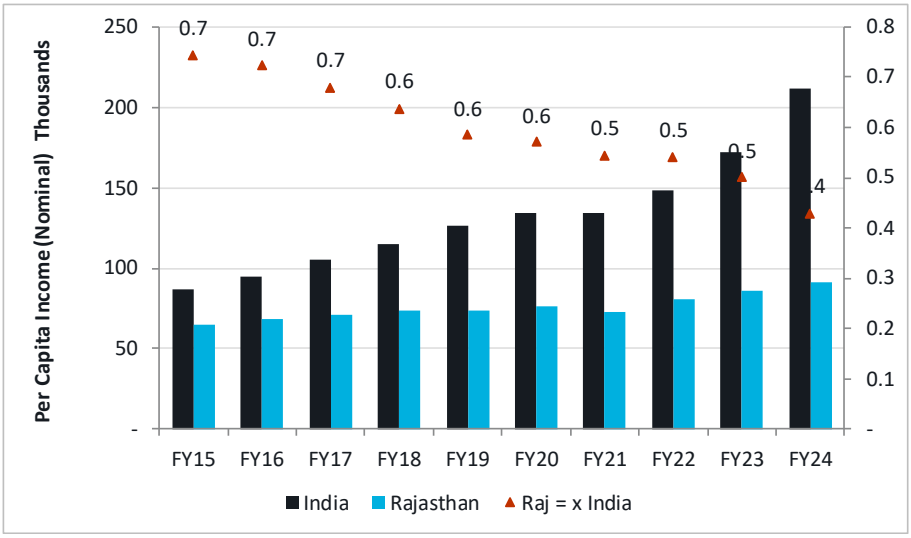


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.13 The per capita income of the state where the Asset lies, i.e., Rajasthan has been lower than the national average, trending at 50-60% of the national per capita income in the recent years. This level of income suggests that the asset is influenced by both Delhi and north and Uttar Pradesh, both of which have exhibited faster growth than Rajasthan's statewide trends in recent years and are expected to continue on this trajectory. Going forward, we therefore expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

Figure 4.3: Per Capita Income



Source: Steer analysis of MoSPI data

4.14 However, given the difficulty in obtaining granular district level PCI data it is not advisable to use this as a growth driver. Also, the long-term forecast for PCI is not available we therefore refrain from using it to forecast traffic.

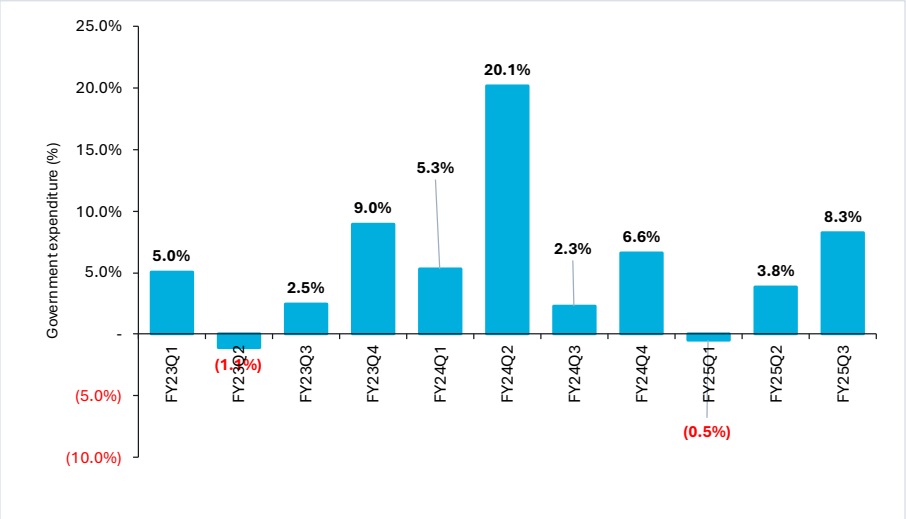
Economic growth

India's Performance

4.15 Figure 4.4 below shows that India's economic performance in Q3 of FY25 has shown signs of recovery in recent months despite slowdown experienced in FY25H1, as the latest SAE estimates released show FY25 growth rate to be 6.5%, which is lower than that observed in FY24 i.e., 9.2%.[17] This deceleration can majorly be attributed to a downturn in industrial output – specially manufacturing, electricity, and mining (as shown in Figure 4.6 below) – along with a decline in government capital expenditure in FY25 (presented in Figure 4.4 below).

4.16 Other contributing factors also include the impact of the 2024 general elections on central infrastructure spending, state-level fiscal constraints and rising global uncertainties such as Russia-Ukraine war and Gaza-Israel conflict which have had impact on global supply chains.

Figure 4.4: Government final consumption expenditure

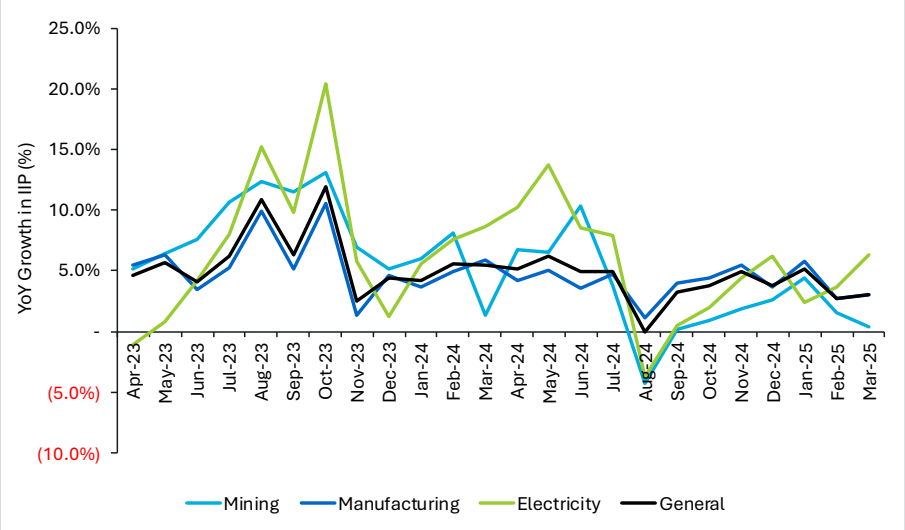


Source: Steer Analysis of MOSPI Data

4.17 Weaker industrial activity, as reflected in lower IIP (Figure 4.5) and GVA contribution (Figure 4.6), directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. At the same time, muted government capex had an influence on both construction-linked activity and industrial output which impacted the commercial traffic growth carrying construction material and industrial goods. Export oriented corridors across the country have also seen muted traffic performance in FY25 due to global supply chain disruptions and the Red-Sea crisis, with exported commodities like manufactured goods, marble, and ceramics experiencing declines as well.

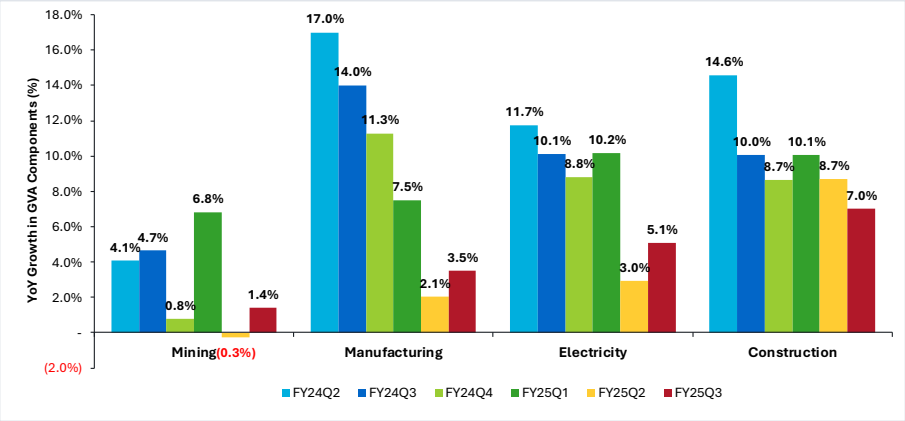
[17] Press Release:Press Information Bureau

Figure 4.5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

Figure 4.6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

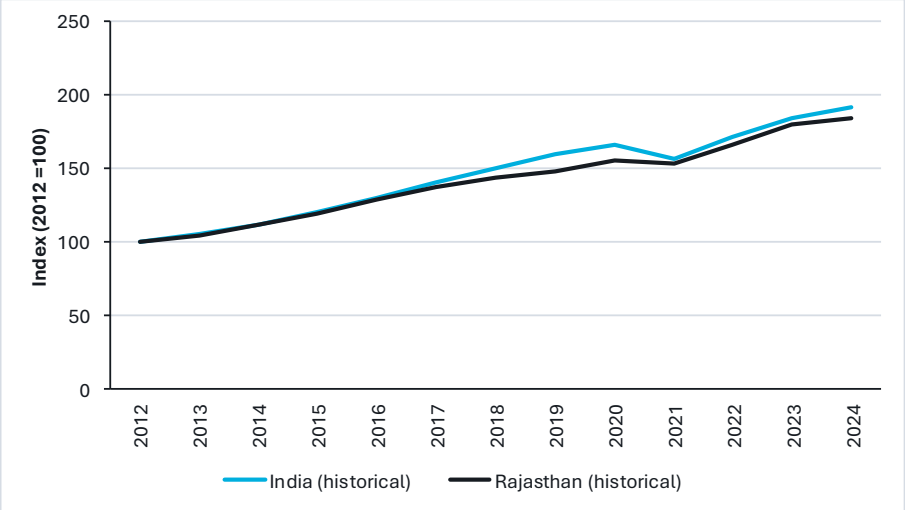
GDP and GSDP Growth

4.18 Over the period FY12-FY24, the Indian economic has grown at a CAGR of approx. 6% aided by growth in the tertiary sector which grew at a CAGR of approx. 6.9% over the same period. The economic growth of Rajasthan (state GSDP) has been somewhat slower than the country overall for the past 5 years but it seems to have caught up with the national rate since the COVID19 pandemic. [18]

4.19 The Asset, lies in the state of Rajasthan. The state contributes approximately 5% to India's GDP. The following figures illustrates the evolution of India and Rajasthan GDP.

[18] GSDP is the Gross State Domestic Product i.e., the GDP equivalent for a particular state, it is the final value of goods and services produced by a particular state

Figure 4.7: Evolution of Rajasthan's state GDP and national GDP; FY12-24



Source: Ministry of Statistics and Program Implementation (MoSPI)

Economic activity in the state

4.20 Rajasthan, the largest (area-wise) state in India, is in the north-western part of the country. In terms of sectoral contribution to the state GDP, tertiary sector has the highest share followed by primary and secondary, with the shares remaining stable during the last five years.

4.21 The tourism and transport sector constitutes a major share of the state's tertiary sector. Rajasthan is considered a favoured tourist destination in India, with key tourist attractions being Jaipur, Jodhpur, Jaisalmer, Bharatpur and Udaipur. In 2018, the state attracted over 50 million domestic tourist arrivals in the country whereas, in terms of foreign tourist arrivals it holds fifth position with over 1.7 million tourist visiting state every year. [19]

4.22 In terms of secondary sector, the state has key industrial areas in Kishangarh (marble); Manesar (automobile), Pali and Jodhpur (textiles), Chittorgah -Neemuch (cement), Kota (stone). Rajasthan is one of the largest mineral producing states in India and the sole producer of lead and zinc ores in the country. The state has one of the largest limestone reserves, making it a hub for cement industries. In terms of agricultural produce, the state is largely known for its production of wheat, cotton, cereals and pulses.

Forecasts for growth drivers

4.23 Following the discussion in Chapter 4 on the nature of economic activity in the state of Rajasthan, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth. We have based our forecast on GDP and GSDP using forecasts of GDP as provided by the Client.

National GDP

4.24 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4%

[19] http://tourism.gov.in/sites/default/files/Other/India%20Tourism%20Statistics%20at%20a%20Glance%202019.pdf

(relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[20]

4.25 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21), and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 and 6.5% in FY25 (as per the SAE) before slowing down over the past year due to several domestic and external factors.

4.26 Figure 4.8 below shows client provided GDP projections for India. The forecast provided by the Client expects the India GDP to grow at 6.5% between FY25-FY27[21] and gradually tapering down to 4.1% by FY32, end of concession. The India GDP growth forecast provided by the Client is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[22] in the medium term.

4.27 Over the near term, Rajasthan's GSDP growth assumes to continue outpacing the national GDP throughout the concession period. We believe this is a realistic position based on the current and future development plans of local and state governments

4.28 There are significant investments expected to take place as part of the state's plan and Rajasthan is expected to receive a significant proportion of these investments, given its leading position in industrial investments. Higher than expected GSDP growth rate across the concession period could be achieved if such investments were realised as they are expected to give an additional boost to Rajasthan's state economy.

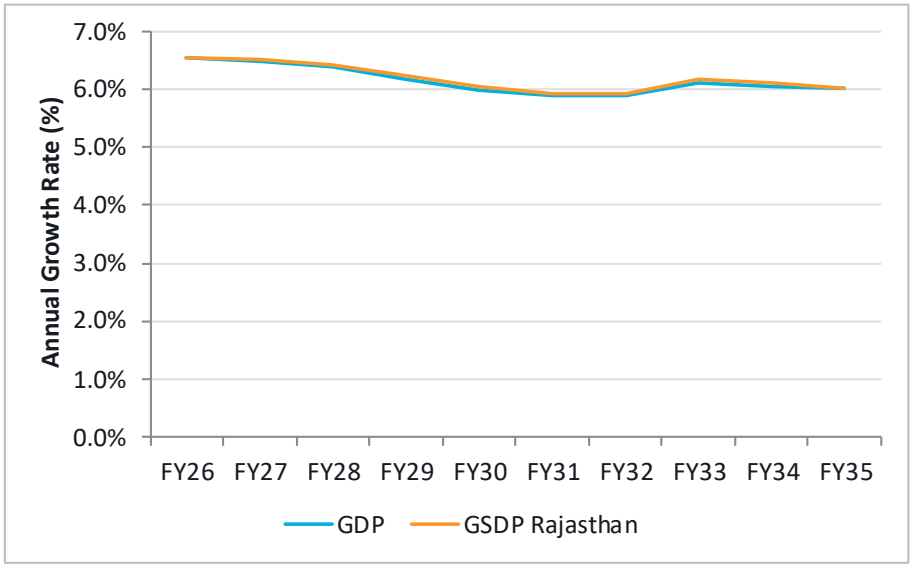
4.29 In the long term, we believe that as other smaller state economies of India catch up with the national economic growth, the gap between growth rates of larger state economies, such as Gujarat, Maharashtra and Karnataka, and the national GDP growth rate will start reducing.

[20] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[21] Based on Asia Pacific Consensus Forecasts (December 2024)

[22] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

Figure 4.8: GDP-GSDP forecast



Source: GDP forecast provided by Client, GSDP based on Steer analysis

5 FY26 Base Year AADT and Traffic growth analysis

Introduction

5.1 In this chapter, we present our approach, assumptions and results for base (or background) traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 To understand the historical traffic trends in relation to these growth drivers, we carry out regression analysis to determine the historical relationship between each traffic belonging to each major vehicle category and its macroeconomic growth driver at each toll plaza. The dynamics of traffic demand is the dependent variable while the dynamics of one or more identified growth drivers are the independent or explanatory variables.

5.4 Typically, passenger and light commercial vehicles like cars, buses, LCVs and 2-axle trucks grow in line with the GSDP of the state where the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This could be because most light vehicles tend to travel shorter distances within the state, whereas a significant proportion of heavy vehicles carry commodities for long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and therefore relate more with GDP growth.

FY26 Base year AADT estimates

5.5 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.6 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

Methodology

5.7 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual

FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at FY26E.

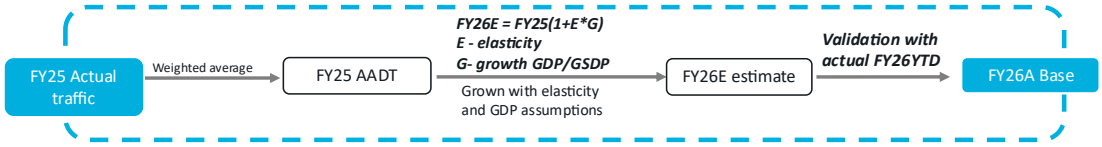
5.8 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April to September) of FY26 (FY26YTD). The Adopted FY26 AADT (FY26A) was then arrived at by making necessary adjustments to FY26E to reflect the outturn traffic in FY26YTD after adjusting for seasonality.

5.9 Historical traffic data was available for all toll vehicle categories starting October 2020 up-to January 2025. Therefore, in absence of longer-term historical data for the Asset where FY21 and FY22 are COVID-19 impacted years, we assume FY23 and FY24 to be normal years, with the latest full year considered for the FY25 base year estimation

5.10 As a validation, the FY26 was estimated using SCF (Seasonality Correction Factor) based on ten months of FY26 data where the adopted FY26 AADT (FY26A) is within ~0.5% of the AADT arrived using SCF approach.[23] This validates the robustness of the approach used to estimate the FY26 base AADT. The SCFs used in our analysis have been explained in the subsequent section.

5.11 The methodology is represented using the below schematic:

Figure 5.1: FY26 Base Estimation methodology



Source: Steer Analysis

5.12 The two key inputs to estimate the base year FY26 traffic are FY25 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.13 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.14 In order to normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

[23] *SCF- SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts.*

5.15 To achieve this, we studied the seasonality between monthly average daily traffic (MADT) – We have analysed the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling (as described in Chapter 3, section 3.19), excluding the years that were impacted by specific events. This averaged seasonality trend is then applied to the monthly traffic to obtain AADT as mentioned in the previous sections.

5.16 The seasonality factors assumed for individual vehicle types are shown in the table below.

Table 5.1: Seasonality correction factors for TP1 Amoli

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.01	1.04	1.00	1.05	1.06	1.15	1.19	0.93	0.95	1.01	0.85	0.93
LCV	0.99	1.01	0.96	1.09	1.15	1.14	1.03	1.00	0.98	1.02	0.84	0.97
Bus/2A	1.06	1.01	1.00	1.08	1.10	1.04	0.99	0.93	0.98	1.04	0.89	0.93
3A/MAV	1.09	1.03	1.05	1.07	1.12	1.06	1.01	1.03	0.91	0.95	0.87	0.92

Table 5.2: Seasonality correction factors for TP2 Ludhawai

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.00	1.04	1.00	1.07	1.07	1.15	1.18	0.92	0.95	0.99	0.84	0.95
LCV	0.99	1.05	0.99	1.05	1.11	1.09	1.05	0.96	0.95	0.98	0.86	1.05
Bus/2A	1.06	1.02	0.99	1.08	1.09	1.04	1.00	0.94	0.99	1.04	0.88	0.94
3A/MAV	1.09	1.03	1.04	1.06	1.12	1.05	1.01	1.03	0.92	0.95	0.87	0.92

Source: Steer analysis of Client historical TMS data

Adopted FY26 base estimates

6.1 Based on the above methodology and inputs, the adopted base for both toll plazas has been shown below:

Table 5.3 Adopted base estimates - TP1 Amoli

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	8,260	7,961	8,402	1.7%
LCV	293	268	280	(4.5%)
Bus/2A	1,920	1,883	1,969	2.6%
3A/MAV	3,978	3,888	4,164	4.7%
Total	**14,451**	**13,999**	**14,815**	**2.5%**
PCUs	**29,878**	**29,078**	**30,868**	**3.3%**

Source: Steer analysis: FY25 actual full year, FY26YTD includes 6 months of FY26, FY26E is estimated base for FY26, FY26A is adopted base for FY26. Note: On this toll plaza, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the plaza

Table 5.4: Adopted base estimates- TP2 Ludhawai

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	9,557	9,341	9,751	2.0%

LCV	310	281	291	(6.0%)
Bus/2A	1,994	1,934	2,018	1.2%
3A/MAV	3,976	3,899	4,163	4.7%
Total	**15,836**	**15,455**	**16,222**	**2.4%**
PCUs	**31,413**	**30,678**	**32,375**	**3.1%**

Source: Steer analysis: FY25 actual full year, FY26YTD includes 6 months of FY26, FY26E is estimated base for FY26, FY26A is adopted base for FY26. Note: On this toll plaza, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the plaza

5.17 From the above tables it can be ascertained that the Asset is expected to grow at an average of 3.2% on PCU levels from FY25 to FY26A. This growth on both toll plazas is being driven off a robust growth profile observed in MAV's. This can be attributed to the overall growth of the urban centres in close vicinity of the Asset including increased economic activity helping commercial traffic growth. The moderation in CJV growth is due to the adjustment of the additional traffic which used the Asset in the months of Jan and Feb-25 due to Kumbh mela, demand which was a one time increase and not expected to be part of base traffic in future years.

5.18 We have combined Bus and 2A volumes for our base estimation because as mentioned before, TMS reports discrepancies in the data. Therefore, the split that we have derived from our counts is the split we are using in our projection to forecast the growth of each individual category for this Asset.

Estimation of background elasticities

5.19 Elasticities, in the case of traffic growth are the relationships between traffic and growth drivers. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide the forecasts of background traffic growth rates.

5.20 Table 5.5 presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.5: Identified growth drivers to model traffic growth

Vehicle type	GDP India	GSDP Rajasthan
Car		100%
LCV		100%
Bus		100%
2A		100%
3A	100%	
MAV	100%	

Source: Steer analysis of Client data

5.21 The TMS data for the Asset reports 3A and MAV together where Bus and 2A reported separately, hence splits were required to understand the 3A and MAV growth pattern. For this Asset Car, Bus and LCV do more regional movement as validate from OD trip length and zonal analysis hence the growth of this vehicle category is more influenced by Rajasthan GSDP. Whereas 2A, 3A and MAV carry heavy commodities like construction

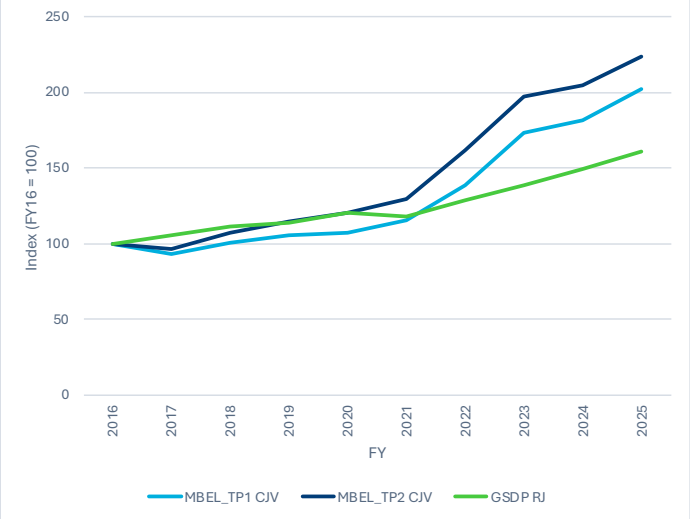
material and agricultural products from Rajasthan across states and internationally hence more linked to GDP growth.

5.22 For the purpose of regression analysis we have considered the period of FY16-24. FY16 and before were chequered period for the Asset with combination of illegal mining and overloading ban. The commercial traffic did not witness significant negative impact on volumes except for first nation-wide lockdown in March and April 2021. Hence we have considered FY21 and FY22 for the regression analysis.

CJV

5.23 It was observed from the OD data that CJVs primarily cater to regional movements between Jaipur, Bharatpur, Agra and other towns in the vicinity of the Asset. We have therefore assumed Rajasthan GSDP to be the growth driver for modelling growth of CJV traffic. Figure 5.2 shows the relationship between indexed values of CJV traffic and Rajasthan GSDP at TP1 Amoli and TP2 Ludhawai. CJV traffic on TP1 has shown 8.1% growth from FY16-25 while for the same period TP2 recorded 9.4%.

Figure 5.2: Relationship between CJV traffic and Rajasthan GSDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.24 Generally, we would expect that in fast-growing economies with relatively low car ownership levels, car traffic growth rates are often in line with or are slightly higher than growth in GSDP/GDP (i.e. suggesting elasticities at or just above 1.0). Further, the opening of the Delhi Mumbai section upto Lalsot has had a significant impact on Car traffic on the corridor on both toll plazas adding additional impetus to car growth. This has also increased the influence of tourism related movement on the Asset, due to the significant volumes contributed by DME onto the corridor and hence it is expected that car growth will remain robust on the Asset. In addition, there is an expected increase in car ownership proportion of overall population as the economy grows.

5.25 Taking note of the positive outlook for passenger traffic on the tourism-driven Asset we have assumed a forecast background elasticity of 1.10 with respect to Rajasthan GSDP for CJV at both the toll plazas.

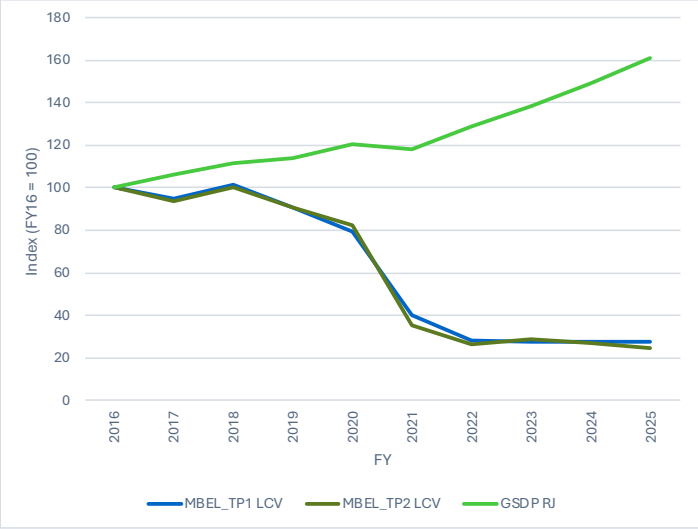
LCV, Bus, 2A

5.26 Compared to heavy vehicles such as 3A and MAV, LCV, Buses and 2As are used for more regional movements within the state – Rajasthan in this case as seen in the OD data analysis. More than 80% of LCVs and Buses and 70% of 2As have one trip end in Rajasthan. We have therefore taken GSDP of Rajasthan would be a more appropriate growth driver to model growth of Bus+LCV+2A traffic. Figure 5.3 shows the relationship between indexed values of Bus+LCV+2A combined traffic and Rajasthan's GSDP.

5.27 Between 2016 and 2025, the growth rate of Bus+2A+LCV remained flat. During this time period, it was noticed that disaggregate traffic for LCVs rose slower than traffic for Buses and 2As. This could be attributable to a variety of factors, one of which is the reclassification of LCVs and 2As, which has been seen as a prevalent tendency across the country's toll highways. However, beginning in 2022, the combined volume of Bus+LCV+2A has begun to show indications of recovery, as shown in Figure 5.3 below.

5.28 Bus growth tends to be largely supply-driven in many parts of the country, with new buses being bought and deployed by the government at different intervals of time. Based on our experience across the country, buses on inter-urban and tourism corridors show elasticities of 0.4 to 0.6 with respect to the GSDP. Based on the regression results and benchmarks, we have therefore assumed an elasticity of 0.5 with respect to GSDP Rajasthan.

Figure 5.3: Relationship between LCV+Bus+2A combined traffic and Rajasthan GSDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.29 Based on the results of the regression, analysis of historical trends on the Asset, as well as our previous experience on benchmark Assets the elasticity assumption for LCVs is 0.3 on both TPs, and for Bus and 2A which have witnessed relatively stronger growth is 0.5 and 0.6 respectively for both toll plazas.

3A/MAV Trucks

5.30 Compared to lighter trucks like LCV and 2A, 3A and MAV have more national or long-distance movements covering several states. Given that manufacturing-related commodities tend to take prominence in the commodity distribution resulting in traffic growth in 3A and MAV to be dependent on industry demand-supply ecosystems spread

across the country, therefore we have taken GDP as the growth driver to model the traffic growth in 3A and MAV. Figure 5.4 shows the relationship between indexed values of 3A+MAV combined traffic and India's GDP.

5.31 Historically, 3A+MAV combined traffic grew positively in the FY16-18 period at 8% at TP1 Amoli and 12% at TP2, before losing volumes in FY19 and FY20. However, for the recent period of FY16-25 TP1 Amoli witnessed CAGR of 1.1% and TP2 Ludhawai observed 1.6% growth. This is shown in the figure below:

Figure 5.4: Relationship between 3A+MAV combined traffic and India GDP

Source: Steer analysis of Client TMS data and publicly available GDP data

5.32 Major reasons associated with this slower growth is:

- Implementation of stringent sand mining policy 2020 in Rajasthan which reduced the illegal sand mining and associated 3A and MAV traffic (FY18-20) in the region
- Completion of Jaipur Ring Road improvising access of regions beyond Jaipur.
- Completion of Dausa to Lalsot section of DME. 3A/MAV volumes remained steady in the third quarter of FY23 on TP1 Amoli. This might be linked to the introduction of the DME in Feb 2023, which has provided an alternate route for traffic between Uttar Pradesh/Moradabad/Bareilly and Rajasthan/Jaipur/Alwar.

5.33 We believe 3A to grow slower as compared to MAV due to a shifting preference seen for MAVs from 3As for long-distance movements. This could be because MAVs have higher load capacity which generate economies of scale and therefore lower costs. However, it is unlikely that 3A trucks will disappear from the market completely as there are best suited for certain commodities or movements.

5.34 Based on the above points, we have assumed elasticities of 0.40 and 0.85 for 3A and MAV trucks respectively, with respect to India GDP growth.

Forecasts for background elasticities

5.35 Table 5.6 presents a summary of the results of the regression analysis carried out on the historical toll plaza data and the macroeconomic (GDP/GDSP) growth, along with the assumed forecast elasticities for background traffic growth.

5.36 The forecast elasticities are assumed to remain constant over the concession period as the logistics sector in still in early stages of development in India (95% of trucks still owned by operators owning less than 5 trucks). Car ownership levels are still around 30-35 per 1000 people, and it is likely to take a few years before the market reaches maturity. These trends are based on a long-term understanding of historical relationships and an overall outlook on the growth of the region and the country.

Table 5.6: Derived elasticities from regression analysis and assumed forecast elasticities for background growth

Vehicle type	Growth driver	History		Forecast	
		Derived elasticity	Years considered	Assumed forecast elasticity	Evolution of elasticity
			TP1		
Car	GSDP Rajasthan	1.50	FY16-25	1.10	No change
LCV*	GSDP Rajasthan	<0.10	FY16-25 *(LCV+2A+Bus)*	0.30	No change
Bus*	GSDP Rajasthan			0.50	No change
2A*	GSD			0.80	No change
3A*	GDP	0.20	FY16-25 *(3A+MAV)*	0.20	No change
MAV*	GDP			0.85	No change
			TP2		
Car	GSDP Rajasthan	1.73	FY16-25	1.10	No change
LCV*	GSDP Rajasthan	<0.1	FY16-25 *(LCV+2A+Bus)*	0.30	No change
Bus*	GSDP Rajasthan			0.50	No change
2A*	GDP			0.80	No change
3A*	GDP	0.29	FY16-25 *(3A+MAV)*	0.20	No change
MAV*	GDP			0.85	No change

Source: Steer analysis of Client data; regression was run on LCV-2A-Bus (against GSDP), and 3A-MAV (with GDP) combined. *The results of the regressions yielded insignificant results based on the tstat values of the outputs of the regression.

5.37 In recent historical traffic performance across national highway corridors, a notable trend has emerged: there is a discernible shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in the Assets FY24 and FY25 performance as well, which has been discussed in detail in the subsequent sections. Because of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

6 Forecasts: Network overlays and forecasts

Introduction

6.1 Following the discussion on our forecast of background growth rates in the previous chapter, this chapter first covers the potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years. Table 6.1 lists key intermediate and final outputs that have presented in chapter 3, 5 and 6.

Table 6.1: Key intermediate and final outputs in the forecast

Forecast	Final outputs	Intermediate outputs	Inputs	Chapter
Traffic	Base year AADT	ADT, SCF estimate for base year	Historical SCF and year-to-date AADT	Chapter 3, 5
	Background traffic growth	Background forecast elasticity	Historical elasticities with respect to growth drivers	Chapter 3,5, Appendix C
		Forecasts for growth drivers	Historical performance of growth drivers along with Client's GDP line	Chapter 4,5, Appendix C
	Impact growth rates and staging	Impacts	Asset vs alternate route costs for ongoing/upcoming network and other developments	Chapters 2,6
Revenue	Annual/daily revenue forecasts	Forecast toll segmentation: Trip frequencies and trip factors	Historical trip frequencies	Chapter 3,6
			Historical trip factors	Chapter 6
		Future toll rates	Toll evolution	Chapter 6

Source: Steer analysis

6.2 All traffic is presented as AADT for vehicle category at each plaza, for financial years (April-March). All revenue is presented in Rupees (nominal terms). Though FY32 is the last year of concession, we have developed our forecasts until FY34 for the Client's reference in the Appendices.

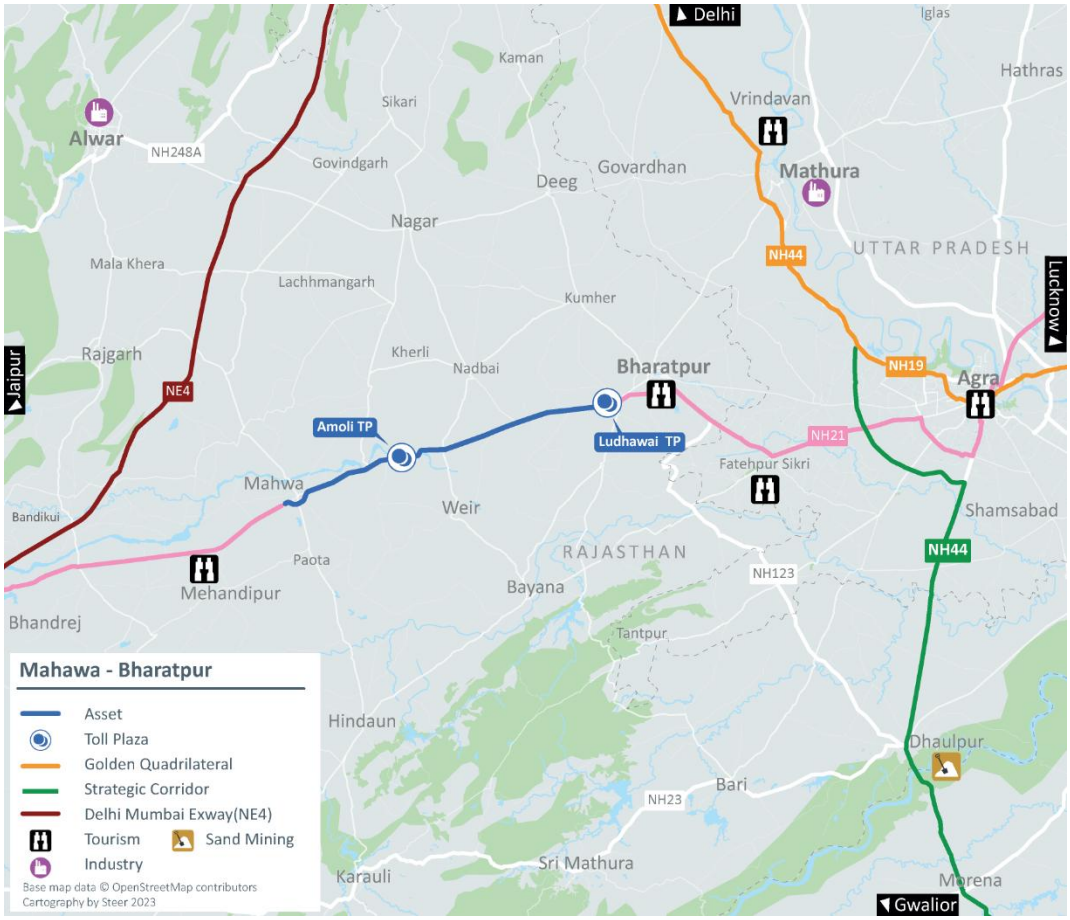
Analysis of potential network/developmental impacts

Summary of alternate routes and planned changes

6.3 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed earlier in chapter 2, in order to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

6.4 The map below shows the road network surrounding the Asset.

Figure 6.1: Alternate routes and Asset route shown against the regional network context



Source: Steer analysis and cartography Recovery of traffic as observed in Q3 FY23Ease

6.5 Apart from the recovery of traffic as observed in Q3 FY23, network developments include the construction of and Agra Ring Road. Table 6.2 presents the upcoming network/other developments, corresponding alternate/feeder routes, year of completion and indicative direction of impact on the Asset.

Table 6.2: List of network/other developments

S. No.	Development	Route affected	Year of impact	Impact (+/-)	Toll plaza
1.	Completion of pending sections on Agra Ring Road	Asset route: Bhilwara/Udaipur-Jaipur-***Asset***-Agra-Kanpur Alternate route: Bhilwara/Udaipur-Chittorgarh-Kota-Jhansi-Kanpur	FY27 onwards	+ve	TP1 & TP2
2.	Delhi- Mumbai Expressway	Delhi-Jaipur connection through the expressway via Dausa interchange is expected to provide faster connectivity and improved level of service	FY27 onwards	-ve	TP1 & TP2
3.	Construction of Agra-Gwalior Expressway	Additional construction material required for the Agra-Gwalior Expressway will be sourced from Alwar and transported via MBEL Asset	FY27 onwards	+ve	TP1 & TP2

Source: Steer analysis.

Impact assessment for network/other developments

6.6 As seen in the previous sub-section, the assessed impacts primarily fall into either the category of road network developments or development in other modes of transport. Under network developments, changes in the road network could be either brownfield (upgrade to existing road) or greenfield (development of new road). We typically assess impacts of the changes in costs and travel time on routes in these networks using binary logit models that compare generalised journey costs (GJC) between Asset and alternate routes. Under other developments, we typically use historical occurrences of the future event and benchmark observations from regional reference Assets. However, each case is dealt individually in its own network or industry context.

6.7 The subsections below include a narrative of each of the improvements, as listed in the table above, and impacts associated from each of these. While this section deals with impacts that have been considered in our forecasts, Appendices A (Queries) and C (Other Impacts) present Steer's responses to the Client on queries and on the list of impacts from the scope of works part of this commission.

Diversion due to completion of pending sections on Agra Ring Road

6.8 As shown in Figure 6.2 below, the Asset is part of the long-distance east-west corridor connecting southern Rajasthan (Udaipur, Bhilwara, Chittorgarh) and Uttar Pradesh (Kanpur, Lucknow) and east. While the Asset route passes through Jaipur (NH8), Jaipur-Mahua-Asset and Agra, the alternate route passes through NH27 via Kota and Jhansi. Currently, the NH7 and NH21 connection to NH19 is not directly possible through Agra given entry restrictions from 5 AM to 11 PM. Completion of the pending section of the Agra

Ring Road is expected to improve connectivity (seamless and without time restrictions) for long-distance traffic, which will allow them to bypass Agra city and provide direct access to Agra Lucknow expressway, thereby significantly improving the access for traffic destined to Kanpur/Lucknow and east.

Figure 6.2: Asset location on long-distance route option between Udaipur/Chittorgarh and Kanpur

6.9 Source: Steer analysis and cartography

6.10 Based on our Generalised Journey Cost (GJC) based diversion analysis from the strategic route discussed above, we believe the upgrade to Agra Ring Road will result in a small positive impact on the Asset route, as summarised in the table below.

Table 6.3: Impact due to completion of missing section on Agra Ring Road, TP1 Amoli

Vehicle type	FY27	FY28 onwards
Staging	*80%*	*100%*
CJV	0.4%	0.3%
2A	2.0%	2.5%
3A	2.7%	3.4%
MAV	4.0%	5.0%

Source: Steer analysis of OD data, Client TMS data and publicly available information

Table 6.4: Impact due to completion of missing section on Agra Ring Road, TP2 Ludhawai

Vehicle type	FY27	FY28 onwards
Staging	*80%*	*100%*
CJV	0.3%	0.3%
2A	2.0%	2.6%
3A	2.8%	3.5%
MAV	4.0%	5.0%

Source: Steer analysis of OD data, Client TMS data and publicly available information

Delhi- Mumbai Expressway

6.11 NHAI is building a greenfield expressway connecting Delhi and Mumbai. The Delhi-Mumbai Expressway (DME) will connect Delhi to Mumbai with a dual carriageway with six lanes per direction. At 1350km long, it will drastically reduce travel length and times from Delhi to Mumbai. With this alignment, it is expected that once it's completed in FY26.

6.12 The benefits will also be most valued by long distance users which can make end to end trips. However this Asset is expected to have minimal impact as it caters to more east-west movement. We have assumed that the impact will be realised over two years, starting FY27.

Table 6.5 Impact due to Delhi Mumbai Expressway, TP1 Amoli

Vehicle type	FY27 onwards
Staging	*100%*
2A	(0.4%)
3A	(0.2%)
MAV	(0.4%)

Source: Steer analysis of OD data, Client TMS data and publicly available information

Table 6.6: Impact due to Delhi Mumbai Expressway, TP2 Ludhawai

Vehicle type	FY27 onwards
Staging	*100%*
2A	(0.4%)
3A	(0.2%)
MAV	(0.4%)

Source: Steer analysis of OD data, Client TMS data and publicly available information

Construction of Agra-Gwalior Expressway

6.13 Additional construction material required for the Agra-Gwalior Expressway will be transported through the MBEL Asset, which will further increase MAV traffic from FY27 onwards. However, we assume that this impact will taper off by FY29, as the expressway construction is expected to be completed by then. The phasing of the impact will see 80% of the impact in FY27, and 100% of the impact playing out in FY28.

Table 6.7: Completion of Agra-Gwalior Construction

Impact	TP1 Amoli		TP2 Ludhwai	
	FY27 (80%)	FY28 (100%)	FY27 (80%)	FY28 (100%)
MAV	1.1%	1.4%	1.1%	1.4%

Source: Steer analysis of OD data, Client TMS data and publicly available information

Revenue forecasting assumptions

6.14 To forecast the revenues for a particular year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While "trip factors" provide the conversion factor to the former, i.e. traffic (trips) to tickets sold, "toll segmentation" provides the latter i.e. the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Trip factors

6.15 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY24 data available and listed in the table below:

Table 6.8: Trip factors on Asset

Forecast	CJV/Mini LCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Monthly	45	45	45	45	45	45
Local commercial	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Toll segmentation

6.16 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles. To access the document, refer to the following **link**.

6.17 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

Table 6.9: Evolution of annual pass trips (15th August to 30th September 2025)

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
Amoli	10.8%	16.4%	18.6%
Ludhawai	9.6%	14.8%	16.8%

Source: Steer analysis of Client TMS data

6.18 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.19 In FY26, the share of CJVs using annual passes at Amoli is projected at **14%** (on an annual basis) with a March 2026 estimate of around 28%, which from FY27, expected to stabilize at March'26 levels. At Ludhawai, the share of CJVs using annual passes is projected at 8% in FY26, with March 2026 estimated to be 19%, by when annual pass segmentation is expected to stabilise.

6.20 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period.

6.21 The table below provides the toll segmentation assumed for the period of forecast. We believe with FASTag penetration stabilising and reaching upto 100% in MAVs and minimal impact of COVID-19 during these months, FY26YTD segmentation provides us with stable toll segmentation which can be used for the forecast years.

Table 6.10: Forecast toll segmentation, FY26 onwards at TP1 Amoli

Ticket Category	CJV (FY26)	CJV (FY27)	Mini LCV	LCV	Bus	2A	3A/MAV
Single	80.6%	66.0%	94.3%	97.8%	98.6%	98.6%	97.1%
Local commercial	0.4%	0.4%	0.5%	0.4%	0.9%	0.9%	2.7%
Local personal	1.0%	1.0%	1.0%	-	-	-	-
Exemptions	3.4%	3.4%	3.4%	1.4%	0.3%	0.3%	0.1%
Violations	0.8%	0.8%	0.8%	0.4%	0.2%	0.2%	0.1%
Annual pass	13.8%	28.4%	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.11: Forecast toll segmentation, FY26 onwards at TP2 Ludhawai

Ticket category	CJV (FY26)	CJV (FY27)	Mini LCV	LCV	Bus	2A	3A/MAV
Single	79.8%	65.1%	93.0%	95.8%	99.1%	98.5%	99.5%
Local commercial	0.2%	0.2%	0.2%	2.5%	0.2%	0.8%	0.4%
Local personal	3.1%	3.1%	3.0%	-	-	-	-
Exemptions	3.3%	3.3%	3.2%	1.3%	0.6%	0.6%	0.1%

Ticket category	CJV (FY26)	CJV (FY27)	Mini LCV	LCV	Bus	2A	3A/MAV
Violations	0.6%	0.6%	0.6%	0.3%	0.1%	0.2%	0.1%
Annual pass	13.1%	27.8%	-	-	-	-	-

Source: Steer analysis of Client TMS data

6.22 There is no other toll category being charged, apart from the official list in the gazetted NHAI Revision of User fee rate w.e.f. 01.07.2022. This set of toll segmentation assumes that further changes in toll categories, unless specific discounts are offered, which is unlikely.

6.23 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.6 presents the Annual pass compensation computed for the toll plaza.

Table 6.12: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Amoli	2.1	4.6	5.4	5.7	6.6	7.6	8.1
Ludhawai	1.0	2.4	2.6	3.3	3.5	3.7	4.6

Source: Steer Analysis

Overloading

6.24 Overloaded vehicles on the Asset are charged twice the toll fee they would otherwise pay for their ticket type at the toll plaza. We have assumed that the FY26YTD overloading shares would continue in the forecast years. The table shows the assumptions for share of overloaded vehicles that are considered to pay twice the toll fee of the respective toll segmentation category, due to overloading.

Table 6.13: Overloading assumptions for forecast years FY26 onwards under various ticket categories

Vehicle type	Single	Local Commercial
TP1 Amoli		
LCV	3.9%	0.00%
Bus	2.0%	0.00%
2A	6.7%	0.00%
MAV	6.0%	0.00%
TP2 Ludhawai		
LCV	2.1%	0.00%
Bus	1.4%	0.00%
2A	4.6%	0.00%
MAV	6.5%	0.97%

Source: Steer review of Client TMS data

Toll evolution

6.25 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is July) based on WPI-linked inflation (as of March). These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.26 We have used actual toll rates from the FY25 toll notifications and latest print WPI for the month of March'25 for FY26 to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in Table 6.14 below. The upward trend in inflation is expected to continue in the medium term, before gradually tapering to 4.1% by FY32.

6.27 These forecasts provided by the Client. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the Client.

Table 6.14: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.05%
FY27	4.7%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32	4.1%

Source: FY26 as per actual WPI March print. FY27 onwards WPI print as per client

Revenue reconciliation

6.28 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a daily level for the Asset. To reconcile we have used the FY26YTD segmentation, FY26YTD AADT and compared it with the reported revenue for the year. The exercise was undertaken at an annual level. The comparison, as shown in Table 6.15 below, depicts the modelled revenue vs the reported revenue difference, and the difference lies within 0.1%, this gives us the confidence in the assumptions around segmentation and trip factors for future forecast purposes.

Table 6.15: Revenue reconciliation summary for FY26YTD

TP	Steer modelled revenue (INR lakh)	Reported revenue (INR lakh)	Difference (%)
TP1 Amoli	20.3	20.2	0.5%
TP2 Ludhawai	10.1	10.0	0.3%

Source: Steer comparison between modelled and reported revenue for FY26YTD

Traffic and Revenue forecasts

6.29 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue for the forecast period for the Asset. The table below presents the AADT/PCU and revenue forecast numbers and CAGRs on this Asset for both TP1 Amoli and TP2 Ludhawai. Further, Appendix B presents the AADT and revenues for the forecast period. Detailed forecast is tabled in Annexure C of the report.

Table 6.16: Traffic forecasts (with impacts) AADT forecast for TP1 Amoli

Vehicle Type	FY26	FY27	FY28	FY29	FY30	FY31	FY32
CJV	7,521	8,059	8,630	9,223	9,836	10,478	11,163
Mini LCV	882	910	940	969	998	1,028	1,058
LCV	280	287	292	298	303	309	314
Bus	1,411	1,457	1,504	1,551	1,598	1,645	1,694
2A	558	596	630	661	693	725	760
3A	476	495	504	510	517	523	529
MAV	3,688	4,073	4,347	4,575	4,744	4,981	5,231
AADT	**14,815**	**15,877**	**16,846**	**17,787**	**18,688**	**19,689**	**20,748**
PCU's	**30,868**	**33,289**	**35,260**	**37,056**	**38,634**	**40,519**	**42,504**

Source: Steer analysis

Table 6.17: Traffic forecasts (with impacts) CAGR (%) for TP1 Amoli

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	7.2%	7.1%	6.8%	6.5%	6.8%
Mini LCV	3.3%	3.2%	3.1%	3.0%	3.1%
LCV	2.4%	2.0%	1.8%	1.8%	1.9%
Bus	3.3%	3.2%	3.1%	3.0%	3.1%
2A	6.9%	5.6%	4.9%	4.7%	5.3%
3A	3.8%	1.9%	1.2%	1.2%	1.8%
MAV	10.4%	6.7%	4.5%	5.0%	6.0%
AADT	**7.2%**	**6.1%**	**5.3%**	**5.4%**	**5.8%**
PCU's	**7.8%**	**5.9%**	**4.7%**	**4.9%**	**5.5%**

Source: Steer analysis

Table 6.18: Revenue forecasts (INR crores) for TP1 Amoli

Vehicle Type	FY26	FY27	FY28	FY29	FY30	FY31	FY32
CJV	14.3	15.4	17.7	19.2	21.9	25.1	27.2
Mini LCV	1.7	1.7	1.9	2.0	2.2	2.4	2.6
LCV	1.0	1.1	1.1	1.2	1.3	1.4	1.4

Vehicle Type	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Bus	10.3	10.7	11.7	12.7	13.7	14.7	15.8
2A	4.3	4.6	5.1	5.7	6.2	6.8	7.4
3A	5.4	5.8	6.2	6.5	7.0	7.3	7.7
MAV	44.6	50.2	56.4	62.1	67.8	74.2	81.2
Total	**81.7**	**89.5**	**100.3**	**109.4**	**120.0**	**132.0**	**143.3**

Source: Steer analysis

Table 6.19: Revenue forecasts CAGR (%) for TP1 Amoli

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	7.1%	15.5%	11.0%	11.5%	11.2%
Mini LCV	3.3%	10.7%	7.2%	8.0%	7.4%
LCV	3.7%	6.2%	6.5%	6.3%	5.9%
Bus	3.9%	9.3%	8.0%	7.5%	7.3%
2A	7.6%	11.9%	9.9%	9.3%	9.6%
3A	5.9%	7.4%	6.2%	5.5%	6.1%
MAV	12.6%	12.4%	9.6%	9.4%	10.5%
Total	**9.5%**	**12.1%**	**9.4%**	**9.3%**	**9.8%**

Source: Steer analysis

Table 6.20: Traffic forecasts (with impacts) AADT forecast for TP2 Ludhawai

Vehicle Type	FY26	FY27	FY28	FY29	FY30	FY31	FY32
CJV	8,728	9,352	10,014	10,703	11,414	12,160	12,954
Mini LCV	1,023	1,056	1,090	1,124	1,158	1,193	1,228
LCV	291	298	304	309	315	321	326
Bus	1,446	1,493	1,541	1,589	1,637	1,686	1,736
2A	572	611	646	678	710	744	779
3A	476	495	505	511	517	523	529
MAV	3,687	4,071	4,344	4,573	4,742	4,979	5,228
AADT	**16,222**	**17,377**	**18,445**	**19,488**	**20,493**	**21,604**	**22,780**
PCU's	**32,375**	**34,892**	**36,965**	**38,866**	**40,552**	**42,551**	**44,657**

Table 6.21: Traffic forecasts (with impacts) CAGR(%) for TP2 Ludhawai

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	7.2%	7.1%	6.8%	6.5%	6.8%
Mini LCV	3.3%	3.2%	3.1%	3.0%	3.1%
LCV	2.3%	2.0%	1.8%	1.8%	1.9%
Bus	3.3%	3.2%	3.1%	3.0%	3.1%

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
2A	7.0%	5.6%	4.9%	4.7%	5.3%
3A	3.9%	2.0%	1.2%	1.2%	1.8%
MAV	10.4%	6.7%	4.5%	5.0%	6.0%
AADT	**7.1%**	**6.1%**	**5.4%**	**5.4%**	**5.8%**
PCU's	**7.8%**	**5.9%**	**4.7%**	**4.9%**	**5.5%**

Source: Steer analysis

Table 6.22: Revenue forecasts (INR crores) forecast for TP2 Ludhawai

Vehicle Type	FY26	FY27	FY28	FY29	FY30	FY31	FY32
CJV	7.5	8.0	8.6	10.6	11.7	12.5	15.1
Mini LCV	0.9	0.9	0.9	1.1	1.2	1.2	1.4
LCV	0.5	0.5	0.5	0.6	0.6	0.6	0.7
Bus	5.0	5.2	5.6	6.1	6.5	7.0	7.6
2A	2.0	2.2	2.4	2.7	2.9	3.2	3.5
3A	2.7	2.8	3.0	3.2	3.4	3.6	3.7
MAV	22.0	24.4	27.4	30.6	32.8	36.2	39.3
Total	**40.4**	**44.0**	**48.5**	**54.8**	**59.1**	**64.3**	**71.4**

Source: Steer analysis

Table 6.23: Revenue forecasts CAGR (%) for TP2 Ludhawai

Vehicle Type	FY26-FY27	FY27-FY28	FY28-FY30	FY30-FY32	FY26-FY32
CJV	7.1%	7.4%	16.7%	13.5%	12.4%
Mini LCV	3.3%	3.5%	12.7%	9.3%	8.4%
LCV	2.3%	11.0%	6.8%	6.6%	6.6%
Bus	4.6%	7.6%	8.0%	7.7%	7.3%
2A	8.4%	10.1%	9.9%	9.6%	9.6%
3A	4.8%	7.2%	6.0%	5.5%	5.8%
MAV	11.3%	12.2%	9.4%	9.5%	10.2%
Total	**8.9%**	**10.2%**	**10.4%**	**9.8%**	**9.9%**

Source: Steer analysis

Upside and Downside cases

Upside and Downside scenario assumptions

6.30 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both

positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.31 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.32 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.24: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.33 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

Impacts-Upside Case

6.34 The upside case impacts included in forecasts are summarised in below.

Table 6.25: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Amoli	TP2 Ludhawai
Completion of pending sections on Agra Ring Road	FY27*	+25% of base case	Base case estimates	Base Case estimates
Delhi- Mumbai Expressway	FY27*		2A: (0.3%) 3A: (0.1%) MAV: (0.3%)	2A: (0.3%) 3A: (0.1%) MAV: (0.3%)
Completion of Agra-Gwalior Construction	FY27*		MAV: 1.7%	MAV: 1.8%

Source: Steer analysis; * Same as base case timeline

Impacts-Downside Case

6.35 The downside case impacts included in forecasts are summarised in below.

Table 6.26: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1 Amoli	TP2 Ludhawai
Completion of pending sections on Agra Ring Road	FY27*	-25% of base case	LCV: 0.4% 2A: 1.9% 3A: 2.5% MAV: 3.7%	LCV: 0.3% 2A: 1.9% 3A: 2.6% MAV: 3.7%
Completion of construction of Delhi-Mumbai Expressway	FY27*		2A: (0.4%) 3A: (0.2%) MAV: (0.6%)	2A: (0.4%) 3A: (0.2%) MAV: (0.6%)
Completion of Agra-Gwalior Construction	FY27*		MAV: 1.0%	MAV: 1.1%

Source: Steer analysis; * Same as base case timeline

Upside and Dowside Forecasts

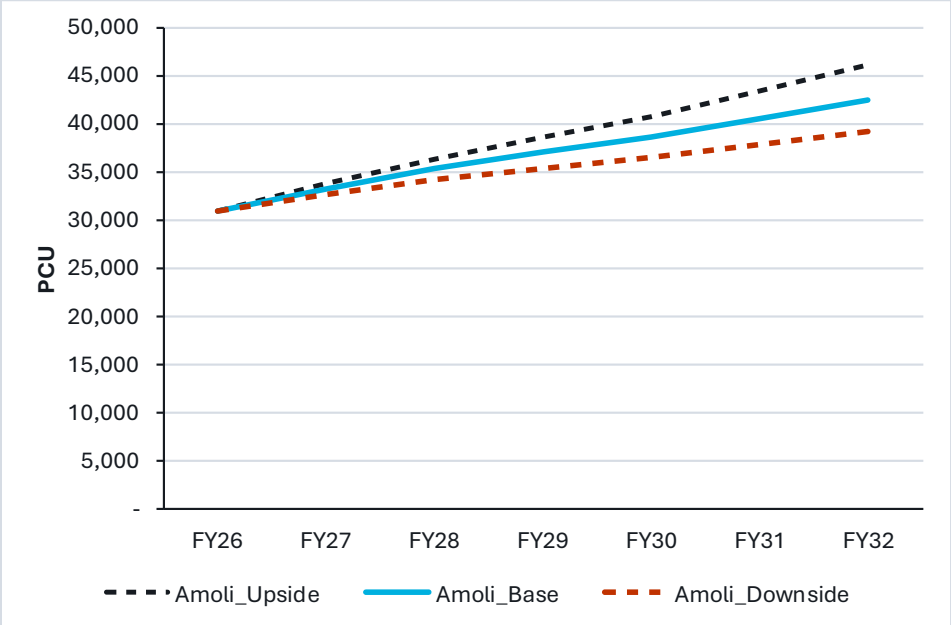
6.36 Based on the above assumptions for upside and downside scenarios, the following table summarizes the upside potential and downside risks associated with the PCU and the revenue for Amoli and Ludhawai toll plazas at the end of the concession i.e. FY32.

Table 6.27: Upside potential and Downside PCU scenario - FY32

Toll Plaza	Upside Potential	Downside Risk
Amoli	8.5%	(7.6%)
Ludhawai	8.6%	(7.7%)

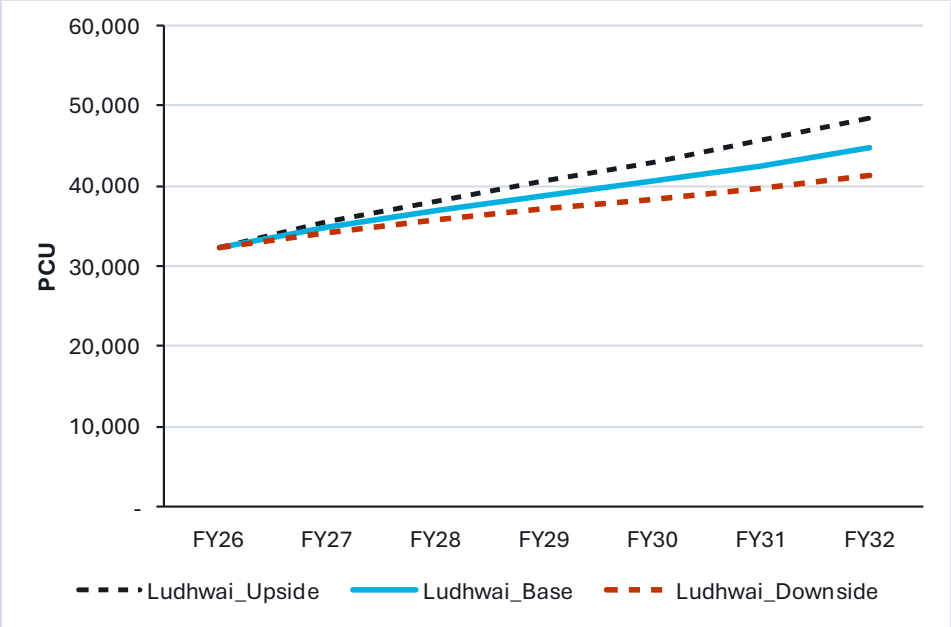
Source: Steer Analysis of client data

Figure 6.3: Long term PCU forecasts for Amoli TP including upside and downside scenario



Source: Steer Analysis

Figure 6.4: Long term PCU forecasts for Ludhawai TP including upside and downside scenario



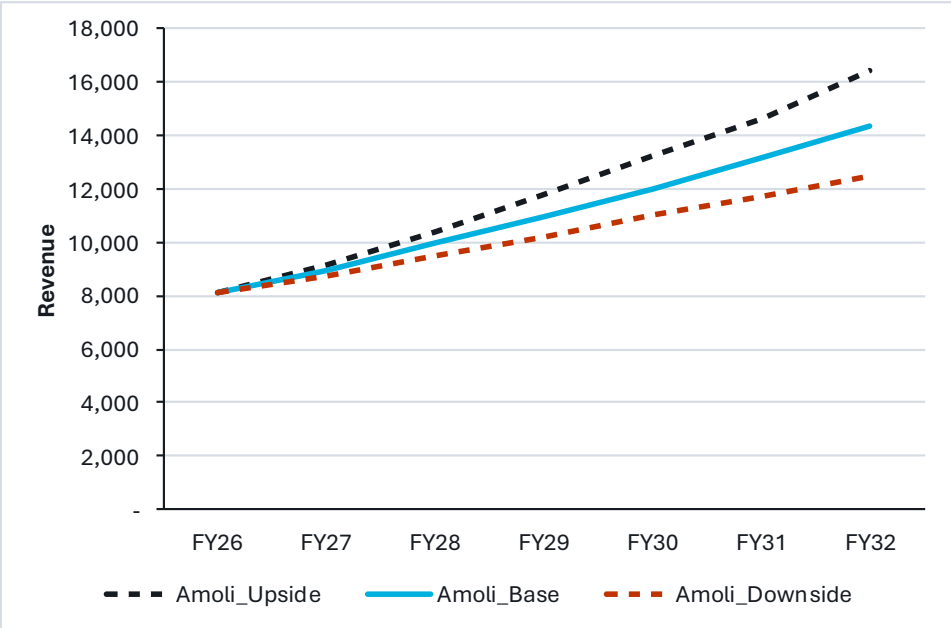
Source: Steer Analysis

Table 6.28: Upside potential and Downside Revenue scenario - FY32

Toll Plaza	Upside Potential	Downside Risk
Amoli	14.5%	(12.6%)
Ludhawai	15.1%	(13.7%)

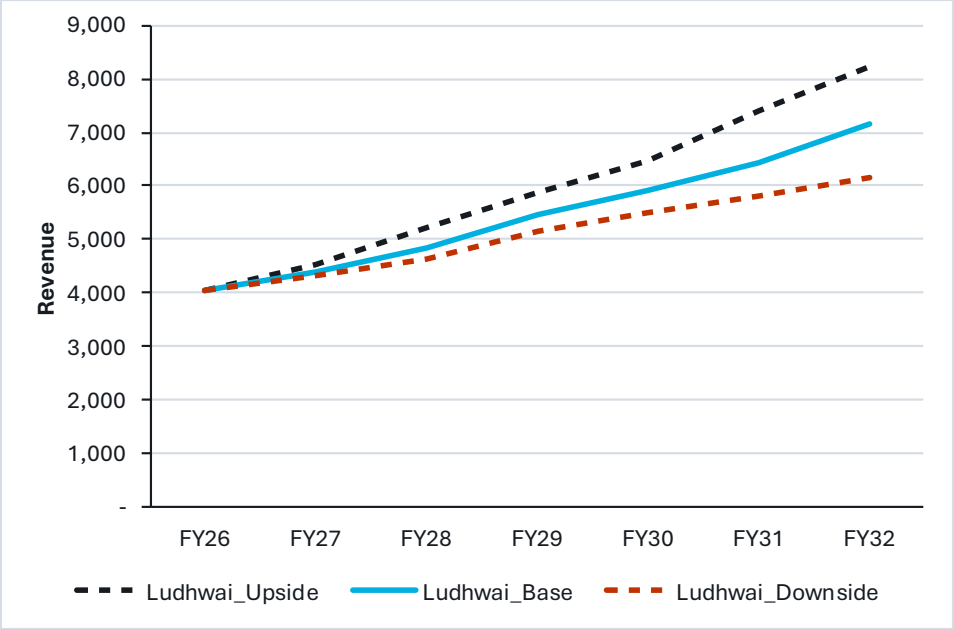
Source: Steer Analysis of client data

Figure 6.5: Long term Revenue forecasts (INR Lakhs) for Amoli TP including upside and downside scenario



Source: Steer Analysis

Figure 6.6: Long term Revenue forecasts (INR Lakhs) for Ludhawai TP including upside and downside scenario



Source: Steer Analysis

Summary outlook

6.37 Passenger traffic on the Asset is driven by local movements connecting key urban centers of Jaipur, Agra, Alwar, and Bharatpur. Tourism and leisure travel between Jaipur at one end and Bharatpur and Agra at the other also contributes to passenger and bus movements, as the Asset is part of the Golden Triangle corridor (Delhi NCR, Agra, Jaipur). Even though the recent pandemic impacted passenger and tourism-related traffic, the trend of increased use of personal vehicles has led to a good recovery of car traffic in recent months.

6.38 Goods traffic are driven by agriculture commodities, construction-related traffic including stone and sand, apart from a good spread of consumption-related commodities meeting urban demand. With the lifting of sandmining ban the Asset has seen a small recovery in MAVs. The recovery in recent months has shown underlying strength in the traffic growth drivers along the Asset corridor which is expected to continue driving growth on this corridor.With the completion of the Dausa-Lalsot road and Jaipur Ring Road in the immediate forecast period and the Agra Ring Road later, both medium-distance and long-distance traffic are expected to experience positive impacts.

6.39 Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by Client, feedback from Client meetings and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarised below.

6.40 With regards to impacts, we see the following risks:

1. Gain of long-distance traffic from NH27 road and the sand movement would depend on the successful completion of Agra Ring Road.

- With the recent commissioning of the Delhi Mumbai expressway section upto Dausa, the network between Delhi and Jaipur has become even more connected, traffic will be negatively affected and full direct impact has been assumed from FY27.

6.41 Overall, we see a positive outlook for the region and the Asset, given that it serves major urban centres of Jaipur, Agra, Bharatpur, Alwar and Delhi NCR. It is also the primary route on the tourism corridor connecting Jaipur with Bharatpur and Agra. The underlying growth drivers of the corridor are strong and are expected to deliver long term sustained growth.

Appendices

A Developments in sand-mining

A.1 This appendix provides a chronological account of developments – policy, regulatory and judicial – in sand-mining applicable across India and particularly in Rajasthan. Please note that this list is not exhaustive and is meant to gain a high-level understanding of the issues surrounding sand-mining that affect movement of sand on the Asset.

Table A.1: History of policy and regulatory changes, and court judgements affecting sand-mining

Event	Timeline
National	
Recommendations of MoEF core group	2010
SC ruling - Orders MoEF to formulate guidelines for sustainable sand-mining	Feb FY12
MoEFCC Sustainable Sand Mining Management Guidelines - Calls for site-specific surveys by district administration - Environmental clearance mandatory for all sand mines - DEAC and DEIAA committees for less than 5 hectare mines Stop of mining during monsoon months (June-September)	Mar FY16
Amendment of EIA Notification 2006 - EI clearance mandatory for all small-scale sand mines Treat cluster mines within 500 m as single mine	May FY17
SC ban on sand-mining; prohibits 82 large sand-mining lease holders	Nov FY18
SC refuses to remove ban	Jan, Aug FY19
Rajasthan	
Mining policy	2015
NGT: Even existing licence holders need to get environmental clearance	Jan FY15
Not clear if manufactured sand can meet demand and quality needs	FY19
"Mining ban give rise to sand mafia"	Oct FY19
SC stays Rajasthan HC order that allowed sand-mining at mines with issued LoIs	May FY20
Manufactured sand policy being considered and licences for small plots being allowed	Sept FY19, Jul FY20
Replenishment study of sand mines to be taken up	Aug FY20
Rajasthan HC asks PS (RJ) to issue compounding fee on vehicle – apply consistent approach	Sept FY20
Rajasthan M-sand policy announced	2020
Revised M-sand policy and 27 monitoring teams deployed across the state	2024

Source: Steer research

B Top 10 OD Pairs

B.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at TP2 Ludhawai. Please see this data for both CJVs and Bus as well as 3As and MAVs combined below.

Table 6.29: CJV and Bus top 10 OD pair shares at TP2 Ludhawai

	OD Pair	Share
1.	Bharatpur-Jaipur	16.8%
2.	Agra-Jaipur	12.9%
3.	Bharatpur-Nadbai	7.2%
4.	Mathura-Jaipur	6.1%
5.	Bharatpur-Mahwa	3.7%
6.	Bharatpur-Dausa	2.5%
7.	Bharatpur-Halena	2.4%
8.	New Delhi-Jaipur	1.9%
9.	Mathura-Mehandipur	1.9%
10.	Agra-Mehandipur	1.5%

Source: Steer analysis

Table B.1: 3A and MAV top 10 OD pair shares at TP2 Ludhawai

	OD Pair	Share
1.	Bharatpur-Jaipur	5.3%
2.	Agra-Jaipur	5.1%
3.	Bhuj-Agra	3.5%
4.	Bihar-Bhuj	2.5%
5.	Bhuj-Lucknow	2.5%
6.	Bhuj-Kolkata	2.4%
7.	Bharatpur-Dausa	2.0%
8.	Agra-Dausa	1.9%
9.	Mathura-Jaipur	1.8%
10.	Bhuj-Mathura	1.7%

C Data collection exercise

C.1 In order to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

7-day TVC counts

Table C.1: 7-day TVC counts at TP1 Amoli

Date	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
27-01-2021	5,638	482	681	779	224	589	3,206	3	11,602
28-01-2021	4,849	547	837	776	197	522	3,234	12	10,974
29-01-2021	5,190	548	875	785	272	641	3,341	7	11,659
30-01-2021	6,055	561	973	796	265	656	3,495	16	12,817
31-01-2021	5,781	570	815	780	312	624	3,643	2	12,527
01-02-2021	5,507	718	783	755	219	586	3,425	11	12,004
02-02-2021	5,825	584	808	762	258	572	3,322	9	12,140

Source: Steer analysis

Table C.2: 4-day TVC counts at TP2 Ludhawai

Date	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
26-06-2023	8,915	1,251	814	1,025	357	466	3,183	7	16,018
27-06-2023	8,929	1,075	953	1,073	368	395	3,069	11	15,873
28-06-2023	9,709	1,191	879	1,034	476	399	3,188	7	16,883
29-06-2023	10,127	987	799	1,009	406	363	3,128	5	16,824

Source: Steer analysis

Table C.3: Consolidated WADT for both TP1 Amoli and TP2 Ludhawai

Toll plaza	Source	CJV+ Mini LCV	LCV	Bus	2A	3A + MAV	OSV	Total
TP1	TVC	6,122	825	776	250	3,979	9	11,960
	TMS	5,558	424	1,172	221	4,066	-	11,441
TP2	TVC	10,546	861	1,035	402	3,548	8	16,400
	TMS	9,646	329	1,559	275	3,574	-	15,382

Source: Steer analysis

Zone list

Table 6.30: Zone list used for OD analysis

Zone No	Zone name	Description/State
1	Andaman & Nicobar Island	State
2	Visakhapatnam	State
3	Itanagar	State
4	Assam	State
5	Bihar	State
6	Chandigarh	State
7	Chhattisgarh	State
8	Dadara & Nagar Havelli	State
9	Daman & Diu	State
10	Goa	State
11	Bhuj	State
12	Julana	State
13	Shmila	State
14	Srinagar	State
15	Jharkhand	State
16	Karnataka	State
17	Kochi	State
18	Lakshadweep	State
19	Hanumana	State
20	Maharashtra	State
21	Manipur	State
22	Meghalaya	State
23	Mizoram	State
24	Nagaland	State
25	Rest of NCT of Delhi	State
26	Puducherry	State
27	Punjab	State
28	Rawatbhata	State
29	Sikkim	State
30	Chennai	State
31	Telangana	State
32	Tripura	State
33	Robertsganj	State

Zone No	Zone name	Description/State
34	Dehradun	State
35	Kolkata	State
36	Odisha	State
37	Jhalawar	District
38	Agra	District
39	Jhansi	District
40	Ahmadabad	District
41	Sheopur	District
42	Jhunjhunun	District
43	Jodhpur	District
44	Ajmer	District
45	Shivpuri	District
46	Junagadh	District
47	Shrawasti	District
48	Jyotiba Phule Nagar	District
49	Kachchh	District
50	Aligarh	District
51	Alirajpur	District
52	Siddharth Nagar	District
53	Kaithal	District
54	Allahabad	District
55	Sidhi	District
56	Sikar	District
57	Alwar	District
58	Ambala	District
59	Ambedkar Nagar	District
60	Singrauli	District
61	Amreli	District
62	Sirohi	District
63	Sirsa	District
64	Kannauj	District
65	Anand	District
66	Sitapur	District
67	Kanpur Dehat	District
68	Kanpur Nagar	District
69	Kansiram Nagar	District

Zone No	Zone name	Description/State
70	Anuppur	District
71	Sonbhadra	District
72	Ashoknagar	District
73	Sonipat	District
74	Auraiya	District
75	Delhi	District
76	Karnal	District
77	Azamgarh	District
78	Katni	District
79	Baghpat	District
80	Delhi	District
81	Kaushambi	District
82	Bahraich	District
83	Balaghat	District
84	Sultanpur	District
85	Kheda	District
86	Ballia	District
87	Surat	District
88	Kheri	District
89	Balrampur	District
90	Surendranagar	District
91	Banas Kantha	District
92	Banda	District
93	Banswara	District
94	The Dangs	District
95	Bara Banki	District
96	Baran	District
97	Bareilly	District
98	Barmer	District
99	Tikamgarh	District
100	Barwani	District
101	Basti	District
102	Kota	District
103	Tonk	District
104	Betul	District
105	Udaipur	District

Zone No	Zone name	Description/State
106	Kurukshetra	District
107	Bharartpur	District
108	Bharuch	District
109	Kushinagar	District
110	Bhavnagar	District
111	Ujjain	District
112	Bhilwara	District
113	Bhind	District
114	Umaria	District
115	Bhiwani	District
116	Lalitpur	District
117	Unnao	District
118	Bhopal	District
119	Bijnor	District
120	Vadodara	District
121	Bikaner	District
122	Valsad	District
123	Varanasi	District
124	Lucknow	District
125	Vidisha	District
126	Budaun	District
127	Bulandshahr	District
128	Maharajganj	District
129	Bundi	District
130	Burhanpur	District
131	Mahendragarh	District
132	Delhi	District
133	Mahesana	District
134	Delhi	District
135	Mahoba	District
136	Mainpuri	District
137	West Nimar	District
138	Chandauli	District
139	Mandla	District
140	Mandsaur	District
141	Mathura	District

Zone No	Zone name	Description/State
142	Chhatarpur	District
143	Yamunanagar	District
144	Mau	District
145	Chhindwara	District
146	Jind	District
147	Dausa	District
148	Karauli	District
149	Meerut	District
150	Sawai Madhopur	District
151	Mewat	District
152	Mirzapur	District
153	Chitrakoot	District
154	Chittaurgarh	District
155	Moradabad	District
156	Churu	District
157	Morena	District
158	Tapi	District
159	Muzaffarnagar	District
160	Damoh	District
161	Nagaur	District
162	Datia	District
163	Deoria	District
164	Dewas	District
165	Narmada	District
166	Narsimhapur	District
167	Dhar	District
168	Navsari	District
169	Dhaulpur	District
170	Neemuch	District
171	New Delhi	District
172	Delhi	District
173	Dindori	District
174	Delhi	District
175	Dohad	District
176	Delhi	District
177	Dungarpur	District

Zone No	Zone name	Description/State
178	Delhi	District
179	Pali	District
180	Palwal	District
181	Panch Mahals	District
182	Panchkula	District
183	East Nimar	District
184	Panipat	District
185	Panna	District
186	Etah	District
187	Etawah	District
188	Faizabad	District
189	Faridabad	District
190	Patan	District
191	Farrukhabad	District
192	Fatehabad	District
193	Fatehpur	District
194	Firozabad	District
195	Pilibhit	District
196	Porbandar	District
197	Gandhinagar	District
198	Pratapgarh	District
199	Ganganagar	District
200	Gautam Bhuddha Nagar	District
201	Ghaziabad	District
202	Ghazipur	District
203	Rae Bareli	District
204	Gonda	District
205	Gorakhpur	District
206	Raisen	District
207	Rajgarh	District
208	Guna	District
209	Rajkot	District
210	Rajsamand	District
211	Gurgaon	District
212	Gwalior	District
213	Hamirpur	District

Zone No	Zone name	Description/State
214	Rampur	District
215	Hanumangarh	District
216	Harda	District
217	Ratlam	District
218	Hardoi	District
219	Mahamaya Nagar	District
220	Rewa	District
221	Rewari	District
222	Rohtak	District
223	Hisar	District
224	Hoshangabad	District
225	Sabar Kantha	District
226	Sagar	District
227	Saharanpur	District
228	Indore	District
229	Jabalpur	District
230	Jaipur	District
231	Jaisalmer	District
232	Jalaun	District
233	Sant Kabir Nagar	District
234	Sant Ravi Das Nagar(bhadohi)	District
235	Jalor	District
236	Satna	District
237	Jamnagar	District
238	Sehore	District
239	Seoni	District
240	Shahdol	District
241	Jaunpur	District
242	Jhabua	District
243	Shahjahanpur	District
244	Jhajjar	District
245	Shajapur	District
246	Agra	City
247	Fatehpur Sikri	City
248	Vrindavan	City
249	Mehandipur	City

Zone No	Zone name	Description/State
250	Bharatpur	City
251	Mandwar	City
252	Jaipur	City
253	Mahwa	City
254	Balaheri	City
255	Bandikui	City
256	Banetha	City
257	Banskho	City
258	Bhangarh	City
259	Brahmbad	City
260	Chandrana	City
261	Chomu	City
262	Dhanawar	City
263	Dhiradi	City
264	Dolika	City
265	Hindaun	City
266	Kherli	City
267	Kumher	City
268	Merta	City
269	Nadoti	City
270	Neemrana	City
271	Nihalpura	City
272	Paparda	City
273	Arauda	City
274	Bagrana	City
275	Bamanpura	City
276	Bassi	City
277	Baswa	City
278	Bayana	City
279	Bhainsa	City
280	Bhandana	City
281	Bhandrej	City
282	Bhot	City
283	Bhusawar	City
284	Binua	City
285	Chainpura	City

Zone No	Zone name	Description/State
286	Chaksu	City
287	Dausa	City
288	Deeg	City
289	Doodhli	City
290	Dopur	City
291	Dubbi	City
292	Geejgarh	City
293	Halena	City
294	Helak	City
295	Jasota	City
296	Jhar	City
297	Jhera	City
298	Kalera	City
299	Kanauta	City
300	Kanjoli	City
301	Khairwal	City
302	Khan Bhankri	City
303	Kharkara	City
304	Kishangarh	City
305	Kolwa	City
306	Kumha	City
307	Lalwas	City
308	Lotwara	City
309	Lulhara	City
310	Luniawas	City
311	Madoli	City
312	Mariyada	City
313	Mehandipur	City
314	Mitrapura	City
315	Nadbai	City
316	Paharsar	City
317	Paota	City
318	Pipalkhera	City
319	Ramshighpura	City
320	Raniwas	City
321	Rohtaspura	City

Zone No	Zone name	Description/State
322	Sainthal	City
323	Sikindra	City
324	Sindoli	City
325	Singwara	City
326	Sinpini	City
327	Somara	City
328	Sujanpura	City
329	Sukhawali	City
330	Todabhim	City
331	Vamanpura	City
332	Weir	City
333	Ludhawai	City
334	Amoli	City
335	Myanmar	State
336	Bhutan	State
337	Bangladesh	State
338	Noida	City
339	Bhutan	Country
340	Chokawada	Town
341	Dudhu	Town

Direction-wise commodity distribution

Table C.4: Commodity distribution at TP2 Ludhawai (towards Jaipur)

Commodities	LCV	2 Axle	3 Axle	MAV
Agriculture	14%	9%	13%	15%
Groceries	21%	14%	9%	6%
Construction	3%	9%	8%	8%
Petroleum	4%	10%	6%	7%
Manufacturing	9%	3%	8%	6%
Automobiles	1%	-	-	1%
Miscellaneous	15%	17%	21%	11%
Metals	4%	4%	3%	8%
Empty	29%	34%	32%	37%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Table C.5: Commodity distribution at TP2 Ludhawai (towards Agra)

Commodities	LCV	2 Axle	3 Axle	MAV
Agriculture	4%	11%	4%	2%
Groceries	23%	17%	4%	6%
Construction	4%	4%	25%	27%
Petroleum	11%	6%	14%	26%
Manufacturing	9%	20%	13%	10%
Automobiles	1%	1%	3%	2%
Miscellaneous	36%	24%	27%	21%
Metals	-	4%	5%	2%
Empty	12%	13%	5%	4%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Trip length distribution

Table C.6: Trip length distribution at TP2 Ludhawai

Distance range	LCV	2 Axle	3 Axle	MAV
0-65 km	2%	3%	4%	3%
65-300 km	41%	25%	36%	27%
300-500 km	16%	16%	18%	15%
500-1000 km	20%	27%	16%	21%
>1000 km	22%	30%	26%	35%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

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1901, Tower B, 19th Floor, World Trade Tower, Plot No. C - 1,
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Final Report

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Project Transit: Traffic Due Diligence of Madurai-Kanyakumari Tollway Limited

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Contents

	Disclaimer	i
Glossary Items		**iii**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**4**
	Introduction	4
	Strategic network	4
	Concession and tolling details	5
	Key economic activities	7
	Alternate routes	9
3	**Traffic Description**	**11**
	Introduction	11
	Historical trends	12
	Toll Frequencies	18
	Key findings of the TVC data analysis	26
	WADT estimates	26
	Key findings of origin-destination analysis	28
	Overview	28
	Sample rates	28
	Zone Categories	29
	Zonal Influence	29
	Internal External analysis	32
	Conclusions	39
4	**Socio economic context and traffic growth**	**41**
	Introduction	41
	Population growth	41
	Economic Indicators	42
	Economic growth	45
	Forecasts for growth drivers	47
5	**FY26 Base Year AADT and Traffic growth Analysis**	**49**
	FY26 Base year AADT estimates	49
	Estimation of background elasticities	53
6	**Forecast: Network overlays and forecasts**	**58**
	Introduction	58
	Analysis of potential network/developmental impacts	58
	Revenue forecasting assumptions	62
	Toll segmentation	64

Traffic and Revenue forecasts	67
Target revenues and modification of concession period	73
Upside and Downside cases	75
Summary outlook	80

Figures

Figure 2-1: Asset location in the regional network context	4
Figure 2-2: Asset context	5
Figure 2-3: TP1 Kappalur, SIPCOT Industrial Park, RAMCO Cement Plant and India Cement Plant	6
Figure 3-1: Ticket segmentation for CJV at TP1	20
Figure 3-2: Ticket segmentation for MAVs at TP1	20
Figure 3-3: Ticket segmentation for CJV at TP2	21
Figure 3-4: Ticket segmentation for MAV at TP2	21
Figure 3-5: Ticket segmentation for CJV at TP3	22
Figure 3-6: Ticket segmentation for MAV at TP3	22
Figure 3-7: Ticket segmentation for CJV at TP4	23
Figure 3-8: Ticket segmentation for MAV at TP4	23
Figure 3-9: Comparison between TVC and TMS daily traffic data on TP1	26
Figure 3-10: Comparison between TVC and TMS daily traffic data on TP2	27
Figure 3-11: Comparison between TVC and TMS daily traffic data on TP3	27
Figure 3-12: Comparison between TVC and TMS daily traffic data on TP4	27
Figure 3-13: Comparison between vehicle shares from TVC and TMS WADTs	28
Figure 3-14: Zonal influence at TP1 Kappalur	30
Figure 3-15: Zonal influence at TP2 Etturvattam	31
Figure 3-16: Zonal influence at TP3 Salaipudhur	31
Figure 3-17: Zonal influence at TP4 Nanguneri	31
Figure 3-18: Internal-external distribution at TP1 Kappalur	32
Figure 3-19: Internal-external distribution at TP2 Etturvattam	33
Figure 3-20: Internal-external distribution at TP3 Salaipudhur	33
Figure 3-21: Internal-external distribution at TP4 Nanguneri	33
Figure 3-22: Commodity distribution at TP1 Kappalur (Total)	36
Figure 3-23: Commodity distribution at TP2 Etturvattam (Total)	36
Figure 3-24: Commodity distribution at TP3 Salaipudhur (Total)	36
Figure 3-25: Commodity distribution at TP4 Nanguneri (Total)	37
Figure 3-26: Trip length distribution TP1 Kappalur	38
Figure 3-27: Trip length distribution TP2 Etturvattam	38
Figure 3-28: Trip length distribution TP3 Salaipudhur	38
Figure 3-29: Trip length distribution TP4 Nanguneri, 2021	39
Figure 4-1: Annual growth - Index of Industrial Production	43
Figure 4-2: Car ownership in India per 1,000 population	44

Figure 4-3: Per capita income 44
Figure 4-4: Government final consumption expenditure 45
Figure 4-5: Month on Month IIP performance 46
Figure 4-6: Industrial components of GVA 46
Figure 4-7: Evolution of Tamil Nadu's state GDP and National GDP, FY12-24 47
Figure 4-8: GDP-GSDP forecast 48
Figure 5-1: FY25 Base Estimation methodology 50
Figure 6-1: Madurai Metro proposed and alignment of NH744 60
Figure 6.2: Vizhinjam port trafficSource: Steer Cartography 62

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Asset description and key metrics 6
Table 2.2: Single toll rates on the Asset (INR), applicable for FY26 7
Table 3.1: PCU factors 11
Table 3.2: Historical Traffic Levels at TP1 Kappalur 12
Table 3.3: Historical Tollable Traffic Levels at TP1 Kappalur 12
Table 3.4: Historical Traffic Levels at TP2 Etturvattam 13
Table 3.5: Historical Tollable Traffic at TP2 Etturvattam 13
Table 3.6: Historical Traffic Levels at TP3 Salaipudhur 14
Table 3.7: Historical Tollable Traffic at TP3 Salaipudhur 15
Table 3.8: Historical Traffic Levels at TP4 Nanguneri 15
Table 3.9: Historical Tollable Traffic at TP4 Nanguneri 16
Table 3.10: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP1 Kappalur 17
Table 3.11: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP2 Etturvattam 17
Table 3.12: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP3 Salaipudhur 17
Table 3.13: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP4 Nanguneri 18
Table 3.14: Typical ticket types sold at NHAI plazas 18
Table 3.15: Ticket segmentation for LCV, Bus, 2A and 3A at TP1 Kappalur 23
Table 3.16 Ticket segmentation for LCV, Bus, 2A and 3A at TP2 Etturvattam 24
Table 3.17 Ticket segmentation for LCV, Bus, 2A and 3A at TP3 Salaipudhur 24
Table 3.18 Ticket segmentation for LCV, Bus, 2A and 3A at TP4 Nanguneri 24
Table 3.18 Ticket segmentation for buses for the months of Aug'25 and Sept'25 24
Table 3.19: Data collection exercise 25
Table 3.20: WADT from TVC counts 26
Table 3.21: Sample rates for OD data 29
Table 3.22: Zone aggregations for zonal influence analysis 29
Table 4.1: CAGR of population in India 41
Table 4.2: Population Growth in Tamil Nadu and India (2012 – 2024) 42

Table 5.1: SCF factors for TP1 Kappalur	50
Table 5.2: SCF Factors for TP2 Etturvattam	50
Table 5.3: SCF Factors for TP3 Salaipudhur	51
Table 5.4: SCF Factors for TP4 Nanguneri	51
Table 5.5: Adopted base estimates: TP1: Kappalur	51
Table 5.6: Adopted base estimates: TP2: Etturvattam	52
Table 5.7: Adopted base estimates: TP3: Salaipudhur	52
Table 5.8: Adopted base estimates: TP4: Nanguneri	52
Table 5.9: Identified growth drivers to model traffic growth	54
Table 5.10: Passenger and Commercial growth with normalised FY22 – MK TP1	54
Table 5.11: Passenger and Commercial growth with normalised FY22 – MK TP2	55
Table 5.12: Passenger and Commercial growth with normalised FY22 – MK TP3	55
Table 5.13: Passenger and Commercial growth with normalised FY22 – MK TP4	55
Table 5.14: Elasticity recommendations for the Asset	56
Table 6.1: Impact of 6 laning LOS improvement for TP1 Kappalur	59
Table 6.2: Impact of 6 laning LOS improvement for TP4 Nanguneri	59
Table 6.3 Impact of Madurai- Kollam for TP2 Etturvattam	59
Table 6.4 Impact of Madurai- Kollam for TP3 Salaipudhur	60
Table 6.5 Impact of Madurai Metro for TP1 Kappalur	61
Table 6.6 Impact of Vizhinjam port traffic for TP4 Nanguneri	61
Table 6.7: Trip factors for the forecast years for TP1 Kappalur	62
Table 6.8: Trip factors for the forecast years for TP2 Etturvattam	63
Table 6.9: Trip factors for the forecast years for TP3 Salaipudhur	63
Table 6.10: Trip factors for the forecast years for TP4 Nanguneri	63
Table 6.11: Segmentation for forecast years, TP1 Kappalur	65
Table 6.12: Segmentation for forecast years, TP2 Etturvattam	65
Table 6.13: Segmentation for forecast years, TP3 Salaipudhur	65
Table 6.14: Segmentation for forecast years, TP4 Nanguneri	66
Table 6.15: Annual pass compensation for CJVs (in Crore)	66
Table 6.16: WPI growth forecast assumptions	66
Table 6.17: FY26YTD Revenue reconciliation summary (INR Lakhs)	67
Table 6.18: Traffic forecast (With Impacts) for TP1 Kappalur	67
Table 6.19: Traffic growth CAGR (%) for TP1 Kappalur	68
Table 6.20: Revenue forecast (With Impacts) for TP1 Kappalur (INR Cr) including the Annual Pass Compensation Revenue for CJV	68
Table 6.21: Revenue growth CAGR (%) for TP1 Kappalur	68
Table 6.22: Traffic forecast (With Impacts) for TP2 Etturvattam	69
Table 6.23: Traffic growth CAGR (%) TP2 Etturvattam	69
Table 6.24: Revenue forecast (with impacts) for TP2 Etturvattam (INR Cr)	70
Table 6.25: Revenue growth CAGR (%) for TP2 Etturvattam	70
Table 6.26: Traffic forecast (With Impacts) for TP3 Salaipudhur	70

Table 6.27: Traffic growth CAGR (%) TP3 Salaipudhur	71
Table 6.28: Revenue forecast (with impacts) for TP3 Salaipudhur (INR Cr)	71
Table 6.29: Revenue growth CAGR (%) for TP3 Salaipudhur	71
Table 6.30: Traffic forecast (With Impacts) for TP4 Nanguneri	72
Table 6.31: Traffic growth CAGR (%) for TP4 Nanguneri	72
Table 6.32: Revenue forecast (with impacts) for TP4 Nanguneri (INR Cr)	72
Table 6.33: Revenue growth CAGR (%) for TP4 Nanguneri	73
Table 6.34: Target Revenues for Extension 1	74
Table 6.35: Target Revenues for Extension 2	74
Table 6.36: Summary of Macro-economic Assumptions for upside and downside cases	75
Table 6.37: Summary of impacts on the Assets	75
Table 6.38: Summary of impacts on the Assets	76

Appendices

A Top 10 OD pairs

B Detailed Forecasts

C Client Sensitivity Analysis: Upside and Downside Sensitivity

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
INR	Indian Rupees
km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NHIIMPL	National Highways Infra Investment Managers Private Limited
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor
SH	State Highway

Acronym	Meaning
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Madurai-Kanyakumari Tollway Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Madurai-Kanyakumari consists of four toll road sections, each of which has a separate special purpose vehicle (SPV). For this report, we hereafter call the four SPVs together as Asset and toll plazas on each section as TP1-TP4.

- Madurai Kanyakumari Tollways Limited: MKTL: TP1 – Kappalur
- Kanyakumari Etturvattam Tollways Limited: KETL: TP2 – Etturvattam
- Salaipudhur Madurai Tollways Limited: SMTL: TP3 – Salaipudhur
- Nanguneri Kanyakumari Tollways Limited: NKTL: TP4 – Nanguneri

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Oct'20 and Sept '25
• Historical analysis and forecasts for baseline growth, including; – Background growth, and – Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: – Zonal influence and Top OD pairs – Commodity distribution – Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer. Surveys were undertaken on TP1 and TP3 in 2023 and on TP2 and TP4 in 2021.

• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by Steer based on Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including – Toll segmentation and trip factors, – Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research and Steer's in-house experience of working in the vicinity of the Asset
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI); and latest Wholesale Price Index (WPI) trends as shared by the client

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis has essentially focused on two sets of issues, namely:

- understanding the traffic that is currently using the Asset; and
- identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources as given below:

- Client-provided secondary data, including:
  - TMS data from October 2020 to September 2025
  - Concession agreement and toll notifications for FY25 and FY26
  - Previous studies related to traffic and revenue
- In the previous study in 2023, Steer-commissioned OD surveys on two plazas of the Asset, TP1 Kappalur and TP3 Salaipudhur to validate any change in growth drivers and travel patterns. Survey on TP1 was conducted on 28th August 2023 and on TP3 on 1st July 2023.
- We undertook revenue reconciliation for FY26 YTD, by building up revenue from the traffic reported by each of the toll plazas and subsequently matching them to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD. This has been a key part of our analysis to validate the segmentation/toll-frequency assumptions, and the Annual Average Daily Traffic (AADT) reported for each of the toll plazas.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating the FY26 base year position. The FY25 AADT was calculated using the monthly traffic data for FY25. The FY25 AADT thus computed was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the estimates for FY26, the expected FY26 traffic was validated against the six months

of actual FY26 traffic (Apr to Sept) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of the concession. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.7 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analyses;
- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases

2 The Asset

Introduction

2.1 This chapter provides a description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the state of Tamil Nadu, connecting Madurai, and northern Tamil Nadu and states north of Tamil Nadu with the cities and towns in southern Tamil Nadu and Thiruvananthapuram in Kerala. The following figure shows the regional road network in which the Asset is located.

Figure 2-1: Asset location in the regional network context

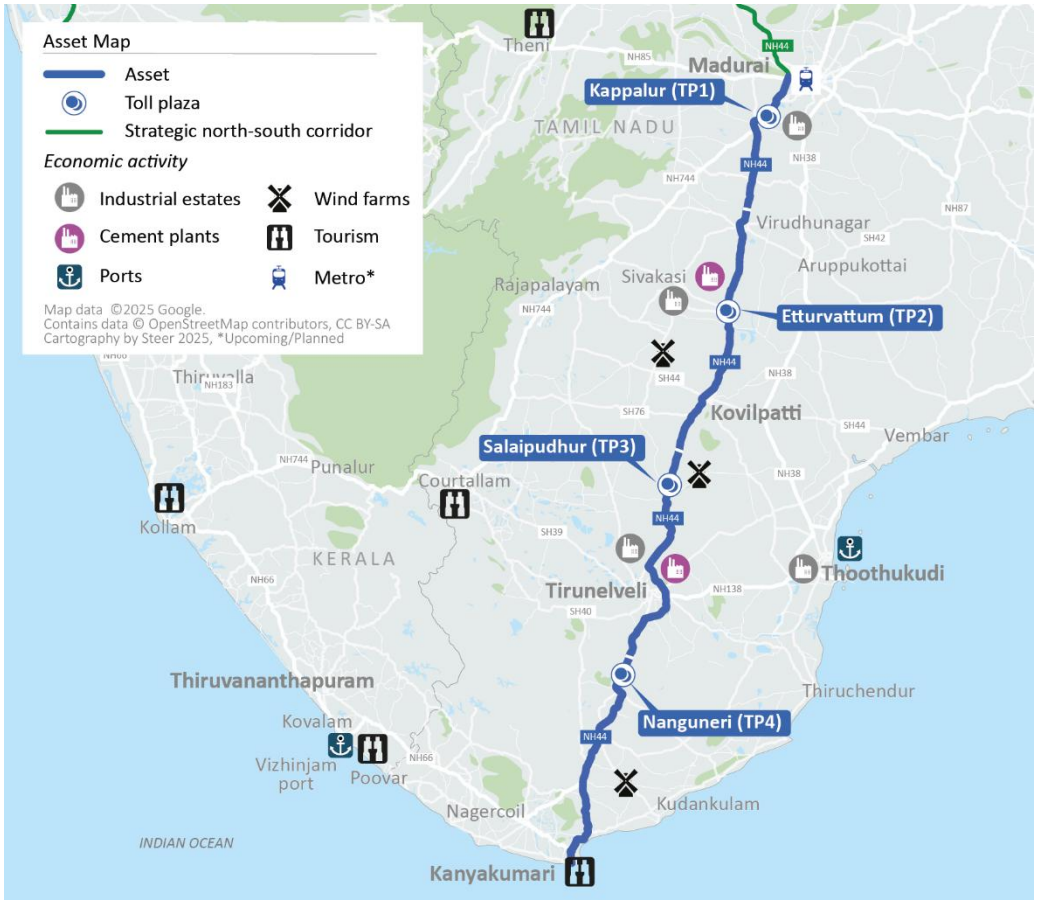
Source: Steer cartography

2.3 This Asset primarily caters to three different types of strategic movements:

- **Long-distance trips** between North India and Southern states like Andhra Pradesh, Telangana and Karnataka at one end and southern Tamil Nadu and Thiruvananthapuram at the other end.
- **Medium-distance trips** between Chennai and Bangalore at one end and southern parts of Tamil Nadu and Thiruvananthapuram at the other end.
- **Short-distance trips** between cities and towns in southern Tamil Nadu including Madurai, Thirumangalam, Tuticorin, Virudhunagar, Sivakasi, Kovilpatti, Tirunelveli and Thiruvananthapuram.

2.4 The Asset is a 243-km toll road which lies on NH44 in Tamil Nadu. It is a four-lane road with four toll plazas. The following figure provides a closer view of the Asset in the context of its immediate surroundings.

Figure 2-2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.5 The three southern toll plazas (TP2: Etturvattam, TP3: Salaipudhur and TP4: Nanguneri) on the Asset have been operational since FY12 while the northernmost toll plaza (TP1 Kappalur) has been operational since FY11. The Client took over operations of the Asset in October 2020.

2.6 The following table provides a key metrics of the Asset that have their chainage from KM 0.0 to KM 243.470 of NH44.

Table 2.1: Asset description and key metrics

Asset	Particulars
State	Tamil Nadu
Highway and lane configuration	NH 44 four-lane
Toll plazas	• SPV 1: TP1: Kappalur • SPV 2: TP2: Etturvattam • SPV 3: TP3: Salaipudhur • SPV 4: TP4: Nanguneri
Road Length (km) as per concession agreement	• TP1: 52.30km • TP2: 64.20km • TP3: 63.50km • TP4: 63.47km
Commencement of operations	• TP1: Sep 2012 • TP2: 15 2011 • TP3: 23 2011 • TP4: 23 2011
Operated by Client since	October 2020
Concession period	30 years
Last year of concession	FY51

Source: Client data

2.7 The figure below shows a typical cross-section of the Asset and its toll plazas.

Figure 2-3: TP1 Kappalur, SIPCOT Industrial Park, RAMCO Cement Plant and India Cement Plant

Source: Steer site visits

2.8 Tolls are collected for the vehicle categories and rates as shown in the following table. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling.

2.9 Due to general elections in India from Apr-May'24, the toll rates on the national highways across the country were changed in June 2024 onwards, instead of April 2024. For FY26 the toll rates changed from Apr'25 across most of the national highways in India including the Asset.

Table 2.2: Single toll rates on the Asset (INR), applicable for FY26

Type of Vehicle	Single Journey Fee			
	TP1 Kappalur	TP2 Etturvattam	TP3 Salaipudhur	TP4 Nanguneri
CJV	105	105	130	115
LCV	170	170	205	185
Bus/Truck	355	355	435	390
3A	385	390	475	425
MAV/HCM/EME	555	560	680	610
OSV	675	680	830	740

Source: NHAI Revision of User fee rate w.e.f. 01.04.2025

Key economic activities

2.10 Of the four plazas, TP1 Kappalur has the highest urban influence, with the toll plaza being in the suburbs of Madurai. It is situated between Madurai city and the municipality of Thirumangalam. The Asset is in a highly urbanised region of Tamil Nadu, with densities peaking at either ends of the Asset cluster – i.e., near Madurai and Kanyakumari. Demand is driven by a consumption-based economy with major economic activities surrounding cement manufacturing, container terminal, textile plants, wind power and industrial estates like State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT).

Cement

2.11 The toll plazas TP2: Etturvattam and TP3: Salaipudhur have two large cement plants close to them, namely Ramco Cements at RR Nagar (near Virudhunagar) and India Cements at Sankarnagar (north of Tirunelveli). Both are Chennai based cement companies which cater to most of the local residential and infrastructure development demand and some in surrounding states like Kerela and Andhra Pradesh.

2.12 The India Cements factory, set up in 1949 and located just north of Tirunelveli on the Asset, has an annual production capacity of 4.7 million tonnes, as per FY23 report. [1] Limestone is one of the main raw materials for cement manufacture and Nanjankulam Limestone Mines, located nearby, is one of the captive limestone mines of the Sankar Nagar factory. Besides, the Ramco Cements factory at RR Nagar in Virudhunagar is another large cement plant which grew from an annual capacity of 2 to 3.9million.

[1] The Ramco Cements Limited (RAMCOCEM) Q4 FY23 Earnings Concall Transcript | AlphaStreet

Industrial estates

2.13 The southern Tamil Nadu region in the immediate area of influence of the Asset and hosts several industrial estates including at Kappalur (Madurai), Gangaikondan (Tirunelveli) and Nanguneri. While Kappalur and Gangaikondan are already operational, the Nanguneri SEZ (Special Economic Zones) already has land allotted but is not operational yet. As per the latest information, Tamil Nadu state Government is planning to acquire 1000 acres from private developers for Nanguneri SEZ (Special Economic Zones). [2]

2.14 The Tamil Nadu Small Industries Corporation (SIDCO) industrial estate at Kappalur, located on the southern part of the Madurai bypass, is a 700-acre facility established in 1974. It has 400 units related to food processing, fabrication, textile and hardware industries and employs over 15,000 people until 2024.[3] The SIPCOT (State Industries Promotion Corporation of Tamil Nadu Limited) at Gangaikondan houses units like the LPG storage godowns of the Indian Oil Corporation, South India Bottling Company, ATC Tyres Private Limited, Nova Carbon Company and Bosch Limited.

2.15 The industrial city of Tuticorin and the surrounding region hosts the Tuticorin Port which is one of the 12 'major' ports of the country and has two container terminals.[4] There are several power plants including the Tuticorin Thermal Power Station and private ones like the captive Sterlite Industries plant. Other industries include salt pans, oil mills, chemical factories and export-based businesses.

2.16 The Asset also lies on the Chennai-Kanyakumari Industrial Corridor (CKIC) which covers 23 districts and aims to promote port-based economic development. The project aims to promote balanced regional growth and development of the southern districts. Six industrial nodes have been identified as part of the Comprehensive Development Plan of which Madurai-Dindigul-Virudhunagar-Theni and Thoothukudi-Tirunelveli have been prioritised as part of Phase-I.[5]

2.17 Based on the site observations and the latest FY24 reports it was found that India's biggest mega textile park under PM Mitra is under development in Virudhunagar along the Asset on NH44 closer TP2 Etturvattam plaza. [6]

Wind power

2.18 Tamil Nadu is the top producer of wind energy in the country with an installed capacity of about 8.7 GW across Coimbatore, Tiruppur, Tirunelveli, Thoothukudi and Kanyakumari districts[7].

2.19 Though the Madurai and Tirunelveli region were traditionally agricultural regions, with older wind farms primarily located in the southern Tirunelveli/Kanyakumari region, commissioning of wind farms in other parts of these southern districts and even western

[2] 20 years on, Nanguneri SEZ yet to flourish - The Hindu
[3] https://www.thehindu.com/news/national/tamil-nadu/industrial-estates-in-wait-and-watch-mode/article31674890.ece**, accessed on 30 March 2021**
[4] https://www.vocport.gov.in/knowyourport.aspx
[5] http://tidco.com/chennai-kanyakumari-industrial-corridor/#:~:text=The%20Chennai%20Kanyakumari%20Industrial%20Corridor,Tamil%20Nadu
[6] https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2037580
[7] Wind energy generation picks up in T.N., consumption expected to peak at 100 million units a day this year - The Hindu

districts like Coimbatore have expanded the wind energy business. Ettaiyapuram town near Thoothukudi is a major producer and storage for wind pillar and mills. Player including Sembcorp Energy India produce these mills there.

Urban consumption centres

2.20 Given the highly urbanised nature of the region including cities like Madurai, Tirunelveli and Trivandrum, and towns like Virudhunagar, Kovilpatti and Tuticorin, there is a lot of consumption-related retail activity in the region. A lot of this regional consumption demand is met by LCVs and 2As, apart from 3As. MAVs primarily serve long-distance traffic part of the strategic movement from and to northern states.

2.21 The cities and towns in the region are culturally connected and show leisure-based car and bus travel not only between cities and towns in the southern districts but also to and from Chennai. Tourism includes both pilgrimage and leisure travel. Destinations like Rameswaram and Kanyakumari are renowned pilgrimage destinations while other cities that have religious destinations include Madurai and Tirunelveli. Leisure destinations in the immediate vicinity of the Asset are Courtallam, Cape Comorin and Manjolai Estates in Tenkasi, Kanyakumari and Tirunelvei districts.

2.22 Besides the urban centres mentioned above, the Asset also serves as the highway link between southern Tamil Nadu and Kerala. Hill stations (Thekkady, Kodaikanal and Munnar), beaches in Kerala are popular tourist destinations for domestic tourists from Tamil Nadu. Besides, Thiruvananthapuram and Kanyakumari districts are culturally connected and show inter-urban passenger movements.

Alternate routes

2.23 As seen on the map in the earlier section, the Asset lie at the southern end of NH 44, the traditional north-south corridor connecting North India with South India terminating at Kanyakumari.

2.24 For the three types of movements observed on the Asset – long-distance, medium-distance and short-distance trips – that were explained earlier in this chapter, this section introduces potential alternate routes available for diversion.

- **Long-distance:** There is no long-distance alternate to the Asset. NH 66 - the long-distance north-south corridor along the coast connecting Mumbai with Kanyakumari, does not directly compete with the Asset as it passes through highly urban and congested areas in Kerala. The Asset is the primary link between Tamil Nadu and states north of Tamil Nadu at one end and the southern districts of Tamil Nadu including Madurai, Virudhunagar, Tirunelveli, Kanyakumari and Thiruvananthapuram (Kerala) at the other end.
- **Medium-distance**: There are two major medium-distance alternatives available.
  - The Madurai-Tuticorin Expressway (MTEL) on NH 38 connects Madurai more directly with Tuticorin (2.5 hours, 150 km) compared to the Asset through Kovilpatti (3 hours, 170 km). Port traffic between the northern Tamil Nadu hinterland and the Tuticorin Port primarily use this route. However, due to current 4-lane expansion of NH38 under Chennai-Kanyakumari by National Highway Authority of India (NHAI), the section is under construction. With that, our Asset

has continued to gain some traffic. Since, the shift of traffic volume is insignificant hence no impact is considered in Chapter 6.[8]

- The NH 744 route between Madurai and Kollam, through Rajapalayam, is another competitive alternate for road users having Courtallam and Kollam district (Kerala) as destinations. Chapter 6 presents the analysis of potential impact due to the planned upgrade of NH 744 in the future. This road is currently being 4-laned from Madurai up to Rajapalayam, while other sections of the route have had DPR prepared for 4 laning.
- **Micro-diversion**: There are local roads that help road users bypass the toll plazas. While some of these movements have already been contained and the issues being addressed, two alternates had significant amount of traffic. We believe these micro-diversions have achieved equilibrium and matured in their diversion behaviour and therefore no impacts were considered in Chapter 6.
- There is metro connectivity being planned from Othakadi to Tirumangalm in Madurai which will cross TP1 Kappalur plaza. It will mostly impact the local car traffic on Asset; hence this impact is considered on the TP1 of the Asset.

[8] **Ecr: Ecr Being Widened At ₹24,435cr | Chennai News - Times of India (indiatimes.com)**

3 Traffic Description

Introduction

3.1 This chapter outlines the current traffic and revenue on the Asset, as well as our analysis of origin-destination (OD) data and traffic count data. This encompasses data, which was collected as a part of this study, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain; a) better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, and b) the commodities being moved by goods vehicles. Combined with our understanding of the Asset (based on our site visits), this analysis enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data is typically provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU Factor assumption

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2023 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV/ Mini LCV	1.0
LCV	1.5
Bus	3.0
2A	3.0
3A	3.0
MAV*	3.3
OSV	4.5

Source: Steer analysis, * Rigid-Trailer PCU

Historical trends

3.5 The following table illustrates the traffic data over the period of 5 years from October 2020 – September 2025 (provided by the Client) at a plaza level. There is lack of long-term historical data available on the Asset since tolling was started by the client only in October 2020 and both the available years of data, FY21 and FY22 were impacted by COVID-19 related restrictions. Therefore, starting FY23 traffic on the Asset has started to get normalised with similar travel patterns recorded in FY24 and FY25.

3.6 Table 3.2 and Table 3.3 below depict the historical total and tollable traffic levels at TP1 Kappalur

Table 3.2: Historical Traffic Levels at TP1 Kappalur

Vehicle category	FY21*	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23-25
CJV	17,121	17,720	18,200	19,245	20,236	22,063	5.4%
LCV	2,369	1,528	1,544	1,563	1,664	1,746	3.8%
Bus	2,697	2,923	2,730	2,991	3,266	3,141	9.4%
2A	1,226	1,264	1,545	1,388	1,358	1,359	(6.4%)
3A	596	567	554	526	541	575	(1.2%)
MAV	828	871	871	911	974	1,021	5.8%
OSV	-	-	2	5	2	3	4.0%
Total	**24,836**	**24,873**	**25,447**	**26,629**	**28,041**	**29,908**	**5.0%**
PCU	**36,962**	**37,149**	**37,904**	**39,350**	**41,467**	**43,307**	**4.6%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25

Table 3.3: Historical Tollable Traffic Levels at TP1 Kappalur

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY23-25
CJV	14,507	12,851	15,663	17,026	17,758	19,326	6.5%
LCV	1,858	1,496	1,413	1,449	1,543	1,611	4.5%
Bus	786	979	1,364	1,445	1,726	3,085	7.3%
2A	1,129	1,067	1,231	1,337	1,294	1,256	12.8%
3A	552	506	533	512	517	549	(1.5%)
MAV	795	794	864	905	966	1,012	5.7%
OSV	2	2	2	5	2	3	2.1%
Tollable AADT	**19,629**	**17,693**	**21,070**	**22,679**	**23,806**	**26,842**	**6.5%**
Tollable PCU	**27,342**	**25,393**	**29,805**	**32,107**	**33,899**	**39,783**	**6.6%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25; Tollable traffic excludes exemption and violation

3.7 Passenger traffic at the TP1 Kappalur (CJV/Buses) has shown a consistently increasing trend since the pandemic-impacted year of FY22. CJVs have witnessed a ~5% CAGR from FY23 to FY25. Overall, for the period between FY23 to FY25, the toll plaza had an AADT growth of 5% and a PCU growth of 4.6%. The buses on the plaza have shown a slight degrowth in the initial months of FY26 due to ongoing court case between the NHAI and TNSRTC.

3.8 In terms of the vehicle share, the dominant category at the toll plaza is CJVs – having a 72% share, as of FY25. This is due to the proximity of the Asset to the consumption centres of Madurai and Thirumangalam. Goods vehicles (2A/3A/MAV combined) have a 10% share at the toll plaza, and their volume is the highest amongst the four toll plazas on the Asset, due to the presence of electronic and manufacturing industries in Madurai

3.9 Tollable traffic at the toll plaza showed a higher growth compared to the total (tollable + non-tollable) traffic for FY23 to FY25. TP1 Kappalur recorded a CAGR of 6.6% tollable PCU growth which is 4.6% in case of total traffic.

3.10 Higher tollable PCU growth is majorly driven by Cars and 2A - which reflects reducing exemptions and violations in these categories.

3.11 Table 3.4 and Table 3.5 presents the historical traffic profile on Etturvattam toll plaza.

Table 3.4: Historical Traffic Levels at TP2 Etturvattam

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY23-25
CJV	7,753	7,286	7,723	8,448	9,174	9,969	9.0%
LCV	1,064	793	809	867	947	963	8.2%
Bus	917	980	1,061	1,119	1,261	1,331	9.0%
2A	763	811	835	923	837	790	0.1%
3A	323	315	323	340	348	351	3.9%
MAV	632	691	685	771	826	840	9.8%
OSV	3	2	2	6	2	3	-
Total	**11,453**	**10,877**	**11,439**	**12,474**	**13,395**	**14,248**	**8.2%**
PCU	**17,444**	**17,077**	**17,877**	**19,480**	**20,684**	**21,633**	**7.6%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25

Table 3.5: Historical Tollable Traffic at TP2 Etturvattam

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY23-25
CJV	7,334	6,133	7,355	8,108	8,813	9,585	9.5%
LCV	1,040	760	800	857	932	953	7.9%
Bus	651	546	748	812	1,010	1,328	16.2%
2A	696	720	833	920	834	788	0.1%
3A	308	284	321	340	348	349	4.1%
MAV	610	605	683	769	825	838	9.9%

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY23-25
OSV	3	2	2	6	2	3	6.8%
Tollable AADT	**10,641**	**9,049**	**10,742**	**11,811**	**12,764**	**13,845**	**9.0%**
Tollable PCU	**15,895**	**13,937**	**16,536**	**18,189**	**19,533**	**21,207**	**8.7%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25; Tollable traffic excludes exemption and violation

3.12 At TP2 Etturvatam, CJVs have historically had the highest share of traffic – like TP1 Kappalur. In FY26YTD, the CJV volume was ~10,000, which was approximately 70% of the total traffic observed at the toll plaza. The rationale for high shares of CJV traffic can be attributed to the presence of the large urban settlements and pilgrim sites on the Asset. With increasing tourism activities post COVID-19, the period between FY23 to FY25 witnessed a healthy CAGR in CJVs (9%) and Bus (9%) traffic on the plaza.

3.13 With the strong presence of industrials units of cement and textile close to TP2, the plaza observes healthy share of commercial traffic (15%). In March 2023, India's first PM Mitra textile park opened in Virudhunagar close to TP2, which is key traffic generator. The opening of the new textile park drove the increase in associated commercial traffic in FY24 (10.4%, compared to FY23). The high volumes of goods vehicles can be explained by the presence of cement plants in the vicinity of the toll plaza (Ramco and India Cement Plants).

3.14 Considering only the tollable traffic (which excludes violations and exemptions), TP2 Etturvatam has observed a higher PCU growth compared to the overall traffic in FY25. TP2 Etturvattam had recorded 9% tollable PCU CAGR which is 9.2% in case of total traffic for the period FY23 to FY25.

3.15 FY25 witnessed a higher tollable CAGR rate by 9.5% growth in CJVs and 16.2% growth in buses, compared to 9% and 9% for the total traffic respectively from FY23 to FY25.

3.16 Table 3.6 and Table 3.7 below present the historical traffic profile on Salaipudhur toll plaza.

Table 3.6: Historical Traffic Levels at TP3 Salaipudhur

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY23-25
CJV	7,446	6,863	7,135	7,788	8,407	9,296	8.6%
LCV	759	705	731	767	829	860	6.4%
Bus	815	816	908	967	1,075	1,173	8.9%
2A	722	711	730	814	760	728	2.0%
3A	330	283	296	314	315	334	3.2%
MAV	460	494	520	584	680	704	14.3%
OSV	3	2	2	6	4	4	45.6%
Total	**10,532**	**9,871**	**10,322**	**11,240**	**12,070**	**13,099**	**8.1%**
PCU	**15,705**	**14,978**	**15,769**	**17,188**	**18,374**	**19,645**	**7.9%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21; FY26YTD includes data till Sept'25

Table 3.7: Historical Tollable Traffic at TP3 Salaipudhur

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26YTD	CAGR FY23-25
CJV	6,870	5,683	6,711	7,343	7,881	8,721	8.4%
LCV	739	663	720	754	817	849	6.5%
Bus	520	457	639	715	858	1,153	15.8%
2A	628	613	727	811	758	725	2.2%
3A	262	242	289	312	315	334	4.3%
MAV	441	442	518	582	678	703	14.4%
OSV	3	2	2	6	4	4	45.6%
Tollable AADT	**9,463**	**8,103**	**9,605**	**10,523**	**11,310**	**12,489**	**8.5%**
Tollable PCU	**13,686**	**12,092**	**14,482**	**15,946**	**17,163**	**18,979**	**8.9%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25; Tollable traffic excludes exemption and violation

3.17 Consistent with the trend observed at TPs 1 and 2, CJVs remain the dominant category (having a 70% share in FY25) with trips generated from/to Madurai, Tirunelveli, Kovilpatti and tourism trips towards Kanyakumari as well.

3.18 In terms of volume, CJVs were ranging at ~7800 volume in FY24 on this plaza which reached ~8400 in FY25 and have continued to increase at ~9300 in FY26YTD. This constant rise in volumes has been due to the increased tourism influence of Kanyakumari, Tirunelveli and Madurai.

3.19 Compared to the total (tollable + non-tollable) traffic, the tollable traffic at TP3 Salaipudhur recorded a 8.9% tollable PCU growth from FY23 to FY25. On the other hand, this growth is 7.9% in case of total traffic.

3.20 Higher tollable PCU growth is majorly driven by buses, which observed a 16% increase, as compared to a 9% increase in overall bus traffic

3.21 Table 3.8 and Table 3.9 below presents the historical traffic profile on Nanguneri toll plaza.

Table 3.8: Historical Traffic Levels at TP4 Nanguneri

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23-25
CJV	8,326	8,776	9,389	10,129	10,618	11,417	6.3%
LCV	1,304	749	740	764	780	767	2.6%
Bus	1,039	1,062	1,165	1,175	1,169	1,239	0.1%
2A	570	650	682	723	699	667	1.2%
3A	354	351	387	359	314	316	(10.0%)
MAV	509	491	581	560	593	704	1.1%
OSV	4	2	1	2	1	1	
Total	**12,102**	**12,078**	**12,945**	**13,711**	**14,173**	**15,110**	**4.6%**
PCU	**17,849**	**17,707**	**19,135**	**19,912**	**20,303**	**21,572**	**3.0%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25

Table 3.9: Historical Tollable Traffic at TP4 Nanguneri

Vehicle category	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR FY23-25
CJV	7,683	7,326	9,063	9,785	10,212	10,985	6.2%
LCV	1,269	689	717	741	757	740	2.7%
Bus	731	585	714	751	812	1,235	6.6%
2A	505	505	678	720	694	664	1.1%
3A	339	321	387	358	313	312	(10.1%)
MAV	490	468	579	559	591	702	1.0%
OSV	4	2	1	2	1	1	(19.2%)
Tollable AADT	**11,021**	**9,896**	**12,141**	**12,916**	**13,381**	**14,639**	**5.0%**
Tollable PCU	**15,956**	**14,155**	**17,408**	**18,246**	**18,771**	**21,062**	**3.8%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25; Tollable traffic excludes exemption and violation

3.22 TP4 Nanguneri has also witnessed a healthy growth in FY25 when compared with FY24 due to increased tourism activities between the hubs of Madurai, Tirunelveli and Kanyakumari. Goods traffic on this Asset, comprising 2A/3A/MAVs, is driven by trips generated to/from Tirunelveli, Kanyakumari and Tuticorin. One of the 12 major ports in India – the V.O Chidambaranar port, is in Tuticorin.

3.23 3A category has largely remained flat historically across all the toll plazas. The reduction in 3A volume is a result of the declining demand for 3A vehicles, which are being replaced by MAV's. MAVs offer higher tonnage capacity making them more cost-effective for transporters. This is consistent with our discussion with various transporters and OEMs across the country who are favouring 5A vehicles for commodity movement due to better unit economics.

3.24 In line with the observation at the other toll plazas on the Asset, when comparing the tollable with the total (tollable + non-tollable) traffic, TP4 Nanguneri has observed a higher PCU growth in FY25 when compared with FY24. TP4 Nanguneri recorded a 3.8% tollable PCU growth, which was marginally higher than that of 3% in case of total traffic for FY23-FY25 period.

3.25 A notable development across all the 4 TPs in FY26 has been the uptick in the tollable traffic observed in the bus segment during August and September of FY26 YTD which can be attributed to the resumption of toll payments by Tamil Nadu State Transport Corporation (TNSTC) buses following the Madras High Court's intervention earlier in July 2025.[9] In this case, the Court had directed toll operators under the Madurai–Kanyakumari Tollway and related concessions to bar TNSTC buses from accessing four key toll plazas—Kappalur, Etturavattam, Salaipudhur, and Nanguneri

[9] TNSTC vs Madras HC

3.26 Subsequent compliance and settlement discussions led to the reinstatement of toll payments by the state transport undertakings, resulting in the observed increase in tollable transactions for buses across these plazas during the recent months.

3.27 This increase in tollable traffic has resulted in increased revenue collection which is discussed in the section below.

Historical Revenue

3.28 The following tables show the revenue (in INR Lakhs) by each vehicle type at the toll plaza at an annual level and at daily level.

Table 3.10: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP1 Kappalur

FY	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY21*	16.9	3.6	2.9	4.0	2.5	5.3	0.0	**35.2**	**22**	
FY22	34.1	5.9	8.2	9.3	5.2	12.5	0.0	**75.3**	**20**	**(9.1%)**
FY23	44.2	6.4	12.9	11.4	5.9	14.9	0.1	**95.8**	**26**	**31.2%**
FY24	50.6	7.1	14.4	13.2	6.0	16.5	0.1	**107.8**	**29**	**12.3%**
FY25	52.8	7.8	16.2	12.8	6.2	17.8	0.1	**113.7**	**31**	**5.7%**
FY26YTD	28.6	4.2	10.6	6.6	3.4	9.7	0.0	63.2	**34**	**10.8%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD includes data till Sept'26 and excludes the annual pass compensation revenue

Table 3.11: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP2 Etturvattam

FY	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY21*	9.2	2.1	2.5	2.7	1.4	4.0	0.0	**21.9**	**13**	
FY22	16.5	3.3	4.7	6.3	3.0	9.1	0.0	**42.8**	**12**	**(7.7%)**
FY23	21.7	3.8	7.0	7.9	3.7	11.1	0.0	**55.2**	**15**	**26.0%**
FY24	25.5	4.3	8.1	9.2	4.1	13.2	0.1	**64.5**	**18**	**16.6%**
FY25	27.6	4.8	9.6	8.6	4.2	14.5	0.1	**69.4**	**19**	**7.8%**
FY26YTD	14.9	2.6	6.1	4.3	2.2	7.7	0.0	**37.8**	**20.5**	**18.1%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD includes data till Sept'26 and excludes the annual pass compensation revenue

Table 3.12: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP3 Salaipudhur

FY	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY21*	10.3	1.7	2.2	2.9	1.4	3.5	0.0	**22.0**	**14**	
FY22	18.5	3.5	5.0	6.5	3.0	8.2	0.1	**44.8**	**12**	**(14.3%)**
FY23	23.9	4.2	7.7	8.4	3.9	10.4	0.1	**58.5**	**16**	**33.6%**
FY24	27.8	4.6	9.0	9.9	4.3	12.2	0.1	**67.9**	**19**	**15.8%**
FY25	30.6	5.1	10.2	9.5	4.4	14.5	0.1	**74.4**	**20**	**9.8%**
FY26YTD	16.9	2.8	6.2	4.8	2.4	7.8	0.1	**40.9**	**22**	**10%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD includes data till Sept'26 and excludes the annual pass compensation revenue

Table 3.13: Total Revenue (in INR Cr) and AADC (in INR Lakhs) by vehicle type at TP4 Nanguneri

FY	CJV	LCV	Bus	2A	3A	MAV	OSV	Total	AADC	AADC Growth
FY21*	10.6	2.8	2.3	2.2	1.7	3.6	0.0	**23.2**	**14**	
FY22	20.1	3.1	5.4	4.7	3.4	7.3	0.0	**44.0**	**12**	**(14.3%)**
FY23	27.5	3.5	7.2	6.9	4.5	9.9	0.0	**59.6**	**16**	**36.1%**
FY24	31.1	3.8	8.0	7.7	4.4	10.2	0.0	**65.2**	**18**	**9.2%**
FY25	32.8	4.1	8.4	7.6	3.9	10.9	0.0	**67.7**	**19**	**4.0%**
FY26YTD	17.6	2.1	5.1	3.9	2.0	6.7	0.0	**37.5**	**20**	**7.0%**

Source: Steer analysis of Client data, (FY21* From Oct-20 (last 12 days) to Mar-21; AADC represents Average Annual Daily Collection; FY26YTD includes data till Sept'26 and excludes the annual pass compensation revenue

3.29 Tables above present, the revenue on the Madurai - Kanyakumari section. It can be inferred from the data that major contributor to the revenue on the Asset is the CJV category which has a share ranging from 40% to 45% of overall revenue across the Asset followed by MAVs which contribute between 15-18% of the overall revenue in case of TP1, TP3 and TP4 whereas for the TP2 the MAV revenue share is around 20%.

Toll Frequencies

3.1 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the client. The most common ticket categories observed on a typical National Highway are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these passes instead of evading toll.

3.2 The following are the types of tickets being sold at the plazas of the Asset.

Table 3.14: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows for a return journey within a day with a 50% discount on the return trip.
Monthly Pass	Discounted single entry ticket for users who undertake multiple trips within a month can buy the monthly pass.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.3 Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For some Assets, the Exemption and violations are at time reported together.

3.4 Generally, over the period the shares of single/return/monthly tickets tend to stabilise within 2-3 years of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns.

3.5 Further, FY21 was impacted due to the mandatory implementation of FASTag as a mode of payment, where users were now paying via an online payment system instead of cash payments at the toll plaza. Additionally, in FY22 traffic and travel patterns were impacted by the second wave of COVID-19 in Q1 and Q2. With FY21 and FY22 being impacted these external events, the segmentation began to stabilise from FY23 onwards and reached steady state starting FY24.

Introduction of Annual pass for CJVs

3.6 The National Highway Authority of India launched the "The FASTag Annual Pass" on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.7 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at toll plazas.
- Provide cost-effective travel for frequent users of NH/NE toll roads.

Share of traffic by payment type

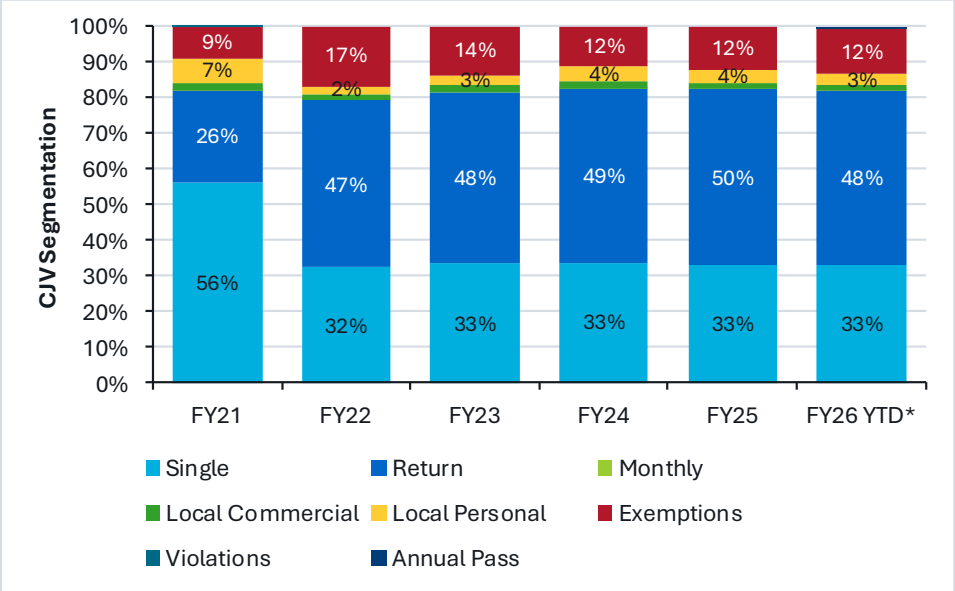
3.8 Since the Asset is located closer to the urban clusters, it caters to a considerable number of daily commuters using the Asset. Generally, the local movement results in multiple CJV trips though the plaza, leading to higher share of return ticket for CJVs. On TP1, the level of exemptions is influenced by higher share of local traffic on the plaza.

3.9 The share of exemptions for CJVs has been stable across all toll plazas, since the reduction in FY22. A high share of non-tollable exempted traffic in buses is seen across the Asset, because of the local nature of the bus traffic. A major reduction can be seen in the exemption category because of the strict implementation of FASTag and this exempted non-paying category traffic has been converted into the Monthly passes and local commercial tickets. However, a large proportion of buses continue to not pay on each of the toll plazas.

3.10 Across the toll plazas, the CJV segmentation shares have largely been consistent from FY23 - FY25. On the other hand, MAVs have exhibited similar trends when compared with previous years where single is dominant ticket category.

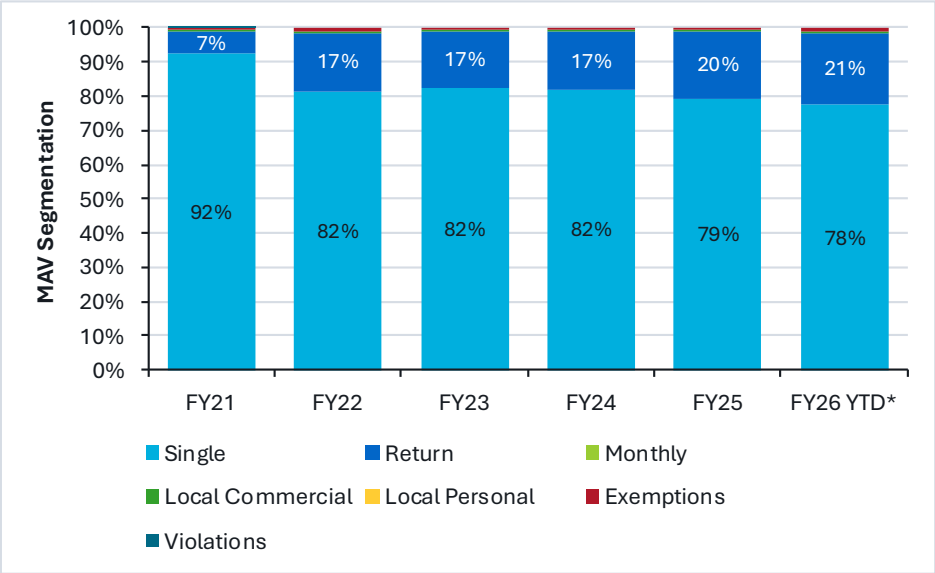
3.11 The figure below shows ticket segmentation for CJV and MAV categories for TP1 Kappalur.

Figure 3-1: Ticket segmentation for CJV at TP1



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD includes 5 months of data from Apr-Aug'25

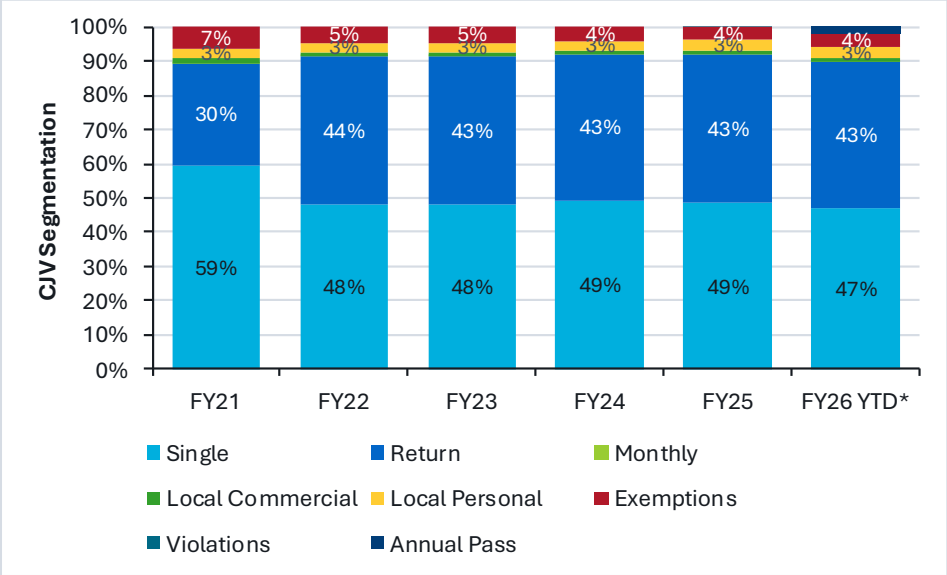
Figure 3-2: Ticket segmentation for MAVs at TP1



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21), FY26YTD includes 5 months of data from Apr-Aug'25

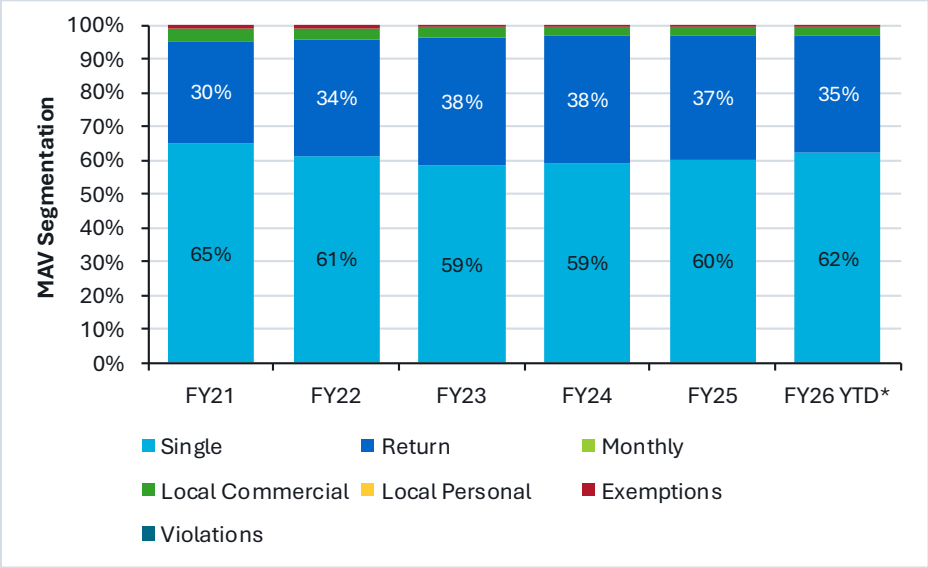
3.12 The figure below shows ticket segmentation for CJV and MAV categories for TP2 Etturvattam.

Figure 3-3: Ticket segmentation for CJV at TP2



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD includes 5 months of data from Apr-Aug'25

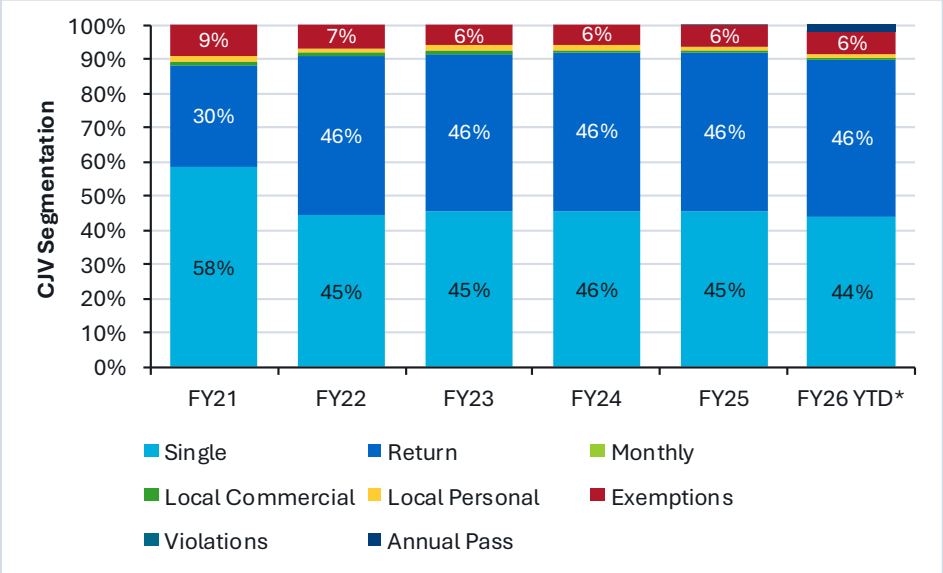
Figure 3-4: Ticket segmentation for MAV at TP2



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21); FY26YTD includes 5 months of data from Apr-Aug'25

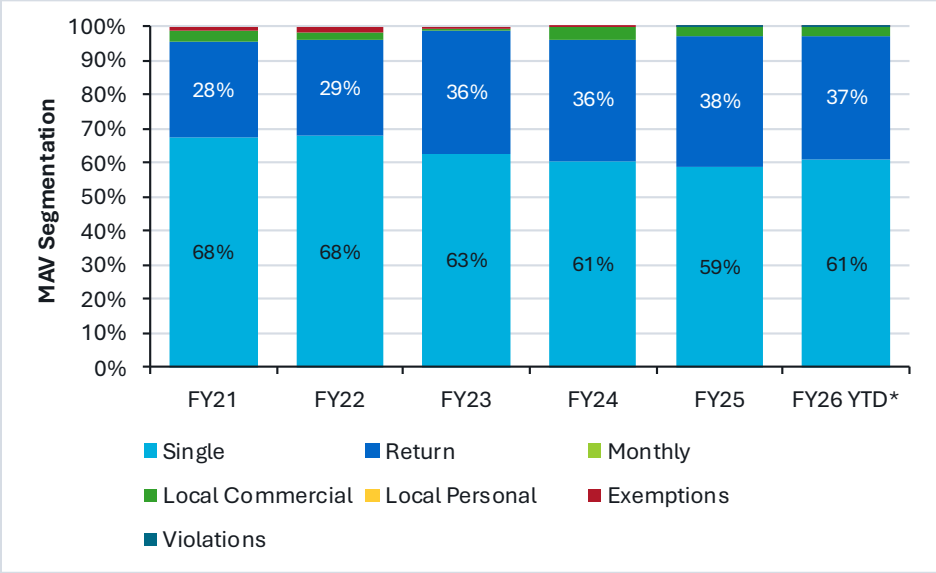
3.13 The figure below shows ticket segmentation for CJV and MAV categories for TP3 Salaipudhur.

Figure 3-5: Ticket segmentation for CJV at TP3



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21) FY26YTD includes 5 months of data from Apr-Aug'25

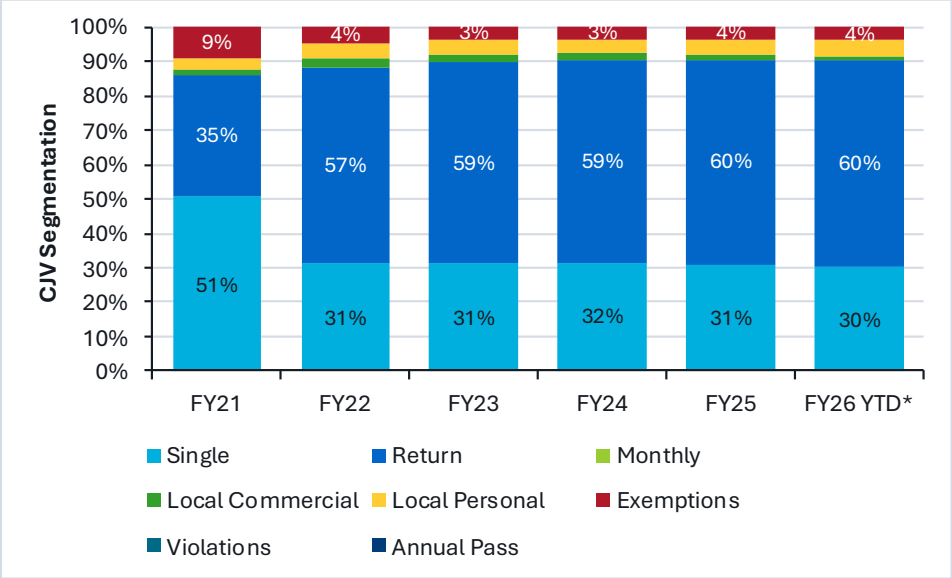
Figure 3-6: Ticket segmentation for MAV at TP3



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21) ; FY26YTD includes 5 months of data from Apr-Aug'25

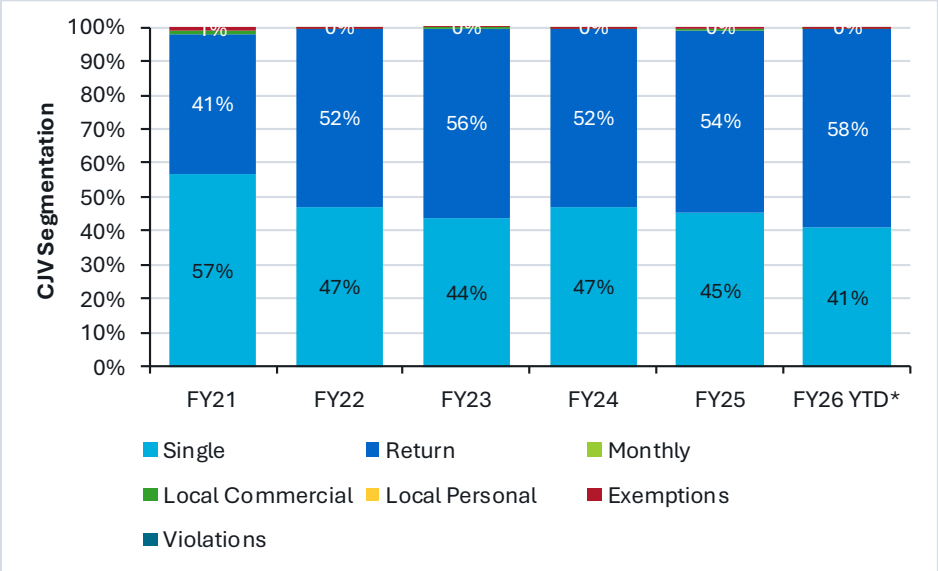
3.14 The figure below shows ticket segmentation for CJV and MAV categories for TP4 Nanguneri.

Figure 3-7: Ticket segmentation for CJV at TP4



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21) ; FY26YTD includes 5 months of data from Apr-Aug'25

Figure 3-8: Ticket segmentation for MAV at TP4



Source: Steer analysis of Client data (FY21 has data for Oct-20 to Mar-21) ; FY26YTD includes 5 months of data from Apr-Aug'25

3.15 Table 3.15, Table 3.16, Table 3.17, and Table 3.18 below depict the FY26YTD (Apr- Aug) segmentation for LCV, Bus, 2A and 3A category for all the four Asset plazas:

Table 3.15: Ticket segmentation for LCV, Bus, 2A and 3A at TP1 Kappalur

Ticket Category	LCV	Bus	2A	3A
Single	40%	6%	28%	57%
Return	49%	31%	58%	35%
Local commercial	4%	18%	9%	5%

Monthly	0%	12%	-	-
Exemption	7%	33%	4%	4%

Table 3.16 Ticket segmentation for LCV, Bus, 2A and 3A at TP2 Etturvattam

Ticket Category	LCV	Bus	2A	3A
Single	47%	9%	34%	59%
Return	50%	51%	62%	41%
Local commercial	2%	7%	4%	1%
Monthly	-	17%	-	-
Exemption	2%	15%	0%	0%

Table 3.17 Ticket segmentation for LCV, Bus, 2A and 3A at TP3 Salaipudhur

Ticket Category	LCV	Bus	2A	3A
Single	45%	9%	30%	47%
Return	53%	53%	67%	44%
Local commercial	1%	5%	2%	9%
Monthly	-	13%	-	-
Exemption	1%	20%	0%	0%

Table 3.18 Ticket segmentation for LCV, Bus, 2A and 3A at TP4 Nanguneri

Ticket Category	LCV	Bus	2A	3A
Single	32%	7%	23%	38%
Return	60%	39%	72%	55%
Local commercial	5%	15%	4%	6%
Monthly	-	15%	-	-
Exemption	3%	23%	1%	0%

Source: Steer analysis of Client data

3.16 As highlighted in the historical traffic section, the state transport buses are mandated to pay the tolls at all the toll plazas by the Madras HC, there has been a change in the segmentation of the buses with the exemptions decreasing since Aug'25. Below table highlights the segmentation for buses for the months of Aug'25 and Sept'25.

Table 3.19 Ticket segmentation for buses for the months of Aug'25 and Sept'25

Ticket Category	TP-1			TP-2			TP-3			TP-4		
	July'25	Aug'25	Sept'25	July'25	Aug'25	Sept'25	July'25	Aug'25	Sept'25	July'25	Aug'25	Sept'25
Single	8%	8%	8%	9%	11%	10%	9%	10%	10%	7%	7%	7%
Return	6%	7%	6%	51%	53%	52%	52%	56%	55%	39%	39%	38%

Local commercial	30%	35%	38%	10%	13%	13%	5%	16%	15%	20%	48%	49%
Monthly	24%	48%	46%	18%	23%	25%	12%	17%	18%	21%	5%	5%
Exemption	24%	2%	2%	11%	0%	0%	22%	2%	2%	13%	0%	0%

Source: Steer Analysis of Client Data

3.17 We have therefore assumed that the buses on each of these toll plazas will continue to pay at the rate observed in September'25, and the same has been considered in our forecasts.

Data Collection exercise

3.18 As mentioned earlier, to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset, comprising the surveys listed below. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual as well as software-based counting. As part of the current study, OD surveys were undertaken on two toll plazas TP1 and TP3 to understand the change in travel patterns on the Asset. The TVC surveys and OD surveys on TP2 and TP4 were undertaken in 2021 as part of the earlier commission.

Table 3.20: Data collection exercise

Asset	7-day videography-based TVC			1-day OD survey			
	Start date	End date	Time (hrs)	Start date	Start time	End Date	End Time
TP1 Kappalur	18 Jan 2021	24 Jan 2021	0000-2359	28 Aug 2023	0900 hours	29 Aug 2023	0900 hours
TP2 Etturvattam	18 Jan 2021	24 Jan 2021	0000-2359	21 Jan 2021	0900 hours	22 Jan 2021	0900 hours
TP3 Salaipudhur	18 Jan 2021	24 Jan 2021	0000-2359	01 Jul 2023	0900 hours	02 Jul 2023	0900 hours
TP4 Nanguneri	18 Jan 2021	24 Jan 2021	0000-2359	21 Jan 2021	0900 hours	22 Jan 2021	0900 hours

Source: Steer analysis

3.19 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, in order to fully understand the impact of this weekly fluctuation on the Asset, we collected seven-day counts at each toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.20 Taking an average of the three/seven-day TVC counts conducted, we obtained the following weekly average daily traffic (WADT) for each toll plaza. This WADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Table 3.21: WADT from TVC counts

Toll Plaza	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
TP1 Kappalur	16,703	2,189	2,628	3,414	1,072	613	791	27,409
TP2 Etturvattam	7,526	806	1,391	1,172	638	306	699	12,538
TP3 Salaipudhur	6,974	828	1,333	1,044	608	282	458	11,527
TP4 Nanguneri	8,452	930	1,331	1,167	527	327	532	13,266

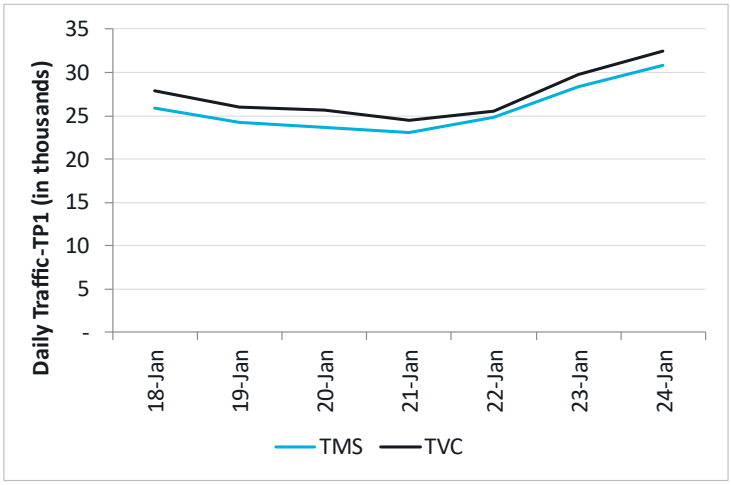
Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.21 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those days, as provided by the Client.

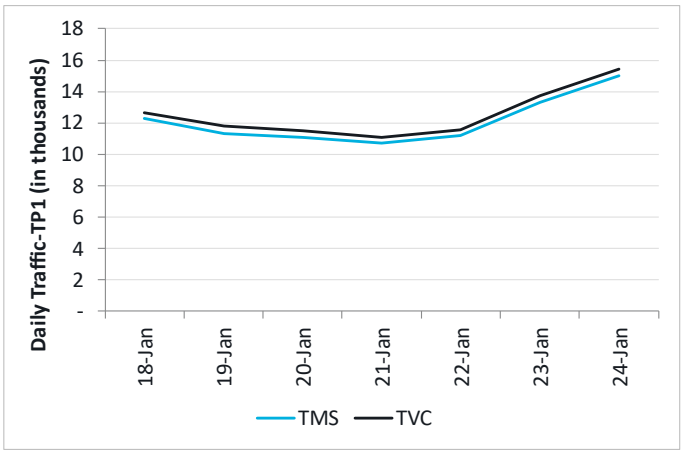
3.22 The following figures show the comparison between the daily traffic observed by TVC and TMS for the four toll plazas. As can be seen from the figures, the overall difference between TVC and TMS over the week for the four toll plazas is within the acceptable range of variation.

Figure 3-9: Comparison between TVC and TMS daily traffic data on TP1



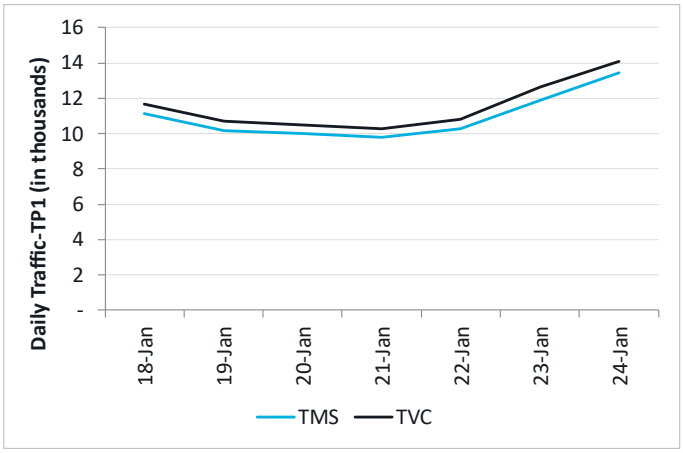
Source: Steer analysis of TVC and Client TMS data

Figure 3-10: Comparison between TVC and TMS daily traffic data on TP2



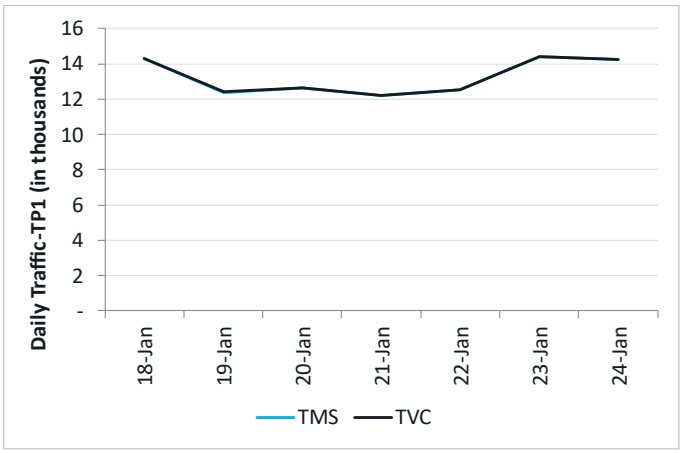
Source: Steer analysis of TVC and Client TMS data

Figure 3-11: Comparison between TVC and TMS daily traffic data on TP3



Source: Steer analysis of TVC and Client TMS data

Figure 3-12: Comparison between TVC and TMS daily traffic data on TP4

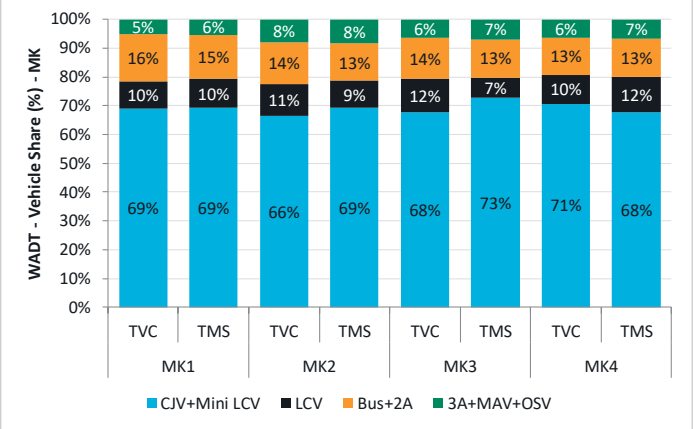


Source: Steer analysis of TVC and Client TMS data

3.23 The figure below compares the shares of vehicle types at four toll plazas observed by the TVC and TMS data. As can be seen, whilst the share of CJVs and 3A+MAV+OSV is marginally higher for TMS compared to TVC, it is equal for Bus/2A and lower for LCV

category. This difference can be attributed to common misclassification of vehicle categories.

Figure 3-13: Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.24 Considering the smaller variation between the TVC and TMS data for the largest revenue generator 3A+MAVs, and an overall match in the traffic volumes, our TVC-TMS analysis gives us confidence that the base year traffic calculated using the Client data forms a reliable base year traffic estimate.

Key findings of origin-destination analysis

Overview

3.25 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. As mentioned previously, the OD analysis presented here has been based on the data collected on 30th Jun – 1st July 2023 for TP1: Kappalur and TP3: Salaipudhur and surveys performed in previous studies for TP2: Etturvattam and TP4: Nanguneri.

3.26 We have analysed the regional drivers of demand based on the following analyses:

Zonal influence
Commodity distribution
Top OD pairs
Trip length distribution

3.27 While zonal analysis and the list of top OD pairs help to understand ‘where’ people and goods travel, commodity distribution sheds light on ‘what’ goods get transported. Trip length distribution shows ‘how far’ vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.28 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TMS data) during the same time period. The table below presents the sample rates for passenger and goods vehicle type

aggregations at the toll plaza. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3.22: Sample rates for OD data

Vehicle type	TP1 Kappalur	TP2 Etturvattam	TP3 Salaipudhur	TP4 Nanguneri
Passenger (CJV+Bus)	43%	27%*	41%	57%
Goods (LCV+2A+3A+MAV)	78%	31%*	68%	52%

Source: Steer analysis of OD data, *The surveys took place during the COVID-19 pandemic due to which the vehicles were reluctant to stop and answer the enumerators leading to lower sample rate.

Zone Categories

3.29 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in the table below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Asset being studied.

Table 3.23: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI (Immediate Area of Influence)	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of Tamil Nadu (TN)	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Kerala	Kerala
Karnataka	Karnataka
AP & Telangana	Andhra Pradesh and Telangana
North India	Uttarakhand, Haryana, Punjab, Jammu and Kashmir etc
West India	Gujarat and Maharashtra
East & Northeast India	West Bengal, Orissa, Jharkhand and Northeast Indian states
Central India	Madhya Pradesh

Source: Steer analysis

Zonal Influence

3.30 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence[10] at each toll plaza of each Asset,

[10] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad would

based on zonal aggregation listed in the previous sub-section. it should be noted that zonal influence is analysed on trip ends and not trips.

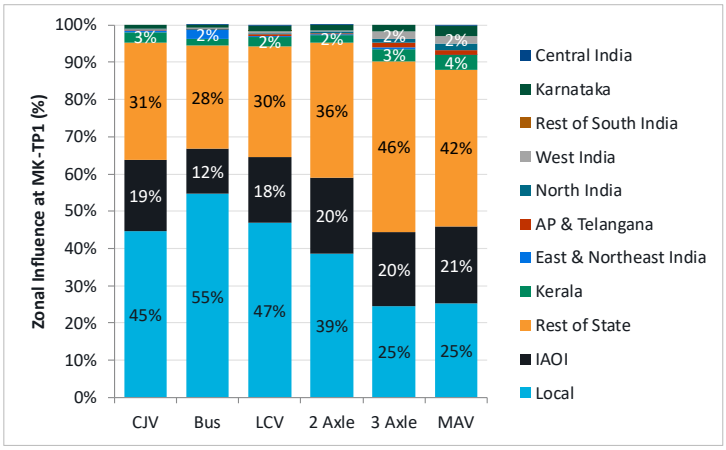
3.31 It is seen that the local, IAOI, and Rest of TN zonal shares - constitute the majority of zonal influence for all vehicle types – with more than 95% for CJVs to about 85% for MAVs. As expected, heavier vehicles have more movement to/from the rest of the state and country. This analysis is further supported by the top 10 OD pairs, given in the appendix which show that the majority of the trips originate and end in areas which are in either of the three zonal categories mentioned above.

3.32 As can be seen from the following figures, at TP1 Kappalur (Figure 3-14), there is a higher share of Rest of State trips for both the passenger and commercial vehicles wherein Local and IAOI zones combined such as Madurai, Tirumangalam, Virudhunagar etc have the greatest influence on CJV, Buses, with around 50-55% of the total share. These shares decrease with axle numbers, indicating that majority of the local movement is led by smaller vehicles. There is also a significant influence on the heavy goods traffic from areas in rest of the state like Tirunelveli, Chennai, Kanyakumari and Coimbatore with 55% and 53% influence on 3A and MAV traffic respectively.

3.33 Going from Kappalur towards Nanguneri (Figure 3-17), the local zones have decreasing influence while IAOI and rest of Tamil Nadu zones have increasing influence. This is understandable given that the southern stretch of the Asset has more urban villages and towns located further away from the highway. For example, at TP2 Etturvattam (Figure 3-19) and TP4 Nanguneri (Figure 3-17), more than 50% of the zonal influence across all vehicle categories are from areas in the rest of the state and at TP3 Salaipudhur (Figure 3-16), majority of the influence on traffic is from Rest of State zones across categories with 72% and 67% influence on 3A and MAV traffic respectively.

3.34 Outside Tamil Nadu, areas in Kerala such as Thiruvananthapuram has the highest influence of about 5-6% on traffic across all toll plazas because the Asset connects the southern part of Tamil Nadu to Kerala, wherein Thiruvananthapuram and Kanyakumari districts are culturally and economically connected cities with inter-urban traffic movements.

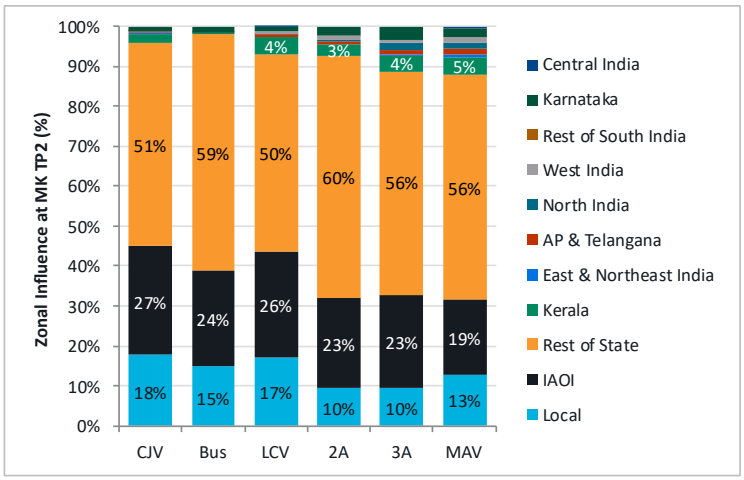
Figure 3-14: Zonal influence at TP1 Kappalur



be 50% since one end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

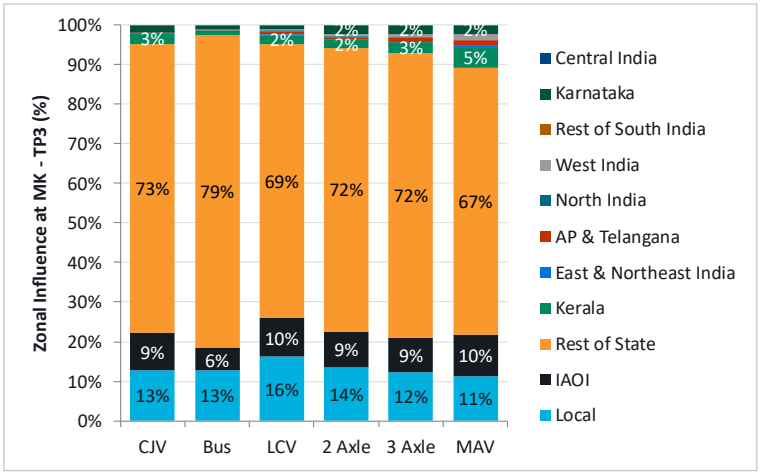
Source: Steer analysis of OD data

Figure 3-15: Zonal influence at TP2 Etturvattam



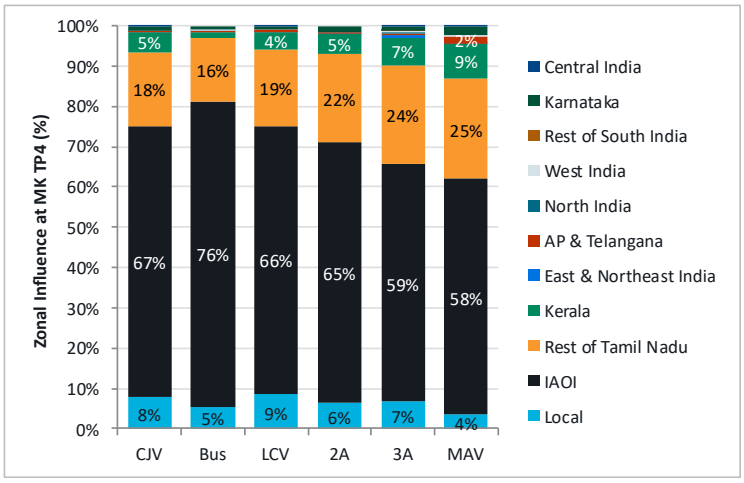
Source: Steer analysis of OD data

Figure 3-16: Zonal influence at TP3 Salaipudhur



Source: Steer analysis of OD data

Figure 3-17: Zonal influence at TP4 Nanguneri



Source: Steer analysis of OD data

Internal External analysis

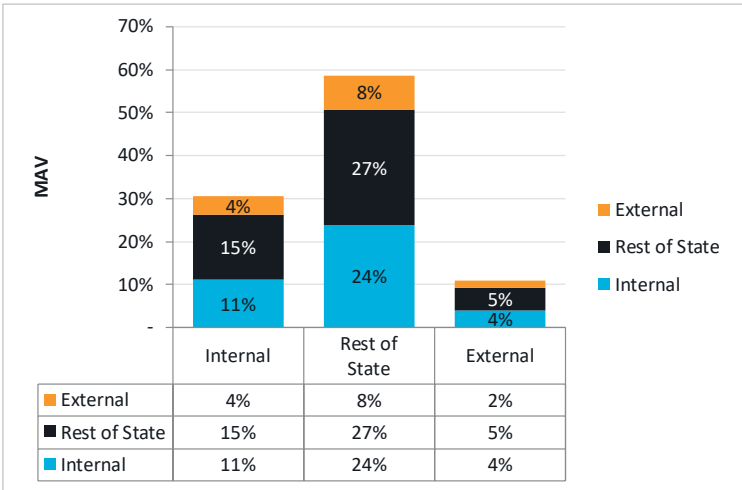
3.35 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e. through trips (External-External or E-E). RoS here represents areas within the state which are neither local or IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e. lying on the Asset, while 'External' zones are areas lying outside the state.

3.36 The figures below shows the distribution of trips based on these categories. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation.

3.37 In line with our understanding from zonal influence analysis above and site visits, it is seen that a significant number of trips either originate and end internally i.e., within local or IAOI zones or have at least one end of the trip in rest of state with very less external to external movement of traffic on the Asset across all toll plazas.

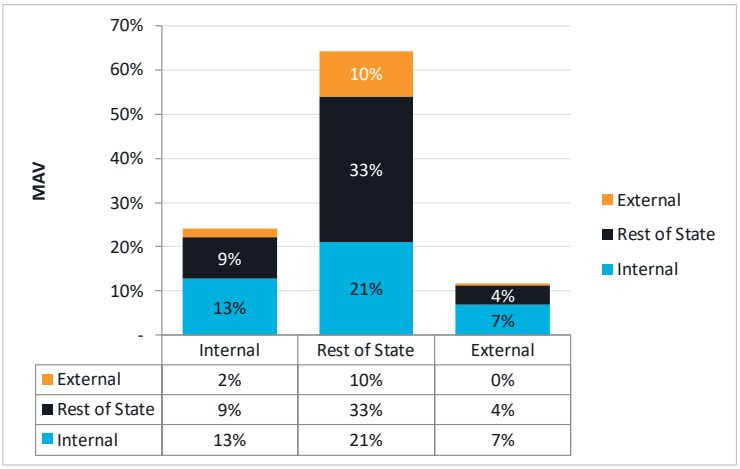
3.38 At TP1 Kappalur (Figure 3-18), more than 50% of the passenger trips are Internal-Internal with this share decreasing for the goods vehicle traffic wherein the majority of the trips originate in and are destined towards areas in the rest of the state like Chennai, Coimbatore, Tirunelveli etc. This share is even higher at TP2 Etturvattam (Figure 3-19) wherein RoS-RoS trips are the highest across all vehicle categories. At TP3 Salaipudhur (Figure 3-20) and TP4 Nanguneri (Figure 3-21), apart from the high I-I movement seen especially in passenger traffic, the goods vehicle traffic sees a high number of trips originating from RoS and ending at internal areas near the Asset.

Figure 3-18: Internal-external distribution at TP1 Kappalur



Source: Steer analysis of OD data

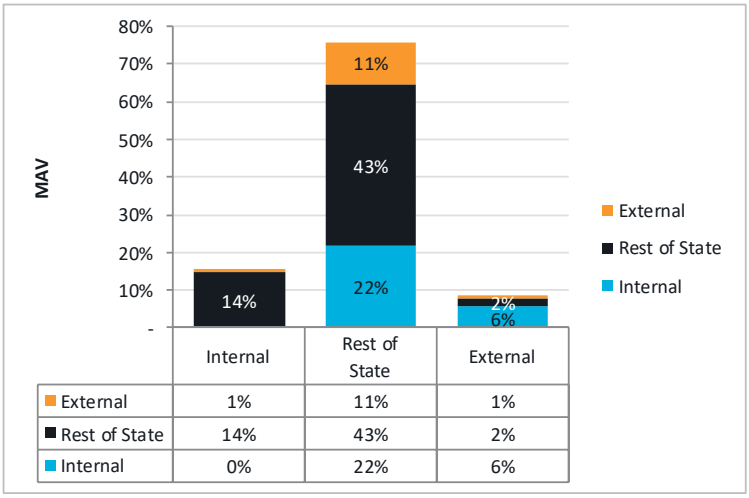
Figure 3-19: Internal-external distribution at TP2 Etturvattam



	Internal	Rest of State	External
External	2%	10%	0%
Rest of State	9%	33%	4%
Internal	13%	21%	7%

Source: Steer analysis of OD data

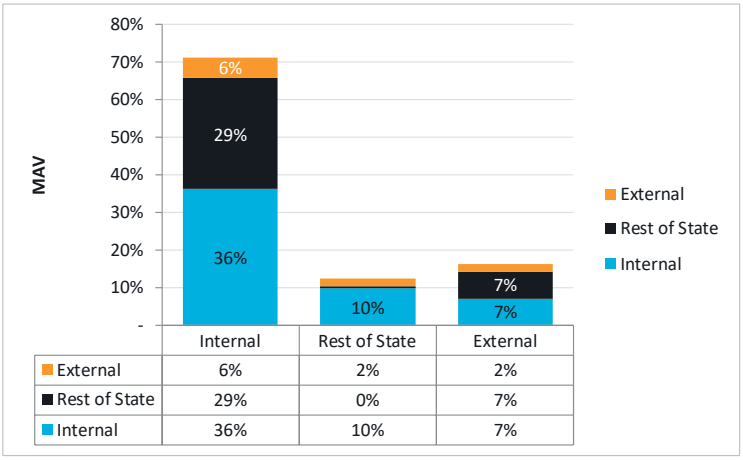
Figure 3-20: Internal-external distribution at TP3 Salaipudhur



	Internal	Rest of State	External
External	1%	11%	1%
Rest of State	14%	43%	2%
Internal	0%	22%	6%

Source: Steer analysis of OD data

Figure 3-21: Internal-external distribution at TP4 Nanguneri



	Internal	Rest of State	External
External	6%	2%	2%
Rest of State	29%	0%	7%
Internal	36%	10%	7%

Source: Steer analysis of OD data

Commodity distribution

3.39 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the table below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane,Maize etc.)	AGR	AGR
Cattle Food / Live Stock (sheep, ghoat, cow,cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread,cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids,Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood,Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, House hold items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

Source: Steer analysis

3.40 The commodity analysis from the OD data shows that overall manufacturing items is the main commodity item being carried on the Asset across all toll plazas followed by agricultural and grocery items. Also, construction goods seem to be a key commodity that is carried by MAVs especially at TP3 Salaipudhur wherein about 33% of the MAVs transported construction material including cement on the Asset. The high commodity share of manufacturing items could be attributed to the presence of several industrial estates along the Asset such as the Tamil Nadu Small Industries Corporation (SIDCO)

industrial estate at Kappalur, industrial city of Tuticorin and an industrial estate in Gangaikondan, Tirunelveli.

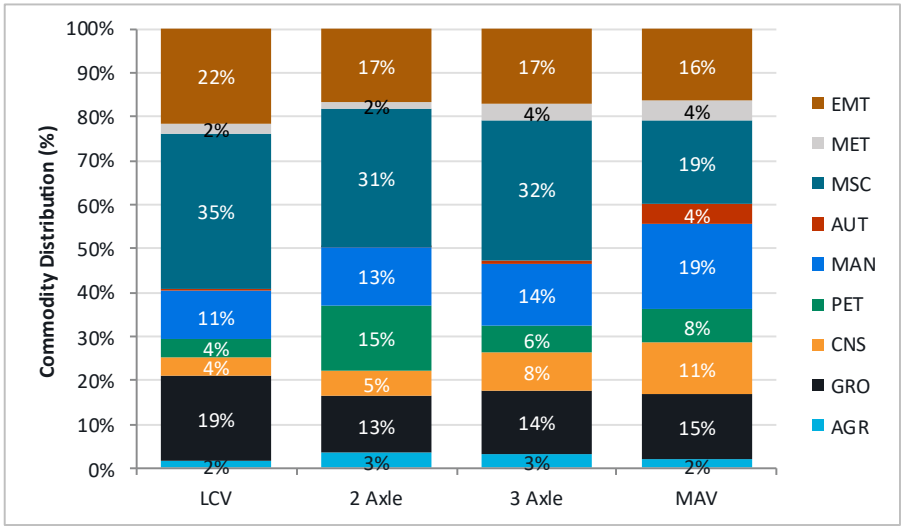
3.41 At TP1 Kappalur (Figure 3-22), manufacturing items such as medicines, machine parts, paint etc is key commodity carried by both light and heavy goods vehicle making up for ~10-20% share across all vehicle categories. Direction wise, it is seen that a significantly higher share (13%) of MAV carry construction goods in the direction of Tirunelveli compared to those moving towards Madurai which could be attributed to the presence of India Cements plant just north of Tirunelveli and Ramco Cements near Virudhunagar. Also 22% of MAV carry manufactured good towards Tirunelveli, which is much higher than the proportion (13%) in the opposite direction. This difference is attributable to the presence of the warehouses and SIDCO industrial estate in the vicinity of TP1 Kappalur. This also stems from the connectivity provided to the Thoothukudi port from Tiruneveli.

3.42 At TP2 Etturvattam (Figure 3-23), grocery items such as biscuits, juice, sweets and other household items make up for the top commodity item that is carried by both the light and heavy goods vehicle with a 17% share for MAV and 22% share for 3A traffic, given the proximity of highly urbanised cities such as Madurai, Virudhunagar, Tirunelveli making up for the regional consumption demand. Direction wise, a relatively higher share of MAVs (more than 30%) moving towards Kanyakumari carried cement compared to those moving in the direction of Madurai.

3.43 At TP3 Salaipudhur (Figure 3-24), miscellaneous goods like household items are at the top of the commodity mix for light good vehicles and 3A traffic, however, one-third of the MAV traffic is dedicated towards carrying construction materials given the proximity of the toll plaza to cement plants nearby. Direction wise, there is a higher share of light good vehicles carrying agriculture and grocery items in the direction of Kanyakumari with around 39% of the MAV carrying construction goods. A larger share of light good vehicles show a considerable share of empty vehicles travelling towards Madurai, given the regional and short- to medium-distance movement of commodities.

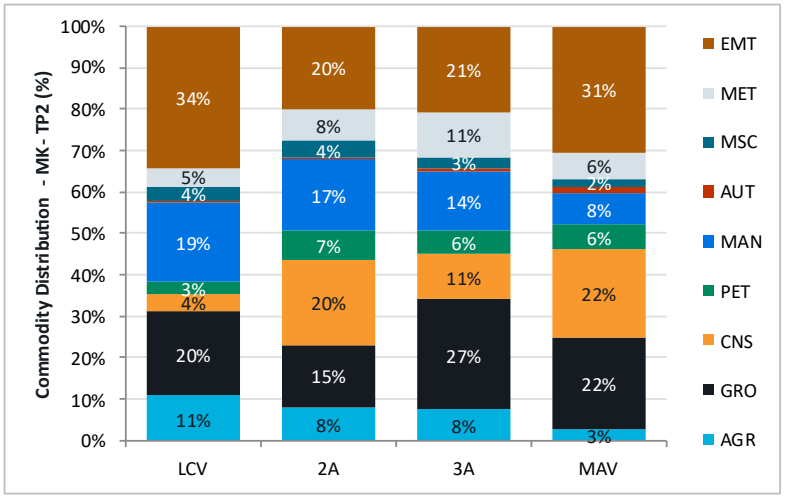
3.44 At TP4 Nanguneri (Figure 3-25), agriculture items are the top commodity category for light good vehicles whereas manufacturing items, cement and construction items make up for a high share in the overall commodity mix for 3A and MAV traffic. Direction wise, there is a relatively higher share of heavy goods traffic carrying cement, agriculture items and construction material in the direction of Kanyakumari and a very high share of empty light and heavy goods vehicle moving in the direction of Madurai.

Figure 3-22: Commodity distribution at TP1 Kappalur (Total)



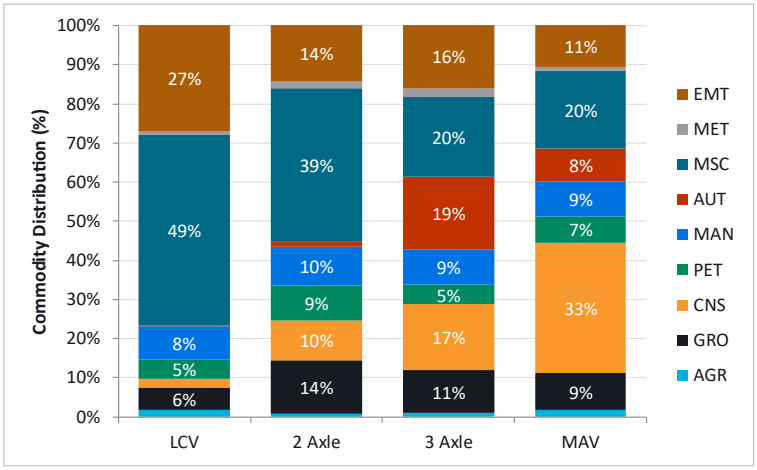
Source: Steer analysis of OD data

Figure 3-23: Commodity distribution at TP2 Etturvattam (Total)



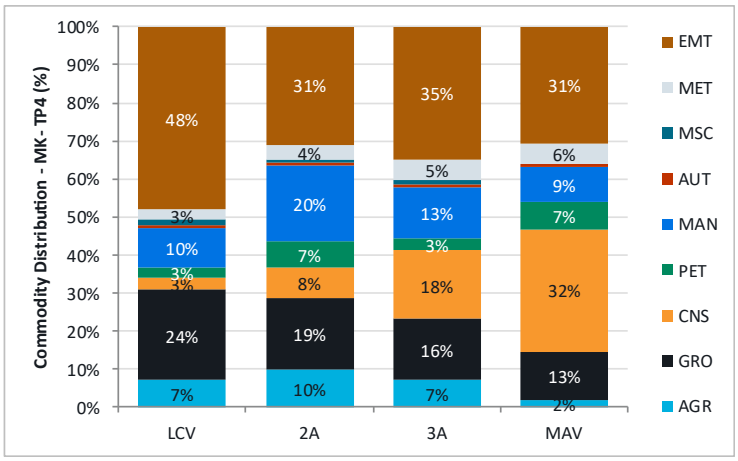
Source: Steer analysis of OD data

Figure 3-24: Commodity distribution at TP3 Salaipudhur (Total)



Source: Steer analysis of OD data

Figure 3-25: Commodity distribution at TP4 Nanguneri (Total)



Source: Steer analysis of OD data

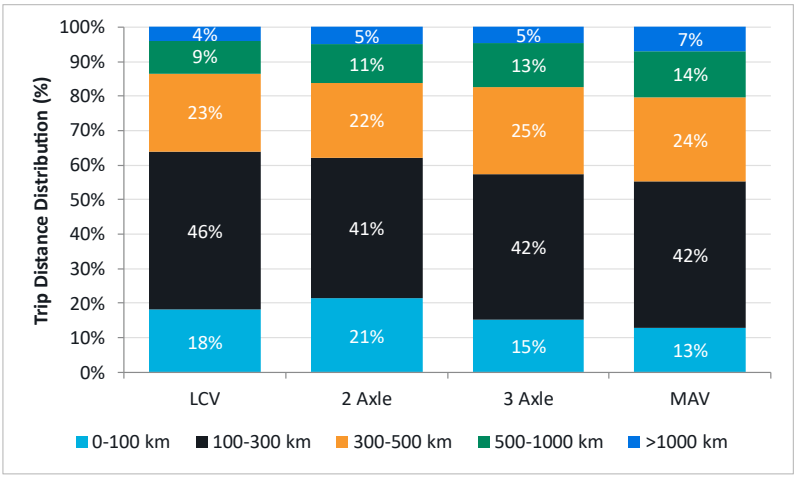
Trip length analysis

3.45 Trip-length distribution provides the distance-based profile of various vehicle types. This aids in validating assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into 5 groups – local (0-100km), short-distance (100 - 300 km), medium-distance (300 – 500 km), long-distance (500-1000 km), and very-long distance (+1000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[11]

3.46 Supporting the observations made in zonal & internal-external analysis in the previous sections, the figure below highlights, contributing to local movements on the Asset. The major proportion of the heavy goods traffic covers longer distances of 300-500 km and 500-1000 km to places such as Tirunelveli, Chennai, Coimbatore etc. Across all the plazas, 6-9% of MAV travel long distance over 1000kms.

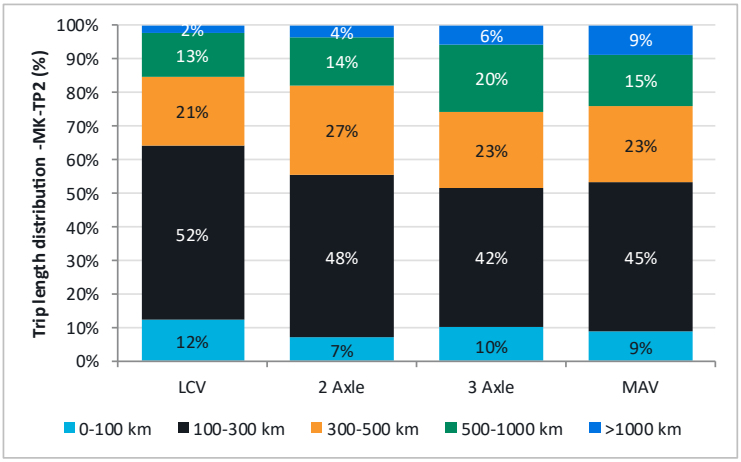
[11] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3-26: Trip length distribution TP1 Kappalur



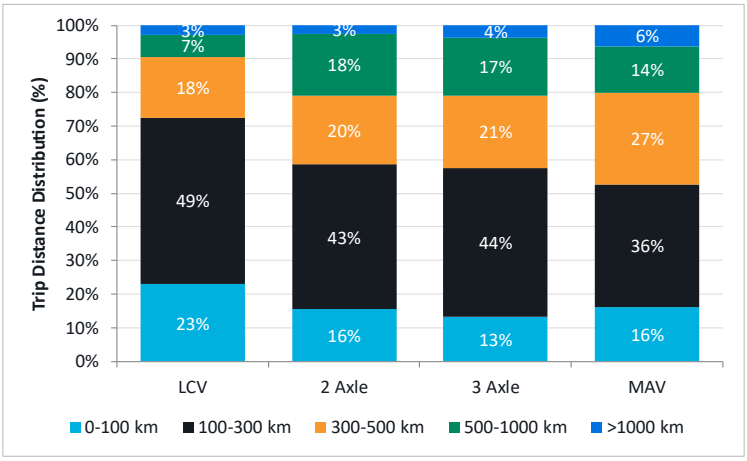
Source: Steer analysis of OD data

Figure 3-27: Trip length distribution TP2 Etturvattam



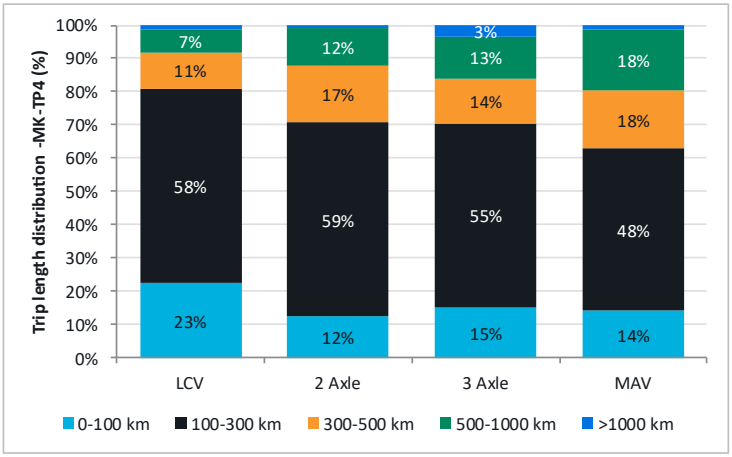
Source: Steer analysis of OD data

Figure 3-28: Trip length distribution TP3 Salaipudhur



Source: Steer analysis of OD data

Figure 3-29: Trip length distribution TP4 Nanguneri, 2021



Source: Steer analysis of OD data

Conclusions

3.47 Traffic on the Asset is dominated by CJVs which make up approximately 70% of the total vehicle composition at every plaza, with the rest dominated by buses, 2As and LCVs – the last two being the dominant goods vehicle type carrying regional movement of goods on the Asset. Heavy goods vehicles (3As and MAVs) make up a small but considerable share of the total traffic.

3.48 CJVs, having the highest share in vehicle proposition, and contribute the maximum in the revenue as well. Across all the plazas, CJVs make up around 45% of the total revenue with MAVs contributing to 16-21% to the total share (Historical Revenue)

3.49 In terms of ticket segmentation, the share of single journeys has reduced across the categories as the share of return journey tickets increased. For MAVs, Single tickets have remained dominant on the asset – with TP1 holding a share of ~80% in FY26YTD, TP2 with a share of 62%, TP3 with a share of 60%. At TP4, the share of single tickets has remained stable at 46%, with return tickets dominating at 53% in FY26YTD. The proportion of exemptions has remained similar historically at each plaza. The Asset observes 4%-12% exemptions for CJVs, with the highest of ~12% being at TP1 Kappalur due to its proximity from urban cluster Madurai having high local influence.

3.50 As a part of previous study, the TVC data shows minor variation on the TMS data, where at a total level, the TVC data is approximately 3% higher than the TMS data. This gives us confidence that the base year traffic calculated using the Client traffic data forms a reliable base year traffic estimate.

3.51 The OD analysis found that in terms of zonal influence, at TP1 Kappalur, local and IAOI zones have the greatest influence on CJV, Buses and LCV and as we towards the southern part of the Asset (to Nanguneri), the local zones have decreasing influence while IAOI and rest of Tamil Nadu zones have major influence on the traffic, especially the heavy goods vehicles. Outside Tamil Nadu, Thiruvananthapuram in Kerala has the most significant influence given its cultural connection with Kanyakumari and the resultant inter-urban traffic movements.

3.52 The key commodity transported on the Asset across all four toll plazas is manufacturing items such as medicines, machine parts, electronics etc followed by agricultural and

grocery items. Also, MAV's carrying cement make up for a very high share of traffic on the Asset especially at TP3 Salaipudhur given the proximity to cement plants such as India Cements plant just north of Tirunelveli and Ramco Cements near Virudhunagar.

3.53 The internal and external distribution highlights that majority of trips either originate and end internally i.e within local or IAOI zones or have at least one end of the trip in RoS with very less E-E movement of traffic on the Asset across all toll plazas. This is further supported by the trip length distribution analysis which shows that between 60-70% of the passenger traffic travel shorter distances of up to 300 km, contributing to local movements on the Asset whereas most of the heavy goods vehicle travel longer distances of 300-500km and 500-1000 km to places such as Tirunelveli, Chennai, Coimbatore etc with very few longer external movements to places such as Mumbai, Uttar Pradesh and Hyderabad. Overall, the OD analysis shows that the Asset has significant inter-urban traffic and regional economies of wind, cement and industrial estates providing captive traffic.

3.54 To understand the overall change in the growth drivers and travel pattern, we compared our 2023 OD results with one conducted in 2021 as a part of previous studies. It was observed that currently on TP1, the share of empty across 2A, 3A and MAV have reduced by ~5-10%. While the share of miscellaneous items parcels courier and automobiles have witnessed increase at TP1. Similar trends are observed on TP2. Other commodities including construction, manufacturing, agriculture and groceries have similar shares. Same is validated through zonal analysis where the share of local trips across vehicles categories have shifted ~5-10% from Outside Tamil Nadu share. However, on TP3 Salaipudhur being further way from the urban centre Madurai observed traffic shift from local to rest of state with reduced share of 30% in 2023.

4 Socio economic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the roads are in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions in the region where the Asset is located and the country. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and
- Other local factors such as strategic port growth, and growth in local industries near the Asset.

4.2 In turn, the change in the relative competitive position of the Asset (and thus of the traffic capture they can achieve) derives from how the relative offer for the roads changes, i.e. the service offered, and the tolls charged on the project roads, in comparison to that on competing roads; and whether any competing road facilities are planned.

4.3 In this chapter, we have assessed the trends of the above growth drivers, as indicators of the socio-economic conditions in the regions surrounding the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in Tamil Nadu state, where the Asset is located.

National level

4.5 Table 4.1 below shows that the total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in the table below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

	CAGR		
Years	**Total Population (m)**	**Rural Population (m)**	**Urban Population (m)**
1970 – 1985	2.3%	1.9%	3.8%
1985 – 2000	2.0%	1.7%	2.9%
2000 – 2015	1.5%	1.0%	2.6%

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth.

State level

4.6 Table 4.2 shows the evolution of population in Tamil Nadu state, compared to that of the country. The CAGR of population in Tamil Nadu has been considerably slower vis-à-vis that of India.

Table 4.2: Population Growth in Tamil Nadu and India (2012 – 2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Tamil Nadu	72.43	76.93	**0.5%**
India	1210	1,395	**1.2%**

Source: Ministry of Statistics and Program Implementation estimates

4.7 Due to the complexities of the patterns in which urbanisation takes place, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide a socio-economic context of the state/trends in the regions in which the Asset is located.

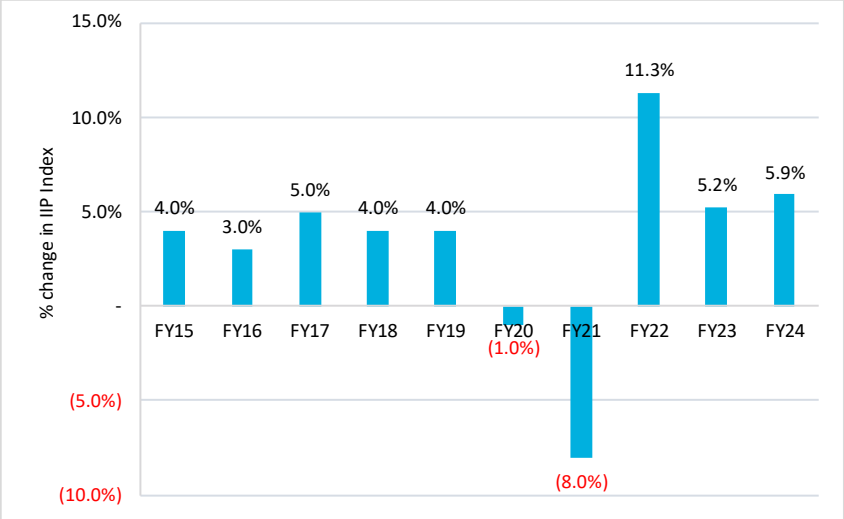
Economic Indicators

Industrial Production

4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.9 As can be seen in Figure 4-1 below, at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. However, with the gradual opening up of economy post the pandemic, and recovery in consumption demand, industrial activity also recovered with time with IIP recording growth of 5% in FY23 and 6% in FY24.

Figure 4-1: Annual growth - Index of Industrial Production



Source: Steer Analysis of MoSPI

4.10 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. We however, do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Vehicle ownership

4.11 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[12]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled and increased at a CAGR of about 11%. The corresponding ownership rates for urban cities like Delhi, Mumbai, Bengaluru, and Chennai are over 100 cars per 1,000 people[13] (GoI 2011; MoRTH 2012). The region where the Asset lie is highly urbanised, therefore the car ownership in Tamil Nadu is expected to be higher than the India average with 50 cars per 1,000.

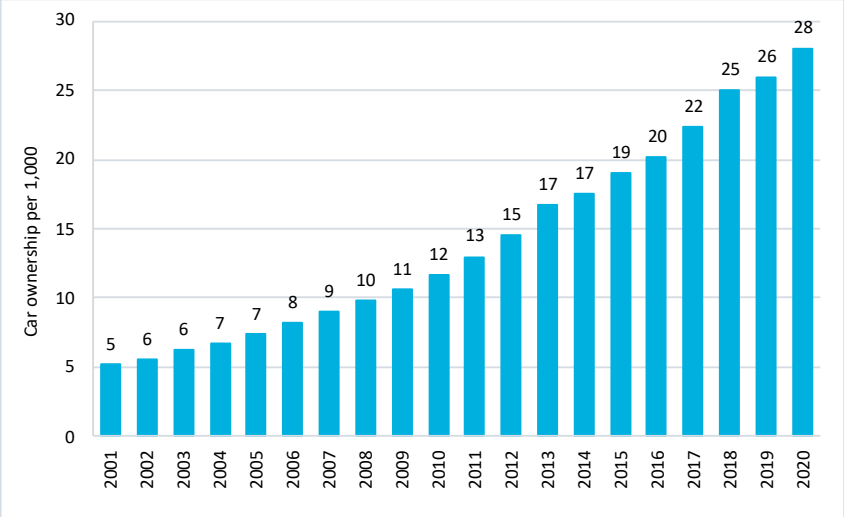
4.12 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[14]

[12] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[13] Proliferation of Cars in Indian Cities

[14] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4-2: Car ownership in India per 1,000 population



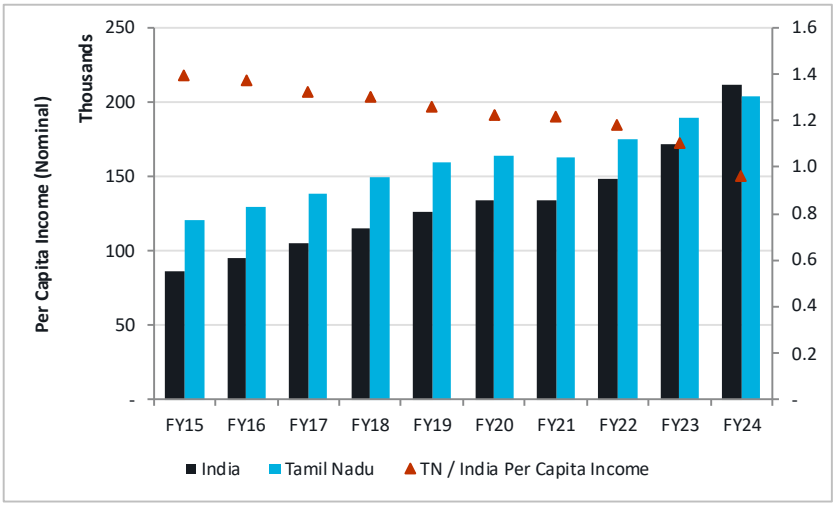
Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.13 The per capita income of the state where the Assets lies i.e., Tamil Nadu is similar as compared to the national average, however in dollar terms, PCI of just $2,000 per head indicates that the state is at a very early stage of consumption curve. Going forward, we therefore expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

4.14 However, given the difficulty in obtaining granular district level PCI data it is not advisable to use this as a growth driver. Also, the long-term forecast for PCI is not available we therefore refrain from using it to forecast traffic.

Figure 4-3: Per capita income



Source: Ministry of Statistics and Program Implementation (MoSPI)

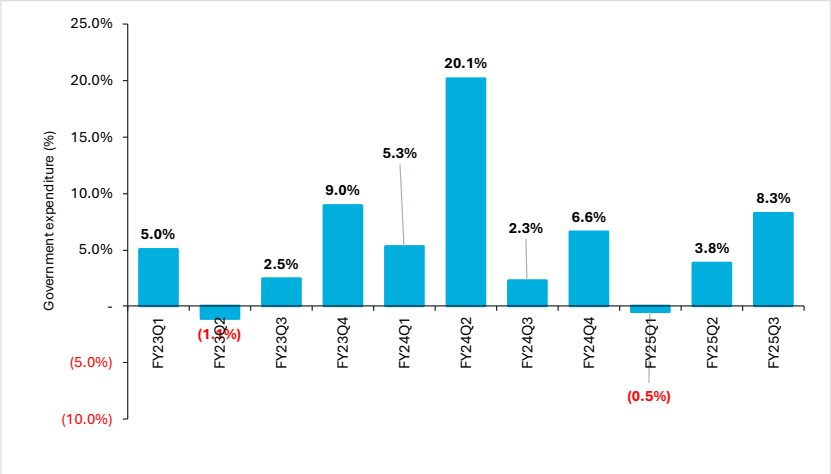
Economic growth

India's Performance

4.15 Figure 4-4 below shows that India's economic performance in Q3 of FY25 has shown signs of recovery in recent months despite slowdown experienced in FY25H1, as the latest SAE estimates released show FY25 growth rate to be 6.5%, which is lower than that observed in FY24 i.e., 9.2%.[15] This deceleration can majorly be attributed to a downturn in industrial output – specially manufacturing, electricity, and mining (as shown in Figure 4-6 below) – along with a decline in government capital expenditure in FY25 (presented in Figure 4-4).

4.16 Other contributing factors also include the impact of the 2024 general elections on central infrastructure spending, state-level fiscal constraints and rising global uncertainties such as Russia-Ukraine war and Gaza-Israel conflict which have had impact on global supply chains.

Figure 4-4: Government final consumption expenditure

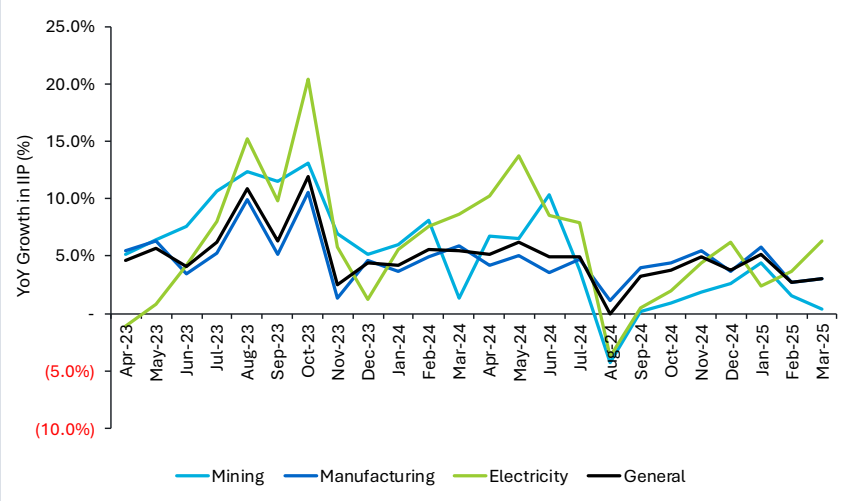


Source: Steer Analysis of MOSPI Data

4.17 Weaker industrial activity, as reflected in lower IIP (Figure 4-5) and GVA contribution (Figure 4-6), directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. At the same time, muted government capex had an influence on both construction-linked activity and industrial output which impacted the commercial traffic growth carrying construction material and industrial goods. Export oriented corridors across the country (such as the Asset) have also seen muted traffic performance in FY25 due to global supply chain disruptions and the Red-Sea crisis, with exported commodities like manufactured goods, marble, and ceramics experiencing declines as well.

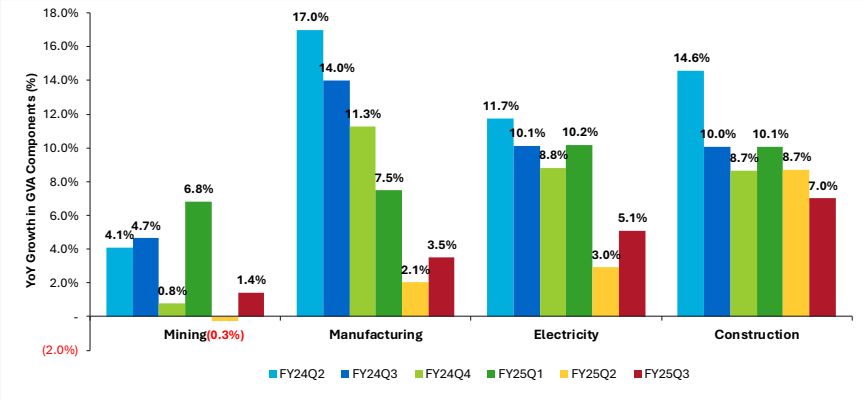
[15] Press Release:Press Information Bureau

Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

Figure 4-6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

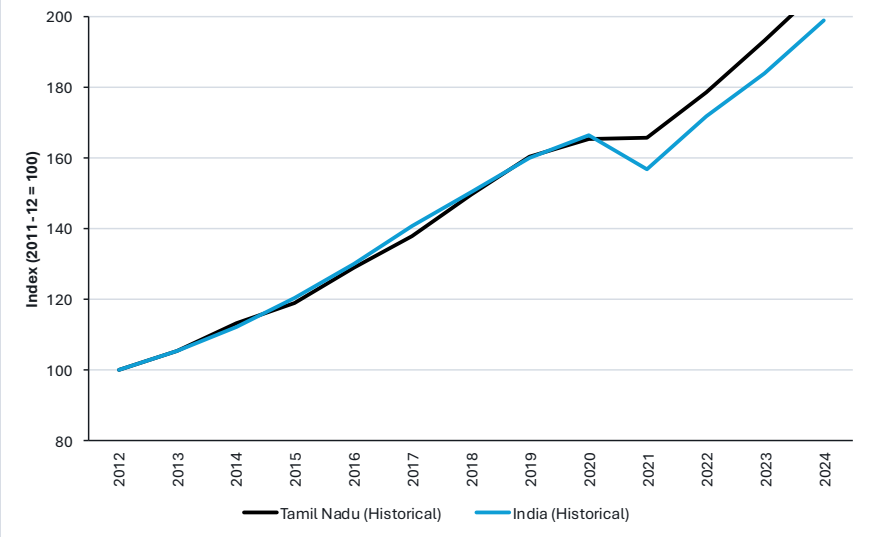
GDP and GSDP Growth

4.18 Over the period FY12-FY24, the Indian economic has grown at a CAGR of approx. 6% aided by growth in the tertiary sector which grew at a CAGR of approx. 6.9% over the same period. The economic growth of Tamil Nadu (state GSDP)[16] been faster than the country overall. Tamil Nadu's GSDP CAGR was 6.3% between FY12-24. Tamil Nadu approximately contributes 9% to the India's GDP. In terms of per capita income, Tamil Nadu has a higher per capita income than the country.

4.19 The Asset Madurai-Kanyakumari, lie in the state of Tamil Nadu. Tamil Nadu's state GSDP has historically grown at a rate that is equal or slightly lower than the national trend. The following figures illustrates the evolution of Tamil Nadu's GSDP during FY12-24.

[16] GSDP is the Gross State Domestic Product i.e., the GDP equivalent for a particular state, it is the final value of goods and services produced by a particular state

Figure 4-7: Evolution of Tamil Nadu's state GDP and National GDP, FY12-24



Source: Steer Analysis of MOSPI Data)

4.20 The official historical GDP and GSDP data for India are released by the Ministry of Statistics and Program Implementation (MoSPI). The GDP forecasts for India are available from various reliable sources such as Oxford Economics and Consensus Economics[17], but state-specific GSDP forecasts are not published by any such sources. To derive state GSDP forecasts, we rely on past trends of the relationship between GDP and GSDP and develop GSDP forecasts as a function of our assumed GDP forecasts[18].

4.21 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.22 Following the discussion in Chapter 2 on the nature of economic activity in the state of Tamil Nadu, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth. Particularly, we have based our forecast on GDP and GSDP projections provided by the Client.

National GDP

4.23 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under

[17] Consensus Economics - Economic Forecasts and Indicators

[18] Assuming that the historical long-term relationship between GSDP and GDP sustains over the short-term, we project future growth in GSDP as a function of our GDP growth forecast. We taper the relationship of GSDP growth to converge to GDP growth gradually over the long-term.

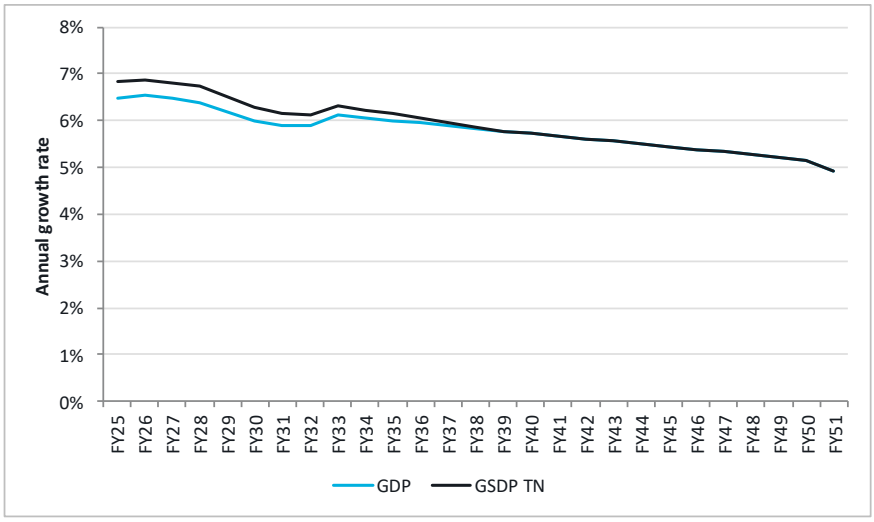
stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[19]

4.24 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21), and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 and 6.5% in FY25 (as per the SAE) before slowing down over the past year due to several domestic and external factors.

4.25 Figure 4-8 below shows Client-provided GDP projections for India. The forecast provided by the Client expects the Indian GDP to grow at 6.5% between FY25-FY27[20] and gradually tapering down to 5.2% by FY51, end of concession. The India GDP growth forecast provided by the Client is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[21] in the medium term.

4.26 The GDP-GSDP lines are expected to converge by FY38. The chart below shows the forecast growth lines for GDP and Tamil Nadu GSDP.

Figure 4-8: GDP-GSDP forecast



Source: GDP forecast provided by the Client

[19] Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu (September 2020)

[20] Based on Asia Pacific Consensus Forecasts (December 2024)

[21] Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)

5 FY26 Base Year AADT and Traffic growth Analysis

Introduction

5.1 In this section, we present our approach, assumptions, and results for base (or background) traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 While comprehensive historical data on the asset is not available, we have access to six years of records. Despite some inconsistencies, this dataset provides a reasonable foundation for analysis. As a result, statistical methods to estimate background growth relationships could not be applied. Instead, we conducted a benchmarking exercise, supported by trip length and origin-destination (OD) analysis, to derive elasticity estimates. These are discussed in detail below.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.5 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

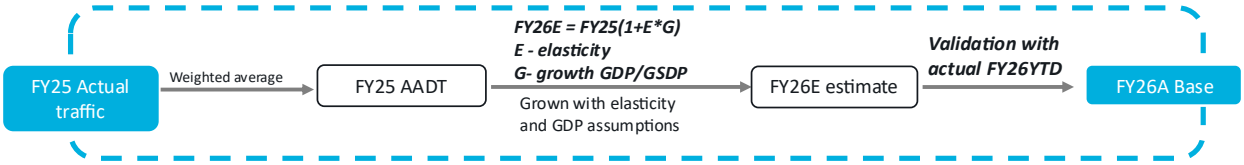
Methodology

5.6 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at estimated FY26 (FY26E).

5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April 2025 to September 2025) of FY26 (FY26YTD). The Adopted FY26 AADT (FY26A) is derived by making necessary adjustments to FY25E to reflect the outturn traffic in FY26YTD (adjusted for seasonality.

5.8 The methodology is represented using the below schematic:

Figure 5-1: FY25 Base Estimation methodology



Source: Steer Analysis

5.9 The two key inputs to estimate the base year FY26 traffic are FY25 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.10 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.11 In order to normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.12 Historical traffic data was available for all toll vehicle categories starting October 2020 up-to September 2025

5.13 The below tables present the average of FY23, FY24 and FY25 SCFs used to estimate the AADT for the four toll plazas.

Table 5.1: SCF factors for TP1 Kappalur

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.07	0.94	0.98	1.06	1.00	1.00	0.96	1.06	0.96	0.96	1.00	1.05
LCV	1.02	1.04	1.01	1.03	1.00	0.99	0.99	1.03	0.99	1.01	0.96	0.95
Bus	1.03	1.02	1.01	1.04	1.01	1.01	0.99	1.02	1.00	0.94	0.98	0.99
2A	1.00	0.99	1.08	0.99	0.99	0.97	1.03	1.05	0.96	1.02	0.99	0.97
3A	1.01	1.02	0.97	0.99	0.96	0.97	1.04	1.10	1.07	1.05	0.93	0.92
MAV	1.03	1.05	1.04	1.03	0.98	0.97	1.04	1.10	1.01	1.02	0.90	0.88

Table 5.2: SCF Factors for TP2 Etturvattam

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.07	0.89	0.99	1.12	1.03	1.03	0.97	1.07	0.94	0.90	1.00	1.07
LCV	1.02	1.03	1.00	1.02	1.02	1.01	1.02	1.05	0.99	0.99	0.95	0.93

Bus	1.04	1.01	1.04	1.08	1.03	1.01	0.99	1.01	0.95	0.89	0.98	0.99
2A	1.01	1.00	0.99	0.99	0.97	0.98	1.02	1.06	1.04	1.04	0.98	0.97
3A	1.01	1.00	0.97	1.03	0.98	0.99	1.02	1.07	1.04	1.02	0.96	0.93
MAV	1.08	1.07	1.04	1.04	1.01	1.00	1.06	1.05	0.99	0.99	0.89	0.84

Table 5.3: SCF Factors for TP3 Salaipudhur

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.05	0.88	0.98	1.10	1.02	1.03	0.98	1.09	0.93	0.90	1.04	1.08
LCV	1.02	1.01	1.01	1.03	1.01	1.00	1.04	1.06	0.98	0.98	0.94	0.93
Bus	1.05	1.00	1.06	1.10	1.04	1.01	0.97	1.01	0.94	0.88	0.98	1.00
2A	1.02	1.01	1.00	0.98	0.97	0.98	1.02	1.04	1.03	1.03	0.98	0.97
3A	0.99	1.04	0.98	1.00	0.99	0.99	1.05	1.08	1.03	1.03	0.95	0.92
MAV	1.12	1.12	1.02	1.01	0.97	0.94	1.06	1.04	1.01	1.03	0.92	0.86

Table 5.4: SCF Factors for TP4 Nanguneri

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	1.04	0.88	0.98	1.07	1.01	1.03	1.02	1.07	0.92	0.90	1.05	1.10
LCV	1.01	1.00	1.01	1.02	0.97	0.99	1.04	1.05	1.00	0.99	0.96	0.98
Bus	1.04	1.01	1.05	1.07	1.04	1.02	1.01	0.99	0.93	0.89	0.98	1.01
2A	1.02	1.02	1.01	0.98	0.93	0.96	1.02	1.03	1.02	1.04	1.00	1.00
3A	1.03	1.05	1.03	0.99	0.90	0.95	1.01	1.03	1.06	1.02	0.97	1.01
MAV	1.17	1.13	0.98	0.95	0.91	0.91	1.01	1.02	1.05	1.04	0.97	0.96

Source: Steer analysis of client shared traffic data

Adopted base estimates

Based on the above methodology and inputs, the adopted base for all toll plazas have been shown below:

Table 5.5: Adopted base estimates: TP1: Kappalur

Vehicle Category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	20,236	22,063	22,184	9.6%
LCV	1,664	1,746	1,770	6.4%
Bus	3,266	3,141	3,195	(2.2%)
2A	1,358	1,359	1,376	1.3%
3A	541	575	566	4.5%
MAV	974	1,021	1,035	6.3%
OSV	2	3	2	-
Total	**28,041**	**29,908**	**30,127**	**7.4%**
PCUs	**41,467**	**43,307**	**43,692**	**5.4%**

Source: Steer analysis; FY25 actual full year, FY26YTD includes 06 months of FY26, FY26A is adopted base for FY26

Table 5.6: Adopted base estimates: TP2: Etturvattam

Vehicle Category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	9,174	9,969	10,103	10.1%
LCV	947	963	977	3.2%
Bus	1,261	1,331	1,379	9.4%
2A	837	790	788	(5.9%)
3A	348	351	350	0.4%
MAV	826	840	869	5.1%
OSV	2	3	3	-
Total	**13,395**	**14,248**	**14,469**	**8.0%**
PCUs	**20,685**	**21,633**	**22,016**	**6.4%**

Source: Steer analysis; FY25 actual full year, FY26YTD includes 06 months of FY26, FY26A is adopted base for FY26

Table 5.7: Adopted base estimates: TP3: Salaipudhur

Vehicle Category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	8,407	9,296	9,335	11.0%
LCV	829	860	871	5.1%
Bus	1,075	1,173	1,222	13.7%
2A	760	728	731	(3.8%)
3A	315	334	333	5.8%
MAV	680	704	734	8.0%
OSV	4	4	4	-
Total	**12,070**	**13,099**	**13,231**	**9.6%**
PCUs	**18,374**	**19,645**	**19,956**	**8.6%**

Source: Steer analysis; FY25 actual full year, FY26YTD includes 06 months of FY26, FY26A is adopted base for FY26

Table 5.8: Adopted base estimates: TP4: Nanguneri

Vehicle Category	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	10,618	11,417	11,394	7.3%
LCV	780	767	764	(2.0%)
Bus	1,169	1,239	1,285	9.9%
2A	699	667	668	(4.3%)
3A	314	316	309	(1.5%)
MAV	593	704	706	19.0%

OSV	1	1	1	-
Total	**14,173**	**15,110**	**15,128**	**6.7%**
PCUs	**20,303**	**21,572**	**21,674**	**6.8%**

Source: Steer analysis: Steer analysis; FY25 actual full year, FY26YTD includes 06 months of FY26, FY26A is adopted base for FY26

5.14 The above tables depict that the FY26A estimates over the full year FY25 AADT show a 5.4%, 6.4%, 8.6% and 6.8% PCU growth for TP1 (Table 5.5), TP2 (Table 5.6), TP3 (Table 5.7) and TP4 (Table 5.8) respectively. This is driven by passenger traffic on the Asset (CJV /Buses), as well as MAVs.

5.15 Considering only CJVs, their volume in FY26A is approximately 10%, 10%, 11% and 7% above the corresponding numbers for TP1, TP2, TP3 and TP4 respectively. As previously discussed in Chapters 2 and 3, commercial traffic on the Asset is driven by the proximity to the urban centres of Madurai, Thirumangalam, Tirunelveli and Kovilpatti (which are expected to continue driving consumption demand) and the tourist hub of Kanyakumari

5.16 In terms of MAVs, the FY26A volumes are above the FY25AADT by approximately 7%, 5%, 8% and 19%. TP1 Kappalur is the nearest to the electronic and manufacturing hub of Madurai; TP2 is located close to India's first textile park in Virudhunagar; while trips at TP3 and TP4 are generated to/from the V.O.C Port in Tuticorin. MAV growth at TP3 (8%) is expected to be driven by the solar power plant in Gangakodian, to be constructed near Salaipudhur toll plaza[22]. These underlying economic factors have driven the growth of commercial vehicles on the Asset.

Estimation of background elasticities

Overview

5.17 For brownfield Asset, where sufficient historical traffic evolution is available, it is common practice to use regression model analysis to determine the relationship, expressed as elasticity, between traffic growth and key socioeconomic drivers. This relationship is then applied to assumptions of future socio-economic evolution to estimate future traffic growth.

5.18 As for the Asset under consideration, a consistent historical trend was not available. Therefore, we undertook a benchmark in order to estimate our forecast elasticities, Sources used included our understanding of the Asset, the elasticities used during the bid for TOT3 package by the client and the subsequent lender study that was undertaken by the Client. We have also undertaken a regional benchmarking against Asset having similar traffic profiles, which give us reasonable confidence the relationships proposed.

5.19 In terms of selection of growth drivers for vehicle types, in general we have assumed state GSDP as the key driving factor for the passenger traffic given this traffic is generally driven by the local economies of the cities and state containing the Asset. The heavier

[22] https://www.deccanchronicle.com/southern-states/tamil-nadu/tata-power-has-big-plans-for-gangaikondan-1824617

commercial vehicles generally ply long-distance, and the underlying growth is governed by the general economies of several states or nation as whole.

5.20 Given the nascent stage of India's logistics sector, characterized by a highly fragmented trucking industry (95% of operators owning fewer than five trucks) and low car ownership rates (30-35 per 1000 people), the forecast elasticities are projected to remain constant throughout the concession period. This assumption is grounded in historical trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away.

5.21 Table 5.9 presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.9: Identified growth drivers to model traffic growth

Vehicle type	GSDP Tamil Nadu
Car	100%
LCV	100%
Bus	100%
2A	100%
3A	100%
MAV	100%

Source: Steer

5.22 Further to developing estimates for FY25 AADT, the Asset has operational history between FY22 and FY25, proving us three years of traffic growth on the Asset. The table below summarises the volume growth across each of the vehicle categories. For this comparison we have normalised the FY22 AADT for COVID19 by adopting seasonally corrected H2FY22 as the FY22 normalised (FY22N).

Table 5.10: Passenger and Commercial growth with normalised FY22 – MK TP1

	FY22N	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	17,720	19,245	20,236	22,184	5.8%
LCV	1,528	1,563	1,664	1,770	3.7%
Bus	2,923	2,991	3,266	3,195	2.2%
2A	1,264	1,388	1,358	1,376	2.1%
3A	567	526	541	566	(0.1%)
MAV	871	911	974	1,035	4.4%
OSV	2	5	2	2	-
Total	**24,875**	**26,629**	**28,041**	**30,127**	**4.9%**
PCUs	**37,172**	**39,350**	**41,467**	**43,692**	**4.1%**
Passenger	20,643	22,236	23,502	25,379	5.3%
Commercial	2,702	2,825	2,873	2,976	2.4%

Source: Steer Analysis; Note; Passenger includes CJV and Bus traffic whereas Commercial includes 2A/3A/MAV traffic

Table 5.11: Passenger and Commercial growth with normalised FY22 – MK TP2

	FY22N	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	7,286	8,446	9,174	10,103	8.5%
LCV	793	867	947	977	5.4%
Bus	980	1,119	1,261	1,379	8.9%
2A	811	923	837	788	(0.7%)
3A	315	341	348	350	2.6%
MAV	691	772	826	869	5.9%
OSV	3	6	2	1	-
Total	**10,880**	**12,474**	**13,395**	**14,469**	**7.4%**
PCUs	**17,101**	**19,480**	**20,685**	**22,016**	**6.5%**
Passenger	8,266	9,565	10,435	11,482	8.6%
Commercial	1,818	2,036	2,012	2,006	2.5%

Source: Steer Analysis; Note; Passenger includes CJV and Bus traffic whereas Commercial includes 2A/3A/MAV traffic

Table 5.12: Passenger and Commercial growth with normalised FY22 – MK TP3

	FY22N	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	6,863	7,788	8,407	9,335	8.0%
LCV	705	767	829	871	5.4%
Bus	816	967	1,075	1,222	10.6%
2A	711	814	760	731	0.7%
3A	283	314	315	333	4.2%
MAV	494	584	680	734	10.4%
OSV	2	6	4	4	
Total	**9,873**	**11,240**	**12,070**	**13,231**	**7.6%**
PCUs	**14,997**	**17,188**	**18,374**	**19,956**	**7.4%**
Passenger	7,679	8,756	9,482	10,557	8.3%
Commercial	1,487	1712	1755	1,799	4.9%

Source: Steer Analysis; Note; Passenger includes CJV and Bus traffic whereas Commercial includes 2A/3A/MAV traffic

Table 5.13: Passenger and Commercial growth with normalised FY22 – MK TP4

	FY22N	FY24	FY25	FY26A	FY22N-26 CAGR
CJV	8,776	10,129	10,618	11,394	6.7%
LCV	749	764	780	764	0.5%
Bus	1,062	1,175	1,169	1,285	4.9%
2A	650	723	699	668	0.7%
3A	351	359	314	309	(3.1%)

	FY22N	FY24	FY25	FY26A	FY22N-26 CAGR
MAV	491	560	593	706	9.5%
OSV	3	2	1	1	
Total	**12,081**	**13,711**	**14,173**	**15,128**	**5.8%**
PCUs	**17,730**	**19,912**	**20,303**	**21,674**	**5.1%**
Passenger	9,838	11,303	11,787	12,679	6.5%
Commercial	1,492	1,642	1,605	1,683	3.1%

Source: Steer Analysis; Note; Passenger includes CJV and Bus traffic whereas Commercial includes 2A/3A/MAV traffic

5.23 The growth rates at a PCU level between FY22N and FY26A has been 4.7%, 7.5%, 8.1% and 5.6% at TP1, TP2, TP3 and TP4 respectively.

5.24 The sections below detail out the reasoning for selection of respective growth driver(s) for each vehicle category. We have looked at the last 3-4 years historical growth on the Asset across each vehicle category based on which we have arrived at the growth assumption of the Asset.

5.25 In recent historical traffic performance across national highway corridors, a notable trend has emerged: there is a discernible shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in the Assets FY23 and FY24 performance as well, which has been discussed in detail in the subsequent sections. Because of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP.

Table 5.14: Elasticity recommendations for the Asset

Vehicle Category	Proposed	Growth Driver	Comments
CJV	TP1, 2 and 3: 1.1 TP4: 1.0	GSDP Tamil Nadu	Primarily inter-urban/local movements between Madurai, Tirunelveli, Virudhunagar, Sivakasi, Nagercoil/KK. Since Madurai has higher urban density, we grow TP1, 2 and 3 Kappalur at higher elasticity of 1.1 compared to 1.0 at TP4.
Mini LCV	TP1-4: 0.6	GSDP Tamil Nadu	Primarily inter-urban/local movements between Madurai, Tirunelveli, Virudhunagar, Sivakasi, Nagercoil/KK. Historical growth observed is similar to LCVs on all plazas hence the same elasticity is assumed as LCVs.
Buses	TP1-4: 0.4	GSDP Tamil Nadu	Mix of public and private inter-city buses, with a higher share of public buses at TP1 Kappalur. Tamil Nadu has a high volume of mofussil and intercity buses serving public transport demand. As the cities and towns grow and become more urbanised, the buses are also expected to respond to the increasing demand however at a 0.4 relationship to GSDP. This is higher than low bus-volume regions in other parts of the country.

Vehicle Category	Proposed	Growth Driver	Comments
LCV	TP1-4: 0.5	GSDP Tamil Nadu	LCVs and 2As are the major goods vehicle types and are expected to have the highest growth amongst goods vehicle types. As discussed in Chapter 3, the trip lengths of LCV and 2A category (more than 50%) are predominantly short distance, confirming the understanding that the movements cater to regional demand. Considering the above observations, and our experience across other toll roads in the region, we believe that elasticities of 0.6 with respect to state GSDP are considered reasonable.
2A	TP1-4: 0.6	GSDP Tamil Nadu	
3A	TP1-4: 0.3	GSDP Tamil Nadu	3As and MAVs cater to both regional and long-distance movement of a wide range of consumption-based commodities. Most of the traffic is within 1000km and more than 85% of trips are within the State. Given TN is an industrialised state, and the region is particularly more developed and has consumption-driven traffic, we have considered elasticities of 0.3 for 3As at all toll plazas, 0.7 for MAVs at TP1 and 0.6 for MAVs at TP 2, 3 and 4
MAV	TP1: 0.7 TP2, 3 and 4: 0.6	GSDP Tamil Nadu	

Source: Steer Analysis

6 Forecast: Network overlays and forecasts

Introduction

6.1 Following the discussion on our forecast of background growth rates in the previous chapter, this chapter first covers the forecasting assumptions around base year AADT and potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to forecast revenues as derived from forecast traffic. In the final section, this chapter summarises traffic growth rates for the forecast years.

Analysis of potential network/developmental impacts

6.2 This section details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed in previous Chapters, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

6 laning LOS improvement

6.3 As per the concession agreement as soon as the Asset hits 40,000 PCUs the Asset is eligible for capacity augmentation. The PCU level need to be maintained above the 40,000 levels for 3 consecutive years and 2 years will be earmarked for DPR preparation. After that a three-year period is factored in for construction, during which the Year 1 of construction toll rates will be maintained at 75% and will remain flat at 75%. After the construction is over the toll rates will be calculated as normal, as they should have been in that year.

6.4 The improvement in Level of Service (LOS) is observed exclusively at Toll Plazas TP1 and TP4. Capacity thresholds at these locations are projected to be exceeded in FY25 and FY39, respectively. Based on the forecast and the methodology outlined above, the LOS improvements are expected to take effect from FY33 for TP1 and FY48 for TP4.

6.5 A comparison of generalised journey costs (GJC) provides how different elements of cost and time affect traffic. This comparison was done for both light and heavy vehicles. Lower GJCs correspond to higher induced traffic. Based on Steer's studies and research in India, we have found that for every 1% reduction in the GJCs, the traffic increases by a factor of 0.3. We then applied the difference of GJCs to the elasticity of 0.3 to get net influence on the traffic.

6.6 The improvement in travel costs or GJC is translated into the impact on share of local + IAOI OD movements. Therefore, the GJC influence is applied on the corresponding shares of local traffic, which were extracted from OD data.

6.7 Table 6.1 and Table 6.2 show the extent of the LOS impact and the expected timelines of the impact on the Asset.

Table 6.1: Impact of 6 laning LOS improvement for TP1 Kappalur

Vehicle category	FY33
CJV	1.2%
LCV	1.0%
2A	1.1%
3A	0.9%
MAV	0.7%

Source: Steer analysis

Table 6.2: Impact of 6 laning LOS improvement for TP4 Nanguneri

Vehicle category	FY48
CJV	1.3%
LCV	1.0%
2A	1.1%
3A	0.9%
MAV	0.7%

Source: Steer analysis

Madurai-Kollam (NH744 Upgrade)

6.8 NH 744 between Madurai and Kollam is getting upgraded to 4-lane which would lead to attractiveness of alternate route compared to this Asset. Medium to long distance trips from Madurai and north destined towards Thiruvananthapuram and regions close by are expected to be influenced from this improvement in level of service. This impact would only be TP2 and TP3 as the traffic taking NH744 would appear on TP1 and then take a deviation towards the NH744. The impact would not appear on TP4 as the traffic destined towards Thiruvananthapuram and regions close by currently take a deviation post TP3 and do not appear on TP4. The status of the alternative is that it is currently undergoing 4 laning work on the stretch between Madurai and Rajapalayam while the other stretches have had their DPR prepared.[23]

Table 6.3 Impact of Madurai- Kollam for TP2 Etturvattam

Vehicle category	FY28	FY29 onwards
Staging	*50%*	*100%*
2A	(1.0%)	(1.9%)
3A	(1.9%)	(3.8%)

[23] NH744: Union Minister urges swift action

MAV	(1.3%)	(2.7%)

Source: Steer analysis, Full impact will be applicable from FY29, while impact will be applicable in a phased manner from FY28.

Table 6.4 Impact of Madurai- Kollam for TP3 Salaipudhur

Vehicle category	FY28	FY29 onwards
Staging	*10%*	*20%*
2A	(0.2%)	(0.4%)
3A	(0.4%)	(0.8%)
MAV	(0.3%)	(0.7%)

Source: Steer analysis, Full impact will be applicable from FY29, while impact will be applicable in a phased manner from FY28

Figure 6-1: Madurai Metro proposed and alignment of NH744

Source: Steer Cartography

Madurai Metro

6.9 Chennai Metro Rail Ltd. (CMRL) proposed to build a mass rapid transit system (MRTS) in the form of Madurai Metro. As per the latest updates in public domain, CMRL received the Detailed Project Report (DPR) approval from the central government in January 2025.

6.10 The exact alignment of the Madurai Metro is not made public yet, however the metro-corridor traverses between Thirumangalam and Othakadai connecting major places such as Madurai Railway station, Madurai College etc and having 20 stations including one near Kappalur Toll Plaza.

6.11 Given the urban characteristics of Kappalur Toll Plaza, CJV are expected to get affected by Madurai Metro which is expected to be operational by FY32.

6.12 Table 6.5 shows the impact of the Madurai Metro at TP1 Kappalur

Table 6.5 Impact of Madurai Metro for TP1 Kappalur

Vehicle category	FY32
CJV	(3.4%)

Source: Steer analysis

Vizhinjam port traffic

6.13 With the Vizhinjam Port becoming operational, we expect it to positively influence goods movement in the region, especially along major highways. One clear sign of this could be a rise in commercial vehicle traffic at the MK4 toll plaza, as more trucks and freight vehicles use this route. This road connects Kerala and Tamil Nadu, making it an important link for cargo transport. The improved access and connections provided by the port are likely to boost trade and transport needs in the area, which in turn could lead to higher traffic on the plaza.

6.14 Table 6.6 shows the impact of the Vizhinjam port traffic at TP4 Nanguneri

Table 6.6 Impact of Vizhinjam port traffic for TP4 Nanguneri

Vehicle category	FY28	FY29 onwards
Staging	*20%*	*20%*
2A	0.4%	0.4%
3A	0.2%	0.2%
MAV	0.4%	0.4%

Source: Steer analysis

Figure 6.2: Vizhinjam port traffic

Source: Steer Cartography

Revenue forecasting assumptions

6.15 To forecast the revenues for a particular financial year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate, which grows over the years as defined in the Concession Agreement. While "trip factors" provide the conversion factor to the former, i.e. traffic (trips) to tickets sold, "toll segmentation" provides the latter i.e. the breakup of trips paying each ticket type. This section discusses assumptions related to trip factors, toll segmentation and toll rates for the forecast period.

Trip factors

6.16 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and listed in the table below:

Table 6.7: Trip factors for the forecast years for TP1 Kappalur

Vehicle category	CJV/ Mini LCV	LCV	Bus	2A	3A	MAV	OSV
Single	1	1	1	1	1	1	1
Return	2	2	2	2	2	2	2

Monthly	50	45	44	45	45	45	45
Local Commercial	1	1	1	1	1	1	1
Local Personal	16	20	20	20	20	20	20
Exemptions	1	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Table 6.8: Trip factors for the forecast years for TP2 Etturvattam

Vehicle category	CJV/Mini LCV	LCV	Bus	2A	3A	MAV	OSV
Single	1	1	1	1	1	1	1
Return	2	2	2	2	2	2	2
Monthly	59	45	42	45	45	45	45
Local Commercial	1	1	1	1	1	1	1
Local Personal	17	20	20	20	20	20	20
Exemptions	1	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Table 6.9: Trip factors for the forecast years for TP3 Salaipudhur

Vehicle category	CJV/Mini LCV	LCV	Bus	2A	3A	MAV	OSV
Single	1	1	1	1	1	1	1
Return	2	2	2	2	2	2	2
Monthly	60	45	42	45	45	45	45
Local Commercial	1	1	1	1	1	1	1
Local Personal	20	20	20	20	20	20	20
Exemptions	1	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Table 6.10: Trip factors for the forecast years for TP4 Nanguneri

Vehicle category	CJV/Mini LCV	LCV	Bus	2A	3A	MAV	OSV
Single	1	1	1	1	1	1	1
Return	2	2	2	2	2	2	2
Monthly	45	45	44	45	45	45	45
Local Commercial	1	1	1	1	1	1	1
Local Personal	15	20	20	20	20	20	20
Exemptions	1	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Toll segmentation

6.17 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles.[24]

6.18 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories.

6.19 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. The adoption of Annual Pass over the 45-day period is presented below:

TP	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
TP1 Kappalur	12%	17%	20%
TP2 Etturvattam	17%	23%	26%
TP3 Salaipudhur	16%	22%	25%
TP4 Nanguneri	12%	18%	21%

6.20 Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.21 At TP-1, the proportion of CJVs utilizing the Annual Pass is projected to be 15% in FY26, increasing to 29% from FY27 onwards, where it is expected to stabilize. For TP-2, the Annual Pass usage among CJVs is estimated at 20% in FY26, rising to 41% in FY27. Similarly, TP-3 is expected to see 19% usage in FY26 and 41% in FY27. At TP-4, the share of CJVs using the Annual Pass is projected at 16% in FY26, increasing to 36% in FY27.

6.22 In July 2025, the Madras High Court ruled that TNSTC buses on the Madurai–Kanyakumari route must pay toll dues and penalties. This led to a shift in how buses are segmented on the asset. Since the judgment came mid-FY26, segmentation for FY26 has been adjusted using actual data from April to July, and a weighted average for the remaining eight months. From FY27 onwards, the average segmentation from August and September 2025 is used as the stable baseline across all toll plazas.

6.23 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as highlighted in Chapter 3. For the traffic and revenue forecast of other vehicle categories, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period. Therefore, we believe the FY26YTD segmentation is representative of the travel patterns on the Asset and the same has been assumed for forecast years as well. This is presented below.

6.24 The table below provides the toll segmentation assumed for the period of forecast.

[24] **Annual Pass**

Table 6.11: Segmentation for forecast years, TP1 Kappalur

Ticket type	CJV FY26	CJV FY27	Mini LCV	Bus FY26	Bus FY27	LCV	2A	3A	MAV
Single	28%	22%	34%	6%	7%	39%	32%	55%	78%
Return	41%	32%	49%	34%	36%	49%	52%	36%	21%
Monthly	0%	0%	0%	10%	9%	0%	-	-	-
Local Commercial	1%	1%	1%	32%	47%	4%	8%	4%	1%
Local Personal	3%	3%	4%	-	-	-	-	-	-
Exemptions	12%	12%	12%	17%	2%	8%	8%	5%	1%
Violations	-	-	-	-	-	-	-	-	-
Annual Pass	15%	29%	-	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.12: Segmentation for forecast years, TP2 Etturvattam

Ticket type	CJV FY26	CJV FY27	Mini LCV	Bus FY26	Bus FY27	LCV	2A	3A	MAV
Single	37%	27%	48%	10%	10%	47%	37%	59%	62%
Return	35%	24%	44%	52%	52%	49%	59%	40%	35%
Monthly	0%	0%	0%	20%	24%	0%	0%	0%	-
Local commercial	1%	1%	1%	10%	13%	2%	4%	0%	3%
Local personal	3%	3%	3%	-	-	-	-	-	-
Exemptions	4%	4%	4%	7%	0%	1%	0%	0%	0%
Violations	-	-	-	-	-	-	-	-	-
Annual Pass	20%	41%	-	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.13: Segmentation for forecast years, TP3 Salaipudhur

Ticket type	CJV FY26	CJV FY27	Mini LCV	Bus FY26	Bus FY27	LCV	2A	3A	MAV
Single	35%	25%	46%	10%	10%	45%	33%	44%	61%
Return	37%	26%	47%	54%	55%	53%	64%	48%	37%
Monthly	0%	0%	0%	15%	17%	0%	-	0%	-
Local commercial	1%	1%	1%	10%	15%	1%	3%	8%	2%
Local personal	1%	1%	1%	-	-	-	-	-	-
Exemptions	6%	6%	6%	10%	2%	1%	0%	0%	0%
Violations	-	-	-	-	-	-	-	-	-
Annual Pass	19%	41%	-	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.14: Segmentation for forecast years, TP4 Nanguneri

Ticket type	CJV FY26	CJV FY27	Mini LCV	Bus FY26	Bus FY27	LCV	2A	3A	MAV
Single	25%	18%	30%	7%	7%	33%	23%	35%	41%
Return	50%	36%	60%	39%	39%	61%	73%	58%	58%
Monthly	-	-	-	10%	5%	-	0%	1%	0%
Local commercial	1%	1%	1%	33%	49%	3%	3%	5%	0%
Local personal	5%	5%	4%	-	-	-	-	-	-
Exemptions	4%	4%	4%	11%	0%	3%	0%	1%	0%
Violations	-	-	-	-	-	-	-	-	-
Annual Pass	16%	36%	-	-	-	-	-	-	-

Source: Steer analysis of Client TMS data

6.25 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.15 presents the Annual pass compensation computed for all the 4 toll plazas.

Table 6.15: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY28	FY33	FY38	FY43	FY51
Kapallur	9.2	23.6	39.6	66.1	108.8	233.4
Etthurvatham	6.1	16.1	27.6	46.1	75.9	165.3
Salaipudhur	6.7	17.6	30.0	50.6	83.4	180.7
Nanguneri	5.7	15.9	26.8	45.4	75.1	166.2
Total	**27.7**	**73.2**	**124**	**208.2**	**343.2**	**745.6**

Source: Steer Analysis

Toll evolution

6.26 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is April) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.27 We have used actual toll rates from the FY26 toll notification and FY27 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in the table below. These forecasts provided by the Client expect the Indian WPI to grow at an average of 4.2% between FY25-FY51. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client.

Table 6.16: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.57%
FY27	2.4%

Financial year	WPI growth (%)
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: Client inputs used for WPI FY27 onwards.

Revenue reconciliation

6.28 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a monthly level for the Asset. To reconcile we have used the FY26YTD segmentation, FY26YTD AADT and compared it with the reported revenue for the year. The exercise was undertaken at an annual level.

6.29 The comparison, as shown in Table 6.17 below, depicts the modelled revenue vs the reported revenue difference, and the difference lies within 1%, this gives us the confidence in the assumptions around segmentation and trip factors for future forecast purposes.

Table 6.17: FY26YTD Revenue reconciliation summary (INR Lakhs)

Asset	Modelled	Actual	Difference (%)
	FY26YTD	FY26YTD	
TP1: Kappalur	34.77	34.74	0.1%
TP2: Etturvattam	20.71	20.72	(0.1%)
TP3: Salaipudhur	22.70	22.74	(0.1%)
TP4: Nanguneri	21.0	21	(0.1%)

Source: Steer comparison between modelled and reported revenue, FY26YTD (Apr'25 to Aug'25)

Traffic and Revenue forecasts

6.30 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the forecast period for the Asset. The table below presents the AADT/PCU and revenue forecast growth rates and CAGRs on this Asset. Further, Appendix B (Detailed forecasts) presents the AADT and revenues for the forecast period.

Table 6.18: Traffic forecast (With Impacts) for TP1 Kappalur

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	19,614	22,555	30,082	40,431	53,259	80,347
Mini LCV	2,570	2,787	3,362	4,023	4,755	6,101
Bus	3,195	3,373	3,825	4,315	4,826	5,703

LCV	1,770	1,894	2,237	2,599	2,988	3,680
2A	1,376	1,492	1,819	2,177	2,573	3,301
3A	566	589	653	715	778	882
MAV	1,035	1,142	1,432	1,764	2,143	2,864
OSV	2	3	3	4	5	6
AADT	**30,127**	**33,835**	**43,413**	**56,027**	**71,327**	**1,02,885**
PCUs	**43,692**	**48,348**	**60,458**	**75,844**	**94,160**	**1,31,160**

Source: Steer analysis

Table 6.19: Traffic growth CAGR (%) for TP1 Kappalur

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	7.2%	5.9%	6.1%	5.7%	5.8%
Mini LCV	4.1%	3.8%	3.7%	3.4%	3.5%
Bus	2.8%	2.5%	2.4%	2.3%	2.3%
LCV	3.4%	3.4%	3.0%	2.8%	3.0%
2A	4.1%	4.1%	3.7%	3.4%	3.6%
3A	2.1%	2.1%	1.8%	1.7%	1.8%
MAV	5.1%	4.6%	4.3%	4.0%	4.2%
OSV	4.1%	3.8%	3.7%	3.4%	3.5%
AADT	**6.0%**	**5.1%**	**5.2%**	**4.9%**	**5.0%**
PCUs	**5.2%**	**4.6%**	**4.6%**	**4.4%**	**4.5%**

Source: Steer analysis

Table 6.20: Revenue forecast (With Impacts) for TP1 Kappalur (INR Cr) including the Annual Pass Compensation Revenue for CJV

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	53.6	68.0	114.1	191.2	313.9	675.4
Mini LCV	7.0	8.4	12.7	19.0	27.9	51.1
Bus	22.3	29.6	42.2	59.4	83.6	141.9
LCV	8.6	10.0	14.7	21.5	30.6	54.5
2A	13.4	15.8	24.2	36.2	53.5	98.7
3A	6.7	7.6	10.7	14.5	19.8	32.2
MAV	19.6	23.5	37.1	57.2	86.7	166.7
OSV	0.1	0.1	0.1	0.2	0.2	0.4
Total Revenue	**131.3**	**162.8**	**255.8**	**399.1**	**616.4**	**1,220.9**

Source: Steer analysis

Table 6.21: Revenue growth CAGR (%) for TP1 Kappalur

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51

CJV	12.6%	10.9%	10.9%	10.4%	10.7%
Mini LCV	9.2%	8.7%	8.4%	8.0%	8.3%
Bus	15.0%	7.4%	7.1%	7.1%	7.7%
LCV	7.8%	8.0%	7.9%	7.4%	7.7%
2A	8.6%	8.9%	8.4%	8.2%	8.3%
3A	6.7%	6.9%	6.4%	6.4%	6.5%
MAV	9.5%	9.6%	9.0%	8.7%	8.9%
OSV	8.8%	8.6%	8.4%	8.1%	8.3%
Total	**11.3%**	**9.5%**	**9.3%**	**9.1%**	**9.3%**

Source: Steer analysis

Table 6.22: Traffic forecast (With Impacts) for TP2 Etturvattam

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	9,125	10,493	14,305	19,227	25,327	38,209
Mini LCV	978	1,060	1,279	1,530	1,809	2,321
Bus	1,379	1,456	1,651	1,863	2,084	2,462
LCV	977	1,046	1,223	1,421	1,634	2,012
2A	788	847	1,011	1,210	1,430	1,835
3A	350	357	385	422	459	520
MAV	869	933	1,111	1,329	1,571	2,016
OSV	3	3	4	5	6	8
AADT	**14,469**	**16,196**	**20,970**	**27,007**	**34,320**	**49,383**
PCUs	**22,016**	**24,214**	**30,267**	**37,805**	**46,745**	**64,724**

Source: Steer analysis

Table 6.23: Traffic growth CAGR (%) TP2 Etturvattam

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	7.2%	6.4%	6.1%	5.7%	5.9%
Mini LCV	4.1%	3.8%	3.7%	3.4%	3.5%
Bus	2.8%	2.5%	2.4%	2.3%	2.3%
LCV	3.4%	3.2%	3.0%	2.8%	2.9%
2A	3.6%	3.6%	3.7%	3.4%	3.4%
3A	1.1%	1.5%	1.8%	1.7%	1.6%
MAV	3.6%	3.6%	3.7%	3.4%	3.4%
OSV	4.1%	3.8%	3.7%	3.4%	3.5%
AADT	**5.8%**	**5.3%**	**5.2%**	**4.9%**	**5.0%**
PCUs	**4.9%**	**4.6%**	**4.5%**	**4.3%**	**4.4%**

Source: Steer analysis

Table 6.24: Revenue forecast (with impacts) for TP2 Etturvattam (INR Cr)

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	28.8	36.1	62.0	103.7	171.1	371.8
Mini LCV	3.1	3.6	5.5	8.3	12.2	22.6
Bus	12.2	15.0	21.4	30.2	42.2	71.5
LCV	5.2	6.0	8.9	12.8	18.5	32.7
2A	8.5	9.9	15.0	22.4	33.0	60.8
3A	4.4	4.9	6.7	9.1	12.4	20.2
MAV	15.9	18.5	27.8	41.5	61.4	113.1
OSV	0.1	0.1	0.1	0.2	0.3	0.5
Total Revenue	**78.2**	**94.3**	**147.4**	**228.2**	**351.2**	**693.2**

Source: Steer analysis

Table 6.25: Revenue growth CAGR (%) for TP2 Etturvattam

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	12.0%	11.4%	10.8%	10.5%	10.8%
Mini LCV	8.4%	8.7%	8.3%	8.2%	8.3%
Bus	10.8%	7.4%	7.1%	6.9%	7.3%
LCV	7.8%	8.2%	7.5%	7.6%	7.7%
2A	8.1%	8.5%	8.4%	8.1%	8.2%
3A	5.2%	6.3%	6.5%	6.3%	6.3%
MAV	7.9%	8.5%	8.4%	8.1%	8.2%
OSV	8.8%	8.6%	8.4%	8.1%	8.3%
Total	**9.8%**	**9.4%**	**9.1%**	**9.0%**	**9.1%**

Source: Steer analysis

Table 6.26: Traffic forecast (With Impacts) for TP3 Salaipudhur

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	8,345	9,596	13,081	17,582	23,160	34,940
Mini LCV	991	1,074	1,296	1,551	1,833	2,351
Bus	1,222	1,290	1,463	1,651	1,846	2,182
LCV	871	932	1,090	1,267	1,456	1,794
2A	731	791	953	1,140	1,347	1,728
3A	333	346	378	414	451	511
MAV	734	797	959	1,147	1,356	1,740
OSV	4	4	5	6	7	10
AADT	**13,231**	**14,831**	**19,225**	**24,757**	**31,457**	**45,255**
PCUs	**19,956**	**22,014**	**27,600**	**34,481**	**42,643**	**59,061**

Source: Steer analysis

Table 6.27: Traffic growth CAGR (%) TP3 Salaipudhur

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	7.2%	6.4%	6.1%	5.7%	5.9%
Mini LCV	4.1%	3.8%	3.7%	3.4%	3.5%
Bus	2.8%	2.5%	2.4%	2.3%	2.3%
LCV	3.4%	3.2%	3.0%	2.8%	2.9%
2A	4.0%	3.8%	3.7%	3.4%	3.5%
3A	1.9%	1.8%	1.8%	1.7%	1.7%
MAV	4.2%	3.8%	3.7%	3.4%	3.5%
OSV	4.1%	3.8%	3.7%	3.4%	3.5%
AADT	**5.9%**	**5.3%**	**5.2%**	**4.9%**	**5.0%**
PCUs	**5.0%**	**4.6%**	**4.5%**	**4.3%**	**4.4%**

Source: Steer analysis

Table 6.28: Revenue forecast (with impacts) for TP3 Salaipudhur (INR Cr)

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	31.9	39.6	67.5	113.7	187.0	405.3
Mini LCV	3.8	4.5	6.7	10.1	14.8	27.4
Bus	12.8	15.9	22.8	32.0	44.8	76.0
LCV	5.6	6.6	9.6	14.0	20.1	35.6
2A	9.5	11.2	17.0	25.4	37.6	69.2
3A	4.9	5.5	7.6	10.3	14.0	22.8
MAV	16.3	19.3	29.2	43.7	64.6	119.0
OSV	0.1	0.1	0.2	0.3	0.4	0.8
Total Revenue	**84.9**	**102.7**	**160.6**	**249.4**	**383.4**	**756.2**

Source: Steer analysis

Table 6.29: Revenue growth CAGR (%) for TP3 Salaipudhur

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	11.4%	11.2%	11.0%	10.5%	10.7%
Mini LCV	8.2%	8.6%	8.4%	8.1%	8.2%
Bus	11.5%	7.4%	7.0%	7.0%	7.4%
LCV	8.5%	8.0%	7.7%	7.6%	7.7%
2A	8.6%	8.7%	8.4%	8.1%	8.3%
3A	6.4%	6.6%	6.4%	6.4%	6.4%
MAV	8.8%	8.7%	8.3%	8.2%	8.3%
OSV	8.6%	8.7%	8.4%	8.1%	8.3%
Total	**10.0%**	**9.4%**	**9.2%**	**9.0%**	**9.1%**

Source: Steer analysis

Table 6.30: Traffic forecast (With Impacts) for TP4 Nanguneri

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	10,265	11,728	15,969	21,463	28,273	43,189
Mini LCV	1,129	1,225	1,477	1,767	2,089	2,680
Bus	1,285	1,357	1,538	1,735	1,941	2,294
LCV	764	818	957	1,112	1,278	1,590
2A	668	728	878	1,050	1,242	1,611
3A	309	323	355	388	423	483
MAV	706	771	931	1,114	1,317	1,701
OSV	1	1	1	2	2	2
AADT	**15,128**	**16,950**	**22,106**	**28,631**	**36,564**	**53,551**
PCU's	**21,674**	**23,965**	**30,289**	**38,124**	**47,472**	**67,075**

Source: Steer analysis

Table 6.31: Traffic growth CAGR (%) for TP4 Nanguneri

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	6.9%	6.4%	6.1%	5.7%	5.9%
Mini LCV	4.1%	3.8%	3.7%	3.4%	3.5%
Bus	2.8%	2.5%	2.4%	2.3%	2.3%
LCV	3.4%	3.2%	3.0%	2.8%	3.0%
2A	4.3%	3.8%	3.7%	3.4%	3.6%
3A	2.2%	1.9%	1.8%	1.7%	1.8%
MAV	4.5%	3.8%	3.7%	3.4%	3.6%
OSV	4.1%	3.8%	3.7%	3.4%	3.5%
AADT	**5.9%**	**5.5%**	**5.3%**	**5.0%**	**5.2%**
PCUs	**5.1%**	**4.8%**	**4.7%**	**4.5%**	**4.6%**

Source: Steer analysis

Table 6.32: Revenue forecast (with impacts) for TP4 Nanguneri (INR Cr)

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
CJV	33.8	42.6	72.7	122.7	202.6	442.6
Mini LCV	3.6	4.3	6.5	9.8	14.5	26.7
Bus	11.0	13.5	19.2	27.2	37.9	64.3
LCV	4.1	4.8	7.1	10.3	14.8	26.4
2A	7.6	8.9	13.6	20.3	30.0	55.8
3A	3.9	4.4	6.1	8.4	11.4	18.8

Vehicle Type	FY26	FY28	FY33	FY38	FY43	FY51
MAV	13.3	15.9	24.1	36.1	53.2	98.9
OSV	0.0	0.0	0.0	0.1	0.1	0.2
Total Revenue	**77.4**	**94.4**	**149.4**	**234.9**	**364.5**	**733.7**

Source: Steer analysis

Table 6.33: Revenue growth CAGR (%) for TP4 Nanguneri

Vehicle Type	FY26-FY28	FY28-FY33	FY33-FY38	FY38-FY43	FY26-FY51
CJV	12.3%	11.3%	11.1%	10.5%	10.8%
Mini LCV	8.8%	8.6%	8.5%	8.2%	8.3%
Bus	10.7%	7.4%	7.2%	6.9%	7.3%
LCV	7.4%	8.2%	7.8%	7.4%	7.7%
2A	8.7%	8.7%	8.4%	8.1%	8.3%
3A	6.6%	6.7%	6.5%	6.4%	6.5%
MAV	9.0%	8.7%	8.4%	8.1%	8.3%
OSV	8.7%	8.7%	8.4%	8.2%	8.3%
Total Revenue	**10.5%**	**9.6%**	**9.5%**	**9.2%**	**9.4%**

Source: Steer analysis

6.31 As presented in the tables above, traffic CAGRs (PCUs) for the traffic forecast (with impacts) on the Asset over the concession period is ranging between 4-5% and corresponding revenue CAGR is around 9-10% over all the Asset.

6.32 This growth is majorly driven by:

- CJVs, as discussed in the historical section, this Asset has a dominant share of CJVs because the Asset lie on the urban corridor. It is expected to grow strongly with a presence of the well-established road network with stabilised travel patterns and the growth of the Buses and CJVs will be driven by the inter-urban relationships, and the presence of tourism hotspots present in the vicinity of the Asset.
- Goods vehicle, as per the forecasts, is interdependent on the growth of regional economy, which is based on the presence of Cement Industries, wind power farms, growth of the port city of Tuticorin, industrial estates (SIDCO) and the movement of Fast-Moving Consumer Goods (FMCG) and groceries on the Madurai-Kanyakumari corridor.

6.33 The peak in forecast PCUs for TP1 Kappalur in FY33 and TP4 Nanguneri in FY46 is due to the impact of 6 laning LOS improvement.

Target revenues and modification of concession period

6.34 As per the concession agreement, the target revenue for individual toll plazas should be as shown in the table below for the first calculation of target revenue and the second calculation of target revenue in March 2030 and March 2040 respectively. The traffic sampling will be undertaken for a continuous period of 7 days during anytime within 15

days prior to the date on the specified year, previous year and following year. The average thereof will be deemed as 'actual revenue.'

6.35 If the target revenue falls short or exceeds by 20% and 30% for extensions 1 and 2 respectively, the concession period shall be deemed to be modified using the laid-out conditions in the concession agreement. The table below presents the summary of the analysis.

Table 6.34: Target Revenues for Extension 1

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2029	2030	2031		
TP1	Mar-30	12.2	15.4	12.7	13.32	13.8	13.4%
TP2	Mar-30	9.9	8.8	9.7	10.56	9.7	(2.0%)
TP3	Mar-30	9.8	9.6	10.6	11.55	10.6	7.7%
TP4	Mar-30	12.0	8.9	9.8	10.71	9.8	(18.2%)

Source: Steer analysis

Table 6.35: Target Revenues for Extension 2

Asset	Target Month	Target Revenue	Estimated Revenue			Average Revenue	Variation (%)
		Cr	2039	2040	2041		
TP1	Mar-40	22.8	37.0	40.5	44.2	40.6	78.1%
TP2	Mar-40	22.7	21.4	23.1	25.3	23.3	2.5%
TP3	Mar-40	22.7	23.3	25.4	27.6	25.4	11.8%
TP4	Mar-40	28.2	21.9	23.8	26.0	23.9	(15.2%)

Source: Steer analysis

6.36 We have used the average AADT forecast for target year, previous year and following year as a proxy for 'actual traffic.' We have forecast seasonality of March month to adjust for seasonal trends and arrive at March traffic from AADT traffic, which is then segmented according to the forecast toll segmentation and trip factors and multiplied with respective estimated toll rates to get to a monthly revenue collection.

6.37 As seen from the table above, the target revenue forecast for the TP1 and the estimated target revenue, difference lies above the threshold value of 30% at second target date. As per the concession agreement, for every 1% excess target revenue, the concession period shall be decreased by 1.5%, with a capping at 20%. Therefore, for the excess traffic on the toll plazas, the concession period, originally 30 years, is expected to be decreased by 5 years from FY51, potentially reducing the last date of concession to FY46 for TP1. For TP2-4 there is no change in concession period expected as the difference in estimated and target revenues lie within the threshold range as stipulated by the concession agreement.

Upside and Downside cases

Upside and Downside scenario assumptions

6.38 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.39 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.40 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions, as described in Table 6.36:

Table 6.36: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

6.41 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions

Impacts-Upside Case

6.42 The upside case impacts included in forecasts are summarised in below.

Table 6.37: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact			
			TP1 Kappalur	TP2 Etturvattam	TP3 Salaipudhur	TP4 Nanguneri
6 laning LOS improvement	FY33 - T1* FY45 - TP4	+25% of base case	CJV: 1.5% LCV: 1.2% 2A: 1.4% 3A: 1.1 % MAV: 0.9%	-	-	CJV: 1.6% LCV: 1.2% 2A: 1.4% 3A: 1.1 % MAV: 0.9%

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact			
			TP1 Kappalur	TP2 Etturvattam	TP3 Salaipudhur	TP4 Nanguneri
Madurai-Kollam (NH744 Upgrade)	FY28* (50% impact) FY30 – Full Impact		-	2A: (1.4%) 3A: (2.8%) MAV: (2.0%)	2A: (1.6%) 3A: (3.2%) MAV: (2.5%)	-
Madurai Metro	FY32*		CJV: (2.6%)	-	-	-
Vinjingham port traffic	FY27*		-	-	-	-

Source: Steer analysis; * Same as the base case timeline; For Salaipudhur NH744 impact in FY30 in 20% of the full impact.

Impacts-Downside Case

6.43 The downside case impacts included in forecasts are summarised in below.

Table 6.38: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact			
			TP1 Kappalur	TP2 Etturvattam	TP3 Salaipudhur	TP4 Nanguneri
6 laning LOS improvement	FY33-TP1*	-25% of base case	CJV: 0.9% LCV: 0.7% 2A: 0.8% 3A: 0.6 % MAV: 0.5%	-	-	-
Madurai-Kollam (NH744 Upgrade)	FY28* (50% impact) FY30 – Full Impact		-	2A: (2.4%) 3A: (4.7%) MAV: (3.3%)	2A: (2.6%) 3A: (5.3%) MAV: (4.1%)	-
Madurai Metro	FY32*		CJV: (4.3%)	-	-	-
Vinjingham port traffic	FY27*		-	-	-	2A: 1.5% 3A: 0.8 % MAV: 1.5%

Source: Steer analysis; * Same as the base case timeline; For Salaipudhur, NH744 impact in FY30 is 20% of the full impact.

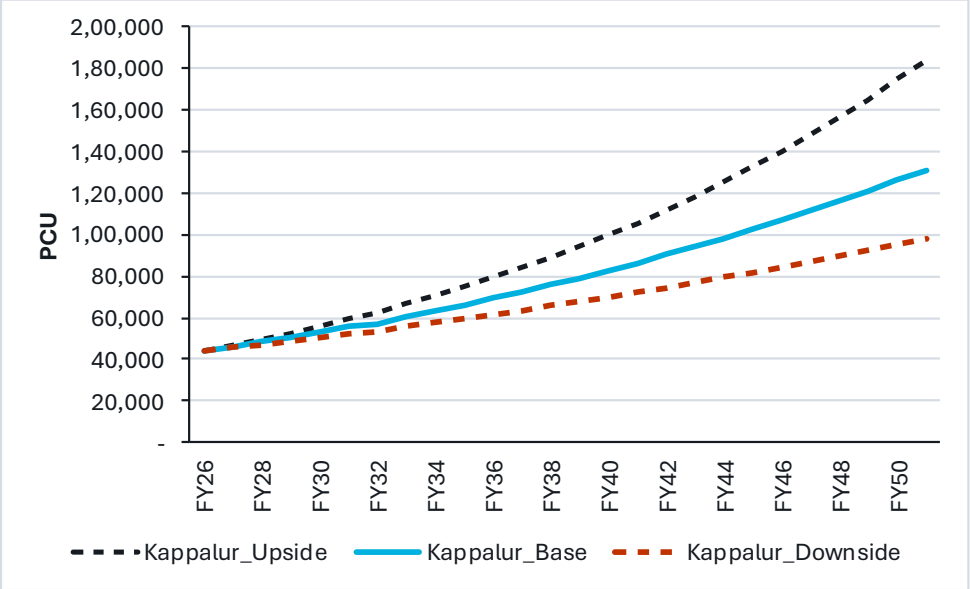
6.44 Based on the above assumptions for upside and downside scenarios, the following table summarizes the upside potential and downside risks associated with the PCU and the revenue for Kappalur, Etthurvatham, Salaipudhur and Nanguneri toll plazas at the end of the concession i.e. FY51.

Table 6.39: Upside potential and Downside PCU scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Kappalur	40.2%	(25.6%)
Etthurvatham	38.5%	(24.7%)
Salaipudhur	38.4%	(24.6%)
Nanguneri	39.9%	(25.9%)

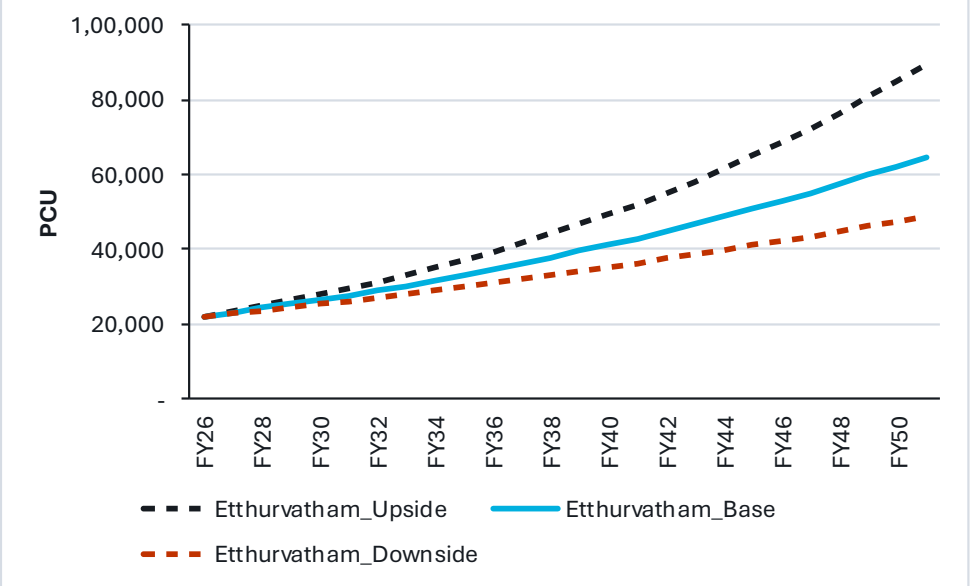
Source: Steer Analysis of client data

Figure 6.3: Long term PCU forecasts for Kappalur TP including upside and downside scenario



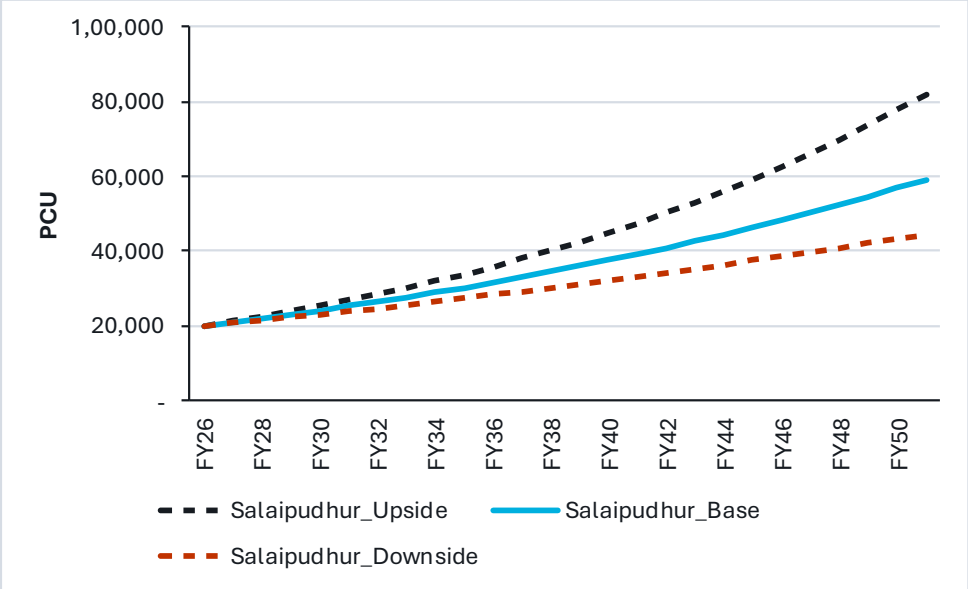
Source: Steer Analysis

Figure 6.4: Long term PCU forecasts for Etthurvatham TP including upside and downside scenario



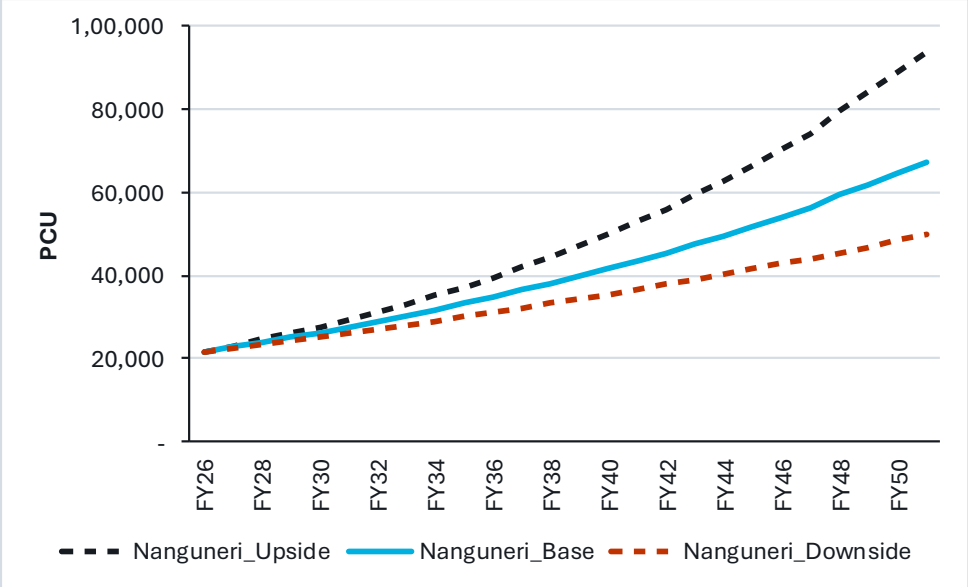
Source: Steer Analysis

Figure 6.5: Long term PCU forecasts for Salaipudhur TP including upside and downside scenario



Source: Steer Analysis

Figure 6.6: Long term PCU forecasts for Nanguneri TP including upside and downside scenario



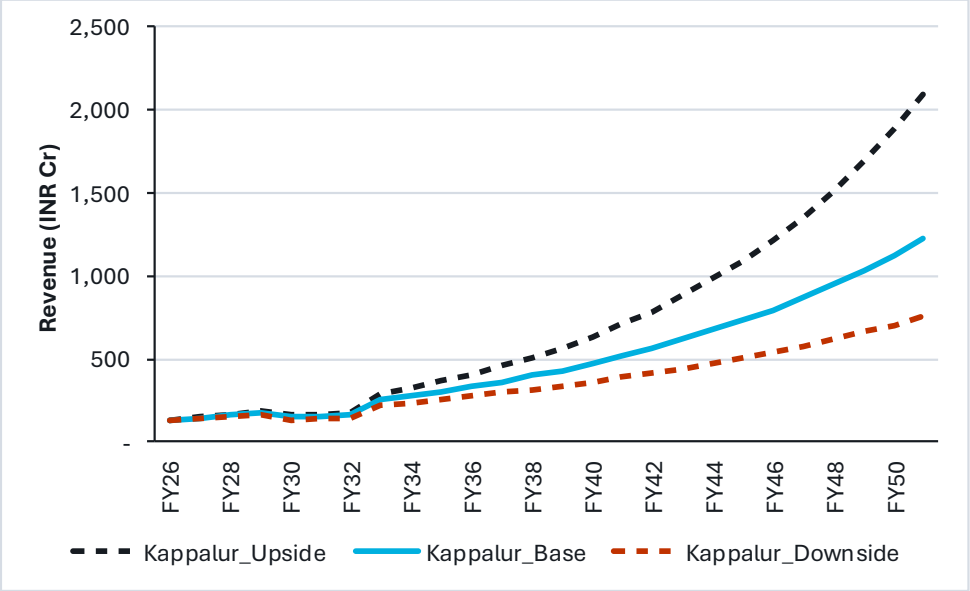
6.45 Source: Steer Analysis

Table 6.40: Upside potential and Downside Revenue scenario – FY51

Toll Plaza	Upside Potential	Downside Risk
Kappalur	71.3%	(38.3%)
Etthurvatham	68.1%	(37.8%)
Salaipudhur	68.7%	(37.6%)
Nanguneri	70.5%	(54.0%)

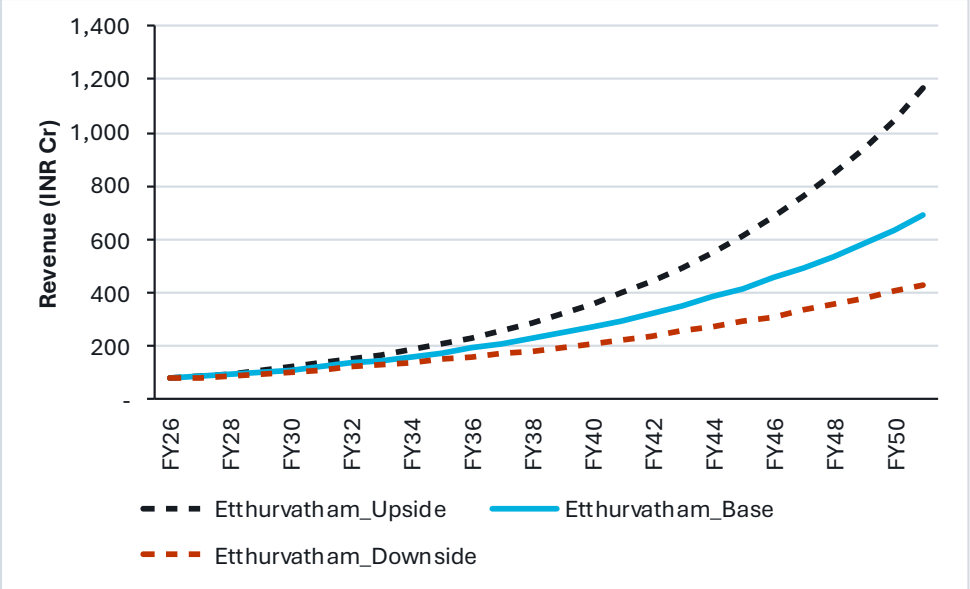
Source: Steer Analysis of client data

Figure 6.7: Long term Revenue forecasts for Kappalur TP including upside and downside scenario



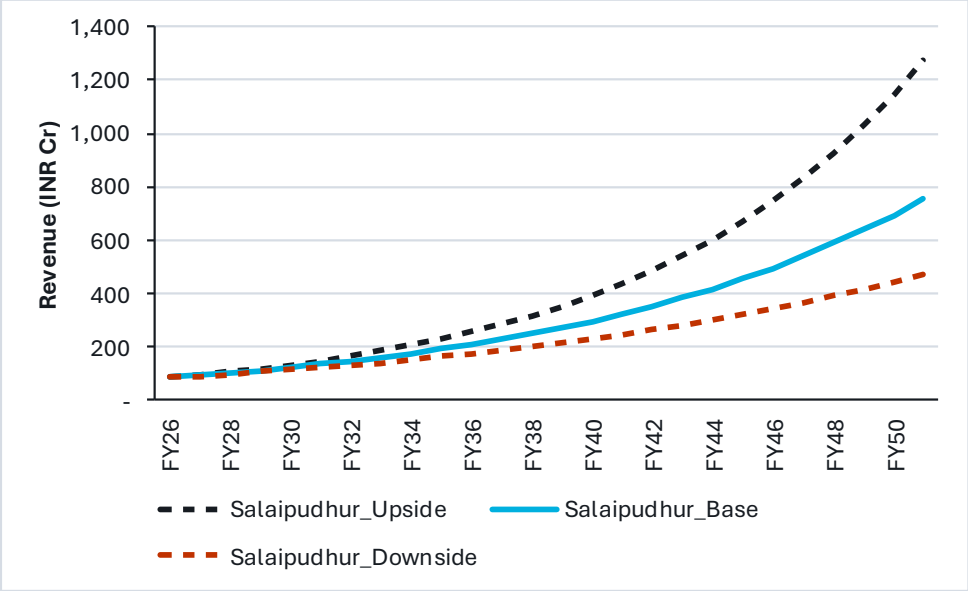
Source: Steer Analysis

Figure 6.8: Long term Revenue forecasts for Etthurvatham TP including upside and downside scenario



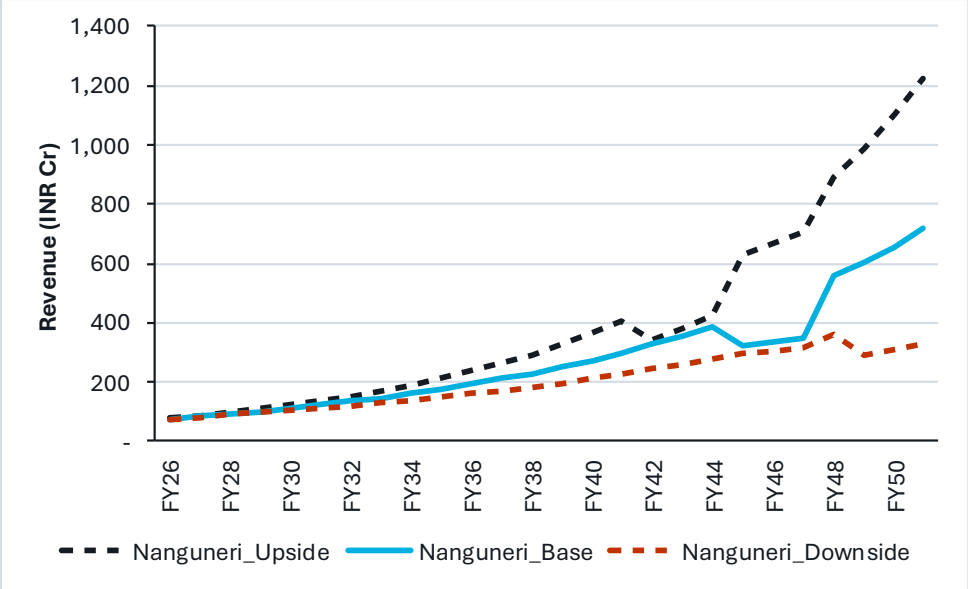
Source: Steer Analysis

Figure 6.9: Long term Revenue forecasts for Salaipudhur TP including upside and downside scenario



Source: Steer Analysis

Figure 6.10: Long term Revenue forecasts for Nanguneri TP including upside and downside scenario



Source: Steer Analysis

6.46 Revenue projections exhibit variability in both the upside and downside cases, driven by fluctuations in macro-economic factors such as WPI, GDP/GSDP, elasticities and the network impacts.

Summary outlook

6.47 Passenger traffic on the Asset is largely inter-urban driven by business, tourism and leisure travel between the cities of Madurai, Tirunelveli, Nagercoil, Thiruvananthapuram, Kanyakumari and towns in the southern Tamil Nadu (TN) region.

6.48 Goods traffic serve the regional industries of wind power and cement, apart from consumption-based movements feeding demand from urban areas. While wind farms are concentrated in the Tirunelveli and Kanyakumari regions, two large operational cement plants are located on the Asset between Virudhunagar and Tirunelveli.

6.49 The Chennai-Kanykumari section of the East Coast Industrial Corridor is planned with nodes in Madurai and Tuticorin and expected to directly support growth in the region and traffic on the Asset.

6.50 Located in the urbanised and industrialised state of TN, the four-lane Asset highway is part of a well-established road network with stable travel patterns and potential for steady growth.

6.51 While the Asset is the primary connection between northern TN and locations north of the state at one end, and the southern TN region, the parallel Tuticorin-Madurai (NH 38) highway to the east of the Asset caters to Tuticorin port traffic, particularly connecting it with the northern TN hinterland. The Asset is also the primary route for inter-urban travel in the southern TN region – both within the State and with the Thiruvananthapuram district of Kerala. The parallel NH 744 Tirumangalam-Kollam highway connects Madurai and northern Tamil Nadu with Courtallam falls near Tirunelveli and Kollam and neighbouring districts in Kerala.

6.52 Consequent to the expected steady growth on the Asset, TP1 Kappalur and TP4 Nanguneri closer to the cities of Madurai and Tirunelveli are expected to cross capacity for four-lane roads during the concession period.

6.53 With six-lane upgrades for these sections by FY33 and FY48 respectively, the Asset is expected to offer additional capacity and therefore see an improvement in level of service, leading to a considerable additional travel demand.

6.54 Upgrade of the feeder section between Nagercoil/Kanyakumari and Thiruvananthapuram of the NH 66 highway is expected to again lead to improved levels of service for inter-urban travel and induce more car trips. Upgrade and tolling of the alternate NH 744 highway may lead to a small negative diversion impact for heavy vehicles currently using the Asset.

6.55 Our findings and estimates in this report are based on multiple factors; our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by Client, feedback from Client meetings and secondary publicly available data. However, we perceive that there can be risks associated with assumptions and the forecasts which are covered in Upside and Downside Forecast section of the report above.

6.56 Overall, we see a positive outlook for the Asset given the well-established road network, which is driven by inter-urban business, leisure and tourism travel in cars and buses, along with the industrial development of cement and electronic items which will drive the growth of goods vehicle on the Asset.

Appendices

A Top 10 OD Pairs

Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1 Kappalur

Table A.1: CJV, Bus and Mini Bus top 10 OD pair shares at TP1 Kappalur

	OD Pair	Share
1.	Madurai-Tirumangalam	9.6%
2.	Madurai-Tirunelveli	7.0%
3.	Madurai-Tenkasi	6.6%
4.	Madurai-Virudunagar	4.0%
5.	Madurai-Sivakasi	4.0%
6.	Madurai-Kanyakumari	3.1%
7.	Madurai-Rajapalayam	2.6%
8.	Madurai-Kappalur	2.4%
9.	Madurai-Manapad	1.9%
10.	Madurai-Nagercoil	1.8%

Source: Steer analysis of OD data

Table A.2: MAV and OSV top 10 OD pair shares at TP1 Kappalur

	OD Pair	Share
1.	Madurai-Tirunelveli	4.4%
2.	Madurai-Sivakasi	2.7%
3.	Madurai-Tirumangalam	2.0%
4.	Madurai-Kanyakumari	2.0%
5.	Madurai-Tenkasi	2.0%
6.	Tirunelveli-Tiruchirappalli	1.9%
7.	Tirunelveli-Chennai	1.9%
8.	Madurai-Thiruvananthapuram	1.7%
9.	Madurai-Manapad	1.4%
10.	Madurai-Rajapalayam	1.3%

Source: Steer analysis of OD data

TP2 Etturvattam

Table A.3: CJV, Bus and Mini Bus top 10 OD pair shares at TP2 Etturvattam

	OD Pair	Share
1.	Madurai-Tirunelveli	19%
2.	Madurai-Kovilpatti	7%
3.	Tirunelveli-Chennai	6%
4.	Madurai-Kanyakumari	6%
5.	Tirunelveli-Coimbatore	5%
6.	Madurai-Sattur	4%
7.	Chennai-Kanyakumari	4%
8.	Virudunagar-Sattur	3%
9.	Tirunelveli-Tiruchirappalli	2%
10.	Virudunagar-Kovilpatti	2%

Source: Steer analysis of OD data

Table A.4: MAV and OSV top 10 OD pair shares at TP2 Etturvattam

	OD Pair	Share
1.	Madurai-Tirunelveli	8%
2.	Dindigul-Tenkasi	5%
3.	Tirunelveli-Chennai	4%
4.	Dindigul-Kanyakumari	4%
5.	Tirunelveli-Dindigul	3%
6.	Tirunelveli-Tiruppur	2%
7.	Kovilpatti-Dindigul	2%
8.	Chennai-Kanyakumari	2%
9.	Madurai-Thiruvananthapuram	2%
10.	Madurai-Kanyakumari	2%

Source: Steer analysis of OD data

TP3 Salaipudhur

Table A.5: CJV, Bus and Mini Bus top 10 OD pair shares at TP3 Salaipudhur

	OD Pair	Share
1.	Madurai-Tirunelveli	14.4%
2.	Tirunelveli-Manapad	12.4%
3.	Tirunelveli-Chennai	6.4%
4.	Madurai-Nagercoil	4.0%
5.	Tirunelveli-Coimbatore	3.0%
6.	Tirunelveli-Ramanathapuram	2.8%
7.	Chennai-Nagercoil	2.6%
8.	Tuticorin (Thoothukudi)-Manapad	2.3%
9.	Madurai-Kanyakumari	2.2%
10.	Kanyakumari-Manapad	2.0%

Source: Steer analysis of OD data

Table A.6: MAV and OSV top 10 OD pair shares at TP3 Salaipudhur

	OD Pair	Share
1.	Madurai-Tirunelveli	10.9%
2.	Tirunelveli-Manapad	6.5%
3.	Tirunelveli-Chennai	4.5%
4.	Madurai-Nagercoil	4.2%
5.	Tirunelveli-Ariyalur	2.8%
6.	Tirunelveli-Karnataka	2.6%
7.	Madurai-Kanyakumari	2.4%
8.	Tirunelveli-Karur	2.3%
9.	Tirunelveli-Dindigul	2.3%
10.	Tirunelveli-Ramanathapuram	1.8%

Source: Steer analysis of OD data

TP4 Nanguneri

Table A.7: CJV, Bus and Mini Bus top 10 OD pair shares at TP4 Nanguneri

	OD Pair	Share
1.	Tirunelveli-Kanyakumari	31%
2.	Madurai-Kanyakumari	8%
3.	Tuticorin (Thoothukudi)-Kanyakumari	6%
4.	Tirunelveli-Vallioor	5%
5.	Chennai-Kanyakumari	5%
6.	Tirunelveli-Tirunelveli	5%
7.	Tirunelveli-Nanguneri	2%
8.	Tirunelveli-Kanniyakumari	2%
9.	Tirunelveli-Thiruvananthapuram	2%
10.	Madurai-Thiruvananthapuram	1%

Source: Steer analysis of OD data

Table A.8: MAV and OSV top 10 OD pair shares at TP4 Nanguneri

	OD Pair	Share
1.	Tirunelveli-Kanyakumari	15%
2.	Tuticorin (Thoothukudi)-Kanyakumari	9%
3.	Madurai-Kanyakumari	9%
4.	Chennai-Kanyakumari	6%
5.	Tirunelveli-Vallioor	3%
6.	Tuticorin (Thoothukudi)-Thiruvananthapuram	2%
7.	Tirunelveli-Kanniyakumari	2%
8.	Madurai-Thiruvananthapuram	2%
9.	Kovilpatti-Kanyakumari	2%
10.	Tirunelveli-Thiruvananthapuram	2%

Source: Steer analysis of OD data

B Detailed forecasts

Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

This section presents the detailed traffic forecasts for the forecast period until FY51, year of expected close of the concession. The following two tables show the AADT and traffic growth, respectively.

Table B.1: Traffic Forecast (with impacts) over horizon years at TP1 Kappalur

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY26	19,614	2,570	3,195	1,770	1,376	566	1,035	30,127	43,692
FY27	21,057	2,677	3,283	1,831	1,433	577	1,088	31,949	45,983
FY28	22,555	2,787	3,373	1,894	1,492	589	1,142	33,835	48,348
FY29	24,074	2,898	3,462	1,957	1,551	601	1,196	35,741	50,730
FY30	25,605	3,008	3,550	2,019	1,610	612	1,249	37,658	53,119
FY31	27,206	3,121	3,639	2,082	1,670	624	1,304	39,650	55,591
FY32	27,913	3,238	3,730	2,147	1,733	635	1,361	40,758	57,193
FY33	30,082	3,362	3,825	2,237	1,819	653	1,432	43,413	60,458
FY34	31,977	3,489	3,922	2,307	1,888	666	1,495	45,747	63,328
FY35	33,958	3,619	4,019	2,379	1,958	678	1,560	48,173	66,301
FY36	36,026	3,751	4,117	2,451	2,030	690	1,626	50,695	69,377
FY37	38,184	3,886	4,215	2,524	2,103	703	1,695	53,313	72,558
FY38	40,431	4,023	4,315	2,599	2,177	715	1,764	56,027	75,844
FY39	42,767	4,163	4,414	2,674	2,252	727	1,836	58,838	79,233
FY40	45,215	4,305	4,515	2,750	2,330	740	1,909	61,769	82,755
FY41	47,777	4,452	4,618	2,828	2,409	753	1,985	64,825	86,415
FY42	50,457	4,602	4,721	2,908	2,490	765	2,063	68,010	90,215
FY43	53,259	4,755	4,826	2,988	2,573	778	2,143	71,327	94,160
FY44	56,186	4,912	4,932	3,070	2,658	791	2,226	74,780	98,253
FY45	59,243	5,072	5,040	3,154	2,745	804	2,310	78,372	1,02,498

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY46	62,432	5,236	5,148	3,239	2,833	817	2,397	82,107	1,06,899
FY47	65,758	5,403	5,258	3,325	2,924	830	2,487	85,990	1,11,458
FY48	69,223	5,574	5,369	3,413	3,016	843	2,579	90,022	1,16,181
FY49	72,832	5,749	5,481	3,502	3,111	856	2,673	94,208	1,21,069
FY50	76,588	5,926	5,594	3,592	3,207	869	2,769	98,552	1,26,127
FY51	80,347	6,101	5,703	3,680	3,301	882	2,864	1,02,885	1,31,160

Source: Steer analysis

Table B.2: Forecasts (with impacts) for AADT growth rates (%) at TP1 Kappalur

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY27	7.4%	4.2%	2.8%	3.5%	4.2%	2.1%	5.1%	6.0%	5.2%
FY28	7.1%	4.1%	2.7%	3.4%	4.1%	2.1%	5.0%	5.9%	5.1%
FY29	6.7%	4.0%	2.6%	3.3%	4.0%	2.0%	4.7%	5.6%	4.9%
FY30	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	4.5%	5.4%	4.7%
FY31	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	4.4%	5.3%	4.7%
FY32	2.6%	3.7%	2.5%	3.1%	3.7%	1.9%	4.3%	2.8%	2.9%
FY33	7.8%	3.8%	2.6%	4.2%	5.0%	2.8%	5.2%	6.5%	5.7%
FY34	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	4.4%	5.4%	4.7%
FY35	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	4.3%	5.3%	4.7%
FY36	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	4.3%	5.2%	4.6%
FY37	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	4.2%	5.2%	4.6%
FY38	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	4.1%	5.1%	4.5%
FY39	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	4.0%	5.0%	4.5%
FY40	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	4.0%	5.0%	4.4%
FY41	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	4.0%	4.9%	4.4%
FY42	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.9%	4.9%	4.4%
FY43	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.9%	4.9%	4.4%
FY44	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.8%	4.8%	4.3%
FY45	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.8%	4.8%	4.3%
FY46	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.8%	4.8%	4.3%
FY47	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.7%	4.7%	4.3%
FY48	5.3%	3.2%	2.1%	2.6%	3.2%	1.6%	3.7%	4.7%	4.2%
FY49	5.2%	3.1%	2.1%	2.6%	3.1%	1.6%	3.6%	4.7%	4.2%

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY50	5.2%	3.1%	2.1%	2.6%	3.1%	1.5%	3.6%	4.6%	4.2%
FY51	4.9%	2.9%	2.0%	2.5%	2.9%	1.5%	3.4%	4.4%	4.0%

Source: Steer analysis

Table B.3: Traffic Forecast (with impacts) over horizon years at TP2 Etturvattam

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY26	9,125	978	1,379	977	788	350	869	**14,469**	**22,016**
FY27	9,797	1,019	1,417	1,011	821	357	906	**15,331**	**23,140**
FY28	10,493	1,060	1,456	1,046	847	357	933	**16,196**	**24,214**
FY29	11,200	1,102	1,495	1,080	872	357	957	**17,067**	**25,287**
FY30	11,913	1,144	1,533	1,115	905	364	994	**17,971**	**26,450**
FY31	12,658	1,187	1,571	1,149	939	371	1,031	**18,910**	**27,651**
FY32	13,444	1,232	1,610	1,185	974	378	1,070	**19,896**	**28,906**
FY33	14,305	1,279	1,651	1,223	1,011	385	1,111	**20,970**	**30,267**
FY34	15,207	1,327	1,693	1,262	1,050	392	1,153	**22,087**	**31,676**
FY35	16,148	1,377	1,735	1,301	1,089	400	1,196	**23,249**	**33,134**
FY36	17,132	1,427	1,777	1,340	1,128	407	1,239	**24,456**	**34,641**
FY37	18,158	1,478	1,820	1,380	1,169	414	1,284	**25,709**	**36,198**
FY38	19,227	1,530	1,863	1,421	1,210	422	1,329	**27,007**	**37,805**
FY39	20,338	1,583	1,906	1,462	1,252	429	1,375	**28,351**	**39,462**
FY40	21,502	1,638	1,949	1,504	1,295	436	1,423	**29,752**	**41,182**
FY41	22,720	1,694	1,994	1,546	1,339	444	1,471	**31,213**	**42,968**
FY42	23,995	1,751	2,038	1,590	1,384	451	1,520	**32,735**	**44,822**
FY43	25,327	1,809	2,084	1,634	1,430	459	1,571	**34,320**	**46,745**
FY44	26,719	1,869	2,129	1,679	1,477	466	1,623	**35,969**	**48,738**
FY45	28,173	1,930	2,176	1,725	1,526	474	1,676	**37,684**	**50,804**
FY46	29,689	1,992	2,223	1,771	1,575	482	1,730	**39,468**	**52,945**
FY47	31,271	2,055	2,270	1,818	1,625	489	1,785	**41,321**	**55,161**
FY48	32,919	2,120	2,318	1,866	1,677	497	1,842	**43,246**	**57,456**
FY49	34,635	2,187	2,366	1,915	1,729	505	1,899	**45,243**	**59,829**
FY50	36,422	2,254	2,415	1,964	1,783	513	1,958	**47,316**	**62,283**
FY51	38,209	2,321	2,462	2,012	1,835	520	2,016	**49,383**	**64,724**

Source: Steer analysis

Table B.4: Forecasts (with impacts) for AADT growth rates (%) at TP2 Etturvattam

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY27	7.4%	4.2%	2.8%	3.5%	4.2%	2.1%	4.4%	6.0%	5.1%
FY28	7.1%	4.1%	2.7%	3.4%	3.1%	0.1%	2.9%	5.6%	4.6%
FY29	6.7%	4.0%	2.6%	3.3%	3.0%	0.0%	2.6%	5.4%	4.4%
FY30	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%	4.6%
FY31	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	3.8%	5.2%	4.5%
FY32	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.2%	4.5%
FY33	6.4%	3.8%	2.6%	3.2%	3.8%	1.9%	3.8%	5.4%	4.7%
FY34	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%	4.7%
FY35	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.3%	4.6%
FY36	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	3.7%	5.2%	4.5%
FY37	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	3.6%	5.1%	4.5%
FY38	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	3.5%	5.0%	4.4%
FY39	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	3.5%	5.0%	4.4%
FY40	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	3.4%	4.9%	4.4%
FY41	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	3.4%	4.9%	4.3%
FY42	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.4%	4.9%	4.3%
FY43	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.3%	4.8%	4.3%
FY44	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%	4.3%
FY45	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%	4.2%
FY46	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.2%	4.7%	4.2%
FY47	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.2%	4.7%	4.2%
FY48	5.3%	3.2%	2.1%	2.6%	3.2%	1.6%	3.2%	4.7%	4.2%
FY49	5.2%	3.1%	2.1%	2.6%	3.1%	1.6%	3.1%	4.6%	4.1%
FY50	5.2%	3.1%	2.1%	2.6%	3.1%	1.5%	3.1%	4.6%	4.1%
FY51	4.9%	2.9%	2.0%	2.5%	2.9%	1.5%	2.9%	4.4%	3.9%

Source: Steer analysis

Table B.5: Traffic Forecast(with impacts) over horizon years at TP3 Salaipudhur

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY26	8,345	991	1,222	871	731	333	734	13,231	19,956
FY27	8,958	1,032	1,256	901	762	340	766	14,020	20,978
FY28	9,596	1,074	1,290	932	791	346	797	14,831	22,014

FY29	10,242	1,117	1,325	963	821	351	826	15,649	23,055
FY30	10,894	1,159	1,358	993	852	358	858	16,477	24,116
FY31	11,575	1,203	1,392	1,024	884	365	890	17,338	25,212
FY32	12,294	1,248	1,427	1,056	917	371	923	18,241	26,358
FY33	13,081	1,296	1,463	1,090	953	378	959	19,225	27,600
FY34	13,905	1,345	1,500	1,124	989	386	995	20,249	28,886
FY35	14,767	1,395	1,537	1,159	1,025	393	1,032	21,314	30,216
FY36	15,666	1,446	1,575	1,195	1,063	400	1,070	22,420	31,592
FY37	16,605	1,498	1,613	1,230	1,101	407	1,108	23,567	33,014
FY38	17,582	1,551	1,651	1,267	1,140	414	1,147	24,757	34,481
FY39	18,598	1,604	1,689	1,303	1,179	422	1,187	25,988	35,993
FY40	19,662	1,659	1,727	1,340	1,220	429	1,228	27,272	37,564
FY41	20,776	1,716	1,767	1,378	1,261	436	1,269	28,611	39,195
FY42	21,942	1,774	1,806	1,417	1,304	443	1,312	30,005	40,887
FY43	23,160	1,833	1,846	1,456	1,347	451	1,356	31,457	42,643
FY44	24,433	1,893	1,887	1,496	1,392	458	1,400	32,968	44,463
FY45	25,762	1,955	1,928	1,537	1,437	466	1,446	34,539	46,350
FY46	27,149	2,018	1,969	1,579	1,483	473	1,493	36,173	48,304
FY47	28,595	2,083	2,011	1,621	1,531	481	1,541	37,871	50,328
FY48	30,102	2,148	2,054	1,663	1,579	488	1,589	39,634	52,423
FY49	31,672	2,216	2,097	1,707	1,629	496	1,639	41,463	54,591
FY50	33,305	2,284	2,140	1,751	1,679	504	1,690	43,362	56,832
FY51	34,940	2,351	2,182	1,794	1,728	511	1,740	45,255	59,061

Source: Steer analysis

Table B.6: Forecasts (with impacts) for AADT growth rates (%) at TP3 Salaipudhur

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY27	7.4%	4.2%	2.8%	3.5%	4.2%	2.1%	4.4%	6.0%	5.1%
FY28	7.1%	4.1%	2.7%	3.4%	3.9%	1.6%	4.0%	5.8%	4.9%
FY29	6.7%	4.0%	2.6%	3.3%	3.7%	1.6%	3.7%	5.5%	4.7%
FY30	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%	4.6%
FY31	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	3.8%	5.2%	4.5%
FY32	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.2%	4.5%
FY33	6.4%	3.8%	2.6%	3.2%	3.8%	1.9%	3.8%	5.4%	4.7%

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY34	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.3%	4.7%
FY35	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.3%	4.6%
FY36	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	3.7%	5.2%	4.6%
FY37	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	3.6%	5.1%	4.5%
FY38	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	3.5%	5.0%	4.4%
FY39	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	3.5%	5.0%	4.4%
FY40	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	3.4%	4.9%	4.4%
FY41	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	3.4%	4.9%	4.3%
FY42	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.4%	4.9%	4.3%
FY43	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.3%	4.8%	4.3%
FY44	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%	4.3%
FY45	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.8%	4.2%
FY46	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.2%	4.7%	4.2%
FY47	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.2%	4.7%	4.2%
FY48	5.3%	3.2%	2.1%	2.6%	3.2%	1.6%	3.2%	4.7%	4.2%
FY49	5.2%	3.1%	2.1%	2.6%	3.1%	1.6%	3.1%	4.6%	4.1%
FY50	5.2%	3.1%	2.1%	2.6%	3.1%	1.5%	3.1%	4.6%	4.1%
FY51	4.9%	2.9%	2.0%	2.5%	2.9%	1.5%	2.9%	4.4%	3.9%

Source: Steer analysis

6.57

Table B.7: Traffic Forecast (with impacts) over horizon years at TP4 Nanguneri

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY26	10,265	1,129	1,285	764	668	309	706	**15,128**	**21,674**
FY27	10,977	1,176	1,320	791	696	316	736	**16,015**	**22,786**
FY28	11,728	1,225	1,357	818	728	323	771	**16,950**	**23,965**
FY29	12,503	1,273	1,392	845	757	329	802	**17,903**	**25,146**
FY30	13,298	1,322	1,428	872	785	335	833	**18,875**	**26,344**
FY31	14,130	1,371	1,464	899	815	342	864	**19,886**	**27,584**
FY32	15,007	1,422	1,500	927	845	348	896	**20,948**	**28,881**
FY33	15,969	1,477	1,538	957	878	355	931	**22,106**	**30,289**
FY34	16,975	1,533	1,577	987	911	361	966	**23,312**	**31,749**

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY35	18,026	1,590	1,616	1,018	945	368	1,002	**24,567**	**33,262**
FY36	19,125	1,648	1,656	1,049	979	375	1,039	**25,871**	**34,829**
FY37	20,270	1,707	1,695	1,080	1,015	382	1,076	**27,226**	**36,449**
FY38	21,463	1,767	1,735	1,112	1,050	388	1,114	**28,631**	**38,124**
FY39	22,703	1,829	1,775	1,144	1,087	395	1,153	**30,087**	**39,852**
FY40	24,002	1,892	1,816	1,177	1,124	402	1,192	**31,606**	**41,649**
FY41	25,362	1,956	1,857	1,210	1,162	409	1,233	**33,191**	**43,516**
FY42	26,785	2,022	1,899	1,244	1,201	416	1,274	**34,843**	**45,457**
FY43	28,273	2,089	1,941	1,278	1,242	423	1,317	**36,564**	**47,472**
FY44	29,827	2,158	1,984	1,314	1,282	430	1,360	**38,356**	**49,564**
FY45	31,449	2,228	2,027	1,349	1,324	437	1,404	**40,221**	**51,734**
FY46	33,142	2,300	2,070	1,386	1,367	444	1,450	**42,161**	**53,985**
FY47	34,908	2,374	2,114	1,422	1,411	451	1,496	**44,178**	**56,318**
FY48	37,210	2,449	2,159	1,474	1,472	462	1,554	**46,783**	**59,317**
FY49	39,150	2,526	2,204	1,513	1,518	469	1,603	**48,985**	**61,848**
FY50	41,169	2,604	2,250	1,552	1,565	476	1,653	**51,270**	**64,467**
FY51	43,189	2,680	2,294	1,590	1,611	483	1,701	**53,551**	**67,075**

Source: Steer analysis

Table B.8: Traffic Forecasts (with impacts) for AADT growth rates (%) at TP4 Nanguneri

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY27	6.9%	4.2%	2.8%	3.5%	4.2%	2.1%	4.4%	5.9%	5.1%
FY28	6.8%	4.1%	2.7%	3.4%	4.5%	2.3%	4.7%	5.8%	5.2%
FY29	6.6%	4.0%	2.6%	3.3%	4.0%	2.0%	4.0%	5.6%	4.9%
FY30	6.4%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.4%	4.8%
FY31	6.3%	3.8%	2.5%	3.1%	3.8%	1.9%	3.8%	5.4%	4.7%
FY32	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.3%	4.7%
FY33	6.4%	3.8%	2.6%	3.2%	3.8%	1.9%	3.8%	5.5%	4.9%
FY34	6.3%	3.8%	2.5%	3.2%	3.8%	1.9%	3.8%	5.5%	4.8%
FY35	6.2%	3.7%	2.5%	3.1%	3.7%	1.9%	3.7%	5.4%	4.8%
FY36	6.1%	3.7%	2.4%	3.0%	3.7%	1.8%	3.7%	5.3%	4.7%
FY37	6.0%	3.6%	2.4%	3.0%	3.6%	1.8%	3.6%	5.2%	4.7%

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	AADT	PCUs
FY38	5.9%	3.5%	2.4%	2.9%	3.5%	1.8%	3.5%	5.2%	4.6%
FY39	5.8%	3.5%	2.3%	2.9%	3.5%	1.7%	3.5%	5.1%	4.5%
FY40	5.7%	3.4%	2.3%	2.9%	3.4%	1.7%	3.4%	5.0%	4.5%
FY41	5.7%	3.4%	2.3%	2.8%	3.4%	1.7%	3.4%	5.0%	4.5%
FY42	5.6%	3.4%	2.2%	2.8%	3.4%	1.7%	3.4%	5.0%	4.5%
FY43	5.6%	3.3%	2.2%	2.8%	3.3%	1.7%	3.3%	4.9%	4.4%
FY44	5.5%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.9%	4.4%
FY45	5.4%	3.3%	2.2%	2.7%	3.3%	1.6%	3.3%	4.9%	4.4%
FY46	5.4%	3.2%	2.2%	2.7%	3.2%	1.6%	3.2%	4.8%	4.4%
FY47	5.3%	3.2%	2.1%	2.7%	3.2%	1.6%	3.2%	4.8%	4.3%
FY48	6.6%	3.2%	2.1%	3.6%	4.3%	2.5%	3.9%	5.9%	5.3%
FY49	5.2%	3.1%	2.1%	2.6%	3.1%	1.6%	3.1%	4.7%	4.3%
FY50	5.2%	3.1%	2.1%	2.6%	3.1%	1.5%	3.1%	4.7%	4.2%
FY51	4.9%	2.9%	2.0%	2.5%	2.9%	1.5%	2.9%	4.4%	4.0%

Source: Steer analysis

Revenue Forecasts

Table B.9: Revenue Forecasts (with impacts) for horizon years (INR Crores) including annual pass compensation at TP1 Kappalur

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY26	54	7	22	9	13	7	20	131
FY27	60	8	28	9	14	7	21	147
FY28	68	8	30	10	16	8	23	163
FY29	76	9	32	11	17	8	26	179
FY30	71	8	26	9	14	7	21	148
FY31	77	8	26	9	15	7	22	155
FY32	80	8	27	9	15	7	23	160
FY33	114	13	42	15	24	11	37	256
FY34	126	14	46	16	26	11	41	279
FY35	139	15	49	17	29	12	44	304
FY36	156	16	52	18	31	13	48	335
FY37	171	17	56	20	34	14	52	363
FY38	191	19	59	21	36	15	57	399
FY39	209	20	64	23	39	15	62	432
FY40	233	22	68	25	42	16	68	475

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY41	257	24	73	27	46	17	74	517
FY42	284	26	78	29	50	19	80	565
FY43	314	28	84	31	54	20	87	616
FY44	347	30	89	33	58	21	94	673
FY45	380	32	95	36	62	22	102	731
FY46	419	35	102	38	68	24	111	797
FY47	464	38	109	41	73	25	121	871
FY48	511	41	117	44	79	27	131	950
FY49	563	44	124	47	85	28	142	1,034
FY50	615	47	133	51	92	30	154	1,122
FY51	675	51	142	55	99	32	167	1,221

Source: Steer analysis

Table B.10: Revenue Forecasts (with impacts) for horizon years (INR Crores) including annual pass compensation at TP2 Etturvattam

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY26	29	3	12	5	8	4	16	78
FY27	32	3	14	6	9	5	17	86
FY28	36	4	15	6	10	5	19	94
FY29	40	4	16	7	11	5	20	103
FY30	45	4	17	7	12	6	22	113
FY31	50	5	19	8	13	6	24	123
FY32	56	5	20	8	14	6	26	135
FY33	62	6	21	9	15	7	28	147
FY34	68	6	23	10	16	7	30	160
FY35	77	7	25	10	18	8	33	176
FY36	85	7	26	11	19	8	36	192
FY37	93	8	28	12	21	9	38	208
FY38	104	8	30	13	22	9	42	228
FY39	115	9	32	14	24	10	45	249
FY40	126	10	35	15	26	10	49	271
FY41	140	10	37	16	28	11	53	295
FY42	155	11	39	17	31	12	57	322
FY43	171	12	42	19	33	12	61	351

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY44	189	13	45	20	36	13	67	383
FY45	207	14	48	21	39	14	72	415
FY46	231	15	51	23	42	15	77	455
FY47	253	17	55	25	45	16	83	494
FY48	278	18	59	27	49	17	90	537
FY49	307	19	63	28	52	18	97	585
FY50	338	21	67	31	56	19	105	638
FY51	372	23	71	33	61	20	113	693

Source: Steer analysis

Table B.11: Revenue Forecasts(with impacts) for horizon years (INR Crores)at TP3 Salaipudhur

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY26	32	4	13	6	10	5	16	85
FY27	35	4	15	6	10	5	18	93
FY28	40	4	16	7	11	5	19	103
FY29	44	5	17	7	12	6	21	112
FY30	50	5	18	8	13	6	23	123
FY31	54	6	20	8	14	7	25	134
FY32	62	6	21	9	16	7	27	148
FY33	67	7	23	10	17	8	29	161
FY34	75	7	24	10	18	8	32	176
FY35	83	8	26	11	20	9	34	191
FY36	92	9	28	12	22	9	37	209
FY37	103	9	30	13	23	10	40	228
FY38	114	10	32	14	25	10	44	249
FY39	126	11	34	15	28	11	47	272
FY40	139	12	37	16	30	12	51	297
FY41	153	13	39	17	32	12	55	322
FY42	171	14	42	19	35	13	60	353
FY43	187	15	45	20	38	14	65	383
FY44	206	16	48	22	41	15	70	417
FY45	227	17	51	23	44	16	75	455
FY46	251	19	55	25	47	17	81	496
FY47	277	20	58	27	51	18	88	540
FY48	306	22	63	29	55	19	95	589
FY49	335	24	67	31	60	20	102	639

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY50	368	25	71	33	64	22	110	694
FY51	405	27	76	36	69	23	119	756

Source: Steer analysis

Table B.12: Revenue Forecasts(with impacts) for horizon years (INR Crores)at TP4 Nanguneri

Year	CJV	Mini LCV	Buses	LCV	2A	3A	MAV	Total
FY26	34	4	11	4	8	4	13	77
FY27	38	4	12	4	8	4	14	86
FY28	43	4	13	5	9	4	16	94
FY29	47	5	14	5	10	5	17	103
FY30	54	5	16	6	11	5	19	115
FY31	59	6	17	6	12	5	21	125
FY32	66	6	18	7	13	6	22	137
FY33	73	6	19	7	14	6	24	149
FY34	81	7	21	8	15	7	26	164
FY35	90	8	22	8	16	7	28	179
FY36	100	8	24	9	17	7	31	197
FY37	111	9	25	10	19	8	33	215
FY38	123	10	27	10	20	8	36	235
FY39	136	11	29	11	22	9	39	257
FY40	150	11	31	12	24	10	42	280
FY41	165	12	33	13	26	10	46	305
FY42	184	13	36	14	28	11	49	335
FY43	203	14	38	15	30	11	53	364
FY44	223	16	41	16	32	12	58	397
FY45	211	13	33	13	26	10	47	352
FY46	228	13	33	13	27	10	48	373
FY47	245	14	34	14	28	10	50	394
FY48	333	21	53	21	45	16	79	568
FY49	365	23	56	23	48	17	85	617
FY50	401	25	60	25	52	18	92	671
FY51	443	27	64	26	56	19	99	733

Source: Steer analysis

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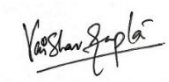

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Cube Highways Fund Advisors Private Limited Fund Advisors Private Limited
Our ref: 23741310

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Final Report
October 2025

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Contents

Disclaimer		**i**
Glossary Items		**iii**
1	**Introduction**	**1**
	The assignment	1
	Our approach	2
	Contents of this report	3
2	**The Asset**	**5**
	Introduction	5
	Strategic network	5
	Concession and tolling details	7
	Key economic activities	8
	Key Network Developments	9
3	**Traffic Description**	**10**
	Introduction	10
	Historical trends	11
	Key findings of the TVC data analysis	19
	Key findings of origin-destination analysis	21
	Conclusions	29
4	**Socio-economic context and traffic growth**	**31**
	Introduction	31
	Population growth	31
	Economic Indicators	32
	Economic growth	35
	Forecasts for growth drivers	38
5	**FY26 Base year AADT and Traffic growth Analysis**	**41**
	Introduction	41
	FY26 Base year AADT estimates	41
	Estimation of background elasticities	44
	Forecasts for background elasticities	48
6	**Forecasts: Network overlays and forecasts**	**49**
	Introduction	49
	Analysis of potential network/developmental impacts	49
	Revenue forecasting assumptions	52
	Traffic and Revenue forecasts	56
	Upside and Downside cases	60
	Summary outlook	63

Figures

Figure 2-1: Asset location in the regional road network 5
Figure 2-2: Asset context 6
Figure 2-3: Typical cross section of the Asset and toll plaza 8
Figure 3-1: Ticket-segmentation for CJV, TP1 Doddakarenahalli 16
Figure 3-2: Ticket-segmentation for MAV, TP1 Doddakarenahalli 16
Figure 3-3: Ticket-segmentation for CJV, TP2 Karabylu 17
Figure 3-4: Ticket Segmentation for MAV, TP2 Karabylu 17
Figure 3-5: TVC WADT 19
Figure 3-6: Comparison between TVC and TMS daily traffic data on TP1 Doddakarenahalli 20
Figure 3-7: Comparison between TVC and TMS daily traffic data on TP2 Karabylu 20
Figure 3-8 Comparison between vehicle shares from TVC and TMS WADTs 21
Figure 3-9: Zonal influence, TP1 Doddakarenahalli 23
Figure 3-10: Zonal influence, TP2 Karabylu 24
Figure 3-11: Internal-external distribution, TP1 Doddakarenahalli 25
Figure 3-12 Internal-external distribution, TP2 Karabylu 25
Figure 3-13: Commodity distribution, TP1 Doddakarenahalli (Total) 27
Figure 3-14: Commodity distribution, TP2 Karabylu 27
Figure 3-15: Trip length distribution, TP1 Doddakarenahalli 28
Figure 3-16: Trip length distribution, TP2 Karabylu 29
Figure 4-1: Annual growth – Index of Industrial Production 33
Figure 4-2: Car Ownership in India per 1000 population 34
Figure 4-3: Per Capita Income 34
Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures 35
Figure 4-5: Month on Month IIP performance 36
Figure 4-6: Industrial components of GVA 36
Figure 4-7: Evolution of Karnataka's state GDP and national GDP 37
Figure 4-8: Sectoral contribution to Karnataka's GSDP in FY24 38
Figure 4-9: GDP-GSDP forecast 40
Figure 5-1: FY26 Base Estimation methodology 42
Figure 5-2: Relationship between CJV traffic and Karnataka GSDP 46
Figure 5-3: Relationship between LCV+Bus+2A combined traffic and Karnataka GSDP 47
Figure 5-4: Relationship between 3A+MAV combined traffic and India's GDP 47
Figure 6-1: Alternate routes and Asset shown against the regional network context 50
Figure 6-2: Traffic and growth rates for forecast PCUs - Background and final- TP1 59
Figure 6-3 Traffic and growth rates for forecast PCUs - Background and final- TP2 59
Figure 6-4: Upside and Downside Case PCU Forecasts - TP1 Neelamangala 61
Figure 6-5: Upside and Downside Case Revenue Forecasts - TP1 Neelamangala 62
Figure 6-6: Upside and Downside Case PCU Forecasts - TP2 Karabylu 62
Figure 6-7: Upside and Downside Case Revenue Forecasts - TP2 Karabylu 63

Tables

Table 1.1: Scope of work and sources of data 1
Table 2.1: Concession details 7
Table 2.2: Single toll rates on the Asset (INR), applicable September 2025 to August 2026 8
Table 3.1: Historical evolution in AADT by vehicle class at TP1- Doddakarenahalli 11
Table 3.2: Historical Tollable Traffic Levels at TP1 Doddakarenahalli 11
Table 3.3: Historical evolution in AADT by vehicle class at TP2- Karabylu 11
Table 3.4: Historical Tollable Traffic Levels at TP2 Karabylu 12
Table 3.5: Revenue (INR Crore) by vehicle type at TP1 Doddakarenahalli, and AADC (annual average daily collection) in INR Lakhs 13
Table 3.6: Revenue (INR Crore) by vehicle type at TP2 Karabylu, and AADC (annual average daily collection) 13
Table 3.7: Typical ticket types sold at NHAI plazas 14
Table 3.8: Historical ticket segmentation at TP1 Doddakarenahalli 18
Table 3.9: Historical ticket segmentation at TP2 Karabylu 18
Table 3.10: Data collection schedule 19
Table 3.11: Difference in vehicle counts when combined 21
Table 3.12: Sample rates for OD data 22
Table 3.13: Zone aggregations for zonal influence analysis 22
Table 3.14: Aggregate commodity categories 26
Table 4.1: CAGR of population in India 31
Table 4.2: Population Growth in Karnataka and India (FY12 – FY24) 32
Table 5.1: Seasonality correction factors for TP1 – Doddakarenahalli 43
Table 5.2: Seasonality correction factors for TP2- Karabylu 43
Table 5.3: Adopted AADT for FY26, Doddakarenahalli 43
Table 5.4: Adopted AADT for FY26, Karabylu toll plaza 43
Table 5.5: Split between individual vehicle types, 2023 45
Table 5.6: Identified growth drivers to model traffic growth 45
Table 5.7: Derived elasticities from regression analysis and assumed forecast elasticities for background growth 48
Table 6.1: List of network/other developments 50
Table 6.2 :Impact of STRR (Dobbaspet- Hoskote section) at TP01 51
Table 6.3: Impact of Peripheral Ring Road at TP1 and TP2 52
Table 6.4: Summary of impact assessments 52
Table 6.5: WPI growth forecast assumptions 53
Table 6.6: Toll estimation overview 53
Table 6.7: Forecast toll segmentation for the forecast years , TP1 Doddakarenahalli 54
Table 6.8: Forecast toll segmentation for the forecast years, TP2 Karabylu 54

Table 6.9: Trip factors for the forecast years, TP1 Doddakarenahalli 55
Table 6.10: Trip factors for the forecast years, TP2 Karabylu 55
Table 6.11: Revenue reconciliation summary for Apr-Jun FY26 AADC 56
Table 6.12: Traffic forecast (with impacts) at TP1 Doddakarenahalli 56
Table 6.13: Traffic forecast (with impacts) growth rates (%), TP1 Doddakarenahalli 56
Table 6.14: Revenue forecasts (in INR crores including annual pass compensation) at TP1 Doddakarenahalli 57
Table 6.15: Revenue forecast with growth rates (%), TP1 Doddakarenahalli 57
Table 6.16: Traffic forecast (with impacts) at TP2 Karabylu 57
Table 6.17: Traffic forecast (with impacts) with growth rates at TP2 Karabylu 58
Table 6.18: Revenue forecast (in INR crores including annual pass compensation) at TP2 Karabylu 58
Table 6.19: Revenue forecast with growth rates (%) at TP2 Karabylu 58
Table 6.20: Summary of Macro-economic Assumptions for upside and downside cases 60
Table 6.21: Summary of impacts on the Assets 60
Table 6.22: Summary of impacts on the Assets 61
Table 6.23: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts – FY33 61

Appendices

A Top OD Pairs

B Data Collection Exercise

C Detailed Forecasts

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Traffic Consultant developed the relationships in the models used to produce the forecasts for the projects based on data available through September 2025. This report does not consider variations in traffic performance due to changing macro and force majeure events such (but not limited to) as global wars, economic uncertainty (high inflation, global recession), and changes in the regulatory environment. The situation remains dynamic and is subject to significant change in the short and medium term. In this challenging context, Traffic Consultant has produced base forecasts with a view on a possible scenario for the traffic forecasts. However, it is important to note that this is only one view, and there continues to remain uncertainty as to the short-term, intermediate or prolonged effects of and responses to such macro-economic/force majeure events. As a result, no assurance can be provided by Traffic Consultant that the scenarios and assumptions Traffic Consultant has identified will prove to be accurate. Given the uncertainty inherent in this scenario, Traffic Consultant advises that all readers of the Report consider the Report in the context of their own assessment of the impact of such events.

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
IHMCL	Indian Highway Management Company Limited
INR	Indian Rupees
InvIT	Infrastructure Investment Trust
Km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Over-sized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor

Acronym	Meaning
SH	State Highway
T&R	Traffic and Revenue
TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Nelamangala-Devihalli Toll Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset Nelamangala-Devihalli consists of a single toll road section with two toll plazas. For this report, we hereafter call both the toll road sections and the toll plazas together as Asset and name the toll plazas as TP1 and TP2 respectively as follows:

- TP1 – Doddakarenahalli (Nelamangala)
- TP2 – Karabylu

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between FY13 and Sep'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable.
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution — Trip length distribution	• Origin Destination (OD) surveys undertaken by Steer in 2023 (TP1) and 2019 (TP2) respectively
• Analysis of upcoming network improvements and other developments, that may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by Steer based on

Scope of work	Data source
	Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including — Toll segmentation and trip factors, — Overloading shares	• Calculated from historical data provided by Client
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research, Asset historical traffic performance and Steer's in-house experience of working on toll roads on the corridor • Gross Domestic Product (GDP) forecast assumptions provided by Client
• Toll revenue estimation for the entire concession, including toll evolution	• Toll evolution based on latest toll notification published by National Highway Authority of India (NHAI) and latest actual Wholesale Price Index (WPI) trends as shared by the Client. • Assumptions of WPI forecasts and future tolling length changes provided by Client • Revenues estimated as a product of traffic forecasts and toll evolution

Our approach

1.4 Our approach follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset. The analysis has essentially focused on two sets of issues, namely:

- Understanding the traffic that is currently using the Asset; and
- Identifying how and why that traffic is likely to change in the future.

1.5 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources and Client-provided secondary data, including:

- TMS data pertaining from July 2012 to September 2025
- Concession agreement and toll notifications for FY25 and FY26
- Previous studies related to traffic and revenue
- Bid documents and studies by lenders
- Steer-commissioned OD survey on 3rd July 2023 at TP1 Nelamangala to validate any change in growth drivers and travel patterns. The OD survey on TP2 Karabylu had been undertaken in 2019 as part of study in earlier commission.
- Steer-commissioned 3-day TVC survey from 1st July to 3rd July 2023 at TP1 Nelamangala on behalf of the Client to validate TMS data independently. Whereas on TP2 Karabylu TVC survey was conducted in 2021 as part of study in earlier commission.

- We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by the toll plaza and subsequently matched it to the reported revenue for FY26 using the prevalent toll rates and reported segmentation/toll-frequencies for FY26, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.6 The estimation of future traffic demand on the Asset was undertaken through:

- Estimating FY26 base year position. The FY26 AADT was calculated using the monthly traffic data for FY25. The annual FY25 AADT was then grown with elasticity linked GDP/GSDP growth to arrive at the FY26 expected traffic. To determine the adopted FY26, the expected FY26 traffic was validated against the ten months of actual traffic (Apr'25-Sep'25) and necessary adjustments were made where required.
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Steer independent primary surveys and site visits to validate our network and contextual understanding.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by Client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.7 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

1. Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
2. Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
3. Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analyses;

4. Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
5. Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
6. Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases.

2 The Asset

Introduction

2.1 This chapter provides description of the Asset, based on both primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in the southern state of Karnataka connecting the city of Bengaluru to Mangaluru via NH75. It is one of the three sections making this corridor, the other two being Devihalli-Hassan Tollway Limited (DHTL) and Hassan-Mangaluru highway. Figure 2-1 below shows the regional road network in which the Asset is located.

Figure 2-1: Asset location in the regional road network

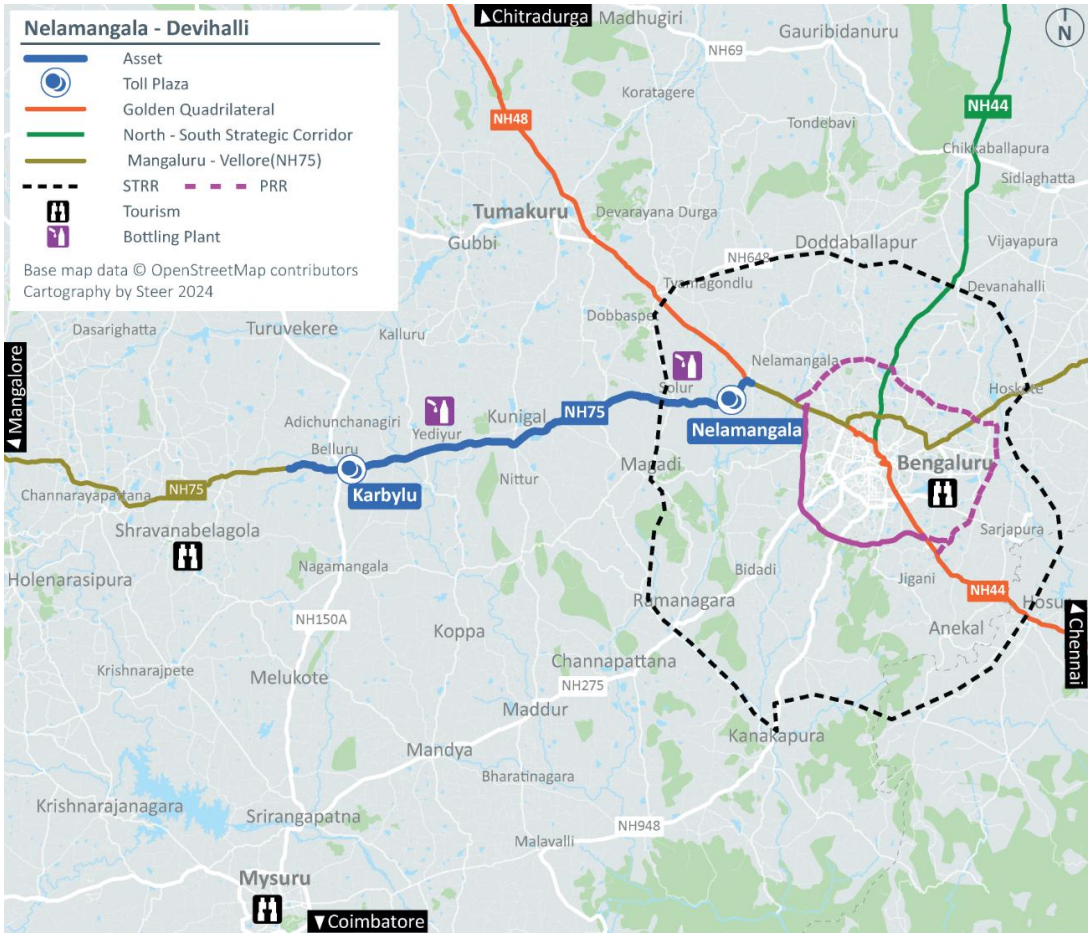
Source: Steer cartography using OpenStreetMap data

2.3 The Asset primarily caters to the following types of movements, by virtue of its strategic location:

- **Medium-distance movements** between **Bengaluru and Mangaluru** primarily for leisure and tourism. The CJVs contribute around 80% on an average to the total traffic on the Asset. This is driven by the large number of tourist destinations along the Asset and close to the Asset which drives the car growth such as Bengaluru, Mangaluru, Madikeri, Coorg, etc.
- Work and leisure trips between local cities, towns, and villages like Nelamangala, Hassan, nearby tourist spots, and Bengaluru city.
- Petroleum-related traffic:
  - Between ports and refineries in Mangaluru and Kochi, and liquified petroleum gas (LPG) bottling plants lying on the Asset, viz Hindustan Petroleum Corporation Limited (HPCL) plant at Yediyur and Bharat Petroleum Corporation Limited (BPCL) plant at Solur.
  - Between the bottling plants and the neighbouring consumption centres like Bengaluru.

2.4 The Asset is an 80.26-km toll road which forms a part of NH75 in Karnataka. This is a four-lane road with two toll plazas, namely, Doddakarenahalli/Nelamangala (TP1 closer to Bengaluru) and Karabylu (TP2 closer to Devihalli). Figure 2-2 below provides a closer view of the Asset in the context of its immediate surroundings.

Figure 2-2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.5 The toll plazas on the Asset have been operational since June 2012. There are 7 years left in the concession period with FY33 being the last year of concession. Table 2.1 below provides a summary of the Asset concession details.

Table 2.1: Concession details

Particulars	Details
State	Karnataka
Highway	NH 75 4-lane
Toll Plaza	TP1: Doddakarenahalli TP2: Karabylu
Length (km)	TP1: 40.13 km TP2: 40.13 km
Commencement of operations*	TP1: July 2012 TP2: July 2012
Concession period	20 years
Last year of concession	FY33

Source: Concession agreement

2.6

2.7 Figure 2-3 below shows a typical cross-section of the Asset and its toll plaza.

Figure 2-3: Typical cross section of the Asset and toll plaza

Source: Steer site visit

2.8 Tolls on the Asset are collected as per the rates presented in Table 2.2 below. The toll plazas have dedicated ETC/FASTag lanes for electronic tolling.

2.9 Apart from single tickets, the typical NHAI ticket categories like return, monthly, local personal and local commercial passes are also available on the Asset.

Table 2.2: Single toll rates on the Asset (INR), applicable September 2025 to August 2026

Type of Vehicle	Single Journey Fee (INR)	
	TP1 Doddakarenahalli	TP2 Karabylu
CJV	60	60
LCV	100	100
Bus/Truck	205	205
3A/MAV/OSV	325	325

Source: NHAI Revision of User fee Rate w.e.f 01.09.2025

2.11 Apart from the (Concession Agreement) CA-prescribed toll categories mentioned above, the toll plaza management charges a small number of school buses at an agreed monthly amount.

Key economic activities

2.12 Bengaluru is both the capital and the largest city of Karnataka. The Asset, passing through several districts, is located just outside and to the west of the Bengaluru urban district.

The industrial town of Nelamangala, at the Asset's eastern end, has several large-scale industries.

2.13 The Asset serves various tourist locations between Bengaluru and Mangaluru such as Madikeri, Coorg and temple tourism spots between the two cities. While Bengaluru earlier known as the 'Garden City' has been popular for its lakes, gardens, and pleasant weather; Mangaluru, on the western Indian coast, is known for its beaches and cuisine. Mangaluru is also the headquarters of the Dakshina Kannada district. Apart from Shravanabelagola, a major Jain pilgrimage centre near Channarayapattana, there are several temple locations in Dakshina Kannada district. Madikeri district, also known as Coorg or Kodagu, is a popular hill destination and coffee-growing region.

2.14 The Asset has two major LPG bottling plants, Solur and Yediyur, in close vicinity. Solur is present near TP1 whereas Yediyur is present near TP2. As urbanisation increases along the corridor, growth of household products and goods including the demand for LPG will also grow and continue to benefit the asset over time. The active implementation of government schemes – like the Pradhan Mantri Ujjwala Yojna, launched in May 2016 - has led to a 6.2% CAGR of total LPG sales in India, between FY15 and FY24[1]

Key Network Developments

2.15 In close proximity to the Asset, the proposed construction of the Satellite Town Ring Road (4-6L) access-controlled expressway is currently underway. Designed to function as a broader bypass, it will facilitate smoother and faster movement of long-distance traffic that does not need to enter the city. This network development has been covered in detail in Chapter 6. [2]

2.16 There are no alternate long-distance or medium-distance routes that pose a threat to the Asset. Also, during our site visit to the Asset, no major micro-diversions through local roads were observed close to the toll plazas. Chapter 6 provides a discussion and estimation of potential impacts on the Asset.

[1] **PMUY : Home**

[2] https://www.thehindu.com/news/cities/bangalore/peripheral-ring-road-under-ppp-model/article34022482.ece

3 Traffic Description

Introduction

3.1 This chapter presents historical and current traffic and revenue trends on the Asset, as well as our analysis of origin-destination (OD) survey data and traffic count data. This covers data which was collected as a part of this study and in previous studies, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of demand currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year Monthly Average Daily Traffic (MADT) is established. This data is typically provided by the Client and independently analysed and validated by us using Traffic Volume Count (TVC) information.

PCU factor assumptions for reporting

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2023 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3-1: PCU factors

Vehicle Category	PCU Factor
CJV/Mini LCV	1.0
LCV	1.5
Bus/2A	3.0
3A	3.0
MAV*	3.42
OSV	4.5

Source: Steer analysis and IRC64,1990; MAV PCU factor has been arrived using the split between rigid and trailer trucks

Historical trends

3.5 Table 3.1 through Table 3.4 below present the historical traffic evolution for each of the Asset toll plazas.

Table 3.1: Historical evolution in AADT by vehicle class at TP1- Doddakarenahalli

Vehicle	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR-FY22 - 25 (%)
CJV	12,794	13,000	14,458	15,656	16,509	19,909	20,291	21,415	22,898	9.1%
LCV	2,658	2,631	2,775	2,476	1,241	1,337	1,173	1,204	1,253	(1.0%)
Bus	1,522	1,436	1,442	539	974	1,370	1,527	1,698	1,758	20.4%
2A	894	812	806	996	711	877	973	1,000	1,058	12.1%
3A/MAV	831	744	952	960	999	1,074	1,136	1,137	1,089	4.4%
Total	**18,699**	**18,623**	**20,432**	**20,627**	**20,433**	**24,568**	**25,100**	**26,454**	**28,057**	**9.0%**
PCU	**26,735**	**26,112**	**28,461**	**27,098**	**26,674**	**32,152**	**33,248**	**35,014**	**36,947**	**9.5%**

Source: Steer analysis of the Client data. 3A/MAV PCU is a weighted average of Rigid-trailer PCU (MAV) and 3A/MAV splits using TVC to arrive at 3A/MAV PCU; FY26YTD includes data till September'25

Table 3.2: Historical Tollable Traffic Levels at TP1 Doddakarenahalli

Vehicle	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR-FY22 - 25 (%)
CJV	10,812	10,872	11,780	13,279	14,845	18,116	18,322	19,225	20,570	9.0%
LCV	2,516	2,494	2,624	2,353	1,199	1,305	1,141	1,157	1,218	(1.2%)
Bus	1,520	1,433	1,431	788	972	1,362	1,522	1,690	1,753	20.2%
2A	816	741	744	698	686	851	946	970	1,019	12.2%
3A/MAV	829	738	938	942	985	1,050	1,104	1,091	1,051	3.5%
Total	**16,493**	**16,277**	**17,516**	**18,061**	**18,687**	**22,683**	**23,035**	**24,133**	**25,611**	**8.9%**
PCU	**24,292**	**23,535**	**25,292**	**24,336**	**24,823**	**31,434**	**32,405**	**32,669**	**34,303**	**9.6%**

Source: Steer analysis of Client data; FY26YTD includes data till September'25; Tollable traffic excludes exemption and violation

Table 3.3: Historical evolution in AADT by vehicle class at TP2- Karabylu

Vehicle	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR-FY22 - 25 (%)
CJV	8,997	8,766	10,273	11,291	12,376	14,748	14,876	15,861	16,996	8.6%
LCV	1,998	1,956	2,149	1,887	901	902	807	835	864	(2.5%)
Bus	1,281	1,227	1,236	643	806	1,162	1,249	1,382	1,436	19.7%
2A	709	583	603	557	553	680	738	729	746	9.7%
3A/MAV	776	660	915	876	952	990	1,119	1,127	1,053	5.9%
Total	**13,761**	**13,193**	**15,176**	**15,255**	**15,587**	**18,482**	**18,789**	**19,934**	**21,095**	**8.5%**
PCU	**20,488**	**19,280**	**22,053**	**20,781**	**20,894**	**24,851**	**25,690**	**27,114**	**28,435**	**9.1%**

Source: Steer analysis of the Client data; FY26YTD includes data till September'25

Table 3.4: Historical Tollable Traffic Levels at TP2 Karabylu

Vehicle	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR-FY22 -25 (%)
CJV	8,316	8,069	8,995	10,156	11,632	14,000	14,065	14,914	16,047	8.6%
LCV	1,890	1,839	1,998	1,772	885	886	789	817	847	(2.6%)
Bus	1,278	1,223	1,233	631	804	1,157	1,244	1,379	1,433	19.7%
2A	662	540	553	521	516	654	712	702	721	10.8%
3A/MAV	732	626	884	858	938	985	985	1,121	1,049	6.1%
Total	**12,879**	**12,297**	**13,662**	**13,939**	**14,775**	**17,681**	**17,919**	**18,933**	**20,097**	**8.6%**
PCU	**19,357**	**18,155**	**20,225**	**19,066**	**19,973**	**23,966**	**26,108**	**26,508**	**27,363**	**9.9%**

Source: Steer analysis of Client data; FY26YTD includes data till September'25; Tollable traffic excludes exemption and violation

3.6 On the Asset, Doddakarenahalli toll plaza is trending at around 38,000 PCUs in FY26YTD and Karabylu toll plaza at around 29,000 PCUs.

3.7 In terms of vehicle composition, CJVs are the biggest contributor on the Asset with a share of over 80%. As discussed in Chapter 2, the Asset caters to large volume of tourism-oriented traffic travelling from Bengaluru to tourism centres such as Coorg, Madikeri, and Shravanabelagola which contribute towards the CJV traffic on the Asset. These shares are slightly higher at TP1 which is closer to the urban centre of Bengaluru.

3.8 The CJV traffic on the Asset was impacted during FY20 and FY21 due to Covid-19. Passenger traffic showed signs of recovery post-FY21 and has exhibited stable growth since then. Between FY22 and FY25, overall traffic grew at a PCU CAGR of 9.5% and 9.1% at TP1 and TP2 respectively. This growth across both TPs stems from higher growth observed in the Bus/2A category, followed by CJVs and MAVs.

3.9 The LCVs on the Asset mainly carry items of daily needs and agricultural commodities. As of FY26YTD LCV traffic growth at both TP1 and TP2 has been flat relative to other vehicle categories including CJVs. In contrast, Bus volumes at both plazas through September 2025 have observed robust growth over FY24 levels as the Asset is an important link for tourism related travel and religious tourism.

3.10 Share of MAVs on the Asset has historically remained at about 4-5% of total traffic. Majority of these MAVs carry LPG cylinders from the Hindustan Petroleum Corporation Limited (HPCL) bottling plant at Solur and Bharat Petroleum Corporation Limited (BPCL) bottling plant at Yediyur. Commercial traffic volumes (2A/3A/MAV) at TP2 (Karabylu) observed declines in the early months of FY25 (June-August 2024) as long-distance movements from (or to) Mangaluru along the NH75 were disrupted due to a Landslip near Doddatapale (further west of TP2). TP1 also observed declines but to a lesser extent as traffic volumes observed at TP1 are dominated more by urban activity of Bangaluru city and outside. Periodic landslides every 1-2 years have historically disrupted traffic flows on the NH75, partially due to prolonged roadworks along the Shiradi Ghat section of the highway. These periodic disruptions are expected to continue going forward.

3.11 The Asset saw steady and healthy growth from FY17 to FY26YTD, except for a decline in FY21 due to COVID-19. Both TPs have witnessed strong growth in the number of CJVs on

the route – the only exception being in FY19 due to construction on the Hassan-Mangaluru section at Shiradi Ghat, which was a temporary impact and FY21 due to COVID-19 related restrictions. The increasing number of CJVs observed on this Asset can be directly linked to the growth of the city of Bengaluru both in terms of population and per capita income levels. As mentioned previously, this corridor is primarily used for social, leisure and tourism activities, the growth in local economy and local tourism has led to strong growth in the CJV traffic. The growth in CJVs in FY22 and FY23 is also attributed to Mini LCV now being correctly tolled in CJVs post FASTag implementation, which were earlier accounted in LCVs. These shares have stabilised post this correction, thereby not affecting growth in the recent years leading up to FY26YTD.

3.12 The flat or negative growth trend in LCVs between FY22 and FY25 can be partially attributed to changes in vehicle classification of Mini LCVs under FASTag implementation, where Mini LCVs that were earlier classified as LCVs are now classified as CJVs. Flat growth in LCVs as of FY26YTD is indicative of a stabilisation of these trends and a return to trend growth, and future growth in LCVs are expected to follow underlying trends in the regional economy more closely.

Historical Revenue

3.13 Table 3.5 and Table 3.6 below present the revenue (in INR Lakhs) by each vehicle type at each toll plaza for FY19-FY26 YTD at an annual and daily level.

Table 3.5: Revenue (INR Crore) by vehicle type at TP1 Doddakarenahalli, and AADC (annual average daily collection) in INR Lakhs

	CJV	LCV	Bus	2A	3A/MAV	Total	AADC	Growth %
FY19	13.6	5.9	6.7	3.1	5.8	35.10	9.62	
FY20	15.5	6.2	6.5	3.2	7.8	39.20	10.74	11.7%
FY21	17.0	5.4	4.0	2.6	6.5	35.60	9.75	(9.2%)
FY22	24.7	2.8	4.6	3.2	8.7	44.10	12.08	23.9%
FY23	27.8	3.0	5.6	3.9	9.3	49.60	13.59	12.5%
FY24	31.0	3.0	6.6	5.0	10.7	56.30	15.42	13.5%
FY25	33.5	3.2	7.5	5.2	10.8	60.20	16.50	7.1%
FY26*	17.6	1.6	3.9	2.7	5.2	31.05	17.06	1.6%

Source: Steer analysis of the Client data; AADC represents Average Annual Daily Collection in INR Lakhs; FY26* is FY26YTD data for 6 months from Apr'25 to Sep'26; Revenue excludes the penalty revenue

Table 3.6: Revenue (INR Crore) by vehicle type at TP2 Karabylu, and AADC (annual average daily collection)

	CJV	LCV	Bus	2A	3A/MAV	Total	AADC	Growth %
FY19	11.9	4.3	4.0	2.7	5.3	28.20	7.73	
FY20	13.3	4.8	4.5	2.7	7.3	32.60	8.93	15.6%
FY21	11.4	4.2	2.5	5.6	5.3	29.10	7.97	(10.7%)
FY22	20.4	2.2	4.1	2.7	8.6	38.10	10.44	30.9%
FY23	22.5	2.3	4.6	3.3	9.0	41.70	11.42	9.4%

	CJV	LCV	Bus	2A	3A/MAV	Total	AADC	Growth %
FY24	24.6	2.3	5.9	4.2	11.2	48.20	13.21	15.6%
FY25	26.8	2.5	6.7	4.4	11.7	52.04	14.26	8.3%
FY26*	14.1	1.3	3.4	2.2	5.5	26.60	14.61	0.3%

Source: Steer analysis of the Client data; AADC represents Average Annual Daily Collection in INR Lakhs; FY26* is FY26YTD data for 6 months from Apr'25 to Sep'26; Revenue excludes the penalty revenue

3.14 From the above table it can be observed that TP1 generates higher daily collection for the Asset. This is due to higher volumes of CJV, LCV and MAV traffic on TP1 given its proximity to Bengaluru.

Toll Frequencies

3.15 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. This is based on the toll policy which forms a part of the concession agreement. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the Client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some toll plazas offer custom made local passes to attract the local commuters to opt for these category passes instead of evading toll.

3.16 Understanding the toll frequency gives insights into the nature of traffic. CJVs generally have higher shares of return passes or local monthly passes because they travel for short to medium distances, while heavy trucks mostly have single tickets since they travel long distance. CJVs and buses also tend to have a higher share of exemption/violations than other commercial vehicle categories as their tolls are higher and tend to contribute the most to the Asset's total revenue. However, this varies from Asset to Asset or even toll plaza to toll plaza. The Asset catering to short distance local traffic generally observes high share of return or other local monthly passes while the Asset catering to strategic long-distance traffic generally observes high share of single ticket traffic.

3.17 Table 3.7 below presents the different types of tickets being sold at both the Asset plazas.

Table 3.7: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows the vehicle to take two trips within a day with second trip at 50% of single fee.
Local Personal	Discounted single entry monthly pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. The pass allows single entry only.
Monthly	For all vehicle categories which charges the user 1/3rd the fee of 50 Single trips
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.18 Further, the toll plazas also record violations which are non-paying users, who are not officially allowed under exemptions category but are forced exemptions. For the Asset, the segmentation discussed below reports Exemption and violations together

3.19 As a general pattern, the shares of single/return/monthly tickets tend to stabilise within 2-3 years of the commencement of Asset operations. Only in the cases where trip patterns are expected to change significantly due to urban expansion is where we expect these shares to change over the period or due to some external events impacting the trip patterns. During FY20 and FY21, however, two key events impacted the traffic patterns throughout the country: COVID-19 and FASTag implementation.

Introduction of Annual pass for CJVs

3.20 The National Highway Authority of India launched the “The FASTag Annual Pass” on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.21 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

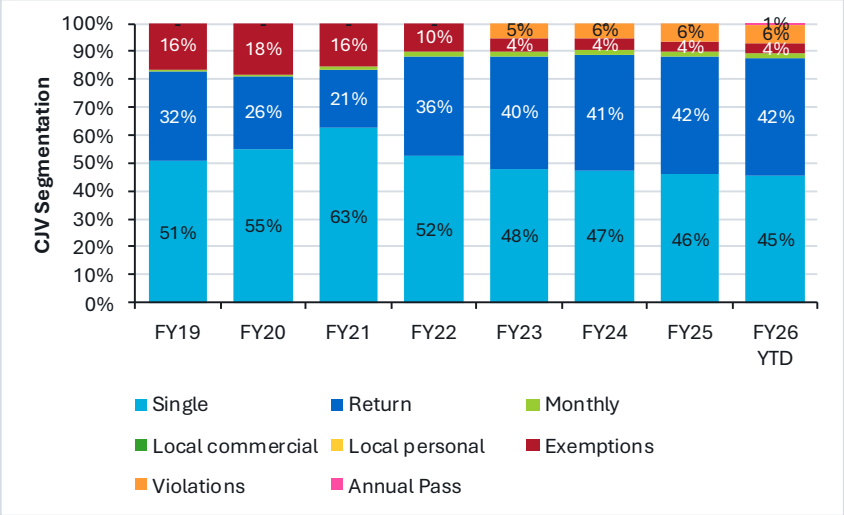
The Annual Pass aims to:

- Promote cashless and seamless travel on national highways.
- Reduce congestion and improve traffic flow at tolls
- Provide cost-effective travel for frequent users of NH/NE toll roads

Share of traffic by payment type

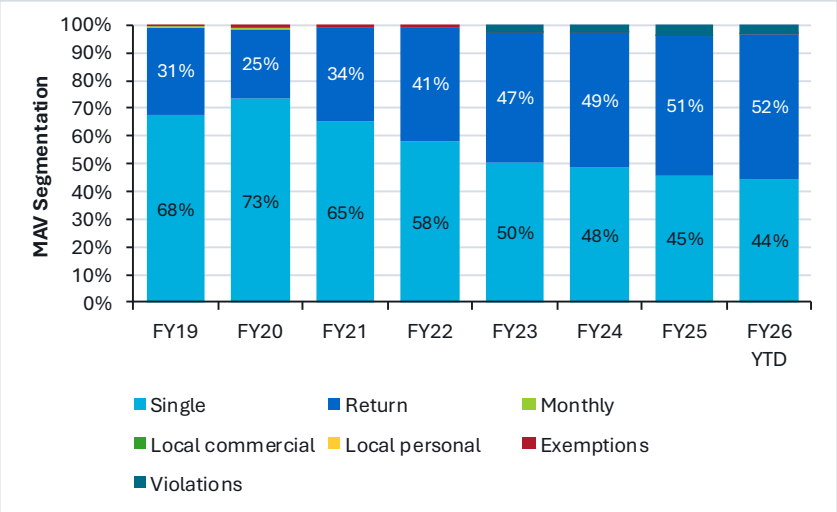
3.22 Figure 3-1 through Figure 3-4 below present toll segmentation for the historical years at TP1 Doddakarenahalli and TP2 Karabylu for CJVs and MAVs. Table 3.8 and Table 3.9 below provide the same for the remaining vehicle types. FY21 was a partial year in terms of operation of the toll plazas. Further, there was a change in ticket patterns due to the mandatory implementation of FASTag as a mode of payment (share of single tickets increased in FY21). FY22 was also impacted by 2nd wave of COVID-19 in Q1 and Q2 of FY22. Hence during this period travel patterns were also disrupted. With FY21 and FY22 being Covid-19 impacted it is assumed that segmentation of FY23 onwards is normal. The figures below show ticket segmentation for CJV and MAV categories.

Figure 3-1: Ticket-segmentation for CJV, TP1 Doddakarenahalli



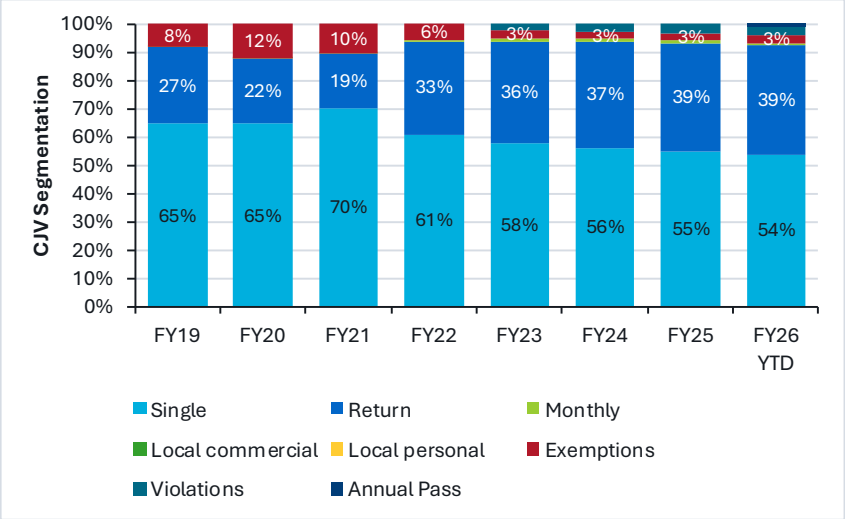
Source: Steer analysis of the Client data. FY26 Segmentation is representative of Client data up till Aug'25.

Figure 3-2: Ticket-segmentation for MAV, TP1 Doddakarenahalli



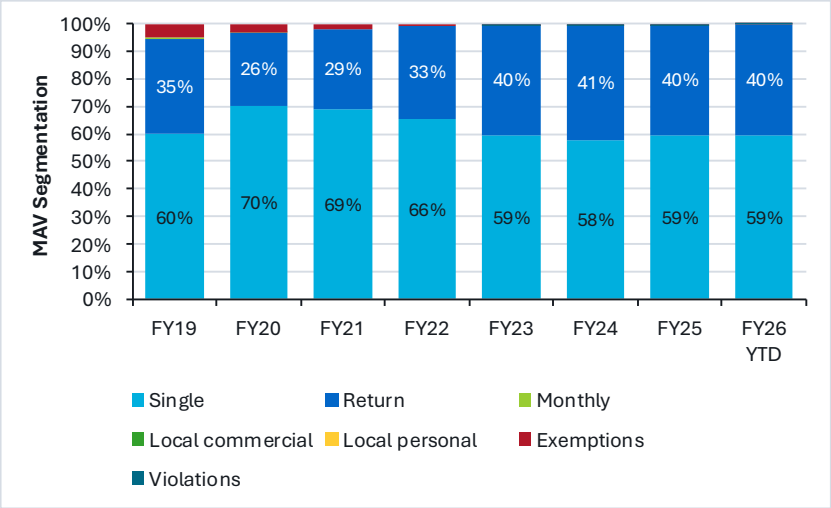
Source: Steer analysis of the Client. FY26 Segmentation is representative of Client data up till Aug'25.

Figure 3-3: Ticket-segmentation for CJV, TP2 Karabylu



Source: Steer analysis of the Client data. FY26 Segmentation is representative of Client data up till Aug'25.

Figure 3-4: Ticket Segmentation for MAV, TP2 Karabylu



Source: Steer analysis of the Client data. FY26 Segmentation is representative of Client data up till Aug'25.

3.23 For CJVs, the dominant ticket type at both plazas is 'Single' tickets (nearly 45% at TP1 and just under 60% at TP2), due to the high share of tourism-related traffic, wherein the commuters generally travel for couple of days, not making users eligible for a return ticket within 24 hours.

3.24 The share of exemptions observed on this Asset is in line with our observations on similar urban Assets across the region. The share of exemptions is higher on TP1 due to its urban nature. With increasing ETC penetration on the Asset, the combined share of exemptions and violations on the Asset has dropped significantly compared to FY22 levels. This is likely because of better management and operation of traffic system post FASTag implementation.

3.25 MAVs also show a high share of 'Single' ticket type (45-50% at TP1 and 60% at TP2), showing the significance of medium-distance traffic. The remaining shares for MAVs are primarily held by 'Return' tickets. Since TP1 of the Asset caters to more local traffic

feeding the local industries as verified from the OD data in chapter 3 therefore the share of return tickets is higher on TP1 of the Asset and has been growing FY22 onwards. In case of MAVs, both the plazas report negligible exemptions.

3.26 Refer below to the table for FY26YTD (Apr'25 – Aug'25) segmentation for LCV, Bus, 2A and 3A /MAV category at TP1 Doddakarenahalli and T2 Karabylu

Table 3.8: Historical ticket segmentation at TP1 Doddakarenahalli

Ticket	LCV	Bus	2A	3A
Single	25.6%	8.0%	28.2%	44.4%
Return	68.3%	86.4%	53.8%	52.0%
Monthly	1.0%	5.3%	0.7%	-
Local commercial	2.3%	-	13.6%	-
Exemptions	0.3%	0.0%	0.2%	0.0%
Violations	2.5%	0.3%	3.4%	3.5%

Source: Steer analysis of the Client data till Aug'25.

Table 3.9: Historical ticket segmentation at TP2 Karabylu

Ticket	LCV	Bus	2A	3A
Single	44.8%	9.5%	46.3%	59.3%
Return	51.9%	83.6%	45.7%	40.3%
Monthly	0.7%	6.7%	0.4%	-
Local commercial	0.8%	-	4.3%	-
Exemptions	-	-	-	-
Violations	0.4%	0.1%	1.1%	0.0%

Source: Steer analysis of the Client data till Aug'25.

Overloading

3.27 The Asset being a part of NHAI concession follows the NHAI Overloading policy released in 2016 which bans the overloading of commercial vehicle on any NHAI toll plaza. In case of non-compliance, overloaded vehicles on the Asset are charged twice the toll fee they would otherwise pay for a Single ticket at the toll plaza. The Asset currently doesn't report overloading under any ticket category.

Data Collection exercise

3.28 To validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset comprising the surveys listed in the table below. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.10: Data collection schedule

Toll Plaza	3-day videography based TVC			1 day OD survey	
	Start date	End date	Time (hrs)	Start date	Time (hrs)
TP1 Doddakarenahalli	1st Jul 2023	3rd Jul 2023	0000-2359	3rd July 2023	08:00
TP2 Karabylu	18 Jan 2021	24 Jan 2021	0000-2359	9 Nov 2019	08:00

Source: Data collection plan as followed for collecting independent survey data

3.29 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, in order to fully understand the impact of this weekly fluctuation on the Asset, we collected three-day counts at each toll plaza.

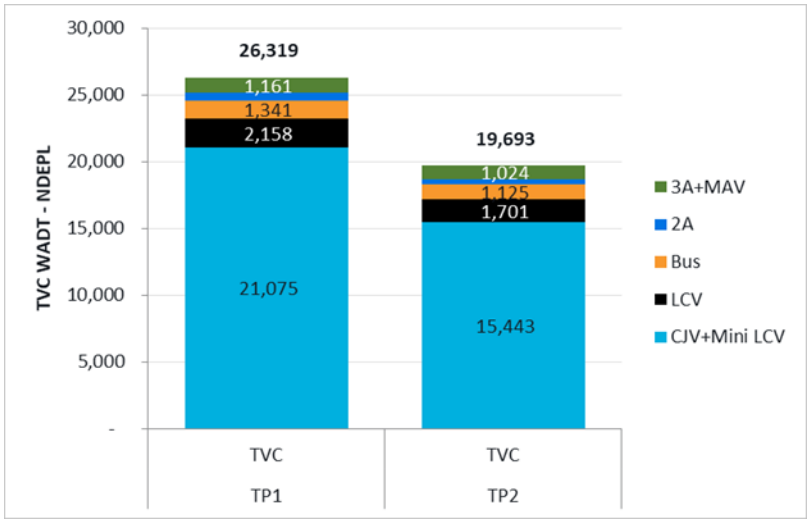
Key findings of the TVC data analysis

WADT estimates

3.30 For Doddakarenahalli, the average of a three-day TVC survey conducted between (1st July – 3rd July 2023, 0000-2359) was used, and for Karabylu an average of the seven-day TVC counts (18th – 24th Jan 2021, 0000-2359) was used, to obtain the following average daily traffic (WADT) for each toll plaza. This WADT excludes non-tollable vehicle such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicle, government vehicle and other vehicle types officially allowed as 'exempted' under the concession agreement.

3.31 From Figure 3-5 below, we see that both toll plazas exhibit similar characteristics in terms of vehicle shares. CJVs form major share on both TPs, where they account for ~80% of the total traffic, followed by LCVs which constitute ~8-10% of the remaining shares.

Figure 3-5: TVC WADT



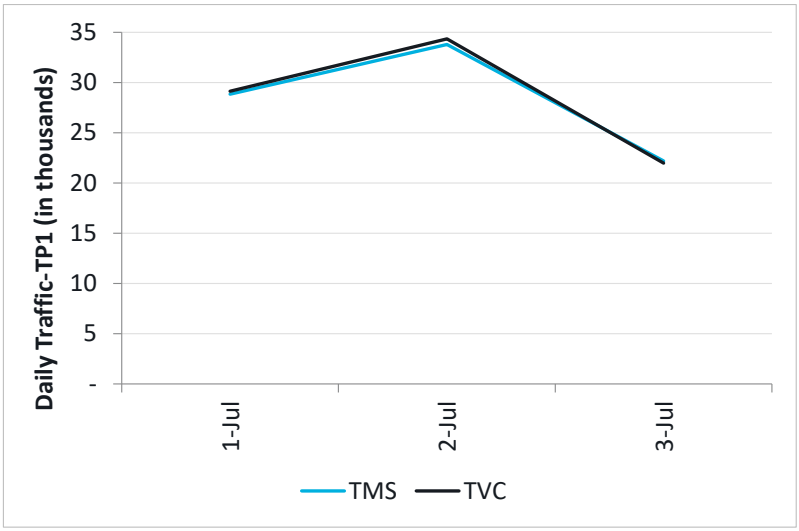
Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.32 We used our TVC data to validate the toll plaza data for the same days, as supplied by the Client via their toll management system (TMS). This TMS data was then used as the base data, for our forecasting model.

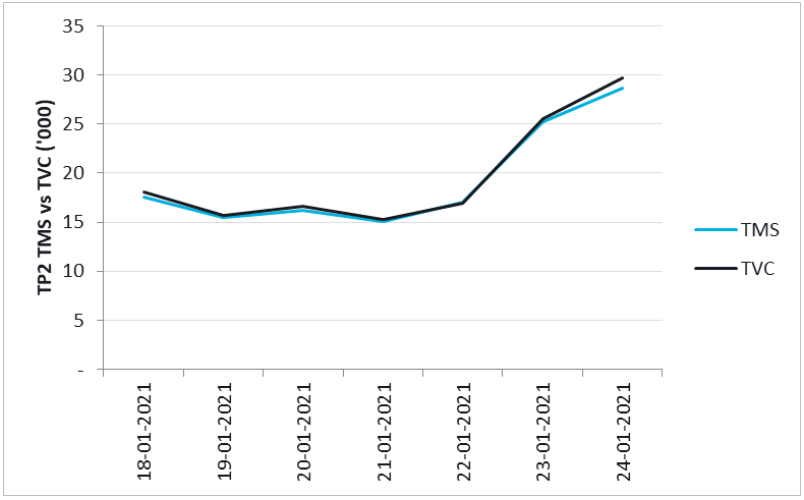
3.33 Figure 3-6 and Figure 3-7 below show the comparison between daily traffic data and shares of vehicle categories in TVC and TMS for the two toll plazas. As can be seen both TP1 Doddakarenahalli and TP2 Karabylu show a good fit between the TVC and TMS. The minor difference on two days of the seven-day period at TP2 is within the acceptable range of variation.

Figure 3-6: Comparison between TVC and TMS daily traffic data on TP1 Doddakarenahalli



Source: Steer analysis of TVC and Client TMS data

Figure 3-7: Comparison between TVC and TMS daily traffic data on TP2 Karabylu

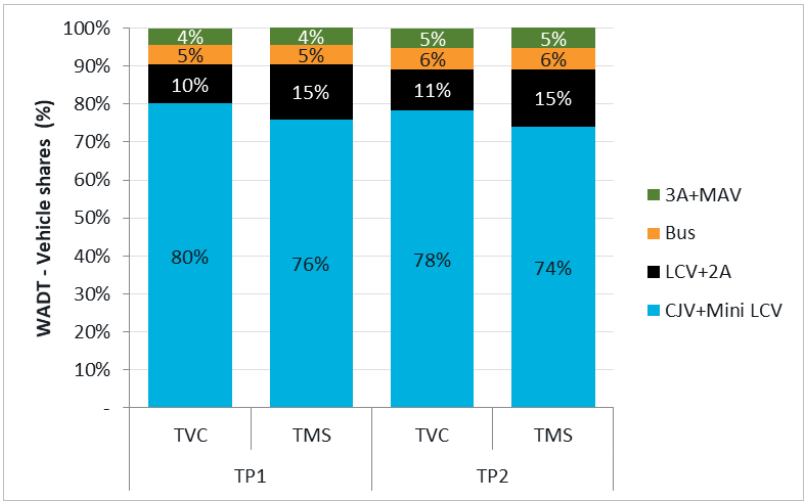


Source: Steer analysis of TVC and Client TMS data

3.34 Figure 3-8 below compares the shares of vehicle types at both plazas, between TVC and TMS data. We see that while most vehicle categories show similar shares, the CJV shares show differences between TMS and TVC. This difference is mostly compensated by the shares of LCVs showing the reverse. This reciprocal mismatch between CJV and LCVs can

be attributed to common misclassification of vehicle categories especially the Mini LCVs. Other vehicle class shares hold consistent across the TVC and TMS.

Figure 3-8 Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

Table 3.11: Difference in vehicle counts when combined

Vehicle type	TP1 Doddakarenahalli			TP2 Karabylu		
	TVC	TMS	TMS vs TVC (%)	TVC	TMS	TMS vs TVC (%)
CJV+Mini LCV	21,705	19,463	8.3%	15,443	14,301	8.0%
Bus	1,341	1,290	4.0%	1,125	1,068	5.4%
LCV+2A	2,731	3,748	(27.1%)	2,095	2,938	(28.7%)
3A+MAV+OSV	1,171	1,146	(2.1%)	1,029	1,025	(0.4%)
Total	26,319	25,646	(2.6%)	19,693	19,332	(1.8%)

Source: Steer analysis of TVC and Client TMS data

Key findings of origin-destination analysis

Overview

3.35 Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. The OD analysis presented here is based on data collected on behalf of the Client in July 2023. More recent OD surveys were not undertaken as this Asset has a long operational history, and we did not believe material changes in these patterns would have occurred in this period.

3.36 We have analysed the regional drivers of demand based on the following analyses:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.37 While zonal analysis and the list of top OD pairs help us to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution show 'how far' vehicles and people travel, and goods get transported. This set of analyses is generally used to estimate the key drivers of traffic and aid the making of informed forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.38 Sample rates help understand the reliability of OD data. They are calculated by dividing OD samples captured by the traffic counts (based on the TVC data) during the same time period. Table 3.12 below presents the sample rates for key vehicle type aggregations at both the toll plazas. We believe that the sample rates of the OD data are reasonable. Lower sample share for Cars and LCV on the Asset is due to reduced stopping time of vehicles at the plaza post implementation of FASTag which has affected the sample rate.

Table 3.12: Sample rates for OD data

Vehicle type	TP1 Doddakarenahalli	TP2 Karabylu
Car	31%	35%
Bus	69%	86%
LCV	42%	32%
3A Truck	92%	75%
MAV	91%	97%

Source: Steer analysis of OD data

Zone categories

3.39 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states, and regions in the vicinity of the Asset, we have aggregated zonal data as described in Table 3.13 below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Assets being studied.

Table 3.13: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	Local zones are those that fall on or very close to the Asset.
IAOI	IAOI zones are the locations which generate traffic and lie within approximately 75-150 km distance from the Asset.
Rest of State	Rest of the cities/Districts in the state that Asset lies in.
Tamil Nadu	Tamil Nadu
Telangana	Telangana
Andhra Pradesh	Andhra Pradesh
Kerala	Kerala
Central India	Madhya Pradesh, Chhattisgarh
West India	Maharashtra, Goa, Gujarat
East and Northeast India	West Bengal, Odisha, Jharkhand, Bihar, and Northeast Indian States

North India	Uttar Pradesh, Rajasthan, and other North Indian states
Outside India	Nepal, Bhutan, Bangladesh

Source: Steer analysis

Zonal influence

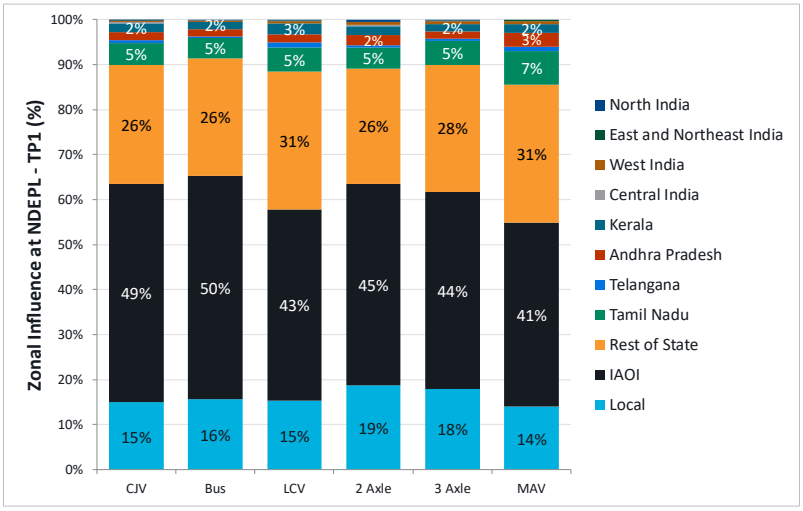
3.40 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence[3] at each toll plaza of each Asset, aggregated based on zonal aggregation listed in the previous sub-section. Please note that zonal influence is analysed on trip ends and not trips.

3.41 Figure 3-9 and Figure 3-10 below present the zonal influence on various vehicle types on the toll plaza. We can see that 'IAOI', (including locations such as Bengaluru, Hassan, Mandya, etc) trips make up the largest share for all vehicle types. We find high shares of local and IAOI zonal influence. Combined with the internal-external distribution (presented in the next section, showing high I-ROS and ROS-I shares), we see that understandably, trips with one end at various locations in Bengaluru district dominate the traffic profile. These reflect in the IAOI zonal influence.

3.42 At TP1 Doddakarenahalli, the highest share of trips can be attributed to IAOI with a share of 40%-50%. Local trips, i.e., trips with their origins along or very near the Asset (including areas like Kunigal, Solur etc), have 15-20% share across categories and 'Rest of State', which includes locations such as Mysore, Mangaluru, Bellary etc which don't fall in either the local or IAOI categories; has about 25-30% share each across all vehicle categories. Tamil Nadu has a share of 5% across categories which rises to 7% for MAVs.

3.43 These trips which are being made between local and IAOI zones for heavy trucks are majorly concentrated in the regions between Bengaluru, Hassan, and Devihalli. Either the origin point, or the destination for most local/IAOI trips are the aforementioned regions.

Figure 3-9: Zonal influence, TP1 Doddakarenahalli

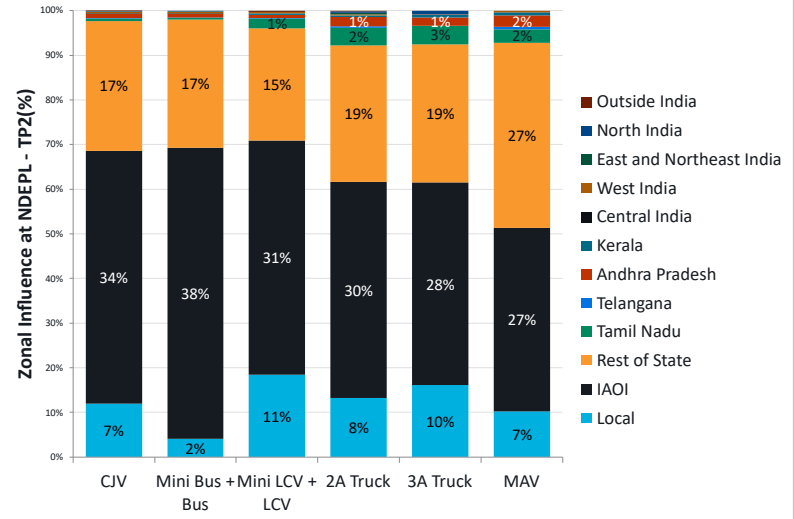


[3] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad is 50% since one trip end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

Source: Steer analysis of OD data

3.44 For TP2 Karabylu, IAOI retains the highest proportion on zone influence across all vehicle types, ranging between 27%-38%. This is closely followed by 'Rest of Karnataka' trips, especially for heavy vehicles. Compared to TP1, the share of local trips is comparatively lower at 5%-10% share across the vehicle categories.

Figure 3-10: Zonal influence, TP2 Karabylu



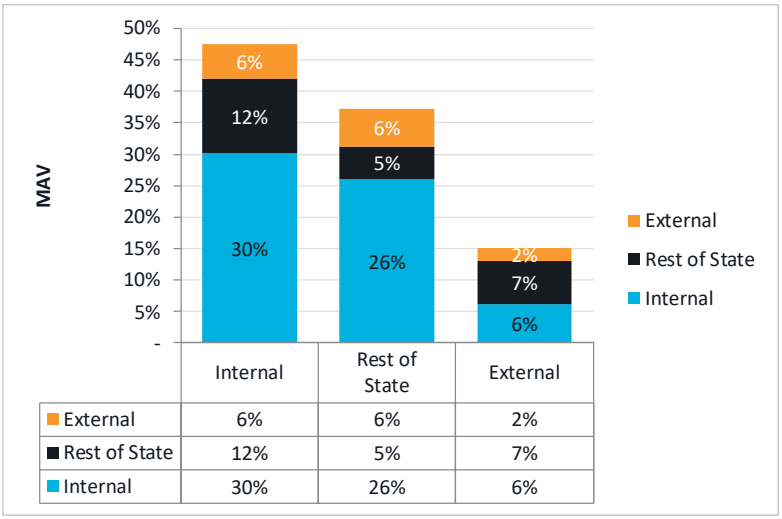
Source: Steer analysis of OD data

Internal External analysis

3.45 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e., through trips (External-External or E-E). RoS here represents areas within the state which are neither local nor IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e., lying on the Asset, while 'External' zones are areas lying outside the state.

3.46 Figure 3-11 and Figure 3-12 below show the distribution of trips based on these categories. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation but at a trip level.

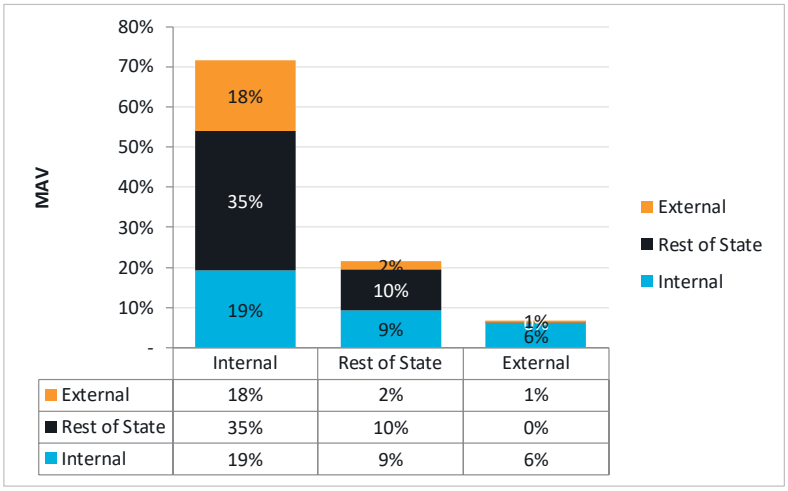
Figure 3-11: Internal-external distribution, TP1 Doddakarenahalli



	Internal	Rest of State	External
External	6%	6%	2%
Rest of State	12%	5%	7%
Internal	30%	26%	6%

Source: Steer analysis of OD data

Figure 3-12 Internal-external distribution, TP2 Karabylu



	Internal	Rest of State	External
External	18%	2%	1%
Rest of State	35%	10%	0%
Internal	19%	9%	6%

Source: Steer analysis of OD data

3.47 As can be seen from the charts above, the I-I distribution makes up the major share for both light and heavy vehicles. This is followed by the trips which have one end of the trip in rest of the state, this includes places like Bengaluru, Mangaluru and Hassan and other end on the Asset.

Commodity distribution

3.48 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the table below. The charts in the following sub-section present information in terms of aggregate commodity categories.

Table 3.14: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	AGR
Cattle Food / Livestock (sheep, goat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	GRO
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cool drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	CNS
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	PET
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	MAN
Raw Wood, Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	AUT
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	MET
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	EMT
Container	CTR	MSC
Miscellaneous (Parcel, Courier, Household items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

Source: Steer analysis

3.49 Figure 3-13 and Figure 3-14 below present the commodity distribution for goods vehicles at this toll plaza. These help in identifying the mix of goods carried on the Asset and in turn, the potential growth drivers.

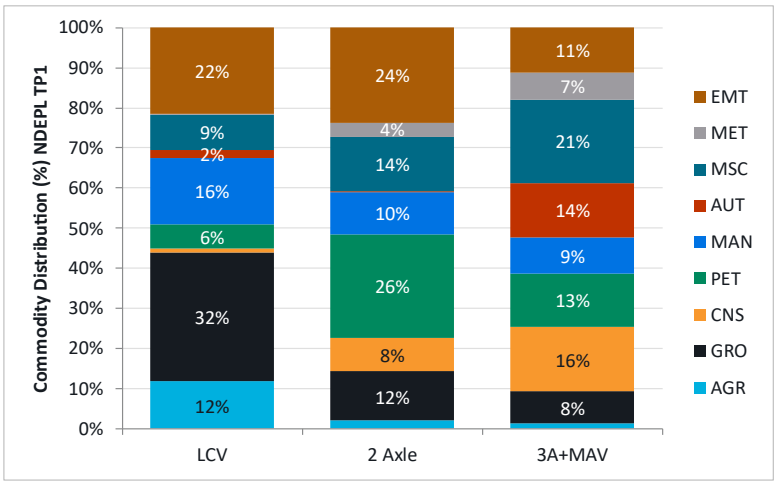
3.50 As observed during our site visits, we see that a significant number of vehicles are bullet tankers carrying petroleum from port and oil refineries in Mangaluru to bottling plants at Yediyur and Solur, and trucks that carry bottled petroleum products. These lie very close to the Asset, leading to the high proportion of petroleum (up to 26% for 2As at TP1) in the commodity distribution.

3.51 A major segment of the 3A+ MAVs (14%) is carrying automobiles and related products. This is due to the presence of the electric vehicle manufacturing cluster around Hosur to the southeast of the Asset.

3.52 Looking by direction, at TP1 the commodity shares in the direction towards Hassan, and the direction towards Bengaluru are somewhat different. Another key difference is that whilst towards Hassan direction has higher shares of empty trucks, this primarily includes empty trucks coming from the city of Bengaluru to be loaded and carrying back commodities for the city consumption. The Bengaluru direction has a higher share of manufactured products especially in LCV category (26%).

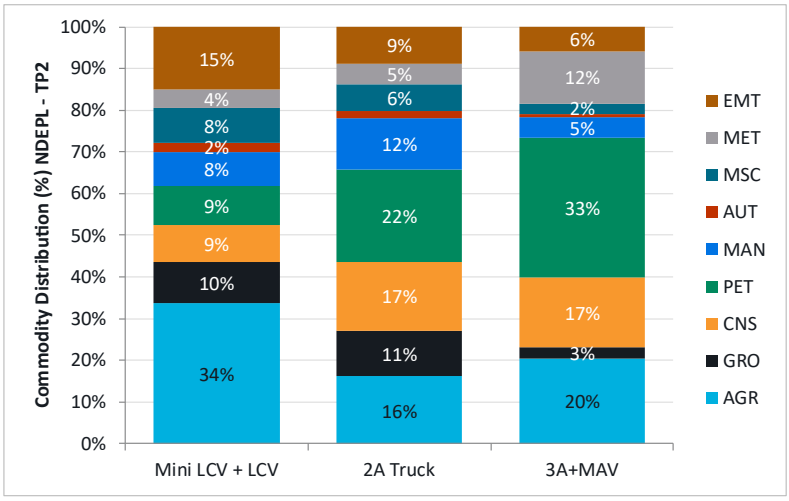
3.53 While at TP2, in the Bengaluru direction petroleum is dominant at a 37% share among 3A+MAVs. Construction materials have a higher share among 3A+MAVs in the direction towards Hassan, at 34% compared to 10% in the opposite direction to Bengaluru.

Figure 3-13: Commodity distribution, TP1 Doddakarenahalli (Total)



Source: Steer analysis of OD data

Figure 3-14: Commodity distribution, TP2 Karabylu



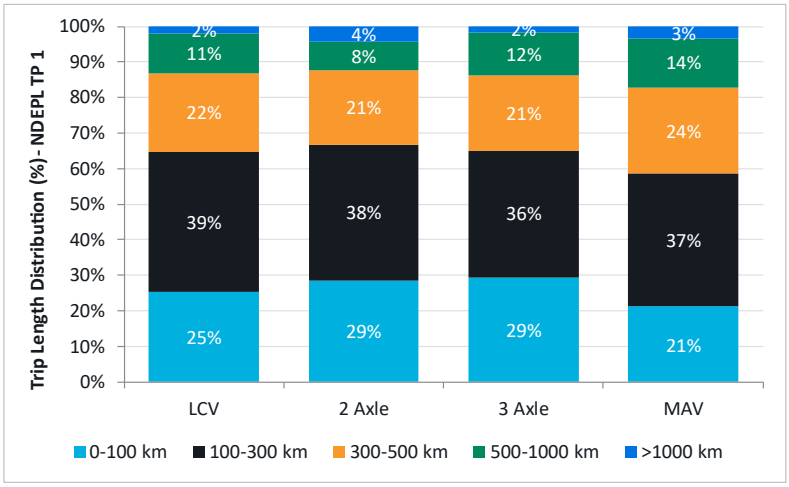
Source: Steer analysis of OD data

Trip length analysis

3.54 Trip-length distribution provides the distance-based profile of various vehicle types. This helps to validate assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into groups –local (0-100km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance (+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[4]

3.55 Figure 3-15 and Figure 3-16 below present the distribution of trip distances for various vehicle categories at the toll plazas on the Asset.

Figure 3-15: Trip length distribution, TP1 Doddakarenahalli



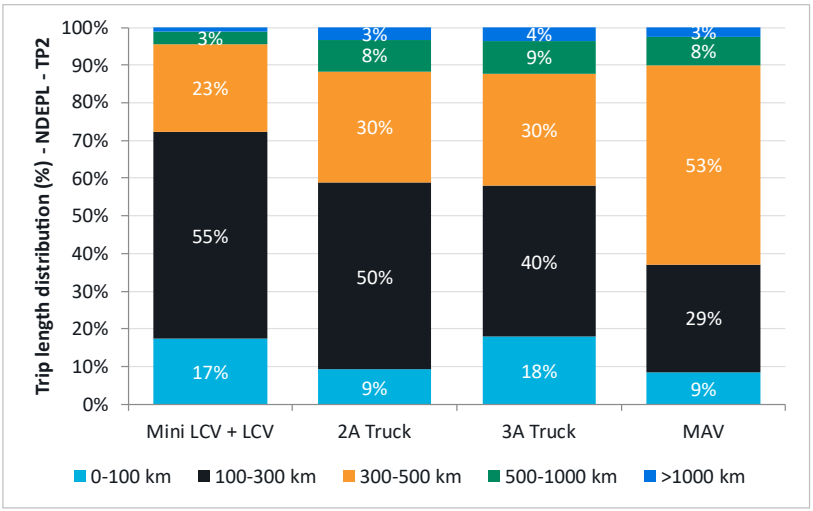
Source: Steer analysis of OD data

3.56 As shown in Figure 3-15 above, TP1 (Doddakarenahalli) has a high share of vehicles covering 100-300 km (~35-40%). The same trend is visible at TP2 for LCV/2A/3As (40%-55%). However, MAV trips covering longer distances (300-500km) are seen to be the dominant category. As previously discussed, the Asset serves mostly short/medium distance traffic between Bengaluru (as one of its major activity centres) and Mangaluru or Hassan being the other main activity centre. The higher proportion of shorter trips (<300 km) at TP1 reflects its proximity to Bengaluru and Nelamangala.

3.57 As we move towards heavy vehicle categories, the trip distances increase. However, the strategic location of the Asset in the east-west direction in the southern Indian peninsular region limits trips to being medium-distance (<500 km). Therefore, MAVs do not show high shares of long-distance traffic (14% on TP1 in the '500-1000 km' category) as observed on other assets located on strategic corridors across the country.

[4] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3-16: Trip length distribution, TP2 Karabylu



Source: Steer analysis of OD data

Conclusions

3.58 In FY25, the Asset's AADT at TP1 Doddakarenahalli reached approximately 26,450, while TP2 Karabylu recorded around 19,493. At both toll plazas, CJVs remain the dominant vehicle class, contributing roughly 77–78% of total traffic. Buses are the second-largest category, accounting for about 6–9%, followed by MAVs, which represent 4.4% at TP1 and 5.8% at TP2. LCVs have a smaller share and even declined slightly at TP2 compared to FY22.

3.59 Since FY22, following the stabilization of pandemic-related impacts, traffic volumes on the Asset have shown robust recovery, supported by economic growth along the corridor. At a PCU level, the Asset has delivered strong growth from FY22 to FY25, with CAGRs of ~10.0% at TP1 Doddakarenahalli and ~9.7% at TP2 Karabylu. This trend underscores sustained improvement in traffic performance and capacity utilization.

3.60 Whilst overall the TVC counts is similar to the TMS, TMS is consistently 1-2% lower than TVC counts. This difference is well within the acceptable ranges and ensures that the systems used by the toll plazas are robust in nature and are able to capture the traffic correctly.

3.61 The OD analysis found that in terms of zonal influence, IAOI retains the highest proportion on zone influence across all vehicle types. This is followed by 'Rest of Karnataka' trips (note the higher share of 'Rest of Karnataka' at TP2). Looking at local trips, the share is 5%-10% lower at TP2 compared to TP1 share across the vehicle categories. Key commodities transported on the Asset include Petroleum products, which is expected given the location of the Asset relative to the Mangaluru and the petroleum bottling plants at Yediyur and Solur. Manufactured products and agriculture products also hold a considerable share of commercial traffic at both plazas (18-21% at TP1 and 15-16% at TP2.)

3.62 When considering the internal – external analysis, I-I, I-ROS and ROS-I distribution makes up the major share for both light and heavy vehicles. The trip length analysis has found that the Asset predominantly serves short/medium distance traffic, with trips under 300km having a share of 60-65% (across all vehicle categories) at TP1, and 58-62% for

LCV/2A/3A traffic at TP2. MAVs at TP2 are observed to traverse comparatively longer distances – with 53% of such trips between 300-500km. The high share of I-I and short/medium distance traffic is considered to be the captive traffic which will remain sticky to the Asset.

3.63 Overall, the historical analysis, the TVC counts and the OD survey data point to the highly tourism and car-dominated nature of the Asset with regional movement of goods traffic, with petroleum being a major regional industry.

4 Socio-economic context and traffic growth

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions of the region where the Asset is located and conditions on a national scale. These include:

1. Changes in factors such as population, economic growth (regional and national) and industrial production; and,
2. Other local factors such as strategic port growth, and growth in local industries near the Assets.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available. In this chapter, we assess the socio-economic and macro-economic indicators relevant to traffic growth on the Asset.

Population growth

4.3 We have analysed the key socioeconomic drivers of the background traffic demand in the state of Karnataka, where the Asset is located.

National Level

4.4 The total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in Table 4.1 below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 – 1985	2.3%	1.9%	3.8%
1985 – 2000	2.0%	1.7%	2.9%
2000 – 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.5 Table 4.2 below shows the evolution of population in the state of Karnataka (containing the Asset), compared to that of the country. Karnataka's has grown at a rate slower than that witnessed across India – between FY12-24, Karnataka's population grew at a 0.8% CAGR, compared to 1.2% for India.

Table 4.2: Population Growth in Karnataka and India (FY12 – FY24)

State	FY12 Population (m)	FY24 Population (m)	CAGR (FY12 – FY24)
Karnataka	61.5	67.9	**0.8%**
India	1,210	1,395	**1.2%**

Source: MoSPI estimates

4.6 Due to the complexities of urbanisation, and the dynamic nature of local population migration (both of which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide the underlying socio-economic context of the state/trends in the regions in which the Asset is located.

Economic Indicators

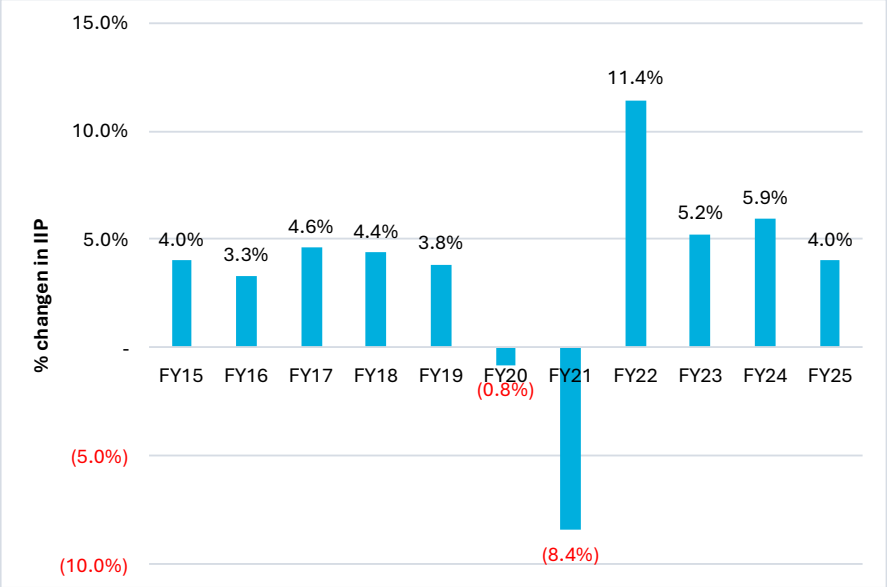
Industrial Production

4.7 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.8 Figure 4-1 below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

4.9 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. However, we do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Figure 4-1: Annual growth – Index of Industrial Production



Source: Ministry of Statistics and Program Implementation (MoSPI)

Vehicle Ownership

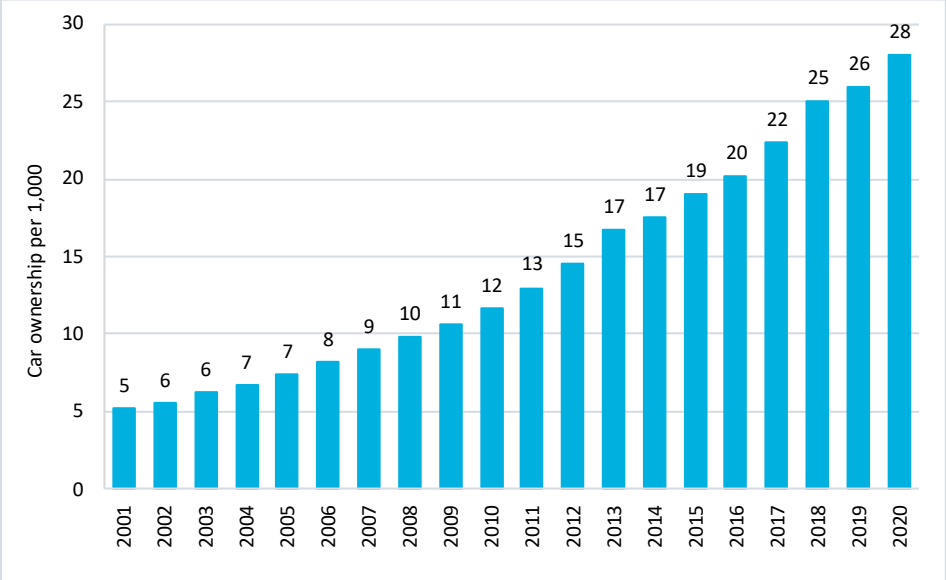
4.10 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[5]. However, this pattern is changing with the increasing per capita income levels. As can be seen in Figure 4-2 below, between 2007-17, number of cars per 1,000 people has more than doubled and increased at a CAGR of about 11%.

4.11 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[6]

[5] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[6] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4-2: Car Ownership in India per 1000 population



Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.12 As per the latest MOSPI data presented in Figure 4-3, Karnataka's per capita income (PCI) in FY25, at constant 2011–12 prices, stood at around ₹2,00,000, compared to the national average of approximately ₹1,12,000. This implies that Karnataka's PCI was nearly 1.78 times the national level.

4.13 This highlights the relatively stronger economic performance of the state compared to the national average, indicating sustained economic and traffic growth. Going forward, we expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

Figure 4-3: Per Capita Income

Source: Ministry of Statistics and Program Implementation (MoSPI)

4.14 However, given the difficulty in obtaining granular district level PCI data it is not advisable to use this as a growth driver. Also, since long-term forecasts for PCI are not available, we therefore refrain from using it to forecast traffic.

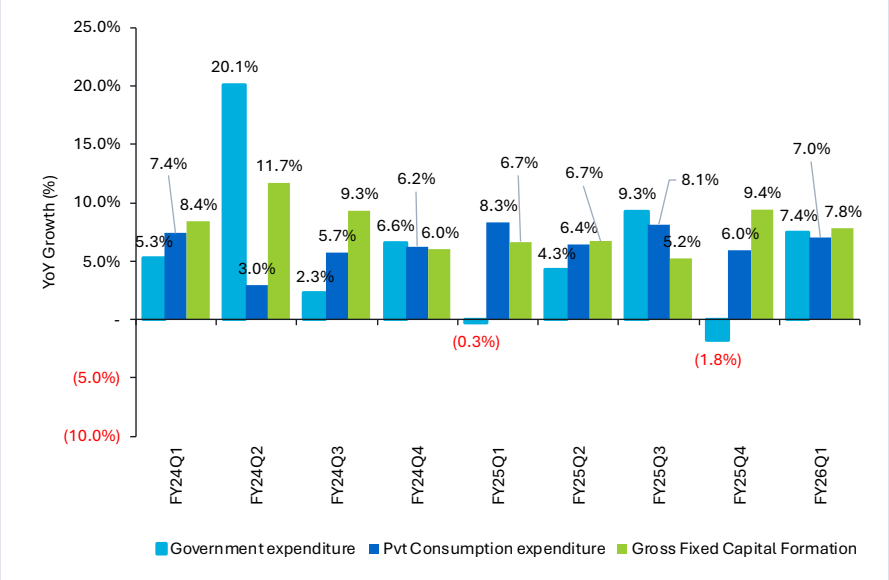
Economic growth

India's Performance

4.15 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[7].

4.16 In Figure 4-4 below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures



Source: Steer Analysis of MOSPI Data

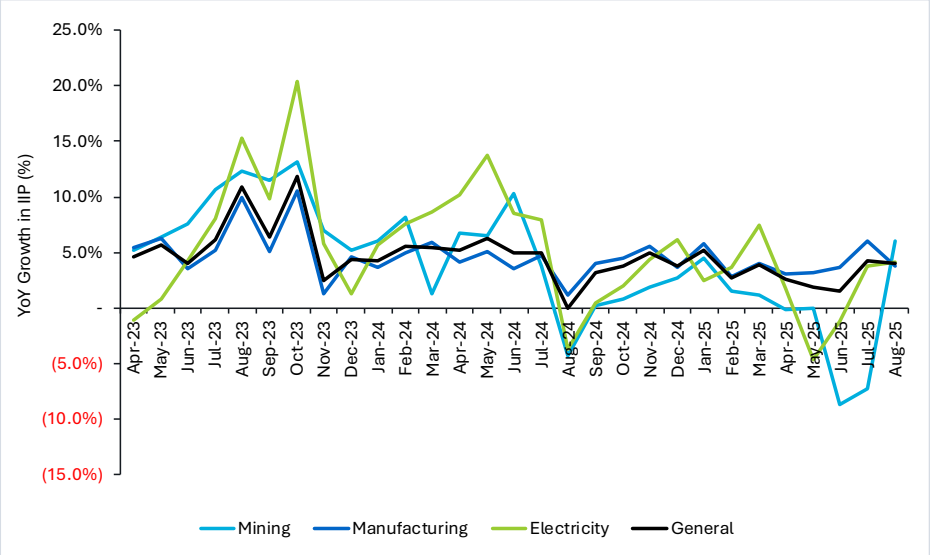
4.17 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.18 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In Figure 4-5 below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the

[7] Government of India, PIB Release Oct 1 '25

two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

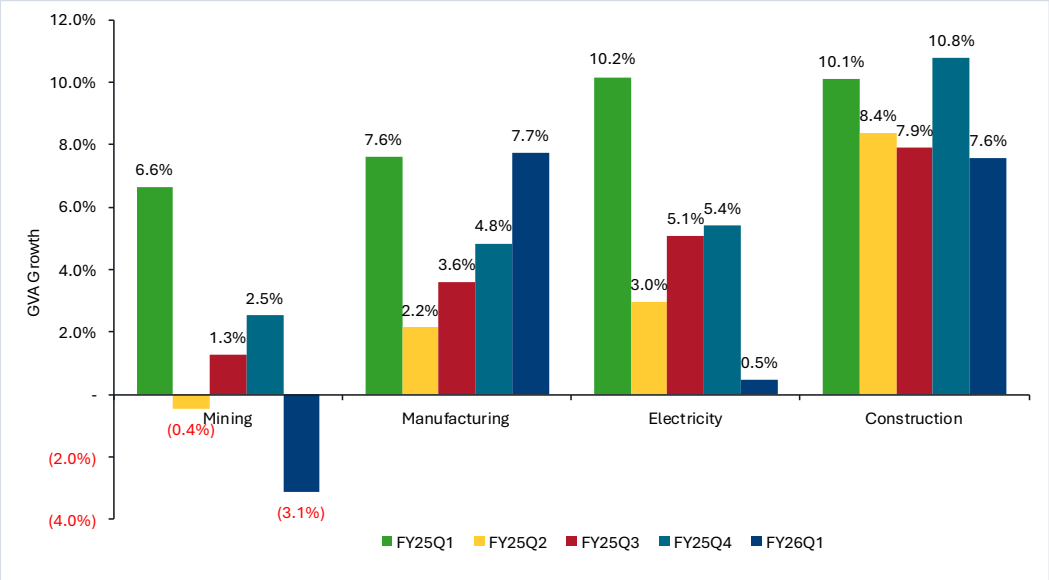
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.19 In addition to monthly trends in IIP, Figure 4-6 below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. Generally, economic growth has remained resilient as of FY26YTD, but performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



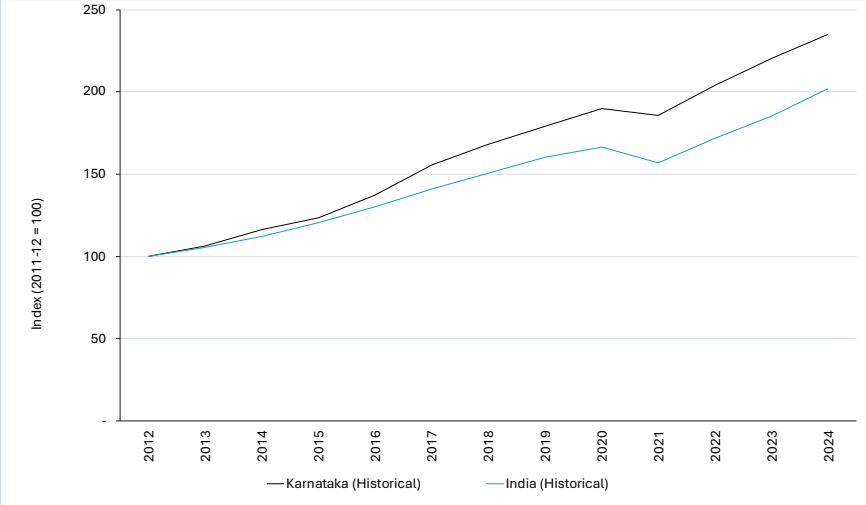
Source: Steer Analysis of MOSPI Data

GDP and GSDP Growth

4.20 Over the period FY12-FY24, National Real GDP (at 2011-12 constant prices) has grown at 5.9% per year, aided by a strong growth in the services/tertiary sector. The economic growth of Karnataka has been stronger than the country overall; between the same FY12-24 period, the state's GSDP grew at a 7.4% CAGR.

4.21 Karnataka contributed approximately 8.2% of India's GDP in FY24 but accounted for 4.9% of its total population – highlighting its relative significance in contributing to nationwide economic growth. Figure 4-7 below compares historical growth of Karnataka's GSDP relative to national GDP growth over the period FY12-FY24.

Figure 4-7: Evolution of Karnataka's state GDP and national GDP



Source: Steer Analysis of MOSPI Data

4.22 Karnataka is the information and technology (IT) hub of India and home to one of the largest technology clusters in the world - Bengaluru. The city contributes to nearly one-third of the state GSDP as of FY24 and houses several major industrial sectors including automobiles, aerospace, textiles, heavy machinery, agriculture and food processing[8].

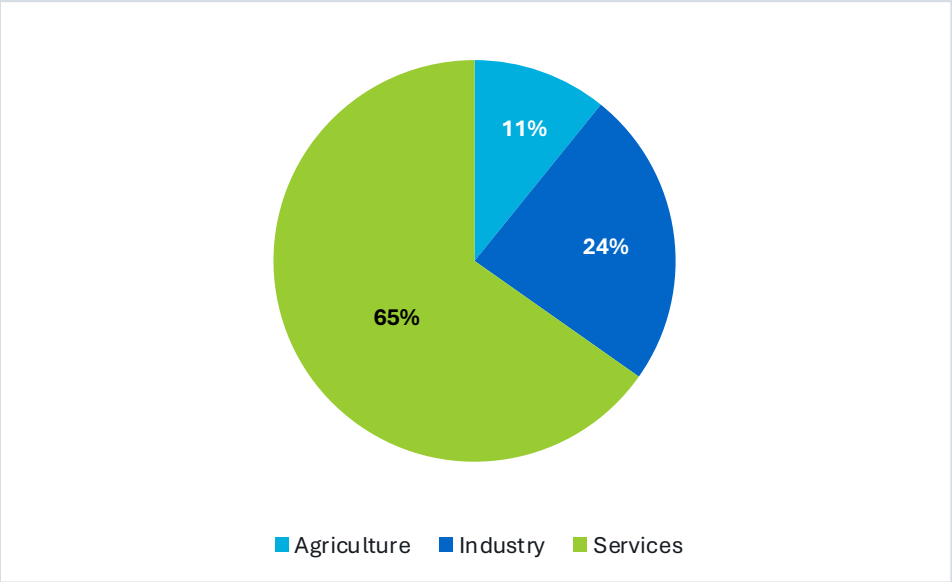
4.23 As shown in Figure 4-7 above, over the past decade, the state of Karnataka followed the same upwards economic growth trend observed at the national level, but at a faster rate. The growth of Karnataka can be attributed to the boom in IT services sector in the region and policies encouraging the establishment of research and development facilities. Apart from the IT sector, automobile, aerospace, textiles, biotechnology, and heavy engineering industries also contribute to the state's growth. Karnataka also houses one of the 13 major ports in India, the Mangaluru port.

4.24 In terms of the secondary sector, the state has key industrial areas in Hubli-Dharwad, Belgaum and Bengaluru (automobile cluster), Mangaluru and Udupi (petrochemical), Bellary, Koppal, Raichur (steel and iron ore) and Belgaum and Bengaluru (aerospace). The state also has a major port in Mangaluru, which is known for import of crude and petroleum products.

[8] **Bengaluru, Karnataka: India Investment Brief**

4.25 As seen in Figure 4-8 below, in terms of sectoral contribution, the services sector is the biggest contributor to the state's GSVA (65%), followed by secondary (24%) and primary sector (11%), as of FY24. Karnataka's GSDP CAGR was 7.4% between FY12-24 and its relative share to the national GDP was around 8.2% in FY24[9]

Figure 4-8: Sectoral contribution to Karnataka's GSDP in FY24



Source: Steer Analysis of MOSPI Data

4.26 The official historical GDP and GSDP data for India are released by the Ministry of Statistics and Program Implementation (MoSPI. The GDP forecasts for India are available from various reliable sources such as Oxford and Consensus, but the GSDP forecasts for the same are not published. However, using the past trends of the relationship between GDP and GSDP, we can develop reasonable GSDP forecasts. Therefore, in our view, GDP is the best source of growth driver for long term traffic forecasts.

4.27 For any indicator to be used as a growth driver to forecast traffic, a reliable source of historical and forecast data availability for that indicator is the key requirement. Of the key socioeconomic indicators discussed above, GDP was assessed to be the only growth driver for which reliable data is available both in terms of historical and forecast data. Therefore, to forecast traffic, we use GDP/GSDP as our key growth drivers.

Forecasts for growth drivers

4.28 Following the discussion in Chapter 4 on the nature of economic activity in the state of Karnataka, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth on the Asset.

4.29 We have based our forecasts of GSDP for Karnataka using forecasts of GDP based on the forecasts of the GDP of India as provided by the Client.

[9] GSVA/NSVA by economic activities | Ministry of Statistics and Program Implementation | Government Of India

National GDP

4.30 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[10]

4.31 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 (as per the SAE) before slowing down to 6.5% in FY25 due to several domestic and external factors.

4.32 Figure 4-9 below shows Client-provided GDP projections for India. The forecast expects the Indian GDP to grow at 6.3% between FY25-FY30[11] and 5.5% between FY31-FY44, gradually tapering down to 5.2% by FY50. The GDP growth forecast is broadly in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[12] in the medium term

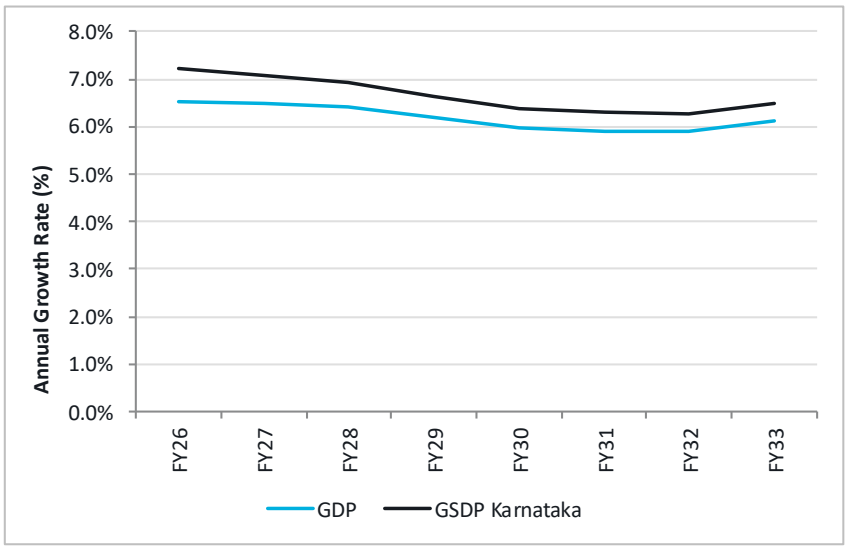
4.33 State economic policies in combination with its fast-growing urban centres such as Bangalore are expected to keep statewide economic growth buoyant. Thus, over the short and medium term, we have assumed KA GSDP to continue growing above national GDP growth, with gradual convergence with the latter in the long-term.

[10] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[11] Based on Asia Pacific Consensus Forecasts (December 2024)

[12] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

Figure 4-9: GDP-GSDP forecast



Source: GDP and GSDP forecast

5 FY26 Base year AADT and Traffic growth Analysis

Introduction

5.1 In this chapter, we present our approach, assumptions, and results for base (or background) traffic growth for each vehicle category on the Asset.

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'.

5.3 We carry out regression analyses to determine the historical relationship between traffic growth by vehicle category and growth in the underlying economic drivers. In this specification, traffic volumes form the dependent variable, and the underlying economic driver forms the independent (or "explanatory") variables.

5.4 Typically, passenger and light commercial vehicle traffic like cars, buses, LCVs and 2-axle trucks grow in line with the GSDP of the state in which the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This is because most light vehicles tend to travel shorter distances within the state, whereas a significant proportion of heavy vehicles carry commodities for long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and are thus related more with GDP growth.

FY26 Base year AADT estimates

5.5 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of our forecasting approach as traffic and ultimately revenue forecasts for future years are built on top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.6 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our context knowledge, to assess a reasonable demand on the corridor.

Methodology

5.7 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual

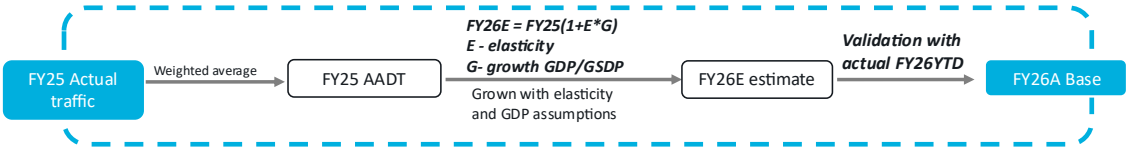
FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at FY26E.

5.8 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April to September) of FY26 (FY26YTD). The Adopted FY26 AADT (FY26A) was then arrived at by making necessary adjustments to FY26E to reflect the outturn traffic in FY26YTD after adjusting for seasonality.

5.9 As a validation, the FY26 was estimated using SCF (Seasonality Correction Factor) based on six months of FY26 data where the adopted FY26 AADT (FY26A) is within ~0.5% of the AADT arrived using SCF approach[13]. This validates the robustness of the approach used to estimate the FY26 base AADT. The SCFs used in our analysis have been explained in the subsequent section.

5.10 The methodology is represented using the below schematic:

Figure 5-1: FY26 Base Estimation methodology



Source: Steer Analysis

Seasonality Correction factors

5.11 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in the region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these there may be other seasonal variations specific to the Asset.

5.12 In order to normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

5.13 To achieve this, we studied the seasonality between monthly average daily traffic (MADT) – We have analysed the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling (as described in Chapter 3) excluding the years that were impacted by specific events. This averaged seasonality trend is then applied to the monthly traffic to obtain AADT as mentioned in the previous sections.

[13] *SCF- SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts.*

5.14 Table 5.1 and Table 5.2 below present the average of FY24 and FY25 SCFs used to arrive at the FY26 base estimates.

Table 5.1: Seasonality correction factors for TP1 – Doddakarenahalli

SCF	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.94	0.90	1.01	1.16	1.12	1.08	0.95	0.95	0.94	1.06	0.99	0.99
LCV	1.02	0.99	0.98	1.06	1.03	1.02	1.05	1.02	0.99	1.02	0.93	0.92
Bus	1.04	1.03	1.04	1.08	1.05	1.01	0.96	0.95	0.95	0.98	0.96	0.98
2A	1.10	1.03	1.05	1.02	0.98	0.96	1.01	1.01	0.98	0.97	0.92	0.98
3A	1.05	1.07	1.03	1.05	1.02	1.00	1.01	0.97	0.96	0.97	0.95	0.94
MAV	1.05	1.07	1.03	1.05	1.02	1.00	1.01	0.97	0.96	0.97	0.95	0.94

Source: Steer analysis of Client historical TMS data

Table 5.2: Seasonality correction factors for TP2- Karabylu

SCF	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.95	0.88	1.02	1.18	1.16	1.09	0.91	0.92	0.90	1.05	1.02	1.05
LCV	1.00	0.98	1.01	1.13	1.07	1.04	1.01	0.98	0.96	0.98	0.95	0.93
Bus	1.03	1.03	1.04	1.09	1.06	1.02	0.95	0.95	0.93	0.98	0.96	0.98
2A	1.01	1.01	1.07	1.13	1.01	0.99	1.03	1.01	0.96	0.95	0.92	0.96
3A	1.05	1.05	1.02	1.10	1.03	1.00	0.96	0.98	0.95	1.01	0.93	0.96
MAV	1.05	1.05	1.02	1.10	1.03	1.00	0.96	0.98	0.95	1.01	0.93	0.96

Source: Steer analysis of Client historical TMS data

Adopted base estimates

5.15 Based on the above methodology and inputs, the adopted base traffic positions for both the Asset toll plazas are shown in Table 5.3 and Table 5.4 below:

Table 5.3: Adopted AADT for FY26, Doddakarenahalli

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	21,415	22,898	23,583	10.1%
LCV	1,204	1,253	1,273	5.8%
Bus	1,698	1,758	1,821	7.3%
2A	1,000	1,058	1,082	8.2%
3A/MAV	1,137	1,089	1,132	(0.4%)
TOTAL	**26,454**	**28,057**	**28,892**	**9.2%**
PCU	**35,014**	**36,947**	**37,887**	**8.2%**

Source: Steer analysis: FY25 is actual full year data. FY26YTD includes 6 months of FY26; FY26A is adopted base for FY26

Table 5.4: Adopted AADT for FY26, Karabylu toll plaza

	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	15,861	16,996	17,595	10.9%

LCV	835	864	893	6.9%
Bus	1,382	1,436	1,474	6.7%
2A	729	746	772	5.9%
3A/MAV	1,127	1,053	1,110	(1.5%)
TOTAL	**19,934**	**21,095**	**21,845**	**9.6%**
PCU	**27,114**	**28,435**	**29,287**	**8.0%**

Source: Steer analysis: FY25 is actual full year data. FY26YTD includes 6 months of FY26; FY26A is adopted base for FY26

5.16 As we can see from the above tables, FY26A AADT and PCU estimates are 9.2% and 8.2% above full year FY25 for TP1, and 9.6% and 8.0% at TP2 (respectively). TP1 has strong influence of growing Bengaluru economy hence it's growing at a healthy rate. Similar trends are observed at TP2. Both TPs show a muted growth profile for 3A/MAVs, which we believe is largely driven off a negative variance observed in 3As on account of evolving axle-preferences.

Estimation of background elasticities

5.17 Elasticities, in the case of traffic growth, are the relationships between traffic growth and the growth in underlying economic drivers of traffic. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide forecasts of background traffic growth rates.

5.18 The TMS data for the Asset reports Bus and 2A separately whereas 3A and MAV volumes are reported together. Therefore, to understand the growth pattern of the vehicle category separately recent TVC splits of 2023 were used. Following the brief note on historical trends shown in Chapter 3, we now delve deeper into results of the historical growth analysis for each major vehicle type. For this Asset Car, LCV and Bus do more regional movement as validated from OD trip length and zonal analysis hence the growth of this vehicle category is more influenced by Karnataka GSDP. Whereas 2A, 3A and MAV carry heavy commodities like construction material, containers, metals and miscellaneous products within Karnataka, Tamil Nadu, and other parts of the country.

5.19 Table 5.5 below presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.5: Split between individual vehicle types, 2023

Toll plaza	Vehicle type (for growth)	Share (%)
Doddakarenahalli & Karabylu	3A	39%
	MAV	61%

Source: Steer analysis of independent TVC data

5.20 Table 5.6 below presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.6: Identified growth drivers to model traffic growth

Vehicle type	GSDP Karnataka	GDP India
Car	100%	
LCV	100%	
Bus	100%	
2A		100%
3A		100%
MAV		100%

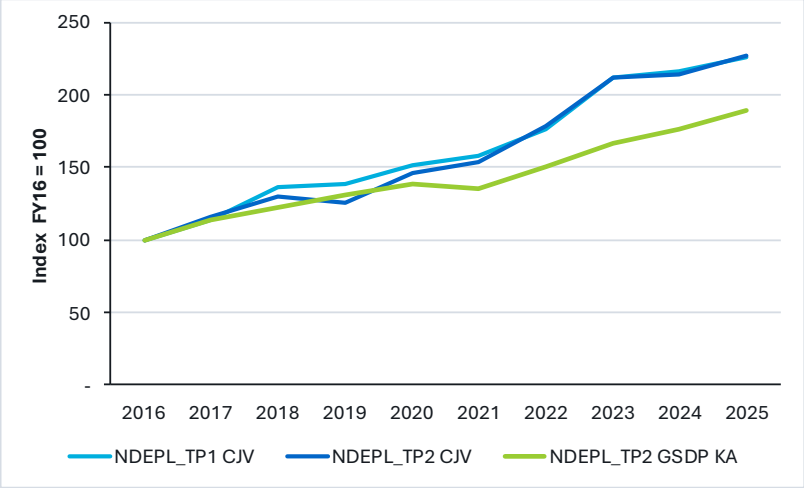
Source: Steer analysis of Client data

5.21 For the purpose of regression analysis, we have considered the period of FY16-25 Though there were combination of activities including construction on the Hassan-Mangaluru section of the corridor and the introduction of the petroleum pipeline between the Mangaluru Port and HPCL bottling plant at Yediyur in FY16-24 period, these episodes didn't impact traffic volumes significantly hence have been considered in regression analysis.

CJV

5.22 We see from the OD data that the CJVs primarily cater to regional movements between Bengaluru, Hassan, Mangaluru, Kunigal and other towns lying on the Asset. We have therefore taken Karnataka GSDP to be the growth driver to model the growth of CJV traffic. Figure 5-2 below shows the relationship between indexed values of CJV traffic and Karnataka GSDP at TP1 Doddakarenahalli and TP2 Karabylu.

Figure 5-2: Relationship between CJV traffic and Karnataka GSDP



Source: Steer analysis of Client TMS data and publicly available GSDP data

5.23 Generally, we would expect that in fast-growing economies with relatively low car ownership levels, car traffic growth rates are often in line with or slightly higher than growth in GSDP/GDP (i.e. suggesting elasticities at or just above 1.0). Further, there is an expected increase in car ownership proportion of overall population as the economy grows. This assumption is very contextual and subject to change as there are changes in economic policies of government and overall economic stability nationally and globally.

5.24 Historically, for the period of FY16-25, Car growth on TP1 (9.6%) and TP2 (9.6%) is similar while the GSDP growth for the same period is 7.3%. This is with the Asset connecting high urban centres Bengaluru and Mangaluru and feeding tourism driven Mysore traffic as well. Considering the positive outlook for passenger traffic on the tourism-driven Asset, proximity to the fast-growing Bengaluru urban agglomeration we have assumed a forecast background elasticity starting of 1.10 at TP1 and TP2 for CJV.

5.25 We have assumed the elasticity of CJV growth to the underlying regional economy to reduce with time at TP2 (i.e., Karabylu), going from 1.10 in FY26 to 1.00 in FY30 and beyond. At TP1 however, we have not tapered our CJV elasticity since this plaza is expected to show more growth potential due to its proximity to Bengaluru city.

LCV, 2A

5.26 Compared to heavy vehicles like 3A and MAV, LCV, 2A and Bus have more regional movements within the state – Karnataka in this case, as seen in the OD data analysis. More than 85% of LCVs, 2A and Bus have both trip ends within Karnataka. We have therefore taken GSDP of Karnataka to be the growth driver to model growth of LCV+2A traffic.

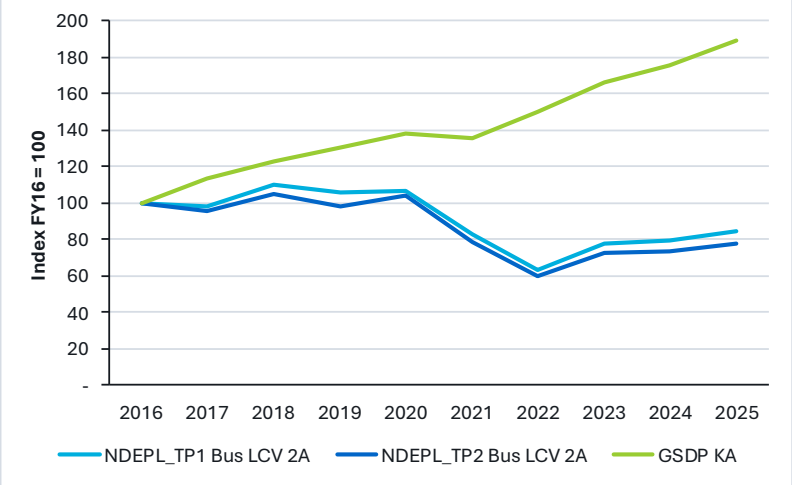
5.27 For the period of FY16-25, combined LCV, Bus and 2A show a degrowth of 1.9% on TP1 and 2.8% on TP2 against growing GSDP. This is because at a vehicle category, LCV are historically dropping more than 7% across both toll plazas. This is with shift from LCV to 2A to carry excess tonnage benefit and a mis-categorisation of 2A, Bus and LCV in reporting system.

5.28 Bus growth tends to be largely supply-driven in many parts of the country, with new buses being bought and deployed by the government at intervals of time. Based on our

experience across the country, buses on inter-urban and tourism corridors show elasticities of 0.4 to 0.6 with respect to the GSDP.

5.29 Figure 5-3 below show the relationship between indexed values of LCV+2A+Bus combined traffic India GDP and Karnataka's GSDP.

Figure 5-3: Relationship between LCV+Bus+2A combined traffic and Karnataka GSDP

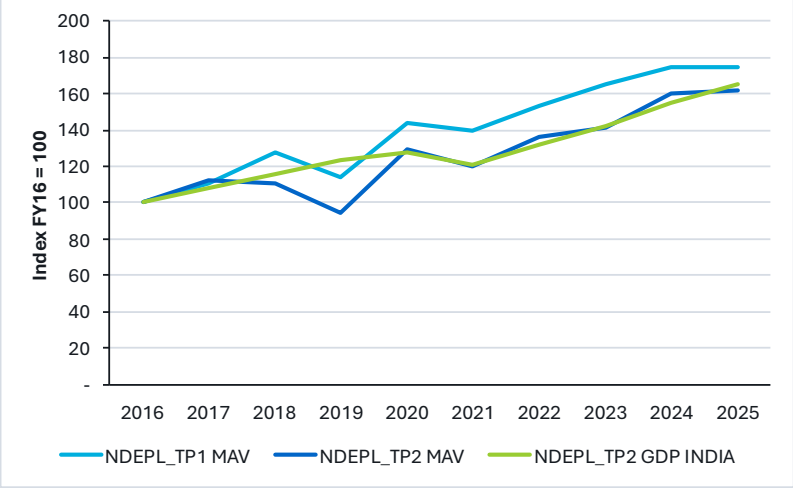


Source: Steer analysis of Client TMS data and publicly available GSDP data

3A/MAV Trucks

5.30 Compared to lighter trucks like LCV and 2A, 3A and MAV have more national or long-distance movements covering several states. Given that manufacturing-related commodities tend to take prominence in their commodity distribution which means that traffic growth in 3A and MAV is dependent on industry demand-supply ecosystems spread across the country, we have taken GDP as the growth driver to model the traffic growth in 3A and MAV. Figure 5-4 below shows the relationship between indexed values of 3A+MAV combined traffic and India's GDP.

Figure 5-4: Relationship between 3A+MAV combined traffic and India's GDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.31 For the period of FY16-25, we observe CAGR 6.4% growth at TP1 and CAGR of 5.4% at TP2 against CAGR of 5.6% GDP growth in the same period. With the shift from 3A to MAV, the growth of 3A has been lower compared to MAV.

Forecasts for background elasticities

5.32 Table 5.7 below presents a summary of the results of the regression analysis carried out on the historical toll plaza data and the macroeconomic (GDP/GDSP) growth, along with the assumed forecast elasticities for background traffic growth.

5.33 Given the nascent stage of India's logistics sector, characterized by a highly fragmented trucking industry (95% of operators owning fewer than five trucks) and low car ownership rates (30-35 per 1000 people), the forecast elasticities for 2A/3A vehicles have been kept constant throughout the concession period, while that of MAVs has been marginally increased in FY27, being brought back to 0.8 from FY30 onwards.

5.34 In terms of passenger traffic, the CJV elasticity at TP2 Karabylu has been tapered down to 1.0 by FY30. This assumption is grounded in historical trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away.

Table 5.7: Derived elasticities from regression analysis and assumed forecast elasticities for background growth

<table>
<tr><th rowspan="2">Vehicle type</th><th rowspan="2">Growth driver</th><th colspan="2">History</th><th colspan="2">Forecast</th></tr>
<tr><th>Derived elasticity</th><th>Years considered</th><th>Assumed forecast elasticity</th><th>Evolution of elasticity</th></tr>
<tr><td colspan="6">TP1 Doddakarenahalli</td></tr>
<tr><td>Car</td><td>GSDP Karnataka</td><td>1.37</td><td rowspan="6">FY16-25</td><td>1.20</td><td>Reduce to 1.1 by FY30</td></tr>
<tr><td>LCV</td><td>GSDP Karnataka</td><td rowspan="3">0.55</td><td>0.40</td><td>No change</td></tr>
<tr><td>Bus</td><td>GSDP Karnataka</td><td>0.25</td><td>No change</td></tr>
<tr><td>2A</td><td>GDP</td><td>0.60</td><td>No change</td></tr>
<tr><td>3A</td><td>GDP</td><td rowspan="2">1.21</td><td>0.30</td><td>No change</td></tr>
<tr><td>MAV</td><td>GDP</td><td>0.80</td><td>No change</td></tr>
<tr><td colspan="6">TP2 Karabylu</td></tr>
<tr><td>Car</td><td>GSDP Karnataka</td><td>1.39</td><td rowspan="6">FY16-25</td><td>1.10</td><td>Reduce to 1.0 by FY30</td></tr>
<tr><td>LCV</td><td>GSDP Karnataka</td><td rowspan="3">0.42*</td><td>0.40</td><td>No change</td></tr>
<tr><td>Bus</td><td>GSDP Karnataka</td><td>0.25</td><td>No change</td></tr>
<tr><td>2A</td><td>GDP</td><td>0.60</td><td>No change</td></tr>
<tr><td>3A</td><td>GDP</td><td rowspan="2">1.05</td><td>0.30</td><td>No change</td></tr>
<tr><td>MAV</td><td>GDP</td><td>0.80</td><td>No change</td></tr>
</table>

Source: Steer analysis of Client data; *insignificant results; regression was run on LCV+Bus +2A and 3A-MAV combined; Invalid model results have been excluded from presentation in the table; FY26 AADT is the estimated Base AADT which includes observed traffic volumes between April 2025 and September 2025.

6 Forecasts: Network overlays and forecasts

Introduction

6.1 Following the discussion on estimated and assumed forecast background growth rates in the previous chapter, this chapter first deals with the forecasting assumptions around base year AADT and potential impacts on traffic growth on the Asset. Later, it also presents the assumed toll segmentation, trip factors and evolution of toll rates for the forecast period which are used to estimate the forecast revenue based on the forecast traffic. In the final section, the chapter summarises the traffic growth rates for the forecast years. The following table lists key intermediate and final outputs that have presented in chapter 3, 5 and 6.

Analysis of potential network/developmental impacts

Summary of alternate routes and planned changes

6.2 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed earlier in Chapter 2, in order to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

6.3 Figure 6-1 below shows the road network surrounding the Asset.

Figure 6-1: Alternate routes and Asset shown against the regional network context

Source: Steer analysis and cartography

6.4 Past network developments on the corridor include the construction and improvement of the Shiradi Ghat section on the Hassan-Mangaluru Road. Upcoming developments include potential construction of Satellite Ring Road around Bengaluru. Table 6.1 below presents the upcoming network developments, corresponding feeder routes, year of completion and direction of impact on the Asset.

Table 6.1: List of network/other developments

S. No.	Development	Route affected	Year	Impact (+/-)
1.	Satellite Town Ring Road (STRR) around Bengaluru (Solur to Dobbaspet spur)	Trips between TN/Hyderabad and Coastal Karnataka (TP1 only)	FY26 onwards	-ve
2	Peripheral Ring Road – LOS improvement		FY30 onwards	+ve

Source: Steer analysis

Impact assessment for network/other developments

6.5 The subsections below include a narrative of each of the improvements, as listed in the table above, and impacts associated from each of these. Please note that all traffic volumes for impacts were estimated as impact rates applied on FY26 Base AADT.

Satellite Town Ring Road (STRR) around Bengaluru

6.6 STRR is an under construction 4-6 lane access-controlled expressway around Bengaluru and will provide a larger bypass for long distance traffic. This will serve as bypass around Bengaluru city and increases the speed of freight movement and traffic handling capacity for the long-distance traffic which does not have anything to do with Bengaluru City.

6.7 STRR involves the realignment of NH648 and can be accessed from Dobbaspet. Currently, the Dobbaspet- Doddaballapur- Devanahalli- Hoskote section of the STRR is completed and operational with tolling in place. The remaining two sections of the Obalapur-Mudugadapalli corridor are the last sections of the STRR and includes the Solur to Dobbaspet spur on the western side of Bengaluru city. Our analysis considers the impact of the currently operational sections of the STRR as well as the impact the completion of the Solur-Dobbaspet spur will have on the Asset.

6.8 The impact of STRR will be applicable to only TP1 as this expressway provides a direct bypass option to Industrial clusters at Dobbaspet- Doddaballapur, can access Kempegowde International Airport and NH44 (Hyderabad highway) through Devanahalli Exit and STRR provides a direct connection to the upcoming Bengaluru- Chennai Expressway which originates from Hoskote.

6.9 Based on the GJC approach we estimate the impact of STRR (due to both the current operational sections as well as the future completion of the Solur-Dobbaspet spur) as shown in Table 6.2 below.

Table 6.2 :Impact of STRR (Dobbaspet- Hoskote section) at TP01

Vehicle type	FY27	FY28 Onwards
Staging	*50%*	*100%*
CJV	(1.4%)	(2.8%)
2A	(1.5%)	(3.0%)
3A	(1.7%)	(3.3%)
MAV	(1.8%)	(3.6%)

Source: Steer analysis of Client OD data, Client TMS data and publicly available information.

Peripheral Ring Road – LOS improvement

6.10 he Peripheral Ring Road (PRR) is a proposed 65 km, 100-meter-wide expressway circumventing Bengaluru, intended to connect Tumakuru Road (NH 48) in the northwest to Hosur Road (NH 44) in the southeast. Once completed, the PRR will form an intermediate bypass around the city connecting major radial highways such as NH 75 (Old Madras Road), NH 648, and NH 44. The facility is designed to reduce the volume of through and inter-city traffic currently forced to enter the Outer Ring Road network and Bengaluru's arterial roads.

6.11 The PRR will serve as a high-capacity, access-controlled corridor facilitating smoother traffic distribution across the city's periphery. This is expected to divert part of the intra-metropolitan freight and passenger traffic away from NH 75 towards peripheral routes. By providing alternative connectivity between industrial zones in Hoskote, Tumakuru Road, and Hosur Road, the PRR will indirectly reduce congestion levels on NH 75, particularly

within the sections intersecting the eastern and southeastern parts of Bengaluru's urban limits.

6.12 The expected impact of the Peripheral Ring Road on NH 75 traffic is assessed to be moderately positive, given that it will complement the diversionary benefits currently provided by the Satellite Town Ring Road. While the PRR's influence will be more localized to Bengaluru's outer periphery rather than long-haul freight routes, its operationalization will likely result in marginally higher travel speeds and improved traffic flow on NH 75 due to redistribution of commuter and logistics trips that currently use the highway for orbital movement.

Table 6.3: Impact of Peripheral Ring Road at TP1 and TP2

Vehicle type	TP1	TP2
Staging	*FY30 onwards*	*FY30 onwards*
CJV	0.5%	0.4%

Source: Steer analysis of Client OD data, Client TMS data and publicly available information.

Summary of impact assessments

6.13 Table 6.4 below summarises the potential impacts on the Asset due to the several ongoing and foreseen improvements on the alternate routes.

Table 6.4: Summary of impact assessments

Impact	Year of impact	Probability/ scale of impact	Magnitude of impact	
			TP1	TP2
Satellite Town Ring Road (STRR)	FY26 Onwards	Medium	CJV (2.8%) 2A (3.0%) 3A (3.3%) MAV (3.6%)	-
Peripheral Ring Road – LOS improvement	FY30	Medium	CJV: 0.5%	CJV: 0.4%

Source: Steer analysis of OD data, Client TMS data and publicly available information

Revenue forecasting assumptions

6.14 To forecast the revenues for a forecast year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate. While toll segmentation provides the breakup of trips paying each ticket type, trip factors provide the conversion factor to convert from traffic (trips) to tickets sold. This section discusses assumptions related to toll segmentation, trip factors and toll rates for the forecast period.

Toll evolution

6.15 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is September) based on WPI-

linked inflation. These are rounded up to the nearest five decimals to estimate the final toll rate charged to users.

6.16 We have used actual toll rates from the FY25 toll notifications and FY26 WPI to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in the table below.

6.17 These forecasts provided by the Client expect the WPI to grow at an average of 4.2% between FY25-FY51. The WPI forecasts available from other independent forecasting agencies may vary from this assumption and could be lower or higher than that provided by the client.

Table 6.5: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.3%
FY27	2.4%
FY28	5.0%
FY29	5.1%
FY30	4.9%
FY31	4.4%
FY32 onwards	4.1%

Source: FY27 onwards WPI as per client inputs

Table 6.6: Toll estimation overview

Toll fee escalation	Revision date	Nearest rounding
Linked to 100% WPI increase	September	5

Source: Concession agreement and toll notification

Toll segmentation and trip factors

6.18 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles[14].

6.19 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
Doddakarenahalli	6.2%	9.9%	11.8%

[14] https://morth.nic.in/sites/default/files/Finalization-Concessionaire-Annual-Pass-Facility-on-NHs-01092025.pdf

Karbylu	7.2%	11.0%	13.4%

6.20 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.21 In FY26, the share of CJVs using the Annual Pass is projected at **11%** and **12%** at TP1 and TP2 respectively (on an annual basis) with March 2026 estimate of around **27%** and **28%** at TP1 and TP2 respectively, which from FY27, is expected to stabilize in March'26 levels.

6.22 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Sept) as discussed in the earlier sections, can be considered a normal period.

Table 6.7: Forecast toll segmentation for the forecast years , TP1 Doddakarenahalli

Forecast	CJV (FY26)	CJV (FY27)	Mini-LCV	LCV	Bus	2A	3A/MAV
Single	39.9%	32.0%	45.8%	25.6%	8.0%	28.2%	44.4%
Return	37.3%	29.8%	42.5%	68.3%	86.4%	53.8%	52.0%
Local commercial	-	-	-	2.3%	-	13.6%	-
Local Personal	1.5%	1.5%	1.5%	-	-	-	-
Monthly	-	-	-	1.0%	5.3%	0.7%	-
Exemptions	3.7%	3.7%	3.7%	0.3%	0.0%	0.2%	0.0%
Violations	6.5%	6.5%	6.5%	2.5%	0.3%	3.4%	3.5%
Annual Pass	**11.1%**	**26.5%**	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.8: Forecast toll segmentation for the forecast years, TP2 Karabylu

Forecast	CJV (FY26)	CJV (FY27)	Mini-LCV	LCV	Bus	2A	3A/MAV
Single	47.4%	38.3%	54.7%	44.8%	9.5%	46.3%	59.3%
Return	34.3%	27.2%	38.9%	51.9%	83.6%	45.7%	40.3%
Local commercial	-	-	-	0.8%	-	4.3%	-
Local Personal	0.8%	0.8%	0.8%	-	-	-	-
Monthly	-	-	-	0.7%	6.7%	0.4%	-

Forecast	CJV (FY26)	CJV (FY27)	Mini-LCV	LCV	Bus	2A	3A/MAV
Exemptions	2.8%	2.8%	2.8%	0.4%	0.1%	1.1%	0.0%
Violations	2.8%	2.8%	2.8%	1.5%	0.1%	2.3%	0.4%
Annual Pass	**12.0%**	**28.1%**	-	-	-	-	-

Source: Steer analysis of Client TMS data

Table 6.9: Trip factors for the forecast years, TP1 Doddakarenahalli

Forecast	CJV/Mini-LCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	29	451	1,000	216	45	45
Local commercial	1	15	1	25	1	1
Local personal	174	1	1	1	1	1
Exemptions	1	1	1	1	1	1
Violations	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Table 6.10: Trip factors for the forecast years, TP2 Karabylu

Forecast	CJV/Mini-LCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2
Monthly	23	45	51	45	45	45
Local commercial	1	15	25	25	1	1
Local personal	164	1	1	1	1	1
Exemptions	1	1	1	1	1	1
Violations	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Revenue reconciliation

6.23 As part of validating the data provided by the Client, as well as our assumptions around toll calculations, we have reconciled the actual reported revenue on a monthly level for the Asset. To reconcile we have used the segmentation and AADT for the period of FY26 (Apr-Aug) and compared it with the reported revenue over the same period.

6.24 The comparison, as shown in Table 6.11 below, shows that our modelled revenue is within a variation of 1.0% from the reported revenue over the selected period of reconciliation (excluding buses). This gives us confidence that the revenues estimated using the traffic

data in our forecasts are accurately representing the revenues being reported from the Asset.

Table 6.11: Revenue reconciliation summary for Apr-Jun FY26 AADC

Toll Plaza	Steer modelled revenue (INR lakhs)	Reported revenue (INR lakhs)	Difference (%)
Doddakarenahalli	15.86	15.76	**0.7%**
Karabylu	13.43	13.45	**0.2%**

Source: Steer comparison between modelled and reported revenue for FY26Q1 excluding buses

Traffic and Revenue forecasts

6.25 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the forecast period for the Asset. Table 6.12, Table 6.13, Table 6.16, and Table 6.17 below present the AADT/PCU forecast growth rates and CAGRs on this Asset. Further, Appendix C presents the detailed AADT and revenues for the forecast period.

6.26 For MAV, based on the discussion with Client, for forecasting purposes, we have referred to the Rigid and Trailer trucks splits in the TVC counts for calculating the effective PCU for MAV trucks. For Rigid trailer trucks we have assumed a PCU factor of 3, whereas for Trailer trucks we have assumed a PCU factor of 4.5.

Table 6.12: Traffic forecast (with impacts) at TP1 Doddakarenahalli

Vehicle Type	FY26	FY27	FY29	FY31	FY33
CJV	21,917	23,457	26,694	30,709	35,165
Mini LCV	1,501	1,575	1,725	1,905	2,104
LCV	1,265	1,292	1,345	1,415	1,488
Bus	1,821	1,853	1,917	1,978	2,042
2 Axle	1,074	1,107	1,174	1,259	1,351
3 Axle	436	441	450	466	483
MAV	686	715	775	850	934
AADT	**28,700**	**30,440**	**34,080**	**38,581**	**43,565**
PCUs	**37,652**	**39,617**	**43,705**	**48,747**	**54,316**

Source: Steer analysis

Table 6.13: Traffic forecast (with impacts) growth rates (%), TP1 Doddakarenahalli

Vehicle Type	FY26-FY27	FY27-FY29	FY29-FY31	FY31-FY33	FY26-FY33
CJV	7.0%	6.7%	7.3%	7.0%	7.0%
Mini LCV	4.9%	4.7%	5.1%	5.1%	4.9%
LCV	2.2%	2.0%	2.5%	2.5%	2.3%
Bus	1.8%	1.7%	1.6%	1.6%	1.6%
2 Axle	3.1%	3.0%	3.6%	3.6%	3.3%
3 Axle	1.1%	1.0%	1.8%	1.8%	1.5%

Vehicle Type	FY26-FY27	FY27-FY29	FY29-FY31	FY31-FY33	FY26-FY33
MAV	4.2%	4.1%	4.7%	4.8%	4.5%
AADT	**6.1%**	**5.8%**	**6.4%**	**6.3%**	**6.1%**
PCUs	**5.2%**	**5.0%**	**5.6%**	**5.6%**	**5.4%**

Source: Steer analysis

Table 6.14: Revenue forecasts (in INR crores including annual pass compensation) at TP1 Doddakarenahalli

Vehicle Type	FY26	FY27	FY29	FY31	FY33
CJV	36.2	40.0	49.7	62.0	78.3
Mini LCV	2.4	2.6	3.1	3.7	4.4
LCV	3.4	3.5	4.0	4.6	5.2
Bus	9.9	10.3	11.6	13.0	14.7
2 Axle	5.2	5.5	6.4	7.5	8.7
3 Axle	4.2	4.4	4.9	5.5	6.2
MAV	6.8	7.2	8.5	10.3	12.3
Total	**67.9**	**73.5**	**88.2**	**106.6**	**129.8**

Source: Steer analysis

Table 6.15: Revenue forecast with growth rates (%), TP1 Doddakarenahalli

Vehicle Type	FY26-FY27	FY27-FY29	FY29-FY31	FY31-FY33	FY27-FY33
CJV	10.7%	11.5%	11.7%	12.4%	11.7%
Mini LCV	8.6%	9.5%	9.5%	9.6%	9.4%
LCV	4.1%	7.0%	7.0%	6.6%	6.5%
Bus	4.3%	6.1%	6.2%	6.1%	5.8%
2 Axle	5.7%	7.4%	8.3%	8.1%	7.6%
3 Axle	3.7%	5.6%	6.6%	6.1%	5.7%
MAV	6.9%	8.8%	9.7%	9.2%	8.9%
Total	**8.2%**	**9.5%**	**10.0%**	**10.3%**	**9.7%**

Source: Steer analysis

Table 6.16: Traffic forecast (with impacts) at TP2 Karabylu

Vehicle Type	FY26	FY27	FY29	FY31	FY33
CJV	16,467	17,703	20,258	23,009	26,034
Mini LCV	1,128	1,184	1,299	1,416	1,546
LCV	893	918	969	1,018	1,071
Bus	1,474	1,500	1,552	1,601	1,653
2 Axle	772	802	864	926	994
3 Axle	431	440	456	473	490

Vehicle Type	FY26	FY27	FY29	FY31	FY33
MAV	679	714	788	865	950
AADT	**21,845**	**23,262**	**26,185**	**29,308**	**32,737**
PCUs	**29,287**	**30,931**	**34,317**	**37,908**	**41,842**

Source: Steer analysis

Table 6.17: Traffic forecast (with impacts) with growth rates at TP2 Karabylu

Vehicle Type	FY26-FY27	FY27-FY29	FY29-FY31	FY31-FY33	FY26-FY33
CJV	7.7%	7.3%	6.9%	6.5%	7.0%
Mini LCV	5.0%	4.7%	4.4%	4.5%	4.6%
LCV	2.8%	2.7%	2.5%	2.5%	2.6%
Bus	1.8%	1.7%	1.6%	1.6%	1.6%
2 Axle	3.9%	3.8%	3.6%	3.6%	3.7%
3 Axle	1.9%	1.9%	1.8%	1.8%	1.8%
MAV	5.2%	5.0%	4.7%	4.8%	4.9%
AADT	**6.6%**	**6.3%**	**6.0%**	**5.8%**	**6.1%**
PCUs	**5.7%**	**5.5%**	**5.3%**	**5.2%**	**5.4%**

Source: Steer analysis

Table 6.18: Revenue forecast (in INR crores including annual pass compensation) at TP2 Karabylu

Vehicle Type	FY26	FY27	FY29	FY31	FY33
CJV	29.3	32.6	40.7	50.0	62.6
Mini LCV	2.0	2.2	2.6	3.1	3.6
LCV	2.7	2.9	3.3	3.8	4.3
Bus	8.6	8.9	10.1	11.3	12.8
2 Axle	4.5	4.8	5.6	6.5	7.6
3 Axle	4.5	4.7	5.3	6.0	6.8
MAV	7.2	7.7	9.3	11.2	13.4
Total	**58.7**	**63.7**	**76.8**	**92.0**	**111.1**

Source: Steer analysis

Table 6.19: Revenue forecast with growth rates (%) at TP2 Karabylu

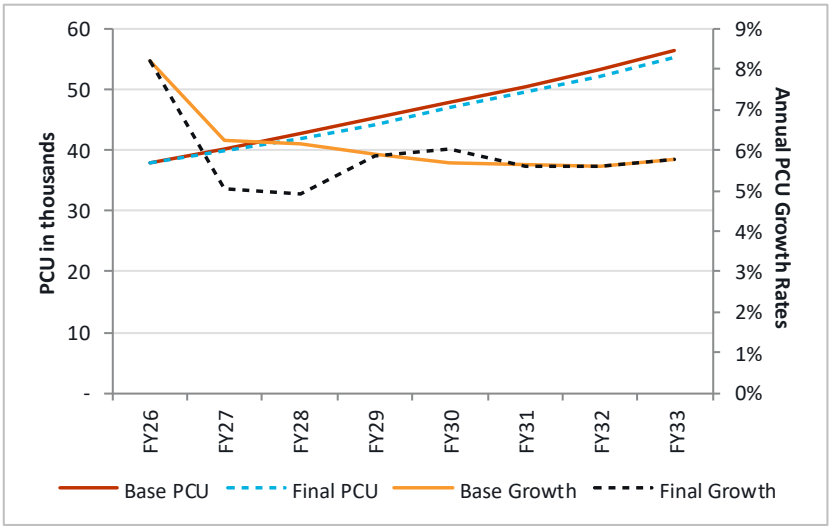
Vehicle Type	FY26-FY27	FY27-FY29	FY29-FY31	FY31-FY33	FY27-FY33
CJV	11.2%	11.7%	10.9%	11.8%	11.5%
Mini LCV	8.7%	9.5%	8.8%	9.1%	9.1%
LCV	5.1%	7.7%	7.0%	6.6%	6.8%
Bus	4.3%	6.1%	6.2%	6.1%	5.8%
2 Axle	6.5%	8.2%	8.2%	8.2%	8.0%

Vehicle Type	FY26-FY27	FY27-FY29	FY29-FY31	FY31-FY33	FY27-FY33
3 Axle	4.5%	6.5%	6.7%	6.0%	6.1%
MAV	7.8%	9.8%	9.8%	9.2%	9.3%
AADT	**8.6%**	**9.8%**	**9.5%**	**9.9%**	**9.5%**

Source: Steer analysis

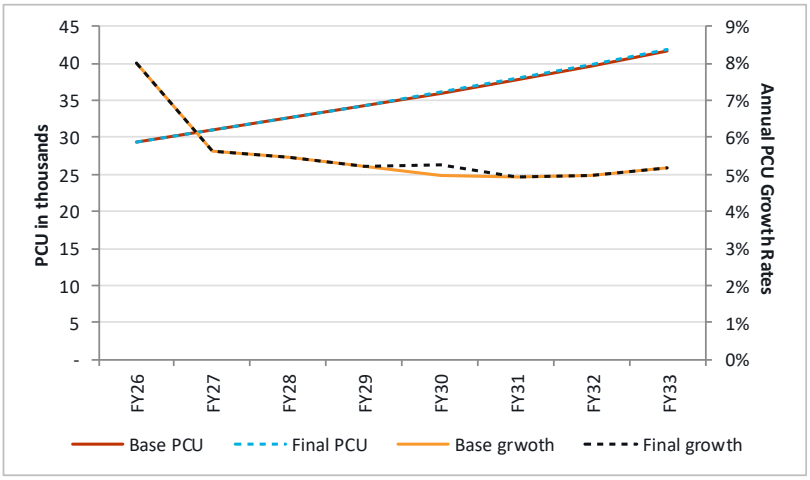
6.27 As presented in Table 6.13 and Table 6.17 above, at TP1 and TP2, FY26-33 PCU CAGRs (inclusive of impacts) are 5.4% and 5.2% respectively. While the background growth is primarily driven by car growth followed by 3A/MAVs, the opening of the Bengaluru STRR Solur-Dobaspet spur is expected to impact traffic growth over the medium term, after which growth is expected to stabilise and remain stable over the long-term.

Figure 6-2: Traffic and growth rates for forecast PCUs - Background and final- TP1



Source: Steer analysis

Figure 6-3 Traffic and growth rates for forecast PCUs - Background and final- TP2



Source: Steer analysis

Upside and Downside cases

Upside and Downside scenario assumptions

6.28 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.29 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.30 Further, network developments are highly dependent on governmental directions, policies, legal and financial measure which might result in early or delayed completion of developments. Therefore, we have included an Upside (optimistic) and a Downside (pessimistic) case. However, at this stage, we consider that the base case represents a central case scenario given the risks of variation of input assumptions

6.31 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.20: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

Impacts-Upside Case

6.32 The upside case impacts included in forecasts are summarised in below.

Table 6.21: Summary of impacts on the Assets

Development	Year of Impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1	TP2
Satellite Ring Road	FY27 (50%), FY28 onwards (100%)	+25% of base case	CJV: (2.1%) 2A: (2.3%) 3A: (2.5%) MAV: (2.7%)	N/A

Source: Steer analysis of OD data

Impacts-Downside Case

6.33 The downside case impacts included in forecasts are summarised in below.

Table 6.22: Summary of impacts on the Assets

Development	Year of Impact	Change in impact w.r.t base case	Magnitude of impact	
			TP1	TP2
Satellite Ring Road	FY27 (50%), FY28 onwards (100%)	+25% of base case	CJV: (3.5%) 2A: (3.8%) 3A: (4.2%) MAV: (4.5%)	N/A

Source: Steer analysis of OD data

Upside and Downside Case Forecasts

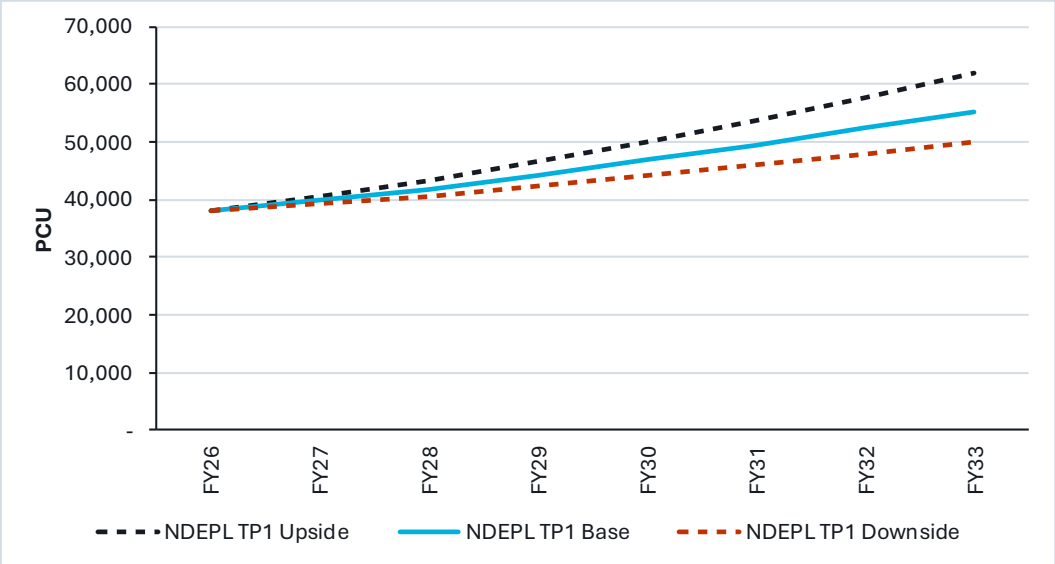
6.34 Table 6.23 below presents the difference between the Upside and Downside Case forecasts relative to the Base Case forecasts in FY33 (i.e., the concession end year) for both Asset toll plazas. Figure 6-4 through Figure 6-7 below plot the Upside and Downside Case forecasts relative to the Base Case forecasts for each Asset toll plaza over the full concession period (FY26-FY33).

Table 6.23: Percentage Difference Upside and Downside Case Forecasts vs. Base Case Forecasts – FY33

Case	Measure	TP1 Neelamangala	TP2 Karabylu
Upside Case	Traffic (PCU)	11.9%	10.2%
Downside Case		(9.5%)	(8.3%)
Upside Case	Revenue	19.4%	17.5%
Downside Case		(14.8%)	(13.6%)

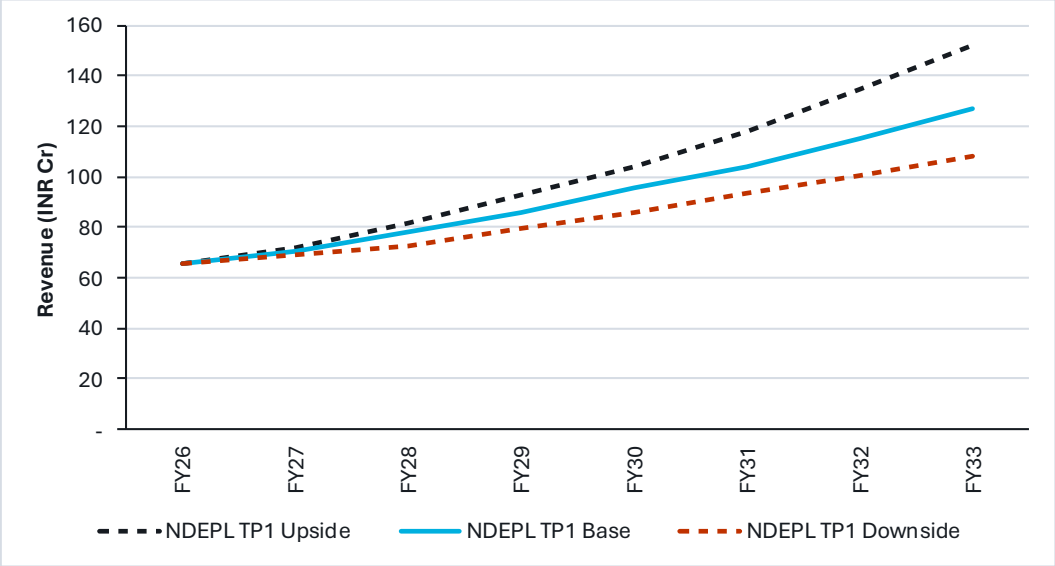
Source: Steer

Figure 6-4: Upside and Downside Case PCU Forecasts - TP1 Neelamangala



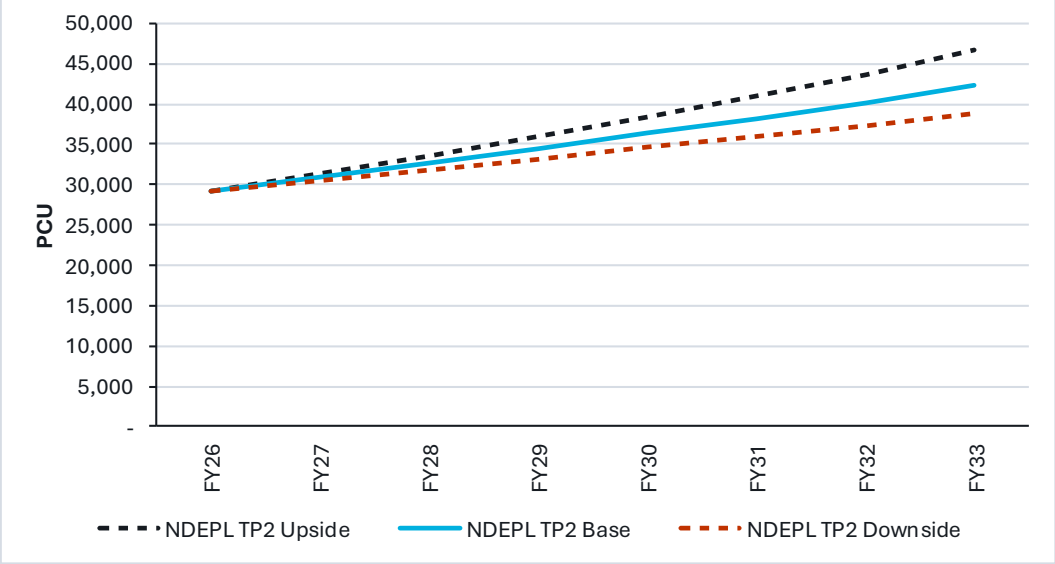
Source: Steer analysis of client data

Figure 6-5: Upside and Downside Case Revenue Forecasts - TP1 Neelamangala



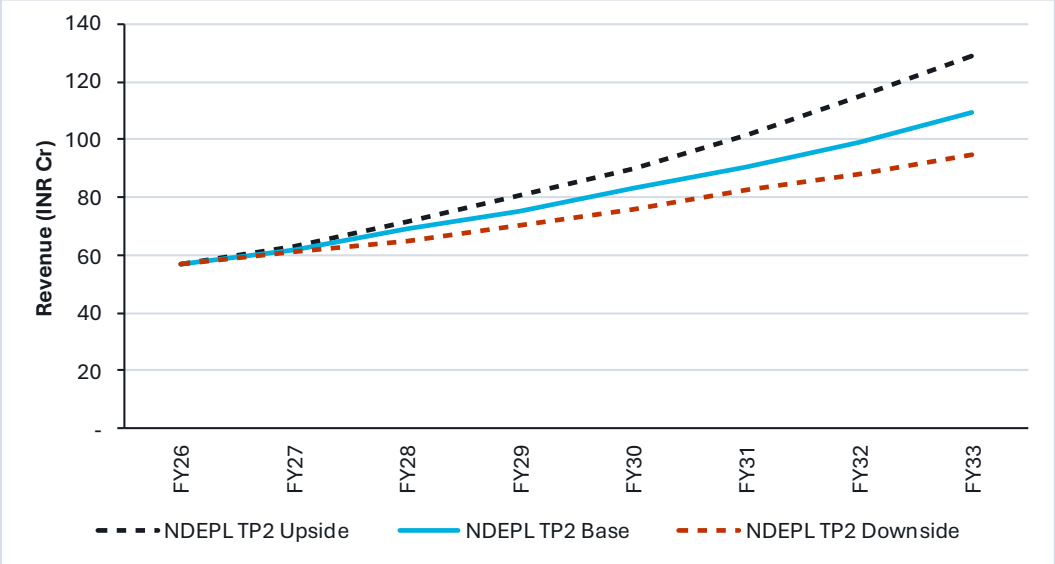
Source: Steer analysis of client data

Figure 6-6: Upside and Downside Case PCU Forecasts - TP2 Karabylu



Source: Steer analysis of client data

Figure 6-7: Upside and Downside Case Revenue Forecasts - TP2 Karabylu



Source: Steer analysis of client data

Summary outlook

6.35 The Asset is a part of a well-established east-west corridor (NH75) that connects two major cities in Karnataka (Mangaluru and Bengaluru). In general, the Asset's value to the regional economy, and particularly for passenger traffic is defined by the critical link it provides in connecting Bengaluru city to regional activity centres further west of the city and towards Mangaluru. This includes local and regional movements connecting key urban centres of the Bengaluru Metro region with Mangaluru, Udupi and Hassan.

6.36 The Asset also serves as the key gateway and primary route to reach Mangaluru on the western coast of Karnataka - known for its temples, hills and beaches, and popular visitor sites for tourism, business and leisure travellers. It is also the headquarters of the Dakshin Kannada district, which is home to several prominent temple locations including Shravanabelagola. Thus, statewide growth in both services and tourism are expected to positively influence passenger traffic growth on the Asset.

6.37 Commercial traffic plying the Asset carry consumption-based agro-related commodities in light goods vehicles while bullet tankers carry petroleum-related products. Two bottling plants, BPCL (Solur) and HPCL (Yediyur) located on the Asset, as well as the Mangaluru port/petroleum refinery are key (trip) generators in the Asset's region of influence. Given the commodities being carried on the Asset are essential in nature and largely serve the growing urban consumption demand of the Bengaluru Metro region, we believe future growth in commercial traffic on the Asset will follow from expanding urbanisation trends.

6.38 The upgradation of the Bengaluru airport, development of new enterprises nearby, and Bengaluru's overall economic development have all contributed to traffic growth on the Asset and continues to support our growth outlook for the Asset. Ongoing improvements to the Shiradi Ghat section of the NH75 and plans to construct Gundya-Sakleshpur tunnel between Hassan and Mangaluru also bode well for the future level of service of the corridor.

6.39 Our positive outlook for the region is driven by historically robust growth in Karnataka's economy (GSDP CAGR of 7.4% per year) between FY12-24 which we believe to sustain going forward. Continued growth in the regional economy, specifically in service-based sectors such as tourism and IT, and goods-production sectors such as petroleum, agriculture, and consumption-based goods is expected to drive long-term growth in both passenger and commercial traffic on the Asset.

Appendices

A Top 10 OD Pairs

A.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at each toll plaza. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1 Doddakarenahalli

Table A.1: CJV and Bus top 10 OD pair shares at TP1 Doddakarenahalli

	OD Pair	Share
1.	Hassan Area-Bengaluru City	12%
2.	Mangaluru City-Bengaluru City	8%
3.	Kunigal Area-Bengaluru City	6%
4.	Soluru City-Bengaluru City	4%
5.	Kunigal Area-Nelamangala Area	3%
6.	Hassan Area-Nelamangala Area	3%
7.	Bengaluru Rural-Bengaluru City	2%
8.	Mandya-Bengaluru City	2%
9.	Mangaluru City-Nelamangala Area	2%
10.	Magadi Area-Bengaluru City	1%

Source: Steer analysis of OD data

Table A.2: 3A and MAV top 10 OD pair shares at TP1 Doddakarenahalli

	OD Pair	Share
1.	Hassan Area-Bengaluru City	9%
2.	Mangaluru City-Bengaluru City	9%
3.	Kunigal Area-Bengaluru City	7%
4.	Soluru City-Bengaluru City	4%
5.	Hassan Area-Nelamangala Area	2%
6.	Soluru City-Nelamangala Area	2%
7.	Kunigal Area-Nelamangala Area	2%
8.	Mangaluru City-Nelamangala Area	2%
9.	Mandya-Bengaluru City	1%
10.	Chikmagalur-Bengaluru City	1%

Source: Steer analysis of OD data

TP2 Karabylu

Table A.3: CJV top 10 OD pair shares at TP2 Karabylu

	OD Pair	Share
1.	Hassan Area-Bengaluru City	14.5%
2.	Mangaluru City-Bengaluru City	11.8%
3.	Chikmagalur-Bengaluru City	4.7%
4.	Nagamangala Area-Bengaluru City	4.1%
5.	Belluru Area-Bengaluru City	3.5%
6.	Channarayapattana Area-Bengaluru City	2.5%
7.	Kodagu-Bengaluru City	2.0%
8.	Bengaluru City-Bengaluru City	1.8%
9.	Udupi-Bengaluru City	1.8%
10.	Hassan Area-Nelamangala Area	1.7%

Source: Steer analysis of OD data

Table A.4: MAV and OSV top 10 OD pair shares at TP2 Karabylu

	OD Pair	Share
1.	Mangaluru City-Bengaluru City	16.8%
2.	Hassan Area-Bengaluru City	7.7%
3.	Mangaluru City-Nelamangala Area	6.8%
4.	Mangaluru City-Magadi Area	4.1%
5.	Shimoga-Bidadi Area	3.9%
6.	Mangaluru City-Bidadi Area	3.5%
7.	Mangaluru City-Tumkur	3.1%
8.	Shimoga-Magadi Area	2.9%
9.	Channarayapattana Area-Yadiyuru Area	2.3%
10.	Mangaluru City-Kolar	2.3%

B Data collection exercise

B.1 In order to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

3/7-day TVC counts

Table B.1: TVC counts at TP1

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
01-07-2023	22,326	1,603	2,105	1,621	484	400	606	6	29,151
02-07-2023	28,706	1,432	1,566	1,628	352	251	429	8	34,372
03-07-2023	15,854	1,546	1,638	1,719	400	320	494	8	21,979

Source: Steer analysis of TVC data

Table B.2: TVC counts at TP2

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
18-01-2021	13,188	1,084	1,539	1,206	337	313	436	5	18,108
19-01-2021	10,579	1,108	1,578	1,071	417	326	643	5	15,727
20-01-2021	11,206	1,139	1,666	1,031	431	440	694	7	16,614
21-01-2021	10,072	1,081	1,582	1,029	376	364	714	9	15,227
22-01-2021	11,497	1,128	1,659	1,062	418	396	739	3	16,902
23-02-2021	19,958	1,099	1,846	1,165	408	389	709	5	25,579
24-02-2021	23,817	1,145	2,038	1,312	375	336	669	3	29,695

Source: Steer analysis of TVC data

TVC vs TMS comparison

Table B.3: TVC and TMS WADT

Toll Plaza	Source	CJV+ Mini LCV	LCV	Bus	2 Axle	3 Axle+ MAV	OSV	Total
TP1	TVC	23,822	1,770	1,656	412	833	7	28,501
	TMS	24,209	1,057	1,463	693	862	-	28,284

TP2	TVC	15,443	1,701	1,125	395	1,024	5	19,693
	TMS	14,301	2,401	1,068	537	1,025	-	19,332

Source: Steer analysis of TVC data

Zone List

Table B.4: Zone list

Zone No	Zone name	State
1	Rest of India	Andaman & Nicobar Island
2	Rest of North AP	Andhra Pradesh
3	Anantapur	Andhra Pradesh
4	Kuppam Area	Andhra Pradesh
5	Y.s.r.	Andhra Pradesh
6	Rajahmundry City	Andhra Pradesh
7	Guntur	Andhra Pradesh
8	Vijayawada North City	Andhra Pradesh
9	Kurnool	Andhra Pradesh
10	Sri Potti Sriramulu Nellore	Andhra Pradesh
11	Prakasam	Andhra Pradesh
12	West Godavari	Andhra Pradesh
13	Visakhapatnam Port	Andhra Pradesh
14	Rest of Krishna	Andhra Pradesh
15	Rest of Chittoor	Andhra Pradesh
16	North East India	Arunanchal Pradesh
17	Bangladesh	Bangladesh
18	Bhutan	Bhutan
19	East Bihar	Bihar
20	Rest of West Bihar	Bihar
21	Gaya	Bihar
22	Chandigarh	Chandigarh
23	Rest of Chhattisgarh	Chhattisgarh
24	Bailadilla City	Chhattisgarh
25	Bilaspur City	Chhattisgarh
26	Bhilai City	Chhattisgarh
27	Dadara & Nagar Havelli	Dadara & Nagar Havelli
28	Daman & Diu	Daman & Diu
29	Goa	Goa

Zone No	Zone name	State
30	Pipavav Port	Gujarat
31	Rest of Gujarat	Gujarat
32	Jamnagar Port	Gujarat
33	Mundra Port	Gujarat
34	Surat Port	Gujarat
35	Kandla Port	Gujarat
36	Rest of Haryana	Haryana
37	Gurgaon City	Haryana
38	Panipat City	Haryana
39	North India	Himachal Pradesh
40	Bokaro City	Jharkhand
41	Rest of Jharkhand	Jharkhand
42	Hazaribagh City	Jharkhand
43	Jamshedpur City	Jharkhand
44	Bagalkot	Karnataka
45	Soladevanhalli Area	Karnataka
46	Belgaum	Karnataka
47	Bellary City	Karnataka
48	Rest of Bellary	Karnataka
49	Bidar	Karnataka
50	Bijapur	Karnataka
51	Chamrajnagar	Karnataka
52	Chikkaballapura	Karnataka
53	Chikmagalur	Karnataka
54	Chitradurga	Karnataka
55	Mangaluru City	Karnataka
56	Davanagere	Karnataka
57	Dharwad	Karnataka
58	Gadag	Karnataka
59	Gulbarga	Karnataka
60	Sakleshpur Area	Karnataka
61	Haveri	Karnataka
62	Kodagu	Karnataka
63	Kolar	Karnataka
64	Koppal	Karnataka

Zone No	Zone name	State
65	Krishnarajpete Area	Karnataka
66	Rest of Mysore	Karnataka
67	Raichur	Karnataka
68	Sankighatta Area	Karnataka
69	Shimoga	Karnataka
70	Yadavani Area	Karnataka
71	Udupi	Karnataka
72	Uttara Kannada	Karnataka
73	Yadgir	Karnataka
74	Mysore City	Karnataka
75	Pittekoppalu Area	Karnataka
76	Mandya	Karnataka
77	Nelligere Area	Karnataka
78	Karabylu Toll Plaza	Karnataka
79	Kadaballi Area	Karnataka
80	Chunchanahalli Area	Karnataka
81	Doddajataka Area	Karnataka
82	Bairasandra Area	Karnataka
83	Huliyar Area	Karnataka
84	Tumkur	Karnataka
85	Doddamadure Area	Karnataka
86	Hulical Area	Karnataka
87	Channapatna Area	Karnataka
88	Tumakuru Area	Karnataka
89	Bengaluru Rural	Karnataka
90	Magadi Area	Karnataka
91	Lanca Toll Plaza	Karnataka
92	Gudemaranahalli Area	Karnataka
93	Tattekere Area	Karnataka
94	Talekere Area	Karnataka
95	Herur Area	Karnataka
96	Kunigal Area	Karnataka
97	Nagamangala Area	Karnataka
98	Doddaballapura Area	Karnataka
99	Ramanagara	Karnataka

Zone No	Zone name	State
100	Sira Area	Karnataka
101	Tiptur Area	Karnataka
102	Madhugiri Area	Karnataka
103	Chikkanayakanahalli Area	Karnataka
104	Hebburu Area	Karnataka
105	Turuvekere Area	Karnataka
106	Kodinagasandra Area	Karnataka
107	Ungra Dodderi Area	Karnataka
108	Gororu Banavadi Area	Karnataka
109	Soluru City	Karnataka
110	Maruru Kudur Area	Karnataka
111	Kalari Area	Karnataka
112	Sankenapura Area	Karnataka
113	Huliyurdurga Area	Karnataka
114	Chowdanakuppe Area	Karnataka
115	Kannagatta Area	Karnataka
116	Chakenahalli Area	Karnataka
117	Chabbanahalli Area	Karnataka
118	Belluru Area	Karnataka
119	Arakalagud Area	Karnataka
120	Hassan Area	Karnataka
121	Arasikere Area	Karnataka
122	Channarayapattana Area	Karnataka
123	Belur Area	Karnataka
124	Holenarasipur Area	Karnataka
125	Rest of Ramanagara	Karnataka
126	Beechanahalli Area	Karnataka
127	Malavalli Area	Karnataka
128	Maddur Area	Karnataka
129	Bidadi Area	Karnataka
130	Ramanagara Area	Karnataka
131	Srirangapatna Area	Karnataka
132	Mandya Area	Karnataka
133	PaneMangaluru Area	Karnataka
134	Putturu Sulva Area	Karnataka

Zone No	Zone name	State
135	Mudigere Area	Karnataka
136	Uppinangady Area	Karnataka
137	Yadiyuru Area	Karnataka
138	Hoskote Area	Karnataka
139	Devihalli Area	Karnataka
140	Nelamangala Area	Karnataka
141	Rest of Bengaluru West	Karnataka
142	Bengaluru City	Karnataka
143	Rest of Bengaluru South	Karnataka
144	Rest of Bengaluru North	Karnataka
145	Rest of Bengaluru East	Karnataka
146	Hirisava Area	Karnataka
147	Rest of Kerala	Kerala
148	Kochi Port	Kerala
149	Kannur	Kerala
150	Kasaragod	Kerala
151	Kozhikode	Kerala
152	Malappuram	Kerala
153	Palakkad	Kerala
154	Thrissur	Kerala
155	Wayanad	Kerala
156	Rest of West Madhya Pradesh	Madhya Pradesh
157	Rest of East Madhya Pradesh	Madhya Pradesh
158	Rest of Central Madhya Pradesh	Madhya Pradesh
159	Balaghat City	Madhya Pradesh
160	Bhopal	Madhya Pradesh
161	Indore City	Madhya Pradesh
162	NW Maharashtra	Maharashtra
163	Central Maharashtra	Maharashtra
164	Rest of Nagpur Region	Maharashtra
165	Rest of East Maharashtra	Maharashtra
166	SW Maharashtra	Maharashtra
167	Mumbai City	Maharashtra
168	Pune	Maharashtra
169	Nagpur City	Maharashtra

Zone No	Zone name	State
170	Myanmar	Myanmar
171	NCT of Delhi	NCT of Delhi
172	Nepal	Nepal
173	Rest of Odisha	Odisha
174	Rayagada City	Odisha
175	Paradip Port	Odisha
176	Rourkela City	Odisha
177	Pakistan	Pakistan
178	Puducherry	Puducherry
179	Punjab	Punjab
180	Rest of East Rajasthan	Rajasthan
181	Rest of West Rajasthan	Rajasthan
182	Jaipur City	Rajasthan
183	Jodhpur City	Rajasthan
184	Udaipur City	Rajasthan
185	Ariyalur	Tamil Nadu
186	Chennai City	Tamil Nadu
187	Coimbatore City	Tamil Nadu
188	Rest of Coimbatore	Tamil Nadu
189	Cuddalore	Tamil Nadu
190	Dharmapuri	Tamil Nadu
191	Dindigul	Tamil Nadu
192	Erode	Tamil Nadu
193	Kancheepuram	Tamil Nadu
194	Rest of South TN	Tamil Nadu
195	Karur	Tamil Nadu
196	Denkanikottai Area	Tamil Nadu
197	Namakkal	Tamil Nadu
198	Perambalur	Tamil Nadu
199	Pudukkottai	Tamil Nadu
200	Salem	Tamil Nadu
201	Thanjavur	Tamil Nadu
202	The Nilgiris	Tamil Nadu
203	Thiruvallur	Tamil Nadu
204	Thiruvarur	Tamil Nadu

Zone No	Zone name	State
205	Tuticorin Port	Tamil Nadu
206	Tiruchirappalli	Tamil Nadu
207	Tiruppur City	Tamil Nadu
208	Rest of Tiruppur	Tamil Nadu
209	Tiruvannamalai	Tamil Nadu
210	Tirupattur Area	Tamil Nadu
211	Villupuram	Tamil Nadu
212	Nagappattinam	Tamil Nadu
213	Hosur Area	Tamil Nadu
214	Uthangarai Area	Tamil Nadu
215	Shoolagiri Area	Tamil Nadu
216	Krishnagiri Area	Tamil Nadu
217	Ambur Area	Tamil Nadu
218	Vellore Area	Tamil Nadu
219	Rest of Telangana	Telangana
220	Hyderabad City	Telangana
221	Khammam	Telangana
222	Agra City	Uttar Pradesh
223	Agra	Uttar Pradesh
224	Rest of UP	Uttar Pradesh
225	Allahabad	Uttar Pradesh
226	Kanpur Nagar City	Uttar Pradesh
227	Mathura City	Uttar Pradesh
228	Moradabad City	Uttar Pradesh
229	Rest of West Uttar Pradesh	Uttar Pradesh
230	Varanasi City	Uttar Pradesh
231	Rest of Uttarakhand	Uttarakhand
232	Hardwar City	Uttarakhand
233	Rest of West Bengal	West Bengal
234	Kolkata City	West Bengal
235	BCPL Plant Solur	Karnataka
236	Mangaluru Port	Karnataka
237	Hesaraghatta	Karnataka

Direction wise commodity distribution

Table B.5: Commodity distribution (towards Hassan) at TP1

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	19%	1%	0%	-
Groceries	29%	7%	4%	3%
Construction	1%	8%	25%	6%
Petroleum	2%	25%	14%	7%
Manufacturing	3%	10%	13%	4%
Automobiles	-	-	0%	31%
Miscellaneous	13%	16%	25%	29%
Metals	0%	2%	7%	3%
Empty	33%	31%	12%	17%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table B.6: Commodity distribution (towards Bengaluru) at TP1

Commodity Category	LCV	2 Axle	3 Axle	MAV
Agriculture	7%	4%	8%	-
Groceries	34%	23%	18%	11%
Construction	1%	10%	22%	17%
Petroleum	9%	28%	21%	16%
Manufacturing	26%	12%	7%	13%
Automobiles	4%	1%	-	12%
Miscellaneous	6%	8%	2%	18%
Metals	-	6%	13%	6%
Empty	14%	8%	7%	6%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table B.7: Commodity distribution (towards Hassan) at TP2

Commodity Category	Mini LCV + LCV	2A Truck	3A Truck	MAV + OSV
Agriculture	30%	12%	15%	5%
Groceries	10%	12%	2%	3%
Construction	11%	18%	31%	36%
Petroleum	9%	18%	22%	26%

Manufacturing	11%	14%	9%	5%
Automobiles	2%	2%	-	4%
Miscellaneous	11%	4%	7%	2%
Metals	6%	7%	4%	16%
Empty	9%	12%	10%	4%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Table B.8: Commodity distribution (towards Bengaluru) at TP2

Commodity Category	Mini LCV + LCV	2A Truck	3A Truck	MAV + OSV
Agriculture	38%	24%	42%	18%
Groceries	9%	8%	3%	3%
Construction	6%	14%	9%	10%
Petroleum	10%	30%	24%	42%
Manufacturing	4%	9%	7%	3%
Automobiles	2%	1%	-	0%
Miscellaneous	4%	10%	3%	1%
Metals	2%	-	7%	16%
Empty	23%	3%	5%	5%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis of OD data

Trip length frequency

Table B.9: Trip length frequency at TP1

Distance range	LCV	2A Truck	3A Truck	MAV
0-100 km	25%	29%	29%	21%
100-300 km	39%	38%	36%	37%
300-500 km	22%	21%	21%	24%
500-1000 km	11%	8%	12%	14%
>1000 km	2%	4%	2%	3%

Source: Steer analysis of OD data

Table B.10: Trip length frequency at TP2

Distance range	Mini LCV	LCV	2A Truck	3A Truck	MAV
0-100 km	17%	9%	18%	9%	17%
100-300 km	55%	50%	40%	29%	55%
300-500 km	23%	30%	30%	53%	23%

Distance range	Mini LCV	LCV	2A Truck	3A Truck	MAV
500-1000 km	3%	8%	9%	8%	3%
>1000 km	1%	3%	4%	3%	1%

Source: Steer analysis of OD data

C Detailed Forecasts

C.1 Further to the summary of forecasts presented in Chapter 6, this appendix presents detailed forecasts.

Traffic forecasts

C.2 This section presents the detailed traffic forecasts for the forecast period until FY33. The following two tables show the traffic growth rates and AADT, respectively.

Table C.1: Traffic Forecast (with impacts) over horizon years at TP1 Doddakarenahalli

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	21,917	1,501	1,265	1,821	1,074	436	686	**28,700**	**37,652**
FY27	23,457	1,575	1,292	1,853	1,107	441	715	**30,440**	**39,617**
FY28	24,883	1,638	1,311	1,886	1,132	442	738	**32,029**	**41,385**
FY29	26,694	1,725	1,345	1,917	1,174	450	775	**34,080**	**43,705**
FY30	28,721	1,813	1,380	1,947	1,216	458	812	**36,347**	**46,240**
FY31	30,709	1,905	1,415	1,978	1,259	466	850	**38,581**	**48,747**
FY32	32,826	2,000	1,450	2,009	1,303	474	890	**40,952**	**51,401**
FY33	35,165	2,104	1,488	2,042	1,351	483	934	**43,565**	**54,316**

Source: Steer analysis

Table C.2: Forecasts for final (background + impacts) growth rates (%), TP1 Doddakarenahalli

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY27	7.0%	4.9%	2.2%	1.8%	3.1%	1.1%	4.2%	**6.1%**	**5.2%**
FY28	6.1%	4.0%	1.4%	1.7%	2.2%	0.2%	3.2%	**5.2%**	**4.5%**
FY29	7.3%	5.3%	2.6%	1.7%	3.7%	1.9%	4.9%	**6.4%**	**5.6%**
FY30	7.6%	5.1%	2.6%	1.6%	3.6%	1.8%	4.8%	**6.7%**	**5.8%**
FY31	6.9%	5.0%	2.5%	1.6%	3.5%	1.8%	4.7%	**6.1%**	**5.4%**
FY32	6.9%	5.0%	2.5%	1.6%	3.5%	1.8%	4.7%	**6.1%**	**5.4%**
FY33	7.1%	5.2%	2.6%	1.6%	3.7%	1.8%	4.9%	**6.4%**	**5.7%**

Source: Steer analysis

Table C.3: Traffic Forecast (with impacts) over horizon years at TP2 Karabylu

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY26	16,467	1,128	893	1,474	772	431	679	**21,845**	**29,287**
FY27	17,703	1,184	918	1,500	802	440	714	**23,262**	**30,931**
FY28	18,977	1,241	944	1,526	833	448	751	**24,720**	**32,621**
FY29	20,258	1,299	969	1,552	864	456	788	**26,185**	**34,317**
FY30	21,646	1,357	993	1,576	895	465	826	**27,758**	**36,122**
FY31	23,009	1,416	1,018	1,601	926	473	865	**29,308**	**37,908**
FY32	24,451	1,479	1,044	1,626	959	481	905	**30,945**	**39,788**
FY33	26,034	1,546	1,071	1,653	994	490	950	**32,737**	**41,842**

Source: Steer Analysis

Table C.4: Forecasts for final (background + impacts) growth rates (%), TP2 Karabylu

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total	PCU
FY27	7.5%	5.0%	2.8%	1.8%	3.9%	1.9%	5.2%	**6.5%**	**5.6%**
FY28	7.2%	4.8%	2.8%	1.7%	3.8%	1.9%	5.1%	**6.3%**	**5.5%**
FY29	6.8%	4.6%	2.6%	1.7%	3.7%	1.9%	4.9%	**5.9%**	**5.2%**
FY30	6.9%	4.5%	2.6%	1.6%	3.6%	1.8%	4.8%	**6.0%**	**5.3%**
FY31	6.3%	4.4%	2.5%	1.6%	3.5%	1.8%	4.7%	**5.6%**	**4.9%**
FY32	6.3%	4.4%	2.5%	1.6%	3.5%	1.8%	4.7%	**5.6%**	**5.0%**
FY33	6.5%	4.5%	2.6%	1.6%	3.7%	1.8%	4.9%	**5.8%**	**5.2%**

Source: Steer analysis

Revenue forecasts

C.3 The following table presents the year-wise annual revenue forecasts for the forecast period until FY33.

Table C.5: Forecasts for annual revenue (INR crores), TP1 Doddakarenahalli

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	36.2	2.4	3.4	9.9	5.2	4.2	6.8	**67.9**
FY27	40.0	2.6	3.5	10.3	5.5	4.4	7.2	**73.5**
FY28	45.2	2.8	3.7	10.9	5.9	4.5	7.8	**80.8**
FY29	49.7	3.1	4.0	11.6	6.4	4.9	8.5	**88.2**
FY30	56.5	3.4	4.3	12.3	6.9	5.2	9.4	**97.9**
FY31	62.0	3.7	4.6	13.0	7.5	5.5	10.3	**106.6**

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY32	69.4	4.0	4.9	13.8	8.1	5.9	11.2	**117.4**
FY33	78.3	4.4	5.2	14.7	8.7	6.2	12.3	**129.8**

Source: Steer analysis

Table C.6: Forecasts for annual revenue (INR crores), TP2 Karabylu

	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	Total
FY26	29.3	2.0	2.7	8.6	4.5	4.5	7.2	**58.7**
FY27	32.6	2.2	2.9	8.9	4.8	4.7	7.7	**63.7**
FY28	37.2	2.4	3.1	9.5	5.2	5.0	8.5	**70.7**
FY29	40.7	2.6	3.3	10.1	5.6	5.3	9.3	**76.8**
FY30	45.9	2.8	3.5	10.7	6.0	5.7	10.3	**84.9**
FY31	50.0	3.1	3.8	11.3	6.5	6.0	11.2	**92.0**
FY32	55.7	3.3	4.0	12.0	7.1	6.4	12.3	**100.9**
FY33	62.6	3.6	4.3	12.8	7.6	6.8	13.4	**111.1**

Source: Steer analysis

Control Information

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Final Report
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Project Transit: Traffic Due Diligence Western UP Tollway Limited

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Table of Content

Disclaimer		**iv**
Glossary Items		**vi**
1	**Introduction**	**8**
	The assignment	8
	Our approach	9
	Contents of this report	10
2	**The Asset**	**11**
	Introduction	11
	Strategic network	11
	Concession and tolling details	12
	Key Economic activities	14
	Alternate routes	15
3	**Traffic Description**	**17**
	Introduction	17
	Historical trends	18
	Key findings of the TVC data analysis	23
	Key findings of origin-destination analysis	25
	Conclusions	31
4	**Socio-economic context**	**33**
	Introduction	33
	Population growth	33
	Economic Indicators	34
	Economic growth	37
	Forecasts for growth drivers	42
5	**FY26 Base year AADT and Traffic growth analysis**	**44**
	Introduction	44
	FY26 Base year AADT estimates	44
	Estimation of background elasticities	47
	Forecasts for background elasticities	50
6	**Forecasts: Network overlays and forecasts**	**52**
	Introduction	52
	Analysis of potential network/developmental impacts	52
	Revenue forecasting assumptions	56
	Traffic and Revenue forecasts	59
	Upside and Downside cases	59
	Summary Outlook	61

Figures

Figure 2-1: Asset location in the regional network context 11
Figure 2-2: Asset context 12
Figure 2-3: Typical cross-section and toll plazas on the Asset. 13
Figure 3-1: Ticket-segmentation for CJV at TP1 Siwaya 21
Figure 3-2: Ticket-segmentation for MAV at TP1 Siwaya 21
Figure 3-3: WADT TVC- TMS at TP1 23
Figure 3-4: Comparison between TVC and TMS daily traffic data on TP1 24
Figure 3-5 Comparison between vehicle shares from TVC and TMS WADTs 24
Figure 3-6: Zonal influence at TP1 27
Figure 3-7 Internal-external distribution at TP1 28
Figure 3-8: Commodity distribution at TP1 (Total) 30
Figure 3-9: Trip length distribution TP1 31
Figure 4-1: Annual growth – Index of Industrial Production 35
Figure 4-2: Car Ownership in India per 1,000 population 36
Figure 4-3: Per Capita Income (PCI) 36
Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures 37
Figure 4-5: Month on Month IIP performance 38
Figure 4-6: Industrial components of GVA 38
Figure 4-7: Evolution of Delhi's and Uttar Pradesh's GSDP and national GDP 39
Figure 4-8: Sectoral Distribution of GSDP of Uttar Pradesh for 2025 40
Figure 4-9: Western UP vs UP GSDP Growth 41
Figure 4-10: GDP-GSDP forecast 43
Figure 5-1: FY26 Base Estimation methodology 45
Figure 5-2: Relationship between CJV traffic and Uttar Pradesh's GSDP 48
Figure 5-3: Relationship between LCV, Bus and 2A combined traffic and Uttar Pradesh's GSDP 49
Figure 5-4: Relationship between 3A+MAV combined traffic and India's GDP 50
Figure 6-1: Alternate routes and Asset route shown against the regional network context 52
Figure 6-2: Alternate routes and Asset routes shown against the regional network context 55

Tables

Table 1.1: Scope of work and sources of data 8
Table 2.1: Summary of concession 13
Table 2.2: Single toll rates on the Asset (INR), applicable FY26 13
Table 3.1: PCU factors 17
Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Siwaya 18
Table 3.3: Historical Tollable Traffic Levels at TP1 – Siwaya 19
Table 3.4: Historical revenue evolution (in INR crores) and AADC (in Lakhs) 19
Table 3.5: Typical ticket types sold at NHAI plazas 20

Table 3.6: Historical ticket segmentation at TP1 Siwaya	22
Table 3.7: Data collection schedule	22
Table 3.8: Sample rates for OD data	25
Table 3.9: Zone aggregations for zonal influence analysis	25
Table 3.10: Aggregate commodity categories	28
Table 3.11: Average trip length by vehicle category (in km)	31
Table 4.1: CAGR of population in India	33
Table 4.2: Population Growth in Uttar Pradesh and India (2012-2024)	34
Table 5.1: SCF values for WUPTL	46
Table 5.2: Adopted base estimates: WUPTL TP1	46
Table 5.3: Split between individual vehicle types	47
Table 5.4: Identified growth drivers to model traffic growth.	47
Table 5.5: Derived elasticities from regression analysis and assumed forecast elasticities for economic growth	51
Table 6.1: List of network/other developments	53
Table 6.2: Details of Ganga Expressway (Phase I)	53
Table 6.3: Diversion impact due to Ganga Expressway	54
Table 6.4 Details of Delhi- Dehradun Expressway	55
Table 6.5 Diversion impact due to Delhi- Dehradun Expressway	56
Table 6.6: Evolution of annual pass trips (15th August to 30th September 2025)	56
Table 6.7: Toll segmentation for FY26 onwards at TP Siwaya	57
Table 6.8: Annual pass compensation for CJVs (in Crore)	57
Table 6.9: Trip factors on at TP Siwaya	57
Table 6.10: WPI growth forecast assumptions	58
Table 6.11: Revenue reconciliation summary for FY25	58
Table 6.12: Traffic forecasts (with impacts) AADT forecast for TP Siwaya	59
Table 6.13: Revenue forecast (INR crores) for TP Siwaya including annual pass compensation for CJVs	59
Table 6.14: Summary of Macro-economic Assumptions for upside and downside cases	60
Table 6.15: Summary of impacts on the Assets	60
Table 6.16: Summary of impacts on the Assets	60

Appendices

A	**Top 10 OD pairs**
B	**Detailed Forecasts**
C	**Data Collection Exercise**
D	**Client Scenario: Upside and Downside Sensitivity Case**

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Traffic Consultant developed the relationships in the models used to produce the forecasts for the projects based on data available through September 2025. This report does not consider variations in traffic performance due to changing macro and force majeure events such (but not limited to) as global wars, economic uncertainty (high inflation, global recession), and changes in the regulatory environment. The situation remains dynamic and is subject to significant change in the short and medium term. In this challenging context, Traffic Consultant has produced base forecasts with a view on a possible scenario for the traffic forecasts. However, it is important to note that this is only one view, and there continues to remain uncertainty as to the short-term, intermediate or prolonged effects of and responses to such macro-economic/force majeure events. As a result, no assurance can be provided by Traffic Consultant that the scenarios and assumptions Traffic Consultant has identified will prove to be accurate. Given the uncertainty inherent in this scenario, Traffic Consultant advises that all readers of the Report consider the Report in the context of their own assessment of the impact of such events.

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Glossary Items

Acronym	Meaning
2A/ Truck	2 Axle/ Truck
3A	3 Axle
AADT	Annual Average Daily Traffic
BOT	Build Operate Transfer
CAGR	Compound Annual Growth Rate
CJV	Cars / Jeeps / Vans
COD	Commercial Operations Date
DPR	Detailed Project Report
ETC	Electronic Toll Collection, also referred to as FASTag
FY	Financial Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HAM	Hybrid Annuity Model
HCM/ EME	Heavy Commercial Vehicles/ Earth Moving Machinery
IE reports	Independent Engineers' reports
INR	Indian Rupees
km	Kilometer
LCV/ LGV	Light Commercial Vehicles/ Light Goods Vehicle
LMV	Light motor vehicles
MADT	Monthly average daily traffic
MAV	Multi Axle Vehicle
NH	National Highway
NHAI	National Highways Authority of India
NSDP	National State Domestic Production
OD	Origin Destination
OSV	Oversized vehicles
PCU	Passenger Car Unit; it is a measure of standard vehicle unit to convert all vehicle classes to a single unit by using PCU factors to compute total traffic on an Asset.
Q1	Quarter 1 of financial year, from April to June
Q2	Quarter 2 of financial year, from July to September
Q3	Quarter 3 of financial year, from October to December
Q4	Quarter 4 of financial year, from January to March
RNP	Registered Number Plate
SCF	Seasonality Correction Factor
SH	State Highway
T&R	Traffic and Revenue

TMS	Traffic Management System
TVC	Traffic Volume Count
WADT	Weekly average daily traffic
YTD	Year to Date

1 Introduction

The assignment

1.1 The Cube Highways Fund Advisors Private Limited (the "Client") has commissioned Steer Davies Gleave India Private Limited ("Steer") for a traffic due diligence to be carried out on the Western UP Tollways Limited Road (hereafter called "Asset"). This report forms part of the annual fair market valuation (FMV) undertaken as part of the "Transit 10 project". This report presents an update of the traffic and revenue forecasts based on primary surveys undertaken in 2023, actual traffic data available up to September 2025 and latest macro-economic assumptions.

1.2 The Asset consists of a single stretch of toll road. For this report, we hereafter call the toll plaza on the Asset as TP1.

- Western UP Tollways Limited: WUPTL: TP1 - Siwaya

1.3 Our scope of work for the traffic and revenue forecasting process includes:

Table 1.1: Scope of work and sources of data

Scope of work	Data source
• Review of historical Traffic Management System (TMS) data, Vendor reports and documents	• Provided by client for the period between Apr'12 and Sept'25
• Historical analysis and forecasts for baseline growth, including; — Background growth, and — Seasonality trends	• Historical data provided by the Client and benchmarking using plazas in the vicinity or of similar nature of the Asset has been done wherever sufficient data was unavailable
• Validation of revenue reported in FY26YTD	• TMS data provided by Client • Revenue reconciliation using toll plaza traffic and ticket type data to calculate revenue and reconciling it with toll plaza reported revenue
• Origin Destination (OD) analysis to understand growth drivers: — Zonal influence and Top OD pairs — Commodity distribution • Trip length distribution	• Origin Destination (OD) surveys dated Apr'23.
• Analysis of upcoming network improvements and other developments, which may have future impacts on traffic	• Secondary research and our in-house experience of working in the vicinity of the Asset. Impact analysis to be conducted by Steer based on Generalised Journey Cost spreadsheet-based analysis
• Historical revenue analysis and forecasts for revenue estimation, including	• Calculated from historical data provided by Client

Scope of work	Data source
— Toll segmentation and trip factors, — Overloading shares	
• Final traffic growth forecasts including baseline growth rates and potential future impacts	• Elasticity based base growth and potential impacts from secondary research and Steer's in-house experience of working in the vicinity of the Asset
• Toll revenue estimation for the entire concession, including toll evolution.	• Toll evolution based on toll notification published by National Highway Authority of India (NHAI); and Gross Domestic Product (GDP) & Wholesale Price Index (WPI) trends as shared by the client

Our approach

1.4 The approach employed by Steer in the preparation of these forecasts was developed to take advantage of existing knowledge of the Asset and available data from various sources made available by the Client as well as publicly sourced. It follows well-established practices for forecasting ongoing traffic growth on an existing/brownfield Asset.

1.5 The analysis focused on two sets of issues, namely:

— understanding the traffic that is currently using the Asset; and
— identifying how and why that traffic is likely to change in the future.

1.6 To understand the current traffic on the Asset, we have analysed traffic data from multiple independent sources:

- Client-provided secondary data, including:
  — TMS data pertaining from April FY12 up to September 2025.
  — Concession agreement and toll notifications for FY25 and FY26
  — Previous studies related to traffic and revenue
  — Client commissioned OD survey in April 2023 (FY24) on the toll plaza to validate any change in growth drivers and travel patterns.
  — Steer-commissioned TVC counts from 20th to 26th March 2021 as part of study in earlier commission
- Secondary research to understand plans for new developments and progress of ongoing developments on the Asset.
- Review of Concession agreement and toll notifications for FY25 and FY26 provided by client.
- To arrive at the base position for FY26, FY25 monthly traffic data was used to arrive at annual FY25 position which then with FY25 GDP/GSDP and Elasticity was grown to FY26. Further, longer historical data was used for validation/computation of Asset SCF considering which monthly FY26 was computed which was validated to 6 months actual FY26.
- Revenue Reconciliation: We undertook revenue reconciliation for FY26YTD, by building up revenue from the traffic reported by each of the toll plaza and subsequently match it to the reported revenue for FY26YTD using the prevalent toll rates and reported segmentation/toll-frequencies for FY26YTD, this is a key part of our analysis to validate the segmentation/toll-frequency assumptions and the Annual Average Daily Traffic (AADT) reported for each of the toll plaza.

1.7 The estimation of future traffic demand on the Asset was undertaken through:

- Detailed assessment of the Asset performance from traffic and revenue perspective based on the previous study and client team.
- As a part of current study, the OD survey data was further utilised in developing the views on the forecasts of traffic on this corridor. Outputs from OD data such as zonal influence, trip lengths, and commodity distribution are presented in this report.
- Developing a bespoke growth model for each Asset/plaza/toll class to forecast year-on-year traffic growth from FY26 to the end of concession period.
- Investigating the elasticity of historical traffic growth compared to state (GSDP) and national (GDP) growth. Where historical data is limited, we have benchmarked the Asset against our Steer knowledge base (e.g., similar Asset types in the same state or on the same corridor), to derive appropriate elasticities.
- Applying our elasticities to independent GDP forecasts as provided by client.
- Identifying and analysing the potential impacts of any relevant changes to the competitive position of each Asset – these include impacts of changes to road network including expressways and opening of competitive modes of travel.
- Identifying and analysing any other potential impacts to traffic and revenue on each Asset – these include axle load norms, axle shift for heavy goods, FASTag implementation.
- Considering changes in trends of segmentation over time and making suggestions for changes in exemptions in the future
- Preparing traffic and revenue forecast for the Asset for the complete length of concession. The analysis here includes the specific impacts of network, or other exogenous factors specific to the Asset. We have developed a set of forecasting assumptions for three scenarios: a base case and upside and downside scenarios.

Contents of this report

1.8 The report has been divided into the following chapters, including Chapter 1 providing an introduction:

- Chapter 1 introduces the methodology and approach to undertake the traffic and revenue due diligence;
- Chapter 2 describes the key characteristics of the Asset and its surrounding road network, primarily based on site visits;
- Chapter 3 summarises the current and historical traffic on the Asset, including results from the TMS, TVC and OD analysis;
- Chapter 4 presents the socio-economic context of the corridor and region/state containing the Asset, along with our approach and results on estimating background traffic demand growth; and
- Chapter 5 presents our baseline year forecast and summarises our results on estimating background traffic demand growth
- Chapter 6 summarises our assessment of network impacts and presents concession traffic and revenue forecasts for the Asset along with the assumptions for upside and downside cases

2 The Asset

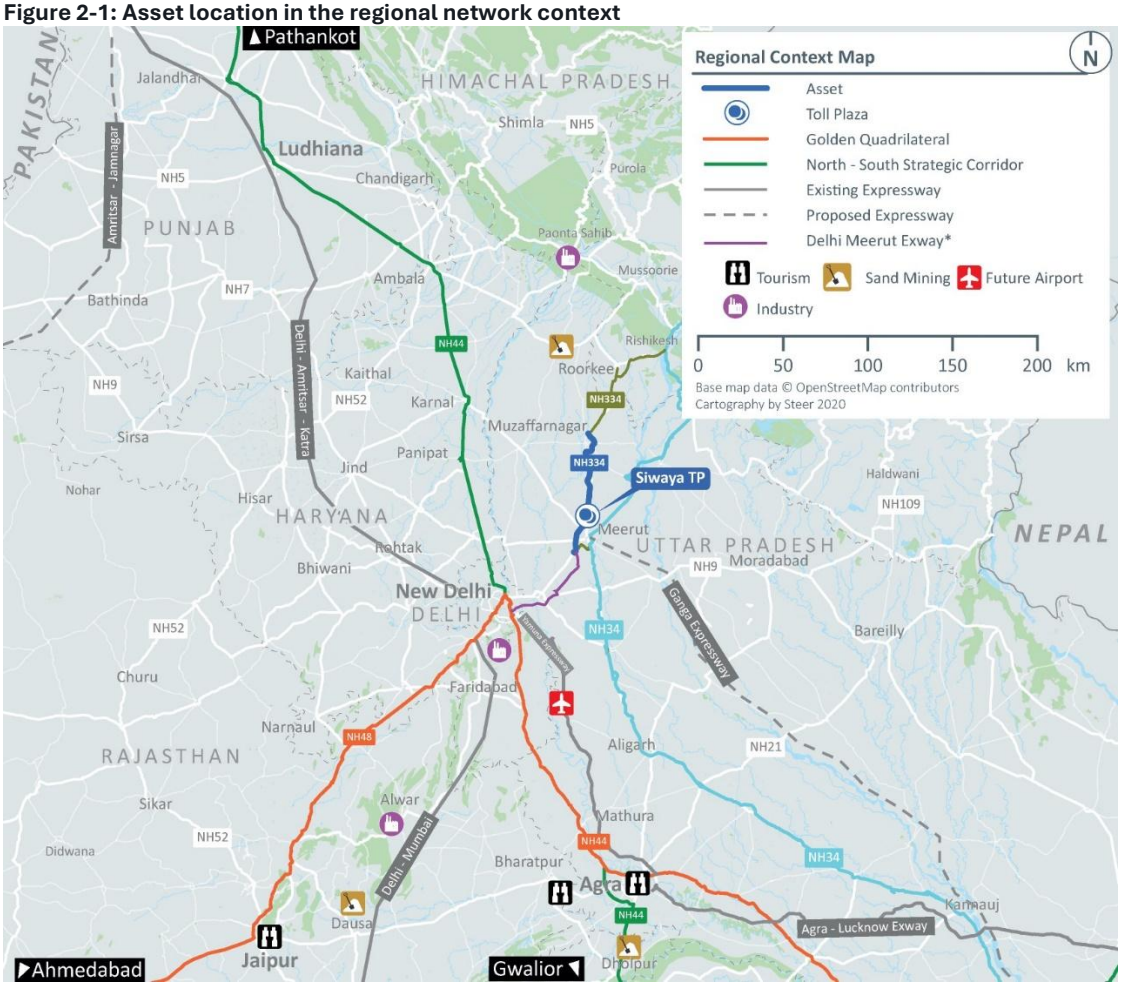
Introduction

2.1 This chapter provides a description of the Asset, based on primary data (from site visits), and our understanding of the region and network surrounding the Asset. We cover the strategic network context, followed by key economic activities and network developments around the Asset.

Strategic network

2.2 The Asset is situated in western Uttar Pradesh (UP), connecting the cities of Meerut and Muzaffarnagar. Figure 2-1 below shows the regional road network in which the Asset is located.

Figure 2-1: Asset location in the regional network context



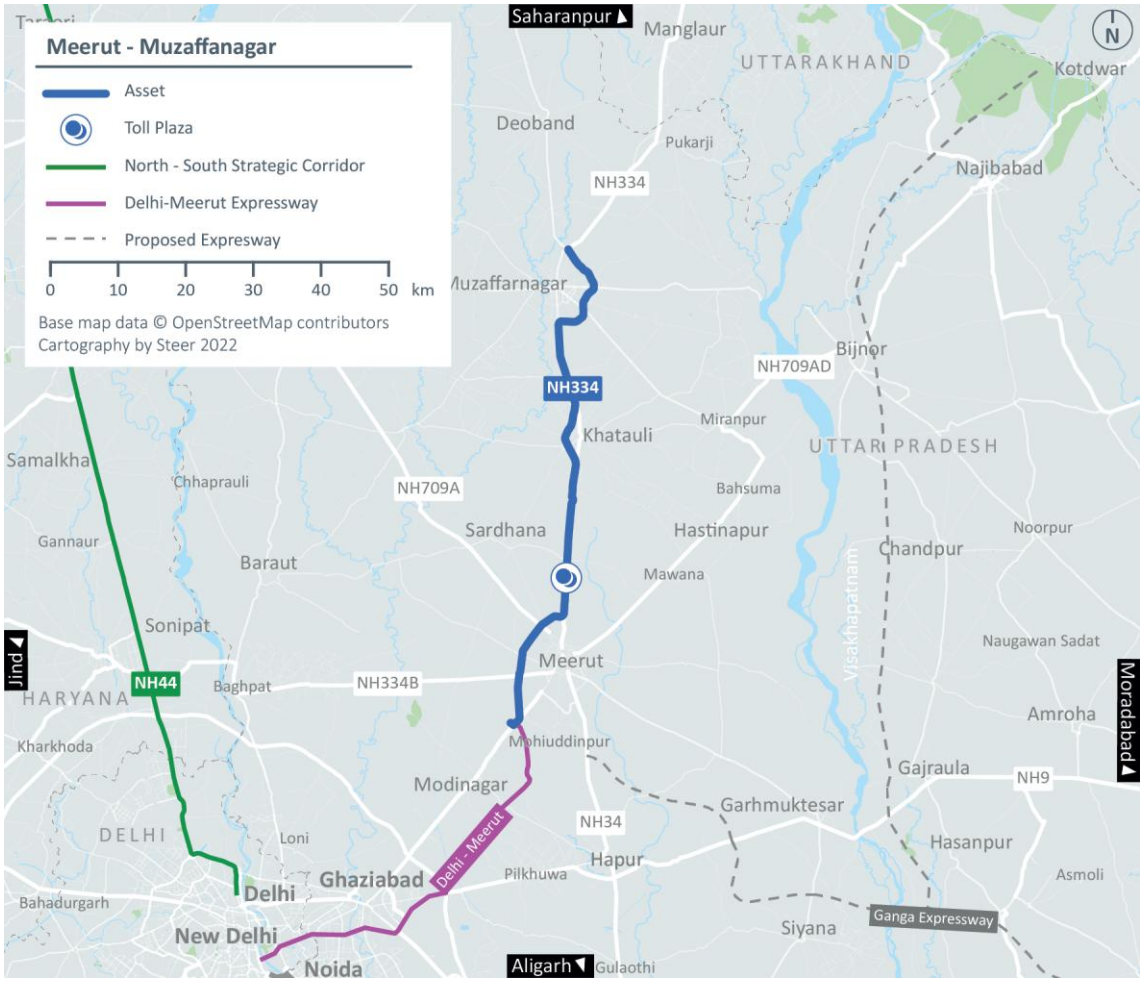
Source: Steer cartography using OpenStreetMap data

2.3 This Asset primarily caters to two different types of strategic movements:

- **Short-distance trips** by locals travelling within the National Capital Region (NCR) for work, leisure or short trips. This region is made up of contiguous urban settlements which are largely co-dependent on each other for goods and services.
- **Medium-distance trips** on the Asset which mostly have one end of their trip in Uttarakhand. This is because the Asset is the primary route connecting Delhi NCR to the popular tourist destinations of Uttarakhand such as Dehradun and Mussorie. Increased traffic volumes can be observed on the Asset closer to weekends, as people from Delhi and nearby areas travel to Uttarakhand for leisure, and tourism purposes.

2.4 The Asset is a 77.8-Km four-lane toll road which forms a part of the NH 334 in Uttar Pradesh. This Asset has one toll plaza, namely, Siwaya (TP1) at Km 76.0, which lies close to Meerut (approximately 10 km from the city). Figure 2-2 provides a closer view of the Asset in the context of its immediate surroundings and location of toll plaza.

Figure 2-2: Asset context



Source: Steer cartography using OpenStreetMap data

Concession and tolling details

2.5 The toll plaza on the Asset has been operational since April 2011, and the Client took over operations in FY16. There are four years left in the concession period. Though March 2026 was the end of the concession period as per the original concession, FY27 is now expected

to be the end of the concession period considering claims for demonetisation and COVID-19-related impacts. The following table presents a summary of the Asset.

Table 2.1: Summary of concession

	Particulars
State	Uttar Pradesh
Highway and lane configuration	NH 334 four lane
Toll plazas	TP1: Siwaya
Length (Km) as per concession agreement	77.80 Km
Commencement of operations	TP1: April 2011
Operated by Client since	FY16
Concession period	15 years
Last year of concession	FY27

Source: Client data

2.6 Figure 2-3 shows a typical cross-section of the Asset and its toll plaza.

Figure 2-3: Typical cross-section and toll plazas on the Asset.

Source: Steer site visit

2.7 The tolls on the Asset are collected for the standard vehicle categories as per toll notification, with toll rates as shown in the Table 2.2. The toll plazas have dedicated FASTag lanes for electronic tolling.

Table 2.2: Single toll rates on the Asset (INR), applicable FY26

Type of Vehicle	Single Journey Fee
CJV	115

Type of Vehicle	Single Journey Fee
LCV	200
Bus/Truck	400
3A/MAV	645
HCM/EME/OSV	645

Source: NHAI Revision of User fee Rate w.e.f 01.06.2025

2.8 The Asset currently issues tickets including single, local commercial and local personal under NHAI concession. There are no return and monthly tickets issued on the Asset. The local commercial and local personal ticket categories are discounted single entry tickets for trips within 20kms and 10kms respectively. Further detailed information on this have been provided in Chapter 3 of the report.

Key Economic activities

2.9 Uttar Pradesh is the most populous state in the country, accounting for 17% of India's total population which also makes its high consumer base. Its real GSDP has grown at 5.8% CAGR between FY12 and FY14, contributing 8% to the national GDP. According to the 2011 census, it also the state where approximately 50% of all workers are dependent on agriculture for livelihood.

2.10 Agriculture is the most important and the biggest sector in the state economy followed by the services sector comprising of travel, tourism, real estate, insurance and the finance industry.

Tourism

2.11 Given that the Asset provides a key link to major religious and tourists destinations in Uttarakhand such as Haridwar, Mussoorie and Rishikesh, the major economic activity along the Asset is mostly tourism-focussed. Several wayside amenities, restaurants and hotel chains are located along the Asset, with tourism being the biggest driver of passenger traffic growth.

2.12 Post opening of Delhi Meerut Expressway in April 2021, the Asset gained tourism related traffic particular Car and Bus volumes which are shown in the historical section below.

Agriculture

2.13 Muzaffarnagar being on one end of the Asset, is rich in agriculture production of rice, maize, sugar and Jaggery. Modinagar is an important industrial town on the periphery of the Asset and is traditionally known for sugar mills that generate employment and revenue for the region. It is popularly known as "Sugar Bowl of India". Hence, significant influence of this commodity is also witnessed in the traffic pattern as validated in Origin Destination (OD) Analysis where these produced products are carried to consumption centres of Meerut, Uttarakhand, Rest of UP and Delhi NCR.

Manufacturing

2.14 Manufacturing of wood, paper and steel is another key economic activity in Muzaffarnagar and neighbouring regions. Muzaffarnagar is popular for its wood carving where the wood crafts are exported nationally and internationally. Similarly, the city also has large scale paper manufacturing and steel processing plants which drives major good traffic on the

Asset. Also, the Asset is a heavy courier/parcel carrying route moving from Delhi NCR to Uttarakhand, Meerut, Muzaffarnagar, Saharanpur.

Sandmining and industry

2.15 Uttarakhand and Haridwar are developing regions wherein the government is actively investing in several industrial parks through its arm, State Industrial Development Corporation of Uttarakhand Limited (SIDCUL) which further attracts traffic movements plying on the Asset.

2.16 Sandmining is another activity which is based just north of the Asset along the banks of river Yamuna in Saharanpur and had contributed to traffic movements on the Asset until FY15 after which regulatory developments on illegal sand mining led to a drop in traffic share carrying construction-related commodities.

Alternate routes

2.17 The major competitor to the Asset was the Upper Ganga Canal (UGC) road which connects Muradnagar to Khatauli (and further north up to Uttarakhand) and especially helps light vehicles (CJV, LCVs) to bypass the toll plaza and the congested Muradnagar-Modinagar-Meerut feeder stretch to the Asset. However, UGC is no more a competitor to the Asset since the opening of feeder Delhi-Meerut expressway. The alternate is a decent-quality two-lane road without paved shoulders, initially developed by the state government to facilitate religious pilgrimage to Rishikesh/Haridwar and further north.

2.18 Another possible alternate route between Delhi NCR region and Uttarakhand is the Delhi-Baghpat-Shamli-Saharanpur section of NH 709B. The four laning of the road has been completed. However, the concession ends by FY27 therefore no impact has been considered on the Asset. For destinations to Haridwar in Uttarakhand, the Asset continues to remain the preferred route even after the existing upgrade on the Delhi-Shamli section due to faster exits out of Delhi through the Delhi-Meerut Expressway. Therefore, no major impact is expected due to the completion of construction of the remaining two stretches.

2.19 Further, an upcoming feeder to the Asset route would be six laned access-controlled Ganga Expressway. The expressway is expected to reduce travel time between NCR, Meerut and Prayagraj substantially and would help in decongesting the existing road network once operational in FY27. As on date, construction works are progressing. Bijauli village in Meerut - where the Asset starts - is the point where Phase-1 of the Expressway would start hence a positive impact in terms of induced traffic is assumed in Chapter 6[1].

2.20 Delhi-Saharanpur- Dehradun Expressway is another potential alternate to the Asset under NHAI concession. This 210km proposed expressway is 6/12 laned access-controlled corridor under Bharatmala Pariyojana. The expressway is under construction stage and is expected to get completed by end of 2025. Being a parallel competing route to the Asset, once operational the impact of the expressway is assumed and mentioned in Chapter 6 of the report.

2.21 Additionally, an option of micro-diversion exists for road users around the toll plaza, east of the Asset wherein a local road was partially upgraded under the Pradhan Mantri Gram Sadak Yojana and at present, several users (especially cars) bypass the toll plaza and use

[1] **Latest Updates on Ganga Expressway: Route, Map, and More -TimesProperty**

this local road instead. Further, the traffic on the local road was observed to have increased after the compulsory implementation of FASTag as car users who have not installed FASTag on their vehicles bypass the toll plaza to avoid paying penalty charge. However, this road has now crossed saturation capacity and is no longer expected to result in further diversions.

3 Traffic Description

Introduction

3.1 This chapter outlines the historical and current traffic and revenues on the Asset, as well as our analysis of origin-destination (OD) data and traffic volume count (TVC) data. This includes data collected as a part of this study and previous studies of this Asset, as well as data provided by the Client.

3.2 Traffic demand data is generally collected and analysed to understand the volume and vehicle composition of traffic currently using the Asset, while OD data is used to obtain a better understanding of travel patterns, trip lengths, trip purposes and areas of influence in the vicinity of the Asset, as well as the commodities being moved by the goods vehicles. This analysis, combined with our understanding of the Asset (based on our site visits), enables us to identify the key drivers of demand on the Asset.

3.3 Actual toll plaza data is used as the basis from which the current/base year annual average daily traffic (AADT) is established. This data is provided by the Client and independently analysed and validated by us using traffic volume count (TVC) information.

PCU factor assumptions for reporting

3.4 The PCU values have been taken from 'IRC 64:1990- Guidelines for Capacity of Roads in Rural Areas'. For MAV, based on the discussion with the Client, we have referred to the rigid and trailer splits in the latest TVC counts conducted in 2023 for calculating the effective PCU for MAVs. For rigid trailer trucks we have assumed a PCU factor of 3, whereas for trailer trucks we have assumed a PCU factor of 4.5. These factors have been used to arrive at the PCU values presented in the following sections.

Table 3.1: PCU factors

Vehicle Category	PCU Factor
CJV	1.0
Mini LCV	1.0
LCV	1.5
Bus/2A/3A	3.0
MAV	3.71
OSV	4.5

Source: Steer analysis and IRC64,1990

Historical trends

3.5 The historical traffic performance of the Asset is summarised in the table below:

Table 3.2: Historical evolution in AADT by vehicle class at TP1 – Siwaya

Vehicle Category	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (20-25)	CAGR (18-25)
CJV	18,067	17,228	15,802	11,724	20,562	28,069	30,431	30,592	30,834	14.0%	7.8%
LCV	2,333	1,668	1,251	1,048	1,007	997	1,022	1,033	990	(4.0%)	(11.0%)
Bus/2A	2,238	2,436	2,396	1,510	1,774	2,327	2,585	2,646	2,659	2.0%	2.4%
3A/MAV	891	1,098	1,165	1,249	1,265	1,441	1,581	1,446	1,306	4.4%	7.2%
Total	**23,529**	**22,454**	**20,767**	**15,498**	**24,608**	**32,834**	**35,618**	**35,717**	**35,789**	**11.5%**	**6.1%**
PCU	**31,380**	**30,905**	**29,124**	**22,135**	**31,797**	**41,561**	**45,217**	**45,112**	**44,842**	**9.1%**	**5.4%**

Source: Steer analysis of the Client data; Note: On this toll plaza, we have 3A/MAV combined volumes. However, for PCU calculations, to maintain consistency, we have used the shares derived from the latest TVC on the Asset

3.6 The high CJV volumes observed on the Asset (~30,000 as of FY25) is primarily due to the Asset lying on a tourism-driven corridor which fetches high daily passenger trips between Delhi NCR and Uttarakhand.

3.7 Traffic growth remained flat in FY25, compared to FY24. This decline is primarily due to a significant drop in MAV volume, as most of the traffic originating from Farukhnagar/Bahadurgarh and north-west and traveling towards Haridwar/Dehradun and above earlier used to pass through our Asset, i.e. the Delhi–Meerut–Muzaffarnagar–Dehradun. However, since the completion of the 4-lane construction on the alternate NH-709B i.e. Baghpat–Shamli-Muzaffarnagar section in FY24, traffic has gained better access and has shifted to the alternate route.

3.8 Additionally, the Kanwar Yatra is an annual pilgrimage undertaken by millions of devotees (Kanwariyas) of Lord Shiva, particularly during the Hindu month of Shravan (July-August). During July-August 2024, authorities implemented traffic restrictions and diversions on major highways, including the Delhi-Meerut Expressway, to accommodate pilgrims. Such measures may have influenced traffic patterns on the Asset too.

3.9 Additionally, passenger volumes have seen flat growth in FY25, driven by shift in demand towards the 2025 Maha Kumbh Mela in Prayagraj. In addition, the section between Muzaffarnagar and Dehradun is currently under construction as the Delhi-Dehradun expressway is being built, resulting in increased travel times. As a result, passenger traffic on the Asset witnessed a decrease in passenger volumes during latter half of the year.

3.10 The Delhi Meerut Expressway was commissioned in April 2021, resulting in significant LOS improvement and providing direct uninterrupted connectivity to Meerut. Thus, the CJV volumes picked up significantly on the Asset in FY23 and have been observed to be on a continuous rise - with increased tourism activity and opening of the Expressway.

3.11 The impact of the opening of the Delhi-Meerut Expressway and the increasing tourism-related traffic can be seen in the growth CAGRs between FY20 – 25, wherein CJVs grew at more than 14% - driving an overall AADT growth of 11.3% and a PCU growth of 9%.

Table 3.3: Historical Tollable Traffic Levels at TP1 – Siwaya

Vehicle Category	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26 YTD	CAGR (20 – 25)
CJV	14,612	13,368	12,238	8,640	16,689	23,039	24,273	23,845	24,589	14.3%
LCV	2,270	1,597	1,198	1,021	970	962	984	997	963	(3.6%)
Bus/2A	2,200	2,389	2,348	1,462	1,730	2,283	2,527	2,593	2,632	2.0%
3A/MAV	874	1,050	1,119	1,199	1,242	1,427	1,568	1,432	1,299	5.1%
Tollable AADT	**19,957**	**18,404**	**16,903**	**12,322**	**20,632**	**27,709**	**29,352**	**28,867**	**29,484**	**11.3%**
Tollable PCU	**27,661**	**26,583**	**24,973**	**18,730**	**27,656**	**36,625**	**39,146**	**38,433**	**38,751**	**9.0%**

Source: Steer analysis of Client data, (FY21* includes 6 months of data from Oct'20 to Mar'21); FY26YTD includes data till Sept'25; Tollable traffic excludes exemption and violation

3.12 The share of LCVs has registered a negative CAGR between FY19-25 period. This decline is primarily due to a shift occurring between LCVs and 2A vehicles. Additionally, some mini-LCVs previously classified as LCVs are now categorized under the CJV category following the implementation of FASTag. The LCV-2A category has historically faced classification challenges because of the similarity in size and appearance of the vehicles. In recent years, there has been a growing preference for 2A trucks, which has further contributed to the decrease in the dominance of LCVs. As a result, traffic data now shows a higher presence of 2A vehicles compared to LCVs.

3.13 However, it's important to note that buses are also included within the 2A category, which means that the shift from LCV to 2A may not be readily visible in the data analysis below.

Historical Revenue

3.14 The table below presents the reported historical revenue on the Asset.

Table 3.4: Historical revenue evolution (in INR crores) and AADC (in Lakhs)

Revenue	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
Total	91.2	74.0	82.4	86.0	85.4	67.2	106.1	153.9	171.7	169.4	83.9
AADC	25.0	21.9	22.7	23.8	23.8	16.7	29.1	42.2	46.9	46.4	45.6
AADC Growth		**(12.4%)**	**3.7%**	**4.8%**	**(0.7%)**	**(29.8%)**	**74.3%**	**45.0%**	**11.1%**	**(1.5%)**	**(1.8%)**

Source: Steer analysis of the Client data

3.15 As we can see from the above Table 3.4, revenue receipts decreased significantly in FY24 and FY25. 1.5% decrease in FY25 AADC can be attributed primarily lower traffic in FY25 compared to FY24. this trend has continued in FY26YTD period as well, however CJV have registered an uptick in the period, whereas commercial volumes have remained in line with FY25 YTD volumes.

Toll Frequencies

3.16 Toll frequency or segmentation is typically the share of each ticket category recorded for a particular vehicle type. Each vehicle category has different segmentation. As a part of historical analysis, we calculate the toll frequency for each vehicle category from the monthly data shared by the client. The most common ticket categories observed on a typical National Highway concession are: Single, Return, Monthly, Local and Exempt. Given the local nature of traffic, some Assets offer custom made local passes to attract the local commuters to opt for these category passes instead of evading toll. Brief description of different ticket-types is given in the subsequent table.

3.17 Understanding the toll frequency gives insights into the nature of traffic. CJVs generally have higher shares of return passes or monthly passes, while heavy trucks mostly have single tickets since they travel long distance. However, this varies from Asset to Asset or even toll plaza to toll plaza. The Asset catering to short distance local traffic generally observes high share of return or other local monthly passes while the Asset catering to strategic long-distance traffic generally observes high share of single ticket traffic. The same can be verified through OD data where the vehicle category with high single ticket shares would have longer trip length with one of their trips ends outside the Asset state. Other reasons for high single shares include the absence of return, local passes, through in and through-out tickets issued on the Asset. This is especially post- FASTag implementation where the user is allowed to pay at each toll plaza.

Table 3.5: Typical ticket types sold at NHAI plazas

Category	Description
Single	Allows the vehicle to cross the toll plaza once
Return	Allows the vehicle to cross the plaza twice in a day at discounted rates.
Monthly Pass	Discounted single entry ticket for users undertaking more frequent trips via the toll plaza.
Local Personal	Discounted single entry pass only for private cars of residents within 20km radius of toll plaza
Local Commercial	50% discount on single trips for commercial vehicles registered in the local district. This pass allows single entry only
Exemptions	Officially exempted vehicles like ambulance, police cars, key political personnel etc.

3.18 In addition to the above ticket categories, a special category pass of “Local Monthly” is also being sold on the Asset. This pass has been issued by the toll plazas individually and the toll plaza is deciding on the toll for such special passes.

Introduction of Annual pass for CJVs

3.19 The National Highway Authority of India launched the “The FASTag Annual Pass” on August 15, 2025, a prepaid facility that allows private CJVs to travel across designated National Highway and National Expressway toll plazas. The annual pass is worth INR 3,000. The pass is valid for one year or 200 trips, whichever occurs first and is applicable only to private, non-commercial vehicles (Car/Jeep/Vans).

Since this pass has been introduced by NHAI, it is not valid on

- state governed toll plazas on highways
- state governed toll plazas expressways
- Parking areas or other non-NHAI tolling locations

3.20 The pass can be activated via the RajmargYatra app or the NHAI website, and links directly to an existing FASTag.

The Annual Pass aims to:

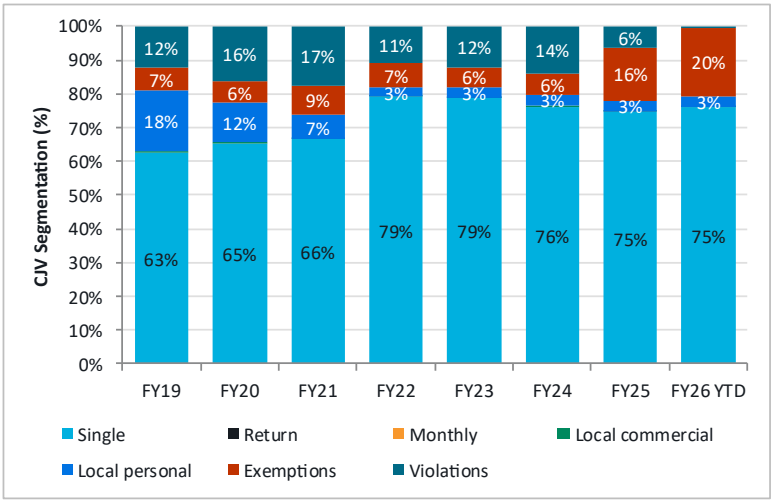
1. Promote cashless and seamless travel on national highways.
2. Reduce congestion and improve traffic flow at tolls

3.21 Provide cost-effective travel for frequent users of NH/NE toll roads

Share of traffic by payment type

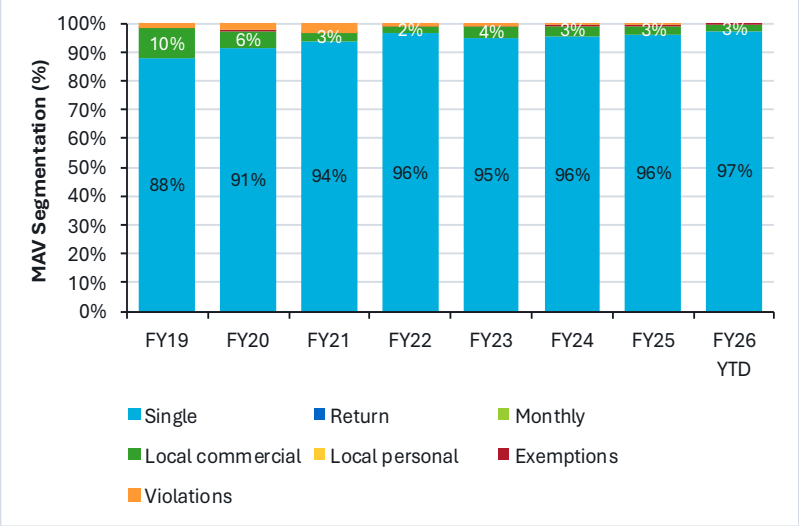
3.22 The following figures provide the toll segmentation for the historical years at TP1 Siwaya for CJV and MAV while the table provides the same for the remaining vehicle types.

Figure 3-1: Ticket-segmentation for CJV at TP1 Siwaya



Source: Steer analysis of the Client data; FY26 YTD includes data till August'25.

Figure 3-2: Ticket-segmentation for MAV at TP1 Siwaya



Source: Steer analysis of the Client data; FY26 YTD includes data till August'25.

3.23 As can be seen in the given figures, in FY26 YTD the share of single tickets has been 75% for CJVs, with the remainder made up of 20% exemptions and 3% local personal tickets. From FY26 onwards, the shares of violations appear to have reduced significantly, which suggests better management the plaza.

3.24 Additionally, the reported high share of exemptions aligns with the asset's urban nature, which typically sees a higher proportion of non-paying CJV traffic.

3.25 The share of MAVs buying single tickets is stable at 97% between FY22-26YTD. This high share of single ticket type is due to other tickets such as return and monthly being not available as per the toll notification. As expected, there is a negligible share of violations for MAVs. The ticket segmentation of other vehicle types is presented in the table below

Table 3.6: Historical ticket segmentation at TP1 Siwaya

LCV	FY20	FY21	FY22	FY23	FY24	FY25	FY26YTD
LCV							
Single	93%	96%	95%	96%	94%	95%	95%
Local commercial	2%	1%	1%	2%	2%	2%	2%
Local personal	0%	0%	0%	0%	0%	0%	0%
Violation	4%	1%	2%	2%	2%	2%	0%
Exemption	1%	1%	1%	1%	1%	2%	3%
Bus/2A							
Single	97%	96%	97%	98%	97%	97%	98%
Local commercial	1%	1%	1%	0%	0%	1%	1%
Violation	2%	2%	2%	1%	2%	2%	-
Exemption	0%	1%	1%	0%	1%	1%	1%

Source: Steer analysis of the Client data

Data collection and validation

Overview

3.26 As mentioned previously, to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset, comprising the surveys listed in the table below. OD survey data was collected by the Client in April'23, TVC surveys were commissioned by Steer with a third party as a part of the study in earlier commission. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas, which Steer also commissioned with a third party. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

Table 3.7: Data collection schedule

TP1	7-day videography based TVC			1 day OD survey	
	Start date	End date	Time (hrs)	Start date	End date
TP1	20-Mar-2021	26-Mar-2021	0000-2359	3rd -Apr-2023	4th -Apr-2023

Source: Steer analysis

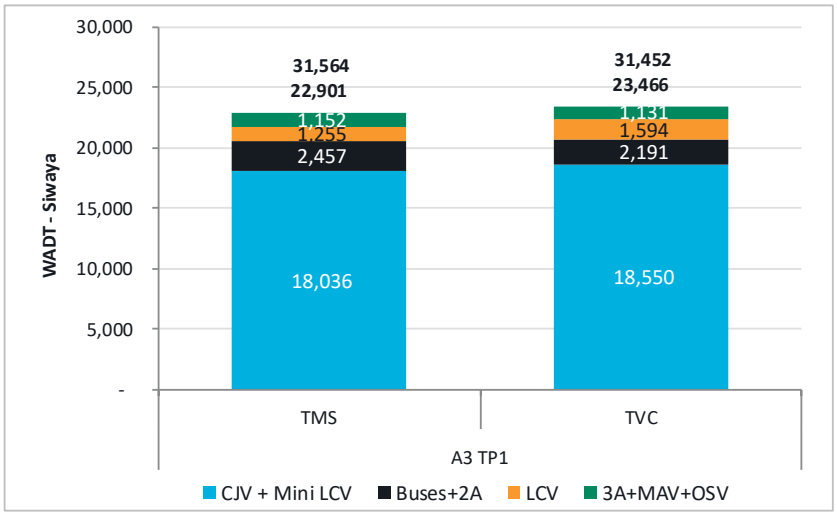
3.27 It should be noted that, in our experience, traffic on national highways shows variation across the week due to the economic activities surrounding each road. To derive a representative TVC count considering daily variation, three-day to seven-day traffic counts are generally recommended, and hence, to fully understand the impact of this weekly fluctuation on the Asset, we collected seven-day counts at each toll plaza.

Key findings of the TVC data analysis

WADT estimates

3.28 Taking an average of the seven-day TVC counts (18-24th January 2021, 0000-2359 hours), we obtained the following weekly average daily traffic (WADT) for each toll plaza. This WADT excludes non-tollable vehicles such as tractors, two-wheelers, bullock-carts, etc., but includes officially exempt vehicles such as police cars, ambulances, emergency response vehicles, government vehicles and other vehicle types officially allowed as 'exempted' under the concession agreement.

Figure 3-3: WADT TVC- TMS at TP1



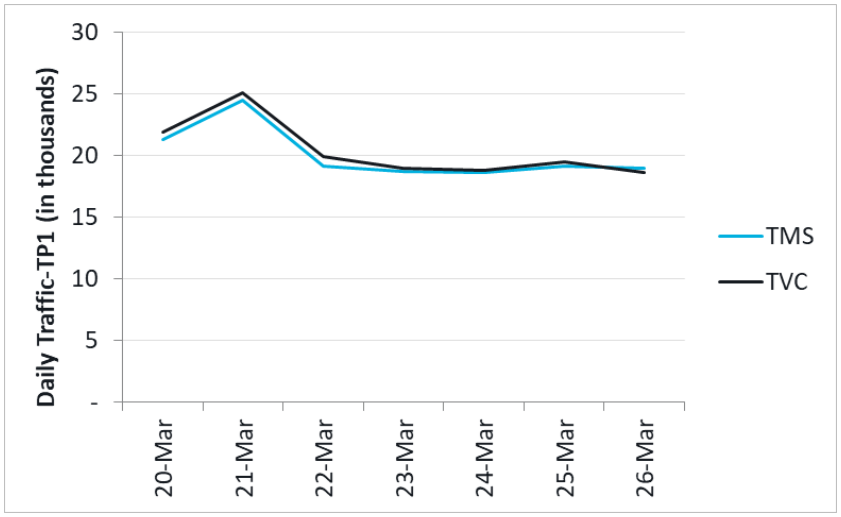
Source: Steer analysis of TVC data

TVC v/s TMS analysis

3.29 As we use the TMS data to estimate the base year AADT, we have used our TVC data to validate the TMS data on those particular days, as supplied by the Client.

3.30 The following figures show the comparison between the daily traffic observed by TVC and TMS at TP1 Siwaya. As shown in the figures below, TVC and TMS show a close fit overall and the differences are within the acceptable range of variation.

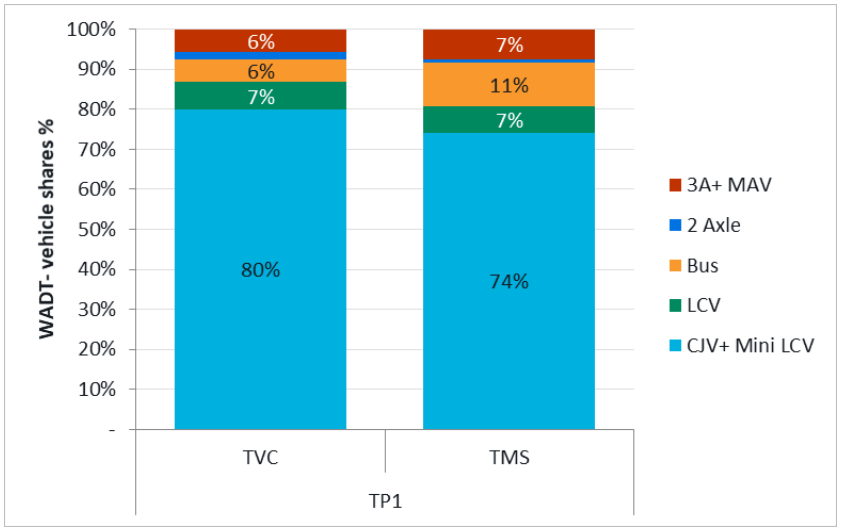
Figure 3-4: Comparison between TVC and TMS daily traffic data on TP1



Source: Steer analysis of TVC and Client TMS data

3.31 The figure below compares the shares of vehicle types on the Asset, between TVC and TMS data. As this shows, there is a slight difference at the vehicle category level, which can be attributed to common misclassification of vehicles and their categories specially between CJV, Mini-LCV, LCV and 2A.

Figure 3-5 Comparison between vehicle shares from TVC and TMS WADTs



Source: Steer analysis of TVC and Client TMS data

3.32 Given the overall good fit of the data at an WADT level and minimal variation between the TVC and TMS data for the largest revenue generator, CJVs and MAVs are within reasonable limits, giving us the confidence that the base year traffic calculated using the Client data forms a robust base year traffic estimate.

Key findings of origin-destination analysis

Overview

Origin-destination (OD) analysis enables the understanding of the nature of traffic movement on the Asset. The OD analysis presented here is based on data collected by client in April 2023.

3.33 We have analysed the regional drivers of demand based on the following analyses:

- Zonal influence
- Commodity distribution
- Top OD pairs
- Trip length distribution

3.34 While zonal analysis and listing of top OD pairs help us to understand 'where' people and goods travel, commodity distribution sheds light on 'what' goods get transported. Trip length distribution shows 'how far' vehicles and people travel, and goods get transported. This set of analyses is used to estimate the key drivers of traffic and aids in forecasting assumptions around traffic demand elasticities, growth drivers and exogenous impacts.

Sample rates

3.35 Sample rates help understand the reliability of OD data. They are calculated by dividing the OD samples captured by the traffic counts (based on the TVC data) during the same time period. The table below presents the sample rates for key vehicle type aggregations at both toll plazas. We believe that the sample rates of the OD data are reasonable for the analysis required.

Table 3.8: Sample rates for OD data

Vehicle category	TP1
Car	32%
Bus	48%
LCV	65%
MAV	65%

Source: Steer analysis of Client OD data

Zone categories

3.36 To facilitate better interpretation of key regional drivers of traffic as determined by their OD zones, and influenced by various towns, cities, states and regions in the vicinity of the Asset, we have aggregated zonal data as described in the table below. The methodology behind this aggregation of zones may vary as per the characteristics displayed by the different Assets being studied.

Table 3.9: Zone aggregations for zonal influence analysis

Aggregate Zone	Description
Local	On or very close to the Asset.
Immediate area of influence (IAOI)	Fall within two districts from the Asset, roughly up to about 75-150 km from the Asset.

Aggregate Zone	Description
Rest of State	Rest of the cities/Districts in the state that Asset lies in (other than Local/IAOI)
Uttarakhand	Uttarakhand.
Delhi	Delhi
Rajasthan	Rajasthan.
Gujarat	Gujarat
Maharashtra	Maharashtra
Punjab	Punjab
Himachal Pradesh	Himachal Pradesh
North India	Jammu and Kashmir
Haryana	Haryana
Goa	Goa
South India	Andhra Pradesh, Tamil Nadu, Karnataka, Kerala
Madhya Pradesh	Madhya Pradesh.
North East	West Bengal, Northeast Indian states
Orissa	Orissa
Bihar	Bihar
Jharkhand	Jharkhand
Outside India	Nepal, Bhutan, Bangladesh.

Source: Steer analysis

Zonal influence

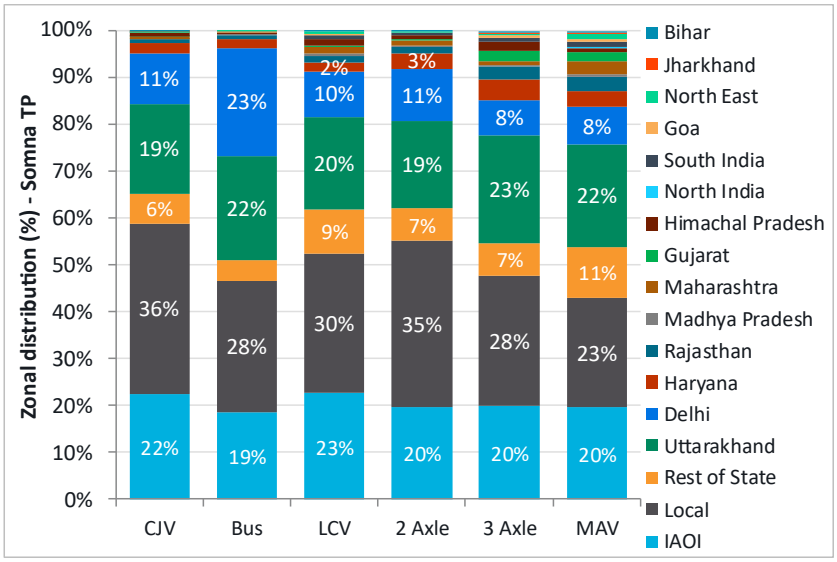
3.37 The zonal influence is the contribution of the zone or the zonal aggregation to trips by a vehicle type. This section presents the zonal influence[2] at TP1 of this Asset aggregated based on zonal aggregation listed in the previous sub-section. Please note that zonal influence is analysed on trip ends and not trips.

3.38 The figure below presents the zonal influence on various vehicle types the toll plaza. We can see that 'local' trips make up the largest share for all vehicle types. Generally smaller vehicles see a higher share of local trips than Trucks and MAVs. Across all vehicle categories UP, Uttarakhand and Delhi have highest influence making ~80% on the Asset. In case of CJV and Bus it is with the significant tourism driven traffic, given the Asset connects tourism and major pilgrimage destinations Haridwar, Rishikesh, Mussoorie, Dehradun and so on. While in case LCV and 2A the cater to local agri based demand and carry miscellaneous goods from Meerut, Delhi to Muzaffarnagar and north. Heavy goods 3A and MAV have high influence because heavy sand mining belt located near the Asset in Saharanpur in Behat region which attracts MAV traffic. Beyond the local area, all vehicle

[2] For example, if out of 100 trips at a toll plaza on an Asset, 10 trips are between Hyderabad and Delhi and 90 trips are between Hyderabad and Chennai, then zonal influence of Hyderabad is 50% since one trip end of all trips are at Hyderabad. Likewise, zonal influence of Delhi and Chennai would be 5% and 45%, respectively.

types see relatively high proportions of trips from Uttarakhand occupying approximately 20% for all vehicle types.

Figure 3-6: Zonal influence at TP1



Source: Steer analysis of OD data

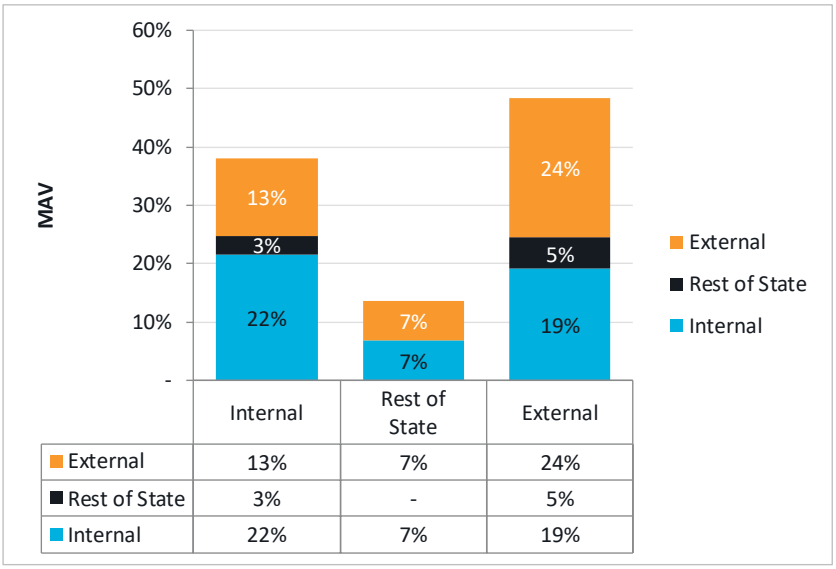
Internal External analysis

3.39 Internal-External analysis helps in identifying the trips which have both the origin and destination on or near the Asset i.e local/IAOI zones (Internal-Internal or I-I), any one end on the Asset (Internal-External or I-E), or neither end on the Asset i.e. through trips (External-External or E-E). RoS here represents areas within the state which are neither local nor IAOI. 'Internal' zones are those that were analysed as 'local' and 'IAOI' in the zonal influence analysis, i.e. lying on the Asset, while 'External' zones are areas lying outside the state.

3.40 Figure 3-7 figure below shows the distribution of trips based on these categories. Understandably, these reflect the observations seen in the zonal influence presented earlier, at a higher level of aggregation.

3.41 We see that for MAVs 24% of the trips both the origin and destination lie externally. Overall, the external influence is 40% of the MAV trips. A significant part of these fully external trips are between Delhi or other states such as Haryana and Uttarakhand and are expected to continue being made on the corridor, given the strategic accessible location of the tourist state in relation to Delhi and UP.

Figure 3-7 Internal-external distribution at TP1



Source: Steer analysis of OD data

Commodity distribution

3.42 We have grouped various commodities into aggregate categories for ease of interpretation, as shown in the table below. The charts in the following sub-section present information in terms of these aggregate commodity categories.

Table 3.10: Aggregate commodity categories

Commodity Description	Code	Combined codes used for charts
Agriculture Products / Cash crops (Wheat, Rice, Sugar cane, Maize etc.)	AGR	**AGR**
Cattle Food / Live Stock (sheep, goat, cow, cattle food etc)	LIV	
Perishable Items (Fruits, vegetables)	PER	**GRO**
Animal Products/Dairy/Eggs/Fish/Meat/Animals	DFM	
Groceries / Food items (Soap, Salt, Sugar, Pulses, Spices, Biscuits, bread, cold drinks, beer etc.)	GRO	
Building Material / Construction (Cement, Lime, Brick, fly ash, etc)	CNS	**CNS**
Sand/Clay	SND	
Stone (kota stone, marble, Granite, Aggregate stone etc.)	STN	
Ceramic	CRM	
Petroleum Products (Oil, LPG, CNG, etc.)	PET	**PET**
Chemicals / Fertilizers (Acids, Fertilizers etc.)	CHM	
Electrical/Manufacturing items (Electronic items, Medicine, Leather, Wine, Rubber/ Tyre, Plastics, Cloth, Paper etc.)	MAN	**MAN**

Commodity Description	Code	Combined codes used for charts
Raw Wood, Cork & Wood Products, Furn	WUD	
Machinery / Spare parts	MAC	
Automobiles (Finished products, auto parts, Car/bike manufacturing, New Chassis)	AUT	**AUT**
Basic / Fabricated Metals (Iron, Steel / Metal)	MET	**MET**
Mining Minerals (Coal, Gypsum, Cobalt etc.)	MIN	
Empty	EMT	**EMT**
Container	CTR	**MSC**
Miscellaneous (Parcel, Courier, House hold items etc.)	MSC	
Passengers	PAS	
Scrap	SCR	

Source: Steer analysis

3.43 The figure below presents the commodity distribution for goods vehicles at this toll plaza. As also observed during our site visits, we see that a significant number of vehicles are "Empty". There is a significant share of Automobiles being transported along this corridor, along with Chemicals. Overall, Manufactured products make up the top aggregate category at this toll plaza.

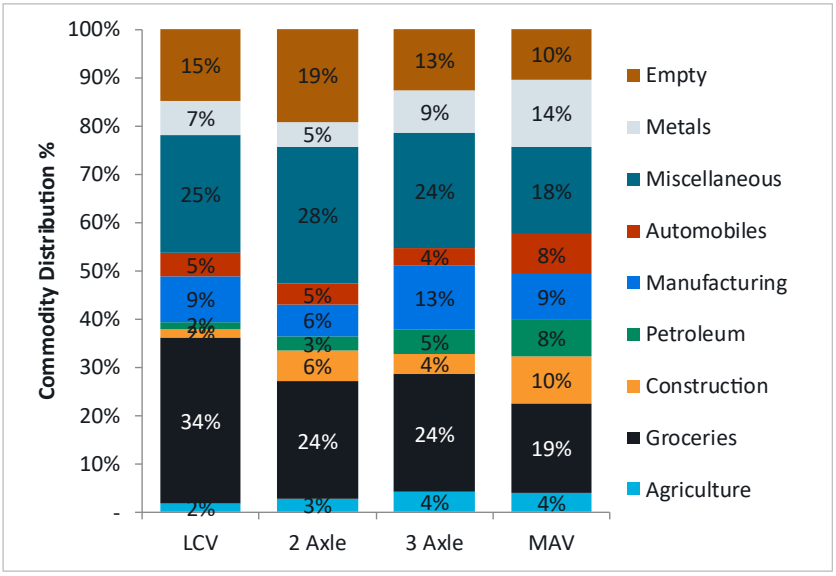
3.44 The high share of manufacturing in commodities can be attributed to presence of several small manufacturing units and small industries along the Asset Road in Muzaffarnagar, Saharanpur and Meerut and other industries that have been setup in Uttarakhand.

3.45 Another significant commodity observed is Agriculture and groceries with over ~19% share in all vehicle categories carrying rice, maize, sugar from production centres of Muzaffarnagar, Meerut and Saharanpur to consumption centres Meerut, Delhi NCR and other parts of UP.

3.46 Construction material makes up 10% of traffic volume for MAVs on this Asset. Metals and related goods also have significant contribution making for 14% of MAV volumes. As was observed from the site visit and background research, though sand volumes have not reached the levels they were at before the ban on sandmining, these trucks carry construction-related material (including sand) from Saharanpur, Dadri and other mining regions and supply to Delhi NCR region for various construction needs.

3.47 Looking by direction you can see from the charts below that a smaller proportion of vehicles travelling towards Meerut are empty as compared to those travelling towards Muzaffarnagar. Aside from the different proportions of Empty vehicle, the most significant difference is that those travelling towards Meerut have a greater share of Metals materials (17% compared to 11%).

Figure 3-8: Commodity distribution at TP1 (Total)



Source: Steer analysis of OD data

Trip length analysis

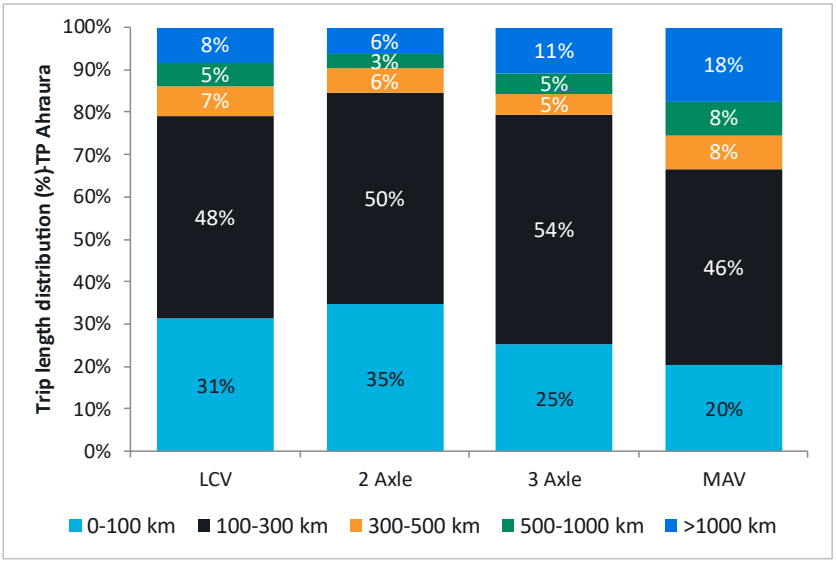
3.48 Trip-length distribution provides the distance-based profile of various vehicle types. This aids in validating assumptions around the share of macro-economic drivers, inputs from zonal influence and toll segmentation. For ease of interpretation, we have categorised distances into 5 groups – local (0-100km), short-distance (100-300 km), medium-distance (300-500 km), long-distance (500-1000 km) and very-long-distance (+1,000 km). The trip distances were derived as driving distances from Google Distance Matrix Tool based on zonal coordinates for OD pairs.[3]

3.49 As can be seen in the figure below, there are minimal long-distance (considered as >500km) movements, even for heavier vehicle categories. ~50% trips for all vehicle categories are between 100-300-km long, which is the average distance between Delhi and Uttarakhand. Generally, smaller vehicles have shorter distances (0-100km) compared to goods-carrying heavy vehicles. For example, 31% of LCVs make trips less than 100-km long, while 20% of MAVs make trips of that length.

3.50 Around ~65-70% share of trips covering between 0-300-Km even among the goods vehicles supports our observations and understanding that this Asset generally caters to the regional urban demand between the contiguous population centres that lie along it. The 15% of MAVs travel longer than 1000km, these trips are primarily from states of Rajasthan, Maharashtra and Gujarat and are destined to Uttarakhand.

[3] Google Distance API is a tool that is available on a chargeable basis from Google Maps Platform. Link: **https://developers.google.com/maps/documentation/distance-matrix/start**. Travel distance and time information for driving/transit under various congestion scenarios can be extracted through this tool by using macro-enabled Excel, R, etc.

Figure 3-9: Trip length distribution TP1



Source: Steer analysis of OD data

Table 3.11: Average trip length by vehicle category (in km)

	LCV	2 Axle	3 Axle	MAV
Average trip length Km	311	255	348	466

Source: Steer Analysis of OD data

Conclusions

3.51 In summary, in FY25 the Asset had an AADT of ~35,000 at the Siwaya toll plaza. Looking at the vehicle shares of this Asset, the dominant vehicle class is CJVs, holding 86% of the vehicle class share. Traffic on the Asset has grown consistently starting FY22 when the Delhi-Meerut expressway was commissioned resulting in improved connectivity to Delhi. MAV's have also grown in the recent years driven by increase in sand mining traffic as one of the key reasons.

3.52 Concurrently, commercial vehicle traffic experienced a 0.6% decline in PCUs compared to FY24, mainly due to a significant drop in MAV volumes as traffic shifted to the newly completed 4-lane Baghpat–Shamli-Muzaffarnagar section of NH-709B.

3.53 In terms of revenue collection, the Asset observed a CAGR of 19% between FY22-24, reflecting the impact of the opening of the Delhi-Meerut Expressway and the consistent growth in Bus/2A and 3A/MAV volumes.

3.54 The OD analysis found that in terms of zonal influence, local (with trip end on Asset), Uttarakhand and the rest of Central NCR are dominant zones. This is expected given the Asset's location, and the industrial, employment and tourism generators and attractors in these zones. The key commodities transported on the Asset are Manufactured products and Construction materials, with a significant share of Empty vehicles showing the influence of short-distance trips serving the regional economy.

3.55 Looking at the internal and external distribution, I-I and E-E trips are dominant, holding the greatest share for all vehicle classes. I-I, I-E and E-I trips are captive to the Asset with one

trip end lying on it. E-E trips are expected to continue being made on the corridor, given the strategic accessible location of the tourist state in relation to Delhi and UP. The trip length analysis validates this conclusion, finding most of the trips (60%+) travelling within 300kms.

3.56 Overall, the analysis of historical traffic, TVC counts, and OD survey data conducted on the Asset in FY24 confirm the understanding from the site visits that the Asset has a tourism and urban nature for CJVs and light goods vehicle, with primary goods movement involving sugar industries, agriculture, and sandmining. Tourism movement majorly includes destinations in Uttarakhand while industries include sugar mills and sandmining in the western UP region.

4 Socio-economic context

Introduction

4.1 The growth of traffic on existing (brownfield) roads depends on, firstly, how fast the background travel demand grows (background growth); and secondly, how successful the Asset is in attracting that traffic (traffic capture). Background travel demand is driven by the socio-economic conditions of the region where the Asset is located and conditions on a national scale. These include:

- Changes in factors such as population, economic growth (regional and national) and industrial production; and,
- Other local factors such as strategic port growth, and growth in local industries near the Assets.

4.2 In turn, the change in the competitive position of the Asset (and thus of the traffic capture it will achieve) derives from how the service offered and the prices charged on the Asset change in comparison to competing roads; and whether any new competing road facilities are available.

4.3 In this chapter, we assess the socio-economic indicators relevant to traffic growth on the Asset.

Population growth

4.4 We have analysed the key socioeconomic drivers of the background traffic demand in Uttar Pradesh state, where the Asset is located.

National Level

4.5 The total population in India has grown at a Compound Annual Growth Rate (CAGR) of 1.5% since 2000, decreasing over the years, as shown in the table below. The World Bank forecasts this growth to decrease to 0.6% CAGR by the 2030-45 period.

Table 4.1: CAGR of population in India

Years	CAGR		
	Total Population (m)	Rural Population (m)	Urban Population (m)
1970 - 1985	2.3%	1.9%	3.8%
1985 - 2000	2.0%	1.7%	2.9%
2000 - 2015	1.5%	1.0%	2.6%
2015 – 2030*	1.0%	0.3%	2.3%
2030 – 2045*	0.6%	-0.3%	1.9%

Source: World Bank Data on Health Nutrition and Population Statistics, *forecast population growth

State Level

4.6 Uttar Pradesh represents approximately 17% of the country's population, with the total state population of 237 million, as of FY24. Table 4.2shows the evolution of population in the state of Uttar Pradesh (containing the Asset), compared to that of the country.

Table 4.2: Population Growth in Uttar Pradesh and India (2012-2024)

State	2012 Population (m)	2024 Population (m)	CAGR (2012 – 2024)
Uttar Pradesh	201	237	**1.4%**
India	1,210	1,395	**1.2%**

Source: MoSPI Estimates

4.7 The growth of the population of Uttar Pradesh is of direct relevance to the Asset. Uttar Pradesh observed healthy growth in population between 2012-24 indicating that the Asset is expected to continue serving the local consumption demand. However, due to the complexities of the patterns in which urbanisation takes place, and the very dynamic nature of local population migration (which are very difficult to forecast with accuracy), we do not use population growth as a proxy for understanding future travel demand growth on the Asset. It has been included in this section simply to provide a general context of the region in which the Asset are located.

Economic Indicators

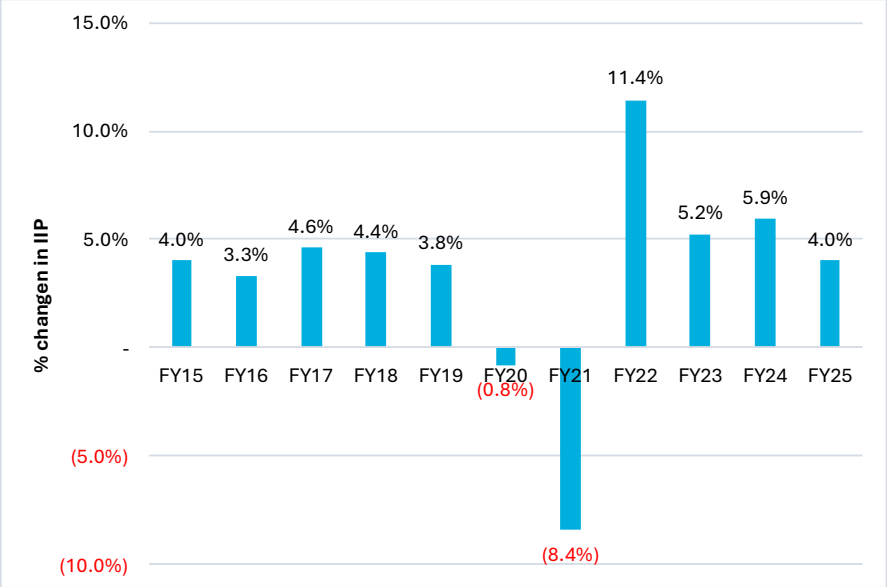
Industrial Production

4.8 The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production for a basket of industrial products. The IIP data tracks the manufacturing activity in different sectors of an economy, with mining, manufacturing, and electricity being the three broad sectors constituting the IIP.

4.9 Figure 4-1 below shows that at an annual level, national IIP was growing at an average of 4% per year over the period FY15-19, before the country underwent a liquidity crisis and experienced an overall economic slowdown in FY20. In the aftermath, IIP shrank by over 8% in FY21 due to a decline in economic activity in the wake of global lockdowns introduced to curb the Covid-19 pandemic. Post the immediate recovery in FY22, IIP growth has since stabilised, with FY25 recording 4% growth over FY24.

4.10 Since state-level IIP data is not as readily available as national level IIP, we have presented national IIP here to indicate nationwide activity in key industrial sectors like power, manufacturing, and mining, all of which influence long-distance commercial movements across the nation, and not unique to this asset. However, we do not use it to forecast future travel demand growth since long-term forecast for IIP is not available through official sources such as MOSPI, RBI or through multilateral organisations like WB, or the IMF.

Figure 4-1: Annual growth – Index of Industrial Production



Source: Ministry of Statistics and Program Implementation (MoSPI)

Vehicle ownership

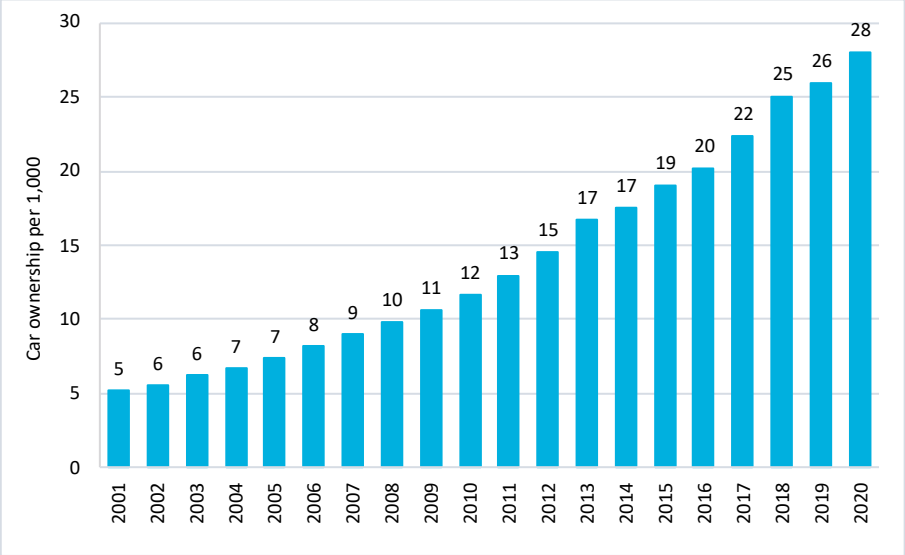
4.11 The gap in car ownership between India and developed nations remains substantial according to recent data. As of 2018, India had approximately 22 cars per 1,000 individuals, a fraction of the 980 cars per 1,000 individuals in the United States[4]. However, this pattern is changing with the increasing per capita income levels. As can be seen in **Error! Reference source not found.** below, between 2007-17, number of cars per 1,000 p eople has more than doubled and increased at a CAGR of about 11%.

4.12 Overall, India still stands at a very nascent stage in the vehicle saturation curve, offering huge potential for growth going forward. As the income per capita of India and the region itself grow further, we expect car ownership levels to increase. As per the India Energy Outlook (2015), car ownership is projected to grow steeply to 175 cars per 1,000 population by 2040 in India.[5]

[4] India has 22 cars per 1,000 individuals: Amitabh Kant, Auto News, ET Auto

[5] https://www.gita.org.in/Attachments/Reports/IndiaEnergyOutlook_WEO2015.pdf

Figure 4-2: Car Ownership in India per 1,000 population

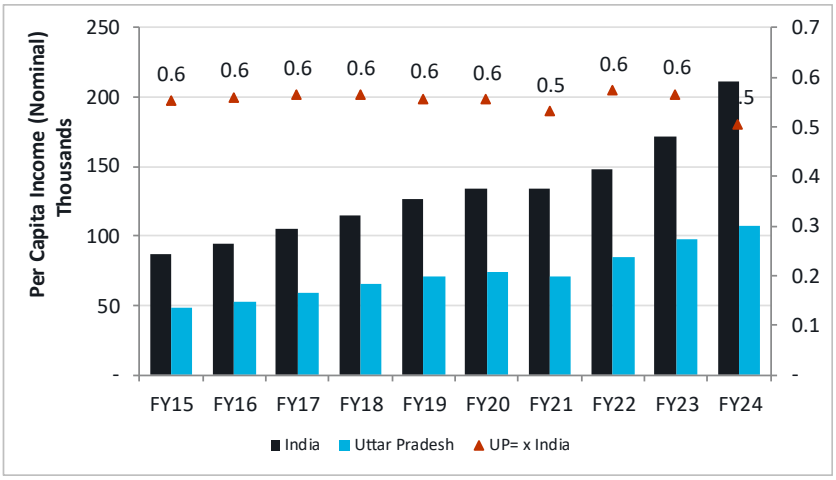


Source: International Energy Agency (IEA)

Per Capita Income (PCI)

4.13 The per capita income of the state where the Asset lies i.e., Uttar Pradesh is lower as compared to the national average. It has been at a level of 50-60% of the national average. In dollar terms, PCI of just $1,000 per head indicates that the state is at a very early stage of consumption curve. Going forward, we therefore expect local consumption to be strong which would drive the growth in both passenger and commercial traffic.

Figure 4-3: Per Capita Income (PCI)



Source: Steer analysis of MoSPI data

4.14 However, given the difficulty in obtaining granular district level PCI data it is not advisable to use this as a growth driver. Also, the long-term forecast for PCI is not available we therefore refrain from using it to forecast traffic.

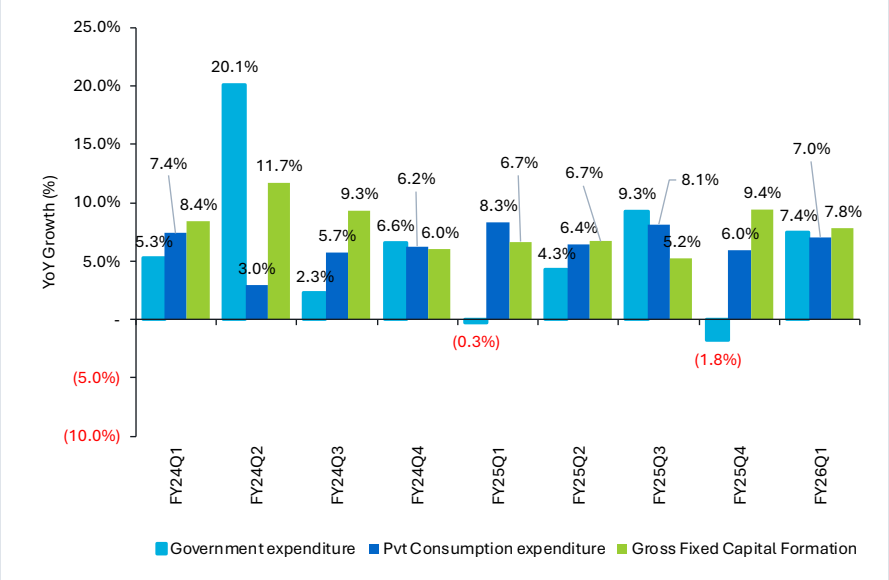
Economic growth

India's Performance

4.15 Despite a slowdown in the economy during H1FY25, the Indian economy has observed strong growth each quarter since FY25Q2, with the latest published estimates for FY26Q1 GDP at 7.8% over FY25Q1. This performance has been driven by strong growth in investment and consumption expenditures and higher consumer optimism for the year ahead[6].

4.16 In Figure 4-4 below, we present quarterly Y-o-Y growth in three major components of GDP – government expenditures, consumption expenditures, and business investment (gross fixed capital expenditure) over the past two years (FY24-FY26Q1).

Figure 4-4: YoY Growth in Government, Consumption and Business Expenditures



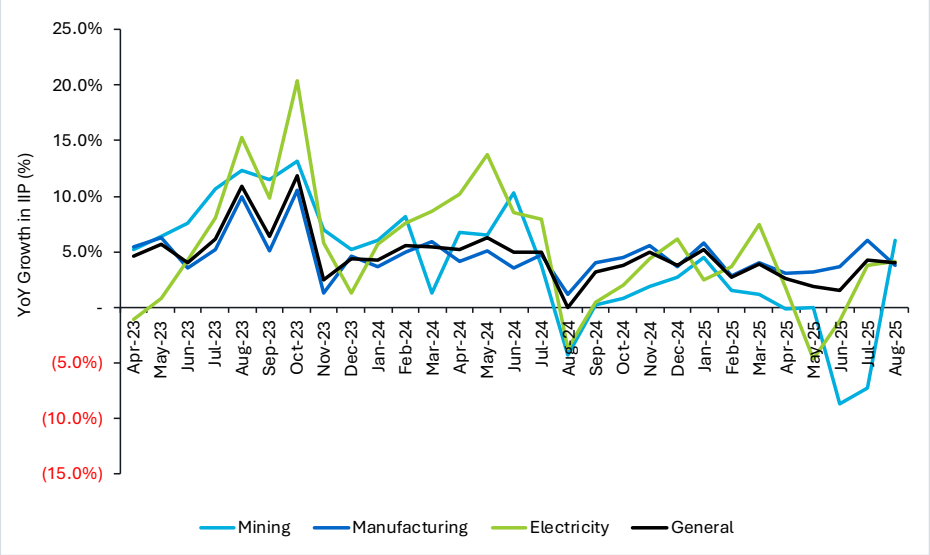
Source: Steer Analysis of MOSPI Data

4.17 While consumption and investment expenditures have continued to show consistent growth over the past two quarters, government expenditures observed a marginal decline in FY25Q4. In FY26Q1, government expenditures rebounded, recording 7.4% growth over FY25Q1 levels.

4.18 Performance across different types of industrial activities (such as Mining, Manufacturing, and Power Generation) directly impact freight movement and commercial traffic volume growth across the country, including on the Asset. In Figure 4-5 below, we present growth trends in IIP – a measure that tracks the performance of the economy across these activities. As of FY26YTD (Apr-Aug '25), the Manufacturing sector continues to perform strongly, recording positive y-o-y growth since FY25Q3. While industrial activity across the two other sectors (i.e., Power Generation and Mining) dropped between May and Jun/Jul '25, they have since rebounded and show signs of continued growth going forward.

[6] Government of India, PIB Release Oct 1 '25

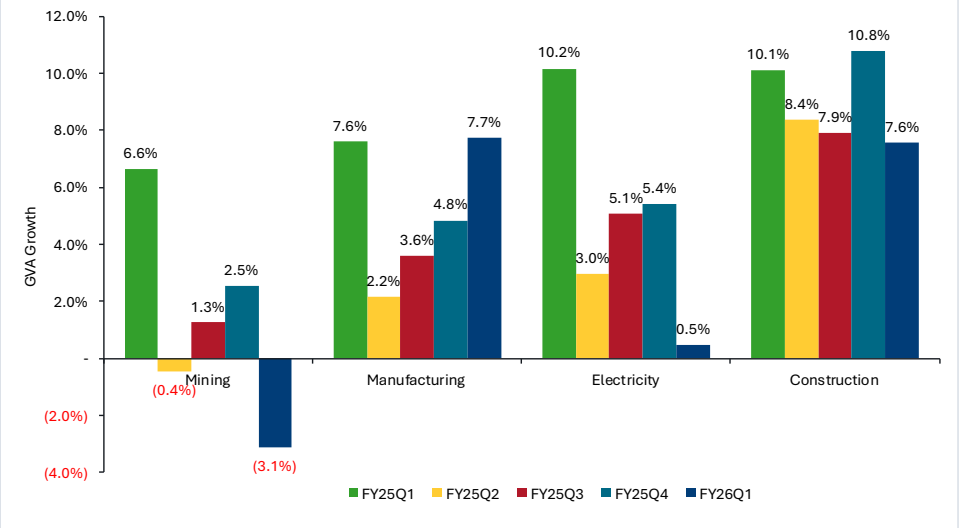
Figure 4-5: Month on Month IIP performance



Source: Steer Analysis of MOSPI Data

4.19 In addition to monthly trends in IIP, Figure 4-6 below presents y-o-y growth of quarterly GVA in four industrial sectors - Mining (& Quarrying), Manufacturing, Electricity (and other Utilities), and Construction. While the Mining and Power sectors observed decline and muted growth in FY26Q1, the Manufacturing and Construction sectors experienced strong growth. Generally, economic growth has remained resilient as of FY26YTD, but performance across industries have varied, impacting economic growth across different regions and on the Asset as well.

Figure 4-6: Industrial components of GVA



Source: Steer Analysis of MOSPI Data

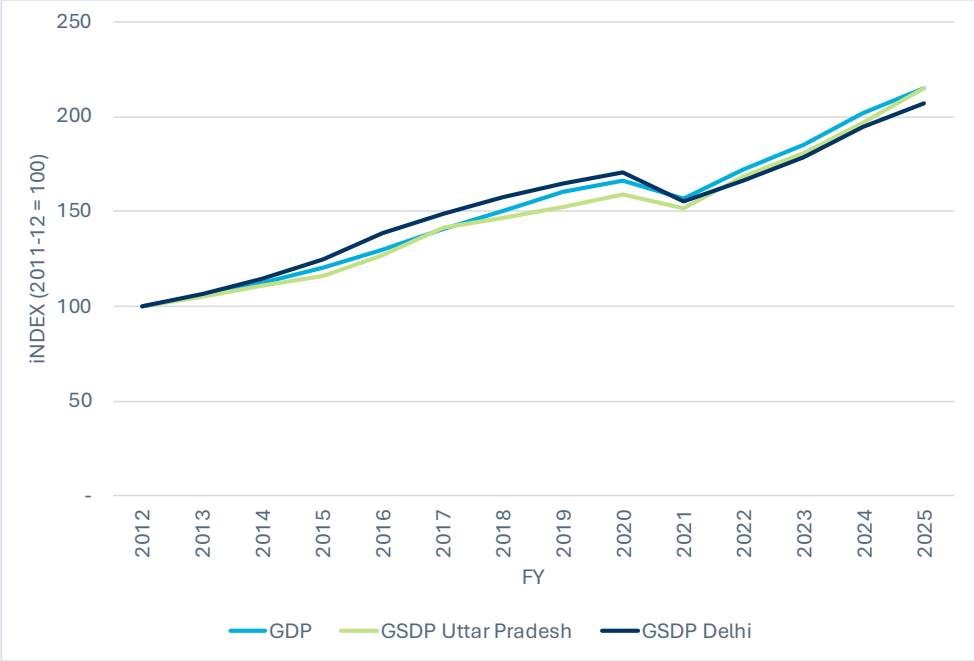
GDP and GSDP Growth

4.20 The Indian economy has grown at a CAGR of 6.1% during FY12-25, aided by a strong growth in the services/tertiary sector. UP GSDP grew at 6.1% per year between FY12 and FY25 – in step with the national economy. Uttar Pradesh approximately contributes 8% to

the India's GDP. In terms of per capita income, Uttar Pradesh's has lower per capita income than the country.

4.21 As shown in Table 4.2 above, UP accounted for 17% of national population in FY24. In terms of national economic contribution, Uttar Pradesh contributed approximately 8% respectively to India's GDP in FY24.

Figure 4-7: Evolution of Delhi's and Uttar Pradesh's GSDP and national GDP



4.22 Source: Ministry of Statistics and Program Implementation (MoSPI

Economic activity in the state

Uttar Pradesh

4.23 Uttar Pradesh is the most populous state in India with a population of ~237 million people (as of FY24). The state has a large pool of skilled, semi-skilled and unskilled labour. A shown in Figure 4-8**Error! Reference source not found.** below, the tertiary sector has the highest sectoral contribution (49%) to the state GSVA followed by the secondary (28%) and primary (23%) sectors, as of FY25.

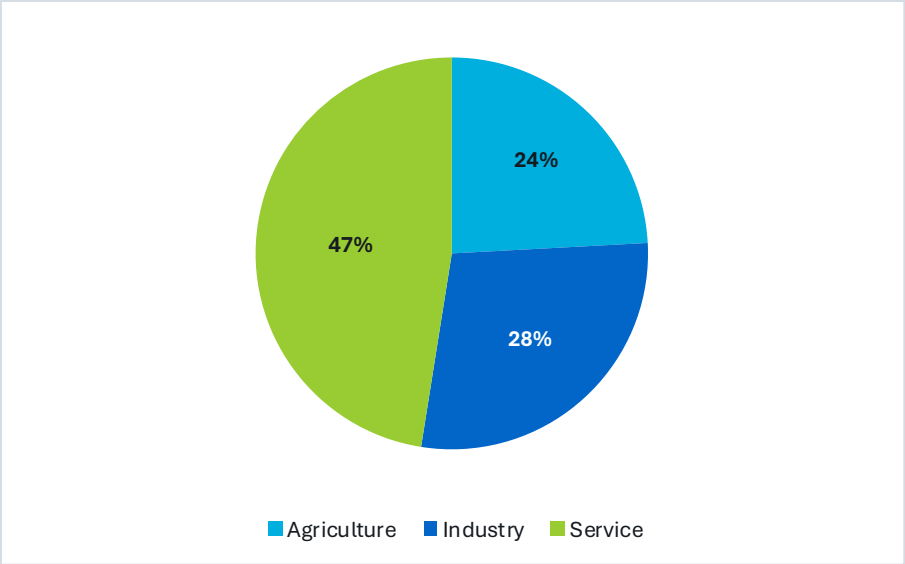
4.24 Uttar Pradesh is considered one of the primary tourist destinations in India, with key tourist attractions being Agra, Varanasi, Mathura and Prayagraj. The state recorded a tourist footfall of 64.90 crore in 2024, a significant increase of over 17 crore in 2023, as per Union Ministry of Tourism[7]. Overall, Uttar Pradesh had an 8.2% contribution to national GDP as per FY24 data by the Ministry of Statistics and Program Implementation.

4.25 In terms of secondary sector, the state has key industrial areas in Khurja (Ceramic); Moradabad (Metals); Meerut, Bareilly, Mirzapur and Lucknow (Handloom & Handicrafts); and Kanpur and Noida (Leather and tannery). The state also has an oil refinery in Mathura, operated by Indian Oil Corporation.

[7] up-sees-65-crore-tourists-in-2024-over-17-crore-more-from-2023

4.26 Uttar Pradesh has very fertile Gangetic land with a large share of population dependent upon agriculture sector for the livelihood. The key primary industries in the state include crop production and horticulture. The state is mainly known for production of wheat, sugarcane, potato and mango.

Figure 4-8: Sectoral Distribution of GSDP of Uttar Pradesh for 2025



Source: Steer Analysis of MoSPI data

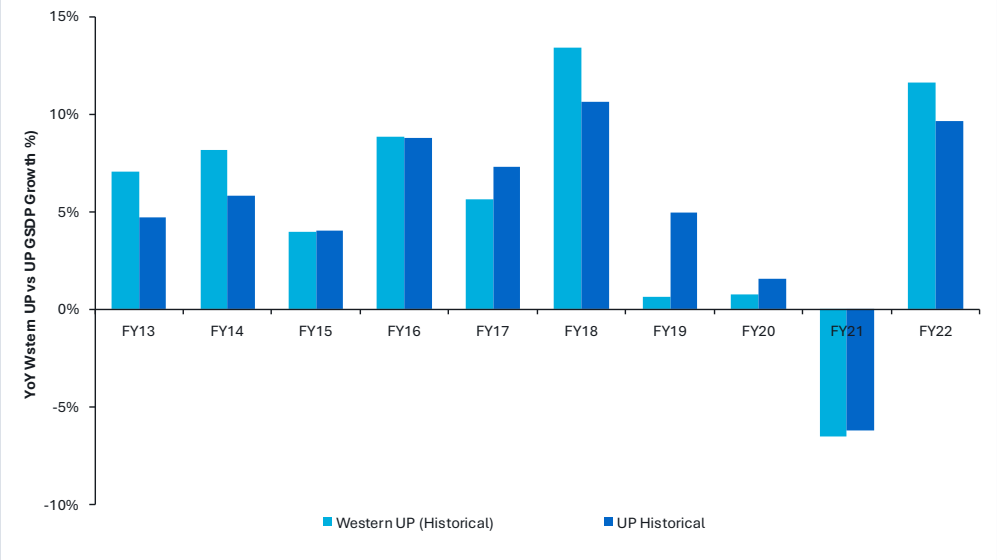
Western UP vs UP GSDP Growth

4.27 Since FY13, growth of Western UP GSDP[8] has remained relatively stable, and in line with UP statewide GSDP growth. In Figure 4-9 below, we see that between FY13 and FY22, GSDP growth in Western UP exceeded that of UP overall in 5 of the 10 years (FY13, FY14, FY18, FY21 and FY22), was consistent with UP in 2 of the 10 years (FY15 and FY16), and was below UP GSDP growth in 3 of the 10 years (FY17, FY19 and FY20). While UP statewide growth is largely influenced by Western UP, in recent years (FY21-22), Western UP GSDP has exhibited growth more sensitive than statewide trends.[9]

[8] The Western UP region consists of 30 districts, prominent among which are Ghaziabad, Gautam Budh Nagar, Agra, Meerut, Mathura and Bareilly. Historically, this collective region has been the more economically developed part of Uttar Pradesh, and as of FY22 accounted for half of the statewide total GSDP.

[9] Steer analysis of data sourced from the Directorate of Economics and Statistics, Uttar Pradesh (**UPDES website**)

Figure 4-9: Western UP vs UP GSDP Growth



Source: Directorate of Economics and Statistics, Uttar Pradesh

4.28 This can be explained due to a combination of policy- and market-driven factors which have contributed to higher growth in the Western region of the state. Some of these major developments pertaining to large-scale infrastructure investments in the region include:

Delhi – Meerut Expressway[10]
Ganga Expressway [11]
Noida International Airport (Jewar Airport) [12]
Logistics hub in Agra, by the Agra Development Authority [13]
'New Noida' initiative by the Uttar Pradesh government [14]

4.29 Between FY12–FY25, the GSDP of Uttar Pradesh grew at a CAGR of 6.1% per year. Over the same period, national GDP grew at 6.1%[15] per year, implying that the long-term elasticity factor of UP GSDP growth to national GDP growth is roughly 1. In this context, as Western UP has exhibited more elastic growth relative to UP state overall in recent years, as well as expectations of strong near-term growth in the Western region driven by large-scale infrastructure and commercial investments, we have assumed the near-term growth forecast for Western UP to be similarly elastic to India's GDP growth forecast.

4.30 Figure below presents the Client-provided forecasts of national (India) GDP growth from FY26 to FY45, and our assumed GSDP forecast for Western Uttar Pradesh over the same period. In the short term, we have assumed GSDP of Western UP to grow at 1.2 times that of national GDP growth forecast, eventually tapering down to a factor of 1.0 over time as it

[10] https://timesofindia.indiatimes.com/city/meerut/gadkari-lays-foundation-of-highway-projects-worth-rs-11595-crore-in-west-up/articleshow/68086587.cms?

[11] 28 Flyovers, 126 Bridges, 600km In 6 Hours: Ganga Expressway Set To Open Soon; Check Route - News18

[12] Noida's Jewar Airport, Set To Be Asia's Largest, Will Open In April 2025; PM Modi To Inaugurate | Times Now

[13] Proposal for Rs 570 crore state-of-the-art logistics hub in Agra approved - India Today

[14] New Noida: UP govt approves massive housing and infrastructure development plan | Key details | Business News – India TV

[15] Steer analysis of MoSPI data

converges to the national growth rate forecast by FY45.

Forecasts for growth drivers

4.31 Following the discussion in Chapter 4 on the nature of economic activity in the state of Uttar Pradesh, in this section, we describe the assumptions in relation to forecasts of the key macro-economic drivers of traffic growth.

4.32 Particularly, we have based our forecast on GDP and GSDP using forecasts of GDP as provided by the Client.

National GDP

4.33 After the last period of economic slowdown in FY11-12, the country experienced an economic downturn again in late FY19 with FY20 having reported a GDP growth of 4% (relative to an average growth rate of 7% per year between FY13 and FY19). India's GDP growth declined as domestic investment and consumption demand were already under stress because of the liquidity crunch before Covid-19. Other factors that contributed to the economic slowdown included reduced growth rates in automobile sales and production, liquidity crunch in credit markets and rising number of Non-Performing Assets (NPAs) within the banking sector, as well as lower manufacturing production and lower rural consumption.[16]

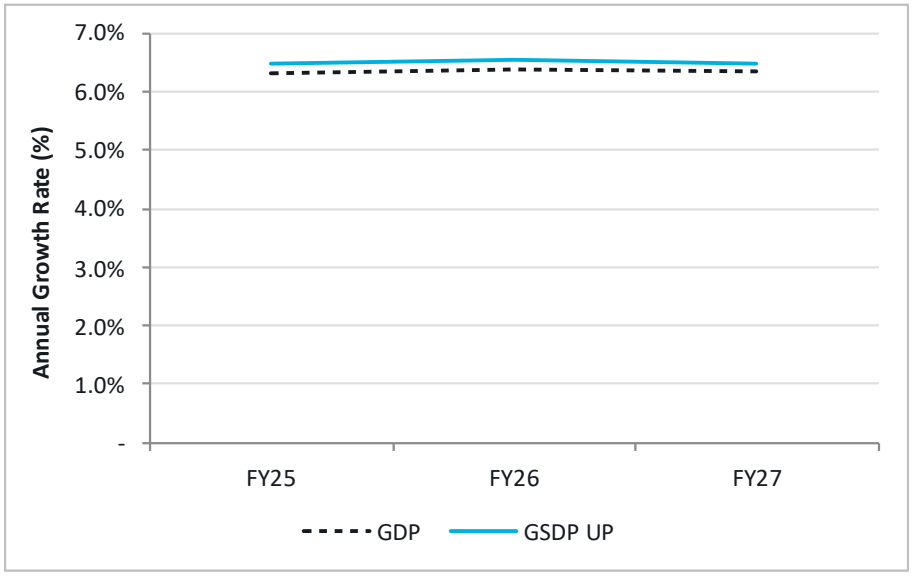
4.34 The Covid19 outbreak had a significant impact on the Indian economy during the first two quarters of FY21 as government mandated lockdowns across the country effectively stalled economic activity and growth. The growth momentum eventually picked up in Q3 of FY21, with a sharp rebound in the economy in FY22 (GDP recorded 9.7% growth over FY21) and has since observed a consistent growth of 7.6% in FY23, 9.2% in FY24 and 6.5% in FY25 (as per the SAE) before slowing down over the past year due to several domestic and external factors.

4.35 Figure 4-10 below shows client-provided GDP and GSDP projections for India and Uttar Pradesh. The forecast provided by the Client expects the Indian GDP to grow at 6.5% between FY25-FY27. The India GDP growth forecast is in line with other independent forecasts available from reliable sources such as IMF, World Bank and RBI[17] in the medium term.

[16] **Data | India's GDP was on a downward slope even before COVID-19 wreaked havoc - The Hindu** (September 2020)

[17] **Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 93rd Round (April 2025)**

Figure 4-10: GDP-GSDP forecast



Source: GDP and GSDP forecast provided by client.

5 FY26 Base year AADT and Traffic growth analysis

Introduction

5.1 In this section, we present our approach, assumptions, and estimates for base year AADT and background traffic growth for each vehicle category on the Asset

5.2 Traffic growth is commonly related to a variety of macro-economic and industry- or commodity-specific factors (hereafter referred to as 'traffic growth drivers'). These growth drivers are typically identified from the results of the OD data analysis and the site visits that help us appreciate the nature of traffic movement – 'what' travels 'where' and 'why'. To understand the historical traffic trends in relation to these growth drivers, we carry out regression analyses to determine the historical relationship between each traffic belonging to each major vehicle category and its macroeconomic growth driver at each toll plaza. The dynamics of traffic demand is the dependent variable while the dynamics of one or more identified growth drivers are the independent or explanatory variables.

5.3 Typically, passenger and light commercial vehicle traffic like cars, buses, LCVs and 2-axle trucks grow in line with the GSDP of the state in which the toll road is located. Heavy vehicle traffic like 3-axle trucks and MAVs grow in line with the national GDP. This is because many light vehicles tend to travel shorter distances within the state, whereas a significant proportion of heavy vehicles carry commodities for long-distances across the country. These commodities also tend to be part of industry ecosystems whose demand-supply relationships are scattered across the country and therefore relate more with GDP growth.

FY26 Base year AADT estimates

5.4 The base year is the year on which long-term background forecast growth rates are applied to derive year-wise average annual daily traffic (AADT) estimates for forecast years. This is therefore an important aspect of Steer's forecasting approach as traffic and ultimately revenue forecasts for future years are built on the top of the base year traffic estimate. We have used FY26 as the base year for AADT estimates for the forecast years.

5.5 As described previously in Chapter 3, to establish the base year (FY26) traffic position, we utilised information from various sources – including from the Client and our contextual knowledge, to assess a reasonable demand on the corridor.

Methodology

5.6 The base traffic for FY26 has been estimated utilizing the actual 12 months of FY25. The weighted average of the actual FY25 traffic (April to March) was taken to arrive at annual

FY25 AADT. Using elasticity-based growth assumptions GSDP or GDP we arrived at FY26E.

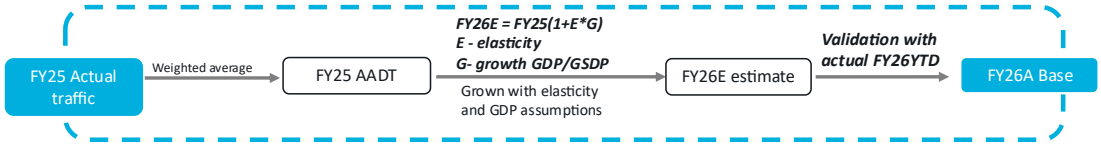
5.7 The monthly profile of the FY26E AADT was then compared to the actual traffic observed in the six months (April to September) of FY26 (FY26YTD). The Adopted FY26 AADT (FY26A) was then arrived at by making necessary adjustments to FY26E to reflect the outturn traffic in FY26YTD after adjusting for seasonality.

5.8 Historical traffic data was available for all toll vehicle categories starting October 2020 up-to September 2025. Therefore, in absence of longer-term historical data for the Asset where FY21 and FY22 are COVID-19 impacted years, we assume FY23 and FY24 to be normal years, with the latest full year considered for the FY25 base year estimation

5.9 As a validation, the FY26 was estimated using SCF (Seasonality Correction Factor) based on ten months of FY26 data where the adopted FY26 AADT (FY26A) is within ~0.5% of the AADT arrived using SCF approach.[18] This validates the robustness of the approach used to estimate the FY26 base AADT. The SCFs used in our analysis have been explained in the subsequent section.

5.10 The methodology is represented using the below schematic:

Figure 5-1: FY26 Base Estimation methodology



Source: Steer Analysis

5.11 The two key inputs to estimate the base year FY26 traffic are FY25 traffic and seasonality correction factor (SCF).

Seasonal Correction Factors

5.12 Traffic on any Asset varies on a month-on-month level. Such variations maybe due to monsoons (typically Jul to Sept) or due to festivals in a particular region. For e.g. It is observed that typically the truck traffic during the first half of the financial year (April-September) is generally lower than the annual average, mainly because of peak summer season followed by monsoons affecting the freight movement patterns in large parts of the country in the July-September period. In addition to these, there may be other seasonal variations specific to the Asset.

5.13 To normalise for these variations across the year to provide an AADT estimate, Seasonality Correction Factors (SCF) are used. SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts. These are typically estimated using historical data for each plaza and vehicle category over multiple years. An SCF >1 means that the traffic for the month is lower than the annual average and vice-versa.

[18] *SCF- SCFs are estimated to convert the monthly traffic numbers to an AADT level while accounting for seasonal variation due to local/national festivals, weather changes and/or temporary external impacts.*

5.14 To achieve this, we studied the seasonality between monthly average daily traffic (MADT) – We have analysed the seasonality trends between monthly average daily traffic (MADT) and AADT for data during the historical years of tolling excluding the years that were impacted by specific events. This averaged seasonality trend is then applied to the monthly traffic to obtain AADT as mentioned in the previous sections.

5.15 The seasonality factors assumed for individual vehicle types are shown in the table below.

Table 5.1: SCF values for WUPTL

Vehicle Category	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CJV	0.94	0.87	0.79	1.25	1.14	1.13	0.99	0.93	1.03	1.15	1.00	0.98
LCV	0.94	0.86	0.91	1.15	1.11	1.02	0.98	1.00	1.04	1.10	0.96	1.02
Bus	1.01	0.92	0.90	1.22	1.04	1.00	0.97	0.97	1.03	1.09	0.97	0.96
2A	1.01	0.92	0.90	1.22	1.04	1.00	0.97	0.97	1.03	1.09	0.97	0.96
3A/MAV	0.95	0.98	0.98	1.27	1.01	1.06	1.04	1.04	0.97	0.98	0.90	0.91

Source: Steer analysis based on benchmarks

Adopted base estimates

5.16 Based on the above methodology and inputs, the adopted base for the toll plaza has been shown below:

Table 5.2: Adopted base estimates: WUPTL TP1

Vehicle	FY25	FY26YTD	FY26A	FY26A vs FY25
CJV	30,592	30,834	30,602	0.0%
LCV	1,033	990	976	(5.6%)
Bus/2A	2,646	2,659	2,670	0.9%
3A/MAV	1,446	1,306	1,349	(6.7%)
Total	**35,717**	**35,789**	**35,597**	**(0.3%)**
PCUs	**45,112**	**44,842**	**44,770**	**(0.8%)**

Source: Steer analysis: FY25 actual full year, FY26YTD includes 6 months of data till Sept'25, FY26A is adopted base for FY26

5.17 As can be seen from Table 5.2 above, the comparison between FY26A and FY25 highlights flatlining and degrowth across all vehicle categories. The PCU growth from FY26A compared to the complete year FY25 is -0.8%, while at an AADT level the growth is -0.3%.

5.18 MAVs observed a decline of 6.7% from FY26 over F25. This primarily is due to the shift of traffic originating from Farukhnagar/Bahadurgarh and north-west bound traffic since the since the completion of the 4-lane construction of the Baghpat–Shamli-Muzaffarnagar section in FY24 which previously used to travel via our Asset.

5.19 This increase in Buses and 2As, reflects the nature of the Asset as a facilitator for both tourism-related traffic, as well as movement of key commodities contributing to the

state's economy – such as agricultural products, sand, and manufacturing items. Heightened tourism and pilgrimage activities towards destinations like Haridwar, Rishikesh, and Dehradun, driving growth in CJVs and Buses is expected to continue contributing to traffic on the Asset in the upcoming years.

Estimation of background elasticities

5.20 Elasticities, in the case of traffic growth, are the relationships between traffic growth and the growth in growth drivers of traffic. Multiplied with forecasts of growth drivers like GDP or GSDP, they provide the forecasts of background traffic growth rates.

5.21 As the TMS data did not provide a breakup between the individual vehicle categories for the toll categories 2A/Bus and 3A/MAV, we have used TVC data of FY21, as discussed in Chapter 3, to estimate the splits in FY25. Table 5.3 presents the splits which have also helped in the elasticity estimation. However, in our regression analysis, we have used the combined traffic as data for historical years which were available only in combined form.

Table 5.3: Split between individual vehicle types

Vehicle type (for toll)	Vehicle type (for growth)	Share (%)
Bus/2A	Bus	77%
	2A	23%
3A/MAV	3A	33%
	MAV	67%

Source: Steer analysis of independent TVC data

5.22 The below table presents the growth drivers identified to model the forecast background traffic growth rates.

Table 5.4: Identified growth drivers to model traffic growth.

Vehicle type	GDP India	GSDP Uttar Pradesh
Car		100%
LCV		100%
Bus		100%
2A		100%
3A	100%	
MAV	100%	

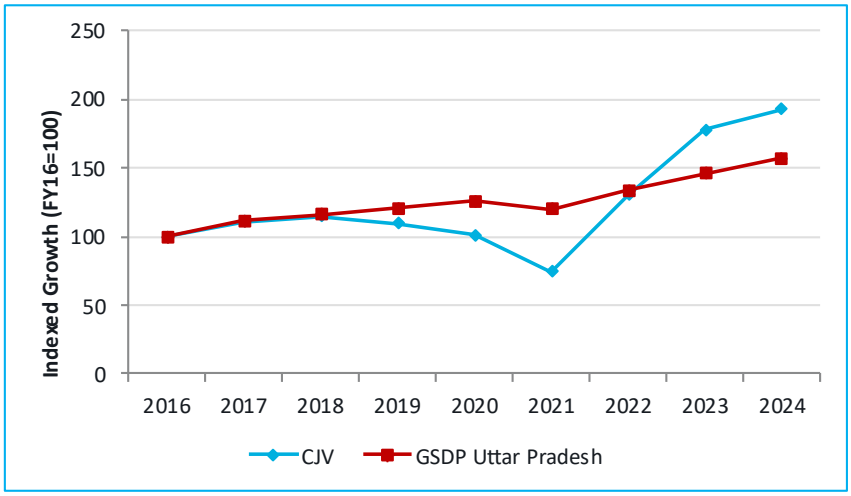
Source: Steer analysis of Client data

5.23 Please note that given that the historical period before FY17/ FY16 is chequered with several impacts due to network developments and a ban on sandmining, especially for commercial vehicles, only a few unaffected years were available for the regression analysis. This, along with the understanding gained of changes in the ecosystem of the traffic growth drivers, is the reason for differences between the derived and assumed elasticities.

CJV

5.24 We can see from the OD data recently conducted in FY24 that the CJVs primarily cater to regional movements related to tourism within the Delhi NCR region, western Uttar Pradesh, and Uttarakhand. More than 60% trips have one end in Uttar Pradesh. We have therefore taken GSDP of Uttar Pradesh to be the growth driver to model the growth of CJV traffic. Figure 5-2 shows the relationship between indexed values of CJV traffic and Uttar Pradesh's GSDP.

Figure 5-2: Relationship between CJV traffic and Uttar Pradesh's GSDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.25 Generally, we would expect that in fast-growing economies with relatively low car ownership levels, car traffic growth rates are often in line with or slightly higher than growth in GSDP/GDP (i.e. suggesting elasticities at or just above 1.0). Further, there is an expected increase in car ownership proportion of overall population as the economy grows. This assumption is very contextual and subject to change as there are changes in economic policies of government and overall economic stability nationally and globally.

5.26 Historically, the CJV traffic on the Asset has shown positive slower growth until FY18, and after the pandemic-impacted years of FY20 and FY21, a consistent upturn in traffic has been observe. Historical growth of Cars has been slower to 3% between FY16-19 and jumped to 8.6% between FY16-24.

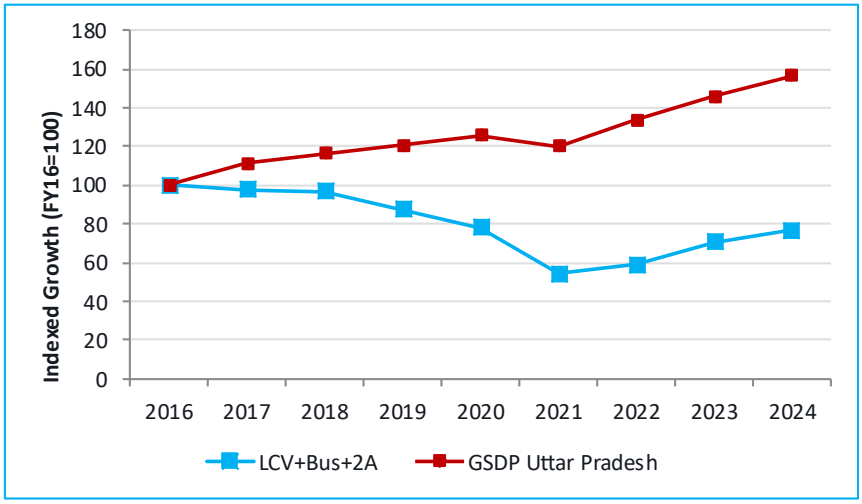
5.27 The regression analysis suggests that between FY16 and FY24 traffic has grown with a background traffic growth elasticity of 0.9 with respect to GSDP on the Asset. Taking note of the positive outlook for passenger traffic on the Asset, driven by improved connectivity for business and leisure trips, and a benchmark toll road in the region, we have assumed a forecast background elasticity of 1.0 for CJV going forward.

LCV, 2A and Bus

5.28 Compared to heavy vehicles like 3A and MAV, LCV, 2A and Bus have more regional movements within the state - Uttar Pradesh in this case as seen in the OD data analysis more than~50% share. More than 60% of LCVs and 2A trucks have one of their trip ends in Uttar Pradesh. We have therefore taken GSDP of Uttar Pradesh to be the growth driver to model growth of LCV, 2A and Bus traffic.

5.29 The Bus and 2A were combined due to same toll rates. Figure 5-3 figure shows the relationship between indexed values of LCV+2A+Bus combined traffic and Uttar Pradesh's GSDP. LCVs have witnessed a dropping trend 11% degrowth in FY16-24, with shift between LCV and 2A. The traffic up to FY20 was also impacted by the Upper Ganga Canal and local leak, which were easily accessible by the small vehicles like LCV.

Figure 5-3: Relationship between LCV, Bus and 2A combined traffic and Uttar Pradesh's GSDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

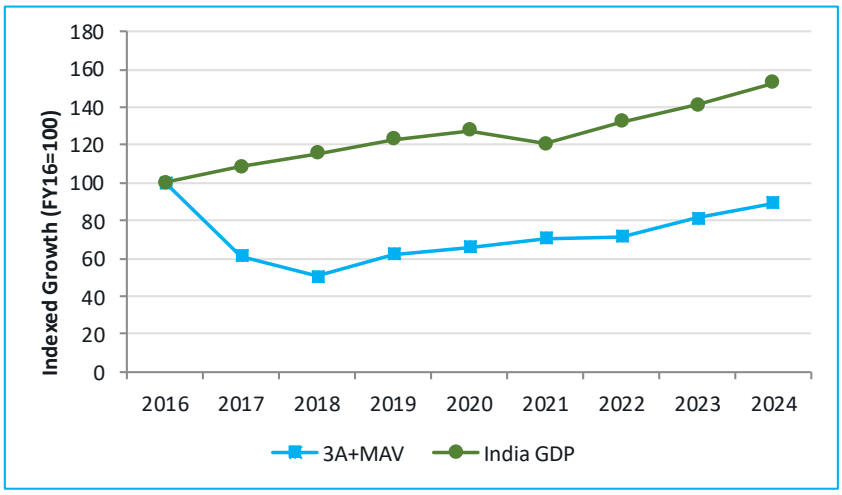
5.30 Around 60% of the bus trips have one end on the Asset or around it. Based on our experience across the country, buses in corridors with tourism-driven passenger growth show moderate elasticities of 0.4 to 0.6. However, with the regression Bus and 2A combined show an elasticity of 0.3. With increasing tourism activity in the region higher growth for bus can be assumed.

5.31 Based on benchmark elasticities from other toll roads, we have therefore assumed a forecast elasticity of 0.2, 0.5 and 0.6 for LCV, Bus and 2A respectively, with respect to GSDP of Uttar Pradesh.

3A/MAV Trucks

5.32 Compared to lighter trucks like LCV and 2A, 3A and MAV have more national or long-distance movements covering several states. Given that manufacturing-related commodities tend to take prominence in their commodity distribution which means that traffic growth in 3A and MAV is dependent on industry demand-supply ecosystems spread across the country, therefore we have taken GDP as the growth driver to model the traffic growth in 3A and MAV. Figure 5-4 shows the relationship between indexed values of 3A+MAV combined traffic and India's GDP.

Figure 5-4: Relationship between 3A+MAV combined traffic and India's GDP



Source: Steer analysis of Client TMS data and publicly available GDP/GSDP data

5.33 Due to new mining policy regulated and licences being given out for sandmining in the Saharanpur region, the negative impact of previous mining bans and the pandemic on 3A + MAV movement was offset. The growth CAGR for 3A + MAV between 2022-24 has been 11.8%, compared to a degrowth of 14.7% between 2016-19

5.34 As discussed earlier in the chapter, the TMS system reports 3A and MAV traffic as a combined category. We have therefore taken a proportional split based on our TVC counts to provide an understanding of how 3A and MAV will grow relative to each other. We believe 3A to grow slower as compared to MAV, as there is an increasing preference seen for MAVs instead of 3As for long-distance movements. This is because MAVs have higher load capacity which generate economies of scale and therefore lower costs. However, it is unlikely that 3A trucks will disappear from the market completely as there are likely certain commodities or movements which are best served by 3As.

5.35 Based on all the above observations, we have assumed elasticities of 0.20 and 0.65 for 3A and MAV trucks, respectively.

Forecasts for background elasticities

5.36 Table 5.5 presents a summary of the results of the regression analysis carried out on the historical toll plaza data and the macroeconomic (GDP/GDSP) growth, along with the assumed forecast elasticities for background traffic growth.

5.37 Given the nascent stage of India's logistics sector, characterized by a highly fragmented trucking industry (95% of operators owning fewer than five trucks) and low car ownership rates (30-35 per 1000 people), the forecast elasticities are projected to remain constant throughout the concession period. This assumption is grounded in historical trends and a long-term perspective on regional and national growth, suggesting market maturity is still several years away.

Table 5.5: Derived elasticities from regression analysis and assumed forecast elasticities for economic growth

Vehicle type	Growth driver	TP1 Siwaya			
		History		Forecast	
		Derived elasticity	Years considered	Assumed forecast elasticity	Evolution of elasticity
Car	GSDP Uttar Pradesh	0.68	FY14-24	1.10	No change
LCV	GSDP Uttar Pradesh	N.A*	FY14-24	0.20	No change
Bus	GSDP Uttar Pradesh	0.41	FY14-24	0.50	No change
2A	GDP			0.80	No change
3A	GDP	1.10	FY14-25	0.20	No change
MAV	GDP			0.65	No change

Source: Steer analysis of Client data; *elasticity not representative and shows insignificant results; #regression was run on 2A-Bus and 3A-MAV combined; ##FY26 is the base year AADT, with 6 months of actual traffic data (April – Sept)

5.38 In recent historical traffic performance across all national highway corridors, a notable trend has emerged: there is a discernible shift in axle preference towards 2As and MAVs, resulting in a dampening effect on the growth of 3As. This trend is mirrored in the Assets FY23 and FY24 performance as well, which has been discussed in detail in the subsequent sections. Because of these evolving axle preferences, it has been assumed that the relationship between 3As and GDP will be relatively muted at 0.2, whereas 2As and MAVs are expected to grow more closely in line with the country's GDP at 0.6 and 0.65, respectively.

6 Forecasts: Network overlays and forecasts

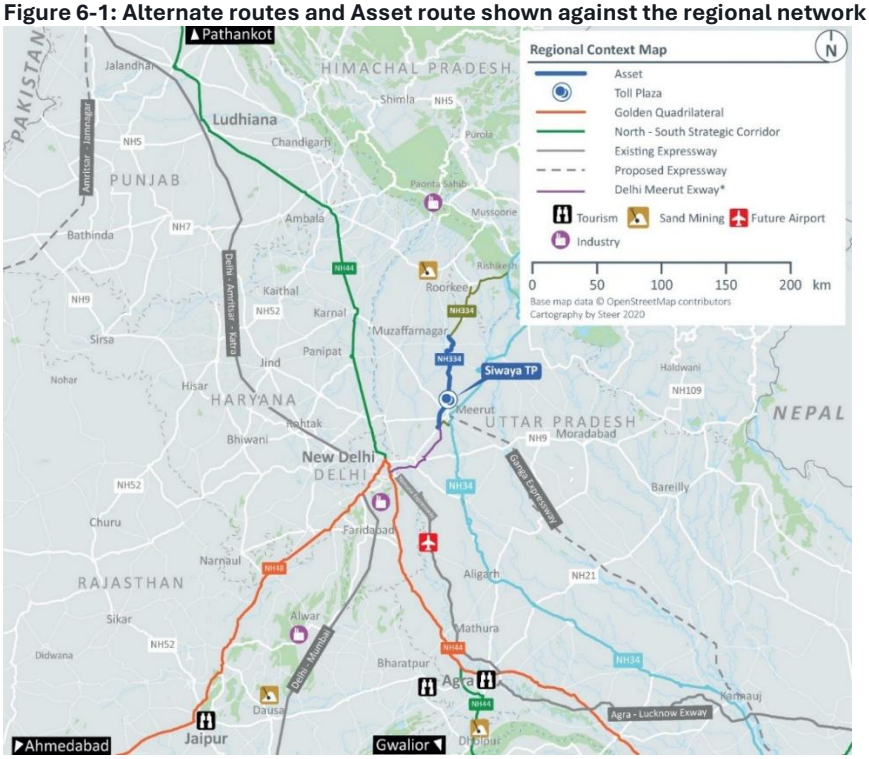
Introduction

6.1 Following the discussion on our forecast of economic growth rates in the previous chapter, this chapter first covers the forecasting assumptions around base year AADT and potential network impacts on traffic growth on the Asset. Thereafter, we present our assumptions around toll segmentation, trip factors and growth of toll rates for the forecast period which have been used to forecast revenues as derived from forecast traffic. This chapter summarises traffic growth rates for the forecast years.

Analysis of potential network/developmental impacts

6.2 The section below details the impacts which we believe would affect traffic on the Asset during the concession period. As discussed earlier in Chapter 2, to assess the impacts on the Asset, whether positive or negative, we have studied developments (alternate roads, feeder roads and regulatory) in the surrounding road network.

Figure 6-1: Alternate routes and Asset route shown against the regional network context



Source: Steer analysis and cartography

6.3 Table 6.1 presents the network/other developments, corresponding alternate/feeder routes, year of completion and indicative direction of impact on the Asset.

Table 6.1: List of network/other developments

S. No.	Development	Route affected	Year of completion	Impact (+/-)
1.	Ganga Expressway	Asset route: Haridwar-Asset-Ganga Expressway-Prayagraj Alternate route: Haridwar-Moradabad-Bareilly-Sitapur-Prayagraj	FY27	+ve
2	Delhi-Dehradun Expressway	Asset Route: Delhi- Baghpat (EPE)- Sahranpur-Dehradun Alternate Route: Delhi- Meerut- Muzaffarnagar-Sahranpur- Delhi	FY27	-ve

Source: Steer analysis *as per Client inputs

Ganga Expressway

6.4 Ganga expressway is a greenfield six-laned expressway (expandable upto 8 lanes) of length 594 kms connecting Meerut to Prayagraj in the State of Uttar Pradesh. The expressway is expected to reduce travel time between NCR, Meerut and Prayagraj substantially and would help in decongesting the existing road network. This would be an access-controlled expressway and is proposed to have 17 entry/exit points.

6.5 As on date, construction works are progressing at brisk pace on all packages of the Expressway, and it is 81% complete overall as per information available on UPEIDA website[19]. The expressway is divided in 4 different packages considered as 4 concessions as presented below:

Table 6.2: Details of Ganga Expressway (Phase I)

Package	Description of sections	Length (kms)	Expected timeline for completion	Awarded
Package 1	Meerut-Hapur (49 km) Hapur to Amroha (30 km) Amroha to Budaun (51 km)	130	FY27	IRB Infrastructure Developers Ltd.
Package 2	Budaun villages Naglabarah to	152		Adani Enterprises Ltd.

[19] https://upeida.up.gov.in/en/page/ganga-expressway

Package	Description of sections	Length (kms)	Expected timeline for completion	Awarded
	Binawar (52 km) Budaun-Shahjahanpur (47 km) Shahjahanpur-Hardoi (53 km)			
Package 3	Hardoi- Unnao (156 km)	156		
Package 4	Hardoi-Prayagraj (157 km)	157		

6.6 Ganga expressway is proposed to extend to Tigri on the UP-Uttarakhand border in north and to Ballia near Varanasi in the east. This alignment would run parallelly to NH19 and would offer direct connectivity from the North to Varanasi and East via Moradabad-Bareilly- Sitapur serving as an alternate.

6.7 As per its latest alignment, Delhi Meerut expressway is expected to intersect with Ganga Expressway which can provide an alternate faster route to traffic currently plying between Haridwar and north in Uttarakhand and Lucknow in eastern UP. Passenger traffic can therefore alternately travel from Haridwar through Muzaffarnagar and Meerut (Asset section) and further south eastwards through the Delhi-Meerut and Ganga Expressways to reach Prayagraj (Allahabad) with much higher levels of service and speeds.

6.8 Our estimates of the positive impact after completion of Ganga Expressway is presented below:

Table 6.3: Diversion impact due to Ganga Expressway

Vehicle type	FY27
Staging	*80%*
CJV	1.3%

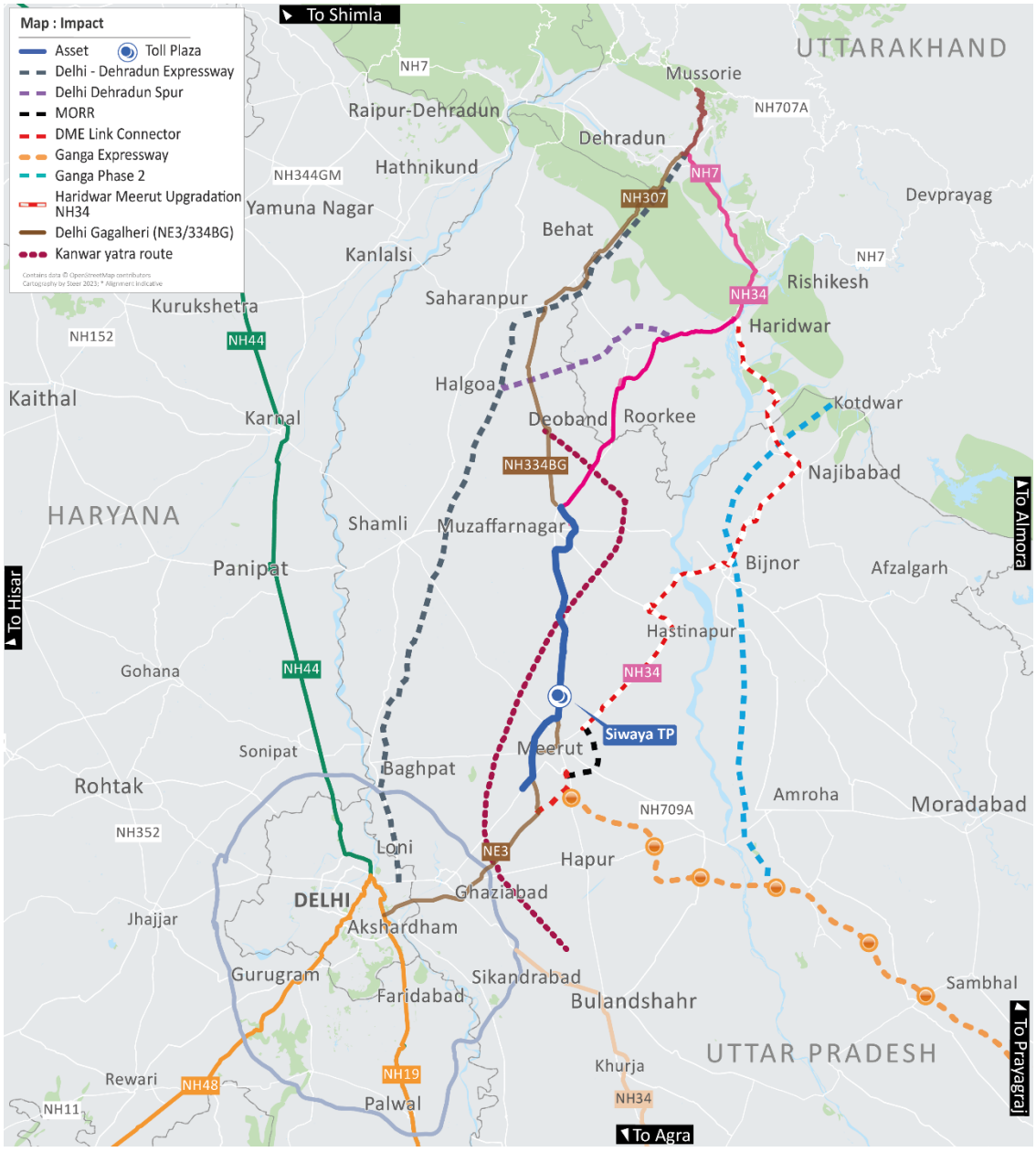
Source: Steer Analysis

Delhi- Dehradun Expressway

6.9 NHAI is executing a 210km access controlled expressway connecting Delhi & Dehradun. This expressway is a mix of both greenfield & brownfield alignment. As on date all the contracts have been awarded and the work is progressing at a rapid pace and is expected to be operational by end of 2025[20] as per latest reports, then impact is assumed from FY26 onwards. The expressway is divided in 4 different phases as presented below:

[20] **English Releases**, Press Information Bureau, Government of India, May 2025

Figure 6-2: Alternate routes and Asset routes shown against the regional network context



Source: Steer analysis and cartography

Table 6.4 Details of Delhi- Dehradun Expressway

Phase	Description of sections	Length (kms)	Expected timeline for completion	Nature of Development
Phase 1	Aksharadham (Delhi) to Baghpat Interchange (EPE)	32	FY27	Brownfield
Phase 2	Baghpat to Saharanpur (This section will feature 7 interchanges)	118		Greenfield
Phase 3	Sahranput to Ganeshpur	40		Brownfield
Phase 4	Ganeshpur to Dehradun (This section will consist of 2.322 km twin tunnels and 0.3 km	19.5		Brownfield

Phase	Description of sections	Length (kms)	Expected timeline for completion	Nature of Development
	approach, 4.82 km 4 lane elevated flyover with 6m vertical clearance for elephants and other wildlife, a 2.12 km hill section and 340m single tube tunnel.)			

6.10 The expressway once operational will have an impact on Delhi/NCR bound traffic travelling to Dehradun, Mussorie and Uttarkashi. Our estimates of the impact due to the expressway are presented below:

Table 6.5 Diversion impact due to Delhi- Dehradun Expressway

Vehicle type	FY27 Onwards
Staging	*80%*
CJV	(11.8%)
2A	(7.4%)
3A	(10.5%)
MAV	(9.3%)

Source: Steer Analysis

Revenue forecasting assumptions

6.11 To forecast the revenues for a particular year, the traffic forecast for each vehicle type is converted into tickets sold, which is then multiplied with the corresponding toll rate. While toll segmentation provides the breakup of trips paying each ticket type, trip factors provide the conversion factor to convert from traffic (trips) to tickets sold. This section discusses assumptions related to toll segmentation, trip factors and toll rates for the forecast period.

Toll segmentation

6.12 The Ministry of Road Transport & Highways has finalized a compensation formula for existing toll concessionaires to offset revenue loss from the Annual Pass scheme for non-commercial vehicles. To access the document, refer to the following **link**.

6.13 Across multiple assets, the number of passes sold has observed to be rising on a day-to-day basis, indicating an early adoption among frequent users since its introduction on 15th August 2025 till 30th September 2025, and a corresponding decline in other ticket categories mainly in the single and return categories. The evolution of proportion of users using the annual pass up to September 2025 is presented below:

Table 6.6: Evolution of annual pass trips (15th August to 30th September 2025)

	15th to 31st Aug	1st to 15th Sept	16th to 30th Sept
Siwaya	13.6%	22.2%	27.2%

Source: Steer analysis of Client TMS data

6.14 CJV Segmentation for FY26 has been developed using the pre annual pass segmentation till 14th August 2025, and daily Annual Pass transaction data from 15th August 2025 till 30th September 2025. Post September 2025, a gradual ramp up is assumed such that

they form a large portion of the CJV trips by the end of FY26. This corresponds to a reduction in a proportionate decrease in single and return trips. For FY27 and beyond, we have assumed the share of annual pass trips to be in line with that observed at the end of March 2026, by when we believe the distribution of ticket categories in CJVs should stabilise.

6.15 In FY26, the share of CJVs using annual passes at Siwaya is projected at **19%** (on an annual basis) with a March 2026 estimate of around 38%, which from FY27, expected to stabilize at March'26 levels.

6.16 For other vehicle categories we have analysed the historical TMS data split by ticket categories, to understand trends, as shown in Chapter 3. For the traffic and revenue forecast, FY26YTD (Apr- Aug) as discussed in the earlier sections, can be considered a normal period.

6.17 The table below provides the toll segmentation assumed for the period of forecast. We believe with FASTag penetration stabilising and reaching upto 100% in MAVs and minimal impact of COVID-19 during these months, FY26YTD segmentation provides us with stable toll segmentation which can be used for the forecast years.

Table 6.7: Toll segmentation for FY26 onwards at TP Siwaya

Forecast	CJV FY26	CJV FY27	Mini-LCV	LCV	Bus/2A	3A/MAV
Single	58%	39%	77%	95%	98%	97%
Local commercial	0%	0%	0%	2%	1%	3%
Local personal	3%	3%	3%	-	-	-
Exemptions	20%	20%	20%	3%	1%	1%
Violations	0%	0%	0%	0%	0%	0%
Annual Pass	18.7%	37.8%				

Source: Steer analysis of Client TMS data

6.18 The Annual pass compensation is separately calculated using the formula prescribed by NHAI in the same circular. Following Table 6.8 presents the Annual pass compensation computed for the toll plaza.

Table 6.8: Annual pass compensation for CJVs (in Crore)

Toll Plaza	FY26	FY27
Siwaya	22.8	44.2

6.19 Source: Steer Analysis

Trip factors

6.20 Trip factors are used to calculate the revenue for the trips made on passes such as return, local personal, monthly passes. The trip factors assumed are based on the latest FY25 data available and listed in the table below:

Table 6.9: Trip factors on at TP Siwaya

Forecast	CJV/Mini-LCV	LCV	Bus	2A	3A	MAV
Single	1	1	1	1	1	1
Return	2	2	2	2	2	2

Forecast	CJV/Mini-LCV	LCV	Bus	2A	3A	MAV
Monthly	45	45	45	45	45	45
Local commercial	1	1	1	1	1	1
Local Personal	1	1	1	1	1	1

Source: Steer analysis of Client TMS data

Toll evolution

6.21 Based on the concession agreement and the gazetted toll notification, we understand that base toll rates increase every year (revision month is July) based on WPI-linked inflation. These are rounded up to the nearest five to estimate the final toll rate charged to users.

6.22 We have used actual toll rates from the FY25 toll notifications and latest print WPI for the month of March'25[21] for FY26 to validate the modelling of future toll evolution. Increase in WPI was calculated based on the Client's WPI forecasts, as shown in Table 6.10 below. The upward trend in inflation is expected to continue in the medium term, before gradually tapering to 5.0% by FY28.

Table 6.10: WPI growth forecast assumptions

Financial year	WPI growth (%)
FY26	2.05%
FY27	2.4%

Source: Client inputs used for WPI FY27 onwards.

Revenue reconciliation

6.23 As part of the validation process to test our model, we have carried out a revenue reconciliation exercise where we compare actual reported revenue against the modelled revenue. For the Asset we have reconciled reported revenue for the FY26YTD with the modelled revenue based on FY26YTD MADT and forecast assumptions on toll segmentation, trip factors and toll rates.

6.24 The comparison, as shown in Table 6.11 below, shows that modelled revenue overall is within a variation from the reported revenue. This gives us confidence that the revenues estimated using the traffic data in our forecasts are accurately representing the revenues being reported from the Asset.

Table 6.11: Revenue reconciliation summary for FY25

Steer modelled daily revenue (INR lakhs)	Reported daily revenue (INR lakhs)	Difference (%)
47.56	47.57	-

Source: Steer comparison between modelled and reported revenue for FY26YTD

[21] Latest release WPI

Traffic and Revenue forecasts

6.25 Based on the traffic and revenue-related forecast assumptions discussed above, we have modelled the traffic and revenue forecasts for the concession period for the Asset. The table below presents the AADT/PCU forecast and CAGRs on this Asset. Further, Annexure B presents year-wise AADT, traffic growth rates and revenues for the forecast period till FY45.

Table 6.12: Traffic forecasts (with impacts) AADT forecast for TP Siwaya

Vehicle Type	FY26	FY27	FY27 vs FY26
CJV	29,082	27,845	(4.3%)
Mini LCV	1,520	1,568	3.2%
LCV	976	933	(4.3%)
Bus	2,285	2,358	3.2%
2A	384	374	(2.6%)
3A	439	398	(9.4%)
MAV	910	860	(5.5%)
AADT	**35,597**	**34,337**	**(3.5%)**
PCU's	**44,770**	**43,395**	**(3.1%)**

Source: Steer analysis

Table 6.13: Revenue forecast (INR crores) for TP Siwaya including annual pass compensation for CJVs

Vehicle Type	FY26	FY27	FY27 vs FY26
CJV	92.3	89.4	(3.1%)
Mini LCV	4.8	5.0	4.3%
LCV	6.7	6.6	(2.0%)
Bus	32.2	34.1	5.8%
2A	5.4	5.4	(0.1%)
3A	10.0	9.2	(7.3%)
MAV	20.6	19.9	(3.3%)
Total	**172.1**	**169.8**	**(1.4%)**

Source: Steer analysis

6.26 As presented in the table above, the growth between FY26-FY27 in terms of AADT and PCUs for the traffic forecasts (with impacts) is (3.5%) and (3.1%) respectively.

Upside and Downside cases

Upside and Downside scenario assumptions

6.27 We have developed our base case scenario considering a balanced view on the risks associated with input assumptions around GDP growth and traffic growth elasticities. There is always a risk that the outturn values of these inputs will vary as compared to the assumptions taken due to exogenous impacts, e.g. GDP growth could be influenced both positively and negatively by the impact of monsoons, export-import balances, political changes etc.

6.28 Similarly, traffic growth elasticities could be influenced by increased efficiencies achieved by technology, large shifts in commodity prices globally, changes in local manufacturing practices. However, at this stage we consider that the base case represents a central case scenario given the risks of variation of input assumptions.

6.29 To account for the possible variations in the growth drivers, we are also presenting an Upside (optimistic) and a Downside (pessimistic) scenario. These scenarios are defined by the following variations from the base assumptions:

Table 6.14: Summary of Macro-economic Assumptions for upside and downside cases

Input	Upside	Downside
Macro Assumptions		
GDP/GSDP	+1% every year	-1% every year
WPI	+1% every year	-1% every year
Elasticities	+ 10%	- 10%

Source: Steer analysis

Impacts-Upside Case

6.30 The upside case impacts included in forecasts are summarised in below.

Table 6.15: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
Ganga Expressway	FY27* (80% of the full impact considered)	+25% of base case	CJV: 1.6%
Delhi- Dehradun Expressway	FY27* (80% of the full impact considered)		CJV: (11.0%) LCV: (8.7%) 2A: (9.2%) 3A: (13.2%) MAV: (11.7%)

Source: Steer analysis; * Same as base case timeline

Impacts-Downside Case

6.31 The downside case impacts included in forecasts are summarised in below.

Table 6.16: Summary of impacts on the Assets

Development	Year of impact	Change in impact w.r.t base case	Magnitude of impact
Ganga Expressway	FY27* (80% of the full impact considered)	-25% of base case	CJV: 1.2%
Delhi- Dehradun Expressway	FY27* (80% of the full impact considered)		CJV: (18.4%) LCV: (14.4%) 2A: (15.3%) 3A: (22.0%) MAV: (19.5%)

Source: Steer analysis; * Same as base case timeline

6.32 The traffic growth, and revenue incorporating the upside and downside assumptions are presented below.

Table 6.17: Upside potential and Downside PCU scenario – FY27

Toll Plaza	Upside Potential	Downside Risk
Siwaya	4.0%	(4.0%)

Source: Steer Analysis of client data

Table 6.18: Upside potential and Downside Revenue scenario – FY27

Toll Plaza	Upside Potential	Downside Risk
Siwaya	4.1%	(4.0%)

Source: Steer Analysis of client data

Summary Outlook

6.33 Overall, the Asset serves a diverse traffic base, encompassing both regional passenger movement between urban centres in Uttar Pradesh and Central National Capital Region (Delhi), and significant tourism traffic heading to Uttarakhand. Goods traffic on the Asset is predominantly driven by regional industries such as sugar mills, paper, and construction-related movements, which have demonstrated a recovery.

6.34 While historically, network developments like the Upper Ganga Canal (UGC) Road caused diversions away from the Asset and its toll plaza, the UGC Road is no longer considered a competitor since the commissioning of the feeder Delhi-Meerut Expressway. Similarly, a local micro-diversion road around the Siwaya toll plaza, which allowed some users to bypass the toll activates as an when the road gets built, no further impact of the alternate road has been assumed.

6.35 The commissioning of the Delhi Meerut Expressway in April 2021 has already led to a significant increase in traffic volumes on the Asset since FY23, particularly boosting CJV and Bus traffic due to improved connectivity and increased tourism activity. Looking ahead, the upcoming Ganga Expressway, expected to be complete in FY27, is anticipated to bring additional traffic to the Asset. This is projected to create a positive diversion from the competing Moradabad-Bareilly-Sitapur route for traffic traveling from Haridwar to Prayagraj, owing to the improved speeds and service levels of the combined expressways. However, the construction of the Delhi-Dehradun Expressway, expected to be completed by FY27, is a parallel competing route that may negatively impact traffic on the Asset.

6.36 Despite some diversionary impacts, the overall outlook for the region and the Asset remains positive. This is largely due to the Asset's strategic position as the primary route on the tourism corridor connecting Delhi NCR with Uttarakhand, a key hill station state in Northern India with numerous destinations. Further investments in Uttar Pradesh's infrastructure landscape are also expected to drive additional traffic onto the Asset. Our findings and estimates in this report are based on our understanding from the site visit, analysis of primary data available both from surveys and the toll management system (both historical and current), macroeconomic assumptions prescribed by Client, feedback from Client meetings and secondary publicly available data. There can be both positive and negative risks associated with assumptions and the forecasts using them as summarised below.

Appendices

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A Top 10 OD pairs

A.1 Further to the OD analysis presented in Chapter 3 this appendix presents the top 10 OD pairs at TP1 Siwaya conducted in Apr'23. Please see this data for both CJVs and MAVs and OSVs combined below.

TP1 Siwaya

Table A.1: CJV and Bus top 10 OD pair shares at TP Siwaya

	OD Pair	Share
1.	Meerut-Sardhana	5.5%
2.	Meerut -Haridwar	5.4%
3.	Meerut -Muzaffarnagar	5.1%
4.	Haridwar-Central Delhi	4.6%
5.	Meerut-Khatauli	4.2%
6.	Meerut -Daurala	3.1%
7.	Meerut-Roorkee	2.7%
8.	Sardhana-Haridwar	2.6%
9.	Dehradun-Haridwar	2.0%
10.	Muzaffarnagar-Haridwar	2.0%

Source: Steer analysis of OD data

Table A.2: 3A and MAV top 10 OD pair shares at TP Siwaya

	OD Pair	Share
1.	Haridwar-Central Delhi	4.0%
2.	Meerut -Haridwar	3.8%
3.	Meerut -Muzaffarnagar	3.7%
4.	Meerut-Sardhana	2.9%
5.	Muzaffarnagar-Haridwar	2.2%
6.	Meerut-Khatauli	2.0%
7.	Ghaziabad-Haridwar	1.7%
8.	Meerut-Dehradun	1.6%
9.	Ghaziabad-Muzaffarnagar	1.6%
10.	Sardhana-Haridwar	1.3%

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B Data Collection exercise

B.1 In order to validate and inform various inputs used in our forecasting, we undertook primary data collection on the Asset. OD survey data was collected on behalf of the Client, TVC surveys were commissioned by Steer with a third party. OD data collection typically involves manual data entry by enumerators based on oral surveys with road users crossing toll plazas. TVC data collection involves video-graphic capture of traffic passing crossing the toll plazas, followed by manual counting.

7-day TVC counts

Table B.1: 7-day TVC counts at TP Siwaya

Date	CJV	Mini LCV	LCV	Bus	2A	3A	MAV	OSV	Total
18-01-2021	15,981	906	1,124	1,211	359	327	750	7	20,665
19-01-2021	14,791	957	1,512	1,256	361	432	898	9	20,216
20-01-2021	13,940	1,071	1,442	1,228	300	437	821	8	19,247
21-01-2021	14,664	1,123	1,472	1,254	417	343	763	10	20,046
22-01-2021	15,770	1,013	1,633	1,258	491	427	864	9	21,465
23-01-2021	18,403	1,038	1,650	1,315	395	432	817	12	24,062
24-01-2021	19,831	976	1,477	1,269	337	386	748	4	25,028

Source: Steer analysis

Table B.2: Consolidated WADT at TP Siwaya

Toll plaza	Source	CJV+ Mini LCV	LCV	Bus	2A	3A + MAV	OSV	Total
TP1	TVC	17,209	1,473	1,256	380	1,206	8	21,533
	TMS	11,882	1,058	1,761	153	1,185	-	16,039

Source: Steer analysis

Table B.3: 7-Day TVC count on Muradnagar UGC Junction

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
20/03/2021	11,022	639	1,123	28	183	209	317	1	13,522
21/03/2021	11,538	493	995	50	110	185	321	2	13,694
22/03/2021	9,731	633	838	38	242	214	253	3	11,952
23/03/2021	8,275	649	1,045	26	205	211	317	3	10,731
24/03/2021	8,744	657	1,030	23	255	233	267	3	11,212
25/03/2021	9,077	621	1,060	19	232	253	292	1	11,555

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Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
26/03/2021	10,199	680	1,164	47	232	235	283	8	12,848

Table B.4: 7-Day TVC count on Khatauli UGC Junction

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
20/03/2021	9,159	653	1,053	34	229	193	444	4	11,769
21/03/2021	8,633	566	1,033	49	135	192	493	1	11,102
22/03/2021	7,654	858	932	28	165	171	490	1	10,299
23/03/2021	6,804	653	1,078	27	226	192	528	4	9,512
24/03/2021	7,134	773	1,100	25	216	228	514	2	9,992
25/03/2021	7,529	735	1,079	24	231	246	437	1	10,282
26/03/2021	8,083	671	1,098	46	258	212	476	1	10,845

Table B.5: 7-Day TVC count on the Micro division

Date	CJV	Mini LCV	LCV	Bus	2 Axle	3 Axle	MAV	OSV	Total
20/03/2021	3,931	235	4	2	-	-	-	-	4,172
21/03/2021	4,534	210	3	-	1	-	-	-	4,748
22/03/2021	4,177	209	3	3	-	-	-	-	4,392
23/03/2021	3,779	222	1	2	-	-	-	-	4,004
24/03/2021	3,811	265	1	-	-	-	-	-	4,077
25/03/2021	3,924	227	-	1	-	-	-	-	4,152
26/03/2021	3,604	230	2	-	-	-	-	-	3,836

Source: Steer Analysis

Zone list

Table B.6: Zone list used for OD analysis

Zone No	Zone name	Description/State
1	Ghaziabad, Mohan Nagar, Raj Nagar, Kavi Nagar, Lal kuan	Ghaziabad
2	Duhai	Ghaziabad
3	Muradnagar	Ghaziabad
4	Modinagar, Kadrabad, Begmabad, Niwadi, Patla, Bhojpur	Ghaziabad
5	Loni, Mandula, Agruala	Ghaziabad
6	Western Ghaziabad District (Vaishali, Sahibabad, Indirapuram)	Ghaziabad
7	Eastern Ghaziabad District (Dasna,Masuri, Nahal, Faridnagar)	Ghaziabad
8	Meerut	Along the Project Road

Zone No	Zone name	Description/State
9	Daurala	Along the Project Road
10	Sakoti, Walidpur, Phalawada	Along the Project Road
11	Khatauli, Bhainsi	Along the Project Road
12	Ghasipura, Mansurpur, Begrajpur	Along the Project Road
13	Bahadarpur	Along the Project Road
14	Muzaffarnagar	Along the Project Road
15	Lawar	Meerut
16	Sardhana	Meerut
17	Southern Meerut District (Phaphunda, kharkhoda, Ajrara)	Meerut
18	South Western Meerut District (Mohiuddinpur, SewalKhas)	Meerut
19	Eastern Meerut District (Hastinapur,Mawana,Parikshitgar)	Meerut
20	Rohana Kalan	Muzaffarnagar
21	South eastern Muzaffarnagar District (Jansath, Miranpur)	Muzaffarnagar
22	South western Muzaffarnagar District (Shahpur, Sisauli, Budhana)	Muzaffarnagar
23	North east Muzaffarnagar District (Purquazi, Khai kheri, Chhapar)	Muzaffarnagar
24	Eastern Muzaffarnagar District (Bhandura, Bhokarhedi, bhopa, Basera, Sikri, jauli)	Muzaffarnagar
25	Bijnor, Najibabad, Nethapur	Bijnor
26	Deoband	Saharanpur
27	Nagal, Danghera, Khera Mugul	Saharanpur
28	Gagalheri	Saharanpur
29	Saharanpur	Saharanpur
30	Bhankala, Rampur Maniharan, Nanauta	Saharanpur
31	Eastern Saharanpur District (Chhutmalpur, Sona)	Saharanpur
32	South-Western Saharanpur District (Gangoh, Ambheta, Nakur)	Saharanpur
33	Northern Saharanpur District (Behat, Mirzapurpole)	Saharanpur
34	Baraut	Bhagpat
35	Doghat Rural, Tikri Rural	Baghpat
36	Bhagpat, Badagaon, Tatri	Bhagpat
37	Northern Baghpat District (Chhaprauli, Ramala, Bachhor, Luhara)	Bhagpat

Zone No	Zone name	Description/State
38	Eastern Bhagpat District (Aminagar, Binauli)	Bhagpat
39	Jalalabad, Thanabhawan	Shamli
40	Shamli	Shamli
41	Khandla, Asara, Gopalpur	Shamli
42	Gautam Buddha Nagar District (NOIDA, Greater NOIDA, Dadri etc.)	Gautam Buddha Nagar
43	Jewar, Rabpura	Gautam Buddha Nagar
44	Hapur, Pilkhuwa	Hapur
45	Garhmukhteshwar	Hapur
46	Bulandshahr, Sikandrabad, Khurja	Bulandshahr
47	Alighar, Hatras	Alighar
48	Etah, Mainpuri, Farukkhabad,Kannauj	Etah, Mainpuri, Farukkhabad,Kannauj
49	Agra, Mathura	Agra, Mathura
50	Kanpur, Etawah,Auraiya	Kanpur, Etawah,Auraiya, Jhansi
51	Bareily, Moradabad, Rampur, Sitapur	Bareily, Moradabad, Rampur, Sitapur
52	Lucknow	Lucknow
53	Varanasi, Allahabad	Varanasi, Allahabad
54	Eastern Uttar Pradesh (Gorakhpur, Ayodhya, Azamgarh, Ghazipur, Ballia)	Eastern Uttar Pradesh
55	Dehradun	Dehradun
56	Haridwar	Haridwar
57	Roorkee	Haridwar
58	Uttarkashi	Uttarkashi
59	Almora	Almora
60	Bageshwar	Bageshwar
61	Chamoli	Chamoli
62	Champawat	Champawat
63	Nainital	Nainital
64	Pithoragarh	Pithoragarh
65	Rudraprayag	Rudraprayag
66	Tehri Garhwal	Tehri Garhwal
67	Udham Singh Nagar	Udham Singh Nagar
68	Central Delhi (New Delhi, Connaught Place)	Central Delhi
69	East Delhi (Shadara, Anand Vihar, Laxmi Nagar, Babarpur, Preet Vihar)	East Delhi

Zone No	Zone name	Description/State
70	South Delhi (Saket, Chhatrpur, Mahipalpur, Badarpur, Hauz Khas	South Delhi
71	West Delhi (Dwaraka, Nazafgarh, Vikaspuri, Rajouri Garden, Pashim Vihar)	West Delhi
72	North Delhi (Narela, Budhpur, Alipur)	North Delhi
73	North Western Delhi (Rohini, Bawana)	North Western Delhi
74	Gurgaon, Mewat	Gurgaon, Mewat
75	Rohtak, Jhajjar	Rohtak, Jhajjar
76	Sonipat	Sonipat
77	Panipat	Panipat
78	Karnal	Karnal
79	Yamunanagar	Yamunanagar
80	Kaithal, Kurukshetra, Ambala, Panchkula	Kaithal, Kurukshetra, Ambala, Panchkula
81	Jind, Bhiwani, Hisar, Fatehbad, Sirsa	Jind, Bhiwani, Hisar, Fatehbad, Sirsa
82	Faridabad, Ballabhgarh, Palwal	Faridabad, Ballabhgarh, Palwal
83	Mahendragarh	Mahendragarh
84	Jaipur, Alwar, Dausa, Bharatpur	Jaipur, Alwar, Dausa
85	Kota, Sawai Madhopur, Tonk	Tonk, Sawai Madhopur, Bundi
86	Chittorgarh, Udaipur, Rajasmand, Bhilwara	Chittorgarh, Udaipur, Rajasmand, Bhilwara
87	Jodhpur, Pali, Sirohi	Jodhpur, Pali, Sirohi
88	Sikar, Churu, Jhunjhunu	Sikar, Churu, Jhunjhunu
89	Barmer, Jaisalmer	Barmar, Jaisalmer
90	Bikaner, Sriganganagar, Hanumangarh	Bikaner, Sriganganagar, Hanumangarh
91	Northern Madhya Pradesh (Gwalior, Morena, Shivpuri, Bhind, Guna)	Northern Madhya Pradesh
92	Central Madhya Pradesh (Bhopal, Vidisha, Sagar, Raison,Sehore)	Central Madhya Pradesh
93	Southern Madhya Pradesh (Narsinghpur, Chhindwara, Seoni, Mandla, Jabalpur)	Southern Madhya Pradesh
94	Eastern Madhya Pradesh (Katni, Rewa, Umaria, Sidhi, Singrauli)	Eastern Madhya Pradesh
95	Western Madhya Pradesh (Indore, Ujjain, Dewas, Ratlam, Dhar, Jhabua, Mandsaur, Neemuch)	Western Madhya Pradesh
96	Mumbai, Pune, Thane, Satara, Sangli, Solapur	Konkan and Pune Region
97	Nashik, Ahmednagar, Dhule, Jalagaon	Nashik Region

Zone No	Zone name	Description/State
98	Aurangabad, Beed, Jalna, Latur, Naded	Aurangabad Region
99	Amaravati, Akola, Washim, Yavatmal, Buldhana	Amaravati Region
100	Nagpur, Wardha, Chandrapur, Bhandara, Gadchiroli	Nagpur Region
101	Ahmadabad, Gandhinagar	Gujarat
102	Vadodara, Surat, Bharuch	Vadodara, Surat, Bharuch
103	Rajkot, Morbi, Jamnagar	Rajkot, Morbi, Jamnagar
104	Kuch Region (Bhuj, kandla, Mundra)	Kuch Region
105	Rest of Gujarat	Rest of Gujarat
106	Pathankot, Amritsar	Pathankot, Amritsar
107	Ludhiana, Jalandhar	Ludhiana, Jaladhar
108	Rest of Punjab	Rest of Punjab
109	Chandigarh	Chandigarh
110	Himachal Pradesh	Himachal Pradesh
111	Jammu and Kashmir	Jammu and Kashmir
112	Andhra Pradesh	Andhra Pradesh
113	Tamil Nadu	Tamil Nadu
114	Karnataka	Karnataka
115	Kerala	Kerala
116	Goa	Goa
117	Chhattisgarh	Chhattisgarh
118	Orissa	Orissa
119	Jharkhand	Jharkhand
120	Bihar	Bihar
121	West Bengal	West Bengal
122	Sikkim, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura	North East India

Source: Steer analysis

Direction-wise commodity distribution

Table B.7: Commodity distribution at TP Siwaya (towards Muzaffarnagar)

Commodities	LCV	2A	3A	MAV
Agriculture	2%	4%	3%	5%
Groceries	29%	23%	24%	15%
Construction	2%	8%	8%	10%
Petroleum	2%	4%	10%	10%

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Manufacturing	13%	3%	3%	7%
Automobiles	6%	4%	3%	8%
Miscellaneous	30%	29%	22%	22%
Metals	4%	5%	13%	12%
Empty	13%	21%	14%	9%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

Table B.8: Commodity distribution at TP Siwaya (towards Meerut)

Category Code	LCV	2A	3A	MAV
Agriculture	2%	-	5%	3%
Groceries	37%	28%	25%	21%
Construction	4%	5%	4%	13%
Petroleum	1%	-	2%	5%
Manufacturing	6%	7%	10%	6%
Automobiles	4%	7%	4%	9%
Miscellaneous	22%	27%	25%	14%
Metals	8%	11%	13%	17%
Empty	16%	15%	12%	12%
Total	**100%**	**100%**	**100%**	**100%**

Source: Steer analysis

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Crisil
Intelligence

Traffic & Revenue Assessment for Behrampore-Farakka Highways Limited

Final Report

December 2025

by S&P Global

Table of contents

1 Executive Summary 6
1.1 Project Details 6
1.2 Asset Overview 6
1.3 Historical traffic data 8
1.4 Base traffic estimation 9
1.5 Tolling lengths 9
1.6 Traffic Projections 10
1.7 Revenue Projections 10
2 Introduction 12
2.1 Asset Overview 12
2.2 Scope 13
2.3 Overview of Key Influence Area 14
2.4 Industrial and economic profile around the project section 15
3 Primary Data Collection & Analysis 19
3.1 General 19
3.2 Origin-Destination Analysis 20
3.2.1 Regional Influence 20
3.2.2 Commodity Distribution 21
3.2.3 Trip length distribution 26
4 Review of Historical Traffic Overview 27
4.1 General 27
4.2 Historical traffic and composition 28
4.3 Traffic segmentation in % 30
5 Base Traffic Estimation 32
5.1 Seasonality Factors 32
5.2 Base Traffic Estimation 33
6 Network developments in the Region 35
6.1 Approach and Methodology for Diversion Analysis 35
6.2 Kharagpur-Morgram Greenfield expressway & 4L expansion of NH-116A 36
6.3 Impact of Sand/Stone mining recovery 39
7 Traffic Growth Estimation & Traffic Forecast 40
7.1 Approach for traffic growth rates estimation 40
7.2 West Bengal State profile 41
7.3 Outlook for car growth 42
7.4 Commodity Overview 43
7.5 Commodity Outlook 46
7.6 Implied Growth Rate for the Project Section 46

7.7 Traffic Projections 47
8 Revenue forecast 50
8.1 General 50
8.2 Revenue Estimates 55
9 Annexure 58
9.1 India GDP-Outlook 58
9.2 Mode wise Top OD pairs 58

List of figures

Figure 1-1: Project Road 6
Figure 1-2: Industrial and economic influence around the project section 7
Figure 1-3: Historic Annual Average Daily Traffic (AADT) -TP01 8
Figure 1-4: Historic Annual Average Daily Traffic (AADT)-TP02 8
Figure 2-1: Project stretch alignment 12
Figure 2-2: Industries and economic profile 15
Figure 2-3: Network and mining activities 16
Figure 3-1: Survey Location 19
Figure 3-2: Trip length distribution-TP01 26
Figure 3-3: Trip length distribution-TP02 26
Figure 4-1: Tollable Traffic composition shares at TP01 29
Figure 4-2: Tollable Traffic composition shares at TP02 30
Figure 6-1: Diversion curve as per IRC:108-2015 36
Figure 6-2: Kharagpur-Morgram Expressway & NH-116A upgradation 37
Figure 7-1: Commodity based approach: Illustrative example for Commercial vehicles 40
Figure 7-2: West Bengal GSDP 41
Figure 7-3: West Bengal GSDP vs India GDP 42
Figure 7-4: Vehicle sales growth-West Bengal 43
Figure 7-5: Pre and post traffic diversion projections-PCUs-TP01 49
Figure 7-6: Pre and post traffic diversion projections-PCUs-TP02 49

List of tables

Table 1-1: Base traffic-FY26 9
Table 1-2: Tolling Lengths for the project section 9
Table 1-3: Traffic projection in terms of PCU for the project section 10
Table 1-4: Projected Revenue in ₹ million 11
Table 2-1: Key details of project stretch 13
Table 2-2: Network Analysis 17
Table 3-1: Type of Survey & Schedule 19

Table 3-2: Regional Distribution in % 20
Table 3-3: Commodity distribution of the project section 21
Table 3-4: Direction wise commodity distribution- TP01 24
Table 3-5: Direction wise commodity distribution- TP02 25
Table 4-1: Historical Traffic and Revenue Data Availability 27
Table 4-2: Past traffic in PCU 27
Table 4-3: Historical mode wise traffic-TP01 28
Table 4-4: Historical mode wise traffic-TP02 29
Table 4-5: Traffic segmentation in % 31
Table 5-1: Seasonal correction factors for FY 23, FY 24 and FY 25- TP01 32
Table 5-2: Seasonal correction factors for FY 23, FY 24 and FY 25- TP02 33
Table 5-3: Base traffic-FY26 34
Table 6-1: Details of Network Development and Possible impact 35
Table 7-1: Commodity Outlook for the Project Section 46
Table 7-2: Mode wise Traffic projections 47
Table 7-3: Traffic projections 47
Table 8-1: Tolling Tickets 50
Table 8-2: Toll segmentation in % - FY26 51
Table 8-3: Annual pass- Trips & Plaza constant factor 51
Table 8-4: Trip rates for CJV 52
Table 8-5: Tolling Lengths for the project section 52
Table 8-6: Base Rate in Rs/km 52
Table 8-7: Base Rate for structure cost more than 50 crores 53
Table 8-8: User fee for overloaded vehicles 53
Table 8-9: Overloading Share % 53
Table 8-10: WPI Outlook 54
Table 8-11: Revenue in ₹ Million for the Project Section 55
Table 8-12: TP01 Revenue by Mode in ₹ Million 56
Table 8-13: TP02 Revenue by Mode in ₹ Million 56
Table 9-1: GDP India Outlook 58
Table 9-2: TP01-CJV Top OD pairs 58
Table 9-3: TP01-Bus Top OD pairs 59
Table 9-4: TP01-2A Top OD pairs 59
Table 9-5: TP01-3A Top OD pairs 59
Table 9-6: TP01-MAV Top OD pairs 60
Table 9-7: TP02-CJV Top OD pairs 60
Table 9-8: TP02-Bus Top OD pairs 61
Table 9-9: TP01-2A Top OD pairs 61
Table 9-10: TP02-3A Top OD pairs 61
Table 9-11: TP02-MAV Top OD pairs 62

Acronyms

Acronyms	Meaning
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
AR	Alternate Route
BFHL	Behrampore-Farakka Highways Limited
CAGR	Compound annual growth rate
CJV	Cars, Jeeps, Vans
CPG	Consumer packaged goods
ETC	Electronic Toll Collection
FMCG	Fast-moving consumer goods
FY	Fiscal Year
GDDP	Gross District Domestic Product
GDP	Gross Domestic Product
GJC	Generalised Journey Cost
GSDP	Gross State Domestic Product
GVW	Gross vehicular Weight
IHMCL	Indian Highways Management Company Limited
IRC	Indian Road Congress
MAV	Multi Axle Vehicle
MMT	million metric tons
MOSPI	Ministry of Statistics and Programme Implementation
MSME	Ministry of Micro, Small and Medium Enterprises of India
NE	Northeast
NGT	National Green Tribunal
NH	National Highways
NTPC	National Thermal Power Corporation
OD	Origin-Destination
OSV	Over Sized Vehicle
PCU	Passenger Car Unit
PMAY	Pradhan Mantri Awas Yojana
PR	Project Road
SCF	Seasonal Correction Factors
SEZ	Special Economic Zone
SIAM	Society of Indian Automobile Manufacturers
SP	Special Publication
TMS	Toll Management Systems
TP	Toll Plaza
VOC	Vehicle Operating Cost
VOT	Value of Time
WPI	Wholesale price index

1 Executive Summary

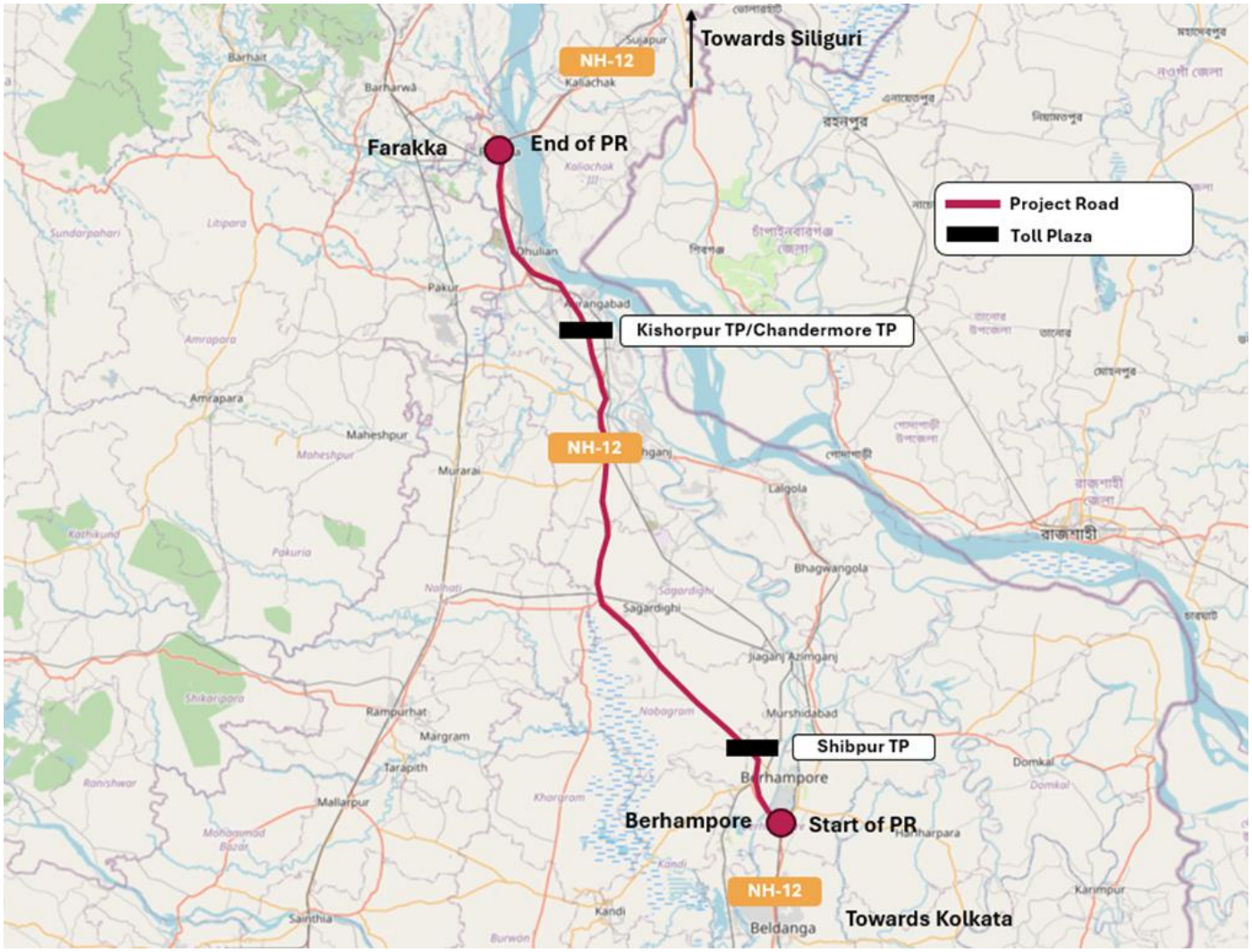
1.1 Project Details

M/s Cube Highways Trust (hereinafter “the Client”) as sponsor has appointed M/s CRISIL Limited (hereinafter referred as “Technical Consultant”) to carry out Traffic and Revenue Due Diligence of operational asset of Behrampore to Farakka section of NH-12 in the state of West Bengal (herein after refer as “the Project”) which is being operated by “M/s **Behrampore-Farakka Highways Limited**" (hereinafter refer as “the Concessionaire or Company or BFHL”).

1.2 Asset Overview

Project road Berhampore to Farakka is a four lane, 90kms long stretch, on NH-12. The project stretch has two toll plazas located at Km 206 near Berhampore and Km 260 near Kishorpur. Key cities and villages along the route include Berhampore, Morgram, Umarpur and Farakka.Project Road connects Kolkata, the state capital, with Siliguri and Darjeeling, which are major tourist attractions.

Figure 1-1: Project Road

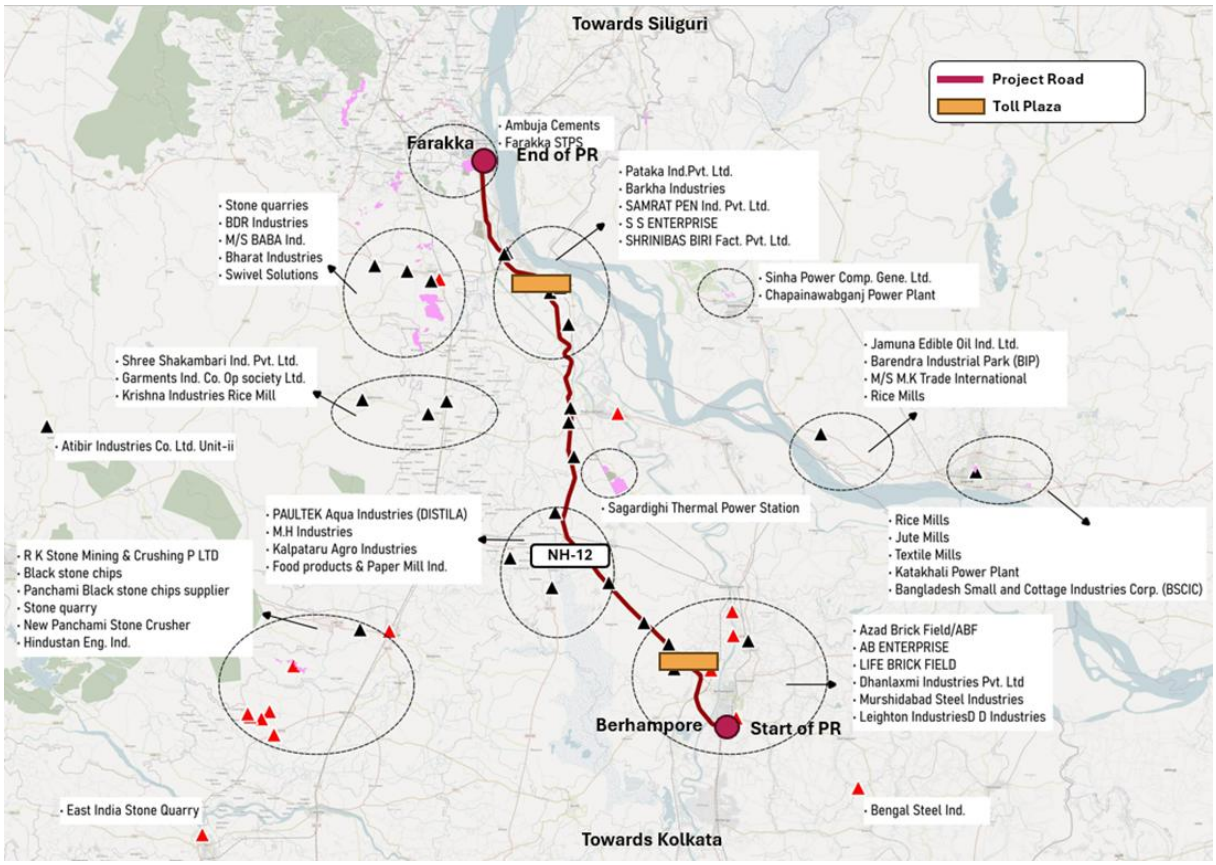


Source: Open Street Map, Crisil Intelligence

Salient growth features and traffic generators

Project section part of NH-12 stretches from Dalkhola in the northern part of West Bengal to Bakkhali in the south, linking all significant hubs within the state. The project section is located near numerous rice mills and is situated in a region of India where rice is the predominant crop. The areas of Bardhhaman, Hooghly, Birbhum, Parganas, and Murshidabad are known as rice-producing regions. Fruits, Vegetables, and Fish: Ina addition project influence area around the project section are agricultural zones for fruits such as mangoes and bananas, cash crops like jute, as well as vegetables and fish, which are distributed to nearby areas and consumption centres in Northeast India and Kolkata. The main commodity being transported along the project section include stone aggregates and sand, sourced from Nalhati, Rampurhat, Pakur, and Sainthia, mainly directed towards Kolkata, Siliguri, and Bangladesh. The aggregates are extracted from the mining areas of Nalhati and Pakur, as well as villages in the Rampurhat subdivision of Birbhum District. Asansol and Sainthia are the principal sources of sand, which is obtained from the sand beds along the Hooghly riverbed. Also, around the project influence area there are significant industrial establishments, the National Thermal Power Corporation (NTPC) operates a thermal power plant in Farakka, while Ambuja Cement, a leading cement manufacturer in India, has a facility also located in Farakka. Jangipur features a large food processing park adjacent to the BFHL section. The Industrial Park in Behrampore serves as a vital manufacturing centre, with Additionally, the Kalyani Industrial Park (SEZ) has been established with units that produce electronics, tools, and spare part. The location of industries and economic centers around the project corridor is presented below

Figure 1-2: Industrial and economic influence around the project section

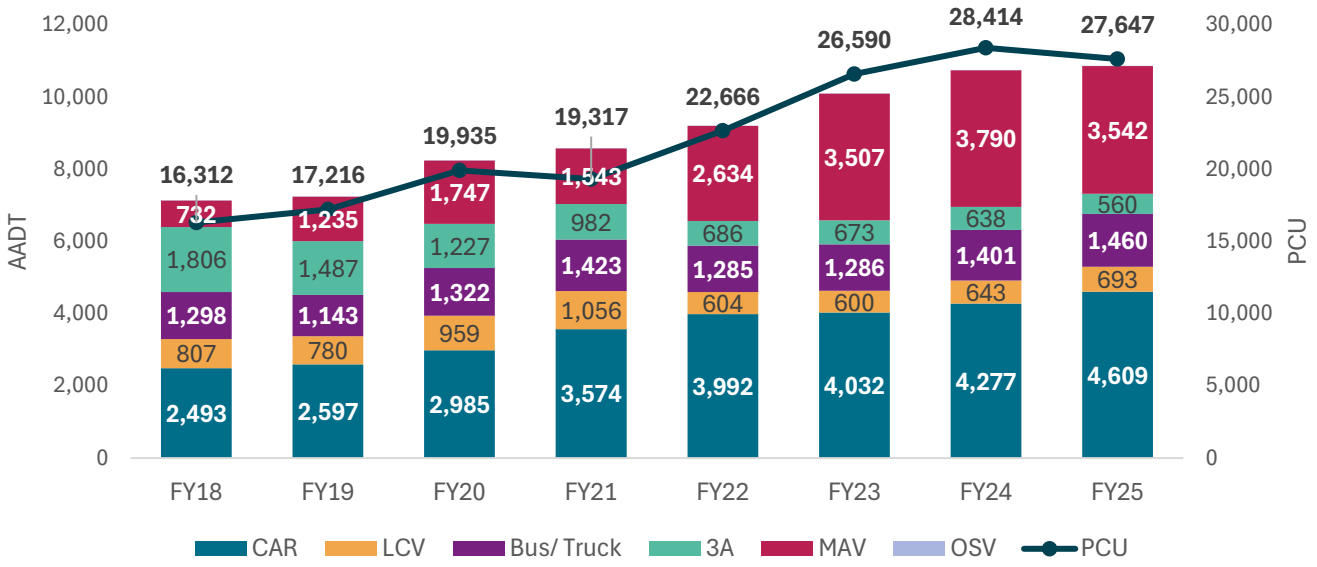


Source: Open Street Map, Crisil Intelligence

1.3 Historical traffic data

Mode wise traffic from April-2017 till Oct-2025 was made available by client. Historical AADT for the toll plazas is presented below

Figure 1-3: Historic Annual Average Daily Traffic (AADT) -TP01

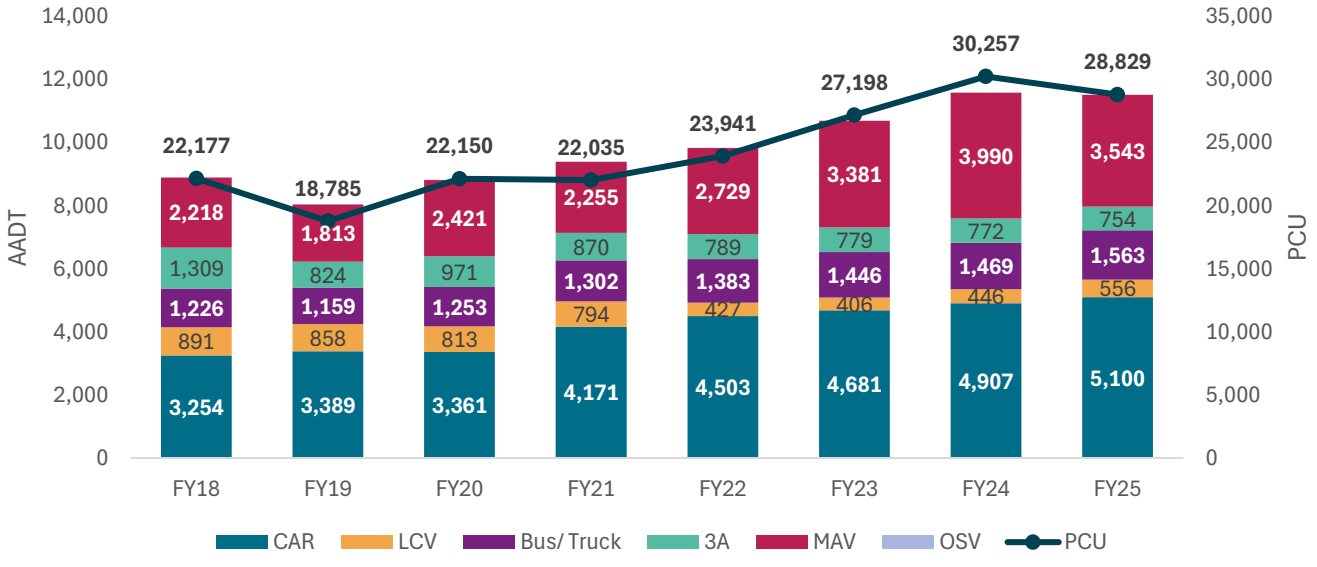


Source: Client Data, Crisil Intelligence

- TP01 is largely influenced by CJV traffic, which is plying mostly between Malda, Farakka, Behrampore and Kolkata, it accounts to about 43 percent followed by MAV which accounts to about 32 percent of the total tollable traffic in FY25.

- The plaza in terms of PCUs has observed to be grown at 8.2 percents for the period FY25 vs FY19.

Figure 1-4: Historic Annual Average Daily Traffic (AADT)-TP02



Source: Client Data, Crisil Intelligence

- TP02 is largely influenced by CJV traffic, which is plying mostly between Malda, Farakka, Behrampore and Kolkata, it accounts to about 44 percent followed by MAV which accounts to about 31 percent of the total tollable traffic in FY25.

- The plaza in terms of PCUs has observed to be grown at 7.4 percents for the period FY25 vs FY19.

1.4 Base traffic estimation

For base traffic estimation for the present study, the 7-months (Apr-25-Oct-25) of traffic data for all the two toll plazas were annualized using SCF factor of 7-12 months were derived from the year FY23, FY24 &FY25 for estimating FY26 AADT.

The AADT estimation for the base case for FY26 is presented below

Table 1-1: Base traffic-FY26

TP	Car	LCV	Bus/2A	3A	MAV	PCU
ADT (April-Oct) FY26						
TP01	4,938	778	1,510	512	3,097	26,103
TP02	5,207	622	1,649	698	3,230	27,718
SCF (April-Oct)- Avg of FY23, FY24 & FY25						
TP01	1.01	1.02	1.03	0.99	1.10	
TP02	1.00	1.02	1.01	1.01	1.04	
AADT- FY26						
TP01	4,985	796	1,553	505	3,411	27,704
TP02	5,198	637	1,670	706	3,365	28,429

Source: Client Data, Crisil Intelligence

1.5 Tolling lengths

The tolling lengths for the project section as per concession agreement is presented below

Table 1-2: Tolling Lengths for the project section

Toll Plaza	Chainage	Tolling Length
TP01	Km 206	39.63
TP02	Km 260	50.17

Source: Concession Agreement, Crisil Intelligence

1.6 Traffic Projections

The total traffic projected in terms of PCUs based on most likely growth rates is presented below:

Table 1-3: Traffic projection in terms of PCU for the project section

FY Year	TP01	TP02
2026	27,703	28,426
2027	30,651	30,744
2028	32,646	33,193
2029	33,032	31,808
2030	34,036	33,430
2031	35,098	38,532
2032	36,815	40,412
2033	38,689	42,463
2034	38,951	40,579
2035	40,925	42,620
2036	44,862	49,196
2037	47,109	51,640
2038	49,443	54,173
2039	49,698	51,653
2040	52,141	54,158
2041	57,134	62,495

Source: Crisil Intelligence

TP01 and TP02 traffic in terms of PCUs is projected grow at 4.9 percent and 5.4 percent respectively.

1.7 Revenue Projections

The revenue in ₹ million for the project road is projected to grow at a CAGR of about 9.8 percent for the forecast period from FY26 to FY41 and is presented in the below table.

Table 1-4: Projected Revenue in ₹ million

FY Year	TP01	TP02	Total
2026	1,222.0	849.9	2,071.8
2027	1,400.0	950.8	2,350.9
2028	1,562.8	1,081.0	2,643.8
2029	1,656.3	1,071.8	2,728.1
2030	1,786.5	1,181.6	2,968.1
2031	1,921.9	1,437.5	3,359.3
2032	2,106.1	1,571.6	3,677.7
2033	2,309.1	1,719.1	4,028.2
2034	2,421.2	1,705.2	4,126.4
2035	2,657.6	1,863.3	4,520.9
2036	3,043.1	2,273.8	5,316.8
2037	3,330.2	2,471.2	5,801.4
2038	3,651.1	2,706.7	6,357.8
2039	3,831.4	2,679.6	6,511.0
2040	4,202.6	2,940.8	7,143.3
2041	4,805.9	3,559.9	8,365.8
CAGR (FY26-FY41)	**9.6%**	**10.0%**	**9.8%**

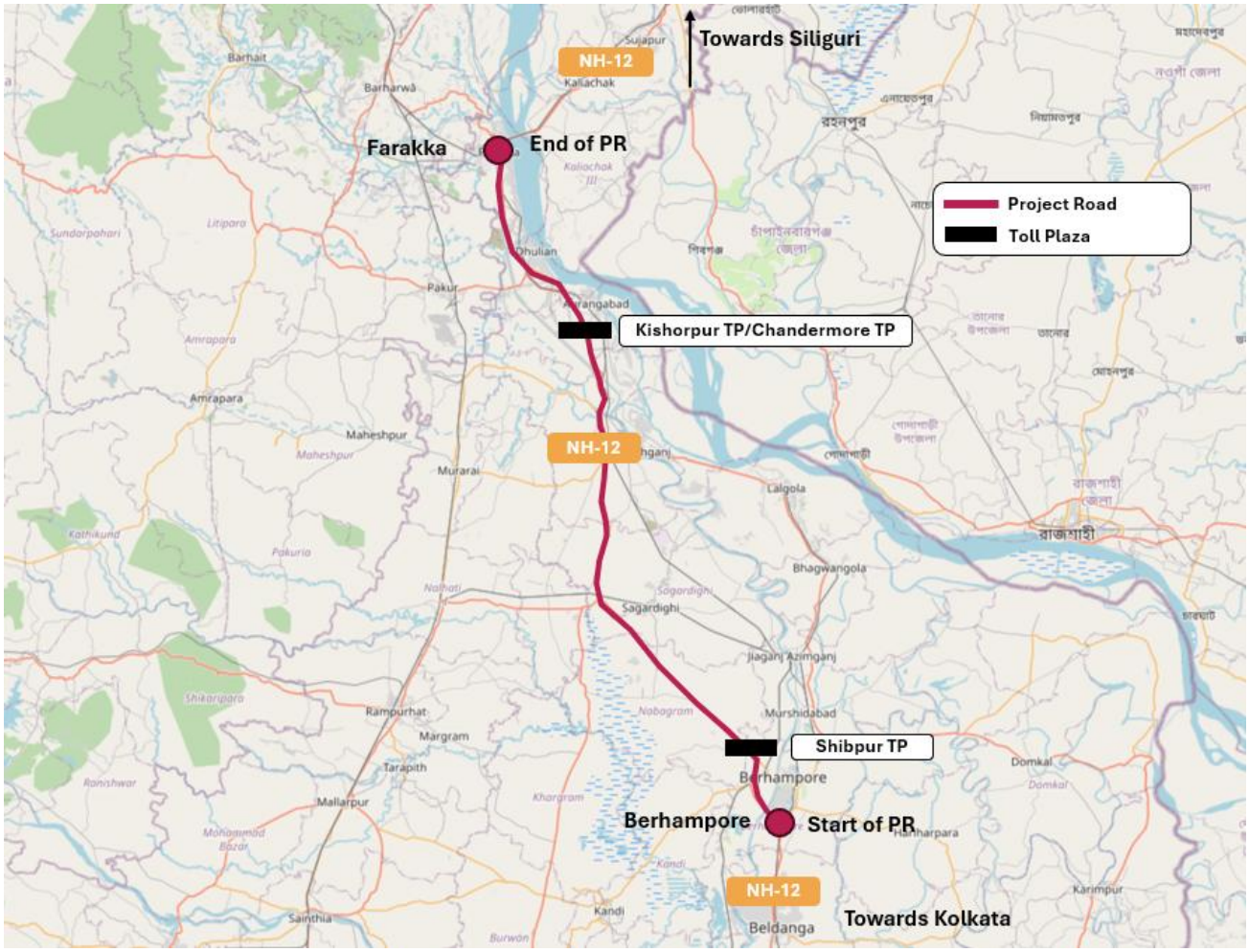
Source: Crisil Intelligence, Overloading revenue (Including all vehicles)

2 Introduction

2.1 Asset Overview

Project road Berhampore to Farakka is a four lane, 90kms long stretch, on NH-12. The project stretch has two toll plazas located at Km 206 near Berhampore and Km 260 near Kishorpur. Key cities and villages along the route include Berhampore, Morgram, Umarpur and Farakka.Project Road connects Kolkata, the state capital, with Siliguri and Darjeeling, which are major tourist attractions. Project section part of NH-12 stretches from Dalkhola in the northern part of West Bengal to Bakkhali in the south, linking all significant hubs within the state. The section serves as the primary access route to the North-eastern states and is a vital artery for West Bengal. Additionally, this corridor is a crucial link to Northeast India. Its closeness to Bangladesh further establishes it as an essential route for international trade.

Figure 2-1: Project stretch alignment



Source: Open Street Map, Crisil Intelligence

Table 2-1: Key details of project stretch

Project stretch	Details
Authority	National Highway Authority of India
Concessionaire	M/s Behrampore-Farakka Highways Limited
Concession period	25 years (Till FY36)
No. of lanes	4-lane configuration with paved shoulders
Project type	Design, Build, Finance, Operate & Transfer
Project Length	90 km
No. of Toll Plazas	2
Toll Plaza 01	Shibpur TP (Km 206)
Toll Plaza 02	Chandermore TP (Km 260)
Estimated Target Traffic Extension period	5 years
TP01 (PCU)-FY25	PCU-27,647
TP02 (PCU)-FY25	PCU-28,829
Total Revenue for the Project section in Cr-FY25	199 Cr

Source: Concession Agreement, Crisil Intelligence

2.2 Scope

The scope of the traffic assessment for the project road is divided into following four sections.

1. Detailed Assessment of the project road
   Include review of the Historic TMS Data, past traffic growth, detailed network assessment.
2. Primary Data collection & Analysis
   Conducting preliminary traffic surveys like Registration plate and Origin-Destination (O-D) to understand the traffic patterns, commodity profiles.
3. Network Impact Assessment
   To Analyse the upcoming network developments which may impact the project road traffic
4. Traffic and Revenue Projections
   Traffic & Revenue projections considering relevant growth drivers and network developments

Approach & Methodology is detailed out in Traffic Growth Estimation & Traffic forecast chapter.

2.3 Overview of Key Influence Area

The project road entirely falls in the state of West Bengal. A brief description of state profile and key influencing district around the project section is presented below.

Overview of West Bengal State profile

West Bengal is located in the eastern region of India, bordered by Bihar and Jharkhand to the west, Odisha to the southwest, Sikkim and Bhutan to the north, and Assam to the northeast, with the Bay of Bengal along its southern coastline. The state occupies a strategic geographic position, serving as a gateway to Northeast India. Key national highways such as NH-16, NH-19, NH-27, and NH-34 facilitate connectivity between West Bengal and the neighbouring states, supporting both intra-state mobility and long-distance freight movement. Kolkata serves as the primary urban and economic hub, supported by Netaji Subhas Chandra Bose International Airport, which offers a wide range of domestic and international flight services. West Bengal's Gross State Domestic Product (GSDP) for 2024-25 is estimated at approximately ₹ 94,185,372, reflecting steady economic performance with a long-term growth trend supported by robust services and industrial activity. The tertiary sector is the major contributor to the state economy—accounting for over 55 percent—driven by trade, finance, transport, and public services. The secondary sector contributes around 25 percent, supported by manufacturing, metallurgy, petrochemicals, cement, and engineering industries, while the primary sector accounts for the remaining share with agriculture, fisheries, and horticulture being key contributors. The state is rich in natural and industrial resources and hosts significant infrastructure such as the Haldia Port and Syama Prasad Mookerjee Port in Kolkata, which serve as major maritime gateways for eastern and northeastern India. West Bengal also has substantial coal reserves in the Raniganj coalfields and remains one of India's leading producers of tea, contributing significantly to national and global supply chains.

Murshidabad District profile

Murshidabad is located in the central-northern part of West Bengal and shares borders with Bihar to the west and Bangladesh to the east, making it an important administrative and commercial district in the region. The district is strategically positioned along National Highway NH-12, which connects Kolkata with North Bengal and further to Assam. Additional corridors such as NH-14 and state highways enhance linkages with neighbouring districts including Birbhum, Nadia, and Malda. The presence of the Farakka Barrage and its rail-road bridge further strengthen cross-river mobility and freight movement towards North and Northeast India. Murshidabad's economy is driven primarily by agriculture, services, and small-scale industry. The district is a major producer of rice, jute, mango, and silk, with its traditional silk weaving (Murshidabad Silk) being nationally renowned. The tertiary sector has been growing steadily, supported by trade, transport, education, and administrative services. Industrial activity is influenced by the presence of the Farakka Super Thermal Power Project, and agro-processing units.

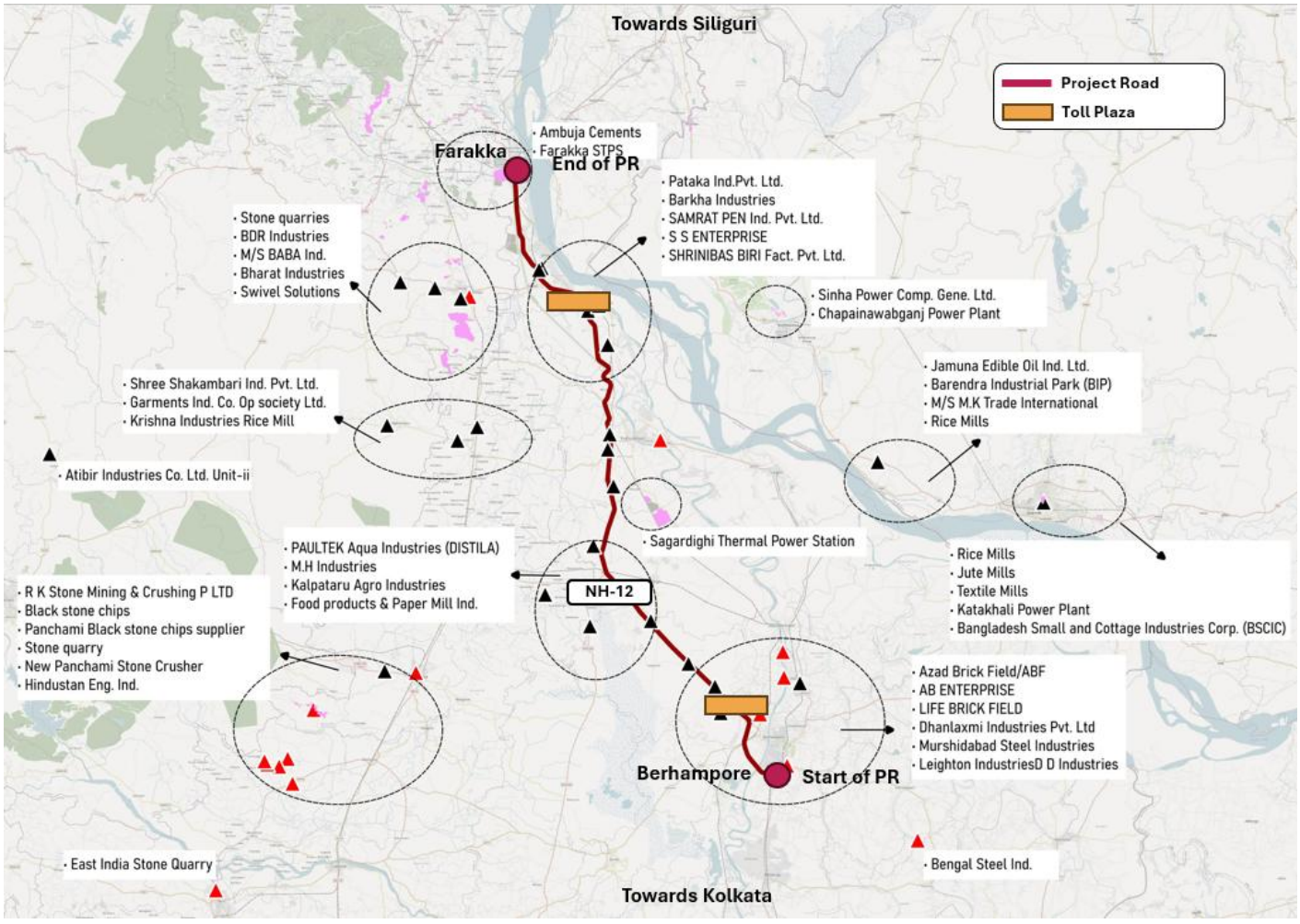
An important economic factor in the region is the substantial supply of construction materials sourced from nearby stone quarry belts. Nalhati, located in the adjacent Birbhum district, acts as the dominant hub for stone chips, aggregates, and crushed materials used across central and northern West Bengal. The steady inflow of Nalhati stone to Murshidabad supports major infrastructure development, road construction, and building activities in the district.

This supply chain also contributes significantly to freight traffic movement, influencing regional logistics patterns and supporting local employment in transportation and handling sectors.

2.4 Industrial and economic profile around the project section

Project section part of NH-12 stretches from Dalkhola in the northern part of West Bengal to Bakkhali in the south, linking all significant hubs within the state. The project section is located near numerous rice mills and is situated in a region of India where rice is the predominant crop. The areas of Bardhhaman, Hooghly, Birbhum, Parganas, and Murshidabad are known as rice-producing regions. Fruits, Vegetables, and Fish: Ina addition project influence area around the project section are agricultural zones for fruits such as mangoes and bananas, cash crops like jute, as well as vegetables and fish, which are distributed to nearby areas and consumption centres in Northeast India and Kolkata.

Figure 2-2: Industries and economic profile



Source: Open Street Map, Crisil Intelligence

The main commodity being transported along the project section include stone aggregates and sand, sourced from Nalhati, Rampurhat, Pakur, and Sainthia, mainly directed towards Kolkata, Siliguri, and Bangladesh. The aggregates are extracted from the mining areas of Nalhati and Pakur, as well as villages in the Rampurhat subdivision of Birbhum

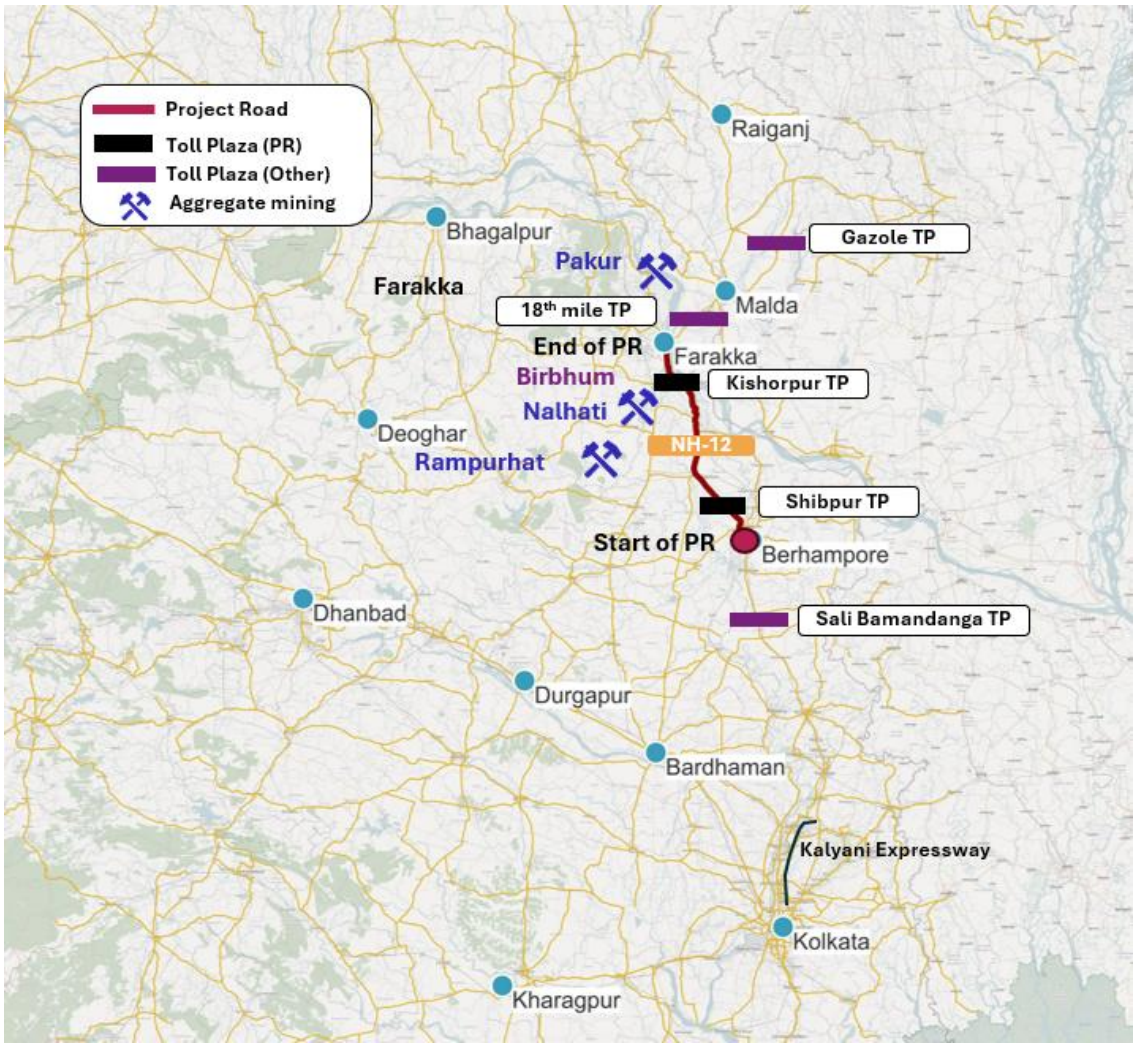
District. Asansol and Sainthia are the principal sources of sand, which is obtained from the sand beds along the Hooghly riverbed.

Also, around the project influence area there are significant industrial establishments, the National Thermal Power Corporation (NTPC) operates a thermal power plant in Farakka, while Ambuja Cement, a leading cement manufacturer in India, has a facility also located in Farakka. Jangipur features a large food processing park adjacent to the BFHL section. The Industrial Park in Behrampore serves as a vital manufacturing centre, with Additionally, the Kalyani Industrial Park (SEZ) has been established with units that produce electronics, tools, and spare part.

Neighbourhood project roads/assets have shown diverse traffic growth in the recent years

Indian Highways Management Company Limited (IHMCL) publishes toll plazas traffic data for the plazas on national highways and data is analysed for neighboring plazas to understand traffic growth patterns in the region, nearby plazas have shown good traffic growth in recent years.

Figure 2-3: Network and mining activities



Source: Open Street Map, Crisil Intelligence

As stated in the previous section, the project is located on NH-12, linking Berhampore to Farakka. To understand the

traffic specially CJV & MAV pattern at the nearby plazas, were examined since the movement across the selected sections has around majority of the share in traffic from MAV vehicles. It is important to note, however, that the traffic flow from the project section has a distinct nature due to the movement from industries and stone mining, which will differ from that of other plazas. The section/toll plaza studied is presented below.

Table 2-2: Network Analysis

Toll Plaza	Location	FY25	FY24	FY23
CJV				
Gazole TP	North	5,319	5,149	4,861
18TH Mile TP		3,803	3,640	3,444
Kishorpur TP	**Project section**	4,564	4,390	4,188
Shibpur TP		4,154	3,819	3,575
Sali Bamandanga TP	South	3,721	3,183	2,913
CJV Growth				
Gazole TP	North	3.3%	5.9%	
18TH Mile TP		4.5%	5.7%	
Kishorpur TP	**Project section**	4.0%	4.8%	
Shibpur TP		8.8%	6.8%	
Sali Bamandanga TP	South	16.9%	9.3%	
MAV				
Gazole TP	North	3,751	3,653	3,609
18TH Mile TP		5,083	4,990	4,764
Kishorpur TP	**Project section**	3,534	3,989	3,376
Shibpur TP		3,541	3,785	3,533
Sali Bamandanga TP	South	3,486	3,775	3,505
MAV Growth				
Gazole TP		2.7%	1.2%	
18TH Mile TP		1.9%	4.7%	
Kishorpur TP		-11.4%	18.1%	
Shibpur TP		-6.4%	7.1%	
Sali Bamandanga TP		-7.6%	7.7%	

Source: IHMCL, Crisil Intelligence

It may be noted that the project section serves as an important connection to Kolkata, along with the influence area various network and economic development which led to diverse growth trends across the corridor. Key developments which impacted the traffic are listed below:

- **Barrackpore-Kalyani Expressway:**

  Kalyani Expressway connects the Belghoria Expressway (NH-19) at Nimta, close to Kolkata Airport, and extends to Kampa in North 24 Parganas. This corridor integrates with the Magra-Barajaguli Road Corridor, which leads to NH-12 at Barajaguli in Nadia. It circumvents congested routes such as Jessore Road, providing a quicker option to access northern suburbs including Sodepur, Barrackpore, Naihati, Kanchrapara,

Barasat, Madhyamgram, and Kalyani.Commercial vehicles heading towards North Bengal, the North-Eastern States of India, and Bangladesh frequently encounter traffic jams in these areas where NH-34 runs through densely populated urban regions like Birati, Madhyamgram, and Barasat. To alleviate this traffic congestion, a parallel expressway was constructed. Majority of the project is completed and operational. This expressway provides direct feeder connectivity to NH-12 and provides seamless connectivity to the project section. Majority of the traffic through the expressway and to the project section is largely established and form already part of the current traffic profile.

- **Stone quarry and sand mining:**

  The asset is situated in a rich belt of Basalt and Coal minerals in the Birbhum district, along with Sand sourced from the dry riverbed of the Mayurakshi River, a tributary of the Hooghly. The Birbhum zone, located 250 km north of Kolkata, boasts a rich mineral profile, featuring the largest coal belt at Deucha Panchami and the Panchami crushing zone, which has historically been a significant rock crushing area.

  In 2021, the West Bengal government implemented a Quarrying permit and Sand mining Policy aimed at reducing illegal mining activities in the region and making efforts to legalize such operations. By 2022, stone quarries and mines in Birbhum that were operating without valid licenses were classified as illegal, resulting in the closure of approximately 300 mines. Following this initiative, many quarry owners transitioned their operations to the nearby Nalhati and Rampurhat areas from the Panchami block, establishing them as major activity clusters.

  Nalhati and Rampurhat have now emerged as significant exporters of aggregates to the eastern region of India. The Sainthia and Madna sand block is a dry riverbed sand mining zone located in the Birbhum district, close to project section. It supports local construction activities as well as those in Bangladesh. The robust road connectivity via NH12 makes it a vital economic cluster.

  Key Timeline to sandmining policy in West Bengal

  July-2021: West Bengal sand mining Policy on illegal mining activities and directive to legalize the same

  November-2021: Temporary suspension of quarrying operations starting from November 2021 in the Panchami crushing zone – with quarries relocating to Nalhati and Rampurhat

  Feburary-2024: NGT direction to prevent illegal stone quarry mining in Birbhum

  Since project has majority of the traffic catering to stone and sand commodities, following above mentioned directive on the mentioned timeline has impacted the growth trends across the project section.

3 Primary Data Collection & Analysis

3.1 General

Primary traffic surveys, i.e. Origin Destination surveys and registration plate surveys were collected on the project road to understand the traffic and travel pattern of vehicles plying on the project road.

For the present study, one day (24-Hours) origin destination survey and one day (24-Hours) Registration Plate survey was conducted at the toll plaza location on the project road. The schedule of the traffic surveys carried out as part of the study on the project road are presented in the table and figure below.

Table 3-1: Type of Survey & Schedule

Location	Location	Survey Duration	Survey Date
OD Survey and Registration Plate Survey	TP01 (Shibpur TP)	1 Days	24-09-2025
	TP02 (Chandermore TP)		25-09-2025

Source: Crisil Intelligence

Figure 3-1: Survey Location

Source: Open Street Map, Crisil Intelligence

3.2 Origin-Destination Analysis

Origin-Destination survey was carried out for 1 Days (24-hours), by roadside interview method as described in IRC: 102-1988. A random sampling approach was employed to interview both passenger and freight vehicles traversing the project road at the toll plaza locations. The survey aimed to gather information on various aspects, including origin, destination, frequency of trips, purpose of travel and for freight vehicles, the type of commodity being transported. The project influencing states will provide an overview of the factors likely to influence the pattern of economic development and hence the flows and volumes of traffic on the project road.

3.2.1 Regional Influence

The key influencing regions from the origin destination survey are West Bengal and Northeast. Regional distribution mode wise is given in the below table.

Table 3-2: Regional Distribution in %

Date	CJV	Bus	2A	3A	MAV
TP01					
West Bengal	97.2%	96.2%	88.2%	84.2%	91.2%
Northeast	1.9%	3.1%	7.9%	13.1%	7.8%
Rest of India	0.9%	0.7%	3.9%	2.7%	1.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
TP02					
West Bengal	95.1%	97.2%	87.2%	83.2%	88.9%
Northeast	3.8%	1.9%	8.5%	12.9%	9.2%
Rest of India	1.1%	0.9%	4.3%	3.9%	1.9%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Primary survey, Crisil Intelligence

Passenger Traffic

- In case of CJV, West Bengal is a major contributor accounting to about 97 percent in TP01 and about 95 percent in TP02.
- Similar trend is observed for Buses in both the toll plazas.

Freight Traffic

- In case of 2A trucks, West Bengal contributes to about 88 percent at TP01 and about 87 percent at TP02, followed by Northeast account to about 7-8 each at both the toll plaza.
- Similarly in case of MAV, West Bengal contributes to about 91 percent at TP01 and about 89 percent at TP02, followed by Northeast accounting to about 8 percent at TP01 and 9 percent at TP02.

Key Origin-Destination (OD) Pairs for Car Traffic:

- TP01: Malda to Behrampore accounts for 6.5 percent of total trips followed by Nabagram to Behrampore accounts to 6.2 percent of total trips.

- TP02: Malda to Behrampore accounts for 6.7 percent of total trips followed by Malda to Kolkata accounts to 4.9 percent of total trips.
- **Key Origin-Destination (OD) Pairs for MAV (4-6 Axle) Traffic:**
- TP01: Nalhati to Kolkata accounts for 27.5 percent of total trips followed by Nalhati to Behrampore accounts to 7.7 percent of total trips.
- TP02: Malda to Kolkata accounts for 7.7 percent of total trips followed by Siliguri to Kolkata accounts to 7.0 percent of total trips.

Mode wise TOP OD pairs for both the toll plazas is presented in Annexure.

3.2.2 Commodity Distribution

Analysis was carried out to understand the various freight vehicles being used to transport different commodities. Table below presents the commodity distribution for all the toll plazas in project road.

Table 3-3: Commodity distribution of the project section

Date	LCV	2A	3A	MAV	Total
TP01					
Agri Produce	31.1%	29.1%	28.1%	13.8%	21.9%
Automobiles	2.2%	3.3%	3.2%	0.8%	1.7%
Chemical products	2.2%	2.3%	4.7%	2.9%	2.8%
Stone/Gitti	1.3%	1.0%	2.6%	42.4%	23.1%
Coal	0.0%	0.0%	0.6%	0.1%	0.1%
Construction materials	5.0%	3.3%	5.1%	1.7%	2.8%
Consumer Foods	14.8%	10.2%	12.6%	3.4%	7.3%
Consumer Products	0.0%	0.8%	0.4%	0.1%	0.3%
Container	0.0%	0.2%	0.9%	0.1%	0.2%
Courier & parcel	9.4%	13.4%	8.6%	1.8%	5.9%
Iron & Steel Products	3.8%	1.7%	2.6%	2.7%	2.7%
Machinery	0.3%	1.1%	0.2%	0.3%	0.5%
Milk & Animal Food	6.9%	5.0%	4.5%	3.0%	4.5%
Others	0.9%	1.7%	1.1%	0.6%	1.0%
Paper products	1.3%	1.7%	1.1%	1.5%	1.4%
Petroleum Products	0.9%	0.2%	0.6%	2.1%	1.3%
Pharmaceuticals	4.1%	2.9%	2.6%	1.2%	2.0%
Plastic products	1.9%	1.0%	0.9%	0.5%	0.9%
Plywood & Timber products	0.6%	1.0%	0.0%	0.3%	0.5%
Rubber products	0.0%	0.0%	0.4%	0.0%	0.1%
Textile & Footwear	1.9%	2.9%	2.4%	0.9%	1.5%
Tiles & Ceramic products	0.0%	0.0%	0.0%	0.0%	0.0%

Date	LCV	2A	3A	MAV	Total
Empty	11.0%	17.0%	16.5%	19.4%	17.5%
Sand	0.3%	0.4%	0.4%	0.3%	0.4%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
		TP02			
Agri Produce	28.6%	23.8%	17.4%	15.9%	21.8%
Automobiles	2.6%	1.5%	1.2%	1.0%	1.3%
Chemical products	1.9%	2.7%	4.4%	4.3%	3.5%
Stone/Gitti	3.8%	6.9%	8.4%	10.2%	8.2%
Coal	0.0%	0.3%	0.2%	0.2%	0.2%
Construction materials	4.5%	5.6%	6.5%	9.5%	6.9%
Consumer Foods	8.6%	11.1%	10.7%	7.4%	8.7%
Consumer Products	2.4%	1.4%	1.1%	0.9%	1.1%
Container	0.2%	0.5%	0.4%	0.5%	0.4%
Courier & parcel	8.3%	13.5%	11.9%	7.9%	9.5%
Iron & Steel Products	4.0%	4.2%	5.3%	8.1%	6.1%
Machinery	1.9%	1.0%	1.9%	0.8%	1.3%
Milk & Animal Food	4.5%	3.5%	2.6%	2.8%	3.3%
Others	2.9%	4.4%	4.9%	2.6%	3.2%
Paper products	0.2%	0.3%	1.1%	0.3%	0.5%
Petroleum Products	1.4%	2.0%	5.3%	5.3%	3.8%
Pharmaceuticals	2.1%	1.9%	3.3%	0.8%	1.8%
Plastic products	2.6%	3.2%	2.1%	1.9%	2.3%
Plywood & Timber products	2.1%	1.5%	1.2%	2.1%	1.8%
Rubber products	0.0%	0.0%	0.0%	0.0%	0.0%
Textile & Footwear	2.1%	0.5%	0.9%	0.9%	0.9%
Tiles & Ceramic products	0.7%	0.8%	0.2%	1.1%	0.7%
Empty	13.1%	7.8%	7.9%	12.1%	10.7%
Sand	1.2%	1.4%	1.2%	3.1%	2.0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Primary Survey, Crisil Intelligence

- The analysis of freight movement across the toll plazas reveals that the major commodities being transported include Agri produce, Stone/Gitti, Courier and parcels, and consumer foods.
- At TP01, a significant portion of vehicles, specifically 30 percent of two axle trucks, about 29 percent of three axle trucks and around 14 percent of MAV (4-6) trucks are engaged in the transportation of Agri produce and their parts across the toll plazas. Similarly, at TP02, about 24 percent of two axle trucks, about 18 percent of three axle trucks and around 16 percent of MAV (4-6) were found to carrying Agri produce.
- Agricultural regions of northern West Bengal, Assam, and Malda, which includes the tea plantations in Darjeeling, and the large urban consumption hubs such as Kolkata and cities located in the southern states.

Potatoes and onions are the key commodities being transported, with potatoes sourced from Malda and onions from Beldanga, a region renowned for its onion exports, heading towards Behrampore and the southern areas

- In addition, about 14 percent of two axle trucks, around 9 percent of three axle trucks and around 2 percent of MAV (4-6) trucks at TP01 are found to carrying courier and parcels which can be attributed to increasing e commerce demand. However, at TP02, about 14 percent of two axle trucks, around 12 percent of three axle trucks and around 8 percent of MAV (4-6) trucks are found to carrying courier and parcels. Long distance traffic carrying courier and parcels started using NH-116A and hence larger share is observed in TP02 as compared to TP01 on account of Kolkata entry points.
- Moreover, a smaller yet significant share of MAV (4-6) trucks around 8 percent at TP02 are engaged in transporting iron and steel products. This is linked to the presence of an iron and steel manufacturing plant located in the project influencing region. The distribution of these commodities underscores the industrial and commercial linkages between the regions served by project section.
- MAV (4-6) trucks also play critical role in the movement of Stone/Gitti with 43 percent at TP01 and around 10 percent at TP02 transporting stone aggregates located near Nalhati/Murarai crossing TP01 and near Pakur crossing TP02. Traffic diversion at Nalhati prior to Kishorpur Plaza. Most Aggregates operate between Nalhati and Kolkata (Shibpur Plaza).
- Stone aggregate and sand, which are primarily moved from Nalhati, Rampurhat, Pakur, and Sainthia to Kolkata, Siliguri, and Bangladesh. Aggregates are sourced from the Nalhati and Pakura mining areas, as well as villages in the Rampurhat subdivision of Birbhum District. Asansol and Sainthia serve as the main sources of sand, which is extracted from the sand beds on the Hooghly riverbed.

Key directional movement:

- At TP01, Stone/Gitti is a significant commodity in MAVs that predominantly travels in a north to south direction, starting from Nalhati, Rampurhat, Pakur, and Sainthia towards Kolkata and Siliguri. It primarily transports stone and Gitti (aggregates) since Nalhati/Rampurhat serves as a key hub for stone quarries and crushers, supplying stone to the Northeastern states and Bangladesh.
- Agricultural goods and groceries represent another significant commodity that predominantly travels from the north to the south. They are primarily transported in 2A and 3A trucks. These journeys typically occur between the agricultural regions of northern West Bengal, Assam, and Malda, which includes the tea plantations in Darjeeling, and the large urban consumption hubs such as Kolkata and cities in the southern states. Potatoes and onions are the key commodities being transported, with potatoes sourced from Malda and onions from Beldanga,
- Consumer products also contribute to significant share across all vehicle categories at TP02, primarily transported in a north to south direction from Assam and Malda to Kolkata and Arunachal Pradesh, which serve as key consumption centres. The main commodities noted include tea from Farakka and potatoes from Siliguri.

- Approximately 8% of MAV trucks were found to be transporting petroleum and their products at TP02, traveling from south to north towards Assam. The primary supply source is Haldia, which hosts numerous petrochemical industries

Direction wise commodity distribution is presented in the below tables.

Table 3-4: Direction wise commodity distribution- TP01

Date	LCV	2A	3A	MAV	Total	LCV	2A	3A	MAV	Total
	Farakka to Berhampur					Berhampur to Farakka				
Agri Produce	29.3%	33.9%	38.4%	10.1%	20.3%	32.0%	23.4%	23.1%	18.5%	23.3%
Automobiles	3.0%	3.2%	2.6%	0.2%	1.1%	1.8%	3.3%	3.5%	1.4%	2.2%
Chemical products	1.0%	2.1%	1.3%	2.4%	2.0%	2.7%	2.5%	6.3%	3.5%	3.5%
Stone/Gitti	0.0%	0.4%	1.3%	69.6%	42.0%	1.8%	1.7%	3.2%	8.7%	5.1%
Coal	0.0%	0.0%	2.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.1%
Construction materials	7.1%	1.8%	4.0%	0.7%	1.6%	4.1%	5.0%	5.7%	2.9%	3.9%
Consumer Foods	12.1%	4.6%	9.9%	2.5%	4.5%	16.0%	16.7%	13.9%	4.4%	9.9%
Consumer Products	0.0%	1.4%	0.7%	0.0%	0.5%	0.0%	0.0%	0.3%	0.3%	0.2%
Container	0.0%	0.0%	2.6%	0.2%	0.4%	0.0%	0.4%	0.0%	0.0%	0.1%
Courier & parcel	13.1%	11.3%	8.6%	0.1%	4.2%	7.8%	15.9%	8.5%	3.9%	7.4%
Iron & Steel Products	4.0%	1.4%	0.0%	3.1%	2.5%	3.7%	2.1%	3.8%	2.2%	2.8%
Machinery	1.0%	1.8%	0.0%	0.5%	0.8%	0.0%	0.4%	0.3%	0.1%	0.2%
Milk & Animal Food	11.1%	6.4%	2.6%	0.6%	3.4%	5.0%	3.3%	5.4%	5.9%	5.5%
Others	1.0%	0.0%	0.7%	0.3%	0.4%	0.9%	3.8%	1.3%	0.9%	1.5%
Paper products	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	3.8%	1.6%	3.4%	2.7%
Petroleum Products	0.0%	0.0%	0.0%	1.7%	1.0%	1.4%	0.4%	0.9%	2.6%	1.6%
Pharmaceuticals	4.0%	2.8%	1.3%	0.6%	1.3%	4.1%	2.9%	3.2%	2.0%	2.7%
Plastic products	1.0%	1.4%	2.0%	0.6%	1.1%	2.3%	0.4%	0.3%	0.3%	0.7%
Plywood & Timber products	0.0%	1.4%	0.0%	0.2%	0.4%	0.9%	0.4%	0.0%	0.5%	0.5%
Rubber products	0.0%	0.0%	1.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Textile & Footwear	1.0%	2.8%	2.0%	0.3%	1.0%	2.3%	2.9%	2.5%	1.7%	2.0%
Tiles & Ceramic products	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Empty	10.1%	22.6%	17.2%	5.5%	10.5%	11.4%	10.5%	16.1%	36.8%	24.1%
Sand	1.0%	0.7%	1.3%	0.6%	0.7%	0.0%	0.0%	0.0%	0.0%	0.1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Primary Survey, Crisil Intelligence

Table 3-5: Direction wise commodity distribution- TP02

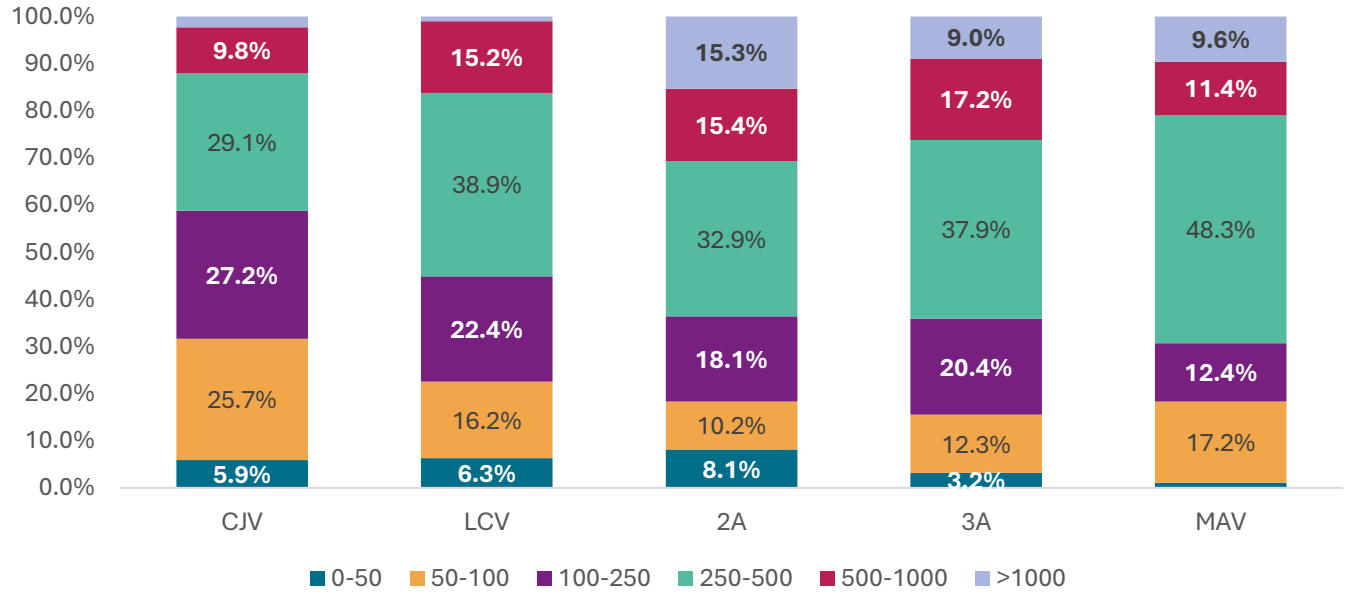
Date	LCV	2A	3A	MAV	Total	LCV	2A	3A	MAV	Total
	Farakka to Berhampur					Berhampur to Farakka				
Agri Produce	28.9%	22.3%	17.4%	18.9%	21.8%	28.4%	25.4%	17.3%	12.5%	21.7%
Automobiles	1.4%	1.0%	0.7%	0.4%	0.6%	3.2%	2.1%	1.8%	1.7%	2.1%
Chemical products	3.5%	3.6%	4.7%	4.9%	4.3%	1.1%	1.7%	4.1%	3.6%	2.6%
Stone/Gitti	9.2%	12.5%	15.1%	14.0%	13.5%	1.1%	1.0%	1.1%	5.9%	2.9%
Coal	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.7%	0.4%	0.3%	0.4%
Construction materials	5.6%	6.2%	9.0%	9.8%	8.1%	4.0%	4.9%	3.7%	9.2%	5.8%
Consumer Foods	12.7%	8.5%	10.7%	7.8%	8.8%	6.5%	13.9%	10.7%	6.9%	8.6%
Consumer Products	1.4%	1.0%	0.3%	0.8%	0.7%	2.9%	1.7%	1.8%	1.1%	1.5%
Container	0.0%	0.3%	0.0%	0.1%	0.1%	0.4%	0.7%	0.7%	0.9%	0.6%
Courier & parcel	7.7%	18.7%	14.4%	10.6%	12.3%	8.6%	8.0%	9.2%	4.8%	6.6%
Iron & Steel Products	0.7%	2.3%	2.7%	4.0%	3.0%	5.8%	6.3%	8.1%	12.9%	9.1%
Machinery	1.4%	0.3%	0.0%	0.4%	0.5%	2.2%	1.7%	4.1%	1.4%	2.1%
Milk & Animal Food	3.5%	4.6%	2.3%	3.6%	3.9%	5.0%	2.4%	3.0%	1.8%	2.8%
Others	4.9%	4.6%	5.4%	2.5%	3.6%	1.8%	4.2%	4.4%	2.7%	2.9%
Paper products	0.7%	0.0%	1.3%	0.5%	0.7%	0.0%	0.7%	0.7%	0.2%	0.3%
Petroleum Products	2.1%	1.0%	4.3%	2.8%	2.6%	1.1%	3.1%	6.3%	8.1%	4.9%
Pharmaceuticals	0.7%	0.3%	2.7%	0.3%	1.2%	2.9%	3.5%	4.1%	1.5%	2.5%
Plastic products	1.4%	1.3%	0.7%	0.9%	1.0%	3.2%	5.2%	3.7%	3.2%	3.6%
Plywood & Timber products	1.4%	1.0%	0.7%	1.9%	1.4%	2.5%	2.1%	1.8%	2.3%	2.1%
Rubber products	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Textile & Footwear	1.4%	0.0%	1.0%	0.9%	0.7%	2.5%	1.0%	0.7%	0.9%	1.1%
Tiles & Ceramic products	0.7%	1.0%	0.3%	1.4%	0.9%	0.7%	0.7%	0.0%	0.8%	0.5%
Empty	9.2%	8.5%	6.0%	11.7%	9.1%	15.1%	7.0%	10.0%	12.6%	12.4%
Sand	1.4%	1.0%	0.3%	1.6%	1.1%	1.1%	1.7%	2.2%	5.0%	2.9%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Primary Survey, Crisil Intelligence

3.2.3 Trip length distribution

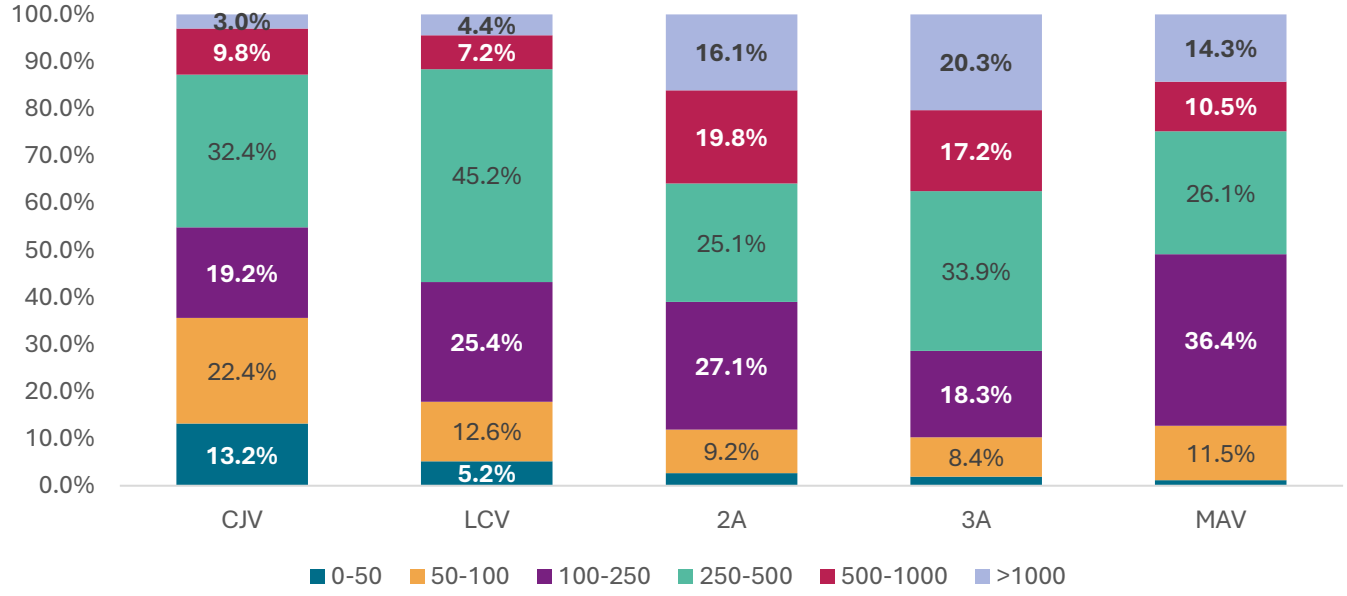
Trip Length Distribution analysis gives distance-based patterns for project road traffic. Trip length is categorized into six trip length groups. Trip length distribution table for different vehicle types is presented below.

Figure 3-2: Trip length distribution-TP01



Source: Primary Survey, Crisil Intelligence

Figure 3-3: Trip length distribution-TP02



Source: Primary Survey, Crisil Intelligence

4 Review of Historical Traffic Overview

4.1 General

This section summarizes the historical performance of the project section in order to understand baseline traffic patterns comprising of historical traffic and revenue growth, traffic and revenue composition, trip distribution, trip factors, seasonality and trend of traffic over the available data set.

The historical tollable traffic and revenue data mode wise was made available by client from April-2017 to Oct 2025 and is presented in below table.

Table 4-1: Historical Traffic and Revenue Data Availability

Toll Plaza	Toll Plaza chainage	Period
TP01	Km 206	April-2017 – Oct-2025
TP02	Km 260	April-2017 – Oct-2025

Source: Client, Crisil Intelligence

The summary of historic traffic data in terms of PCUs is presented below

Table 4-2: Past traffic in PCU

FY	TP01	TP02
2018	16,312	22,177
2019	17,216	18,785
2020	19,935	22,150
2021	19,317	22,035
2022	22,666	23,941
2023	26,590	27,198
2024	28,414	30,257
2025	27,647	28,829

Source: Client, Crisil Intelligence

Traffic in terms of PCUs at TP01 and TP02 has grown at 6.9 percent and 11.2 percent respectively during the period FY24 vs FY23.The asset specially in CJV and LCV has demonstrated robust growth particularly following the pandemic. This growth is fuelled by enhanced reporting efficiencies, which are bolstered by the expansion of local urban economies. However, FY25 has shown a downward trend on account of other network improvements and sand and stone movement restriction which are detailed out in following sections.

4.2 Historical traffic and composition

Overall traffic growth in terms of PCU for the period FY25 vs FY18 is about 7.8 percent. However external factors mentioned below had impacted mode wise and overall traffic while comparing year on year.

- Covid-19 pandemic for three different waves has significantly impacted traffic across India and on to the project section. First wave (March-April-2020), Second wave (September-Nover-2020) and Third wave during (January-Feburary-2021)
- Post three strong waves of covid-19 i.e. from FY21 onwards traffic specially in cars has seen significant growth across all India across all toll plaza owing to increased use of private mode of transport
- Post ETC/Fastag implementation; LCV and 2A corrections have also been observed across the project corridor which is in line with benchmark across the country
- Growth rate of LCV traffic is subdued at toll plaza owing to conversion of LCV to higher load carrying capacity vehicles from 4-wheel LCV to 6 -wheel LCV made which categorized based on its GVW to 2-axle category
- Also, shift of vehicles from Three axle trucks to higher category vehicles such as 5-axle and 6-axle trucks observed across the country and at the project section for its economic advantage. It is worth noting that within MAV category 5 Axle trucks are gaining importance as compared to 4 axle trucks.
- In case of 3A and MAV following events have impacted the growth trends across the assets (both the toll plazas) and are listed below
    - June-2018: Network improvement and completion of Malda Bypass
    - Feb-2019: Sandeshkhali agitation
    - November-2019: Cyclone “Bulbul”
    - November-2021 onwards: Temporary suspension of quarrying operations in the Panchami crushing zone, with quarries relocated to Nalhati and Rampurhat after the granting of new quarry leases.
    - August-2021: Strict overloading norms from West Bengal government
    - June-2023: Cyclone “Biparjoy”
    - Feburary-2023: NGT direction to authorities for illegal stone quarrying in Birbhum
    - November-2024 onwards: TP01 started observing decline in traffic on account of diversion to NH-116A on account of restriction in Kolkata entry during the daytime.

The above-mentioned events and network improvements has led to diverse growth trends for the period between FY18 to FY25

The mode wise historical traffic for TP01 is presented below

Table 4-3: Historical mode wise traffic-TP01

FY Year	Car	LCV	Bus/2A	3A	MAV	PCU
2018	2,493	807	1,298	1,806	732	16,312
2019	2,597	780	1,143	1,487	1,235	17,216
2020	2,985	959	1,322	1,227	1,747	19,935
2021	3,574	1,056	1,423	982	1,543	19,317
2022	3,992	604	1,285	686	2,634	22,666

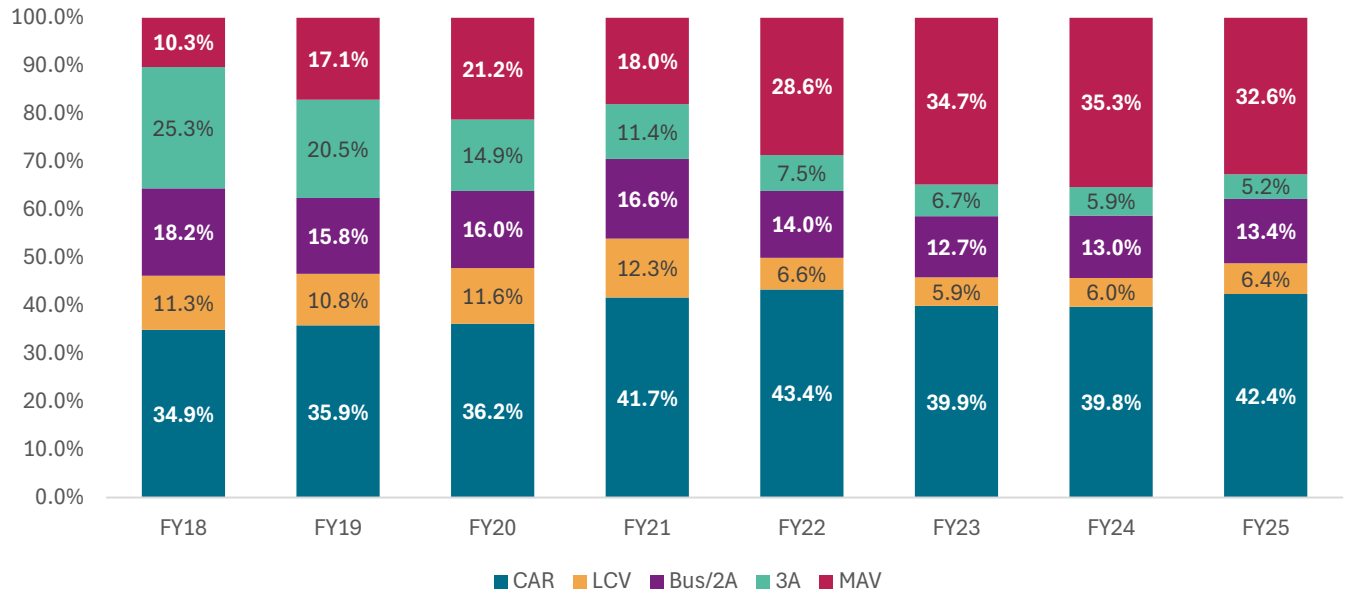
FY Year	Car	LCV	Bus/2A	3A	MAV	PCU
2023	4,032	600	1,286	673	3,507	26,590
2024	4,277	643	1,401	638	3,790	28,414
2025	4,609	693	1,460	560	3,542	27,647
YoY Growth						
FY19 vs FY18	4.2%	-3.4%	-11.9%	-17.7%	68.7%	5.5%
FY20 vs FY19	15.0%	23.0%	15.6%	-17.5%	41.5%	15.8%
FY21 vs FY20	19.7%	10.1%	7.7%	-20.0%	-11.7%	-3.1%
FY22 vs FY21	11.7%	-42.8%	-9.7%	-30.1%	70.7%	17.3%
FY23 vs FY22	1.0%	-0.7%	0.1%	-2.0%	33.1%	17.3%
FY24 vs FY23	6.1%	7.1%	8.9%	-5.1%	8.1%	6.9%
FY25 vs FY24	7.8%	7.8%	4.2%	-12.2%	-6.6%	-2.7%

Source: Client, Crisil Intelligence

Traffic composition:

CJV traffic accounts to about 43 percent of the total traffic, followed by MAV which accounts to 33 percent in FY25.

Figure 4-1: Tollable Traffic composition shares at TP01



Source: Client, Crisil Intelligence

The mode wise historical traffic for TP02 is presented below

Table 4-4: Historical mode wise traffic-TP02

FY Year	Car	LCV	Bus/2A	3A	MAV	PCU
2018	3,254	891	1,226	1,309	2,218	22,177
2019	3,389	858	1,159	824	1,813	18,785

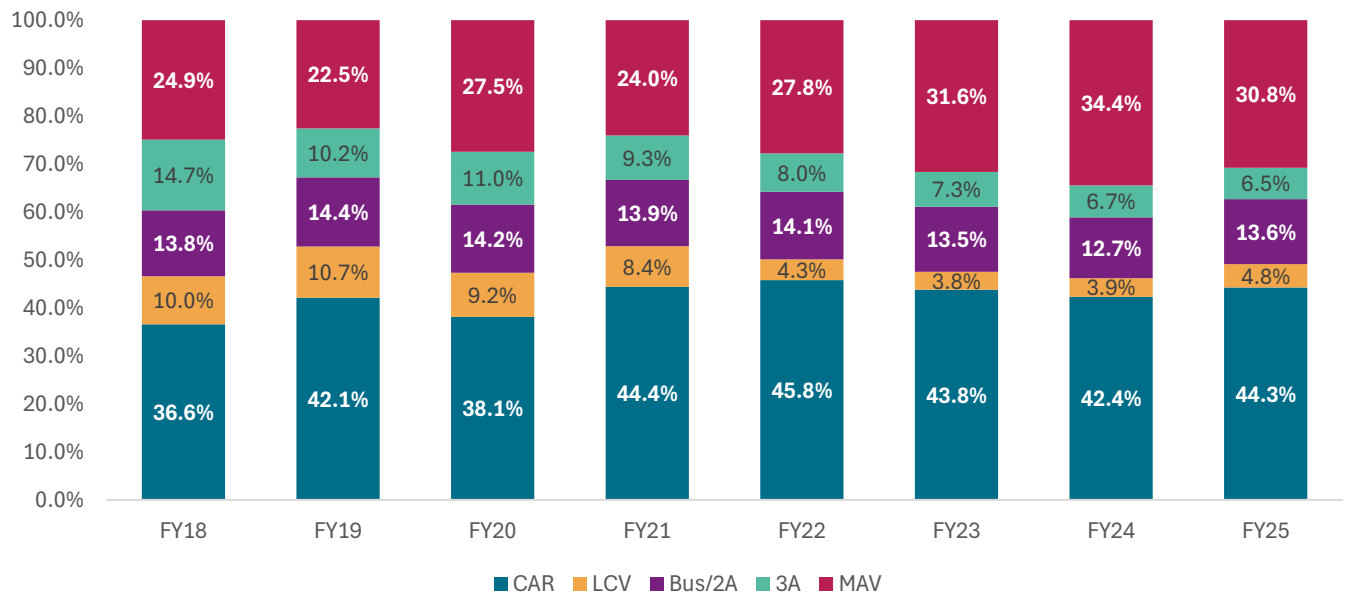
FY Year	Car	LCV	Bus/2A	3A	MAV	PCU
2020	3,361	813	1,253	971	2,421	22,150
2021	4,171	794	1,302	870	2,255	22,035
2022	4,503	427	1,383	789	2,729	23,941
2023	4,681	406	1,446	779	3,381	27,198
2024	4,907	446	1,469	772	3,990	30,257
2025	5,100	556	1,563	754	3,543	28,829
YoY Growth						
FY19 vs FY18	4.1%	-3.6%	-5.5%	-37.0%	-18.3%	-15.3%
FY20 vs FY19	-0.8%	-5.3%	8.1%	17.9%	33.5%	17.9%
FY21 vs FY20	24.1%	-2.3%	4.0%	-10.4%	-6.8%	-0.5%
FY22 vs FY21	8.0%	-46.2%	6.2%	-9.3%	21.0%	8.7%
FY23 vs FY22	3.9%	-4.9%	4.6%	-1.3%	23.9%	13.6%
FY24 vs FY23	4.8%	9.9%	1.6%	-1.0%	18.0%	11.2%
FY25 vs FY24	3.9%	24.7%	6.4%	-2.3%	-11.2%	-4.7%

Source: Client, Crisil Intelligence

Traffic composition:

CJV traffic accounts to about 39 percent of the total traffic, followed by MAV which accounts to 54 percent in FY25.

Figure 4-2: Tollable Traffic composition shares at TP02



Source: Client, Crisil Intelligence

4.3 Traffic segmentation in %

Mode wise traffic ticket segmentation in % for FY26 as provided by client is presented below

Table 4-5: Traffic segmentation in %

Mode	Single journey	Return journey	Monthly Pass	Local Pass	Annual Pass (*)	Exempt
TP01						
Car	23.4%	53.8%	0.1%	5.0%	8.7%	9.0%
LCV	30.5%	49.7%	19.0%	0.0%		0.8%
Bus	16.7%	73.0%	9.4%	0.0%		1.0%
2A	69.1%	29.6%	0.0%	0.0%		1.3%
3A	83.1%	16.8%	0.0%	0.0%		0.1%
MAV	35.7%	64.2%	0.0%	0.0%		0.1%
OSV	100.0%	0.0%	0.0%	0.0%		0.0%
TP02						
Car	20.6%	53.1%	0.0%	8.3%	7.7%	10.2%
LCV	39.1%	58.5%	1.1%	0.0%		1.3%
Bus	19.7%	79.3%	0.0%	0.0%		1.0%
2A	72.4%	26.1%	0.1%	0.0%		1.4%
3A	79.1%	20.3%	0.2%	0.0%		0.4%
MAV	65.9%	33.7%	0.3%	0.0%		0.1%
OSV	100.0%	0.0%	0.0%	0.0%		0.0%

Source: Client, Crisil Intelligence

5 Base Traffic Estimation

5.1 Seasonality Factors

Traffic volumes on roads varies throughout the year, influenced by socio-economic activities in the surrounding regions. To accurately estimate the Annual Average Daily Traffic (AADT) for the road, it is crucial to account for these seasonal variations.

To achieve this, a seasonal correction factor is applied, which is derived from secondary data sources such as historical traffic data, fuel sales and similar indicators. In this assessment as long historic traffic data is available, consultants have the traffic data for seasonality

Seasonal correction Factors (SCF)

Seasonal correction factors for the latest years of FY23, FY 24 & FY 25 are tabulated below.

Table 5-1: Seasonal correction factors for FY 23, FY 24 and FY 25- TP01

TP	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
FY23												
Car	0.98	0.90	0.91	1.05	1.10	1.03	1.06	1.06	1.00	0.98	1.00	0.97
LCV	1.03	1.03	0.87	1.00	1.16	1.07	1.09	0.90	1.00	0.99	1.01	0.92
2A/Bus	0.94	1.00	1.02	1.10	1.15	0.97	1.13	0.92	0.94	1.01	0.97	0.90
3A	0.87	1.13	1.03	1.11	0.72	1.05	1.28	1.03	1.02	1.06	0.98	0.95
MAV	0.85	1.02	0.97	1.06	1.46	1.23	1.27	0.93	0.90	1.00	0.88	0.79
FY24												
Car	1.06	0.89	0.95	1.04	1.08	1.09	1.02	1.01	0.95	0.98	1.02	0.95
LCV	1.05	0.89	0.98	1.16	1.13	1.03	1.08	0.93	0.96	1.08	0.97	0.84
2A/Bus	1.02	0.91	0.97	1.07	1.11	1.08	1.08	1.02	0.97	1.02	0.93	0.89
3A	0.95	0.92	1.00	1.09	1.07	1.02	1.11	1.03	0.95	1.05	0.94	0.91
MAV	0.93	1.03	0.99	1.30	1.27	1.28	1.49	0.92	0.85	0.86	0.80	0.79
FY25												
Car	1.03	1.03	0.89	0.99	1.10	1.08	1.03	1.03	0.95	0.96	0.99	0.96
LCV	0.94	1.02	0.91	0.93	1.07	1.07	1.14	1.03	1.06	1.05	0.97	0.87
2A/Bus	0.96	1.00	0.94	0.99	1.06	1.02	1.16	1.04	1.01	0.99	0.94	0.91
3A	0.85	0.84	0.92	0.97	0.95	0.90	1.34	1.18	1.13	1.11	1.03	0.99
MAV	0.88	0.89	0.93	1.02	1.28	1.14	1.56	1.05	0.97	0.93	0.83	0.87

Source: Client TMS Data, Crisil Intelligence

Table 5-2: Seasonal correction factors for FY 23, FY 24 and FY 25- TP02

TP	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
FY23												
Car	1.03	0.89	0.85	1.04	1.08	1.06	1.08	1.05	1.00	0.98	1.02	0.97
LCV	0.93	0.94	0.91	1.04	1.08	1.07	1.19	1.01	1.00	1.01	0.99	0.89
2A/Bus	0.94	0.95	0.99	1.06	1.06	0.96	1.12	0.98	1.02	1.04	0.98	0.93
3A	0.89	1.02	1.04	1.11	1.02	0.97	1.14	1.00	1.00	1.03	0.94	0.90
MAV	1.01	1.16	1.00	1.12	0.93	1.01	1.19	1.00	0.98	1.02	0.92	0.79
FY24												
Car	1.03	0.87	0.90	0.98	1.07	1.12	1.07	1.05	0.98	1.00	1.04	0.96
LCV	1.10	0.89	0.99	1.08	1.11	1.08	1.08	1.00	0.97	1.04	0.98	0.79
2A/Bus	0.98	0.90	0.96	1.06	1.08	1.07	1.07	1.04	0.99	1.02	0.98	0.89
3A	0.94	0.94	0.97	1.04	1.05	1.03	1.11	1.04	0.98	1.05	0.99	0.89
MAV	0.99	0.92	0.97	1.15	1.09	1.00	1.21	0.98	0.96	0.93	0.98	0.91
FY25												
Car	0.98	1.00	0.84	0.95	1.10	1.13	1.06	1.04	0.98	1.00	1.01	0.98
LCV	0.94	0.98	0.87	0.93	1.13	1.17	1.17	1.04	0.98	1.05	0.97	0.88
2A/Bus	0.95	1.01	0.95	1.01	1.08	1.05	1.07	1.03	0.99	0.99	0.96	0.92
3A	0.90	0.92	1.03	1.05	1.04	1.03	1.09	1.04	0.99	1.01	0.97	0.95
MAV	0.92	0.90	0.96	1.09	1.15	1.12	1.20	1.08	0.96	0.99	0.88	0.87

Source: Client TMS Data, Crisil Intelligence

5.2 Base Traffic Estimation

For base traffic estimation for the present study, the 7-months (Apr-25-Oct-25) of traffic data for all the two toll plazas were annualized using SCF factor of 7-12 months were derived from the year FY23, FY24 &FY25 for estimating FY26 AADT.

The AADT estimation for the base case for FY26 is presented below

Table 5-3: Base traffic-FY26

TP	Car	LCV	Bus/2A	3A	MAV	PCU
ADT (April-Oct) FY26						
TP01	4,938	778	1,510	512	3,097	26,103
TP02	5,207	622	1,649	698	3,230	27,718
SCF (April-Oct)- Avg of FY23, FY24 & FY25						
TP01	1.01	1.02	1.03	0.99	1.10	
TP02	1.00	1.02	1.01	1.01	1.04	
AADT- FY26						
TP01	4,985	796	1,553	505	3,411	27,704
TP02	5,198	637	1,670	706	3,365	28,429

Source: Client Data, Crisil Intelligence

6 Network developments in the Region

In the case of the project road, there is no short distance alternate routes available that will impact the traffic on the project road. However ongoing and upcoming development that could impact the project road

The details of the development in term of milestone, expected completion date and possible impact to project road traffic is presented in below table.

Table 6-1: Details of Network Development and Possible impact

S. No	Details of Development	Milestone/Completion	Possible Impact
1	**Kharagpur-Morgram Greenfield expressway** This project is part of the Kharagpur-Siliguri Economic Corridor (EC-14) and runs in a north-south direction through West Bengal. The expressway is anticipated to serve as an alternative route.	Based on the information available in the public domain likely completion of the expressway to be FY30. Impact has been considered in a phased manner, 50% in FY30 and 100% from FY31 onwards	**Negative:TP01** Impact considered for two different pairs: **Short Distance:** Trips from Kolkata to Morgram **Long Distance:** Trips from Kharagpur to Morgram
2	**Kharagpur-Morgram -NH116A expansion** Trips from Kolkata to Morgram diversion to project road during the construction period of NH116A	Based on the site reconnaissance and the information available in the public domain the four laning/upgradation for NH-116A will likely to be between FY27-30	**Positive:TP01** Impact years: FY27 to FY30
3	**Sand/Stone mining recovery** As of February 2024, a temporary prohibition on illegal mining in the Birbhum district, implemented by the National Green Tribunal (NGT), has affected construction traffic in the TP2 catchment area, which has a greater impact.	Once the ban is removed, there will be an increase in construction traffic on the asset, resulting in a rise in demand over the upcoming years. Consequently, a recovery in construction traffic is expected from FY27 onwards on a cyclic trend	**Positive:TP01 & TP02** Impact years: FY27 onwards on a cyclic trend keeping in mind external factors such lease renewals.

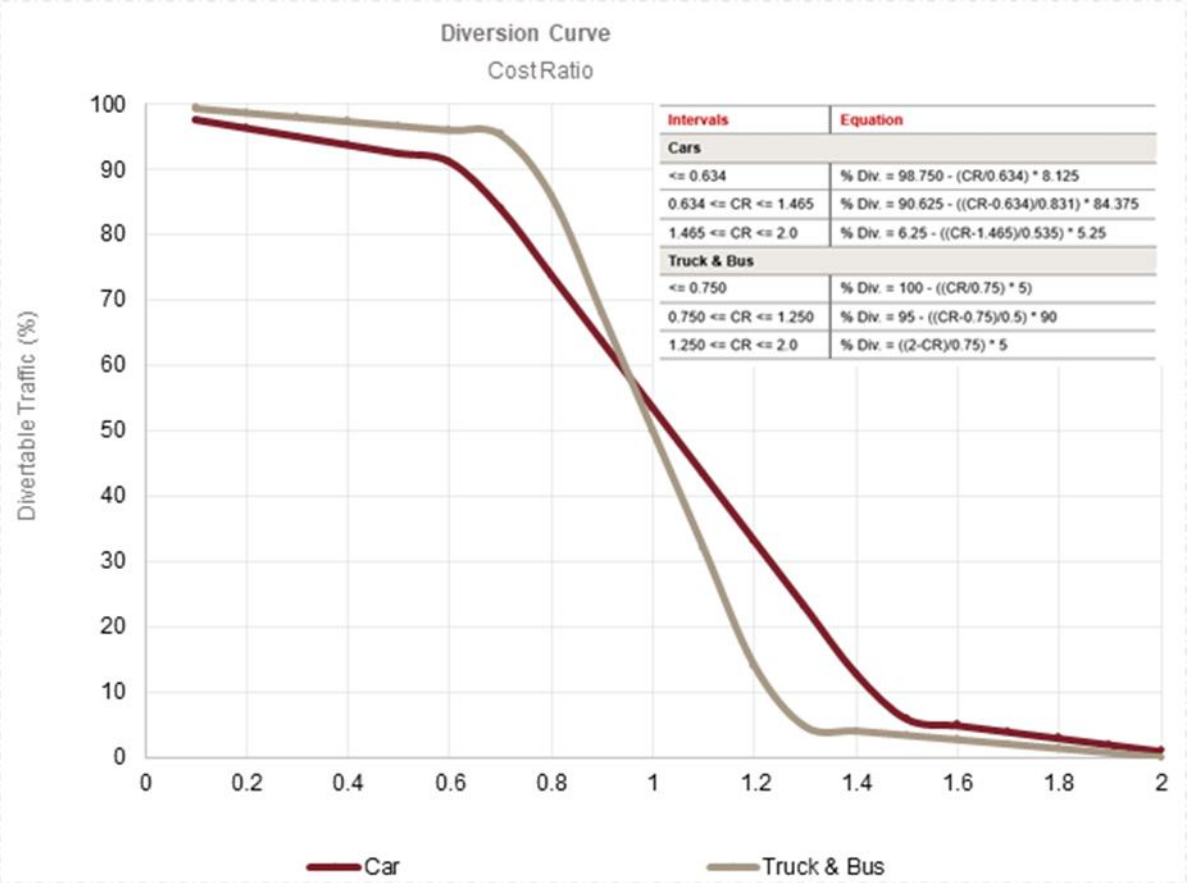
Source: Crisil Intelligence

6.1 Approach and Methodology for Diversion Analysis

The assessment of traffic diversion if any away from the project road has been done using cost ratio analysis. The road user cost is estimated based on the vehicle operating cost (VOC) and Value of time (VOT) as mentioned in IRC: SP30-2019. The generalized cost ({VOC} + t{VOT} + {toll rates}) for the project road and the alternate or proposed route is then compared to obtain a cost ratio. Cost ratio is applied on the diversion curve equations (Binary logit model) to estimate the expected percentage of traffic diverting, based on users perceived costs on the existing and alternate or proposed facility. The diversion percentages are then applied on the in-scope traffic derived from the OD

analysis to estimate the traffic that would shift to/from the project road. Diversion curve (equation) mentioned in IRC:108-2015 and is presented below

Figure 6-1: Diversion curve as per IRC:108-2015



Source: IRC 108-2015, Crisil Intelligence

6.2 Kharagpur-Morgram Greenfield expressway & 4L expansion of NH-116A

The Kharagpur–Morgram Expressway, officially designated as NH 116A, is a proposed greenfield expressway that will constitute the southern section of the extensive 516 km Kharagpur–Siliguri Economic Corridor in West Bengal.

Stretching roughly 231 km, this four-lane, access-controlled greenfield expressway is designed to significantly cut down travel time and logistics expenses between Kharagpur and Morgram, thereby enhancing connectivity for both freight and passenger traffic in the area.

Key feature of the alternate route:

- The expressway starts near Kharagpur on NH-16 and stretches to Morgram, where it intersects with NH-34 and NH-60, traversing through Chandrakona, Jayrambati, Burdwan, Guskara, and Morgram.
- Once operational, the distance from Kharagpur to Morgram will be reduced by 135 km, leading to a decrease in travel time and making this route more appealing for traffic traveling between Kharagpur/South and Morgram/North.

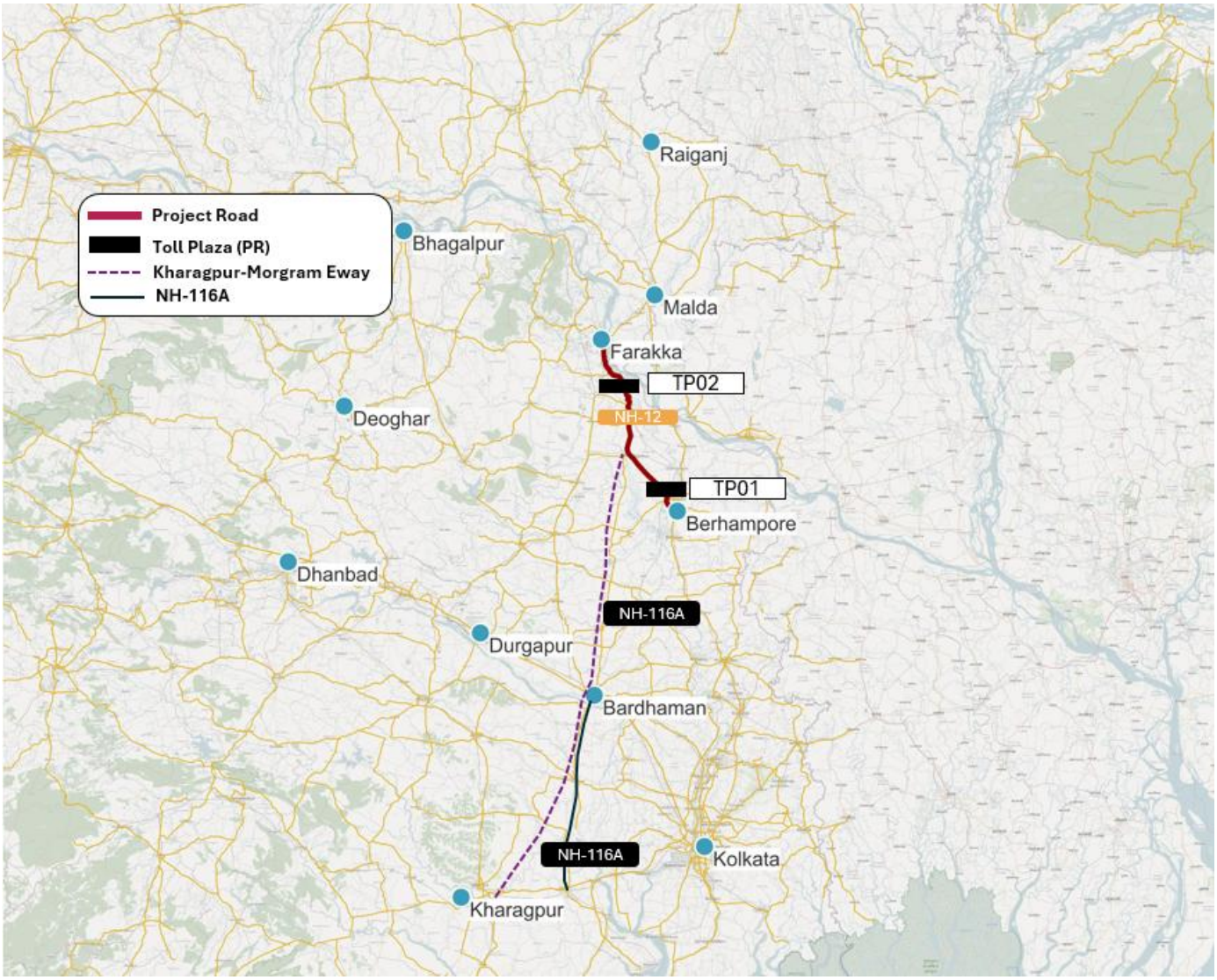
The impact has been estimated for two pair of traffic:

- Kolkata-Morgram (Short Distance): Travel via NH-12 from Kolkata to Bardhhaman, then access the expressway leading from Bardhhaman to Morgram. Distance via project road is about 232 Km as against 240 Km via alternate route.

- Kharagpur-Morgram (Long Distance): Traffic originating from Kharagpur and the southern regions (Odisha, South India, etc.) heading towards northeastern India and eastern Bihar. Distance via project road is about 363 Km as against 230 Km via alternate route.

The alignment of the expressway and the project section is presented below

Figure 6-2: Kharagpur-Morgram Expressway & NH-116A upgradation



Source: Crisil Intelligence

The estimation for the traffic to diver to the alternat route has been considered basis cost-based analysis. The assessment of diversion from the project road is presented below

Particulars	CJV	LCV	2A	3A	MAV
Trips to/from Kolkata from/to Morgram (Short Distance)					
In scope Traffic	3.6%	10.9%	11.6%	14.9%	3.9%
GJC-PR	4,928	8,365	11,841	12,066	17,697
GJC-AR	5,101	9,399	12,327	11,925	15,116
Cost-Ratio	1.04	1.12	1.04	0.99	0.85
Diverted Traffic	**1.8%**	**3.1%**	**4.9%**	**7.8%**	**3.0%**
Trips to/from Kharagpur from/to Morgram (Long distance)					
In scope Traffic	-	-	3.8%	5.9%	1.2%
GJC-PR	-	-	17,448	17,448	26,007
GJC-AR	-	-	18,175	17,987	26,674
Diverted Traffic	-	-	**1.6%**	**3.1%**	**0.9%**

Source: Crisil Intelligence

Conclusion

The operation of Kharagpur-Morgram expressway may result in a loss at TP01.The diverted traffic to the Kharagpur-Morgram expressway has been grown appropriately till FY30 and considered from FY30 in a base case at TP01 in a phased manner-50 percent in FY30, and 100 percent in FY31 onwards.

In addition, the historical analysis reveals that there has been reduction in traffic in MAV over the past months. Also, as per the information made available from client and while comparison, it was observed that the Kharagpur-Morgram Short Distance pair has experienced a decline across all categories however notable change has been observed in MAV traffic.

In MAVs, the percentage has dropped from 16.3% to 4.7% during the survey period of July-2024 to March 2025 and further declined to 3.9 percent during the recent study This decline includes trips mainly originating to/from Kolkata from/to Siliguri, confirming the adverse diversion at TP01, where long-distance trips are rerouting to NH116A due to stricter daytime restrictions on heavy vehicle movement in Kolkata. It is anticipated that during the four-laning of this section traffic will likely to shift to the project section and will have positive impact to the asset during the period from FY27 to FY30 during the network development of NH-116A.The estimation for the traffic to divert to the project during the upgradation period of NH-116A has been considered basis cost-based analysis keeping into account potential traffic during earlier data and the present data analysis. The estimated traffic from the above-mentioned factor for is MAV is about 6.8 percent and has been considered from FY27-30 period.

6.3 Impact of Sand/Stone mining recovery

As mentioned in the earlier section the main commodity being transported along the project section include stone aggregates and sand, sourced from Nalhati, Rampurhat, Pakur, and Sainthia, mainly directed towards Kolkata, Siliguri, and Bangladesh. The aggregates are extracted from the mining areas of Nalhati and Pakur, as well as villages in the Rampurhat subdivision of Birbhum District. Asansol and Sainthia are the principal sources of sand, which is obtained from the sand beds along the Hooghly riverbed.

Nalhati and Rampurhat have now emerged as significant exporters of aggregates to the eastern region of India. The Sainthia and Madna sand block is a dry riverbed sand mining zone located in the Birbhum district, close to project section. It supports local construction activities as well as those in Bangladesh. The robust road connectivity via NH12 makes it a vital economic cluster.

In 2021, the West Bengal government implemented a Quarrying permit and Sand mining Policy aimed at reducing illegal mining activities in the region and making efforts to legalize such operations. By 2022, stone quarries and mines in Birbhum that were operating without valid licenses were classified as illegal, resulting in the closure of approximately 300 mines. Following this initiative, many quarry owners transitioned their operations to the nearby Nalhati and Rampurhat areas from the Panchami block, establishing them as major activity clusters.

Since February 2024, a temporary prohibition on illegal mining in the Birbhum district, enforced by the National Green Tribunal (NGT), has affected construction traffic in both the toll plazas. This prohibition has resulted in a downward trend in heavy vehicle categories (MAV) associated with stone/sand traffic. However, it is anticipated that this ban is temporary and will likely be lifted. The similar trend was noticed in other commodity-driven assets where temporary bans, due to environmental regulations, are enacted, facilitating the replacement of mines. Consequently, once the ban is lifted, construction traffic on the asset will rise, resulting in a recovery in demand. To assess the impact of the recovery the share of stone/sand/Gitti has been compared with the earlier data provided with the client and recent conducted by crisil. The quantum of traffic estimated while assessing earlier commodity share and the present it was estimated that about 3.7 percent of MAV and about 8.8 percent at TP02 will have a recovery on the sand/stone mining/construction activity around the project section.

Also, it is to be noted that, the commodity sector is inherently high-risk and subject to uncertainties, which may result in similar fluctuations in the future hence the impact is considered in cyclic trend over the projected period and has been considered from FY27 onwards.

7 Traffic Growth Estimation & Traffic Forecast

7.1 Approach for traffic growth rates estimation

Crisil, based on its coverage of 80+ sectors and the MSME industry, has developed a knowledge base to understand the growth of industries and demand across various regions and clusters. The growth expectations for various industries are applied to each vehicle category based on the commodity composition of the vehicle category. For example, the share of light commercial vehicles (LCVs) carrying agricultural commodities is expected to grow as per agricultural output growth; the share of LCVs carrying consumer products is expected to grow as per the volume growth of durables; and the share of Multi axle vehicles (MAVs) carrying steel commodities is expected to grow as per demand/supply volume of steel products based on regional dynamics. This approach helps Crisil provide a more accurate growth rate of commercial traffic in the region.

For passenger traffic, Crisil assesses the sale of passenger cars in the region, growth of vehicular population, purpose and frequency of passenger travel, population growth, expansion of the city, and infrastructure development in the catchment area.

Further, Crisil also examines the various factors that will impact traffic over the concession period, such as upcoming alternative road routes, truck aggregation by logistics players, dedicated freight corridors and other transportation options. Thus, the analysis considers the impact of central and state policies, growth in production and consumption centres along the stretch, and infrastructure in the adjoining regions. The report covers both growth drivers and restraints for the traffic along the stretch. Crisil has enumerated and detailed the parameters that will positively/negatively impact the traffic on the stretch in the future.

Crisil has used its proprietary traffic projection methodology to project traffic using regional industry growth assumptions, macroeconomic developments, infra development and consumption centre growth factors of the catchment area and adjacent regions.

Figure 7-1: Commodity based approach: Illustrative example for Commercial vehicles

Commodity	MAV (Vehicles) Year 1	YoY growth	MAV (Vehicles) Year 2
Construction materials	300	9%	327
Consumer products	100	4%	104
Agri Produce	200	3%	206
Iron & Steel products	50	9%	55
Chemical products	200	5%	210
Total vehicles	XX		YY

Commodity	LCV (Vehicles) Year 1	YoY growth	LCV (Vehicles) Year 2
Construction materials	100	9%	109
Consumer products	200	4%	208
Agri Produce	50	3%	52
Iron & Steel products	300	9%	327
Chemical products	200	5%	210
Total vehicles	XX		YY

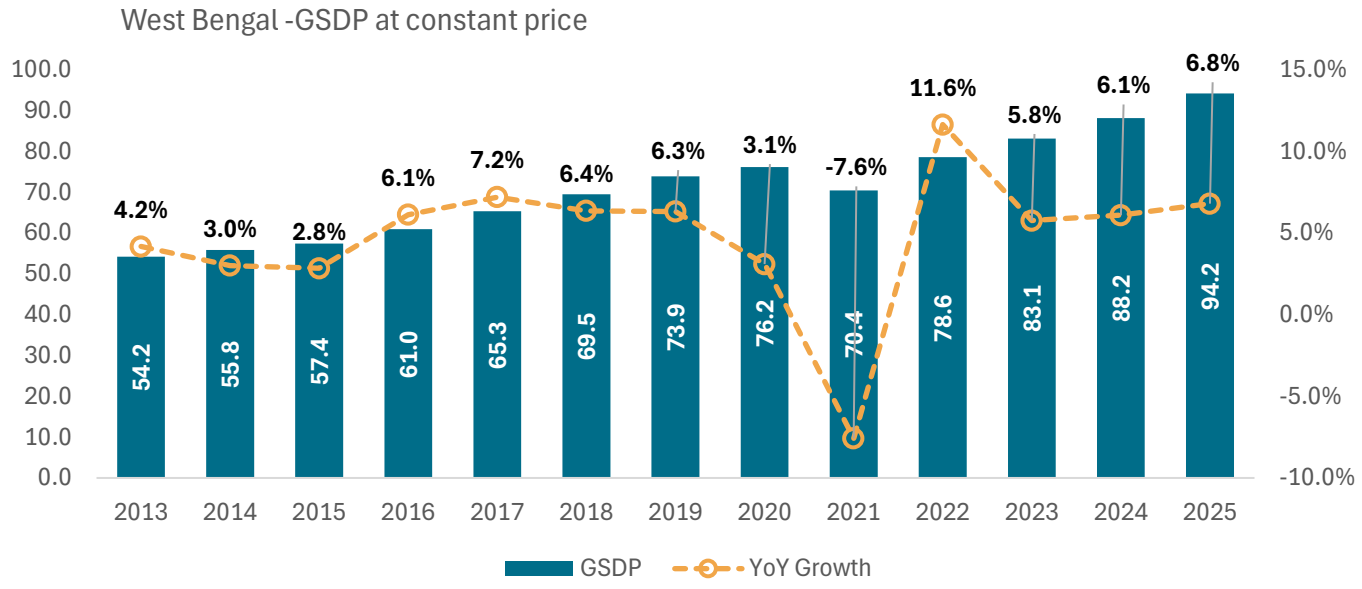
Growth rates for commodities are based on commodity specific demand/supply drivers and regional dynamics

Source: Crisil Intelligence

7.2 West Bengal State profile

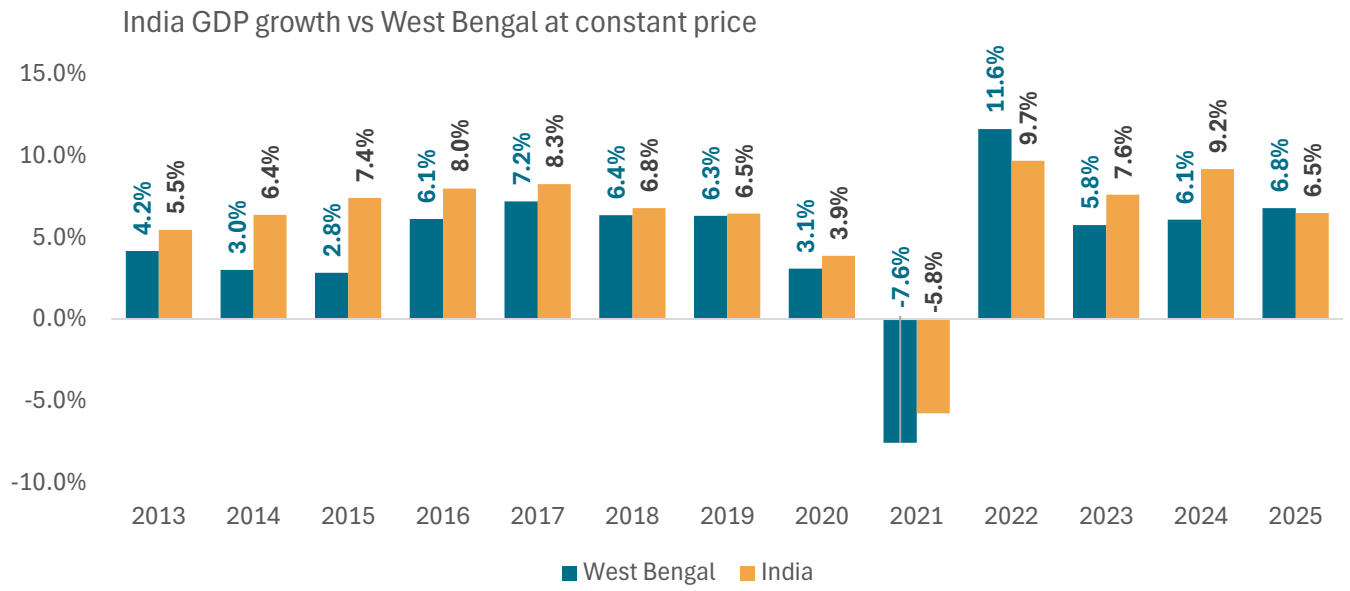
West Bengal is located in the eastern region of India, bordered by Bihar and Jharkhand to the west, Odisha to the southwest, Sikkim and Bhutan to the north, and Assam to the northeast, with the Bay of Bengal along its southern coastline. The state occupies a strategic geographic position, serving as a gateway to Northeast India. Key national highways such as NH-16, NH-19, NH-27, and NH-34 facilitate connectivity between West Bengal and the neighbouring states, supporting both intra-state mobility and long-distance freight movement. Kolkata serves as the primary urban and economic hub, supported by Netaji Subhas Chandra Bose International Airport, which offers a wide range of domestic and international flight services. West Bengal's Gross State Domestic Product (GSDP) for 2024-25 is estimated at approximately ₹ 94,185,372, reflecting steady economic performance with a long-term growth trend supported by robust services and industrial activity. The tertiary sector is the major contributor to the state economy—accounting for over 55 percent—driven by trade, finance, transport, and public services. The secondary sector contributes around 25 percent, supported by manufacturing, metallurgy, petrochemicals, cement, and engineering industries, while the primary sector accounts for the remaining share with agriculture, fisheries, and horticulture being key contributors. The state is rich in natural and industrial resources and hosts significant infrastructure such as the Haldia Port and Syama Prasad Mookerjee Port in Kolkata, which serve as major maritime gateways for eastern and northeastern India. West Bengal also has substantial coal reserves in the Raniganj coalfields and remains one of India's leading producers of tea, contributing significantly to national and global supply chains.

Figure 7-2: West Bengal GSDP



Source: MOSPI, Crisil Intelligence

Figure 7-3: West Bengal GSDP vs India GDP



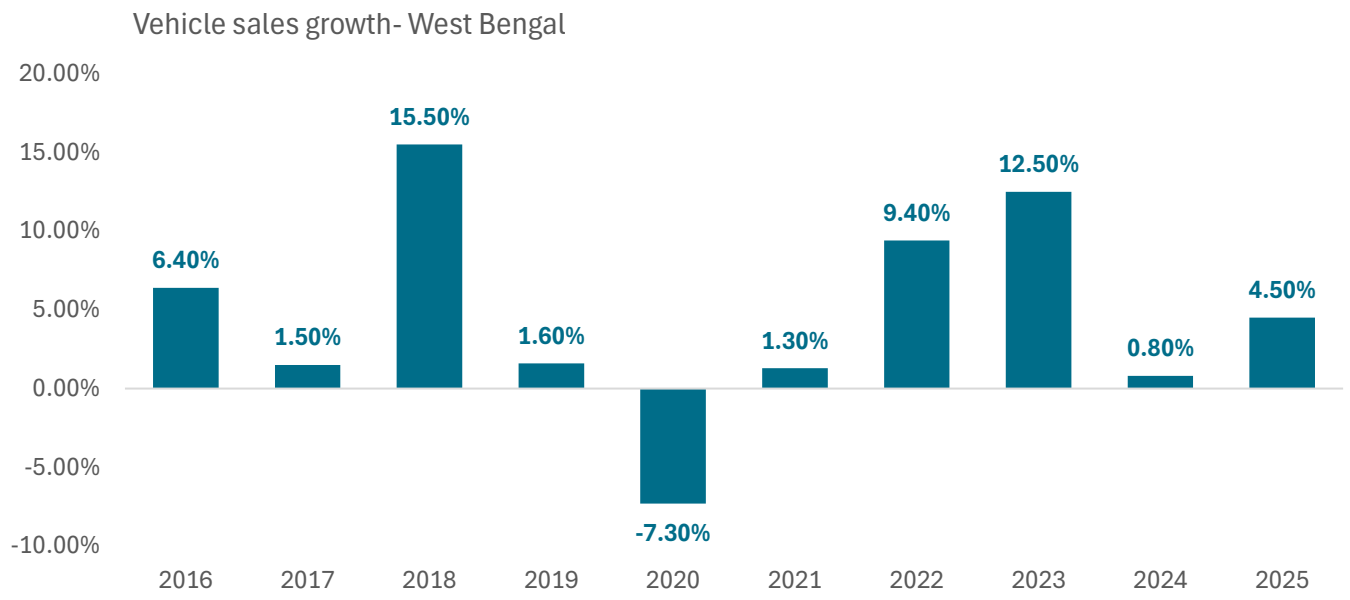
Source: MOSPI, Crisil Intelligence

7.3 Outlook for car growth

The rate of car ownership in India has increased from 6.6 per 1,000 people in 2001 to 25 per 1,000 people in 2019. Despite India's car fleet growing at an annual rate of 10% for nearly 25 years, the rate of car ownership remains low compared to countries with similar economic status and significantly lower than developed countries, which have a rate of around 450 per 1,000 people. This low rate of car ownership indicates potential for continued growth in the coming years. With the ongoing increase in car ownership and improvements in the road network, the use of cars for inter-urban travel is showing a growing trend.

Vehicles sales in West Bengal have grown to about 5 percent for the period FY16 vs FY25 also about 4 percent during the period FY19 vs FY25. The project road CJV traffic have grown to about 10 percent for the period FY25 vs FY19 at TP01 and about 6.5 percent at TP02 for the same period. Higher growth observed at TP01 on account of improvement in network connectivity and closer interaction to Kolkata. The YoY passenger vehicles sales growth is presented below.

Figure 7-4: Vehicle sales growth-West Bengal



Source: SIAM, Crisil Intelligence

7.4 Commodity Overview

As mentioned in section primary data collection & analysis, the analysis of freight movement across the toll plaza reveals that the major commodities being transported include courier and parcels, Agri produce, consumer foods, construction material especially stone/aggregate.

Courier and parcels

Courier/Parcel traffic on the project stretch form a significant proportion of the commercial traffic and is majorly for the purpose of consumption in domestic market in the urban and semi urban regions of Malda, Behrampore, Kolkata, Siliguri and nearby regions of the catchment. Traffic on the project stretch originates majorly from West Bengal. Courier/Parcel traffic is destined for consumption in regions of consumption hubs like Kolkata, Malda, and Northeastern states.

India has been becoming a significant domestic shipment market, with significant companies entering and expanding networks in the market. The industry was flush with early-stage and venture capital funding that led to growing e-commerce penetration in different retail product segments. Apart from primary growth drivers such as increasing internet penetration, higher disposable incomes, and rising urbanisation, factors such as user-friendly interface of portals offered by players, ease of shopping, increasing awareness, relatively higher pricing discounts (in comparison with brick-and-mortar stores), and easy delivery and innovation, have propelled growth. Pandemic has brought about a shift in buying behaviour with more and more people taking the online route.

High domestic consumption of e-commerce goods is expected leading to exports growth. Going forward it is expected that the demand will remain high along with the pick-up in domestic consumption.

Crisil expects a growth of 7.2 from fiscal FY 27-31 considering historical and the above-mentioned factors for courier and parcels related traffic on the project road.

Agri Produce

Agricultural regions of northern West Bengal, Assam, and Malda, which includes the tea plantations in Darjeeling, and the large urban consumption hubs such as Kolkata and cities located in the southern states. Potatoes and onions are the key commodities being transported, with potatoes sourced from Malda and onions from Beldanga, a region renowned for its onion exports, heading towards Behrampore and the southern areas. Agri produce is one of the major goods carried in the project corridor since the districts though which the project corridor passes are largely agrarian in nature.

West Bengal state is known for its varied agro-climatic conditions which, in a way, supports the cultivation of wide range of crops across the year. The state has net cropped area as 52.05 lakh ha. which comprises 68% of geographical area and 92% of arable land. In terms of vegetables production, the top five states as of fiscal 2024 are West Bengal (28.3 MMT), Uttar Pradesh (27.5 MMT), Madhya Pradesh (18.8 MMT), Bihar (16.9 MMT), and Gujarat (12.6 MMT). West Bengal has time and again topped the vegetable production, nationwide, thus proving to be one of the important states as far as Agriculture sector is concerned.

Also, on the other hand, as Bay of Bengal is close by, the state has faced many calamities like cyclones, hailstorms, thus leading to considerable damage to the Agri output. The Indian agriculture sector is highly volatile as it is still dependent on the outcome of the monsoon season.

CRISIL's methodology considers the growth of the Agri produce commodity at the regional level to derive the traffic growth of each vehicle category. Growth in Agri produce is highly volatile as it depends on the positive outcome of the monsoon season. Hence on a long-term period, it grows at a low rate compared to the aggregate GDP. Given the high proportion of Agri produce on the stretch, it's imperative to assess it at a regional and commodity level, compared to a macroeconomic level. This is evident, considering only the macro level growth.

Crisil expects a growth of 2.5 from fiscal FY 27-31 considering historical and the above-mentioned factors for courier and parcels related traffic on the project road.

Consumer foods

Consumer foods also account to about 7-8 percent in the commercial vehicles in the project stretch. This accounts to close proximity of consumption centres such as Malda, Kolkata, Behrampore and Siliguri. The fast-moving consumer goods (FMCG) industry or consumer packaged goods (CPG) industry is mainly responsible for producing, distributing, and marketing fast-moving consumer goods. Fast-moving consumer goods (FMCG) sector is India's fourth-largest sector and has been expanding at a healthy rate over the years because of rising disposable income, a rising youth population, and rising brand awareness among consumers.

Changing food habits and consumption patterns post the pandemic, rising demand for healthy products, increasing appetite for discretionary spends on processed foods and increasing focus on health and sanitation, shift in demand from loose to branded packaging to support growth. Demand is also expected to be supported by new product launches, rising distribution network with players catering to multiple segments.

Crisil expects a growth of a4.1 from fiscal FY 27-31 considering historical and the above-mentioned factors for courier and parcels related traffic on the project road.

Construction materials

Construction Materials especially stone/Gitti is the largest commodity crossing TP01 accounting to about 43 percent and about 10 percent at TP02. These commodities are majorly destined to Kolkata and nearby project influence areas and within the state.

These stone/Gitti are sourced from Nalhati, Rampurhat, Pakur, and Sainthia, mainly directed towards Kolkata, Siliguri, and Bangladesh. The aggregates are extracted from the mining areas of Nalhati and Pakur, as well as villages in the Rampurhat subdivision of Birbhum District. Asansol and Sainthia are the principal sources of sand, which is obtained from the sand beds along the Hooghly riverbed

There are greenfield expressways coming in the vicinity of project stretch, which may add to the construction materials demand going up the coming time. Some of the key expressways that may do so are, Raxaul-Haldia Expressway, Varanasi-Kolkata Expressway and Kharagpur-Morgram Expressway.

In the last five years, the eastern (Odisha, Bihar, and West Bengal) regions exhibited strong demand led by a surge in infrastructure. construction and rural housing. Madhya Pradesh, Uttar Pradesh, West Bengal, Bihar, and Odisha form almost 65% of under construction houses in PMAY Rural.

As seen in the past decade, the Eastern and Central regions are expected to continue to drive construction material demand in India in the medium term on the back of continued government thrust on infra and housing in the region. Healthy rural housing demand in West Bengal as well as a plethora of infrastructure projects and pickup in urban housing will aid the construction material traffic. Key infrastructure projects in the region such as East Coast Corridor Project and other road and highway projects, and the Economic Corridor (Kharagpur-Bardhhaman-Morgram) Project will keep the demand elevated.

In addition, Cement demand is an ideal proxy for construction demand as most infrastructure projects and pucca / concrete housing projects required cement and as cement is used along with sand, aggregates, TMT bars etc. it provides a good indicator for construction material demand. During fiscals 2023-27, the upcoming cement capacity additions in the eastern region amount to ~47-49 million tonnes, 1/3rd of all India capacity addition. Rising income levels and growing preference of rural consumer for ceramic tiles will drive the long-term growth of the construction material traffic on the stretch. Government initiatives such as 100 smart cities, Housing for all by 2022, increase in deduction limit for housing loan, relaxed norms for issuing long term bonds by banks for financing affordable housing will aid growth.

Crisil expects a growth of 7.4 from fiscal FY 27-31 considering historical and the above-mentioned factors for courier and parcels related traffic on the project road.

7.5 Commodity Outlook

Crisil Intelligence has forecasted the freight traffic growth based on the growth in relevant sectors influencing traffic in the region. Industry growth has been analysed and forecasted based on our proprietary database of industries for the surrounding regions that impact traffic on project road as well as our internal assessment on a relevant set of sectors at the pan India level. Package wise forecast incorporates the regional dynamics including, but not limited to, investments, commodity trends, district output (GDDP) profile (primary/secondary, construction/manufacturing) etc. The traffic for the coming years is projected by factoring in the impact of these parameters on commodity wise growth rates and is presented in below table.

Table 7-1: Commodity Outlook for the Project Section

Commodity Type	FY 27-31	FY 31-35	FY 35-39	FY27-41
Agri Produce	2.5%	2.3%	2.2%	2.3%
Automobiles	5.4%	5.1%	5.0%	5.1%
Chemical products	4.0%	3.7%	3.6%	3.7%
Coal	0.9%	0.9%	0.8%	0.9%
Construction materials	7.4%	7.1%	6.9%	7.1%
Consumer Foods	4.1%	4.1%	4.0%	4.0%
Consumer Products	4.1%	3.8%	3.7%	3.8%
Container	4.5%	4.2%	4.1%	4.3%
Courier & parcel	7.2%	6.6%	6.4%	6.7%
Iron & Steel Products	6.2%	5.6%	5.5%	5.7%
Machinery	4.3%	4.1%	3.9%	4.1%
Milk & Animal Food	3.5%	3.3%	3.2%	3.3%
Others	4.5%	4.3%	4.1%	4.3%
Paper products	2.7%	2.6%	2.5%	2.6%
Petroleum Products	3.7%	3.4%	3.3%	3.4%
Pharmaceuticals	3.6%	3.4%	3.3%	3.4%
Plastic products	5.0%	4.7%	4.6%	4.7%
Plywood & Timber products	4.5%	4.3%	4.1%	4.3%
Rubber products	5.4%	5.1%	5.0%	5.1%
Textile & Footwear	4.5%	4.3%	4.1%	4.3%
Tiles & Ceramic products	4.5%	4.3%	4.1%	4.3%

Source: Industry, Crisil Intelligence

7.6 Implied Growth Rate for the Project Section

Mode wise implied growth rates adopted for the project road is presented in the below table.

Table 7-2: Mode wise Traffic projections

Vehicle category	FY 26 -30	FY30-35	FY35-40	FY26-41
TP01				
Car	6.7%	6.3%	6.1%	6.3%
LCV	3.8%	3.5%	3.8%	3.7%
Bus	3.5%	3.3%	3.1%	3.3%
2A	3.7%	3.5%	4.2%	3.8%
3A	0.3%	0.1%	1.3%	0.6%
MAV	5.9%	3.2%	5.1%	5.2%
Total Veh.	**5.6%**	**4.6%**	**5.3%**	**5.3%**
Total PCU	**5.3%**	**3.8%**	**5.0%**	**4.9%**
TP02				
Car	7.0%	6.5%	6.1%	6.5%
LCV	4.6%	4.2%	4.1%	4.3%
Bus	3.5%	3.3%	3.1%	3.3%
2A	4.9%	4.4%	4.4%	4.5%
3A	2.1%	1.6%	1.6%	1.7%
MAV	3.2%	5.1%	5.0%	5.8%
Total Veh.	**5.1%**	**5.4%**	**5.3%**	**5.6%**
Total PCU	**4.1%**	**5.0%**	**4.9%**	**5.4%**

Source: Crisil Intelligence

7.7 Traffic Projections

The total traffic projected in terms of PCUs based on most likely growth rates and after impacts is presented in below table.

Table 7-3: Traffic projections

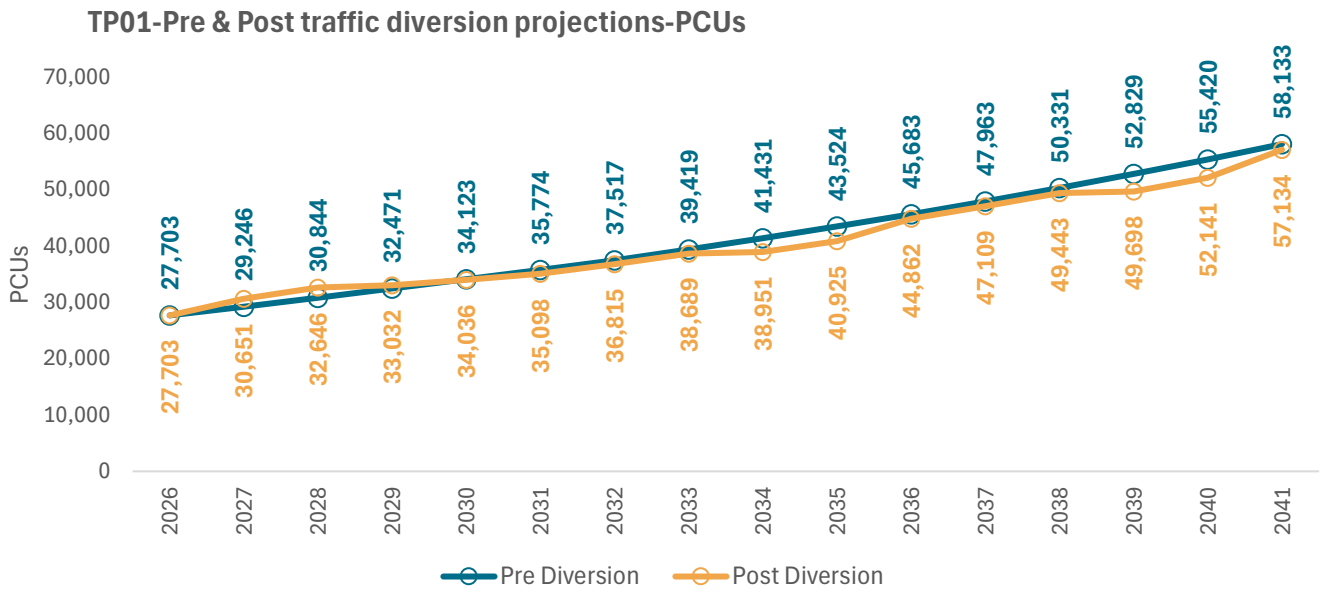
FY	Car	LCV	Bus	2A	3A	MAV	Total Veh	PCU	YoY %
TP01									
2026	4,985	796	370	1,183	505	3,411	11,250	27,703	
2027	5,345	832	384	1,240	515	3,921	12,235	30,651	10.6%
2028	5,724	867	397	1,298	524	4,214	13,025	32,646	6.5%
2029	6,118	903	411	1,356	533	4,146	13,468	33,032	1.2%
2030	6,467	924	425	1,369	511	4,282	13,978	34,036	3.0%

FY	Car	LCV	Bus	2A	3A	MAV	Total Veh	PCU	YoY %
2031	6,818	944	439	1,376	487	4,435	14,499	35,098	3.1%
2032	7,253	979	453	1,433	493	4,657	15,268	36,815	4.9%
2033	7,732	1,017	468	1,494	500	4,899	16,110	38,689	5.1%
2034	8,242	1,057	483	1,558	507	4,773	16,621	38,951	0.7%
2035	8,778	1,098	499	1,624	514	5,019	17,533	40,925	5.1%
2036	9,324	1,141	515	1,693	521	5,698	18,891	44,862	9.6%
2037	9,905	1,185	531	1,764	528	5,991	19,903	47,109	5.0%
2038	10,511	1,230	547	1,838	534	6,295	20,956	49,443	5.0%
2039	11,155	1,277	564	1,915	541	6,125	21,578	49,698	0.5%
2040	11,826	1,326	581	1,995	548	6,434	22,710	52,141	4.9%
2041	12,519	1,377	598	2,078	555	7,301	24,429	57,134	9.6%
TP02									
2026	5,198	637	398	1,272	706	3,365	11,577	28,426	
2027	5,574	667	413	1,337	723	3,723	12,436	30,744	8.2%
2028	5,970	699	427	1,404	738	4,104	13,342	33,193	8.0%
2029	6,380	731	442	1,471	753	3,630	13,407	31,808	-4.2%
2030	6,805	762	457	1,539	766	3,821	14,151	33,430	5.1%
2031	7,240	793	472	1,604	778	4,787	15,674	38,532	15.3%
2032	7,702	826	487	1,673	790	5,027	16,505	40,412	4.9%
2033	8,211	861	503	1,748	803	5,288	17,414	42,463	5.1%
2034	8,753	897	520	1,827	817	4,664	17,478	40,579	-4.4%
2035	9,322	935	537	1,908	831	4,904	18,436	42,620	5.0%
2036	9,902	974	553	1,992	844	6,148	20,413	49,196	15.4%
2037	10,519	1,015	571	2,080	858	6,461	21,503	51,640	5.0%
2038	11,163	1,056	588	2,170	871	6,786	22,634	54,173	4.9%
2039	11,846	1,100	607	2,265	885	5,975	22,677	51,653	-4.7%
2040	12,558	1,145	625	2,362	899	6,272	23,861	54,158	4.8%
2041	13,295	1,191	643	2,464	913	7,856	26,362	62,495	15.4%

Source: Crisil Intelligence

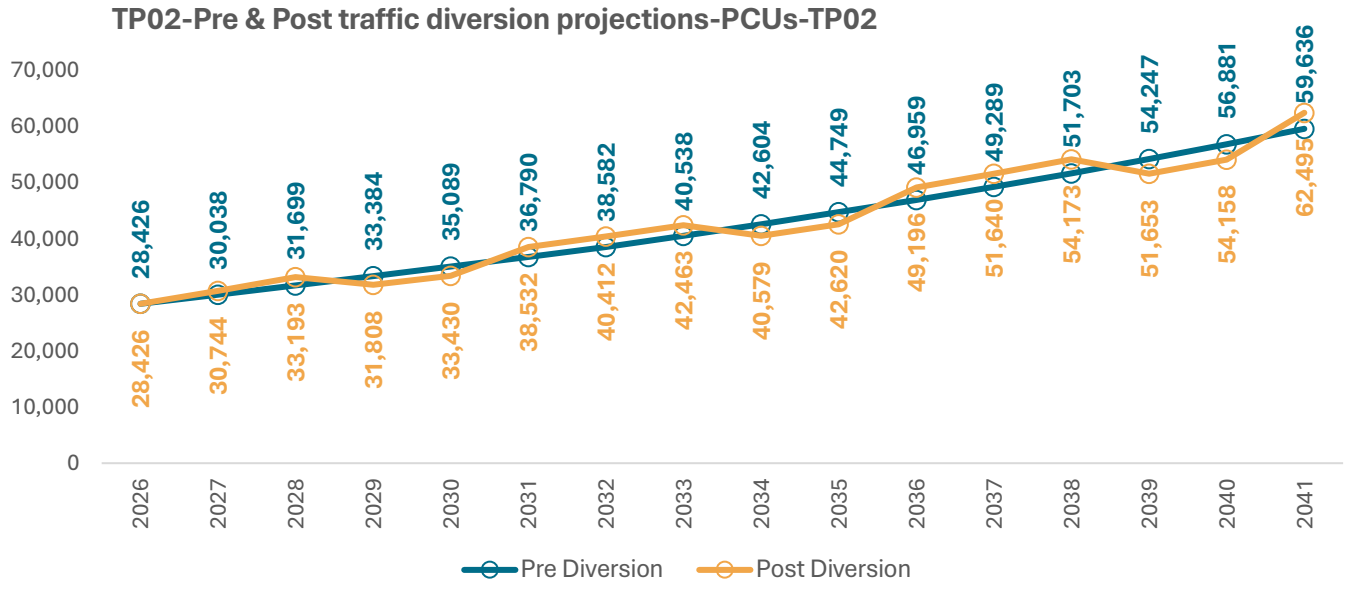
Pre and post traffic projections in terms of PCU is presented below

Figure 7-5: Pre and post traffic diversion projections-PCUs-TP01



Source: Crisil Intelligence

Figure 7-6: Pre and post traffic diversion projections-PCUs-TP02



Source: Crisil Intelligence

The traffic at TP01 and TP02 in terms of PCUs is expected to grow at 4.9 percent and 5.4 percent respectively for the period FY26-41.

8 Revenue forecast

8.1 General

At present the project section is under “open tolling system” which enables the concessionaire to collect tolls from long distance as well as short distance traffic joining the project from adjoining highways.

8.1.1.1 User Fee Schedule

As per Gazette notification dated 05.12.2008, under National Highways Fee (Determination of Rates and Collection) Rules 2008 [GSR 838 (E) and concession agreement the per km toll rates applicable from 2007/08 for normal tolling length and permanent structure, the revision basis and concessions are provided.

Local traffic Car / Jeep / Vans (CJV) - This category includes local users who own a vehicle registered for non-commercial use, living within 20 km of the toll plaza and crossing it for commuting. The reduced fee for these users is a monthly pass priced at Rs. 150.00.

Daily Pass If a vehicle needs to cross the tolled area more than once in a single day, the user can choose to pay one and a half times (1.5 times) the fee for a single entry; this pass is valid for 2 entries within 24 hours of purchase.

Monthly Pass Users who frequently utilize the project road throughout the month may opt to buy a monthly pass by paying a fee equivalent to two-thirds of the cost for 50 single journeys; this pass allows for a maximum of 50 one-way trips during its month of validity

The concessions of traffic have been provided under the categories/ toll tickets as presented in below table.

Table 8-1: Tolling Tickets

Ticket	Maximum number of one-way journeys allowed	Period of validity
Single/Normal	Single	-
Daily Pass	Two	24 hours
Monthly Pass	Fifty	One month from the date of payment
Local Personal	Multiple	One month from the date of payment

8.1.1.2 Toll Segmentation

As mentioned in section historical toll data of FY 25 is used in adopting the segmentation for the project road. The traffic tolling segmentation in (%) adopted for the present study for FY26 onwards is presented in below table.

Table 8-2: Toll segmentation in % - FY26

Mode	Single journey	Return journey	Monthly Pass	Local Pass	Annual Pass (*)	Exempt
TP01						
Car	23.4%	53.8%	0.1%	5.0%	8.7%	9.0%
LCV	30.5%	49.7%	19.0%	0.0%		0.8%
Bus	16.7%	73.0%	9.4%	0.0%		1.0%
2A	69.1%	29.6%	0.0%	0.0%		1.3%
3A	83.1%	16.8%	0.0%	0.0%		0.1%
MAV	35.7%	64.2%	0.0%	0.0%		0.1%
OSV	100.0%	0.0%	0.0%	0.0%		0.0%
TP02						
Car	20.6%	53.1%	0.0%	8.3%	7.7%	10.2%
LCV	39.1%	58.5%	1.1%	0.0%		1.3%
Bus	19.7%	79.3%	0.0%	0.0%		1.0%
2A	72.4%	26.1%	0.1%	0.0%		1.4%
3A	79.1%	20.3%	0.2%	0.0%		0.4%
MAV	65.9%	33.7%	0.3%	0.0%		0.1%
OSV	100.0%	0.0%	0.0%	0.0%		0.0%

Source: Historical toll data, Crisil Intelligence,
Note: Annual pass: Data for September & October 2025

The normal toll paying traffic for Cars is about 23 percent at TP01, and about 20.6 percent at TP02 respectively. In case of MAV vehicle normal toll paying is about 36 percent at TP01 and about 66 percent at TP02 respectively.

As per recent announcements, the annual Pass activated on the Fastag will allow free passage of private car/jeep/van at designated National Highway (NH) and National Expressway (NE) fee plazas for one year or 200 trips (whichever is earlier), without per-trip user fee charges. The Annual Pass is applicable only for private non-commercial Car/Jeep/Van after checking through VAHAN database.

To assess the impact of the annual pass, frequency of travel, and number of trips, were made available from client from September 2025 to October 2025. For estimating the annual pass revenue, the plaza constant factor has also been provided by client for both the toll plaza. Details for estimating the annual pass revenue is presented below

Table 8-3: Annual pass- Trips & Plaza constant factor

TP	% Trips	% Trips <2 trips	Plaza constant factor
TP01	8.7%	98.2%	0.83
TP02	7.7%	97.9%	0.81

Source: Historical toll data, Client input, Crisil Intelligence

8.1.1.3 Trip Rates

The trip rates for CJV are adopted based on the FY 26 historic traffic data and trip rates for the present study for FY26 onwards is presented in below table. It may be noted that for other vehicles trip rates of 1.0 is adopted as per schedule of user fee.

Table 8-4: Trip rates for CJV

Mode	Single journey	Return journey	Monthly Pass	Local Pass	Annual Pass
TP01	1.00	2	50	21.86	200
TP02	1.00	2	50	21.91	200

Source: Historical toll data, Crisil Intelligence

8.1.1.4 Tolling lengths

The tolling lengths for the project section as per concession agreement is presented below

Table 8-5: Tolling Lengths for the project section

Toll Plaza	Chainage	Tolling Length
TP01	Km 206	39.63
TP02	Km 260	50.17

Source: Concession Agreement, Crisil Intelligence

8.1.1.5 Toll Rates Estimation

The toll rates that are likely to be applicable on the project section during the project study are in accordance with the National Highways Fee (Determination of Rates and Collection) Rules 2008 [GSR 838 (E),2008 and article 27 of the concession agreement.

The toll rates (Rs/km) for the base year 2007-08 for different vehicle categories are as per fee rule/concession agreement mentioned above and are presented below

Table 8-6: Base Rate in Rs/km

Mode	Car	LCV	2A/Bus	3A	MAV	OSV
Rs/km	0.65	1.05	2.20	3.45	3.45	4.20

Source: Concession agreement, Schedule of user fee

As per the concession agreement structure cost of 150.160 will be applicable at TP01. Thus, the user fee for use of permanent bridge, bypass or tunnel will be applicable considering base year 2007-08 and is presented below

Table 8-7: Base Rate for structure cost more than 50 crores

Cost of permanent bridge, bypass or tunnel (In cr)	Car	LCV	2A/Bus	3A/MAV	OSV
10-15	5.0	7.50	15.0	22.0	30.0
Every 5 cr; 15-100 cr	1.0	1.5	3.0	4.5	6.0
Every 5 cr; 100-200 cr	0.75	1.15	2.25	3.4	4.5
Every 5 cr; >200 cr	0.5	0.75	1.50	2.25	3.0

Source: Concession agreement, Schedule of user fee

In addition, overloaded vehicles are plying on the project road, and overloading revenue has been collected at both the plaza in accordance with gazette notification dated 25th September 2018, G.S.R. 920(E).

The driver or owner or person in charge of a mechanical vehicle shall be liable to pay fee, for entering the overloaded vehicle on the national highway, to the user fee collecting agency, equal to fees as follows

Table 8-8: User fee for overloaded vehicles

Percentage of excess load over Maximum Permissible Gross Vehicular Weight	Multiplying factor to base rate of fees	Fees
0% to 20%	2	[(Fees applicable for such category of mechanical vehicle under sub-rule of rule 4) X (Multiplying factor)]
>20% to 40%	4	
>40% to 60%	6	
>60% to 80%	8	
>80% and above	10	

Source: G.S.R. 920(E).

The overloaded vehicles plying on the project section is provided by client as part of the assignment and the overloading share has been estimated from FY26 (April-Oct) data and is presented below

Table 8-9: Overloading Share %

Particulars	CJV	LCV	2A/Bus	3A	MAV
TP01					
% Overload	0.5%	1.4%	3.6%	0.2%	0.4%
Overload slabs					
0% to 20%	66.6%	73.8%	73.1%	91.4%	91.6%
>20% to 40%	21.2%	20.4%	24.0%	7.5%	8.0%
>40% to 60%	8.6%	5.1%	2.8%	1.1%	0.4%
>60% to 80%	1.9%	0.7%	0.1%	0.0%	0.0%
>80% and above	1.7%	0.0%	0.0%	0.0%	0.0%
TP02					
% Overload	0.5%	1.4%	3.9%	0.2%	1.5%

Particulars	CJV	LCV	2A/Bus	3A	MAV
Overload slabs					
0% to 20%	68.1%	74.1%	69.1%	88.5%	33.0%
>20% to 40%	16.9%	20.1%	27.6%	10.3%	50.7%
>40% to 60%	11.9%	5.4%	3.3%	0.8%	6.8%
>60% to 80%	1.8%	0.2%	0.1%	0.3%	8.2%
>80% and above	1.3%	0.2%	0.0%	0.0%	1.3%

Source: Historical data, Crisil Intelligence

8.1.1.6 Review and Outlook of Whole-Sale price index (WPI)

The projected toll rates are dependent on Wholesale Price Index (WPI) assumptions for 2024 to 2045. For WPI projection, Crisil Intelligence has relied on inputs from Client. Past and outlook WPI growth is presented in below table.

Table 8-10: WPI Outlook

Year	WPI	Expected Year-on-year growth
2025	478.6	
2026P	490.0	2.40%
2027P	514.5	5.00%
2028P	540.8	5.10%
2029P	567.3	4.90%
2030P	592.2	4.40%
2031P	616.5	4.10%
2032P	641.8	4.10%
2033P	668.1	4.10%
2034P	695.5	4.10%
2035P	724.0	4.10%
2036P	753.7	4.10%
2037P	784.6	4.10%
2038P	816.8	4.10%
2039P	850.3	4.10%
2040P	885.1	4.10%
2041P	921.4	4.10%

Source: Projected WPI (P), Client Input

8.2 Revenue Estimates

According to the concession agreement, the duration of the concession for the project section is set at 25 years. The concession period is scheduled to conclude at the end of FY36; however, based on the information provided by the client regarding target traffic, the concession period is expected to be extended by 5 years. The revenue estimates have been presented till FY41 and is presented below

Table 8-11: Revenue in ₹ Million for the Project Section

FY Year	TP01	TP02	Total
2026	1,222.0	849.9	2,071.8
2027	1,400.0	950.8	2,350.9
2028	1,562.8	1,081.0	2,643.8
2029	1,656.3	1,071.8	2,728.1
2030	1,786.5	1,181.6	2,968.1
2031	1,921.9	1,437.5	3,359.3
2032	2,106.1	1,571.6	3,677.7
2033	2,309.1	1,719.1	4,028.2
2034	2,421.2	1,705.2	4,126.4
2035	2,657.6	1,863.3	4,520.9
2036	3,043.1	2,273.8	5,316.8
2037	3,330.2	2,471.2	5,801.4
2038	3,651.1	2,706.7	6,357.8
2039	3,831.4	2,679.6	6,511.0
2040	4,202.6	2,940.8	7,143.3
2041	4,805.9	3,559.9	8,365.8
CAGR (FY26-FY41)	**9.6%**	**10.0%**	**9.8%**

Source: Crisil Intelligence, Overloading revenue (Including all vehicles)

The share of revenue from TP01 and TP02 is about 57.4 percent and 42.6 percent of the total revenue from the project section.

At both toll plazas, MAV is major contributor in total revenue accounting to about 55 percent, followed by 2A accounting to about 13 percent. CJV accounts to about 14 percent at TP01 and about 12 percent at TP02 of the total revenue

Table 8-12: TP01 Revenue by Mode in ₹ Million

FY Year	Car	LCV	Bus	2A	3A	MAV	OSV	Overloading	Total
2026	169.4	47.7	43.7	163.8	112.1	663.8	0.0	21.4	1,222.0
2027	189.9	51.3	46.8	177.7	118.7	791.9	0.0	23.6	1,400.0
2028	212.9	56.3	50.8	195.2	126.8	894.6	0.0	26.1	1,562.8
2029	239.9	62.0	55.2	214.5	135.0	921.1	0.0	28.5	1,656.3
2030	263.7	66.3	60.2	228.1	136.6	1,001.1	0.0	30.6	1,786.5
2031	292.4	70.9	65.0	238.9	136.2	1,085.8	0.0	32.6	1,921.9
2032	323.3	76.7	70.3	261.2	144.3	1,194.6	0.1	35.6	2,106.1
2033	363.9	83.6	75.6	283.8	152.8	1,310.3	0.1	39.0	2,309.1
2034	400.7	90.6	81.7	309.2	162.1	1,334.9	0.1	41.9	2,421.2
2035	449.7	98.7	88.2	338.2	171.5	1,465.3	0.1	45.9	2,657.6
2036	498.8	107.5	95.1	367.7	181.6	1,741.4	0.1	50.9	3,043.1
2037	554.3	116.2	102.3	399.9	191.8	1,910.0	0.1	55.5	3,330.2
2038	615.7	126.4	110.2	435.0	203.5	2,099.6	0.1	60.6	3,651.1
2039	682.6	136.6	118.9	475.4	215.7	2,136.8	0.1	65.4	3,831.4
2040	756.7	148.5	128.4	519.6	228.6	2,349.3	0.1	71.5	4,202.6
2041	837.7	161.7	138.0	564.3	241.5	2,783.6	0.1	78.9	4,805.9

Source: Crisil Intelligence, Overloading revenue (Including all vehicles)

Table 8-13: TP02 Revenue by Mode in ₹ Million

FY Year	Car	LCV	Bus	2A	3A	MAV	OSV	Overloading	Total
2026	98.7	24.1	29.6	110.8	98.6	454.1	0.1	33.9	849.9
2027	111.3	25.7	31.8	119.2	104.5	520.4	0.1	37.9	950.8
2028	125.6	28.7	34.7	132.5	112.3	603.9	0.1	43.3	1,081.0
2029	137.1	31.3	37.5	145.7	119.5	558.0	0.1	42.5	1,071.8
2030	153.1	34.5	40.9	160.3	128.0	617.6	0.1	47.1	1,181.6
2031	173.6	37.4	44.1	175.1	136.6	812.8	0.1	57.8	1,437.5
2032	193.0	40.5	47.6	191.3	144.7	891.1	0.1	63.3	1,571.6
2033	213.4	44.7	51.4	208.4	153.6	978.1	0.1	69.3	1,719.1
2034	240.5	48.2	55.6	227.2	163.3	902.3	0.1	68.0	1,705.2
2035	265.5	52.6	59.9	247.1	173.3	990.4	0.1	74.3	1,863.3
2036	297.7	57.9	64.8	271.6	185.2	1,304.7	0.1	91.8	2,273.8
2037	326.0	62.0	69.7	294.1	195.3	1,424.3	0.1	99.7	2,471.2

FY Year	Car	LCV	Bus	2A	3A	MAV	OSV	Overloading	Total
2038	362.6	67.8	74.8	320.9	207.4	1,563.8	0.1	109.2	2,706.7
2039	402.5	73.9	80.7	350.1	221.1	1,443.9	0.2	107.2	2,679.6
2040	453.0	80.7	87.4	382.6	234.6	1,584.8	0.2	117.5	2,940.8
2041	498.2	87.4	93.7	417.9	248.6	2,070.0	0.2	143.9	3,559.9

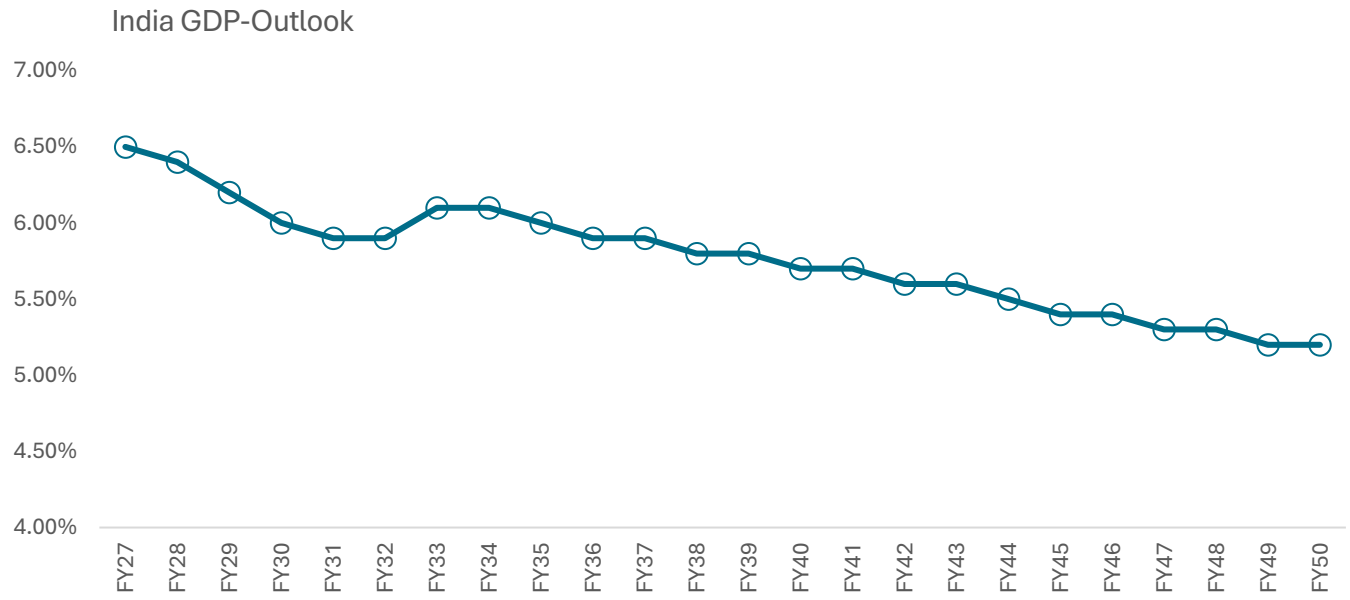
Source: Crisil Intelligence, Overloading revenue (Including all vehicles)

9 Annexure

9.1 India GDP-Outlook

The GDP outlook for India is provided by client and is presented below

Table 9-1: GDP India Outlook



Source: Client Input

9.2 Mode wise Top OD pairs

Table 9-2: TP01-CJV Top OD pairs

S. No	OD Pairs-CJV	% Trips
1	MALDA to BERHAMPORE	6.5%
2	NABAGRAM to BERHAMPORE	6.2%
3	PALSANDA to BERHAMPORE	5.9%
4	MALDA to KOLKATA	4.4%
5	FARAKKA to BERHAMPORE	3.8%
6	NALHATI to BERHAMPORE	3.4%
7	SAGARDIGHI to BERHAMPORE	3.0%
8	SILIGURI to KOLKATA	3.0%
9	FARAKKA to KOLKATA	2.2%
10	UMARPUR to BERHAMPORE	1.7%

Source: Crisil Intelligence

Table 9-3: TP01-Bus Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	MALDA to BERHAMPORE	18.2%
2	SILIGURI to KOLKATA	12.7%
3	MALDA to KOLKATA	6.8%
4	FARAKKA to BERHAMPORE	5.1%
5	SILIGURI to BERHAMPORE	5.1%
6	RAMPURHAT to BERHAMPORE	2.5%
7	NABAGRAM to BERHAMPORE	2.5%
8	PALSANDA to BERHAMPORE	2.1%
9	FARAKKA to KOLKATA	2.1%
10	BIRBHUM to BERHAMPORE	1.7%

Source: Crisil Intelligence

Table 9-4: TP01-2A Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	SILIGURI to KOLKATA	8.4%
2	NALHATI to KOLKATA	6.1%
3	PALSANDA to BERHAMPORE	5.4%
4	MALDA to KOLKATA	4.8%
5	GUWAHATI to KOLKATA	3.6%
6	NALHATI to BERHAMPORE	3.4%
7	MALDA to BERHAMPORE	3.3%
8	UMARPUR to BERHAMPORE	2.9%
9	SILIGURI to BERHAMPORE	2.3%
10	SAGARDIGHI to BERHAMPORE	1.7%

Source: Crisil Intelligence

Table 9-5: TP01-3A Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	NALHATI to KOLKATA	13.3%
2	SILIGURI to KOLKATA	9.4%
3	MALDA to KOLKATA	3.9%
4	NALHATI to BERHAMPORE	3.6%
5	ASSAM to KOLKATA	3.2%
6	GUWAHATI to KOLKATA	3.2%
7	PALSANDA to BERHAMPORE	2.8%

S. No	OD Pairs-Bus	% Trips
8	SAGARDIGHI to BERHAMPORE	2.6%
9	SILIGURI to BERHAMPORE	2.4%
10	RAMPURHAT to KOLKATA	1.9%

Source: Crisil Intelligence

Table 9-6: TP01-MAV Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	NALHATI to KOLKATA	27.5%
2	NALHATI to BERHAMPORE	7.7%
3	NALHATI to KRISHNANAGAR	4.2%
4	SILIGURI to KOLKATA	4.0%
5	MALDA to KOLKATA	3.5%
6	ASSAM to KOLKATA	2.3%
7	MALDA to BERHAMPORE	2.1%
8	RAMPURHAT to KOLKATA	1.9%
9	NALHATI to PALASI	1.6%
10	NALHATI to BELDANGA	1.5%

Source: Crisil Intelligence

Table 9-7: TP02-CJV Top OD pairs

S. No	OD Pairs-CJV	% Trips
1	MALDA to BERHAMPORE	6.7%
2	MALDA to KOLKATA	4.9%
3	MALDA to JANGIPUR	4.1%
4	FARAKKA to BERHAMPORE	4.0%
5	DHULIYAN to JANGIPUR	3.4%
6	FARAKKA to JANGIPUR	3.4%
7	FARAKKA to KOLKATA	2.8%
8	SILIGURI to KOLKATA	2.7%
9	DHULIYAN to BERHAMPORE	2.7%
10	FARAKKA to UMARPUR	2.6%

Source: Crisil Intelligence

Table 9-8: TP02-Bus Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	SILIGURI to KOLKATA	18.4%
2	MALDA to BERHAMPORE	18.2%
3	MALDA to KOLKATA	6.3%
4	BALAGHAT to KOLKATA	4.0%
5	MALDA to UMARPUR	3.7%
6	MALDA to JANGIPUR	3.7%
7	SILIGURI to BERHAMPORE	3.5%
8	FARAKKA to BERHAMPORE	3.0%
9	FARAKKA to KOLKATA	2.3%
10	RAIGANJ to BERHAMPORE	1.9%

Source: Crisil Intelligence

Table 9-9: TP01-2A Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	MALDA to KOLKATA	11.0%
2	SILIGURI to KOLKATA	10.5%
3	MALDA to BERHAMPORE	5.1%
4	GUWAHATI to KOLKATA	4.9%
5	DHULIYAN to KOLKATA	4.1%
6	DHULIYAN to UMARPUR	2.7%
7	DHULIYAN to BERHAMPORE	2.4%
8	FARAKKA to BERHAMPORE	2.4%
9	FARAKKA to KOLKATA	2.4%
10	SILIGURI to BERHAMPORE	2.0%

Source: Crisil Intelligence

Table 9-10: TP02-3A Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	SILIGURI to KOLKATA	8.1%
2	GUWAHATI to KOLKATA	6.7%
3	MALDA to KOLKATA	6.7%
4	MALDA to BERHAMPORE	4.2%
5	DHULIYAN to KOLKATA	4.0%
6	FARAKKA to KOLKATA	3.9%
7	DHULIYAN to BERHAMPORE	2.6%

S. No	OD Pairs-Bus	% Trips
8	FARAKKA to BERHAMPORE	1.6%
9	MALDA to UMARPUR	1.6%
10	RAIGANJ to KOLKATA	1.6%

Source: Crisil Intelligence

Table 9-11: TP02-MAV Top OD pairs

S. No	OD Pairs-Bus	% Trips
1	MALDA to KOLKATA	7.7%
2	SILIGURI to KOLKATA	7.0%
3	MALDA to BERHAMPORE	3.6%
4	FARAKKA to KOLKATA	3.4%
5	GUWAHATI to KOLKATA	2.8%
6	DHULIYAN to KOLKATA	2.3%
7	FARAKKA to BERHAMPORE	1.8%
8	DHULIYAN to BERHAMPORE	1.6%
9	MALDA to BARDHAMAN	1.5%
10	MALDA to DURGAPUR	1.5%

Source: Crisil Intelligence

About Crisil Intelligence (formerly Market Intelligence & Analytics)

Crisil Intelligence is a leading provider of research, consulting, risk solutions and advanced data analytics, serving clients across government, private and public enterprises. We leverage our expertise in data-driven insights and strong benchmarking capabilities to help clients navigate complex external ecosystems, identify opportunities and mitigate risks. By combining cutting-edge analytics, machine learning and AI capabilities with deep industry knowledge, we empower our clients to make informed decisions, drive business growth and build resilient capacities.

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Intelligence

Traffic & Revenue Assessment for Devanahalli Tollway Private Limited section of NH-44 from Km 534.720 to Km 556.840 in the state of Karnataka

Final Report

December 2025

by S&P Global

Crisil Intelligence

Table of contents

1 Executive Summary 8

1.1 Project Details 8

1.2 Asset overview 8

1.3 Historical traffic data 9

1.4 Base Traffic Estimation 10

1.4.1 Toll Segmentation 10

1.5 Network Developments in the Region 11

1.6 Traffic Projections 12

1.7 Revenue Projections 13

2 Introduction 14

2.1 Asset Overview 14

2.2 Scope 15

2.3 Neighbourhood Plazas Traffic Growth 15

2.4 Industrial Profile on the project road 16

2.5 Overview of Key Influence Area & Industrial profile 18

3 Primary Data Collection & Analysis 19

3.1 General 19

3.2 Origin-Destination (OD) Analysis 19

3.2.1 Regional Influence 20

3.2.2 Zonal Influence 21

3.2.3 Internal External Analysis 22

3.2.4 Commodity Distribution 22

3.2.5 Trip Length Distribution 24

4 Review of Historic Traffic 25

4.1 General 25

4.2 Historic Toll Segmentation 26

5 Base traffic estimation 27

5.1 Seasonality Factors 27

5.2 Base Traffic Estimation 28

6 Network and Industrial developments in the Region 29

6.1 Approach and Methodology for Diversion Analysis 30

6.2 Impact of Bengaluru Satellite Ring Road 31

6.3 Impact of Bengaluru Metro 33

6.4 Approach and Methodology for Metro Impact 34

7 Traffic Growth Estimation & Traffic Forecast 36

7.1 Traffic projections – Outline 36

7.2 Traffic projections – Commodity based approach 36

7.2.1 Karnataka State profile 37
7.2.2 Outlook for Car growth 39
7.2.3 Commodity Overview 41
7.2.4 Commodity Outlook 44
7.3 Implied growth rate for the project section 45
7.3.1 Traffic Projections 48
8 Revenue forecast 49
8.1 General 49
8.2 User Fee Schedule 49
8.3 Toll Segmentation 49
8.4 Trip Rates 50
8.4.1 Tolling lengths 50
8.4.2 Toll Rates Estimation 50
8.4.3 Review and Outlook of Whole-Sale price index (WPI) 51
8.5 Revenue Estimates 51
9 Annexure 53
9.1 Top OD Pairs 53
9.2 Direction Wise Commodity Distribution 54
9.3 GDP Forecast of India 55

List of figures

Figure 1-1: Project Road....8
Figure 1-2: Historic Annual Average Daily Traffic (AADT) – Devanahalli TP....10
Figure 1-3: Network Development around project road....11
Figure 2-1: Project stretch alignment....14
Figure 2-2: Neighbourhood plazas traffic & growth....16
Figure 2-3: Major Industries around the PR....18
Figure 3-1: Survey Location....19
Figure 3-2: State influence for Car and 3A/MAV at Devanahalli....21
Figure 3-3: Internal-External Influence at the toll plaza....22
Figure 6-1: Network Development around project road....29
Figure 6-2: Diversion curve as per IRC:108-2015....31
Figure 6-3: Alignment of Project Road and STRR....32
Figure 6-4: Length Via PR and AR....32
Figure 6-5: Toll Rates and Cost Ratio....32
Figure 6-6: Alignment of Project Road and Bengaluru Metro Lines....34
Figure 6-7: Methodology for Bengaluru Metro....34
Figure 7-1: Commodity based approach: Illustrative example for Commercial vehicles....37
Figure 7-2: Karnataka GSDP (Lakh Crore)....38
Figure 7-3: Karnataka GSDP vs India GDP....38
Figure 7-4: Motor Car vehicle registration growth....40
Figure 7-5: Bangalore Airport Freight Traffic (In Tonnes)....42
Figure 7-6: Steel Demand in India....43
Figure 7-7: Pre and Post Diversion Traffic Projection of Car/Jeep/Van (CJV)....46
Figure 7-8: Pre and Post Diversion Traffic Projection of MAV....47
Figure 7-9: Pre and Post Diversion Traffic Projection of PCU....47

List of tables

Table 1-1: Base Traffic Estimation - FY26 AADT 10
Table 1-2: Historic Toll Segmentation at the toll plaza on the project road 10
Table 1-3: Projected Traffic Growth Rates- Post Diversion 12
Table 1-4: Projected Traffic – Post Diversion 12
Table 1-5: Toll Rates 12
Table 1-6: Projected Revenue in ₹ Millions 13
Table 2-1: Details of the road stretch 14
Table 2-2: Key details of project stretch 15
Table 3-1: Type of Survey & Schedule 19
Table 3-2: Regional Distribution in % 20
Table 3-3: Zonal influence in % for passenger and goods traffic at Devanahalli TP 21
Table 3-4: Commodity Distribution (in %) on the project road 22
Table 3-5: Trip Length Distribution 24
Table 4-1: Historical Traffic and Revenue Data Availability 25
Table 4-2: Historic Traffic 25
Table 4-3: Historic Toll Segmentation at the toll plaza on the project road 26
Table 5-1: Seasonal correction factors for FY 24 and FY 25 27
Table 5-2: Base Traffic Estimation -FY26 AADT 28
Table 6-1: Details of Network Development and Possible impact 29
Table 6-2: STRR Diversion Impact 33
Table 6-3: Metro Diversion Impact 35
Table 7-1: Sectoral Growth-Karnataka 39
Table 7-2: Sub-Sectoral Growth-Karnataka 39
Table 7-3: Airport Passenger Forecast Growth Rates 41
Table 7-4: Commodity outlook for the Project section 45
Table 7-5: Implied Growth Rates: Pre Diversion 45
Table 7-6: Implied Growth Rates: Post Diversion 46
Table 7-7: Traffic projections- Pre Diversion 48
Table 7-8: Traffic projections- Post Diversion 48
Table 8-1: Tolling Tickets 49
Table 8-2: Toll segmentation in % - FY26 49
Table 8-3: Annual pass- Trips & Plaza constant factor 50
Table 8-4: Adopted Trip Rates 50
Table 8-5: Tolling Lengths 50
Table 8-6: Base Rate in Rs/km 51
Table 8-7: Toll Rates (in INR) 51

Table 8-8: WPI 51
Table 8-9: Mode wise Revenue in ₹ Millions for the Project Section 52

Acronyms

Acronyms	Meaning
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
APEDA	Agricultural and Processed Food Products Export Development Authority
BIAL	Bangalore International Airport Ltd
CA	Concession Agreement
CAGR	Compound annual growth rate
CFS	Container Freight Station
CT	Container Terminal
DBFOT	Design Build Finance Operate and Transfer
DGCIS	Directorate General of Commercial Intelligence and Statistics
DPR	Detailed Project Report
FMCG	Fast-moving consumer goods
FY	Fiscal Year
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
GSR	General Statutory Rules
HME	Heavy Motor Vehicle
IHMCL	Indian Highways Management Company Limited
IRC	Indian Road Congress
LCV	Light Commercial Vehicle
LMT	lakh metric tonnes
LPG	Liquefied petroleum gas
MAV	Multi Axle Vehicle
MMLP	Multi-Modal Logistics Parks
MMT	million metric tons
MTPA	million tonnes per annum
NH	National Highways
NHAI	National Highways Authority of India
SH	State Highway
OD	Origin-Destination
OSV	Over Sized Vehicle
PFT	Private Freight Terminal
PCU	Passenger Car Unit
SCF	Seasonal Correction Factors
SPV	Special Purpose Vehicle
TEU	Twenty-foot Equivalent Units
TMS	Toll Management Systems
TVC	Traffic Volume Count
WPI	Wholesale price index

1 Executive Summary

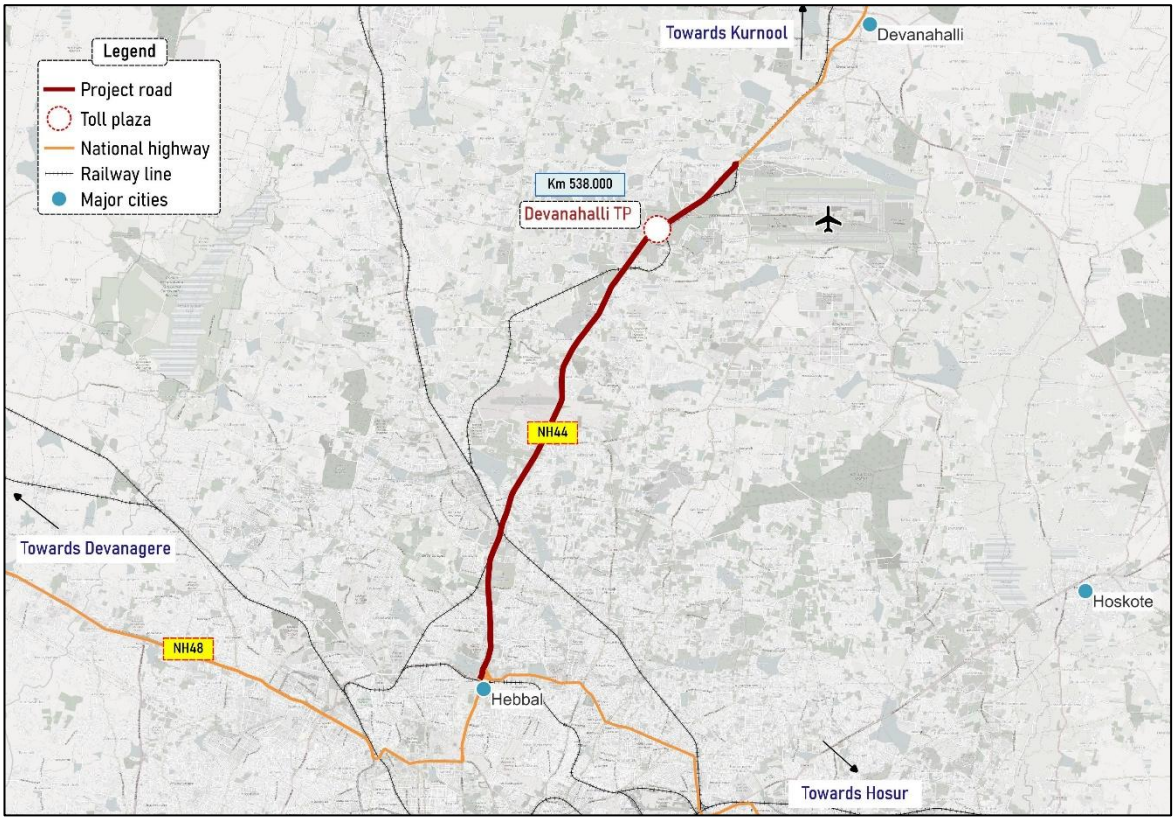
1.1 Project Details

M/s Cube Highways Trust (hereinafter “the Client”) as sponsor has appointed M/s CRISIL Limited (hereinafter referred as “Technical Consultant”) to carry out Traffic and Revenue Due Diligence of operational asset of six Laning of Devanahalli-Hebbal Road on DBFOT Toll Basis in the State of Karnataka (herein after refer as “the Project”) which is being operated by “M/s Devanahalli Tollway Private Limited" (hereinafter refer as “the Concessionaire or Company or DTPL”).

1.2 Asset overview

Project road Devanahalli-Hebbal is a 6-lane, 22.12 km long stretch, on NH-44 in the state of Karnataka and connects the city Bengaluru to Kempegowda International Airport and the traffic moving towards Hyderabad and further North. The project highway has been constructed on Design, Build, Finance, Operate and Transfer (DBFOT) basis with a six – lane divided configuration. The project road has a total of 1 mainline toll plaza Devanahalli TP and 1 check plaza as Sadahalli TP.

Figure 1-1: Project Road



Source: Open Street Map, Crisil Intelligence

The said project stretch is part of NH-44, which is a major north-south national highway from Srinagar in Jammu & Kashmir to Kanyakumari in Tamil Nadu. NH-44 connects several cities and town from north to south such as Srinagar, Delhi, Nagpur, Hyderabad, , Bengaluru, and Kanyakumari. NH 44 covers the north-south corridor of national highway development programme (NHDP) and it is officially listed as running over 3,745 km from Srinagar to Kanyakumari.

Salient growth features and traffic generators

- **IT and ITES Hub**: Bangalore is known as the "Silicon Valley of India" and is home to many top IT companies, including Infosys, Wipro, and Tata Consultancy Services (TCS).
- **Biotechnology and Pharmaceutical Hub**: Bangalore is a major center for biotechnology and pharmaceutical companies, with many research institutions and companies like Biocon and AstraZeneca.
- **Aerospace and Defense Hub**: Bangalore is a significant hub for the aerospace and defense industries, with companies like Hindustan Aeronautics Limited (HAL) and the Indian Space Research Organization (ISRO).
- **Start-up Ecosystem**: Bangalore has a thriving start-up ecosystem, with many incubators, accelerators, and venture capital firms supporting new businesses.
- **Education and Research**: Bangalore is home to many top educational institutions, including the Indian Institute of Science (IISc), Indian Institute of Information Technology (IIIT), and Bangalore University.

The city's traffic generators include IT parks and tech hubs like Electronic City, Whitefield, Koramangala, Manyata Tech Park, and Bagmane Tech Park, which attract a large number of employees and visitors. Commercial centers like MG Road, Brigade Road, Commercial Street, Indiranagar, and Jayanagar are also major traffic generators, with many shops, restaurants, and entertainment options. Industrial areas like Peenya, Yeshwantpur, Hosur Road, Bommasandra, and Jigani are also significant traffic generators, with many manufacturing units and warehouses. Educational institutions like universities, colleges, schools, and research institutions also generate traffic, particularly during peak hours. Hospitals and healthcare facilities like Apollo Hospital, Fortis Hospital, Narayana Hrudayalaya and Manipal Hospital also attract a large number of patients and visitors.

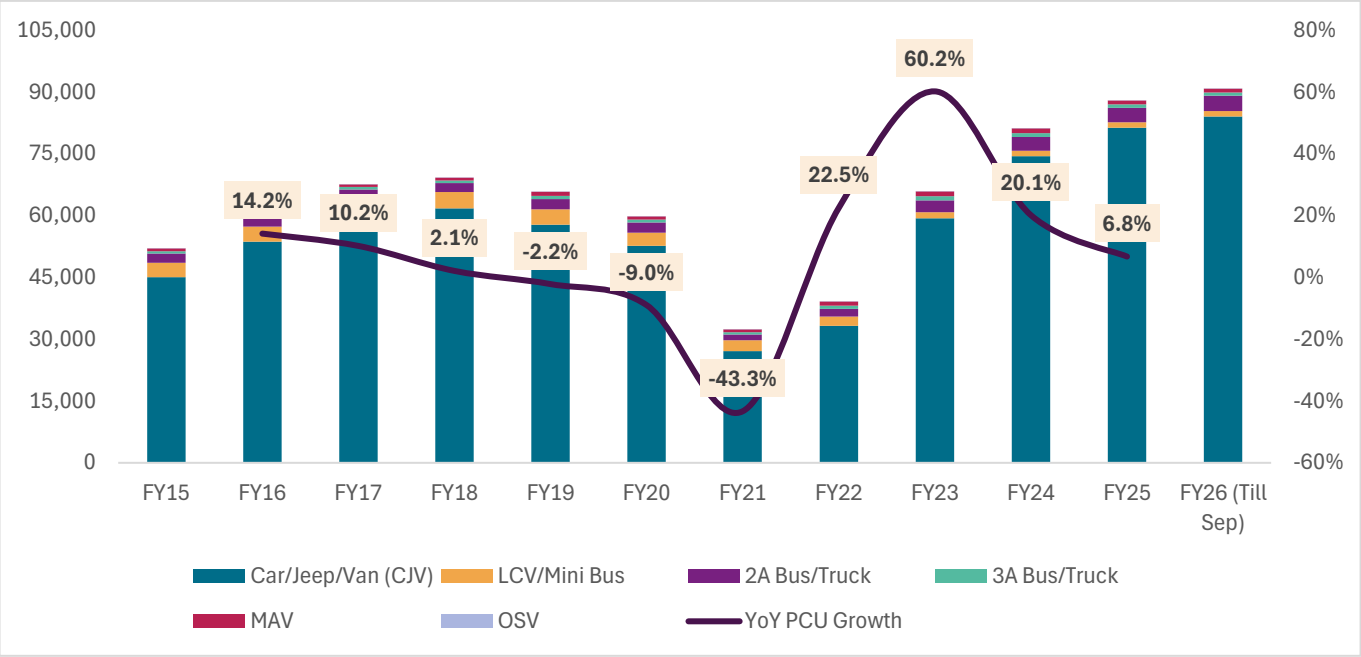
In terms of upcoming developments, Bangalore is expected to see significant growth in the coming years. The city is planning to have a 1,000-acre aerospace park near Devanahalli, which will house many aerospace and defense companies. A 10,000-acre ITIR is also being developed near Devanahalli, which will house many IT companies and create over 1 million jobs. The Bengaluru-Mysuru Industrial Corridor, a 111-km long corridor along the Bengaluru-Mysuru highway, is also being developed, which will house many industries and create over 1 million jobs. The Bengaluru-Chennai Industrial Corridor, a 260-km long corridor along the Bengaluru-Chennai highway, is also being developed, which will house many industries and create over 1.5 million jobs. The city is also expected to see significant development in terms of smart infrastructure, transportation, and public services, with the implementation of the Smart City Project. The metro rail network is also being expanded to 250 km, and a high-speed rail link is being planned between Bengaluru and Mysuru.

1.3 Historical traffic data

The chart below shows the average daily traffic on Devanahalli-Hebbal stretch from the start of commercial operations to Sep 2025. The commercial operations for the toll plazas on the project road are:

- Devanahalli TP

Figure 1-2: Historic Annual Average Daily Traffic (AADT) – Devanahalli TP



Source: Client Data, Crisil Intelligence

1.4 Base Traffic Estimation

For base traffic (annual average daily traffic) estimation of the present study, current fiscal 6-months (Apr-25 to Sep-25) of traffic data were annualized using SCF factor of FY 24 & FY 25 to arrive at the annual average daily traffic (AADT) for FY 26.

The AADT estimation for the base case for FY26 is presented table below.

Table 1-1: Base Traffic Estimation - FY26 AADT

Particulars	FY Year	Car/Jeep/Van (CJV)	LCV/Mini Bus	2A Bus/Truck	3A Bus/Truck	MAV	OSV	Vehicles	PCU
ADT (Apr-Sep)	**FY 26**	84,064	1,344	3,723	773	905	2	90,811	103,650
SCF	**FY 24 & FY 25**	1.03	1.00	1.03	0.97	0.97	0.92		
AADT	**FY 26**	**86,930**	**1,341**	**3,818**	**750**	**879**	**2**	**93,720**	**106,608**

Source: Client TMS Data, Crisil Intelligence

1.4.1 Toll Segmentation

For the present study FY26 (Apr-Sep) toll segmentation has been adopted for FY26. However, in case of Car category Oct-25 data has been used for the segmentation. Return tickets are major in CJV category primarily due to the closer proximity of Bengaluru city and Kempegowda International Airport.

Table 1-2: Historic Toll Segmentation at the toll plaza on the project road

FY	Vehicle Type	Single	Return	Monthly	Local Pass	Exempt	Annual Pass
Oct-25	**Car/Jeep/Van (CJV)**	21.6%	56.8%	2.8%	2.3%	6.1%	10.4%
	LCV/Mini Bus	39.0%	57.7%	0.4%	0.0%	2.9%	

FY	Vehicle Type	Single	Return	Monthly	Local Pass	Exempt	Annual Pass
2026 (Apr-Sep)	2A Bus	3.8%	89.7%	2.3%	0.0%	4.2%	
	2A Truck	57.6%	39.4%	0.3%	0.0%	2.6%	
	3A Bus/Truck	37.4%	57.9%	2.0%	0.0%	2.7%	
	MAV	57.4%	40.6%	1.5%	0.0%	0.5%	
	OSV	54.9%	19.1%	0.0%	0.0%	26.0%	

Source: Client TMS Data, Crisil Intelligence

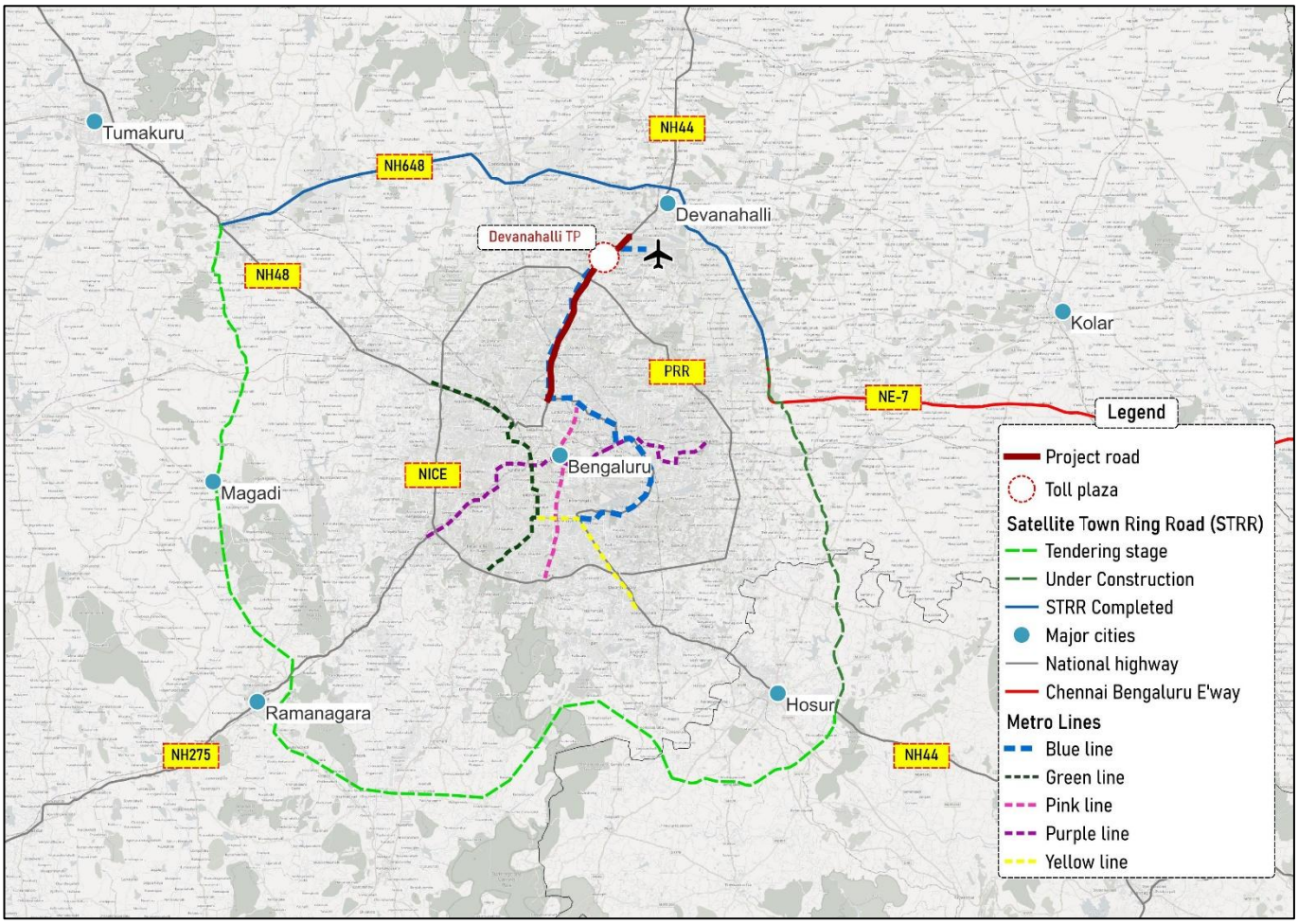
1.5 Network Developments in the Region

In the case of the project road, there are no short distance alternate routes available that will impact the traffic on the project road. However ongoing and upcoming network developments that could impact the project road are:

- Bengaluru Satellite Town Ring Road (STRR)
- Bengaluru Metro- Airport Blue Line

The alignment of the developments along with the project road are presented in figure below.

Figure 1-3: Network Development around project road



Source: Open Street Map, Crisil Intelligence

1.6 Traffic Projections

The table below provides the traffic growth rates considering various diversion/impacts, as provided by the Traffic Consultant:

Table 1-3: Projected Traffic Growth Rates- Post Diversion

Vehicle category	FY27	FY28	FY29	FY30	FY31	FY32	CAGR (FY26-FY32)
Car/Jeep/Van (CJV)	7.6%	3.7%	5.7%	9.0%	6.4%	6.4%	6.4%
LCV/Mini Bus	2.6%	2.4%	3.1%	2.9%	0.0%	0.0%	1.8%
2A Bus	4.1%	-6.1%	-7.3%	3.9%	3.8%	3.7%	0.2%
2A Truck	3.4%	3.2%	4.0%	3.8%	0.9%	0.9%	2.7%
3A Bus/Truck	0.5%	0.3%	1.6%	1.4%	-2.7%	-2.8%	-0.3%
MAV	5.4%	5.2%	6.2%	5.9%	3.3%	3.3%	4.9%
OSV	6.6%	6.4%	6.2%	5.9%	5.7%	5.7%	6.1%
Total	**7.3%**	**3.3%**	**5.2%**	**8.6%**	**6.1%**	**6.1%**	**6.1%**
PCU	**6.8%**	**2.8%**	**4.5%**	**8.1%**	**5.6%**	**5.7%**	**5.6%**

Source: Crisil Intelligence

Table 1-4: Projected Traffic – Post Diversion

FY Year	Car/Jeep/Van (CJV)	LCV/Mini Bus	2A Bus	2A Truck	3A Bus/Truck	MAV	OSV	Total Veh.	Total PCU	YoY Growth (%)
FY-2026	86,930	1,341	3,111	706	750	879	2	93,720	106,608	
FY-2027	93,500	1,376	3,239	731	754	927	2	100,528	113,913	6.9%
FY-2028	96,931	1,410	3,041	754	756	975	2	103,868	117,094	2.8%
FY-2029	102,409	1,453	2,819	784	768	1,034	2	109,270	122,369	4.5%
FY-2030	111,607	1,495	2,928	813	779	1,096	2	118,721	132,354	8.2%
FY-2031	118,714	1,495	3,039	821	758	1,133	2	125,962	139,918	5.7%
FY-2032	126,272	1,495	3,152	828	737	1,170	3	133,656	147,940	5.7%
CAGR (26-32)	**6.4%**	**1.8%**	**0.2%**	**2.7%**	**-0.3%**	**4.9%**	**6.1%**	**6.1%**	**5.6%**	

Source: Crisil Intelligence

Actual User Fee on 1st April 2025 Calculated in accordance with the toll Notification applicable at all the toll plaza on the project road for current fiscal (FY26) is provided below:

Table 1-5: Toll Rates

Type of vehicle	Single	Return	Monthly	Local Commercial	Local Personal
Car/Jeep/Van (CJV)	120	180	3,970	60	350
LCV/Mini Bus	185	275	6,100	90	
2A Bus/Truck	370	550	12,265	185	
3A Bus/Truck/MAV	560	840	18,615	280	
OSV	725	1,090	24,245	365	

Source: Crisil Intelligence

1.7 Revenue Projections

The revenue in ₹ million for the project road is projected to grow at a CAGR of about 10.3 percent for the forecast period from FY26 to FY32 and is presented in the table below.

Table 1-6: Projected Revenue in ₹ Millions

FY Year	Devanahalli TP
FY26	3591.8
FY27	3962.1
FY28	4282.4
FY29	4670.9
FY30	5334.9
FY31	5872.7
FY32	6471.9
CAGR (FY26-32)	**10.3%**

Source: Crisil Intelligence

2 Introduction

2.1 Asset Overview

Project road Devanahalli-Hebbal is a 6-lane, 22.12 km long stretch, on National Highways 44 in the state of Karnataka. The project stretch serves as the primary road to the Bengaluru airport from Bengaluru city. The traffic composition of the stretch largely comprises of passenger traffic originating and destined for the airport. The project road has been constructed on Design, Build, Finance, Operate and Transfer (DBFOT) basis with a six – lane divided configuration. The project road has 1 mainline plaza and 1 check plaza: Devanahalli TP (mainline).

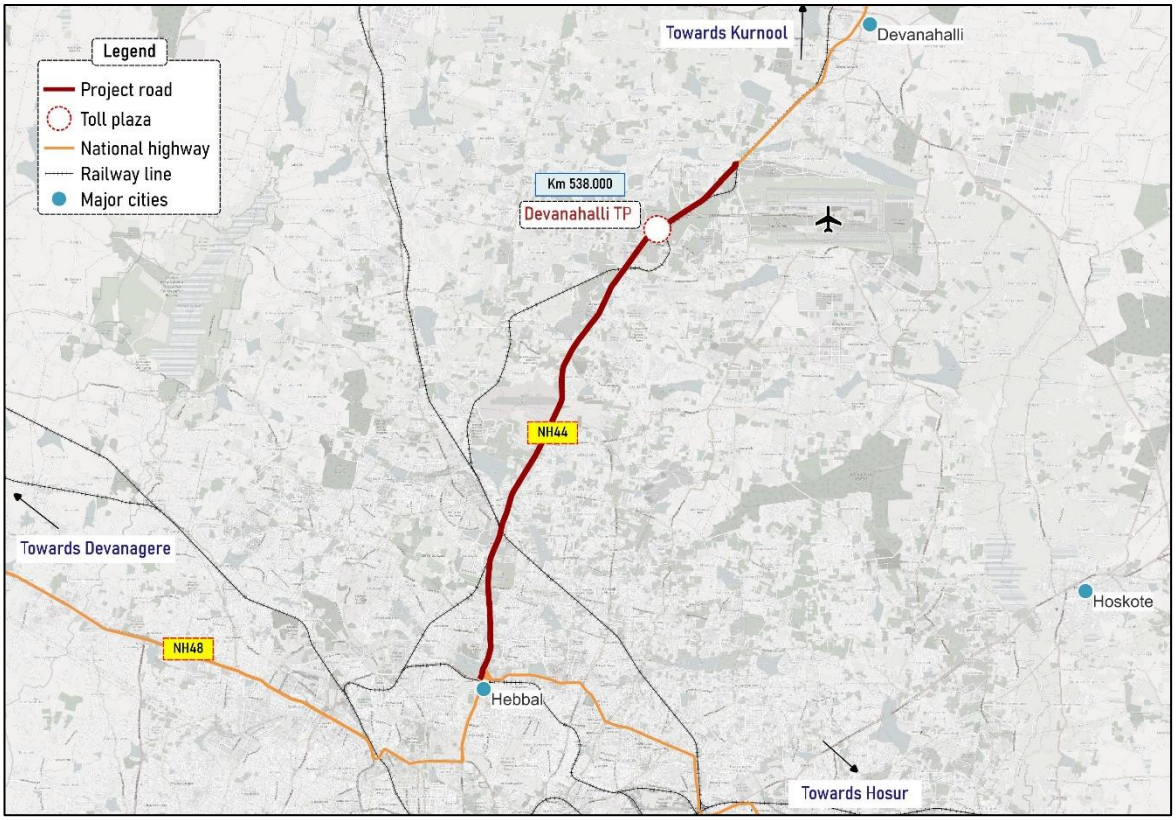
The project highway provides seamless connectivity to the long-distance traffic travelling between northern parts of India to Southern parts of India as it connects Srinagar in North and Kanyakumari in South.

Table 2-1: Details of the road stretch

Project stretch	State	Toll plaza	Length (km)
Devanahalli-Hebbal section of NH-44 from Km 534.720 to Km 556.840 in the state of Karnataka	Karnataka	Devanahalli TP	22.12

Source: Crisil Intelligence

Figure 2-1: Project stretch alignment



Source: Open Street Map, Crisil Intelligence

Table 2-2: Key details of project stretch

Project stretch	Devanahalli-Hebbal Road section of NH-44 from Km 534.720 to Km 556.840 in the state of Karnataka
Authority	National Highway Authority of India (NHAI)
Concessionaire	Devanahalli Tollway Private Limited (DTPL)
Project type	Design-Build – Finance - Operate - Transfer
No. of lanes	6-lane configuration
Length of Project Stretch	22.12 Km
No. of Toll Plaza(s)	1 Mainline and 1 Check Plaza
Name of Toll Plaza(s)	Devanahalli TP (Km 538.000) Mainline Plaza
Concession Period	20 Years
CA Signed	10 April 2010
COD	25 April 2011
Concession end date	25 April 2031

Source: Concession Agreement, Crisil Intelligence

2.2 Scope

The scope of the traffic assessment for the project road is divided into following four sections.

1) Detailed Assessment of the project road: - Include review of the Historic TMS Data, past traffic growth, detailed network assessment.

2) Primary Data collection & Analysis: - Conducting preliminary traffic surveys like Registration Plate and Origin-Destination (O-D) to understand the traffic patterns, commodity profiles.

3) Network Impact Assessment: - To Analyse the upcoming network developments which may impact the project road traffic

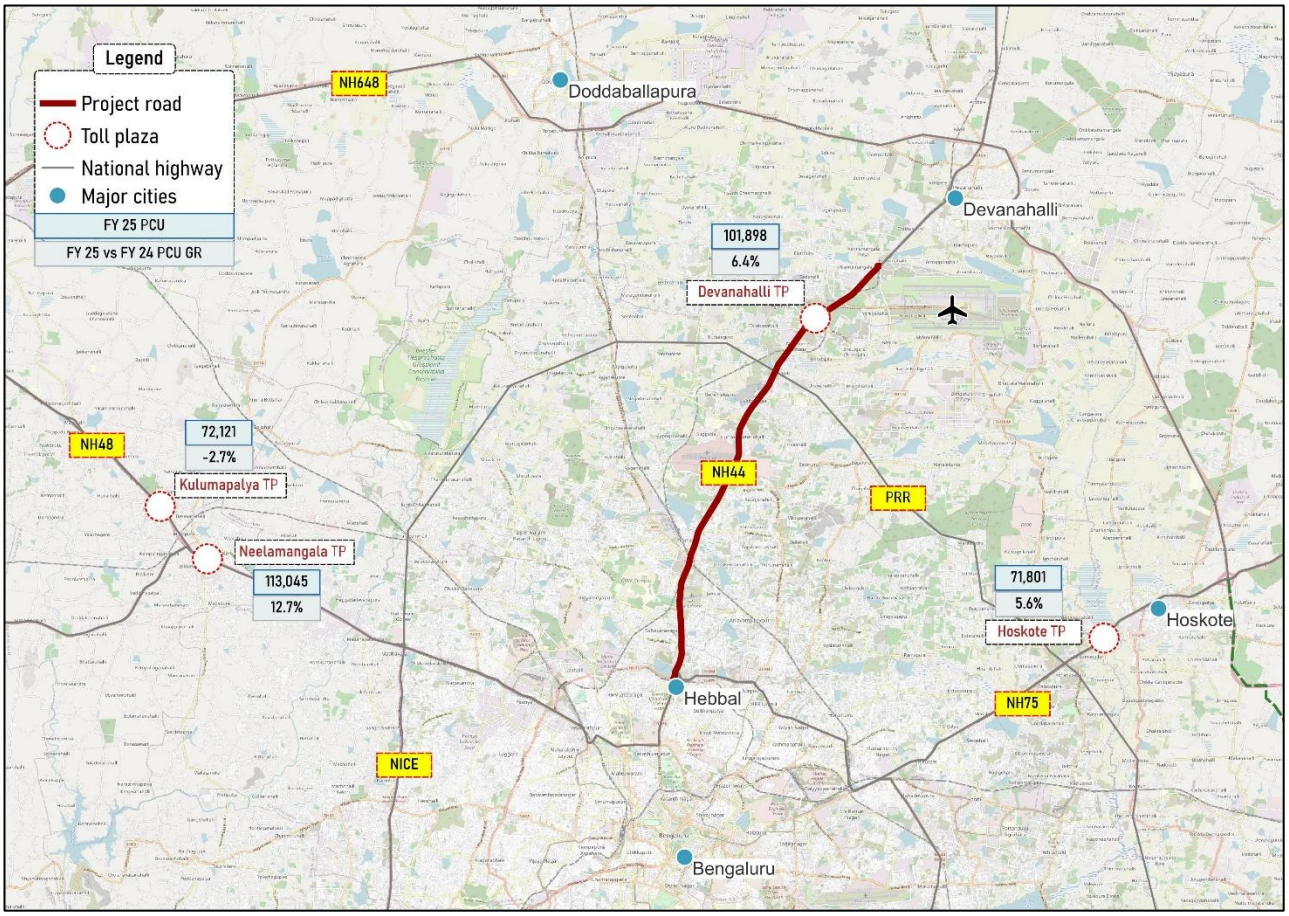
4) Traffic and Revenue Projections: - Traffic & Revenue projections considering relevant growth drivers and network developments

Approach & Methodology is detailed out in Traffic Growth Estimation & Traffic forecast chapter.

2.3 Neighbourhood Plazas Traffic Growth

Indian Highways Management Company Limited (IHMCL) publishes toll plazas traffic data for the plazas on national highways and data is analyzed for neighboring plazas to understand traffic growth patterns in the region, nearby plazas have shown good traffic growth in recent years. FY25 traffic PCU and FY24 traffic PCU growth is presented in the figure below.

Figure 2-2: Neighbourhood plazas traffic & growth



Source: Open Street Map, Crisil Intelligence, IHMCL Data

2.4 Industrial Profile on the project road

Bengaluru district is a major industrial hub in India, with a diverse range of industries, including IT, biotechnology, aerospace, automotive, and manufacturing. The district is home to many large and small-scale industries and is a significant contributor to the state's economy.

Industrial Sectors:

IT and ITES:

- Bengaluru is known as the "Silicon Valley of India" and is home to many top IT companies, including Infosys, Wipro, TCS, and IBM.
- The IT sector is the largest contributor to the district's economy, with over 50% of the state's IT exports coming from Bengaluru.

Biotechnology:

- Bengaluru is a major hub for biotechnology, with many companies, including Biocon, AstraZeneca, and Novartis, having a presence in the city.

- The biotechnology sector is a significant contributor to the district's economy, with many companies involved in research and development, manufacturing, and exports.

Aerospace:

- Bengaluru is home to many aerospace companies, including Hindustan Aeronautics Limited (HAL), Indian Space Research Organization (ISRO), and Bharat Electronics Limited (BEL).
- The aerospace sector is a significant contributor to the district's economy, with many companies involved in the manufacture of aircraft, spacecraft, and defense equipment.

Automotive:

- Bengaluru is a major hub for the automotive industry, with many companies, including Toyota, Honda, and Volvo, having a presence in the city.
- The automotive sector is a significant contributor to the district's economy, with many companies involved in the manufacture of vehicles, components, and accessories.

Manufacturing:

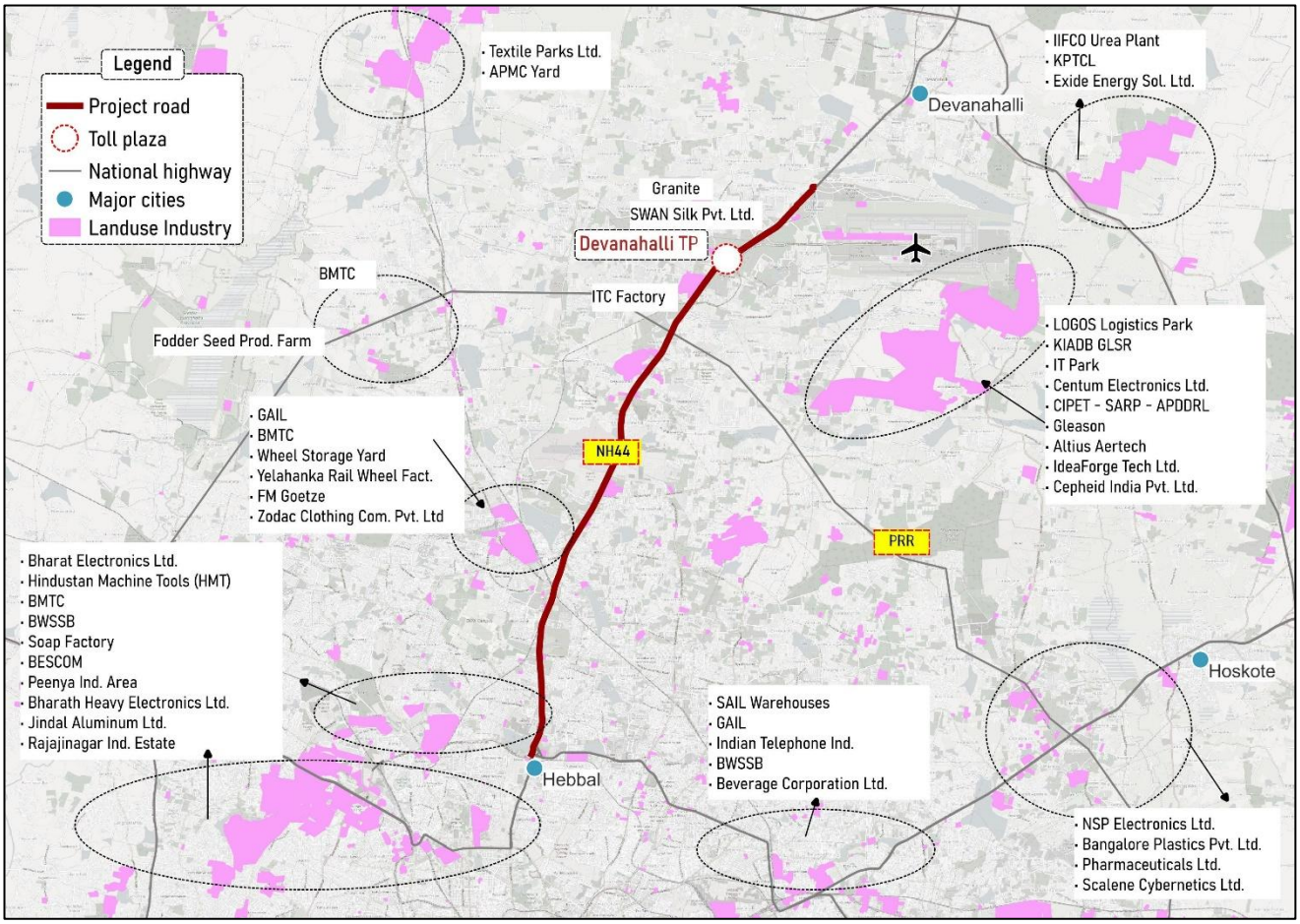
- Bengaluru is home to many manufacturing companies, including those involved in the production of textiles, leather goods, and food products.
- The manufacturing sector is a significant contributor to the district's economy, with many companies involved in the production of goods for both domestic and international markets.

Industrial Estates and Parks:

- **Peenya Industrial Estate:** One of the largest industrial estates in Bengaluru, with over 1,000 industries, including textiles, engineering, and food processing.
- **Yeshwantpur Industrial Estate:** A major industrial estate in Bengaluru, with over 500 industries, including textiles, leather goods, and engineering.
- **Electronic City:** A major IT hub in Bengaluru, with over 100 companies, including Infosys, Wipro, and TCS.
- **Whitefield Industrial Estate:** A major industrial estate in Bengaluru, with over 500 industries, including textiles, engineering, and food processing.
- **Bommasandra Industrial Estate:** A major industrial estate in Bengaluru, with over 1,000 industries, including textiles, engineering, and food processing.

Major Industries around the Project corridor are presented in **Figure 2-3**.

Figure 2-3: Major Industries around the PR



Source: Open Street Map, Crisil Intelligence

2.5 Overview of Key Influence Area & Industrial profile

The project road entirely falls in the state of Karnataka passing through the district of Bengaluru. A brief description of key influencing district around the project section is presented below.

Bengaluru District Profile

Bengaluru, the capital city of Karnataka, is a district that embodies a unique blend of traditional and modern culture. Located in the southeastern part of the state, Bengaluru district is spread over an area of approximately 2,190 square kilometres. The district is bounded by the districts of Kolar to the east, Chikballapur to the north, Tumkur to the northwest, and Ramanagara to the southwest.

Bengaluru district is home to a diverse population of over 9.6 million people, making it one of the most populous districts in the country. The district is divided into four taluks: Bengaluru North, Bengaluru South, Bengaluru East, and Anekal.

The district is also a major economic hub, with a thriving IT industry, and is home to many multinational companies, startups, and research institutions, making it a hub for innovation and entrepreneurship. The district has a rich cultural heritage, with a blend of traditional Kannada culture and modern influences, reflected in its cuisine, festivals, and architecture. Overall, Bengaluru district is a vibrant and dynamic region that offers a unique blend of tradition, culture, and modernity.

3 Primary Data Collection & Analysis

3.1 General

Primary traffic surveys, i.e. Origin Destination and Registration Plate surveys were collected on the project road to understand the travel pattern of vehicles plying on the project road.

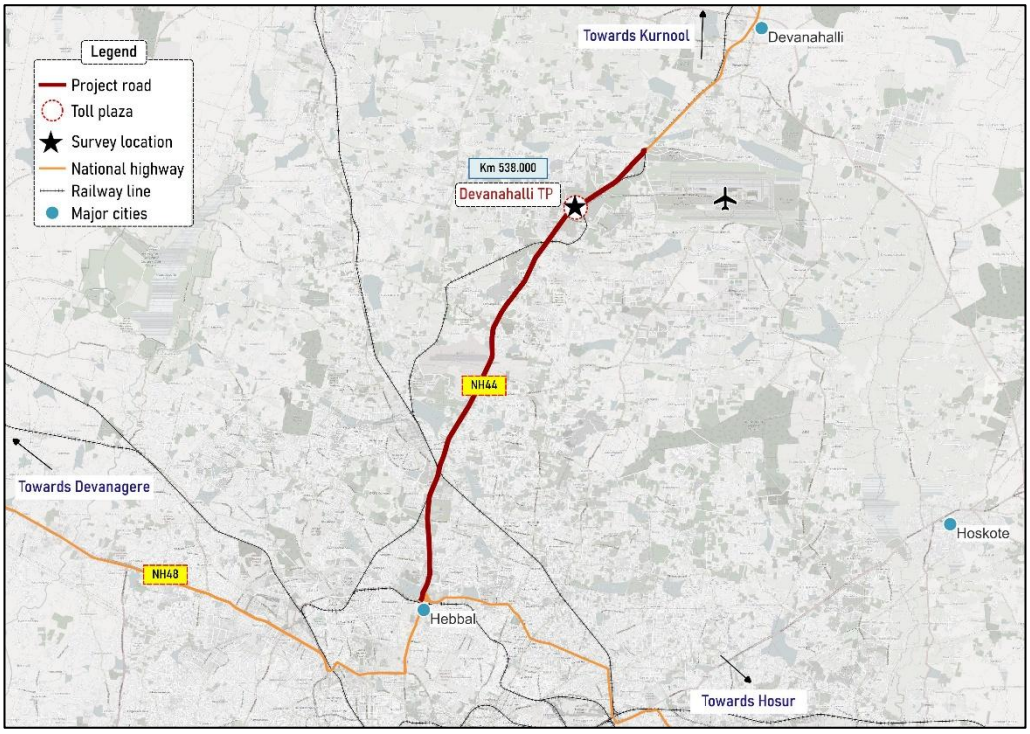
For the present study, one day (24-Hours) origin destination survey and one day (24-Hours) Registration Plate survey was conducted at the toll plaza location on the project road. The schedule of the traffic surveys carried out as part of the study on the project road are presented in the table and figure below.

Table 3-1: Type of Survey & Schedule

Type of Survey	Survey Duration	Location	Survey Date
Origin-Destination (O-D) Survey	1 Day	Devanahalli TP	22nd September 2025
Registration Plate (RP) Survey	1 Day	Devanahalli TP	22nd September 2025

Source: Crisil Intelligence

Figure 3-1: Survey Location



Source: Open Street Map, Crisil Intelligence

3.2 Origin-Destination (OD) Analysis

Origin-Destination survey was carried out at toll plaza for 1 Day (24-hours), by roadside interview method as described in IRC: 102-1988. A random sampling approach was employed to interview both passenger and freight vehicles traversing the project road at the toll plaza locations. The survey aimed to gather information on various aspects, including origin, destination, frequency of trips, purpose of travel and for freight vehicles, the type of commodity being transported.

The project influencing states will provide an overview of the factors likely to influence the pattern of economic

development and hence the flows and volumes of traffic on the project road.

3.2.1 Regional Influence

The key influencing regions from the origin destination survey are Bengaluru district, and Chikballapur district for passenger traffic and for goods traffic Bengaluru district, Chikballapur district and Hyderabad. Regional distribution for passenger traffic and goods traffic is given in the table below.

Table 3-2: Regional Distribution in %

State/Region	Car/Jeep/Van (CJV)	2A Bus	LCV	2A Truck	3A Bus/Truck/MAV
Karnataka	96.1%	92.4%	87.7%	86.8%	80.3%
Andhra Pradesh	2.1%	6.1%	7.0%	9.3%	9.4%
Telangana	1.2%	1.3%	4.5%	2.3%	8.5%
Tamil Nadu	0.6%	0.1%	0.8%	1.6%	1.9%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Crisil Intelligence

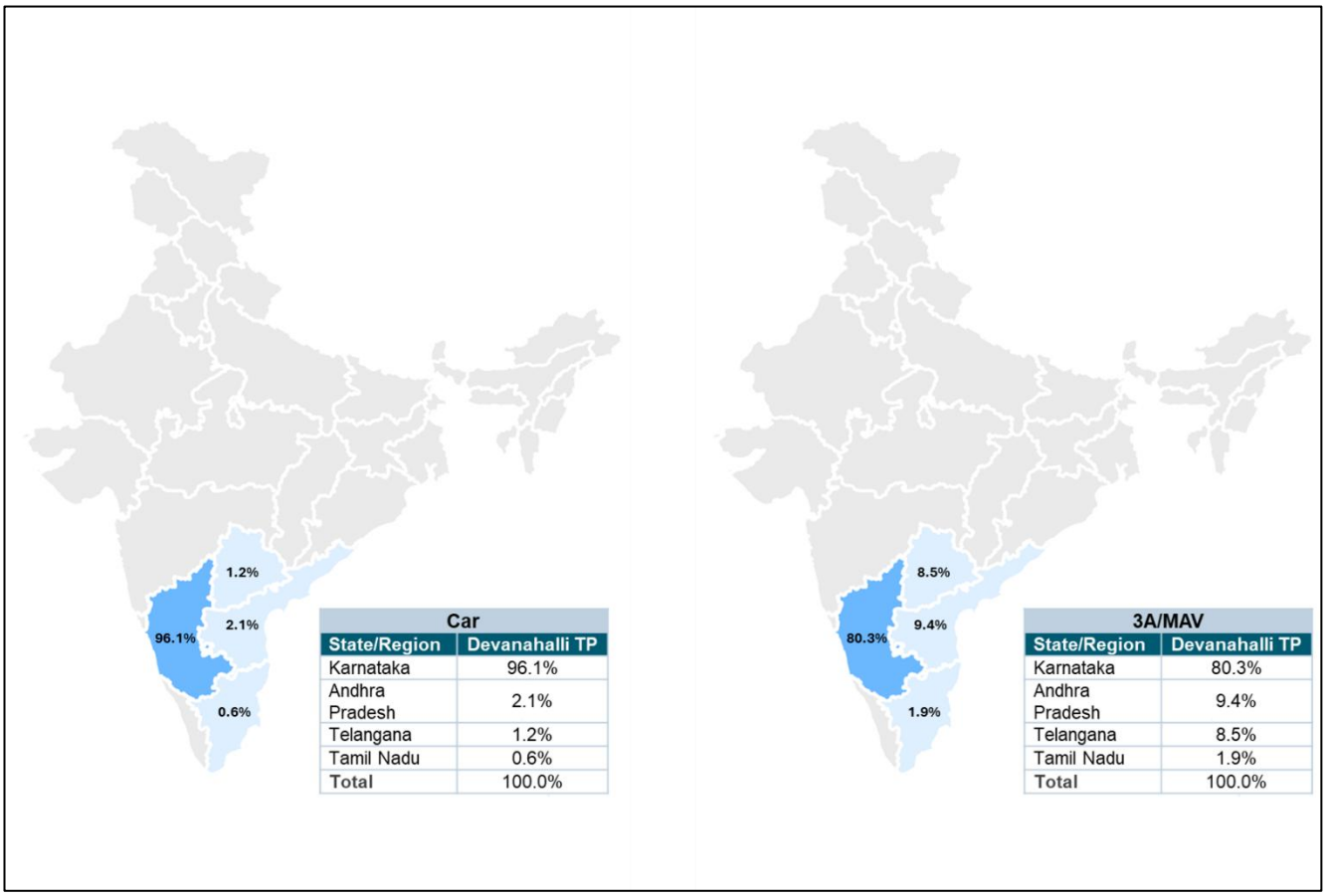
Passenger Traffic

- **Karnataka** contribute to 96.1% car traffic and followed by **Andhra Pradesh and Telangana** with 2.1% and 1.2% respectively.
- About 92.4% bus traffic is contributed by Karnataka state followed by Andhra Pradesh with 6.1%
- **Majestic Bus Stand, City Railway Station to Bangalore International Airport- Terminal 1** and vice versa are the major OD pairs in car traffic**.**

Freight Traffic

- **Karnataka** contribute to 80.3% of 3AT&MAV traffic followed by **Andhra Pradesh and Telangana** with 9.4% and 8.5% respectively.
- In case of 2AT, about 86.8% traffic is contributed by Karnataka followed by Andhra Pradesh state with 9.3%
- Rest of Bangalore City to Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne and vice versa are the top OD pair in 3AT&MAV traffic

Figure 3-2: State influence for Car and 3A/MAV at Devanahalli



Car

State/Region	Devanahalli TP
Karnataka	96.1%
Andhra Pradesh	2.1%
Telangana	1.2%
Tamil Nadu	0.6%
Total	100.0%

3A/MAV

State/Region	Devanahalli TP
Karnataka	80.3%
Andhra Pradesh	9.4%
Telangana	8.5%
Tamil Nadu	1.9%
Total	100.0%

Source: Crisil Intelligence

3.2.2 Zonal Influence

The key influencing zones/regions at Devanahalli TP from the origin destination survey are Bengaluru district, and Chikballapur district for passenger traffic and for goods traffic Bengaluru district, Chikballapur district and Hyderabad.

Table 3-3: Zonal influence in % for passenger and goods traffic at Devanahalli TP

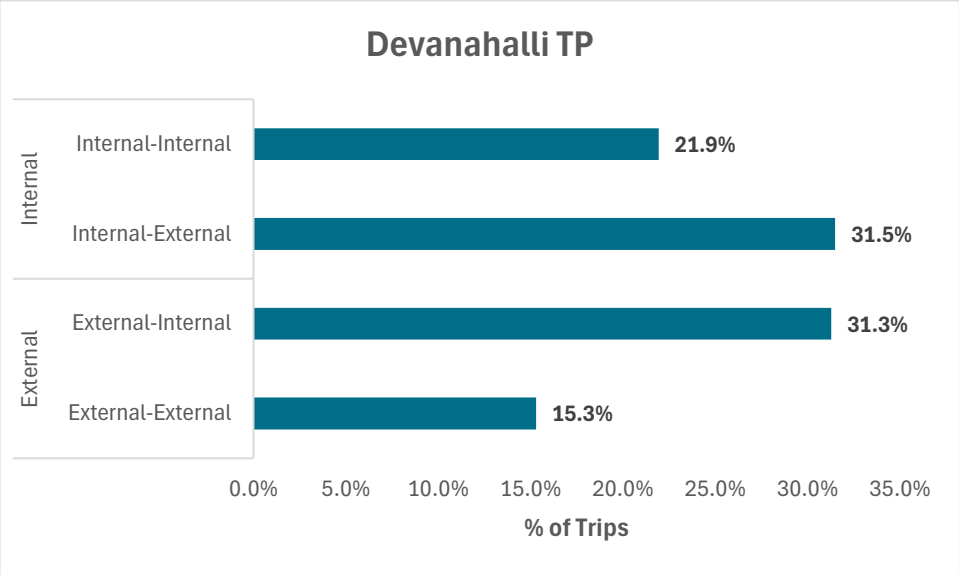
Zone	Car/Jeep/Van (CJV)	2A Bus	LCV	2A Truck	3A Bus/Truck/MAV
Bangalore Urban District	46.5%	47.9%	46.6%	46.0%	45.7%
Bangalore Airport	31.9%	18.2%	12.8%	14.5%	10.6%
Bangalore Rural District	10.7%	15.7%	15.1%	12.5%	14.0%
Chikballapur District	5.8%	10.2%	12.5%	13.5%	9.1%
Ananthapur District	1.4%	4.3%	3.9%	6.7%	4.8%
Hyderabad city	1.1%	1.3%	4.2%	1.9%	8.1%
Ramanagaram District	1.0%	0.8%	1.3%	2.1%	1.9%
Mysore and Chamarajanagar Districts	1.0%	0.8%	1.8%	2.2%	2.4%
Rest of Andhra Pradesh	0.3%	0.7%	1.6%	0.0%	2.8%
Krishnagiri District	0.3%	0.0%	0.2%	0.5%	0.5%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Crisil Intelligence

3.2.3 Internal External Analysis

To understand the influence of the zones, present along the project corridor and the dependency and impact of traffic from outside of the project road, internal-external analysis has been done. The zones which fall along the project road and very near project road are considered as internal zones and other zones are considered as external zones. If both end of the trips are internal, those trips are internal-internal trips. If one end of the trips is internal and other is external those trips are internal to external and external to internal trips. If both ends of the trips are external, those are external-external trips. Internal-External analysis is presented in the figure below.

Figure 3-3: Internal-External Influence at the toll plaza



Source: Crisil Intelligence

It can be observed that higher Internal-External and External-Internal trips at the toll plaza, this is due to the closer proximity of Bengaluru city and Airport trips.

3.2.4 Commodity Distribution

Analysis was carried out to understand the various freight vehicles being used to transport different commodities. Table below presents the commodity distribution for the toll plaza in project road.

Table 3-4: Commodity Distribution (in %) on the project road

Commodity	LCV	2A Truck	3A Truck	MAV	Total
Agri Produce	13.6%	8.6%	11.1%	7.6%	11.2%
Automobiles	1.1%	1.0%	2.9%	4.0%	2.0%
Chemical products	0.3%	0.5%	0.5%	0.4%	0.4%
Coal	0.1%	0.0%	0.0%	0.2%	0.1%
Construction materials	5.5%	11.3%	15.2%	11.1%	9.4%
Consumer Foods	9.0%	9.0%	3.5%	7.1%	7.5%
Consumer Products	2.6%	4.4%	2.2%	2.6%	2.8%
Container	0.0%	0.0%	0.2%	0.0%	0.0%
Courier & parcel	15.0%	12.9%	9.5%	12.5%	13.2%
Iron & Steel Products	5.6%	12.9%	10.6%	11.9%	8.9%
Machinery	0.1%	0.0%	0.2%	0.2%	0.1%
Milk & Animal Food	1.6%	0.5%	1.2%	0.6%	1.2%

Commodity	LCV	2A Truck	3A Truck	MAV	Total
Others	0.4%	0.5%	0.5%	0.4%	0.4%
Paper products	0.5%	1.5%	0.5%	1.5%	0.9%
Petroleum Products	0.5%	0.9%	1.3%	1.5%	0.9%
Pharmaceuticals	0.6%	1.0%	0.3%	0.7%	0.6%
Plastic products	1.7%	6.6%	1.5%	1.7%	2.4%
Plywood & Timber products	3.3%	1.5%	2.8%	2.5%	2.8%
Rubber products	0.2%	0.5%	0.5%	0.4%	0.3%
Textile & Footwear	1.1%	2.5%	3.2%	2.5%	2.0%
Tiles & Ceramic products	0.1%	0.5%	0.9%	0.0%	0.3%
Empty	37.1%	23.3%	31.4%	30.7%	32.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Crisil Intelligence

- The analysis of freight movement across the toll plaza reveals that the major commodities being transported include Agri produce, construction materials, iron and steel products and consumer foods and products,
- Courier & Parcels is the major commodity passing through the toll plaza, majorly carried by LCV with 15.0% and 12.5% with MAV. This is due to the presence of multiple warehouses in the proximity of the project road.
- About 11 percent of MAV and 15% of 3A trucks are carrying construction materials across the toll plaza. These trucks are travelling to Hyderabad & surroundings areas that has several cement manufacturing units also this construction material consists of stone due to presence of various stone quarries at Chikballapur located on Northern end of the asset.
- Around 13% of LCV and 11% of 3A trucks are found to be carrying agri produce across the project road. This is due to presence of urban centres at both ends of the project road.

Direction wise commodity is presented in Annexure.

Courier & Parcel is the topmost commodity on the stretch

Courier/Parcel traffic on the project stretch form a significant proportion of the commercial traffic and is majorly for the purpose of consumption in domestic market in the urban and semi urban regions of Bengaluru, Devanahalli, Hyderabad, Hospete and nearby regions of the catchment. Traffic on the project stretch originates from Karnataka (Bangalore, Chitradurga), Delhi, and Maharashtra State. Courier/Parcel traffic is destined for consumption in regions of consumption hubs like Telangana, Karnataka, Tamil Nadu, Delhi, and to warehouses in Karnataka.

India is rapidly becoming a key domestic shipment market, driven by increased e-commerce due to venture capital funding, rising internet access, and urbanization. User-friendly platforms, attractive discounts, and convenient delivery have fueled growth, with the pandemic accelerating online shopping trends.

Agri produce is one of the major commodities

Agri accounts for 11% at the toll plaza. This category comprises of rice, wheat, vegetables, and fruits. Karnataka's food grain production has been growing due to adequate rainfall and increased acreage, heavily relying on rainfall for agriculture. While food grain production is expected to continue growing, rainfall patterns will be crucial. Horticulture crops like fruits and vegetables are anticipated to grow faster due to their short storage life, and seasonal crops may yield higher incomes.

Construction Materials

Construction Materials accounts for 9.4% on the project road. Construction materials represent a significant commodity transported throughout the area. The primary sub-commodity within construction materials is cement, followed by stone. It is to be noted that there are several cement manufacturing units in the region of Hyderabad, Chikballapur and Doddaballapur. The demand for this commodity is expected to continue increasing, driven by the growing needs of the infrastructure, housing, and other related sectors.

Consumer Foods

The FMCG (fast-moving consumer goods) industry is India's fourth-largest sector, growing steadily due to rising disposable incomes, a youthful population, and increased brand awareness. Post-pandemic changes in food habits, a demand for healthier options, and a shift towards branded packaging are driving growth. Additionally, new product launches and an expanding distribution network are expected to support ongoing demand.

3.2.5 Trip Length Distribution

Trip Length Distribution analysis gives distance-based patterns for project road traffic. Trip length is categorized into nine trip length groups. Trip length distribution table for different vehicle types is presented below.

Table 3-5: Trip Length Distribution

Trip Length Group (Kms)	Car/Jeep/Van (CJV)	2A Bus	LCV	2A Truck	3A Truck	MAV
Devanahalli TP						
0 to 20	11.5%	3.2%	3.8%	7.2%	3.4%	5.1%
21 to 40	51.9%	47.2%	35.0%	33.6%	20.9%	26.8%
41 to 100	26.0%	31.6%	31.3%	29.6%	28.8%	21.5%
101 to 200	2.9%	3.8%	3.7%	7.0%	4.2%	4.2%
201 to 350	3.2%	7.9%	9.5%	14.4%	12.7%	10.6%
351 to 500	0.9%	2.0%	1.4%	3.2%	2.6%	1.4%
501 to 750	2.4%	2.7%	8.2%	4.5%	15.9%	15.3%
751 to 1000	0.7%	1.4%	3.4%	0.5%	5.6%	5.3%
Beyond 1000 Km	0.6%	0.3%	3.6%	0.0%	5.9%	9.8%
Grand Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Crisil Intelligence

Cars are mostly short distance trip, about ~90% of trip travel within 100 kms of toll plaza due to proximity of Bengaluru Airport and Bengaluru city.

In MAV about ~58% of trips lie between 0-200 km, indicating travel over short distances is a key feature of vehicle movement along this corridor.

4 Review of Historic Traffic

4.1 General

This section summarizes the historical performance of the project section in order to understand baseline traffic patterns comprising of historical tollable traffic and revenue growth, traffic and revenue composition, trip distribution, trip factors, seasonality and trend of traffic over the available data set.

The historical tollable traffic data mode wise was made available by client for the toll plaza on the project road as per following:

Table 4-1: Historical Traffic and Revenue Data Availability

Data Source	Type of Data	Period
TMS Data	Traffic & Revenue Data Vehicle Wise	May 2014 to September 2025

Source: Client, Crisil Intelligence

Mode wise historical traffic and composition is presented in the table below.

Table 4-2: Historic Traffic

FY	Car/Jeep/Van (CJV)	LCV/Mini Bus	2A Bus/ Truck	3A Bus/Truck	MAV	OSV	Total	PCU
2015	45,059	3,535	2,233	556	652	1	52,035	61,663
2016	53,710	3,627	2,134	586	687	0	60,744	70,403
2017	60,238	3,894	2,206	590	691	1	67,620	77,582
2018	61,759	3,980	2,175	598	701	3	69,216	79,218
2019	57,802	3,748	2,452	813	953	1	65,769	77,512
2020	52,703	3,152	2,473	690	808	2	59,827	70,562
2021	27,140	2,582	1,438	564	661	2	32,386	39,999
2022	33,241	2,262	1,839	826	968	3	39,140	49,000
2023	59,384	1,432	2,867	1,010	1,184	2	65,880	78,501
2024	74,408	1,358	3,290	964	1,130	3	81,152	94,302
2025	81,307	1,330	3,534	817	957	2	87,947	100,672
2026 (Till Sep)	84,064	1,344	3,723	773	905	2	90,811	103,650
CAGR (25-16)	**4.7%**	**-10.5%**	**5.8%**	**3.8%**	**3.8%**		**4.2%**	**4.1%**
CAGR (25-20)	**9.1%**	**-15.9%**	**7.4%**	**3.4%**	**3.4%**		**8.0%**	**7.4%**
CAGR (25-23)	**17.0%**	**-3.6%**	**11.0%**	**-10.1%**	**-10.1%**		**15.5%**	**13.2%**

Source: Client TMS Data, Crisil Intelligence

Project road has seen traffic CAGR growth of 4.1% at the toll plaza in PCU terms from FY 2016 to FY 2025. In the last two years the traffic shown higher growth of 13.2% at the toll plaza in PCU terms.

- Car and LCV traffic has declined in FY19 due to operational of alternate route via BK Halli in 2018.In addition to BK Halli alternate route, there are two more alternate routes that contributed to decline in car traffic, these are SH 104 and New Airport access road.

- Post ETC/Fastag implementation, LCV and 2A corrections have also been observed across the project

corridor which is in line with the benchmark across the country. Therefore, a sudden decline in LCV volume because of MLCV being recorded in Car category post FY20.

- Post pandemic there is surge in passenger traffic due to operation of Terminal-2 airport in Jan-23 and international operations in Nov-23. Also, removal of work from home played a significant role for this surge in traffic during FY23.

- There is a decline in 3A/MAV traffic due to restrictions of heavy vehicles in Bengaluru city on weekdays from Nov-22, in addition this restriction is further extended to Saturdays from Aug-24 onwards. In addition to restriction to freight movement, STRR was also partially operational therefore impacting FY24 & FY25 traffic.

4.2 Historic Toll Segmentation

For the present study FY26 (Apr-Sep) toll segmentation has been adopted for FY26. However, in case of Car category Oct-25 data has been used for the segmentation. Return tickets are major in CJV category primarily due to the closer proximity of Bengaluru city and Kempegowda International Airport.

Table 4-3: Historic Toll Segmentation at the toll plaza on the project road

FY	Vehicle Type	Single	Return	Monthly	Local Pass	Exempt	Annual Pass
Oct-25	Car/Jeep/Van (CJV)	21.6%	56.8%	2.8%	2.3%	6.1%	10.4%
2026 (Apr-Sep)	LCV/Mini Bus	39.0%	57.7%	0.4%	0.0%	2.9%	
	2A Bus	3.8%	89.7%	2.3%	0.0%	4.2%	
	2A Truck	57.6%	39.4%	0.3%	0.0%	2.6%	
	3A Bus/Truck	37.4%	57.9%	2.0%	0.0%	2.7%	
	MAV	57.4%	40.6%	1.5%	0.0%	0.5%	
	OSV	54.9%	19.1%	0.0%	0.0%	26.0%	

Source: Client TMS Data, Crisil Intelligence

5 Base traffic estimation

5.1 Seasonality Factors

Traffic volumes on roads varies throughout the year, influenced by socio-economic activities in the surrounding regions. To accurately estimate the Annual Average Daily Traffic (AADT) for the road, it is crucial to account for these seasonal variations.

To achieve this, a seasonal correction factor is applied, which is derived from secondary data sources such as historical traffic data, fuel sales and similar indicators. Project Road is having enough historical data to arrive the seasonal correction factors. Hence consultant adopted the same factors to arrive base year AADT.

Seasonal correction Factors (SCF)

Seasonal correction factors for the latest years of FY 24 & FY 25 are tabulated below.

Table 5-1: Seasonal correction factors for FY 24 and FY 25

FY	Month	Car/Jeep/Van (CJV)	LCV/Mini Bus	2A Bus/ Truck	3A Bus/Truck/MAV	OSV
2024	Apr	1.07	0.97	1.08	0.93	0.88
	May	1.05	0.99	1.06	1.02	0.95
	Jun	1.05	0.95	1.04	0.96	0.93
	Jul	1.04	1.01	1.06	0.96	1.18
	Aug	1.04	1.01	1.01	0.91	1.16
	Sep	1.03	1.04	0.99	0.97	1.06
	Oct	1.00	1.03	0.97	1.02	1.16
	Nov	0.98	1.05	0.99	1.10	1.70
	Dec	0.92	1.01	0.97	1.03	1.31
	Jan	0.95	1.03	0.97	1.08	0.99
	Feb	0.93	0.95	0.94	1.01	0.96
	Mar	0.96	0.99	0.94	1.04	0.56
2025	Apr	1.04	1.05	1.04	1.04	0.54
	May	1.02	1.01	1.01	1.00	0.76
	Jun	1.02	1.00	1.02	0.99	0.75
	Jul	1.04	0.98	1.02	0.97	1.00
	Aug	1.00	1.01	0.99	0.97	1.15
	Sep	1.02	0.98	1.00	0.95	1.20
	Oct	1.01	1.01	0.99	1.03	1.75
	Nov	0.96	1.00	0.99	1.05	1.08
	Dec	0.95	0.99	1.00	1.03	1.51
	Jan	0.97	1.00	0.98	0.99	1.24
	Feb	0.98	1.01	0.99	0.99	1.24
	Mar	1.00	0.96	0.98	1.01	0.96

Source: Client TMS Data, Crisil Intelligence

5.2 Base Traffic Estimation

For base traffic (annual average daily traffic) estimation of the present study, current fiscal 6-months (Apr-25 to Sep-25) of TMS traffic data were annualized using SCF factor of FY 24 & FY 25 traffic data to arrive at the annual average daily traffic (AADT) for FY 26.

The AADT estimation for the base case for FY26 is presented in table below

Table 5-2: Base Traffic Estimation -FY26 AADT

Particulars	FY Year	Car/Jeep/Van (CJV)	LCV/Mini Bus	2A Bus/Truck	3A Bus/Truck	MAV	OSV	Vehicles	PCU
ADT (Apr-Sep)	**FY 26**	84,064	1,344	3,723	773	905	2	90,811	103,650
SCF	**FY 24 & FY 25**	1.03	1.00	1.03	0.97	0.97	0.92		
AADT	**FY 26**	**86,930**	**1,341**	**3,818**	**750**	**879**	**2**	**93,720**	**106,608**

Source: Client TMS Data, Crisil Intelligence

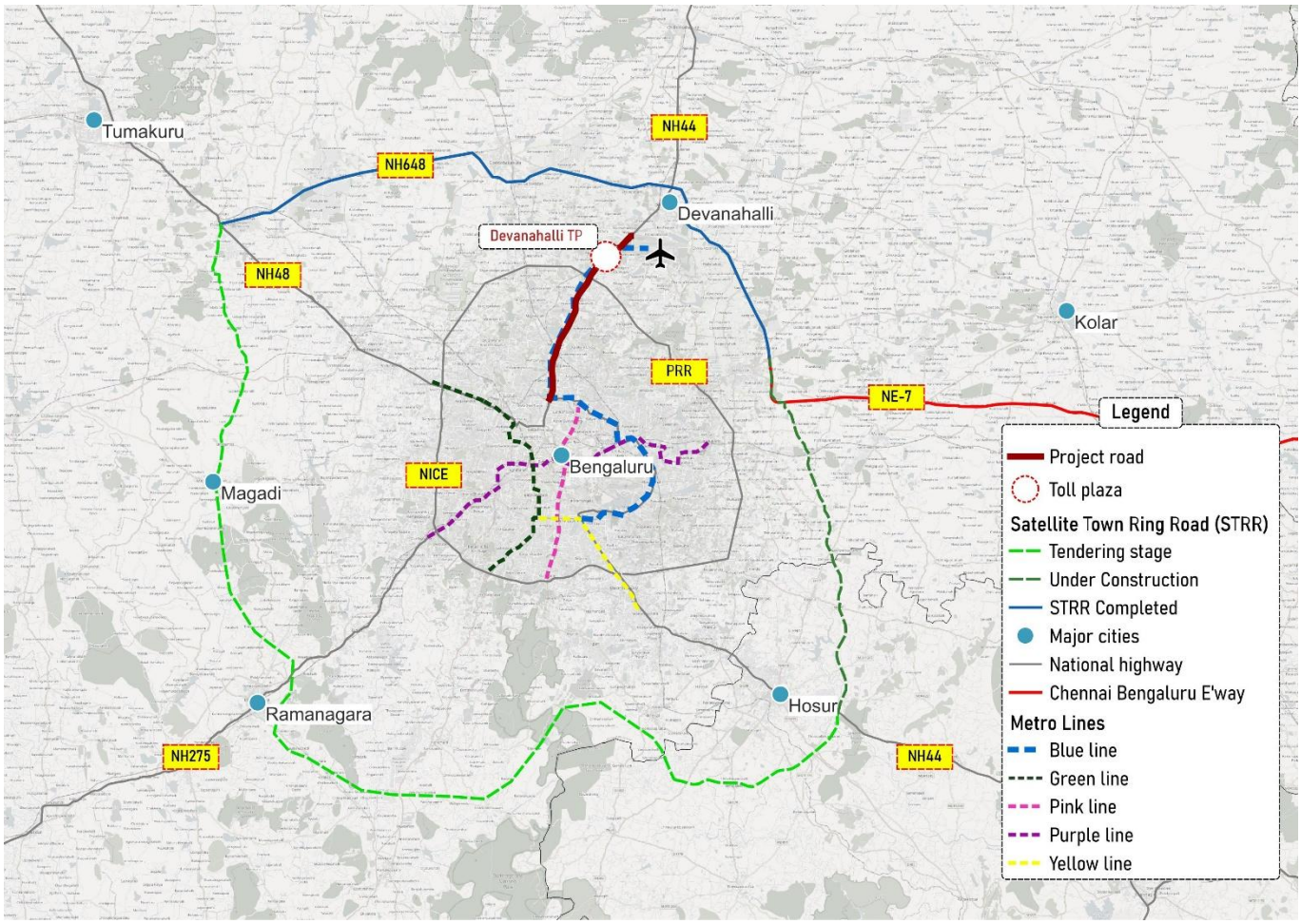
6 Network and Industrial developments in the Region

In the case of the project road, there are no short distance alternate routes available that will impact the traffic on the project road. However ongoing and upcoming network developments that could impact the project road are:

- Bengaluru Satellite Town Ring Road (STRR)
- Bengaluru Metro- Airport Blue Line

The alignment of the developments along with the project road is presented in figure below.

Figure 6-1: Network Development around project road



Source: Open Street Map, Crisil Intelligence

The details of the development in term of milestone, expected completion date and possible impact to project road traffic is presented in table below.

Table 6-1: Details of Network Development and Possible impact

S. No	Details of Development	Milestone/Completion	Impact Type	Possible Impact
1	**STRR** • 280.8 km long • 4/6 lanes	• Dobbasapete to Doddaballapur- **Apr-24**	Negative	At present, STRR is partially operational and is expected to be fully

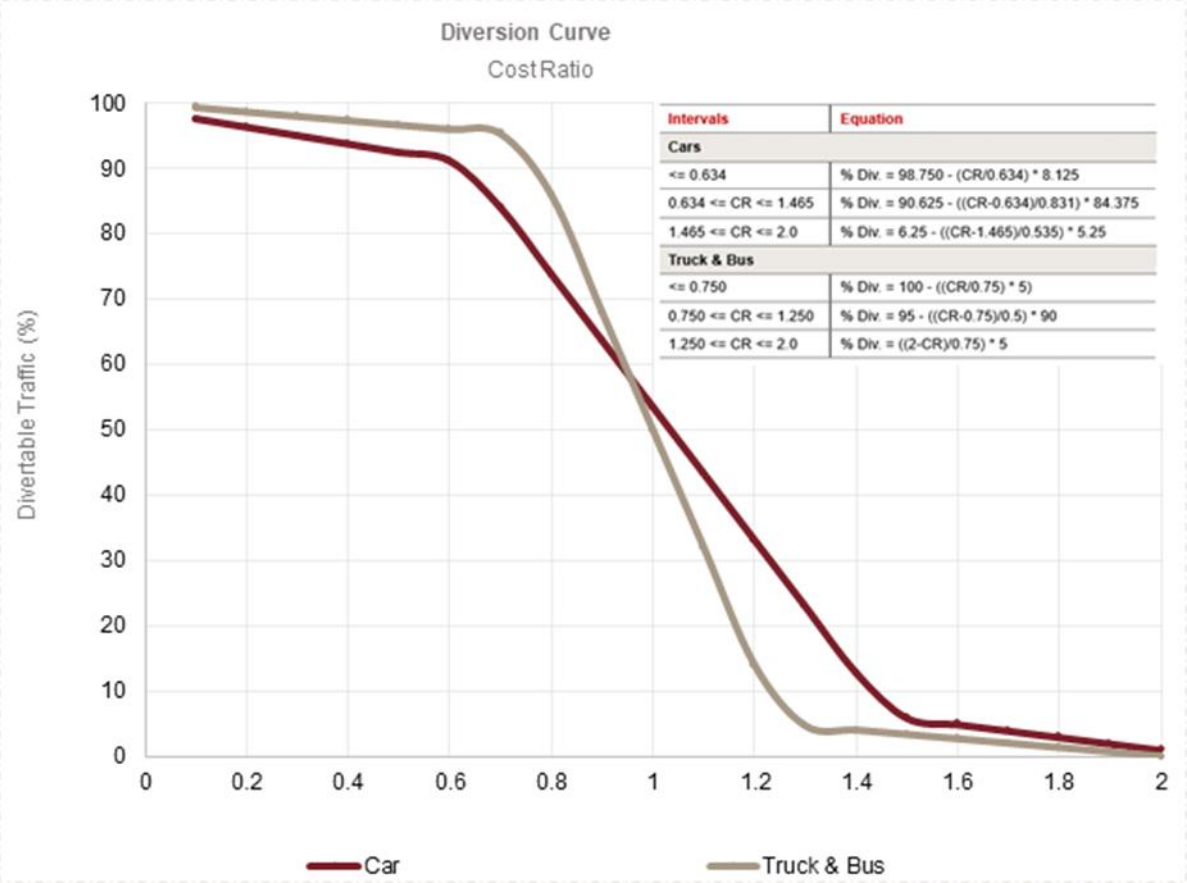
S. No	Details of Development	Milestone/Completion	Impact Type	Possible Impact
		• Doddaballapur to Hoskote- **Nov 23** • Hoskote to Chandrapura-**Dec 24**		operational by FY31. Impact has been divided into three categories, these are Hosur bound trips, Ramanagaram bound trips and Kunigal bound trips. For Hosur bound trips partial impact has been considered from FY27 with 50% and 100% onwards FY28 and for Ramanagaram bound trips and Kunigal bound trips impact has been considered from FY31 with 50% and 100% onwards FY32
2	**Impact of Bengaluru Metro**	Bengaluru metro is currently operational on Purple, Green and Yellow lines and under construction projects include pink lines and blue lines and is expected to be completed by 2027	Negative	As the construction of metro is undergoing and is expected to be completed by FY27, therefore metro impact has been considered from FY28 with 50% and 100% onwards FY28

Source: Crisil Intelligence

6.1 Approach and Methodology for Diversion Analysis

The assessment of traffic diversion if any away from the project road has been done using cost ratio analysis. The road user cost is estimated based on the vehicle operating cost (VOC) and Value of time (VOT) as mentioned in IRC: SP30-2019. The generalized cost ({VOC} + t{VOT} + {toll rates}) for the project road and the alternate or proposed route is then compared to obtain a cost ratio. Cost ratio is applied on the diversion curve equations (Binary logit model) to estimate the expected percentage of traffic diverting, based on users perceived costs on the existing and alternate or proposed facility. The diversion percentages are then applied on the in-scope traffic derived from the OD analysis to estimate the traffic that would shift to/from the project road. Diversion curve (equation) mentioned in IRC:108-2015 and is presented below.

Figure 6-2: Diversion curve as per IRC:108-2015



Source: IRC 108-2015, Crisil Intelligence

6.2 Impact of Bengaluru Satellite Ring Road

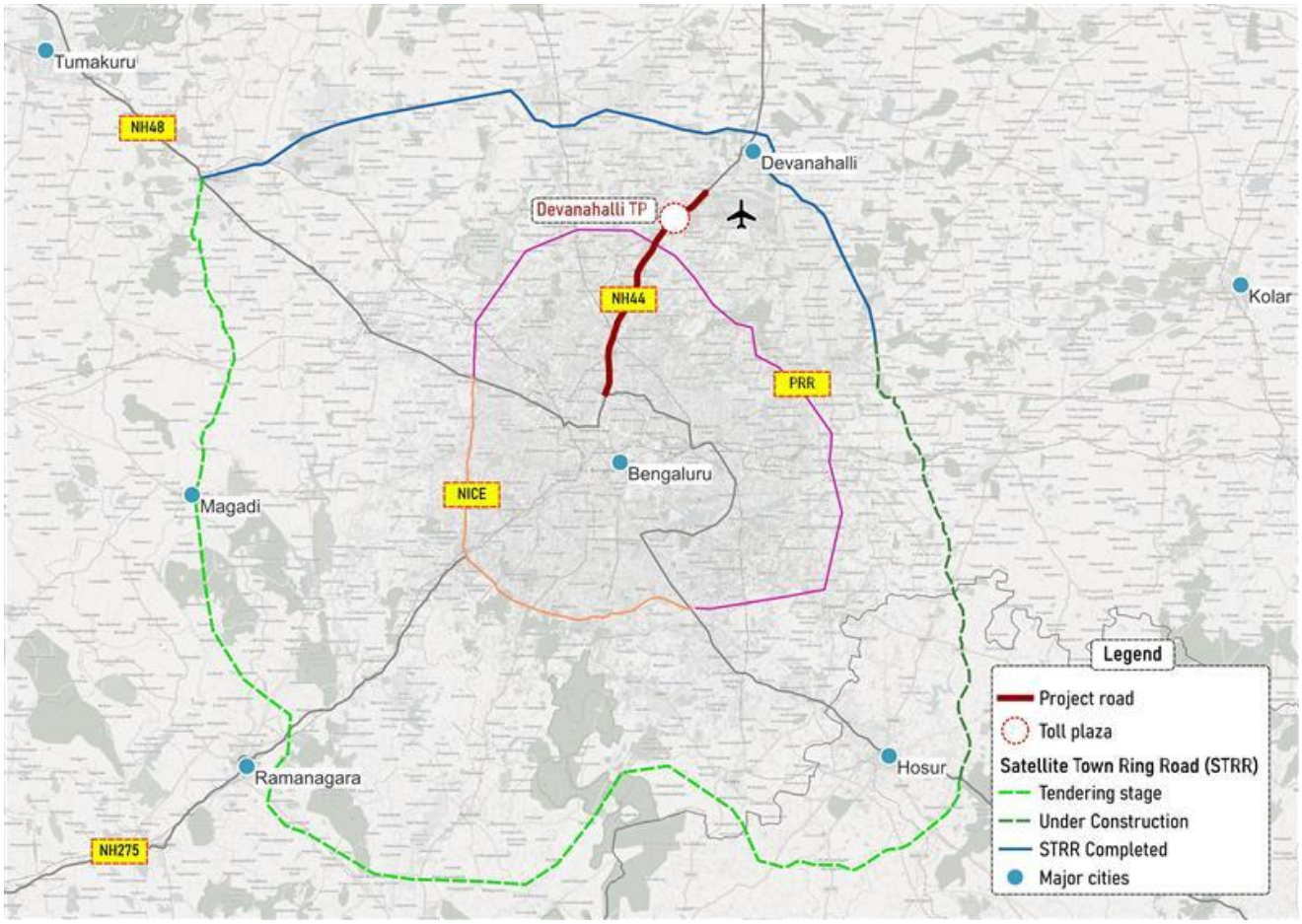
The 280.8 km Bangalore Satellite Town Ring Road (STRR, NH-948A), developed by NHAI, is partially operational and under construction. This access-controlled expressway has 4-6 lanes and connects 12 towns in Karnataka, including Dobbasapete, Doddaballapur, Devanahalli, Sulibele, Hoskote, Sarjapura, Attibele, Anekal, Tattekere, Kanakapura, Ramanagara, and Magadi. The Bengaluru Satellite Town Ring Road (STRR) Packages 1 and 2, covering the Dobbasapete – Hoskote segment, were inaugurated on March 11, 2024.

STRR once fully operational may take away some of the traffic which is currently using the project road. In order to understand the quantum of traffic that may shift to STRR, the potential divertible traffic is divided into three categories, these are: -

- Hosur Traffic
- Ramanagara Traffic
- Kunigal Traffic

The alignment of the STRR and the project section is presented in figure below.

Figure 6-3: Alignment of Project Road and STRR



Source: Open Street Map, Crisil Intelligence

Based on the information available in the public domain, it is anticipated that the STRR will be fully operational by FY31. The length for via Project Road and Via Alternate Road is presented below.

Figure 6-4: Length Via PR and AR

Particulars	Via Project Road Length (Km)	Via Alternate Road (STRR) Length (Km)
Hosur Traffic	85	70
Ramanagara Traffic	94	117
Kunigal Traffic	70	79

Source: Crisil Intelligence

Figure 6-5: Toll Rates and Generalised Cost

Particulars	Car/Jeep/Van (CJV)	LCV	2A Truck	3A Truck	MAV
Toll Rates					
Hosur Traffic-PR	120	185	370	560	560
Hosur Traffic-AR	145	235	490	535	770
Ramanagara Traffic-PR	120	185	370	560	560
Ramanagara Traffic-AR	195	315	660	720	1,040
Kunigal Traffic-PR	120	185	370	560	560
Kunigal Traffic-AR	140	225	465	510	730
Generalised Cost					

Particulars	Car/Jeep/Van (CJV)	LCV	2A Truck	3A Truck	MAV
Hosur Traffic-PR	1,554	6,901	7,612	12,106	12,116
Hosur Traffic-AR	1,141	3,422	3,604	5,202	5,461
Ramanagara Traffic-PR	1,610	7,624	8,427	13,447	13,456
Ramanagara Traffic-AR	1,856	5,624	5,872	8,531	8,891
Kunigal Traffic-PR	1,233	5,696	6,254	9,872	9,882
Kunigal Traffic-AR	1,265	3,812	4,040	5,865	6,113

Source: Crisil Intelligence

The assessment of STRR diversion from the project road is presented in table below.

Table 6-2: STRR Diversion Impact

Particulars	Car/Jeep/Van (CJV)	LCV	2A Truck	3A Truck	MAV	Total	PCU
Potential Traffic							
A) Hosur Traffic	0.4%	1.6%	1.9%	2.9%	2.2%	0.5%	0.6%
B) Ramanagara Traffic	1.4%	4.8%	5.0%	7.0%	4.2%	1.5%	1.7%
C) Kunigal Traffic	0.2%	0.5%	0.0%	0.5%	0.2%	0.2%	0.2%
Diversion %							
D) Hosur diversion %	100%	100%	100%	100%	100%		
E) Ramanagara Traffic	38.0%	100%	100%	100%	100%		
F) Kunigal Traffic	50.8%	100%	100%	100%	100%		
Diverted Traffic							
G) Hosur Traffic (A*D)	0.4%	1.6%	1.9%	2.9%	2.2%	0.5%	0.6%
H) Ramanagara Traffic (B*E)	0.5%	4.8%	5.0%	7.0%	4.2%	0.7%	1.0%
I) Kunigal Traffic (C*F)	0.1%	0.5%	0.0%	0.5%	0.2%	0.1%	0.1%

Source: Crisil Intelligence

The operation of STRR may result in a loss of about 0.6% of Hosur trips, 1.0% of Ramanagara trips and 0.1% of Kunigal trips. It is to be noted that one of the sections of STRR, i.e., from Chandrapura to S.Mudhuganapalli is expected to be operational by the end FY26, therefore the impact for Hosur trips has been considered from FY27 with 50% impact and 100% onwards FY28. The section from S.Mudhuganapalli to Dobbasapete is under tendering process and is expected to be completely operational by FY31, therefore the impact for Ramanagara trips and Kunigal trips has been considered from FY31 with 50% and 100% onwards FY32.

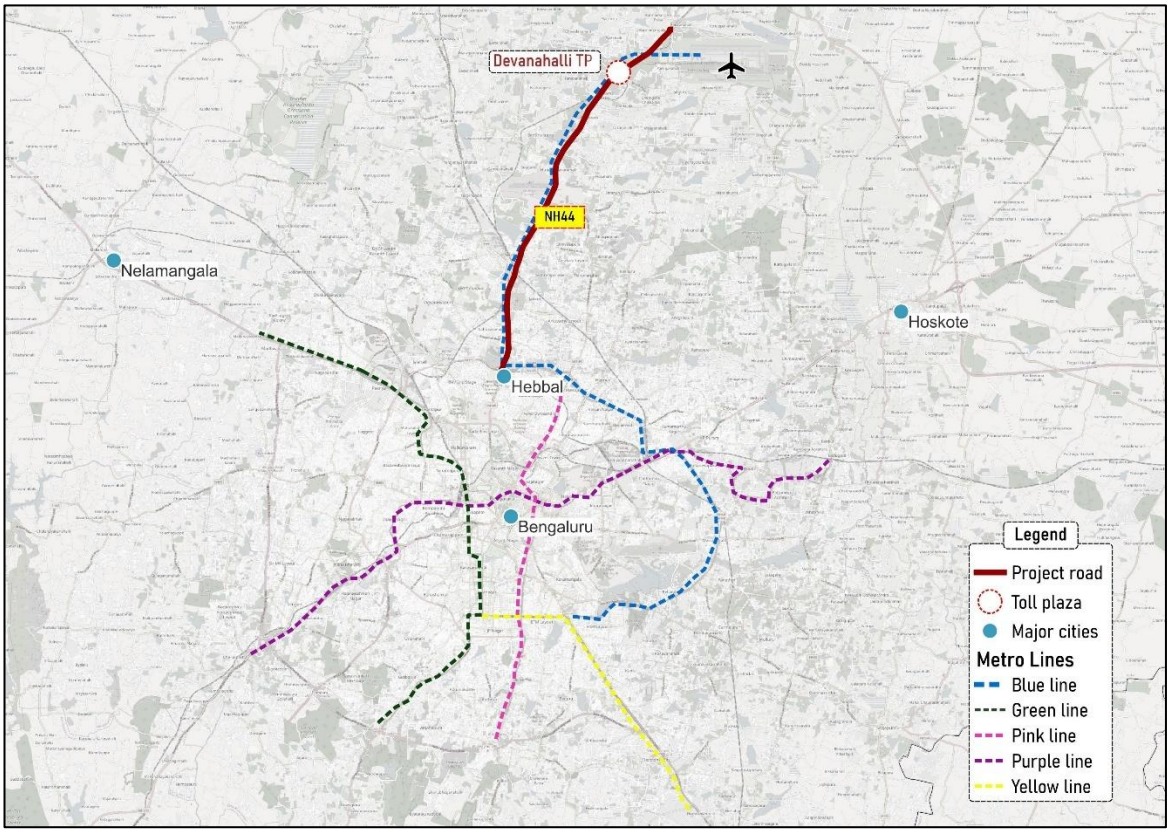
6.3 Impact of Bengaluru Metro

Bengaluru has a well-planned and expanding metro network, known as Namma Metro, which is a rapid transit system. At present Namma metro is currently operational on two lines. Purple lines which connect Baiyappanahalli to Mysore Road covering a distance of 18.1 km with 17 stations and green line which connects Nagasandra to Yelachenahalli covering a distance of 24.2 km with 24 stations.

The Bangalore Metro Rail Corporation Limited is presently undertaking construction of several metro lines in the city, of which blue metro line will enhance the connectivity to the airport and provide an alternate mode of transport to the road-based traffic moving towards Airport.

The alignment of metro with respect to PR is presented below.

Figure 6-6: Alignment of Project Road and Bengaluru Metro Lines



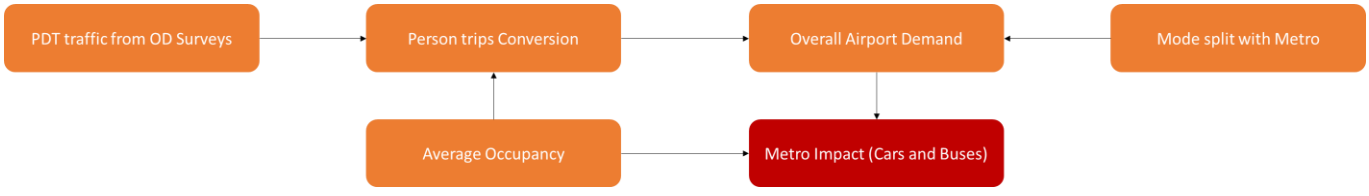
Source: Open Street Map, Crisil Intelligence

6.4 Approach and Methodology for Metro Impact

As the impact of Metro cannot be analysed through Generalized Cost Ratio, therefore a separate methodology has been adopted to arrive the potential traffic that may shift to Metro.

In this methodology Potential Divertible Traffic has been analysed and is converted to passenger trips by multiplying it with the occupancy factor. This passenger trips have been considered as overall airport demand and a mode wise split for metro has been applied and divertible traffic has been calculated.

Figure 6-7: Methodology for Bengaluru Metro



Source: Open Street Map, Crisil Intelligence

The assessment of metro line diversion has been considered based on the DPR for Airport metro line published in 2019 by BMRCL present in the public domain which states that almost 8 lac people will ride metro by 2031. As per the information available in report an occupancy factor of 2.3 for Cars and 37.5 for buses has been considered. Based on the travel demand estimation, mode share of different modes is presented below.

Modal Share	Domestic Passenger
Metro	30%
Car	20%
Taxi	40%
Bus	10%
Total	100%

Source: Bangalore Metro Rail Corporation Ltd. Report, Crisil Intelligence

Metro line diversion from the project road is presented in table below.

Table 6-3: Metro Diversion Impact

Particulars	Car/Jeep/Van (CJV)	2A Bus	Total	PCU
Potential Traffic (A)	44%	30%	46%	42%
Total Person Trips (B)	1,24,466			
Car Person Trips (Mode share*Total Person Trips) (C)	24,893		-	-
Taxi (Mode share*Total Person Trips) (D)	49,786			
Bus (Mode share*Total Person Trips) (E)		12,447		
Metro Trips ((A*Occupancy Factor)-(B+C))	14,142	22,730		
Metro Diversion	7%	19%	7%	7%

Source: Crisil Intelligence

The operation of blue line metro may result in loss of about 7% PCU from the project road. As per the information available in the public domain the operation of blue line metro is expected to start from FY28. Therefore, impact for the same has been considered in phased manner with 50% in FY28 and 100% impact onwards FY29

7 Traffic Growth Estimation & Traffic Forecast

7.1 Traffic projections – Outline

Traffic projections for the asset are done through Crisil's proprietary commodity-based approach (bottom-up). This section provides an overview and detailing of the commodity the approach.

7.2 Traffic projections – Commodity based approach

Crisil, based on its coverage of 80+ sectors and the MSME industry, has developed a knowledge base to understand the growth of industries and demand across various regions and clusters. The growth expectations for various industries are applied to each vehicle category based on the commodity composition of the vehicle category. For example, the share of light commercial vehicles (LCVs) carrying agricultural commodities is expected to grow as per agricultural output growth; the share of LCVs carrying consumer products is expected to grow as per the volume growth of durables; and the share of Multi axle vehicles (MAVs) carrying steel commodities is expected to grow as per demand/supply volume of steel products based on regional dynamics. This approach helps Crisil provide a more accurate growth rate of commercial traffic in the region.

For passenger traffic, Crisil assesses the sale of passenger cars in the region, growth of vehicular population, purpose and frequency of passenger travel, population growth, expansion of the city, and infrastructure development in the catchment area. From the OD analysis, the major influence of passenger traffic is from Bengaluru region and same has been detailed out in section **7.2.2**

Further, Crisil also examines the various factors that will impact traffic over the concession period, such as upcoming alternative road routes, truck aggregation by logistics players, dedicated freight corridors and other transportation options. Thus, the analysis considers the impact of central and state policies, growth in production and consumption centres along the stretch, and infrastructure in the adjoining regions. The report covers both growth drivers and restraints for the traffic along the stretch. Crisil has enumerated and detailed the parameters that will positively/negatively impact the traffic on the stretch in the future.

Crisil has used its proprietary traffic projection methodology to project traffic using regional industry growth assumptions, macroeconomic developments, infra development and consumption centre growth factors of the catchment area and adjacent regions.

Figure 7-1: Commodity based approach: Illustrative example for Commercial vehicles

Commodity	MAV (Vehicles) Year 1	YoY growth	MAV (Vehicles) Year 2
Construction materials	300	9%	327
Consumer products	100	4%	104
Agri Produce	200	3%	206
Iron & Steel products	50	9%	55
Chemical products	200	5%	210
Total vehicles	XX		YY

Commodity	LCV (Vehicles) Year 1	YoY growth	LCV (Vehicles) Year 2
Construction materials	100	9%	109
Consumer products	200	4%	208
Agri Produce	50	3%	52
Iron & Steel products	300	9%	327
Chemical products	200	5%	210
Total vehicles	XX		YY

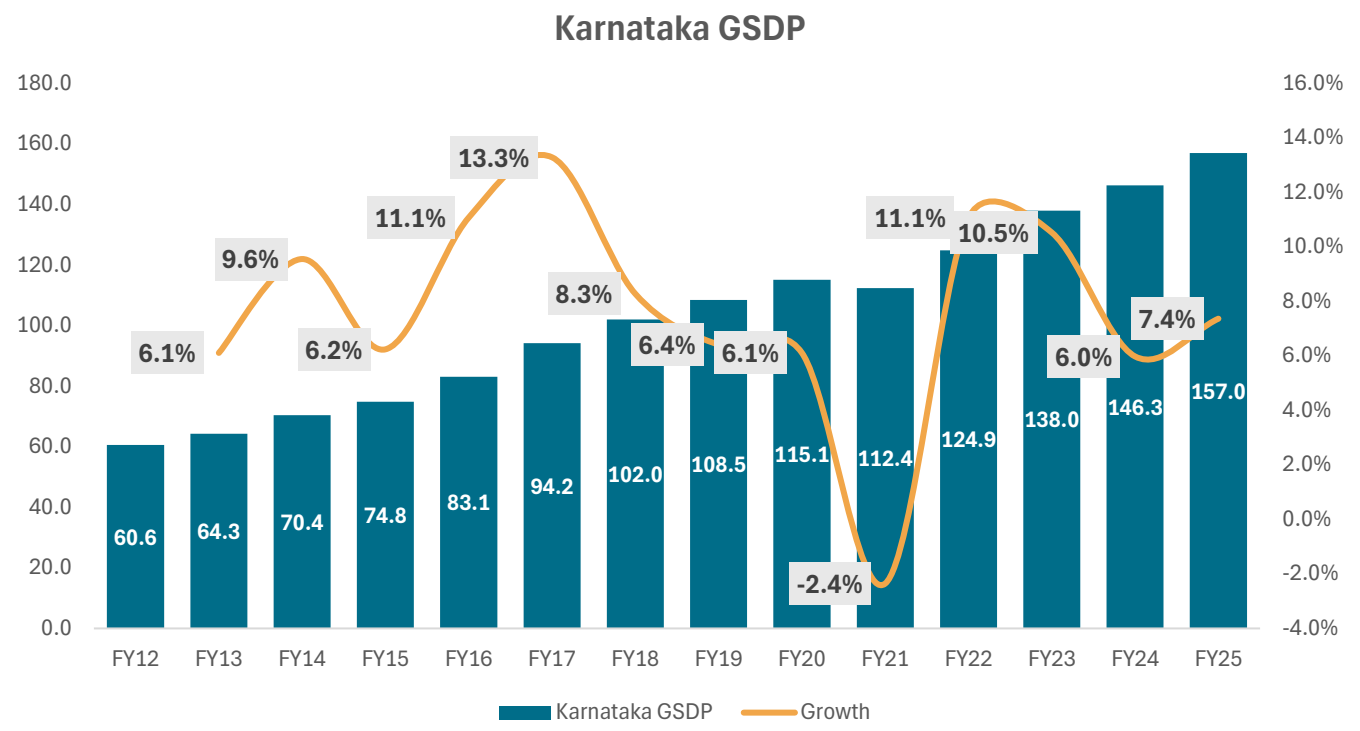
Growth rates for commodities are based on commodity specific demand/supply drivers and regional dynamics

7.2.1 Karnataka State profile

Karnataka, located in the southwestern part of India, is a state known for its rich cultural heritage, diverse geography, and vibrant economy. With a population of approximately 64 million people, Karnataka is a major hub for industry and services, accounting for around 10% of India's GDP. The state has a strong industrial profile, with major manufacturing sectors including aerospace and defence, automobiles, IT and electronics, biotechnology, and textiles. Karnataka is also a leading destination for service sectors such as IT and ITES, tourism, healthcare, education, and financial services, with many world-class institutions and companies operating in the state. Bengaluru, the state capital, is known as the "Silicon Valley of India" and is home to many major IT companies, while the state's rich cultural heritage and natural beauty attract millions of tourists every year.

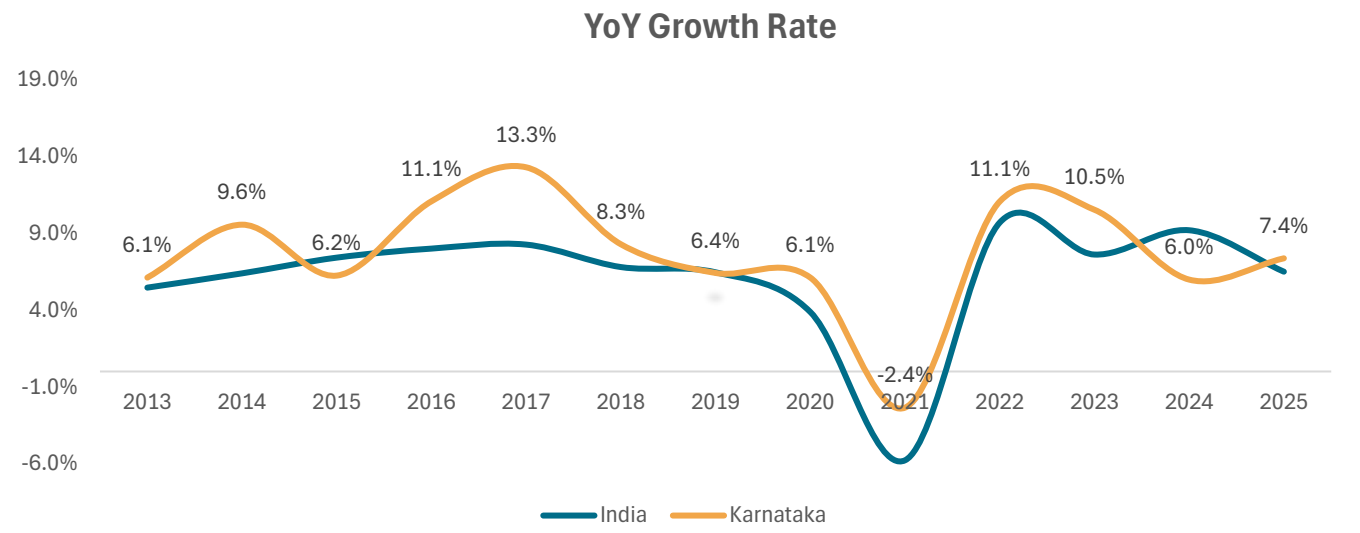
Karnataka, with a GSDP of ₹15,703 billion in 2024-25, has consistently demonstrated robust economic growth, achieving a compounded annual growth rate (CAGR) of 7.8% from 2011-12 to 2022-23. After experiencing a 2.4% decline in FY21 due to the COVID-19 pandemic, the state's economy rebounded with a 11.1% growth in FY22, underscoring its resilience. The state's per capita income has also shown steady growth, with a CAGR of 7.6% from fiscal 2012 to fiscal 2025.

Figure 7-2: Karnataka GSDP (Lakh Crore)



Source: MOSPI, Crisil Intelligence

Figure 7-3: Karnataka GSDP vs India GDP



Source: MOSPI, Crisil Intelligence

The tertiary sector dominates Karnataka's economy, contributing 66.6% to the GSDP in 2024-25, followed by the secondary sector at 23.6%, and agriculture and allied activities at 9.8%. Sectoral historical performance is presented in **Table 7-4**.

Table 7-1: Sectoral Growth-Karnataka

Sector	2013-2019	2019-2025	2013-2025
Primary	4.0%	6.4%	5.1%
Secondary	8.2%	4.4%	6.3%
Tertiary	9.6%	7.7%	8.6%

Source: MoSPI, GoI, Crisil Intelligence

Primary sectors, which include agriculture, forestry and fishing, exhibited a steady growth of 5.1 percent during 2013-2025. The secondary sector, comprising industries such as manufacturing, construction and utilities, experienced growth of 6.3 percent during 2013-2024.

The subsector indicator growth is presented in **Table 7-2**.

Table 7-2: Sub-Sectoral Growth-Karnataka

Sub Sector	2013-2025
Crops	2.4%
Mining	11.3%
Manufacturing	6.9%
Construction	4.9%

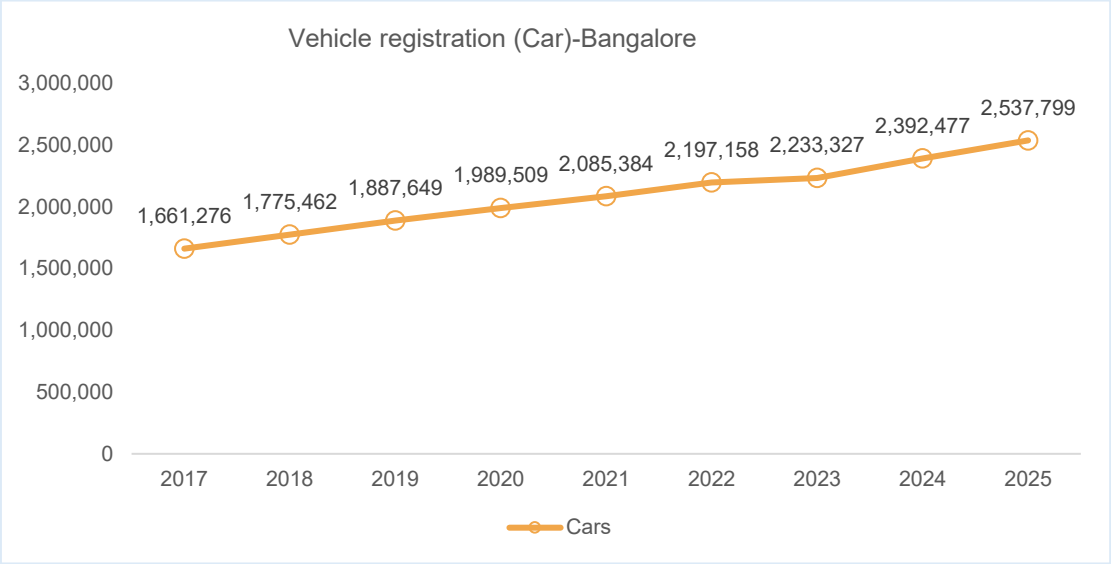
Source: MoSPI, GoI, Crisil Intelligence

7.2.2 Outlook for Car growth

The rate of car ownership in India has increased from 6.6 per 1,000 people in 2001 to 30-35 per 1,000 people in 2024. Despite India's car fleet growing at an annual rate of 10% for nearly 25 years, the rate of car ownership remains low compared to countries with similar economic status and significantly lower than developed countries, which have a rate of around 450 per 1,000 people. This low rate of car ownership indicates potential for continued growth in the coming years. With the ongoing increase in car ownership and improvements in the road network, the use of cars for inter-urban travel is showing a growing trend.

Bengaluru’s vehicle population grew steadily across all segments between FY17 and FY25 with private car registration surged by ~900k during the period and CAGR of 5.4% from 2017 to 2025.

Figure 7-4: Motor Car vehicle registration growth

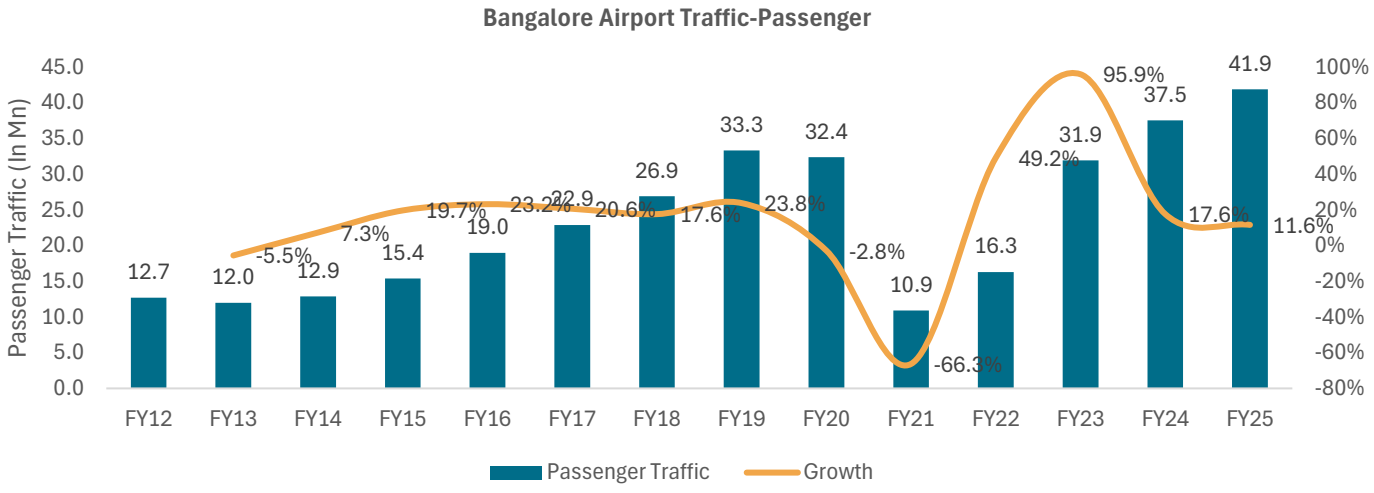


Source: Vahan Dashboard, Ministry of Road Transport & Highways (MoRTH)

Bangalore Airport Passenger Traffic

Kempegowda International Airport, Bengaluru (KIAB) is one of the fastest-growing airports in India, serving as a major hub for domestic and international air travel. The airport has witnessed significant passenger traffic growth over the years, driven by the city's thriving economy, growing tourism, and increasing air connectivity. Historically, it was noted that the traffic on the Asset, particularly CJV traffic, closely aligned with the passenger traffic at the airport.

Airport Authority of India shows good growth in passenger traffic both domestic and international for (FY12-FY25) at 9.6% CAGR. Airport Passenger data for Kempegowda International Airport, Bengaluru (KIAB) from AAI is compiled in the chart below.



Source: AAI, Crisil Research Estimates

Bangalore Airport Expansion Plan and Growth Assumptions

The airport experienced a robust growth of 10% in FY24, driven by terminal expansion and an increase in international connectivity to Bangalore following the COVID-19 pandemic. With the operationalization of Terminal 2,

the current capacity of Bangalore Airport stands at 52 million passengers per annum (MPPA).

The Phase 2 expansion of Terminal 2 is expected to boost the airport's capacity by an additional 25 MPPA. Accordingly, a jump in passenger traffic is expected in fiscal 2029 and 2030.

The increase in passenger traffic at the airport will contribute to traffic growth on the Asset. CJVs represent 90% of the traffic and 72% of the revenue on the Asset.

Crisil's projections for passenger traffic, based on the capacity addition plans are as provided below:

Table 7-3: Airport Passenger Forecast Growth Rates

Vehicle Type	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Passenger Forecasts (in MPPA)	~45			~62	~70		82.0
Growth Rate	7.5%	9.0%	9.0%	15.5%	13.4%	8.0%	8.0%

Source: Bangalore International Airport Limited (BIAL), Crisil Intelligence

7.2.3 Commodity Overview

As mentioned in section primary data collection & analysis, the analysis of freight movement across the toll plaza reveals that the major commodities being transported include Agri produce, construction materials, iron and steel products and consumer foods and products.

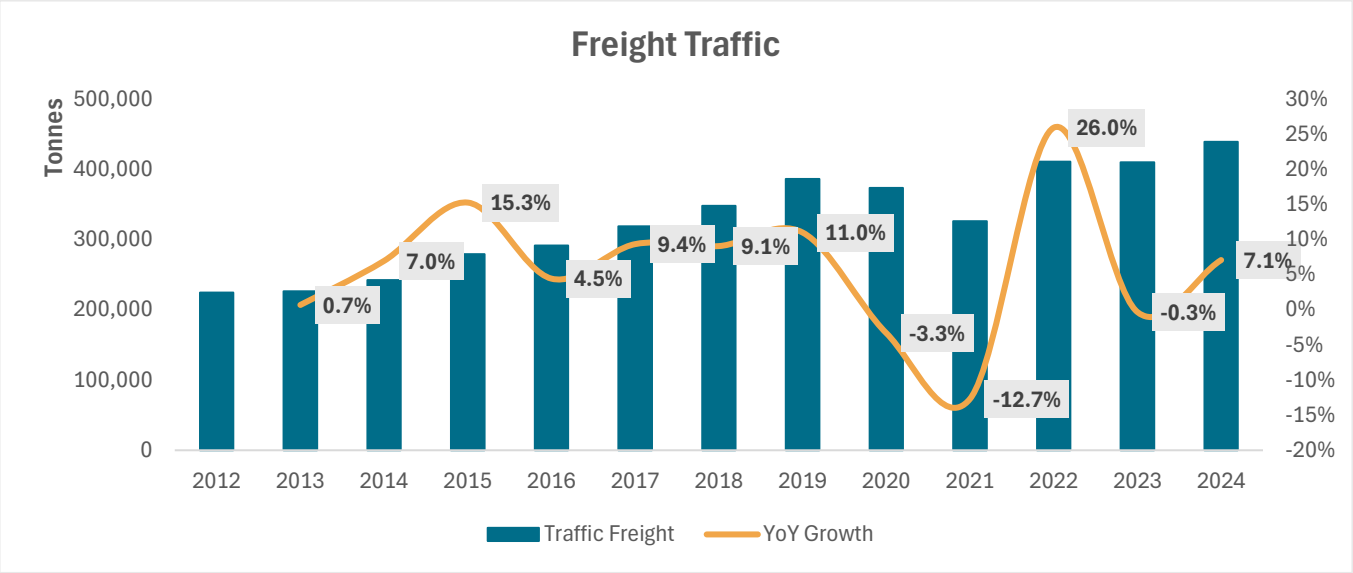
Courier & Parcels

The project road connects major cities like Bengaluru, Hyderabad, Devanahalli and Chikballapur. The project section is part of North-South corridor

Bangalore's Kempegowda International Airport (BLR) has witnessed significant cargo growth over the years, establishing itself as one of the leading cargo hubs in India. Recent years have seen a robust increase in cargo traffic, reflecting the overall growth of the logistics and supply chain sectors in India. In the fiscal year 2022-2023, BLR handled approximately 500,000 metric tonnes of cargo, marking a significant increase compared to previous years. A substantial portion of the cargo handled at BLR is international, with a significant increase in exports, particularly in sectors like pharmaceuticals and electronics.

The airport's dedicated cargo terminal has a capacity to handle over 1 million metric tonnes per year, which supports the anticipated growth in cargo traffic. Bangalore's Airport freight traffic (In Tonnes) has shown a steady growth with CAGR of 5.7% from FY12 to FY24. Year on year freight traffic (In Tonnes) handled at Bangalore's Kempegowda International Airport is presented below.

Figure 7-5: Bangalore Airport Freight Traffic (In Tonnes)



Source: Bangalore International Airport Limited (BIAL), Crisil Intelligence

Also, the trend of individuals and families relocating to cities like Bangalore for better employment opportunities. Bangalore has established itself as a hub for technological innovation, entrepreneurship, and diverse job opportunities. As more people choose to relocate to Bangalore, the demand for Movers/Packers services has surged. The influx of new residents and the growth of e-commerce in Bangalore have led to a corresponding increase in Courier/Parcel movement.

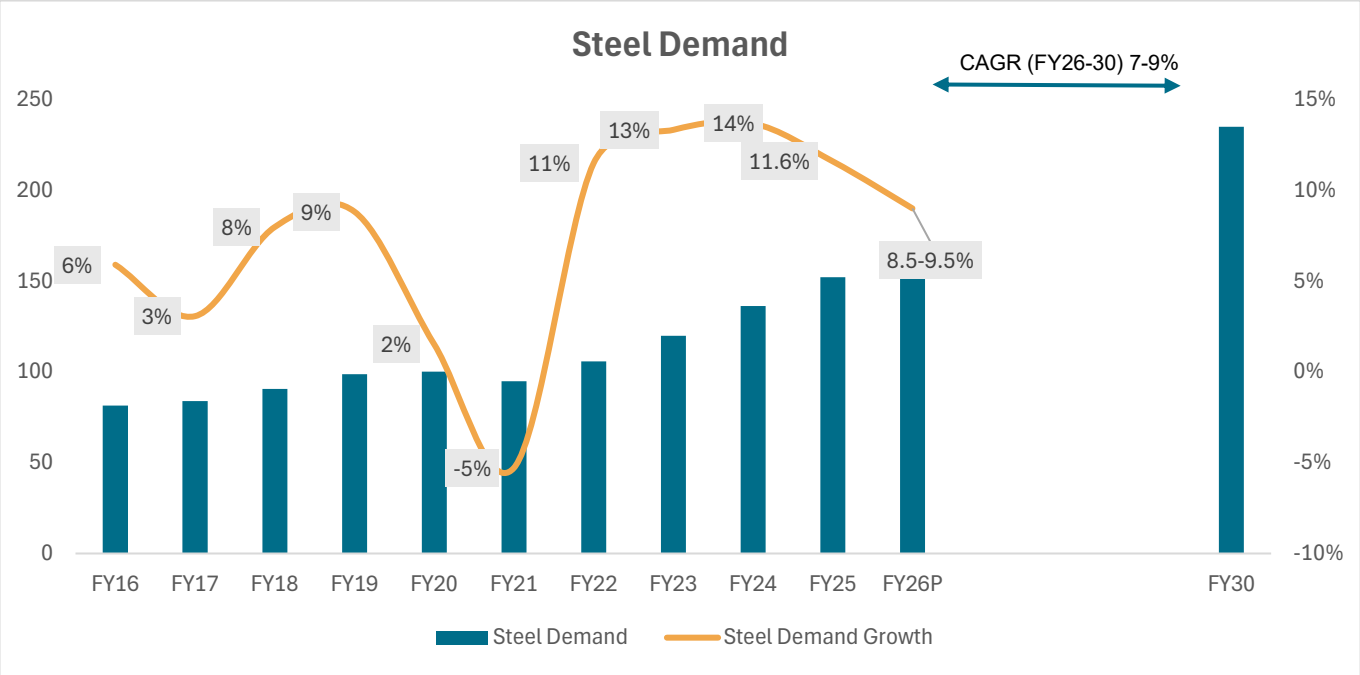
The e-commerce industry is on a rise with increasing consumption levels and moderating inflation and project corridor being an important link in connecting the important cities of Karnataka, Crisil expects CAGR of 6.7% from fiscal FY27-FY32 for Courier and parcels related traffic on the project road.

Iron & Steel Products

Iron & steel is one of major commodity plying on the project road with 8.9% share. The consumption of iron and steel in Bengaluru has been increasing steadily over the years, driven by the growth of the construction, infrastructure, and manufacturing sectors. The city's iron and steel industry is expected to continue to grow, driven by the increasing demand for steel from the construction and infrastructure sectors.

On-going and up-coming infrastructure activities have been key driving factors to the growth of this sector. A healthy housing market and an increase in individual house construction across the country are supporting this segment. Government initiatives, such as the Pradhan Mantri Awas Yojana (PMAY), are further supporting this segment. Cold storage, food processing units, warehouses, and irrigation structures also create consistent steel demand, linking back to the agrarian strength of both states.

Figure 7-6: Steel Demand in India



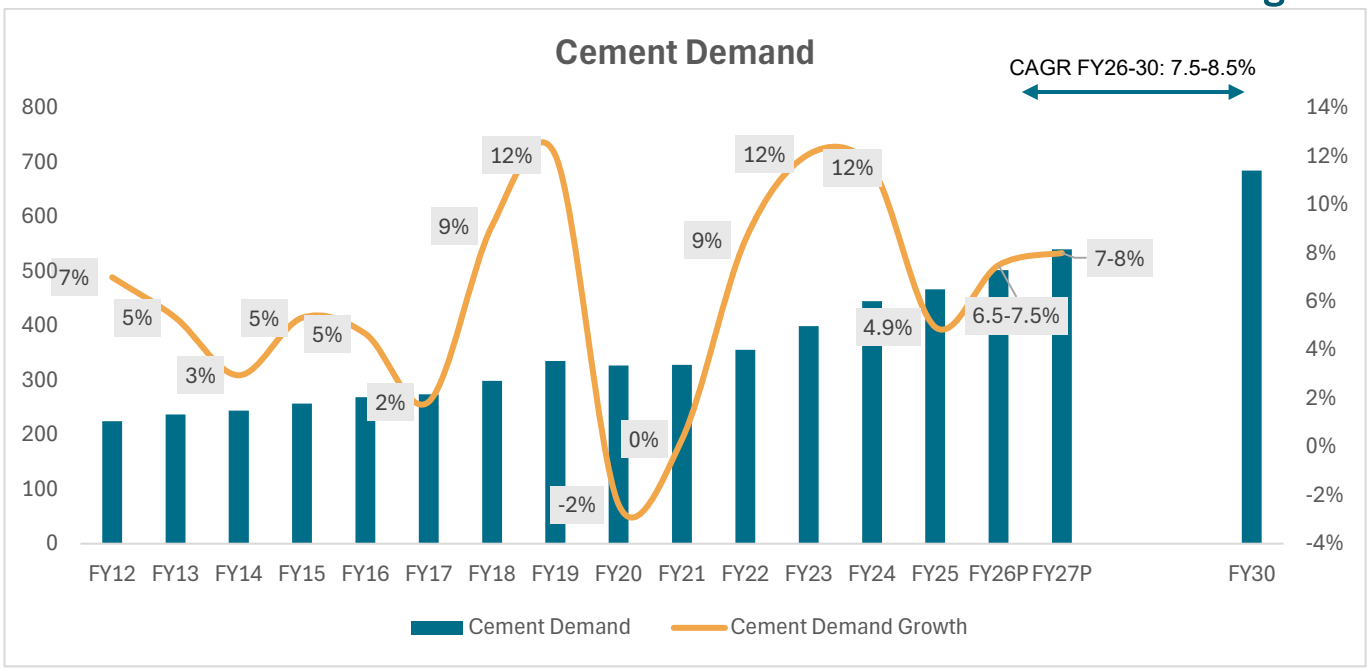
Source: CMA, Industry, Crisil Research Estimates

Considering all these factors Crisil expects growth of 5.3% from fiscal FY27-FY32 for Iron & Steel related traffic on the project road.

Construction Materials

Construction Material is another commodity, which is travels on the road stretch amounting to 9-10% of traffic on project corridor of which cement is the major commodity crossing the toll plaza owning to presence of various cement industries in and around the project corridor

The construction industry in India is expected to grow steadily at an annual rate of 6-8% between fiscal years 2026 and 2030. This growth will be mainly driven by increased spending on infrastructure projects such as roads and railways, supported by both central and state government investments.



Source: CMA, Industry, Crisil Research Estimates

Cement Demand growth moderated in fiscal 2025 to ~5%, following three years of healthy growth. While infrastructure segment continued to remain the key demand driver, growth moderated owing to slowdown in state capex roll outs during first half of fiscal 2025. However, with revival in state spending in the second half, infra projects picked up pace. Demand from the housing sector moderated to 3.5-4.5% with higher growth from rural housing segment. However, urban housing growth slowed down owing to slower execution under PMAY-U along with muted traction from real estate. In the industrial and commercial (I&C) segment growth slowed down after three consecutive years of healthy growth; however, continued traction from the PLI scheme and commercial real estate demand supported the growth.

Considering all these factors Crisil expects growth of 6.2% from fiscal FY27-FY32 for construction materials related traffic on the project road.

Consumer food and products

The fast-moving consumer goods (FMCG) industry or consumer packaged goods (CPG) industry is mainly responsible for producing, distributing, and marketing fast-moving consumer goods. Fast-moving consumer goods (FMCG) sector is India's fourth-largest sector and has been expanding at a healthy rate over the years because of rising disposable income, a rising youth population, and rising brand awareness among consumers. Improved penetration of the organized snacks sector post the pandemic and new product offerings to drive growth of the industry in fiscal 2027.

Crisil expects growth of 3.6% from fiscal FY27-FY32 for consumer food & products related traffic on the project road.

7.2.4 Commodity Outlook

Crisil Intelligence has forecasted the freight traffic growth based on the growth in relevant sectors influencing traffic in the region. Industry growth has been analysed and forecasted based on our proprietary database of industries for the surrounding regions that impact traffic on project road as well as our internal assessment on a relevant set of sectors at the pan India level.

Package wise forecast incorporates the regional dynamics including, but not limited to, investments, commodity trends, district output (GDDP) profile (primary/secondary, construction/manufacturing) etc.

The traffic for the coming years is projected by factoring in the impact of these parameters on commodity wise growth rates and is presented in table below.

Table 7-4: Commodity outlook for the Project section

Commodity	FY 27 - FY 32
Agri Produce	2.2%
Automobiles	5.3%
Chemical products	3.6%
Coal	2.2%
Construction materials	6.2%
Consumer Foods	3.6%
Consumer Products	3.6%
Container	3.6%
Courier & parcel	6.7%
Iron & Steel Products	5.3%
Machinery	3.6%
Milk & Animal Food	1.8%
Others	4.4%
Paper products	3.6%
Petroleum Products	2.7%
Pharmaceuticals	3.1%
Plastic products	3.1%
Plywood & Timber products	3.1%
Rubber products	3.1%
Textile & Footwear	3.6%
Tiles & Ceramic products/powder	3.6%

Source: Industry, Crisil Intelligence

7.3 Implied growth rate for the project section

Mode wise implied growth rates adopted for the project road is presented in the table below.

Table 7-5: Implied Growth Rates: Pre Diversion

Vehicle category	FY 27	FY 28	FY 29	FY30	FY 31	FY32	FY26-FY32
Car/Jeep/Van (CJV)	7.8%	7.7%	9.7%	9.0%	6.7%	6.7%	7.9%
LCV/Mini Bus	3.5%	3.3%	3.1%	2.9%	2.7%	2.8%	3.0%
2A Bus	4.1%	4.0%	3.9%	3.9%	3.8%	3.7%	3.9%
2A Truck	4.4%	4.2%	4.0%	3.8%	3.6%	3.6%	3.9%
3A Truck	2.0%	1.8%	1.6%	1.4%	1.2%	1.2%	1.5%
MAV	6.6%	6.4%	6.2%	5.9%	5.7%	5.7%	6.1%
OSV	6.6%	6.4%	6.2%	5.9%	5.7%	5.7%	6.1%
Total	**7.5%**	**7.5%**	**9.3%**	**8.6%**	**6.5%**	**6.5%**	**7.7%**
PCU	**7.2%**	**7.1%**	**8.7%**	**8.1%**	**6.3%**	**6.3%**	**7.3%**

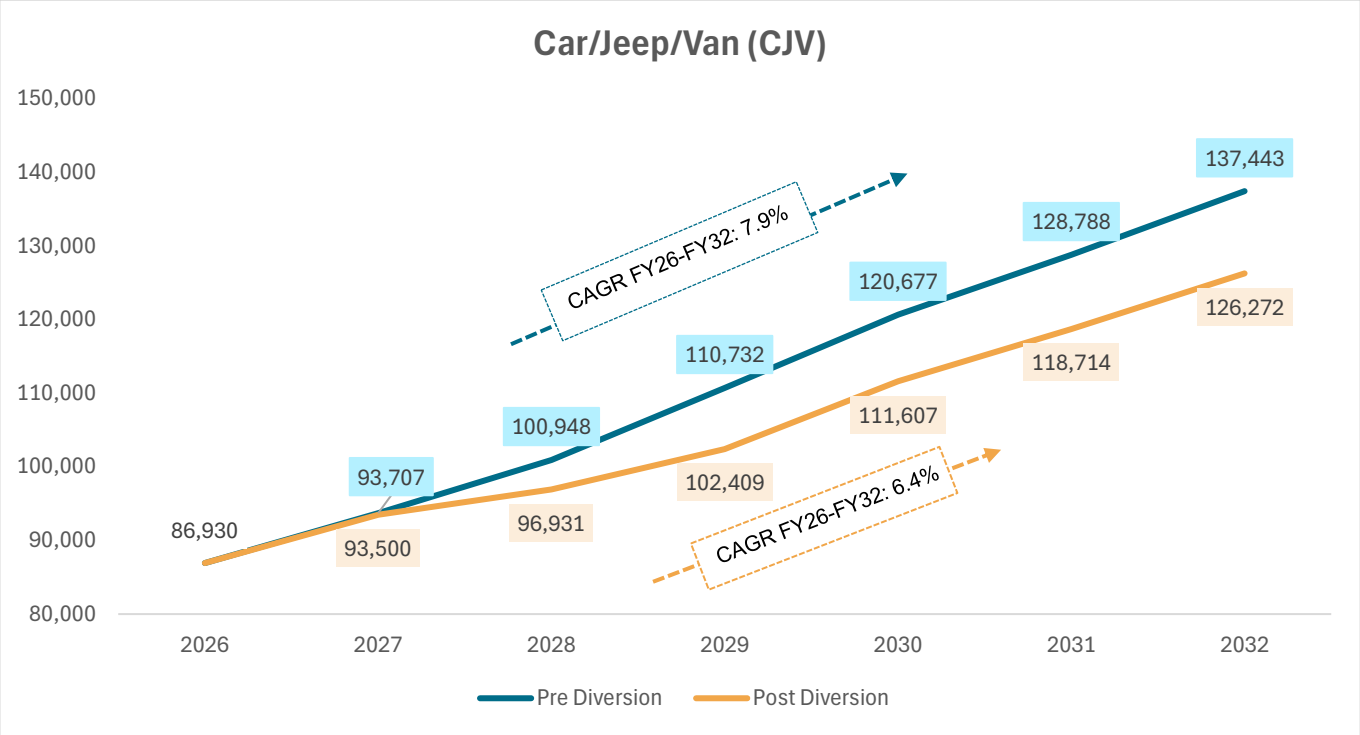
Source: Crisil Intelligence

Table 7-6: Implied Growth Rates: Post Diversion

Vehicle category	FY 27	FY 28	FY 29	FY30	FY 31	FY32	FY26-FY32
Car/Jeep/Van (CJV)	7.6%	3.7%	5.7%	9.0%	6.4%	6.4%	6.4%
LCV/Mini Bus	2.6%	2.4%	3.1%	2.9%	0.0%	0.0%	1.8%
2A Bus	4.1%	-6.1%	-7.3%	3.9%	3.8%	3.7%	0.2%
2A Truck	3.4%	3.2%	4.0%	3.8%	0.9%	0.9%	2.7%
3A Truck	0.5%	0.3%	1.6%	1.4%	-2.7%	-2.8%	-0.3%
MAV	5.4%	5.2%	6.2%	5.9%	3.3%	3.3%	4.9%
OSV	6.6%	6.4%	6.2%	5.9%	5.7%	5.7%	6.1%
Total	**7.3%**	**3.3%**	**5.2%**	**8.6%**	**6.1%**	**6.1%**	**6.1%**
PCU	**6.8%**	**2.8%**	**4.5%**	**8.1%**	**5.6%**	**5.7%**	**5.6%**

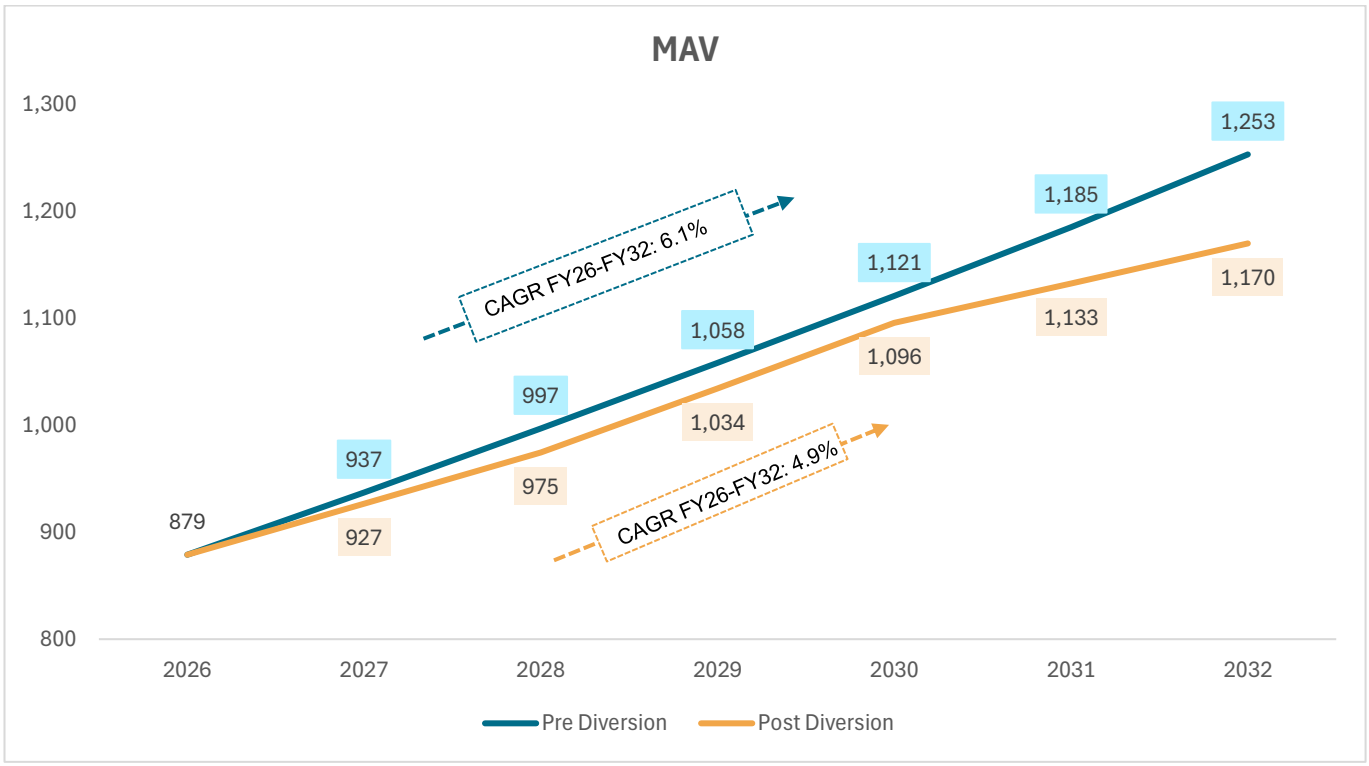
Source: Crisil Intelligence

Figure 7-7: Pre and Post Diversion Traffic Projection of Car/Jeep/Van (CJV)



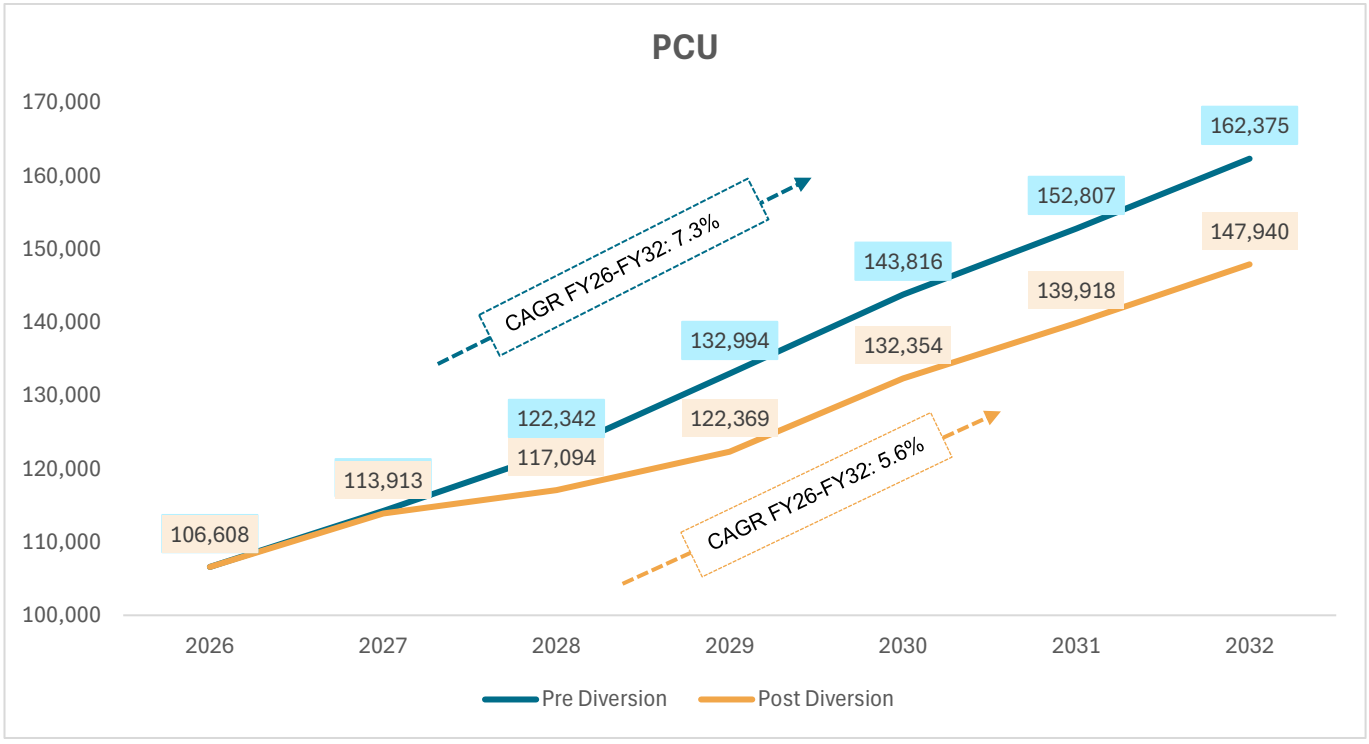
Source: Crisil Intelligence

Figure 7-8: Pre and Post Diversion Traffic Projection of MAV



Source: Crisil Intelligence

Figure 7-9: Pre and Post Diversion Traffic Projection of PCU



Source: Crisil Intelligence

7.3.1 Traffic Projections

The total traffic projected in terms of PCUs based on most likely growth rates is presented in table below.

Table 7-7: Traffic projections- Pre Diversion

FY Year	Car/Jeep/Van (CJV)	LCV/Mini Bus	2A Bus	2A Truck	3A Bus/Truck	MAV	OSV	Total Veh.	Total PCU	YoY Growth (%)
FY-2026	86,930	1,341	3,111	706	750	879	2	93,720	107,734	
FY-2027	93,707	1,388	3,239	737	765	937	2	100,776	114,239	7.2%
FY-2028	100,948	1,433	3,369	768	779	997	2	108,296	122,342	7.1%
FY-2029	110,732	1,477	3,502	799	791	1,058	2	118,361	132,994	8.7%
FY-2030	120,677	1,520	3,637	829	802	1,121	2	128,589	143,816	8.1%
FY-2031	128,788	1,562	3,774	858	812	1,185	2	136,981	152,807	6.3%
FY-2032	137,443	1,605	3,914	889	821	1,253	3	145,928	162,375	6.3%
CAGR (26-32)	**7.9%**	**3.0%**	**3.9%**	**3.9%**	**1.5%**	**6.1%**	**6.1%**	**7.7%**	**7.3%**	

Source: Crisil Intelligence

Table 7-8: Traffic projections- Post Diversion

FY Year	Car/Jeep/Van (CJV)	LCV/Mini Bus	2A Bus	2A Truck	3A Bus/Truck	MAV	OSV	Total Veh.	Total PCU	YoY Growth (%)
FY-2026	86,930	1,341	3,111	706	750	879	2	93,720	106,608	
FY-2027	93,500	1,376	3,239	731	754	927	2	100,528	113,913	6.9%
FY-2028	96,931	1,410	3,041	754	756	975	2	103,868	117,094	2.8%
FY-2029	102,409	1,453	2,819	784	768	1,034	2	109,270	122,369	4.5%
FY-2030	111,607	1,495	2,928	813	779	1,096	2	118,721	132,354	8.2%
FY-2031	118,714	1,495	3,039	821	758	1,133	2	125,962	139,918	5.7%
FY-2032	126,272	1,495	3,152	828	737	1,170	3	133,656	147,940	5.7%
CAGR (26-32)	**6.4%**	**1.8%**	**0.2%**	**2.7%**	**-0.3%**	**4.9%**	**6.1%**	**6.1%**	**5.6%**	

Source: Crisil Intelligence

8 Revenue forecast

8.1 General

The project section is under “open tolling system” which enables the concessionaire to collect tolls from long distance as well as short distance traffic joining the project from adjoining highways.

8.2 User Fee Schedule

As per Gazette notification dated 05.12.2008, under the National Highways Fee (Determination of Rates and Collection) Rules 2008 [GSR 838 (E) and concession agreement the per km toll rates applicable from 2007/08 for normal tolling length and permanent structure, the revision basis and concessions are provided.

The concessions of traffic have been provided under the categories/ toll tickets as presented in table below.

Table 8-1: Tolling Tickets

Ticket	Maximum number of one-way journeys allowed	Period of validity
Single/Normal	Single	-
Daily Pass	Two	24 hours
Monthly Pass	Fifty (50)	One month from the date of payment
Local Personal	Multiple	One month from the date of payment
Local Commercial	Single	-
Annual Pass	Multiple	One year from the date of payment or 200 trips

Source: Concession Agreement, Crisil Intelligence

8.3 Toll Segmentation

As mentioned in traffic assessment of the project stretch section, historical toll data of FY26 is used in adopting the segmentation for the project road and is presented below.

Table 8-2: Toll segmentation in % - FY26

FY	Vehicle Type	Single	Return	Monthly	Local Pass	Exempt	Annual Pass
Oct-25	**Car/Jeep/Van (CJV)**	21.6%	56.8%	2.8%	2.3%	6.1%	10.4%
2026 (Apr-Sep)	**LCV/Mini Bus**	39.0%	57.7%	0.4%	0.0%	2.9%	
	2A Bus	3.8%	89.7%	2.3%	0.0%	4.2%	
	2A Truck	57.6%	39.4%	0.3%	0.0%	2.6%	
	3A Bus/Truck	37.4%	57.9%	2.0%	0.0%	2.7%	
	MAV	57.4%	40.6%	1.5%	0.0%	0.5%	
	OSV	54.9%	19.1%	0.0%	0.0%	26.0%	

Source: Historical toll data, Crisil Intelligence

As per recent announcements, the annual Pass activated on the Fastag will allow free passage of private car/jeep/van

at designated National Highway (NH) and National Expressway (NE) fee plazas for one year or 200 trips (whichever is earlier), without per-trip user fee charges. The Annual Pass is applicable only for private non-commercial Car/Jeep/Van after checking through VAHAN database.

To assess the impact of the annual pass, frequency of travel, and number of trips, were made available by client for October 2025. For estimating the annual pass revenue, the plaza constant factor has also been provided by the client for the toll plaza. Details for estimating the annual pass revenue are presented below.

Table 8-3: Annual pass- Trips & Plaza constant factor

TP	% Trips	% Trips <2 trips	Plaza constant factor
Devanahalli TP	10.4%	97.1%	0.80

Source: Historical toll data, Client input, Crisil Intelligence

8.4 Trip Rates

The trip rates are adopted based on the FY26 historic traffic data and trip rates for the present study for FY26 onwards is presented in table below.

Table 8-4: Adopted Trip Rates

Type of vehicle	Single	Return	Monthly	Local Commercial	Local Personal
Car/Jeep/Van (CJV)	1.0	2.0	50.0	1.0	20.66
LCV/Minibus	1.0	2.0	50.0	1.0	
2A Bus/Truck	1.0	2.0	50.0	1.0	
3A Bus/Truck/MAV	1.0	2.0	50.0	1.0	
OSV	1.0	2.0	50.0	1.0	

Source: Historical toll data, Crisil Intelligence

8.4.1 Tolling lengths

The tollable lengths for the project section for plaza is presented in table below.

Table 8-5: Tolling Lengths

TP	Devanahalli TP
Chainage	Km 534.720 to Km 556.840
Section	Devanahalli-Hebbal
Normal Length (In Km)	18.40
Cost of structure (In Cr.)	220.0

Source: Concession Agreement, Crisil Intelligence

8.4.2 Toll Rates Estimation

The toll rates that are likely to be applicable on the project section during the project study are in accordance with the National Highways Fee (Determination of Rates and Collection) Rules 2008 [GSR 838 (E),2008 and article 27 of the concession agreement.

The toll rates (Rs/km) for the base year 2007-08 for different vehicle categories are as per fee rule/concession

agreement mentioned above and are presented below.

Table 8-6: Base Rate in Rs/km

Vehicle Type	Base rate of fee per km for base year from 1st April 2007 (in Rupees)
Car, Jeep, Van, or Light Motor Vehicle	0.65
Light Commercial Vehicle, Light Goods Vehicle or Minibus	1.05
2A Bus/Truck	2.20
3A Bus/Truck	3.45
Heavy Construction Machinery (HCM) or Earth Moving Equipment (EME) or Multi Axle Vehicle (MAV) (four to six axles)	3.45
Oversized Vehicles (seven or more axles)	4.20

Source: Concession Agreement, DTPL

Table 8-7: Toll Rates (in INR)

Type of vehicle	Single	Return	Monthly	Local Commercial	Local Personal
Car/Jeep/Van (CJV)	120	180	3,970	60	350
LCV/Minibus	185	275	6,100	90	
2A Bus/Truck	370	550	12,265	185	
3A Bus/Truck/MAV	560	840	18,615	280	
OSV	725	1,090	24,245	365	

Source: Crisil Intelligence

8.4.3 Review and Outlook of Whole-Sale price index (WPI)

The projected toll rates are dependent on Wholesale Price Index (WPI) assumptions for 2027 to 2032. For WPI projection, Crisil Intelligence has relied on inputs from Client. Past and outlook WPI growth is presented in table below.

Table 8-8: WPI

Year	WPI	Expected Year-on-year growth
2025	478.6	2.57%
2026	490.0	2.40%
2027	514.5	5.00%
2028	540.8	5.10%
2029	567.3	4.90%
2030	592.2	4.40%
2031	616.5	4.10%
2032	641.8	4.10%

Source: Projected WPI (P): - Client Input

8.5 Revenue Estimates

The revenue projections for the project road are presented in the table below.

Table 8-9: Mode wise Revenue in ₹ Millions for the Project Section

FY Year	Car/Jeep/Van (CJV)	LCV/Minibus	2A Bus	2A Truck	3A Bus/Truck	MAV	OSV	Total	YoY Growth (%)
FY-2026	2,845.8	74.4	302.6	83.1	125.9	159.7	0.3	3,591.8	
FY-2027	3,163.4	78.8	326.3	88.6	130.7	174.0	0.4	3,962.1	10.3%
FY-2028	3,447.3	85.1	323.3	96.5	137.8	192.0	0.4	4,282.4	8.1%
FY-2029	3,799.8	91.9	313.9	105.0	146.5	213.3	0.5	4,670.9	9.1%
FY-2030	4,384.9	99.1	341.6	114.2	156.5	238.2	0.5	5,334.9	14.2%
FY-2031	4,858.4	103.6	373.1	120.7	159.1	257.2	0.6	5,872.7	10.1%
FY-2032	5,389.3	108.3	405.0	128.3	162.1	278.3	0.6	6,471.9	10.2%
CAGR (26-32)	11.2%	6.5%	5.0%	7.5%	4.3%	9.7%	11.1%	10.3%	

Source: Crisil Intelligence

9 Annexure

9.1 Top OD Pairs

Top OD pairs for Car/Jeep/Van (CJV) and 2A Bus traffic at Devanahalli TP

OD Pair	% Influence
Car/Jeep/Van (CJV)	
Majestic Bus Stand, City Railway Station to Bangalore International Airport- Terminal 1	7.2%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur to Bangalore International Airport- Terminal 1	7.2%
"HSR Layout,Koramangala, Electronic city, Silk Board, Bommanahalli, Basapura,	5.8%
Bommasandra To Bangalore International Airport- Terminal 1"	5.5%
Rest of Bangalore City to Bangalore International Airport- Terminal 1	5.1%
MG Road, Trinity, Indira Nagar, Baiyyapanahalli, Banswadi to Bangalore International Airport- Terminal 1	4.7%
Hebbal to Bangalore International Airport- Terminal 1	3.0%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur to Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	3.0%
Srirampura, Rajaji nagar, Yeswanthpur, Goraguntepalya, Jalhalli, Nagasandra to Bangalore International Airport- Terminal 1	2.5%
Rest of Bangalore City to Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	2.5%

OD Pair	% Influence
2A Bus	
Majestic Bus Stand, City Railway Station To Bangalore International Airport- Terminal 1	11.2%
Majestic Bus Stand, City Railway Station To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	9.5%
HSR Layout,Koramangala, Electronic city, Silk Board, Bommanahalli, Basapura, Bommasandra To Bangalore International Airport- Terminal 1	6.9%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	5.7%
Rest of Bangalore City To Bangalore International Airport- Terminal 1	4.4%
Rest of Bangalore City To Chikballapur	3.8%
Rest of Bangalore City To Anantapur/Hindupur/Dharmavaram/Rayadurg/Tadpatri/Kadiri/rest of anantapur district	3.7%
Rest of Bangalore City To Rest of Chikballapur district/ Bagepalli/Gudibanda/Gulur/Yalagahalli /Kondateddihalli/Vadagere/Gauribidanur/Sidlaghatta/Chintamani/Jangamakote /Ramapura/Tondebhavi	3.6%
Majestic Bus Stand, City Railway Station To Chikballapur	3.5%
Rest of Bangalore City To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	3.2%

Source: Crisil Intelligence

Top OD pairs for LCV and 3A Truck/MAV traffic at Devanahalli TP

OD Pair	% Influence
LCV	
Majestic Bus Stand, City Railway Station To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	5.4%
Majestic Bus Stand, City Railway Station To Bangalore International Airport- Terminal 1	4.9%

OD Pair	% Influence
3A Truck/MAV	
Rest of Bangalore City To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	3.8%
Majestic Bus Stand, City Railway Station To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	3.3%

OD Pair	% Influence
Rest of Bangalore City To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	3.6%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	3.5%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur To Chikballapur	3.5%
Rest of Bangalore City To Bangalore International Airport- Terminal 1	2.7%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur To Bangalore International Airport- Terminal 1	1.9%
Rest of Bangalore City To Chikballapur	1.8%
Majestic Bus Stand, City Railway Station To Chikballapur	1.8%
Rest of Bangalore City To Hyderabad	1.8%

OD Pair	% Influence
Rest of Bangalore City To Bangalore International Airport- Terminal 1	3.1%
Majestic Bus Stand, City Railway Station To Hyderabad	2.3%
Rest of Bangalore City To Hyderabad	2.3%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur To Devanahalli, Udayagiri, Boovanahalli, Hosathota, Chikkasanne	2.2%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur To Chikballapur	2.0%
Majestic Bus Stand, City Railway Station To Bangalore International Airport- Terminal 1	1.8%
Rest of Bangalore City To Anantapur/Hindupur/Dharmavaram/Rayadurg/Tadpatri/Kadiri/rest of anantapur district	1.7%
Yelahanka, BSF Campus, Kattigenahalli, Sathanur, Jakkur, RK Hegde Nagar, Bagalur To Hyderabad	1.6%

Source: Crisil Intelligence

9.2 Direction Wise Commodity Distribution

Direction wise commodity distribution is presented in the tables below.

Commodity Distribution (in %) direction wise for Devanahalli TP

Commodity	LCV	2A Truck	3A Truck	MAV	Total	LCV	2A Truck	3A Truck	MAV	Total
	Bengaluru-Hyderabad					Hyderabad-Bengaluru				
Agri Produce	11.3%	8.2%	11.4%	3.9%	9.5%	15.8%	9.0%	10.9%	11.3%	13.0%
Automobiles	1.6%	2.1%	4.5%	7.4%	3.4%	0.5%	0.0%	1.3%	0.7%	0.6%
Chemical products	0.7%	0.0%	0.9%	0.8%	0.6%	0.0%	0.9%	0.0%	0.0%	0.1%
Coal	0.2%	0.0%	0.0%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Construction materials	6.8%	8.2%	10.5%	8.5%	8.0%	4.3%	14.4%	19.9%	13.7%	10.7%
Consumer Foods	9.0%	7.2%	1.8%	8.5%	7.2%	9.0%	10.8%	5.1%	5.6%	7.8%
Consumer Products	2.2%	5.2%	3.2%	1.9%	2.8%	3.0%	3.6%	1.3%	3.2%	2.8%
Container	0.0%	0.0%	0.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Courier & parcel	19.6%	18.6%	11.4%	15.9%	17.1%	10.4%	7.2%	7.7%	9.2%	9.1%
Iron & Steel Products	5.4%	4.1%	9.1%	7.0%	6.2%	5.8%	21.6%	12.2%	16.9%	11.5%
Machinery	0.1%	0.0%	0.5%	0.0%	0.1%	0.1%	0.0%	0.0%	0.4%	0.1%
Milk & Animal Food	1.1%	1.0%	1.8%	0.8%	1.2%	2.0%	0.0%	0.6%	0.4%	1.1%
Others	0.4%	0.0%	0.9%	0.8%	0.5%	0.3%	0.9%	0.0%	0.0%	0.3%
Paper products	0.5%	3.1%	0.9%	2.3%	1.3%	0.5%	0.0%	0.0%	0.7%	0.4%
Petroleum Products	0.6%	0.0%	1.4%	1.9%	0.9%	0.5%	1.8%	1.3%	1.1%	0.9%

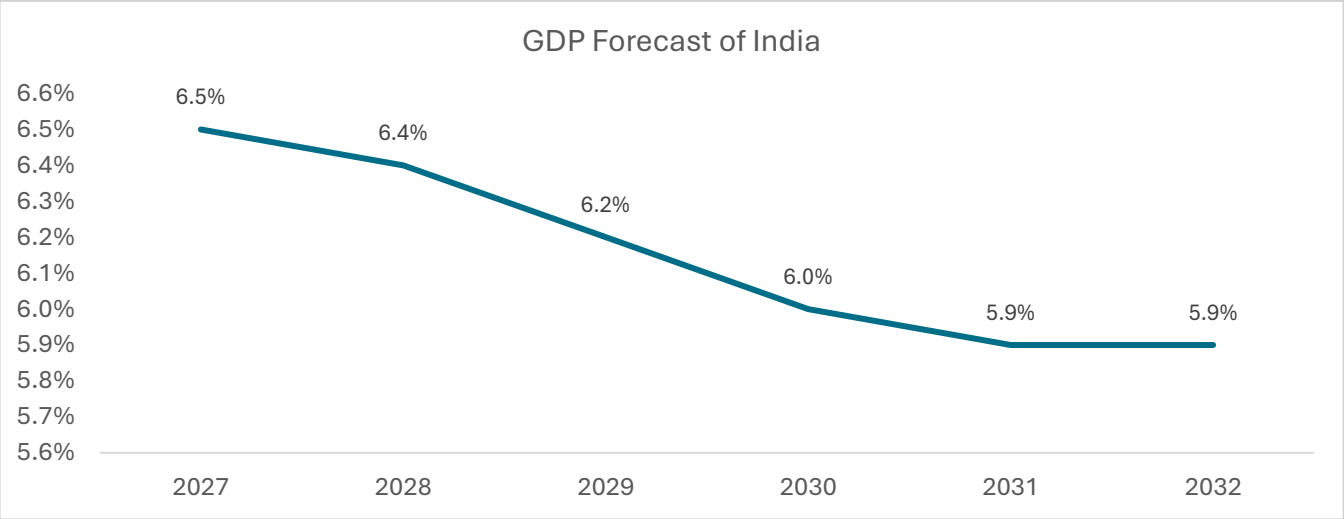
Commodity	LCV	2A Truck	3A Truck	MAV	Total	LCV	2A Truck	3A Truck	MAV	Total
	Bengaluru-Hyderabad					Hyderabad-Bengaluru				
Pharmaceuticals	0.7%	2.1%	0.0%	0.4%	0.7%	0.6%	0.0%	0.6%	1.1%	0.6%
Plastic products	1.9%	5.2%	0.5%	2.3%	2.2%	1.6%	8.1%	2.6%	1.1%	2.6%
Plywood & Timber products	2.7%	2.1%	3.6%	4.7%	3.2%	3.9%	0.9%	1.9%	0.4%	2.4%
Rubber products	0.4%	1.0%	0.9%	0.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Textile & Footwear	1.1%	4.1%	4.5%	3.9%	2.8%	1.0%	0.9%	1.9%	1.1%	1.2%
Tiles & Ceramic products	0.0%	1.0%	0.5%	0.0%	0.2%	0.1%	0.0%	1.3%	0.0%	0.3%
Empty	33.6%	26.8%	31.4%	27.9%	31.1%	40.6%	19.8%	31.4%	33.5%	34.4%
Grand Total	**100.0%**	**100.0%**	**100.0 %**	**100.0 %**	**100.0%**	**100.0%**	**100.0%**	**100.0 %**	**100.0%**	**100.0%**

Source: Crisil Intelligence

- For Bengaluru-Hyderabad direction, courier parcel traffic is higher than the Hyderabad-Bengaluru direction, indicating presence of multiple warehousing units in the Bengaluru city.
- For Hyderabad-Bengaluru direction, Construction materials and Iron & steel products traffic is higher than Bengaluru-Hyderabad direction for all modes. This is due to the presence of various cement and steel plants at Hyderabad & surrounding

9.3 GDP Forecast of India

GDP Forecast of India



Source: Client Input

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Traffic and revenue assessment for Western M P Infrastructure and Toll Road Pvt Ltd

Final report
December 2025

Crisil
a company of S&P Global

Contents

1 Executive summary 9

1.1 Project details 9

1.2 Asset overview 9

1.3 Historical traffic data 10

1.4 Base traffic estimation 12

1.4.1 Toll segmentation 12

1.5 Overview of impact due to network developments 13

1.6 Traffic projections 15

1.7 Revenue projections 16

2 Introduction 18

2.1 Asset overview 18

2.2 Scope 19

2.3 Network profile 20

2.4 Industrial profile 21

3 Primary data collection & analysis 25

3.1 General 25

3.2 Origin-Destination (OD) Analysis 26

3.2.1 Regional influence 26

3.2.2 Internal-External Analysis 28

3.2.3 Commodity Analysis 29

3.2.4 Trip length distribution 33

4 Review of historic traffic & revenue 35

4.1 General 35

4.2 Adopted toll segmentation 37

5 Base traffic estimation 38

5.1 Seasonality factors 38

5.2 Base traffic estimation 39

6 Network developments in the Region 40

6.1 Overview 40

6.1.1 Delhi-Mumbai Expressway (intersecting project stretch near Jaora) 40

6.1.2 Ujjain Garoth Spur (connecting Indore catchment region traffic to the DME) 40

6.2 Approach and methodology for diversion analysis 41

6.3 Impact of Delhi Mumbai Expressway 42

6.3.1 Potential traffic (OD survey) 43

7 Traffic growth estimation & traffic forecast 46

7.1 Traffic projections – Outline 46

7.2 Traffic projections – Commodity based approach 46
7.2.1 Madhya Pradesh state profile 47
7.2.2 Review of car growth 48
7.2.3 Commodity overview 49
7.2.4 Commodity outlook 51
7.3 Implied growth rate for the project section 52
7.3.1 Traffic projections 53
8 Revenue forecast 55
8.1 User fee schedule 55
8.2 Toll segmentation 55
8.3 Trip rates 56
8.4 Revenue estimates 57
9 Annexures 59
9.1 Top OD Pairs 59
9.2 Direction wise commodity distribution 62
9.3 Zonal influence 64
9.4 Delhi Mumbai Expressway Status 67

List of tables

Table 1-1: Historical mode wise traffic (AADT) and growth at Chokala TP 10
Table 1-2: Historical mode wise traffic (AADT) and growth at Chikliya TP 11
Table 1-3: Base traffic estimation FY26 AADT for Chokala TP 12
Table 1-4: Base traffic estimation FY26 AADT for Chikliya TP 12
Table 1-5: Adopted toll segmentation at the Chokala toll plaza on the project road 12
Table 1-6: Adopted toll segmentation at the Chikliya toll plaza on the project road 13
Table 1-7: Details of network development and possible impacts 13
Table 1-8: Details of average impact on long distance to DME across Chokala and Chikliya TP 14
Table 1-9: Traffic projections- Commodity Based- Chokala (TP01) 15
Table 1-10: Traffic projections- Commodity Based- Chikliya (TP02) 15
Table 1-11: Mode wise revenue in ₹ millions for the project section – Commodity based analysis for Chokala TP 16
Table 1-12: Mode wise revenue in ₹ millions for the project section – Commodity based analysis for Chikliya TP 16
Table 2-1: Details of the road stretch 18
Table 2-2: Key details of project stretch 19
Table 3-1: Type of survey & schedule 25
Table 3-2: Regional distribution in % at Chokala TP 26
Table 3-3: Regional distribution in % at Chikliya TP 26
Table 3-6: Commodity distribution (in %) on the project road – Chokala TP 29
Table 3-7: Commodity distribution (in %) on the project road – Chikliya TP 30
Table 3-8: Key upcoming infrastructure projects in the catchment region of Indore, Ratlam, Dhar and Ujjain 32
Table 3-9: Trip length distribution – Chokala TP 33
Table 3-10: Trip length distribution – Chikliya TP 34
Table 4-1: Historical traffic data availability 35
Table 4-2: Historical mode wise traffic (AADT) and growth at Chokala TP 36
Table 4-3: Historical mode wise traffic (AADT) and growth at Chikliya TP 37
Table 4-4: Adopted toll segmentation at the Chokala toll plaza on the project road 37
Table 4-5: Adopted toll segmentation at the Chikliya toll plaza on the project road 37
Table 5-1: Seasonal correction factors for FY 19, FY 20, FY 24 and FY 25 38
Table 5-2: Base traffic estimation FY26 AADT for Chokala TP 39
Table 5-3: Base traffic estimation FY26 AADT for Chikliya TP 39
Table 6-1: Details of network development and possible impact 42
Table 6-2: Length via Project Road and Alternate Road-Long Distance 43
Table 6-3: Toll Rates and Cost Ratio-Long Distance 44
Table 6-4: Details of average impact on long distance to DME across Chokala and Chikliya TP 44
Table 6-5: Length via Project Road and Alternate Road-Short Distance (Before Indore Western Bypass) 44
Table 6-6: Toll Rates and Cost Ratio-Short Distance (Before Indore Western Bypass) 44
Table 6-7: Length via Project Road and Alternate Road-Short Distance (After Indore Western Bypass) 45

Table 6-8: Toll Rates and Cost Ratio-Short Distance (After Indore Western Bypass) 45
Table 6-9: Details of average impact on short distance traffic 45
Table 7-1: Commodity outlook for the project section 52
Table 7-2: Pre-Diversion growth rates: Chokala (TP01) 52
Table 7-3: Pre-Diversion growth rates: Chikliya (TP01) 53
Table 7-4: Traffic projections: Chokala (TP01)-Post Diversion 53
Table 7-5: Traffic projections: Chikliya (TP02)-Post Diversion 54
Table 8-1: Toll rates as per schedule R 55
Table 8-2: Tolling tickets 55
Table 8-3: Adopted toll segmentation at the Chokala toll plaza 55
Table 8-4: Adopted toll segmentation at the Chikliya toll plaza 55
Table 8-5: Overloading toll segmentation at the Chokala toll plaza (% Single Journey) 56
Table 8-6: Overloading toll segmentation at the Chikliya toll plaza (% Single Journey) 56
Table 8-7: Adopted trip rates for Chokala TP 56
Table 8-7: Adopted trip rates for Chikliya TP 57
Table 8-8: Mode wise revenue in Rs millions for the project section –Chokala TP 57
Table 8-9: Mode wise revenue in Rs millions for the project section –Chikliya TP 57
Table 9-1: Top OD pairs at Chokala TP 59
Table 9-2: Top OD pairs at Chikliya TP 60
Table 9-3: Commodity distribution (in %) direction wise for Chokala TP 62
Table 9-4: Commodity distribution (in %) direction wise for Chikliya TP 63
Table 9-5: Major Zonal influence in % for passenger and goods traffic at Chokala TP 64
Table 9-6: Major Zonal influence in % for passenger and goods traffic at Chikliya TP 65
Table 9-7: Delhi-Mumbai Expressway package wise details and status 67

List of figures

Figure 1-1: Project Road 9
Figure 1-2: Historical mode wise traffic (AADT) and growth at Chokala TP 10
Figure 1-3: Historical mode wise traffic (AADT) and growth at Chikliya TP 11
Figure 1-4: Long distance alignment of the project stretch, Ujjain Spur, DME, and Mumbai-Agra section (old NH-3) 14
Figure 2-1: Project stretch alignment 19
Figure 2-2: Network around the project influence area 21
Figure 2-3: Major industries around the project stretch 24
Figure 3-1: Survey location (toll plazas) 25
Figure 3-2: State influence: Passenger & Goods (consolidated - TP1 & TP2) 28
Figure 3-3: Internal-External Influence 29
Figure 4-1: Historical mode wise traffic (AADT) and growth at Chokala TP 35
Figure 4-2: Historical mode wise traffic (AADT) and growth at Chikliya TP 36
Figure 6-1: Network Development around project road 41
Figure 6-2: Diversion curve as per IRC:108-2015 42
Figure 6-3: Long distance alignment of the project stretch, Ujjain Spur, DME, and Mumbai-Agra section (old NH-3) 43
Figure 7-1: Commodity based approach: Illustrative example for Commercial vehicles 46
Figure 7-2: Madhya Pradesh GSDP (Rs Billion) 47
Figure 7-3: Madhya Pradesh GSDP vs India GDP against on-year growth 48
Figure 7-4: LMV registration count in Madhya Pradesh and Indore RTO 48
Figure 7-5: Ecommerce industry in India 49
Figure 7-6: Steel demand in India 50
Figure 7-7: Cement demand in India 51

Acronyms

Acronyms	Meaning
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
BOT	Build Operate and Transfer
CA	Concession Agreement
CAGR	Compound annual growth rate
CPG	Consumer packaged goods
DBFOT	Design Build Finance Operate and Transfer
DES	Directorate of Economics and Statistics
DME	Delhi Mumbai Expressway
DND	Delhi-Noida Direct
DPR	Detailed Project Report
EPC	Engineering, Procurement, and Construction
EPZ	Export Processing Zone
FMCG	Fast-moving consumer goods
FY	Fiscal Year
GC	Generalised Cost
GDDP	Gross District Domestic Product
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
GSR	General Statutory Rules
HME	Heavy Motor Vehicle
IHMCL	Indian Highways Management Company Limited
IIM	Indian Institute of Management
IIT	Indian Institutes of Technology
IRC	Indian Road Congress
ITES	Information Technology Enabled Services
JNPT	Jawaharlal Nehru Port Authority (Trust)
LCV	Light Commercial Vehicles
LMT	lakh metric tonnes
LMV	Light Motor Vehicle
LPG	Liquefied petroleum gas

Acronyms	Meaning
MAV	Multi Axle Vehicle
MMT	million metric tons
MPIDC	Madhya Pradesh Industrial Development Corporation
MPRDC	Madhya Pradesh Road Development Corporation Limited
MSME	Ministry of Micro, Small and Medium Enterprises of India
MSRDC	Maharashtra State Road Development Corporation Limited
MTPA	million tonnes per annum
NCR	National Capital Region
NH	National Highways
NHAI	National Highways Authority of India
OD	Origin-Destination
OEM	Original Equipment Manufacturer
OSV	Over Sized Vehicle
PCU	Passenger Car Unit
PFT	Private Freight Terminal
PLI	Production Linked Incentive
PMAY	Pradhan Mantri Awas Yojana
RTO	Regional Transport Office
SCF	Seasonal Correction Factors
SEZ	Special Economic Zone
SH	State Highway
SPV	Special Purpose Vehicle
TEU	Twenty-foot Equivalent Units
TMS	Toll Management Systems
TP	Toll Plaza
TVC	Traffic Volume Count
UNESCO	United Nations Educational, Scientific and Cultural Organization
UP	Uttar Pradesh
VOC	Vehicle Operating Cost
VOT	Value of Time
WMPTL	Western M P Infrastructure and Toll Road Pvt. Ltd
WPI	Wholesale price index

1 Executive summary

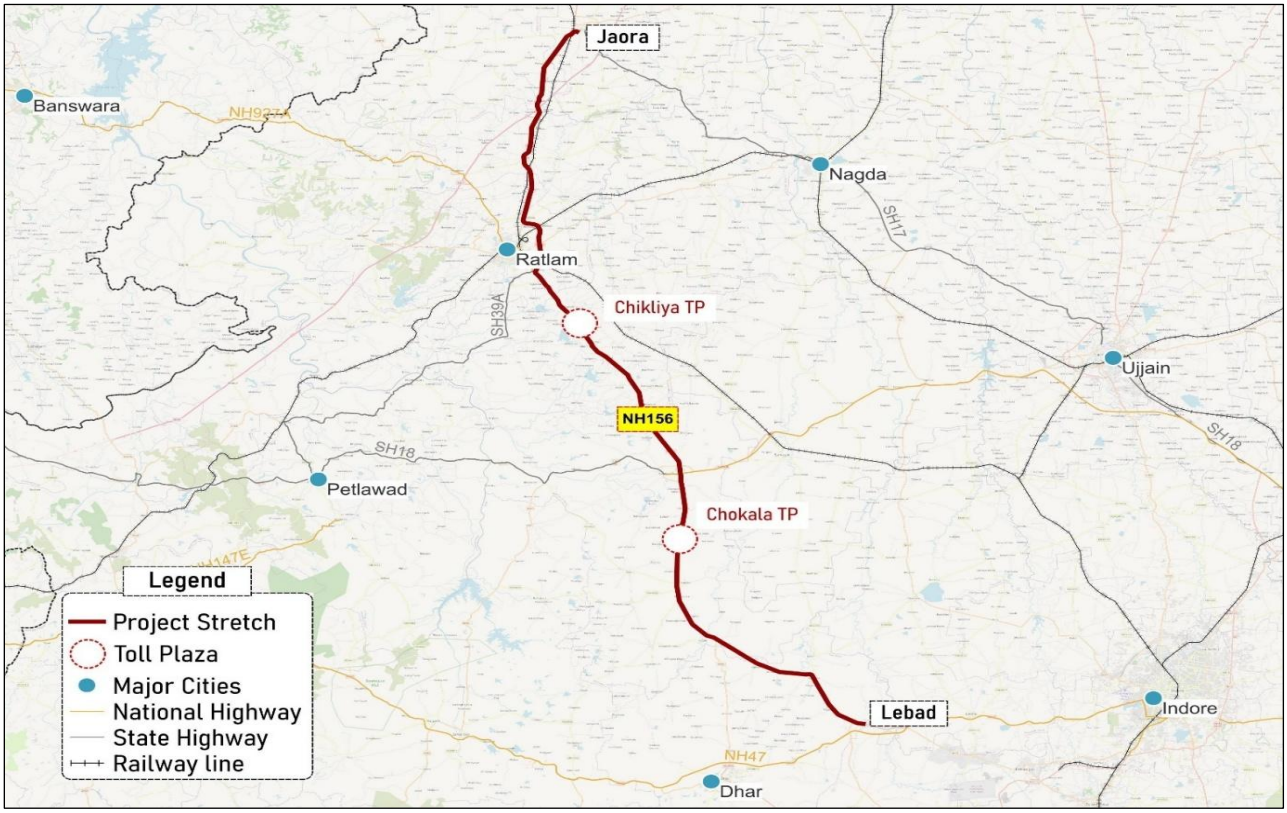
1.1 Project details

M/s Cube Highways Trust (hereinafter “the Client”) as sponsor has appointed M/s CRISIL Limited (hereinafter referred as “Technical Consultant”) to carry out Traffic and Revenue Due Diligence of operational asset of four Laning of Lebad-Jaora Road on BOT Toll Basis in the State of Madhya Pradesh (herein after refer as “the Project”) which is being operated by “M/s Western M P Infrastructure and Toll Road Pvt. Ltd. (WMPTL)" (hereinafter refer as “the Concessionaire or Company”).

1.2 Asset overview

The Lebad–Jaora segment of State Highway 31 is a ~125-kilometer, four-lane corridor that enhances connectivity between Indore and key destinations in Rajasthan and Maharashtra, including Udaipur, Jaipur, and Mumbai. It serves as a critical east-west link between NH48 and NH52, facilitating traffic among major economic hubs. The corridor forms a critical east–west connection between NH48 and NH52, enabling smooth traffic movement among major economic hubs. It includes two toll plazas and serves two key industrial clusters—Pithampur and Indore—which house diverse industries such as pharmaceuticals and textiles. Automobile and associated ancillary industries also have a significant footprint along this corridor. The corridor predominantly carries freight traffic, particularly agricultural commodities like wheat, with Madhya Pradesh being an important wheat-producing state. The area along the project road is also a leading producer of garlic and cotton. In addition, the route accommodates significant courier service movements linking major cities such as Delhi-NCR, Mumbai and Bengaluru.

Figure 1-1: Project Road



Source: Open Street Map, Crisil Intelligence

The four districts of Indore, Dhar, Ujjain, and Ratlam form the industrial core of western Madhya Pradesh, centered around Indore and the Pithampur manufacturing hub. This region benefits from multimodal connectivity, including national highways, Western Railway routes, and air cargo access through Devi Ahilya Bai Holkar Airport. Each district has distinct industrial clusters:

Nimbahera–Badnawar is focused on heavy cement manufacturing, generating significant vehicular traffic for transporting materials. Indore serves as a commercial capital with a diverse industrial base in textiles, food processing, pharmaceuticals, and IT/ITeS, supported by various industrial parks and SEZs. Dhar hosts the Pithampur industrial ecosystem, a major automobile and engineering hub with significant OEM presence. Ujjain has a strong services sector, including tourism and process industries, while Ratlam focuses on light manufacturing and logistics, leveraging its rail junction status.

Agricultural mandis and tourism also contribute to local economies, with Ujjain being a major pilgrimage destination. The corridor's competitiveness is enhanced by robust highway networks, railway routes for bulk goods, and the airport's capacity for high-value shipments, along with expanding warehousing facilities that improve logistics efficiency.

1.3 Historical traffic data

Figure 1-2: Historical mode wise traffic (AADT) and growth at Chokala TP

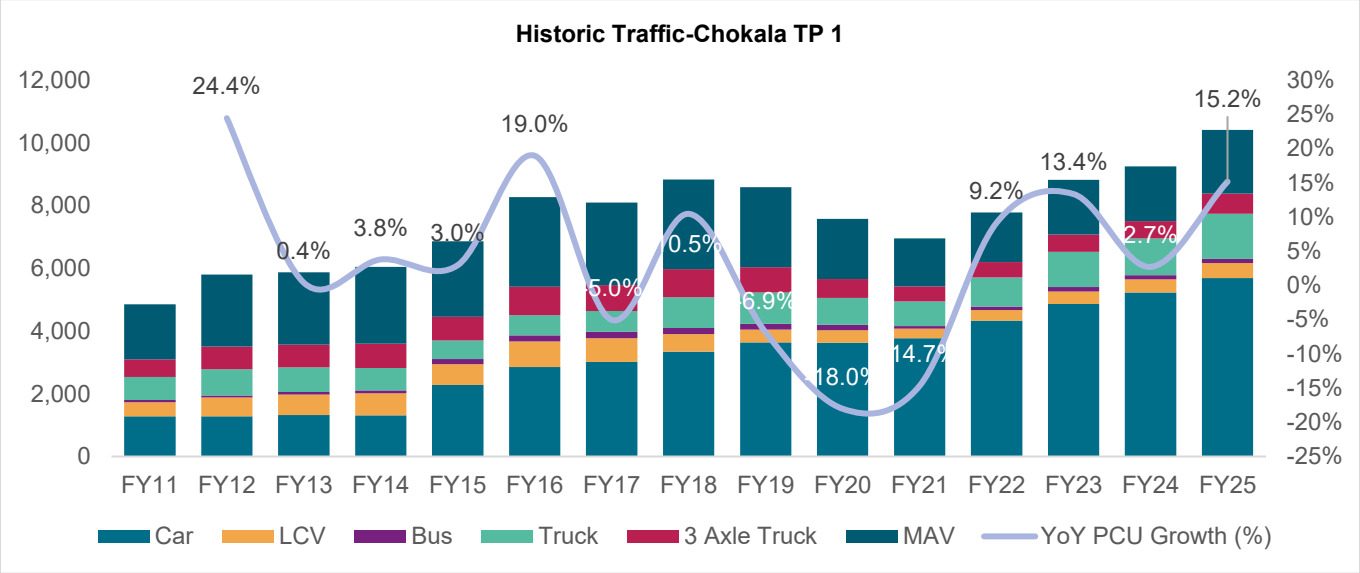


Table 1-1: Historical mode wise traffic (AADT) and growth at Chokala TP

Fiscal year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	Total PCU	YoY PCU Growth (%)
FY11	1,281	453	69	737	556	1,759	**4,855**	**13,962**	
FY12	1,277	603	69	829	725	2,294	**5,798**	**17,376**	24.4%
FY13	1,320	654	84	780	728	2,304	**5,870**	**17,446**	0.4%
FY14	1,314	706	89	717	772	2,445	**6,043**	**18,108**	3.8%
FY15	2,279	665	165	589	760	2,406	**6,864**	**18,645**	3.0%
FY16	2,857	811	199	643	903	2,860	**8,273**	**22,179**	19.0%
FY17	3,013	760	203	659	831	2,629	**8,096**	**21,064**	-5.0%
FY18	3,338	566	190	981	903	2,857	**8,835**	**23,268**	10.5%

Fiscal year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	Total PCU	YoY PCU Growth (%)
FY19	3,641	410	181	1,002	804	2,544	**8,583**	**21,668**	-6.9%
FY20	3,632	393	171	861	606	1,917	**7,580**	**17,762**	-18.0%
FY21	3,775	301	84	784	483	1,528	**6,955**	**15,157**	-14.7%
FY22	4,336	335	113	922	499	1,579	**7,784**	**16,546**	9.2%
FY23	4,863	401	139	1,119	552	1,747	**8,821**	**18,756**	13.4%
FY24	5,235	415	132	1,172	551	1,743	**9,248**	**19,265**	2.7%
FY25	5,687	487	127	1,441	642	2,032	**10,415**	**22,189**	15.2%
H1FY26 (ADT)	6,252	586	138	1,778	777	2,460	**11,991**	**26,281**	
CAGR (15-25)	9.6%	-3.1%	-2.6%	9.4%	-1.7%	-1.7%	4.3%	1.8%	

Source: Client TMS Data, Crisil Intelligence

Figure 1-3: Historical mode wise traffic (AADT) and growth at Chikliya TP

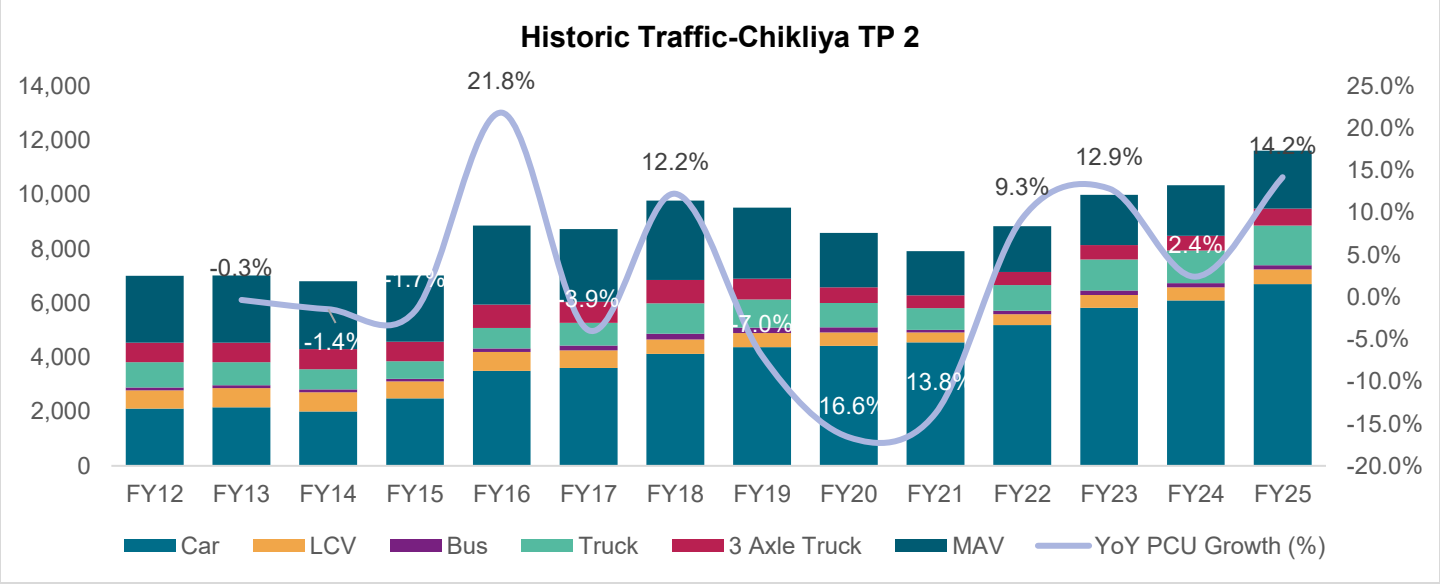


Table 1-2: Historical mode wise traffic (AADT) and growth at Chikliya TP

Fiscal year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	Total PCU	YoY PCU Growth (%)
FY12	2,116	670	101	936	718	2,462	**7,003**	**19,464**	
FY13	2,164	703	110	842	723	2,478	**7,021**	**19,398**	-0.3%
FY14	2,006	711	104	746	733	2,510	**6,810**	**19,118**	-1.4%
FY15	2,488	621	105	645	713	2,443	**7,014**	**18,801**	-1.7%
FY16	3,502	701	122	763	852	2,921	**8,861**	**22,909**	21.8%
FY17	3,605	651	183	832	781	2,676	**8,727**	**22,009**	-3.9%
FY18	4,128	526	215	1,127	855	2,931	**9,783**	**24,702**	12.2%
FY19	4,377	512	209	1,031	766	2,626	**9,522**	**22,981**	-7.0%
FY20	4,425	488	199	888	583	1,999	**8,583**	**19,165**	-16.6%

Fiscal year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	Total PCU	YoY PCU Growth (%)
FY21	4,558	357	101	793	475	1,628	**7,913**	**16,528**	-13.8%
FY22	5,193	395	135	936	492	1,688	**8,839**	**18,071**	9.3%
FY23	5,830	465	166	1,143	540	1,849	**9,992**	**20,393**	12.9%
FY24	6,098	482	161	1,202	542	1,856	**10,341**	**20,887**	2.4%
FY25	6,700	543	154	1,463	624	2,137	**11,621**	**23,853**	14.2%
H1FY26 (ADT)	7,794	648	160	1,831	751	2,574	**13,757**	**28,573**	
CAGR (15-25)	10.4%	-1.3%	3.9%	8.5%	-1.3%	-1.3%	5.2%	2.4%	

Source: Client TMS Data, Crisil Intelligence

1.4 Base traffic estimation

For base traffic (annual average daily traffic) estimation in the present study, Q1FY26 (Apr-25 to Jun-25) of TMS traffic data were annualized using SCF factor of FY25, FY24, FY20 and FY19 traffic data to arrive at the annual average daily traffic (AADT) for FY 26.

The AADT estimation for the base case for FY26 is presented tables below

Table 1-3: Base traffic estimation FY26 AADT for Chokala TP

Particulars	FY year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	PCU
ADT (Apr-June)	FY 26	6,362	571	143	1,634	738	2,335	11,783	25,271
SCF	FY19, FY20, FY 24, FY 25	0.98	0.99	0.92	1.08	1.02	1.02		
AADT	**FY 26**	**6,253**	**567**	**132**	**1,772**	**752**	**2,380**	**11,855**	**25,778**

Source: Client TMS Data, Crisil Intelligence

Table 1-4: Base traffic estimation FY26 AADT for Chikliya TP

Particulars	FY year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	PCU
ADT (Apr-June)	FY 26	7,864	634	173	1,664	700	2,399	13,433	27,218
SCF	FY19, FY20, FY 24, FY 25	1.01	1.01	0.93	1.07	1.01	1.01		
AADT	**FY 26**	**7,908**	**638**	**161**	**1,784**	**709**	**2,430**	**13,628**	**27,757**

Source: Client TMS Data, Crisil Intelligence

1.4.1 Toll segmentation

For the present study, trip segmentation based on H1FY26 has been adopted for the projections

Table 1-5: Adopted toll segmentation at the Chokala toll plaza on the project road

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Single journey	68.2%	76.0%	85.0%	99.2%	99.2%
Monthly pass (local)	0.5%	0.0%	0.0%	0.0%	0.0%

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Monthly pass	1.8%	22.5%	14.4%	0.5%	0.5%
Exemption/violations	29.5%	1.5%	0.6%	0.3%	0.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Client TMS Data, Crisil Intelligence

Table 1-6: Adopted toll segmentation at the Chikliya toll plaza on the project road

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Single journey	69.3%	75.3%	81.3%	99.5%	97.1%
Monthly pass (local)	1.2%	0.0%	0.0%	0.0%	0.0%
Monthly pass	0.0%	23.6%	18.1%	0.1%	2.8%
Exemption/violations	29.6%	1.1%	0.7%	0.4%	0.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Client TMS Data, Crisil Intelligence

1.5 Overview of impact due to network developments

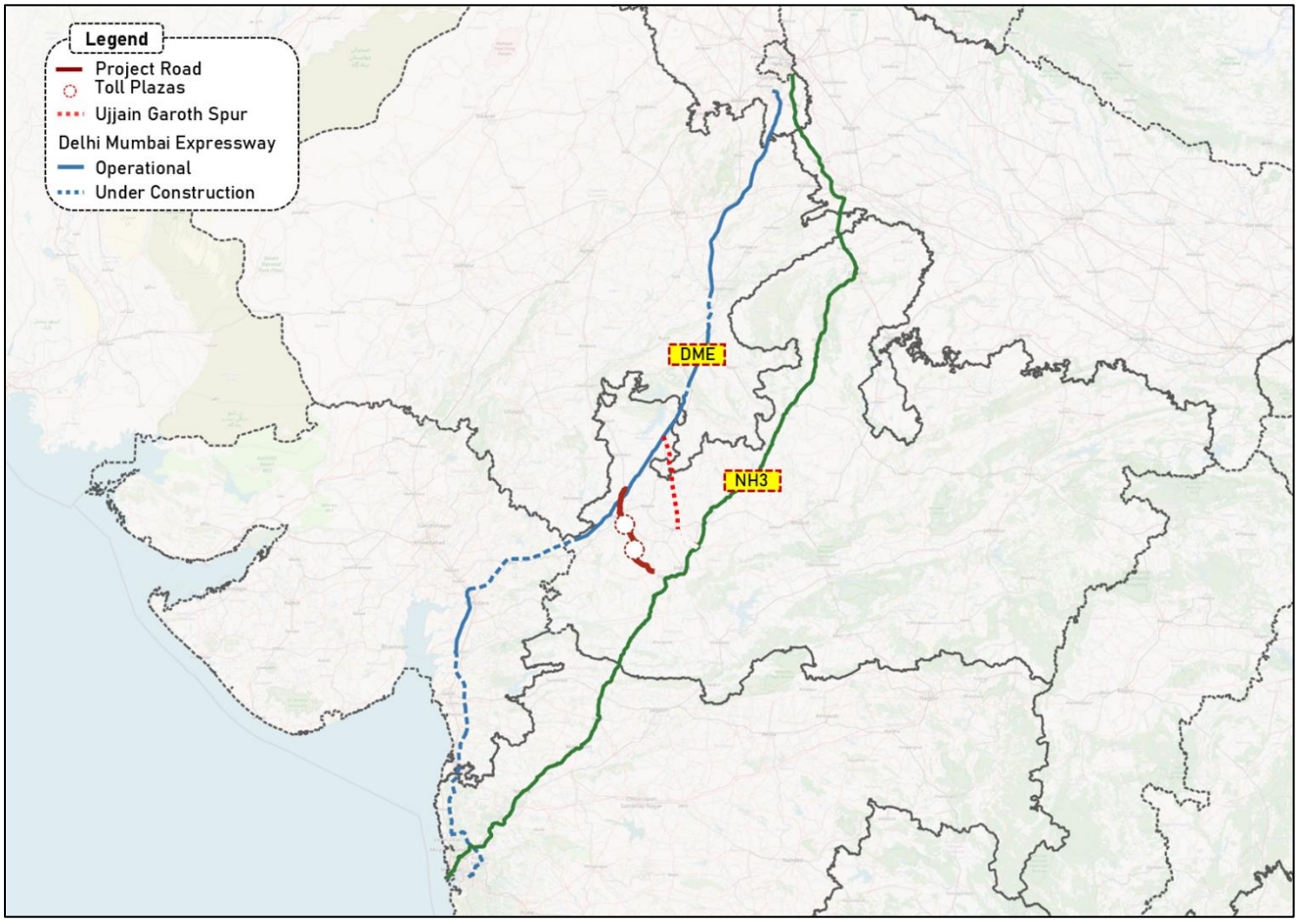
In the case of the project road, the major impact on the traffic is expected to be from the development of Delhi-Mumbai expressway (DME) and the DME spur connecting the to the expressway at Garoth (starting from Ujjain with a length of 130 km). The DME intersects with the project stretch near Nayapura (Towards Jaora). These two developments are like to have two-pronged impact on the project stretch's traffic in terms of long-distance traffic and short distance traffic.

Table 1-7: Details of network development and possible impacts

Sr. no	Network development	Traffic impacted	Impact Type	Phasing	Possible impact
1	Delhi Mumbai Expressway long distance Traffic	Mumbai/Pune/South and beyond to Delhi/Jaipur/Haryana/UP and beyond	Negative	20% in FY27 and 100% from FY28	The long-distance traffic on the project stretch which is originating/destined for Delhi and North and Mumbai/Pune/Bangalore and South is considered as potential divertible traffic
2	Delhi Mumbai Expressway short distance Traffic	Indore/Dhule & South till Nashik and surroundings to Rajasthan/Delhi	Negative	20% in FY27 and 100% from FY30-Considering the construction of the Western Indore Bypass in the future the diversion percentage is different from FY 29 onwards	The traffic present on the project stretch which is originating and destined for the catchment area around Indore/Pithampur, Dhule, and Nashik have an alternative in the form of the Ujjain-Garoth spur to connect to DME and travel to Rajasthan (Jaipur catchment) and Delhi/North India. Thus, this short distance traffic is considered as potential divertible traffic.

Source: Crisil Intelligence

Figure 1-4: Long distance alignment of the project stretch, Ujjain Spur, DME, and Mumbai-Agra section (old NH-3)



Source: Open Street Map, Crisil Intelligence

Table 1-8: Details of average impact on long distance to DME across Chokala and Chikliya TP

Impacted traffic	Vehicle type	Potential divertible traffic	Diverted traffic
Long distance	LCV/Minibus	9.2%	-5.0%
	2 Axle Truck	13.5%	-8.9%
	3 Axle	12.3%	-9.1%
	MAV	17.5%	-11.7%

Source: Crisil Intelligence

Details of average impact on short distance traffic due to DME + Ujjain Spur + Indore Western & Eastern Bypass across Chokala and Chikliya TP

Impacted traffic	Vehicle type	Potential divertible traffic	Diverted traffic (Ujjain Spur)-Till FY 28	Diverted traffic (Western Bypass)-FY 29 onwards
Short Distance	LCV/Minibus	6.1%	-4.1%	-4.5%
	2 Axle Truck	7.8%	-5.0%	-5.8%
	3 Axle	8.9%	-5.2%	-6.3%
	MAV	9.6%	-6.0%	-6.8%

Source: Crisil Intelligence

1.6 Traffic projections

The table below provides the traffic growth rates considering various diversion/impacts, as provided by the Traffic Consultant:

Table 1-9: Traffic projections- Commodity Based- Chokala (TP01)

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	PCU
2026	6,253	567	132	1,772	752	2,380	**11,855**	**25,778**
2027	6,700	573	137	1,766	732	2,384	**12,290**	**26,188**
2028	7,171	576	141	1,747	707	2,364	**12,707**	**26,459**
2029	7,661	576	146	1,710	675	2,316	**13,084**	**26,541**
2030	8,166	587	151	1,737	669	2,380	**13,688**	**27,423**
2031	8,670	605	156	1,794	675	2,498	**14,398**	**28,692**
2032	9,204	625	161	1,852	681	2,620	**15,142**	**30,010**
2033	9,791	645	166	1,913	687	2,749	**15,951**	**31,426**
2034	10,415	665	171	1,975	693	2,882	**16,801**	**32,899**
2035	11,068	685	176	2,036	698	3,018	**17,681**	**34,405**
2036	11,716	704	181	2,096	702	3,155	**18,556**	**35,910**
2037	12,402	724	186	2,157	706	3,297	**19,473**	**37,474**
2038	13,117	744	191	2,219	709	3,443	**20,424**	**39,087**
2039	13,872	765	197	2,282	713	3,596	**21,425**	**40,777**
CAGR (2026-39)	**6.3%**	**2.3%**	**3.1%**	**2.0%**	**-0.4%**	**3.2%**	**4.7%**	**3.6%**

Source: Crisil Intelligence

Table 1-10: Traffic projections- Commodity Based- Chikliya (TP02)

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	PCU
2026	7,908	638	161	1,784	709	2,430	**13,628**	**27,757**
2027	8,473	645	166	1,783	693	2,437	**14,197**	**28,332**
2028	9,070	649	172	1,768	672	2,419	**14,751**	**28,769**
2029	9,688	650	178	1,736	644	2,372	**15,267**	**29,010**
2030	10,327	662	184	1,766	641	2,439	**16,019**	**30,067**
2031	10,964	684	189	1,828	649	2,562	**16,876**	**31,517**
2032	11,640	705	195	1,890	657	2,689	**17,777**	**33,026**
2033	12,382	728	202	1,956	666	2,823	**18,757**	**34,651**
2034	13,172	751	208	2,023	674	2,963	**19,790**	**36,344**
2035	13,997	774	214	2,089	681	3,104	**20,860**	**38,080**
2036	14,817	796	220	2,154	688	3,248	**21,924**	**39,815**
2037	15,685	819	226	2,220	694	3,397	**23,041**	**41,621**

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	PCU
2038	16,588	842	233	2,287	699	3,550	**24,200**	**43,485**
2039	17,543	866	239	2,356	705	3,711	**25,420**	**45,441**
CAGR (2026-39)	**6.3%**	**2.4%**	**3.1%**	**2.2%**	**0.0%**	**3.3%**	**4.9%**	**3.9%**

Source: Crisil Intelligence

1.7 Revenue projections

Table 1-11: Mode wise revenue in ₹ millions for the project section – Commodity based analysis for Chokala TP

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	YoY Growth (%)
2026	127	35	17	305	259	820	1,563	
2027	146	38	19	325	270	879	1,677	7.3%
2028	168	41	21	345	280	935	1,790	6.7%
2029	191	44	23	361	285	978	1,881	5.1%
2030	218	48	26	392	302	1,074	2,059	9.5%
2031	247	53	29	434	326	1,207	2,294	11.4%
2032	282	58	32	480	353	1,357	2,562	11.7%
2033	319	64	35	529	380	1,520	2,847	11.1%
2034	363	71	38	585	410	1,705	3,173	11.4%
2035	412	78	42	645	442	1,910	3,529	11.2%
2036	470	86	47	712	477	2,143	3,935	11.5%
2037	528	94	51	782	512	2,390	4,357	10.7%
2038	599	104	56	861	550	2,671	4,841	11.1%
2039	679	114	62	947	592	2,984	5,379	11.1%
CAGR (2026-39)	13.8%	9.5%	10.3%	9.1%	6.6%	10.4%	10.0%	

Source: Crisil Intelligence

Table 1-12: Mode wise revenue in ₹ millions for the project section – Commodity based analysis for Chikliya TP

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	YoY Growth (%)
2026	138	34	18	268	210	721	1,389	
2027	159	36	20	286	220	774	1,496	7.7%
2028	182	39	22	304	229	824	1,601	7.1%
2029	209	42	25	319	234	862	1,691	5.6%
2030	238	46	27	347	249	949	1,857	9.8%
2031	269	51	30	385	270	1,066	2,071	11.5%
2032	307	56	33	426	294	1,201	2,318	11.9%
2033	348	62	37	471	317	1,345	2,580	11.3%
2034	397	68	40	521	344	1,511	2,881	11.7%

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	YoY Growth (%)
2035	450	75	44	576	372	1,694	3,211	11.4%
2036	511	83	49	637	403	1,902	3,585	11.6%
2037	576	91	54	700	433	2,122	3,977	10.9%
2038	655	100	59	772	467	2,373	4,427	11.3%
2039	741	110	65	851	504	2,654	4,927	11.3%
CAGR (2026-39)	13.8%	9.6%	10.3%	9.3%	7.0%	10.5%	10.2%	

Source: Crisil Intelligence

2 Introduction

2.1 Asset overview

The Lebad–Jaora segment of State Highway 31 is a ~125-kilometer, four-lane corridor that anchors Indore's connectivity to Rajasthan and Maharashtra, linking onward to key destinations such as Udaipur, Jaipur, and Mumbai. This stretch sits within SH31's broader alignment from Nayagaon, at the Rajasthan–Madhya Pradesh border, down to Khargone, effectively tying the two states together. It also functions as a critical east–west bridge between NH48 (formerly NH8) south of Chittorgarh and NH52 (formerly NH3) west of Indore, channeling traffic among major economic hubs including Gurgaon, Jaipur, Ajmer, Udaipur, Nimbahera, Indore/Dewas, and further to Nasik, Bhiwandi, and Mumbai/JNPT. There are two toll plazas on the asset—Chokala and Chikliya—with Chikliya recording the larger share of throughput.

The corridor's catchment features two prominent industrial clusters: Pithampur, which lies close to the project stretch, and Dewas near Ujjain. These hubs host a diversified industrial base spanning pharmaceuticals, automotive, iron and steel, cement, food processing, and textiles. As a vital conduit for north–south long-haul movement, the route carries predominantly freight traffic, while most passenger car volumes are inter-state in nature.

Freight composition is led by agricultural commodities, largely transported by LCV/Minibuss and 2-axle trucks. Heavier multi-axle vehicles primarily move construction inputs—especially cement, marble, and associated powders—originating around Nimbahera and Jaipur and heading toward Indore, Ujjain, and Badnawar to serve local construction demand. The corridor also facilitates significant courier and parcel flows connecting Delhi-NCR, Mumbai, and Bengaluru.

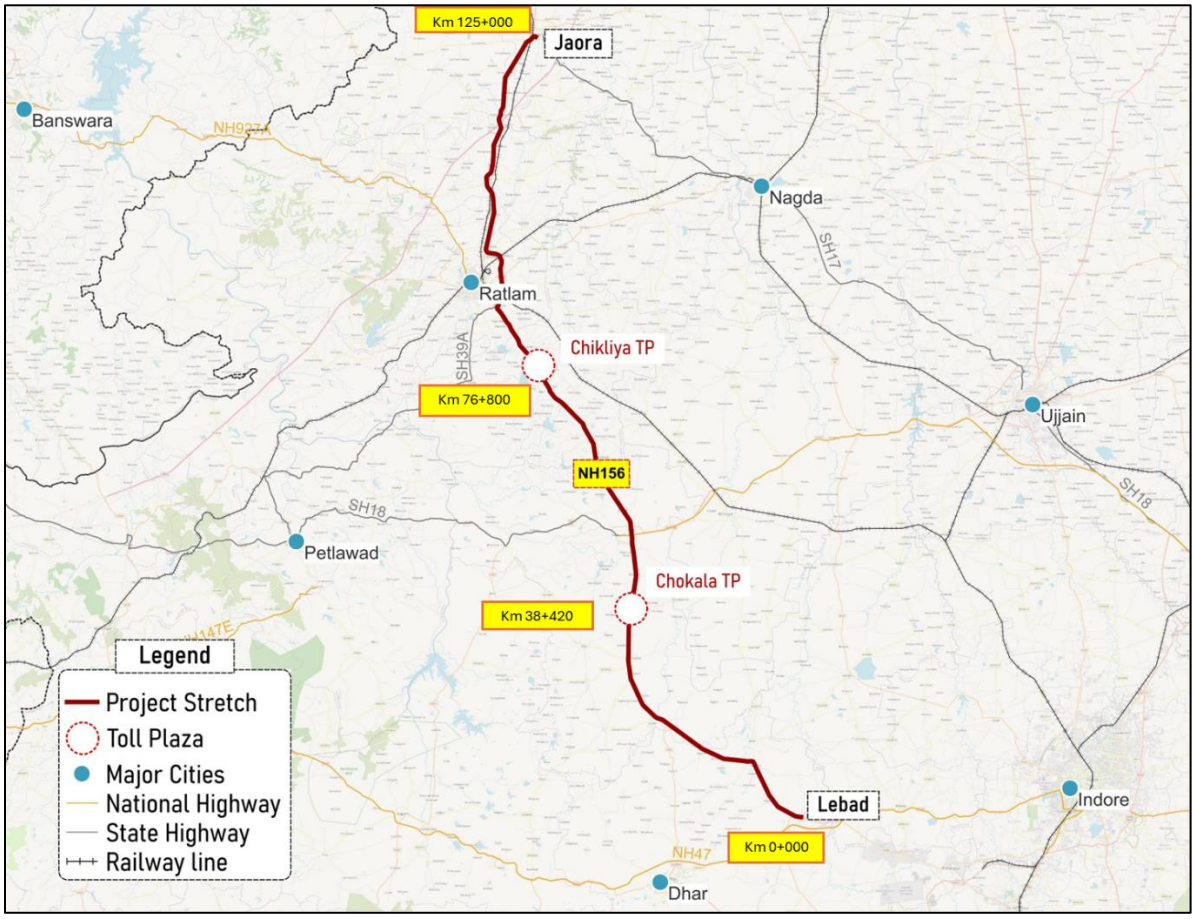
Agriculture remains the dominant commodity theme, with wheat at the forefront. Madhya Pradesh is India's second-largest wheat producer, cultivating high-quality varieties across more than 19 districts. Notably, premium Sharbati and Kathiya (durum) wheats are produced here and supplied to both domestic and export markets.

Table 2-1: Details of the road stretch

Project stretch	State	Toll plaza	Length (km)
Lebad-Jaora section of SH-31	Madhya Pradesh	Chokala (TP1) and Chikliya (TP2)	124.15

Source: Crisil Intelligence

Figure 2-1: Project stretch alignment



Source: Open Street Map, Crisil Intelligence

Table 2-2: Key details of project stretch

Project stretch	Lebad-Jaora section of SH-31 in the state of Madhya Pradesh
Concessionaire	Western M P Infrastructure and Toll Road Pvt. Ltd. (WMPTL)
Authority	MP Road Development Corporation Ltd (MPRDC)
Appointed Date	March 2008
Concession Period	25 years
Extension	5 Years
No of Lanes	4-lane configuration
Type	BOT
Length of Stretch	124.15 km
No of Toll Plaza	Chokala (TP1) and Chikliya (TP2)

Source: Concession Agreement, Crisil Intelligence

2.2 Scope

The scope of the traffic assessment for the project road is divided into following four sections.

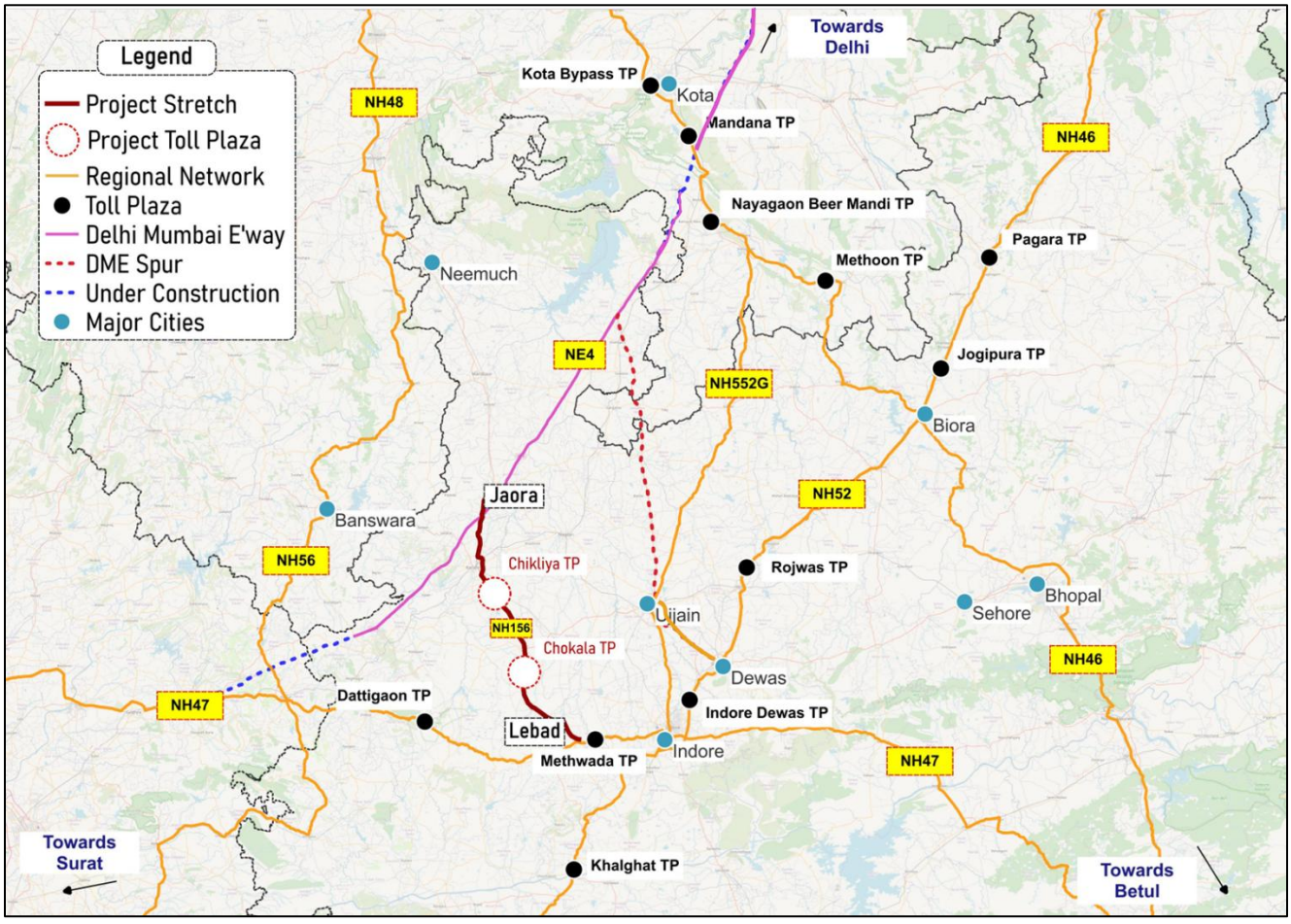
- Detailed Assessment of the project road: - Include review of the Historic TMS Data, past traffic growth, detailed network assessment.
- Primary Data collection & Analysis: - Conducting preliminary traffic surveys like Origin-Destination (O-D) to understand the traffic patterns, commodity profiles.
- Network Impact Assessment: - To Analyse the upcoming network developments which may impact the project road traffic
- Traffic and Revenue Projections: - Traffic & Revenue projections considering relevant growth drivers and network developments

Approach & Methodology is detailed out in Traffic Growth Estimation & Traffic forecast chapter.

2.3 Network profile

The Asset connects the industrial catchment region around Indore/Pithampur with Maharashtra and Rajasthan. For passenger and local traffic, the stretch provides movement between the adjacent districts i.e. Ratlam, Dhar, Indore and Ujjain It plays a vital role in regional trade, business, and passenger movement. The project stretch connects to the 8-lane Delhi-Mumbai expressway at Nayapura (near Jaora). Nearby network development includes the construction include greenfield access controlled 130 km Ujjain-Garoth DME spur, 4-lane Indore-Ujjain section, 4-lane Ujjain-Badnawar section, and 4 lane Ujjain-Agra-Jhalawar section. However, several major network developments in the surrounding region have influenced travel behavior. A schematic representation of the current network within the project influence area is presented in the figure below

Figure 2-2: Network around the project influence area



Source: Open Street Map, Crisil Intelligence, IHMCL Data

Overall, these developments are expected to enhanced regional connectivity and travel efficiency but also concurrently impact the traffic load on the project corridor. The redistribution of long/short-distance traffic is expected to get suppressed on the existing alignment on account of the DME and the Ujjain DME spur.

2.4 Industrial profile

The four districts—Indore, Dhar, Ujjain, and Ratlam—form the core of western Madhya Pradesh's western industrial belt, anchored by Indore city and the Pithampur manufacturing hub in Dhar. The corridor is enabled by multimodal connectivity: national highways linking to Gujarat, Maharashtra, and Rajasthan; Western Railway routes via Indore, Ujjain, and Ratlam; and air cargo access through Devi Ahilya Bai Holkar Airport (Indore). This connectivity underpins manufacturing, trade, and logistics, with Indore serving as the procurement, finance, services, and talent center for the wider region.

The industrial clusters and sector composition of the region is as follows,

Nimbahera–Badnawar (cement cluster): Heavy manufacturing activity spans Nimbahera (Rajasthan)—housing units of Wonder Cement, and JK Cement—and Badnawar (Dhar), where Wonder Cement's cement/clinker facility has strengthened throughput. These nodes generate consistent 3 Axle and multi-axle vehicular flows carrying limestone, clinker, and finished cement across the corridor, including movement observed at the Chikliya toll plaza.

Indore Indore is located in the western region of Madhya Pradesh and functions as the administrative headquarters of the district. The district is a major metropolitan and commercial hub for the state, with strong linkages to the Indore–Pithampur industrial belt. As per the latest publicly available District Domestic Product (constant prices) estimates, Indore's Gross District Domestic Product (GDDP) was recorded at Rs 4,64,282.6 million in fiscal year 2023 marking a growth of 5.7% CAGR compared to fiscal year 2012.

Indore is widely recognized as the "Commercial Capital of Madhya Pradesh," with a diversified economic base spanning manufacturing, trade, services, and technology. The broader Indore region features significant industrial activity, with the nearby Pithampur belt known for automotive and engineering manufacturing, while the district itself hosts clusters in pharmaceuticals, food processing, packaging, and IT/ITES. Indore has also emerged as a major education and innovation hub, anchored by institutions like IIT Indore and IIM Indore, and is noted for effective urban governance and cleanliness initiatives.

Indore, the most populous city in Madhya Pradesh, is a major trading hub with diversified industrial activity in textiles, food processing (a nationally significant namkeen cluster and dedicated park), pharmaceuticals, packaging, plastics, light engineering, and printing. SEZs and parks—Indore SEZ, Dewas Industrial Area, IT Parks, Diamond Park, and the Pharma Cluster—complement robust warehousing and e-commerce logistics along the Super Corridor and key arterials. A growing IT/ITeS base (analytics, fintech, shared services) supports supply-chain digitization and industrial services.

Dhar: Dhar is located in the western region of Madhya Pradesh. It is strategically positioned in the Malwa region, Dhar forms a key part of the Indore–Pithampur–Dhar industrial corridor and benefits from proximity to Indore's markets, talent, and logistics. The district also hosts prominent heritage assets such as Mandu (Mandav), which underpin its tourism potential. As per the latest publicly available District Domestic Product (constant prices) estimates, Dhar's Gross District Domestic Product (GDDP) was recorded at Rs 195,106.1 million in fiscal year 2023 marking a growth of 7.6% CAGR compared to fiscal year 2012. The growth reflects expansion in manufacturing and services anchored by the Pithampur industrial ecosystem.

Dhar's economy is underpinned by the Pithampur industrial area, which is known for automotive and engineering manufacturing, ancillary components, pharmaceuticals, packaging, and allied industries. The district's broader economic base spans agro processing (soybean, wheat, and cotton value chains), logistics and warehousing along key corridors connecting Indore and Gujarat, and tourism centered on Mandu's historical sites. Dhar's integration with the Indore urban-industrial cluster supports workforce mobility, supply chain depth, and market access, while ongoing industrial park development and infrastructure upgrades continue to strengthen its role within the regional manufacturing belt.

Pithampur, south of Indore, is among central India's largest automobile and engineering hubs, with OEMs and tiered suppliers producing buses (e.g., Volvo), trucks and tractors (e.g., Eicher), passenger vehicles, and a wide range of components. MPIDC-managed estates, SEZ/EPZ assets, and common infrastructure enable export-oriented production, vendor development, and rapid scale-up. Proximity to Indore ensures access to managerial talent, testing/certification, and shared services.

Ujjain Ratlam is located in the western region of Madhya Pradesh. Positioned within the Malwa region, Ratlam benefits from strong rail connectivity via the Western Railway network and road linkages to Indore, Neemuch, and Mandsaur, integrating it with the broader Indore-centered market and supply chains. As per the latest publicly available District Domestic Product (constant prices) estimates, Ratlam's Gross District Domestic Product (GDDP) was recorded at Rs 160,867.9 million in fiscal year 2023 marking a growth of 7.4% CAGR compared to fiscal year 2012.

Ratlam's economic base spans light engineering and fabrication, agro-processing (soybean, wheat), food products, and packaging, supported by a robust trading and logistics ecosystem anchored by its rail junction status. The district has emerging warehousing along key corridors and a diversified MSME presence serving regional demand. Proximity to Indore's industrial ecosystem supports vendor development, workforce mobility, and market access, while ongoing infrastructure

upgrades continue to strengthen Ratlam's role within the western Madhya Pradesh manufacturing and trade belt. Industrial activity is anchored by process industries around Nagda (chemicals and fibers), alongside engineering components, food processing, and packaging. A strong services base—tourism, hospitality, retail, and public administration—supports local demand, stabilizes the workforce, and provides ancillary markets for FMCG and packaging.

Ratlam Ujjain is located in the western region of Madhya Pradesh A historic cultural center of the Madhya Pradesh state, Ujjain anchors significant religious tourism—centered on the Mahakaleshwar Jyotirlinga and periodic Kumbh (Simhastha)—and benefits from strong linkages to Indore for markets, talent, and logistics. As per the latest publicly available District Domestic Product (constant prices) estimates, Ratlam's Gross District Domestic Product (GDDP) was recorded at Rs 222,015.1 million in fiscal year 2023 marking a growth of 5.8% CAGR compared to fiscal year 2012.

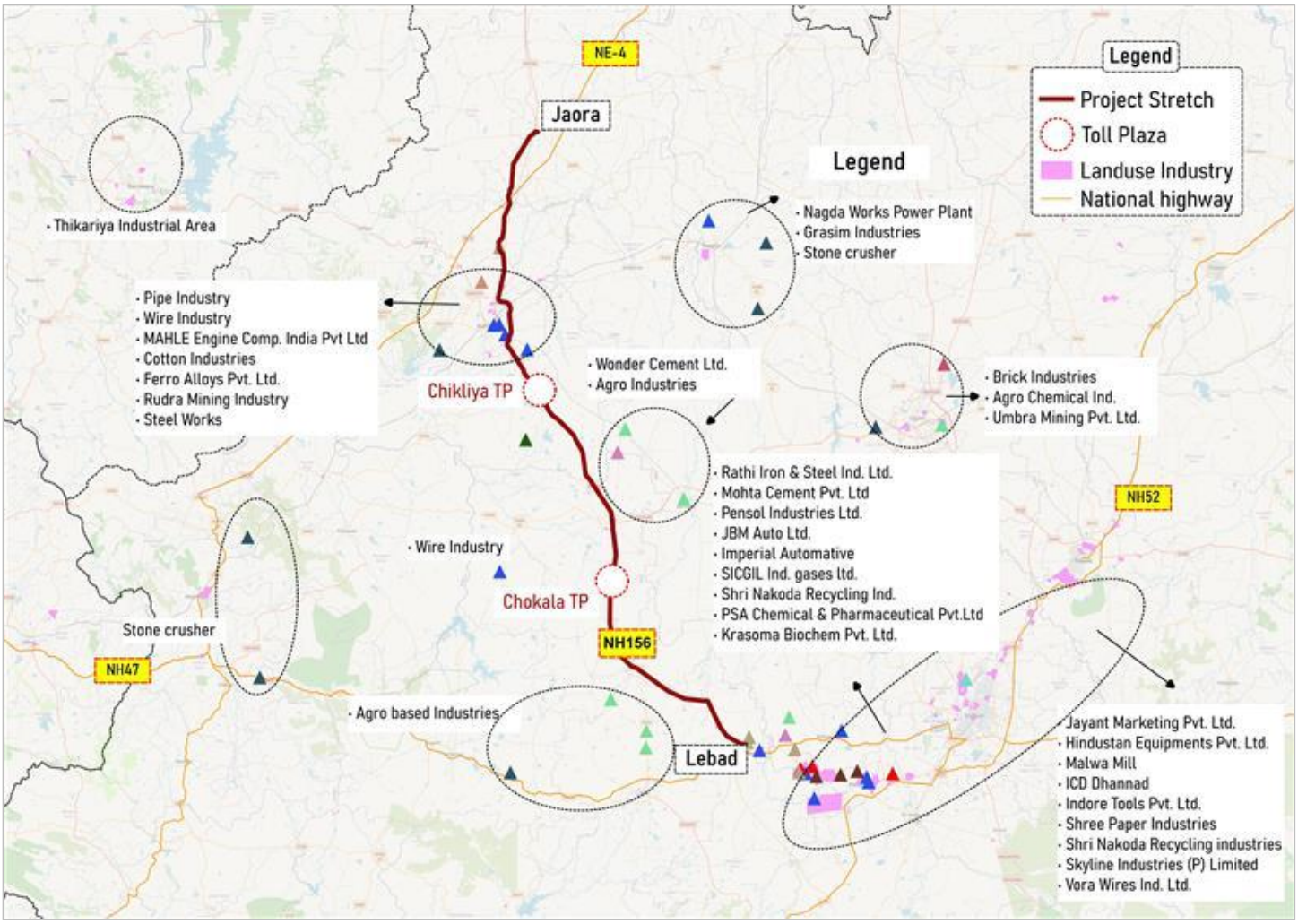
Ujjain's economy features a substantial services component driven by tourism, hospitality, retail, and public administration, alongside industrial activity in and around Nagda (chemical and fiber manufacturing), engineering components, food processing, and packaging. The district's agro-trade (oilseeds, cereals) and warehousing benefit from connectivity along the Indore–Ujjain corridor. Education and skills are supported by various institutions, while civic and transport improvements have enhanced visitor infrastructure and local commerce. Ratlam's rail junction status drives aggregation and distribution of industrial inputs and outputs. The district hosts light engineering, fabrication, food products, and agro-processing, with emerging Grade-B/Grade-A warehousing on corridors linking Indore, Neemuch, and Mandsaur. MSMEs cater to maintenance, tooling, and components for the broader Malwa belt.

Agricultural and tourism linkages Agricultural mandis and small industries at intermediate nodes along SH31—Neemuch, Mandsaur, Ratlam, Jaora, Badnawar—generate steady local commercial traffic via 2-axle and LCV/Minibus segments for loading/unloading and short-haul distribution, feeding agro-processing and packaging value chains in Indore and Ujjain. Tourism is a significant services demand driver: Ujjain, along NH52, is a major pilgrimage center anchored by the Mahakaleshwar Temple, with Omkareshwar and Dewas also attracting pilgrims. South of Indore on NH3, Maheshwar and Mandu (Mandav) are prominent leisure destinations, reinforcing hospitality, retail, and local transport ecosystems—indirectly supporting food processing, packaging, and light manufacturing tied to visitor consumption.

The corridor's competitiveness is supported by:

- Highways connecting the Indore–Pithampur–Dhar belt to Ujjain and Ratlam, and onward to Gujarat/Rajasthan manufacturing and markets.
- Western Railway routes enabling bulk movement (cement, chemicals) and containerized flows for auto components and FMCG.
- Indore airport's belly-cargo capacity for high-value, time-sensitive shipments (pharma, electronics, specialty components).
- Expanding warehousing near Indore's Super Corridor and along Ujjain/Ratlam spines, improving inventory turns and last-mile reliability.

Figure 2-3: Major industries around the project stretch



Source: Open Street Map, Crisil Intelligence

3 Primary data collection & analysis

3.1 General

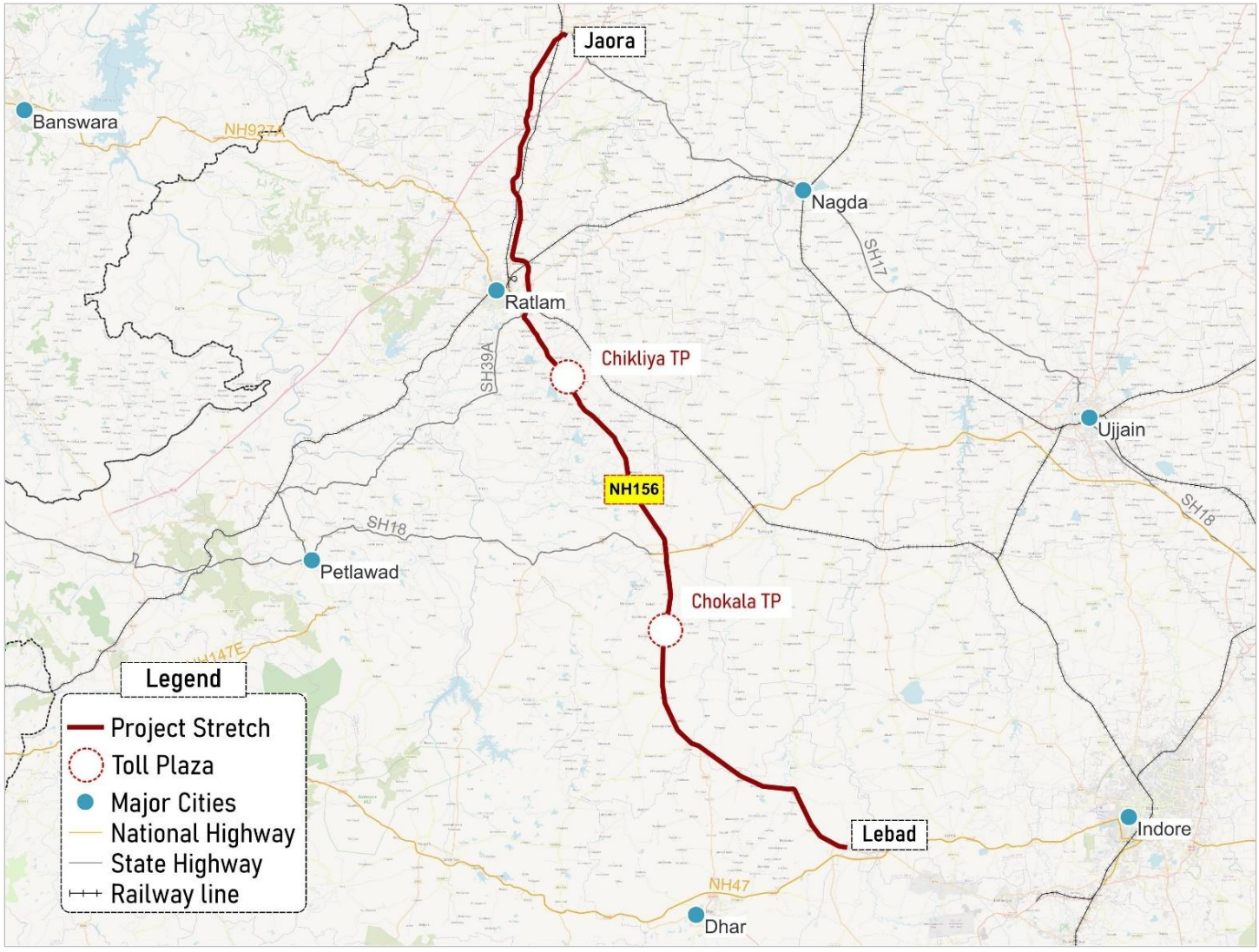
Origin Destination survey was conducted on the project road to understand the traffic and travel pattern of vehicles plying on the project road. For the present study, one day (24-Hours) origin destination survey conducted at the toll plaza locations on the project road. The schedule of the traffic surveys carried out as part of the study on the project road are presented in the below table and figure.

Table 3-1: Type of survey & schedule

Location of Survey	Survey type	Duration	Survey date
Chokala & Chikliya Toll Plaza	Origin-Destination (O-D) Survey	1 Day	22nd September to 23rd September

Source: Crisil Intelligence

Figure 3-1: Survey location (toll plazas)



Source: Open Street Map, Crisil Intelligence

3.2 Origin-Destination (OD) Analysis

Origin-Destination survey was carried out at toll plaza for 1 Day (24-hours), by roadside interview method as described in IRC: 102-1988. A random sampling approach was employed to interview both passenger and freight vehicles traversing the project road at the toll plaza locations. The survey aimed to gather information on various aspects, including origin, destination, frequency of trips, purpose of travel and for freight vehicles, the type of commodity being transported.

The regional distribution of tollable vehicles at all the toll plaza location has been estimated based on OD matrices is presented in below table and figure. The project influencing states will provide an overview of the factors likely to influence the pattern of economic development and hence the flows and volumes of traffic on the project road.

3.2.1 Regional influence

Table 3-2: Regional distribution in % at Chokala TP

States	Cars	Bus	LCV/Minibus	Truck	3 Axle Truck	MAV
Madhya Pradesh	87.6%	79.5%	70.0%	63.9%	57.1%	47.0%
Rajasthan	2.5%	3.3%	8.3%	10.0%	10.7%	14.4%
Maharashtra	6.4%	13.4%	9.5%	12.0%	13.0%	13.2%
Delhi	0.3%	1.5%	2.6%	3.7%	4.3%	7.1%
Haryana	0.3%	0.0%	2.6%	2.7%	3.9%	4.7%
Rest of India	2.9%	2.4%	7.0%	7.8%	11.0%	13.7%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Crisil Intelligence

Table 3-3: Regional distribution in % at Chikliya TP

States	Cars	Bus	LCV/Minibus	Truck	3 Axle Truck	MAV
Madhya Pradesh	88.4%	88.5%	59.0%	48.9%	45.0%	42.7%
Rajasthan	2.9%	1.6%	11.8%	15.1%	17.2%	15.7%
Maharashtra	5.2%	7.4%	12.3%	12.6%	14.2%	15.7%
Delhi	0.8%	0.0%	6.2%	8.1%	9.1%	8.6%
Haryana	0.2%	0.0%	1.8%	2.2%	1.3%	2.6%
Rest of India	2.5%	2.6%	8.8%	13.1%	13.3%	14.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Crisil Intelligence

Contribution of Madhya Pradesh declines as vehicle category changes from passenger to commercial vehicles (from cars/buses to LCV/Minibus & trucks, 3 Axle, and MAV). The interstate contributions (notably Rajasthan, Maharashtra, and Delhi) rise—consistent with commercial vehicles undertaking longer-haul, cross-border freight runs. Chikliya TP shows consistently higher non-Madhya Pradesh shares for heavier vehicle classes (LCV/Minibus/Truck, 3 Axle, MAV) than Chokala TP, indicating stronger interstate freight connectivity and commodity movement through Chikliya. Cars and buses

are predominantly Madhya Pradesh-origin at both plazas, with Chikliya even more skewed to intra-Madhya Pradesh passenger flows.

3.2.1.1 Cars

- Car flows are overwhelmingly local/Madhya Pradesh-centric. Dominance of Madhya Pradesh trips at both plazas: 87.6% (Chokala) and 88.4% (Chikliya), indicates primarily intra-state, regional passenger movement.
- Secondary contributors are small: Rajasthan 6.4% (Chokala) vs 5.2% (Chikliya); Maharashtra 2.5% (Chokala) vs 2.9% (Chikliya); all other states collectively under ~4% at each plaza.

3.2.1.2 Buses

- The distribution indicates a strong Madhya Pradesh skew among all categories in case of buses: 79.5% (Chokala) and 88.5% (Chikliya). Rajasthan contributes 13.4% at Chokala vs 7.4% at Chikliya; other states are marginal. Chikliya sees more intra-Madhya Pradesh bus movement than Chokala.

3.2.1.3 LCV/Minibus & Trucks

- Madhya Pradesh remains a majority but with notable intrastate presence: 66.3% (Chokala) vs 52.4% (Chikliya).
- At Chikliya, Maharashtra (14.0%) and Rajasthan (12.5%) shares are materially higher than at Chokala (9.3% and 11.0% respectively); Delhi is also higher at Chikliya (7.4% vs 3.2%). This can be attributed to proximity of Chikliya to Rajasthan and the North. Chikliya experiences more interstate light commercial freight, pointing to stronger through-corridor movements.

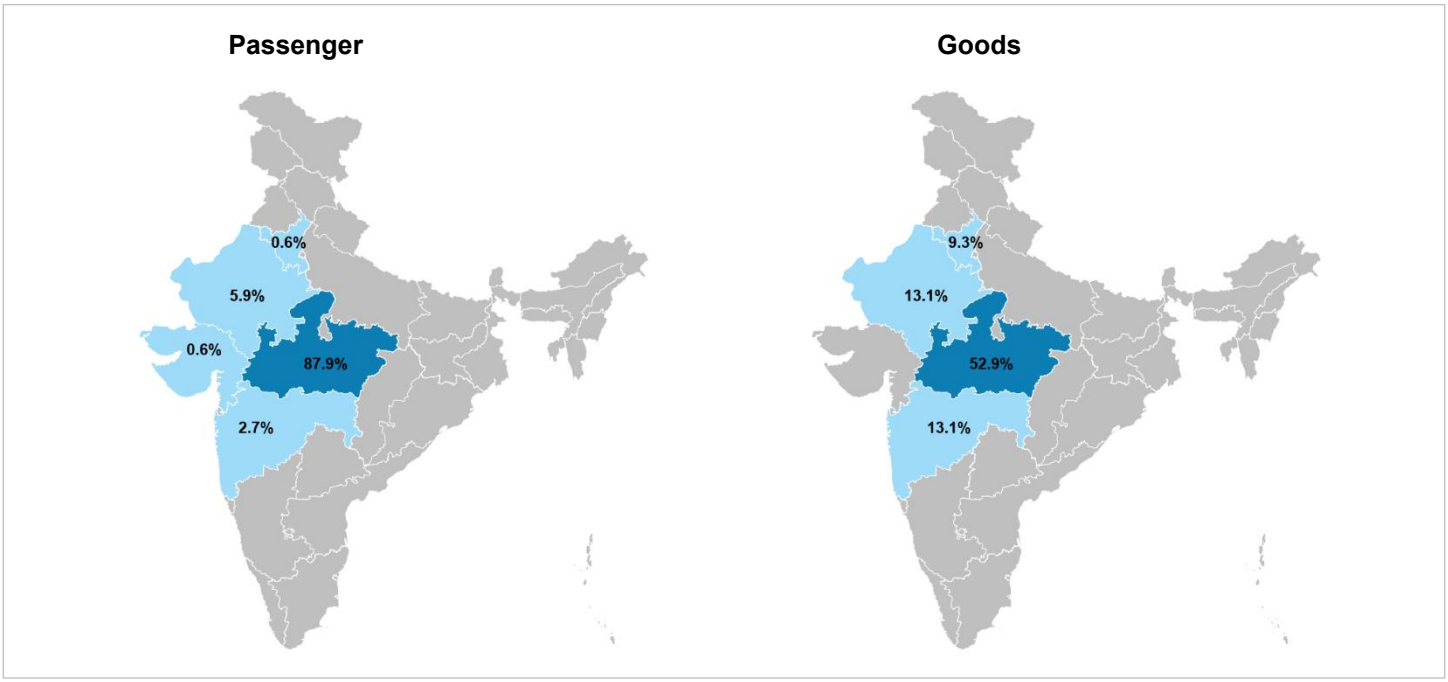
3.2.1.4 3 Axle Truck

- Madhya Pradesh share drops further: 57.1% (Chokala) vs 45.0% (Chikliya). Non-Madhya Pradesh shares rise sharply at Chikliya: Maharashtra 17.2%, Rajasthan 14.2%, Delhi 9.1% (vs 10.7%, 13.0%, 4.3% at Chokala).
- Heavy 3 Axle Trucks is substantially more interstate at Chikliya, suggesting the plaza is a key node for longer-haul industrial shipments.

3.2.1.5 MAV (Multi-Axle Vehicles)

- MAV is the most diversified category: Madhya Pradesh accounts 47.0% (Chokala) vs 42.7% (Chikliya). Rajasthan and Maharashtra are strong co-contributors at Chikliya (both 15.7%), higher than at Chokala (13.2% and 14.4%). Delhi is also higher at Chokala (8.6% vs 7.1%). MAV flows at Chikliya reflect robust interstate heavy-haul corridors.

Figure 3-2: State influence: Passenger & Goods (consolidated - TP1 & TP2)



Zone	% Influence
Passenger	
Madhya Pradesh	87.9%
Rajasthan	5.9%
Maharashtra	2.7%
Gujarat	0.6%
Delhi	0.6%
Rest of India	2.7%
Total	**100.0%**

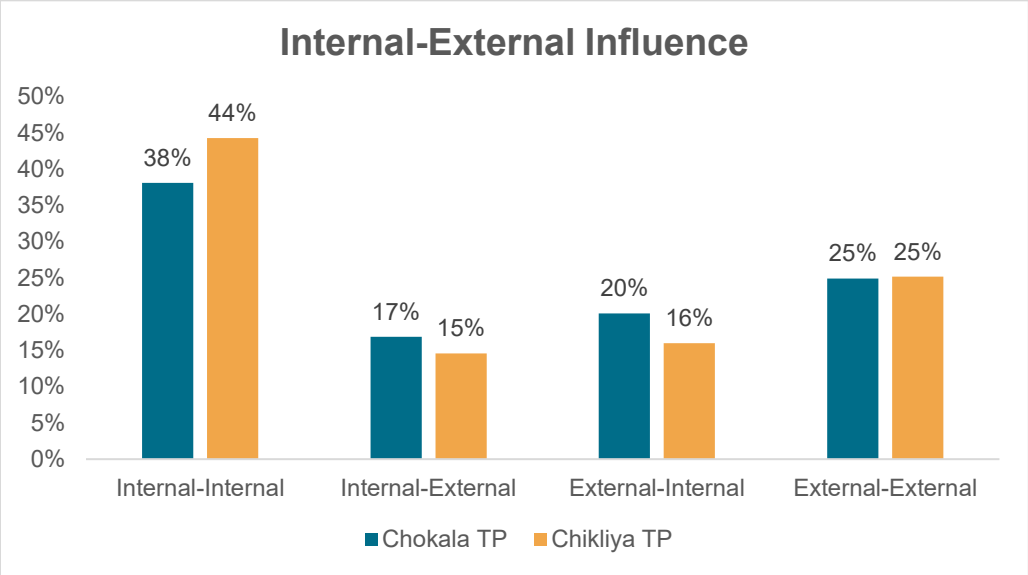
Zone	% Influence
Goods	
Madhya Pradesh	52.9%
Maharashtra	13.1%
Rajasthan	13.1%
Delhi	6.4%
Haryana	2.9%
Rest of India	11.6%
Total	**100.0%**

Source: Crisil Intelligence

3.2.2 Internal-External Analysis

The zones which fall along the project road and very near project road are considered as internal zones and other zones are considered as external zones. If both end of the trips are internal, those trips are internal-internal trips. If one end of the trips is internal and other is external those trips are internal to external and external to internal trips. If both ends of the trips are external, those are external-external trips. Internal-External analysis is presented in the below figure, its shows about 38% trips move within the project road for Chokala TP and 44% trips move with project road for Chikliya TP and about 25% of trips are external to external trips at both the Plazas.

Figure 3-3: Internal-External Influence



3.2.3 Commodity Analysis

Analysis was carried out to understand the various freight vehicles being used to transport different commodities. Table below presents the commodity distribution for the toll plazas in project road.

Table 3-4: Commodity distribution (in %) on the project road – Chokala TP

Commodity	LCV/Minibus	Truck	3 Axle Truck	MAV	Total
Agri Produce	38.1%	36.7%	30.8%	28.4%	33.2%
Courier & parcel	17.4%	15.8%	15.8%	18.0%	16.9%
Machinery	4.7%	3.3%	4.2%	7.5%	5.1%
Iron & Steel Products	5.3%	5.3%	7.0%	6.5%	6.0%
Automobiles	3.0%	2.5%	4.5%	6.2%	4.2%
Tiles & Ceramic products	1.9%	2.9%	4.2%	5.2%	3.7%
Consumer Products	4.9%	7.0%	8.1%	4.4%	5.9%
Empty	8.3%	4.2%	2.8%	4.2%	4.8%
Construction materials	2.6%	4.0%	3.7%	3.9%	3.7%
Others	3.9%	5.1%	3.9%	3.0%	3.9%
Consumer Foods	2.8%	2.6%	2.4%	2.5%	2.6%
Plastic products	0.8%	2.5%	2.5%	2.2%	2.1%
Textile & Footwear	1.4%	1.2%	2.2%	1.9%	1.7%
Chemical products	0.4%	0.7%	1.6%	1.8%	1.1%
Pharmaceuticals	0.4%	0.7%	0.9%	0.9%	0.7%
Plywood & Timber products	1.5%	1.6%	1.3%	0.7%	1.2%
Coal	0.2%	0.3%	0.4%	0.5%	0.4%
Petroleum Products	0.6%	1.3%	1.6%	0.5%	0.9%

Commodity	LCV/Minibus	Truck	3 Axle Truck	MAV	Total
Container	0.2%	0.2%	0.6%	0.5%	0.3%
Milk & Animal Food	1.6%	1.1%	0.6%	0.4%	0.9%
Rubber products	0.0%	0.5%	0.4%	0.3%	0.3%
Paper products	0.0%	0.7%	0.5%	0.3%	0.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Crisil Intelligence

Table 3-5: Commodity distribution (in %) on the project road – Chikliya TP

Commodity	LCV/Minibus	Truck	3 Axle Truck	MAV	Total
Agri Produce	28.3%	20.3%	21.5%	22.1%	22.5%
Courier & parcel	17.2%	20.0%	26.4%	19.2%	19.9%
Machinery	2.3%	2.2%	1.3%	3.6%	2.7%
Iron & Steel Products	3.9%	3.1%	5.2%	6.9%	5.1%
Automobiles	1.6%	3.9%	6.4%	5.0%	4.2%
Tiles & Ceramic products	0.8%	2.4%	2.6%	2.4%	2.2%
Consumer Products	5.9%	6.9%	6.5%	6.7%	6.6%
Empty	19.0%	16.1%	11.2%	11.9%	14.3%
Construction materials	6.2%	4.3%	4.7%	9.2%	6.7%
Others	1.6%	3.8%	1.7%	1.4%	2.2%
Consumer Foods	3.3%	1.6%	1.3%	1.6%	1.9%
Plastic products	0.6%	1.6%	1.7%	1.1%	1.2%
Textile & Footwear	1.8%	1.4%	1.0%	1.5%	1.4%
Chemical products	0.0%	0.5%	0.6%	0.6%	0.5%
Pharmaceuticals	1.4%	1.3%	0.4%	0.7%	0.9%
Plywood & Timber products	1.9%	1.8%	1.1%	1.0%	1.4%
Coal	0.0%	0.3%	0.6%	0.2%	0.2%
Petroleum Products	0.7%	2.2%	1.1%	1.2%	1.4%
Container	0.6%	0.3%	0.6%	0.8%	0.6%
Milk & Animal Food	2.6%	5.0%	3.4%	1.8%	3.1%
Rubber products	0.1%	0.3%	0.2%	0.2%	0.2%
Paper products	0.4%	0.6%	0.6%	0.7%	0.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Crisil Intelligence

- The analysis of freight movement across the toll plaza reveals that the major commodities being transported include agri produce, courier parcel, consumer products, construction material and Iron and steel products are top commodities plying on the project section.
- For Chokala about 15.8 percent of two axle trucks, around 15.8 percent of three axle trucks and around 18.0 percent of MAV (4-6) trucks at the toll plaza location are found to carry couriers and parcels. In case of Chikliya about 20.0

percent of two axle trucks, around 26.4 percent of three axle trucks and around 19.2 percent of MAV (4-6) trucks at the toll plaza location are found to carry couriers and parcels. The high proportion of use of 3 Axle trucks and MAV suggests that larger shipments are common, likely due to the e-commerce boom and increased demand for parcel delivery services within proximity to Indore region

- Significant portion of vehicles, about 33.2% at Chokala and 22.5% at Chikliya are engaged in the transportation of Agri produce. Especially fruits and vegetables across the vehicle categories. The high percentage of agri produce highlights the region's agricultural output and the reliance on road transport for distribution to markets.
- Consumer products account for 5.9% of the total at Chokala, with 3 Axle trucks having higher share across categories. Chikliya, the percentage remains at 6.6%. This indicates a steady flow of consumer goods, likely reflecting the needs of local markets and retail outlets in the vicinity.
- The higher proportion of construction material, and iron & steel is on account of the ongoing infrastructure projects, industrial activity in the region, indicating economic growth and development.

3.2.3.1 Courier & parcel

Courier & Parcel is among the largest commodity plying on the project road, accounting for 17.4% in LCV/Minibus, 15.8% in 2A, 15.8% in 3A and 18.0% in MAV at Chokala. At Chikliya, the commodity accounts for 17.2% in LCV/Minibus, 20.0% in 2A, 26.4% in 3A and 19.2% in MAV. Courier/Parcel traffic on the project section forms a significant proportion of the commercial traffic and is majorly for the purpose of consumption in domestic market in the urban and semi urban regions of Delhi, Mumbai, Indore, Rajasthan and regions of the catchment for the project stretch. Traffic on the project stretch originates and is destined for majorly Delhi, Indore/Pithampur/Dhar, Mumbai/Maharashtra, and the northern part of the country. The destinations for the Courier/Parcel traffic indicates the key ecommerce and warehousing clusters across India including Delhi, Indore and Mumbai

India has been becoming a significant domestic shipment market, with significant companies entering and expanding networks in the market. The industry was flush with early-stage and venture capital funding that led to growing e-commerce penetration in different retail product segments. Apart from primary growth, drivers such as increasing internet penetration, higher disposable incomes, and rising urbanization, factors such as user-friendly interface of portals offered by players, ease of shopping, increasing awareness, relatively higher pricing discounts (in comparison with brick-and-mortar stores), and easy delivery and innovation, have propelled growth. Pandemics have brought about a shift in buying behaviour with more and more people taking the online route.

High domestic consumption of e-commerce goods is expected to lead to export growth. Going forward it is expected that the demand will remain high along with the pick-up in domestic consumption.

3.2.3.2 Agri produce

Agri accounts for 33.2% and 22.5% at Chokala and Chikliya TP, respectively. The underlying commodity noticed is largely fruits and vegetables traversing between the districts of Madhya Pradesh i.e. Indore, Dhar, and Ratlam. Mumbai, Pune and Delhi are also major origination/destination points for this commodity. Madhya Pradesh's major crops include rice, soyabean, wheat, major fruits includes banana, mango and guava, and in terms of vegetables potato, tomato, brinjal are key ones. In the country, Madhya Pradesh ranks as the 3rd largest producer of fruits and vegetables, 2nd largest producer of wheat and maize, 3rd rank for milk producer and 2nd largest producer of oilseeds

Madhya Pradesh is central to India's farm output, drawing strength from its rich soils and varied climate that suit a broad spectrum of crops. The state cultivates wheat, rice, pulses, oilseeds, cotton, and sugarcane, among others. Its climate has especially favored soybean, making Madhya Pradesh one of the country's leading producers. Expanded irrigation, modern agronomic practices, and policy support for crop diversification have raised yields and improved production resilience. These

initiatives are boosting overall agricultural performance while providing farmers with greater income stability, reinforcing both food security and economic sustainability across the region.

3.2.3.3 Construction materials and iron & steel

Construction Materials and Iron & Steel cumulatively accounts for 9.6% and 11.8% at Chokala and Chikliya TP, respectively. Construction Materials and Iron & Steel represent a significant commodity transported throughout the area. The primary sub-commodity within construction materials is cement, stone and iron rods. It is to be noted that there are several cement manufacturing units in the catchment of the project stretch which contribute to the traffic carrying limestone, clinker, and finished cement. These include Ultratech plant in Neemuch & Dhar, Wonder cement plant in Badnawar, JK cement in Nimbahera. The demand for this commodity is expected to continue increasing, driven by the growing needs of the infrastructure, housing, and other related sectors. Few of the major infrastructure projects underway in the region of Indore, Ratlam, Dhar and Ujjain are given below.

Table 3-6: Key upcoming infrastructure projects in the catchment region of Indore, Ratlam, Dhar and Ujjain

Project name	Promoter	Industry	Cost (Rs Bn)	Expected Completion
Light Metro Rail (Indore) Project	Madhya Pradesh Metro Rail Co. Ltd.	Railways	222.8	2028
Indore-Manmad Railway Line Project	Central Railway	Railways	220.0	2028
Solar Cells & Modules (Pithampur) Project	Avaada Electro Pvt. Ltd.	Other Electronics	156.7	2026
LPG Pipeline (Kandla-Gorakhpur) Project	IHB Ltd.	Gas Pipeline	100.9	-
Vadodara-Ratlam Quadrupling Railway Line Project	Government of India, Ministry of Railways	Railways	88.9	-
Mega Integrated Textile Region & Apparel Park (Bhensola) [PM MITRA Park]	Madhya Pradesh Industrial Devp. Corpn. Ltd.	Other Parks	68.5	2025
Ratlam-Mhow-Khandwa-Akola GC Railway Line Project	Western Railway	Railways	63.8	2026
Smart City (Indore) Project	Indore Smart City Devp. Ltd.	Real Estate	51.1	2025
Textile Products (Bhensola) Project	Trident Ltd.	Other Textile Products	48.8	-
Indore-Jabalpur Railway Line Project	West Central Railway	Railways	43.2	-
Firm & Dispatchable Renewable Energy (Barmer, Ballari & Agar) Project	Acme Venus Urja Pvt. Ltd.	Solar based Power	38.9	2027
Medical Devices Park (Vikram Udyog Nagari)	MP Industrial Development Corpn. Ltd.	Other Parks	29.0	2026
Kukshi Micro Lift Irrigation Scheme	Narmada Valley Devp. Authority	Irrigation	27.7	2028
Fabrics & Garments (Bhensola) Project	Jain Cord Industries Pvt. Ltd.	Apparels	25.2	-
Road Upgradation (Seoni-Chhindwara-Sanwner Highway) Project	National Highways Authority of India	Roadways	25.0	-
Highway (Ujjain-Jaora) Project	Madhya Pradesh Road Devp. Corpn. Ltd.	Roadways	24.2	-
Economic Corridor (Indore-Pithampur) Project	Madhya Pradesh Industrial Devp. Corpn. Ltd.	Roadways	24.1	-
Wind Power (Ujjain)Project	ReNew Power Pvt. Ltd.	Wind Based Power	21.0	-

Project name	Promoter	Industry	Cost (Rs Bn)	Expected Completion
Wind Power (Ratlam) Project	ReNew Samir Urja Pvt. Ltd.	Wind Based Power	21.0	2026
Wind Power (Ujjain) Project	ReNew Samir Urja Pvt. Ltd.	Wind Based Power	21.0	2026

Source: Projects Today, Crisil Intelligence

3.2.3.4 Consumer foods and products

The fast-moving consumer goods (FMCG) industry or consumer packaged goods (CPG) industry is mainly responsible for producing, distributing, and marketing fast-moving consumer goods. Fast-moving consumer goods (FMCG) sector is India's fourth-largest sector and has been expanding at a healthy rate over the years because of rising disposable income, rising youth population, and rising brand awareness among consumers.

The project stretch catchment—covering Indore city and adjoining districts like Ratlam, Ujjain, Dhar, and the Pithampur belt appears to have value-conscious consumer base with a growing middle-income and young workforce; urban Indore is shifting toward premiumization in health, convenience, and branded staples, while semi-urban and rural pockets remain price-sensitive. The consumer base is driving demand for consumer foods and products aiding growth of this commodity on the project stretch

In the catchment area, wheat-based staples and pulses dominate meals, and a vibrant local food culture (poha, sev/namkeen, chaats) sustains strong demand for snacks, spices, dairy, and bakery, complemented by an active eating-out scene that boosts ready-to-cook/eat and condiments at home. Categories gaining traction include packaged staples, savory snacks, biscuits, noodles/pasta, beverages (soft drinks, juices, lassi, packaged water), seasonal ice cream, and home care essentials, with frozen foods and gourmet condiments growing off a small base. Health-oriented choices—millets, high-fiber foods, low-oil snacks, sugar-free options, probiotic dairy, and nutrition drinks—are increasingly visible, especially among urban buyers. Kiranas are dominating with neighborhood loyalty, while modern trade, cash-and-carry, D2C, and quick commerce expand in the region; rural demand relies on haats and traditional distributors. Consumption peaks around festivals and weddings, with summer lifting hydration and ice cream products.

3.2.4 Trip length distribution

Trip Length Distribution analysis gives distance-based patterns for project road traffic. Trip length is categorized into nine trip length groups. Trip length distribution table for different vehicle types is presented below.

Table 3-7: Trip length distribution – Chokala TP

Trip Length Group (Kms)	Cars	Bus	LCV/Minibus	2 Axle Truck	3 Axle Truck	MAV
Chokala TP						
0 to 20	5.3%	2.5%	1.9%	1.8%	1.5%	1.2%
21 to 40	5.3%	2.1%	7.4%	2.7%	2.6%	1.6%
41 to 100	30.1%	26.9%	19.2%	16.7%	14.0%	9.3%
101 to 200	28.9%	31.6%	18.6%	15.8%	14.9%	11.4%
201 to 350	13.1%	17.4%	11.7%	13.3%	11.1%	9.3%
351 to 500	6.6%	6.9%	7.5%	9.3%	9.4%	7.9%
501 to 750	5.6%	4.3%	14.5%	16.8%	14.2%	16.0%
751 to 1000	2.5%	6.2%	6.7%	7.7%	9.8%	12.1%

Trip Length Group (Kms)	Cars	Bus	LCV/Minibus	2 Axle Truck	3 Axle Truck	MAV
Beyond 1000 Km	2.8%	2.2%	12.5%	15.9%	22.4%	31.2%

Source: Crisil Intelligence

Table 3-8: Trip length distribution – Chikliya TP

Trip Length Group (Kms)	Cars	Bus	LCV/Minibus	2 Axle Truck	3 Axle Truck	MAV
Chikliya TP						
0 to 20	5.1%	4.0%	2.3%	0.8%	0.6%	1.3%
21 to 40	18.6%	20.0%	10.9%	6.0%	4.9%	5.3%
41 to 100	22.6%	20.8%	7.4%	7.8%	8.7%	6.5%
101 to 200	27.7%	28.3%	18.2%	14.3%	13.3%	11.2%
201 to 350	8.3%	13.0%	11.3%	10.1%	9.5%	8.7%
351 to 500	6.9%	9.6%	9.1%	7.3%	7.3%	8.1%
501 to 750	7.4%	1.7%	12.7%	13.0%	13.3%	14.2%
751 to 1000	1.0%	1.7%	5.8%	11.7%	10.8%	10.8%
Beyond 1000 Km	2.4%	0.9%	22.1%	29.0%	31.6%	33.9%

Source: Crisil Intelligence

Majority of the car trips are in the range of 41-200km. More than 30% trips of MAV for both toll plazas are in the range of beyond 1000km.

4 Review of historic traffic & revenue

4.1 General

This section summarizes the historical performance of the project section in order to understand baseline traffic patterns comprising of historical tollable traffic and revenue growth, traffic and revenue composition, trip distribution, trip factors, seasonality and trend of traffic over the available data set.

The historical tollable traffic data mode wise was made available by client for the toll plaza on the project road as per following:

Table 4-1: Historical traffic data availability

Notation	Toll plaza	Details
TP01	Chokala TP	FY11 to FY25, and H1FY26
TP02	Chikliya TP	FY12 to FY25, and H1FY26

Source: Client, Crisil Intelligence

Historic traffic has seen some changes in trend due to some events which has occurred during this period. Over the years project road traffic is impacted by construction on the asset due to poor road condition during 2019. Some of the road upgradation on NH-3, which are NH3 four lane completion Biora-Dewas April 2019; Guna-Biora – March 2019 has negatively impacted project road traffic. During Covid during FY 20 FY 22 negative traffic has been observed. Recently traffic was impacted by partial operations of the Delhi-Mumbai Expressway.

Traffic at Chokla TP has seen shown moderate traffic CAGR growth of 1.8% in PCU terms from FY 2015 to FY 2025. Mode wise historical traffic and composition is presented in the below figures and tables.

Figure 4-1: Historical mode wise traffic (AADT) and growth at Chokala TP

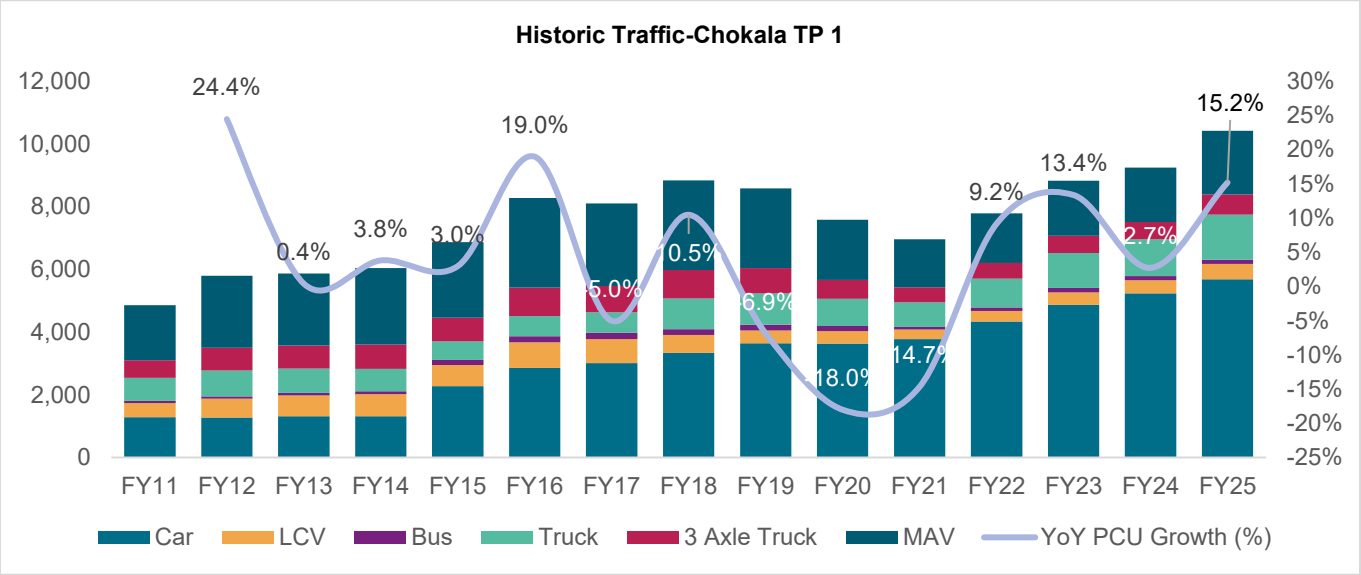


Table 4-2: Historical mode wise traffic (AADT) and growth at Chokala TP

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	Total PCU	YoY PCU Growth (%)
FY11	1,281	453	69	737	556	1,759	**4,855**	**13,962**	
FY12	1,277	603	69	829	725	2,294	**5,798**	**17,376**	24.4%
FY13	1,320	654	84	780	728	2,304	**5,870**	**17,446**	0.4%
FY14	1,314	706	89	717	772	2,445	**6,043**	**18,108**	3.8%
FY15	2,279	665	165	589	760	2,406	**6,864**	**18,645**	3.0%
FY16	2,857	811	199	643	903	2,860	**8,273**	**22,179**	19.0%
FY17	3,013	760	203	659	831	2,629	**8,096**	**21,064**	-5.0%
FY18	3,338	566	190	981	903	2,857	**8,835**	**23,268**	10.5%
FY19	3,641	410	181	1,002	804	2,544	**8,583**	**21,668**	-6.9%
FY20	3,632	393	171	861	606	1,917	**7,580**	**17,762**	-18.0%
FY21	3,775	301	84	784	483	1,528	**6,955**	**15,157**	-14.7%
FY22	4,336	335	113	922	499	1,579	**7,784**	**16,546**	9.2%
FY23	4,863	401	139	1,119	552	1,747	**8,821**	**18,756**	13.4%
FY24	5,235	415	132	1,172	551	1,743	**9,248**	**19,265**	2.7%
FY25	5,687	487	127	1,441	642	2,032	**10,415**	**22,189**	15.2%
H1FY26 (ADT)	6,252	586	138	1,778	777	2,460	**11,991**	**26,281**	
CAGR (15-25)	9.6%	-3.1%	-2.6%	9.4%	-1.7%	-1.7%	4.3%	1.8%	

Source: Client TMS Data, Crisil Intelligence

Traffic at Chikliya TP has seen shown moderate traffic CAGR growth of 2.4% in PCU terms from FY 2015 to FY 2025. Mode wise historical traffic and composition is presented in the below figures and tables.

Figure 4-2: Historical mode wise traffic (AADT) and growth at Chikliya TP

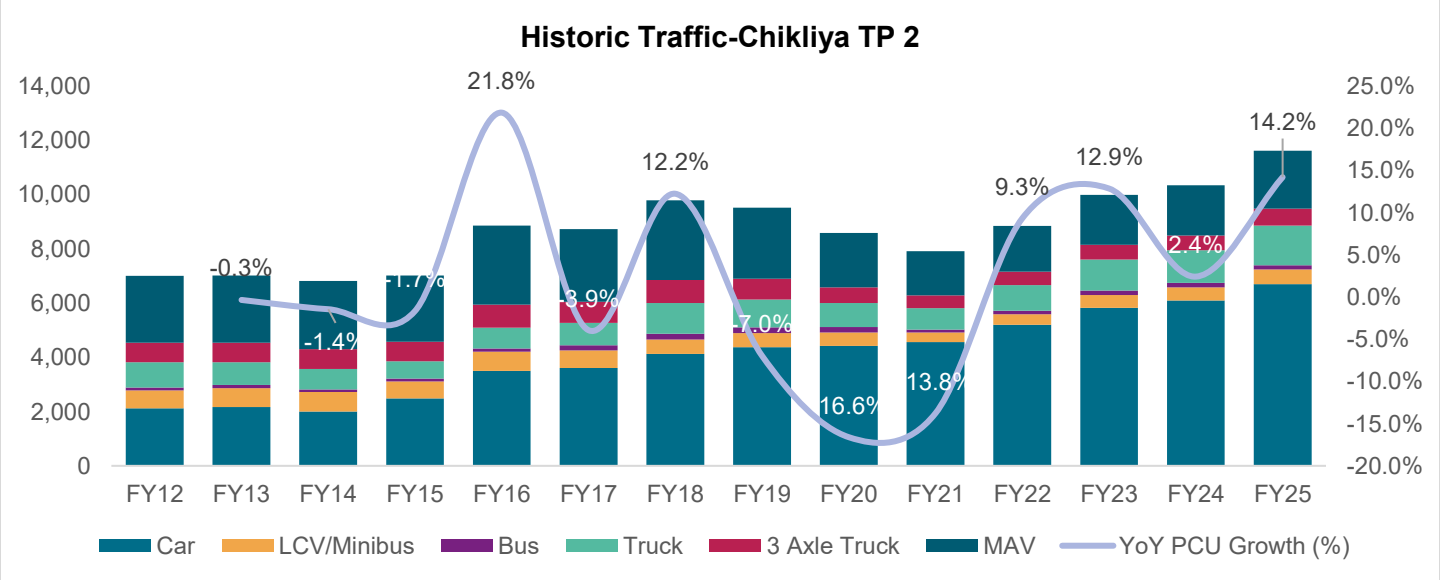


Table 4-3: Historical mode wise traffic (AADT) and growth at Chikliya TP

FY	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	Total PCU	YoY PCU Growth (%)
FY12	2,116	670	101	936	718	2,462	**7,003**	**19,464**	
FY13	2,164	703	110	842	723	2,478	**7,021**	**19,398**	-0.3%
FY14	2,006	711	104	746	733	2,510	**6,810**	**19,118**	-1.4%
FY15	2,488	621	105	645	713	2,443	**7,014**	**18,801**	-1.7%
FY16	3,502	701	122	763	852	2,921	**8,861**	**22,909**	21.8%
FY17	3,605	651	183	832	781	2,676	**8,727**	**22,009**	-3.9%
FY18	4,128	526	215	1,127	855	2,931	**9,783**	**24,702**	12.2%
FY19	4,377	512	209	1,031	766	2,626	**9,522**	**22,981**	-7.0%
FY20	4,425	488	199	888	583	1,999	**8,583**	**19,165**	-16.6%
FY21	4,558	357	101	793	475	1,628	**7,913**	**16,528**	-13.8%
FY22	5,193	395	135	936	492	1,688	**8,839**	**18,071**	9.3%
FY23	5,830	465	166	1,143	540	1,849	**9,992**	**20,393**	12.9%
FY24	6,098	482	161	1,202	542	1,856	**10,341**	**20,887**	2.4%
FY25	6,700	543	154	1,463	624	2,137	**11,621**	**23,853**	14.2%
H1FY26 (ADT)	7,794	648	160	1,831	751	2,574	**13,757**	**28,573**	
CAGR (15-25)	10.4%	-1.3%	3.9%	8.5%	-1.3%	-1.3%	5.2%	2.4%	

Source: Client TMS Data, Crisil Intelligence

4.2 Adopted toll segmentation

For the present study, trip segmentation based on H1 FY 26 has been adopted for the projections

Table 4-4: Adopted toll segmentation at the Chokala toll plaza on the project road

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Single journey	68.2%	76.0%	85.0%	99.2%	99.2%
Monthly pass (local)	0.5%	0.0%	0.0%	0.0%	0.0%
Monthly pass	1.8%	22.5%	14.4%	0.5%	0.5%
Exemption/violations	29.5%	1.5%	0.6%	0.3%	0.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Client TMS Data, Crisil Intelligence

Table 4-5: Adopted toll segmentation at the Chikliya toll plaza on the project road

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Single journey	69.3%	75.3%	81.3%	99.5%	97.1%
Monthly pass (local)	1.2%	0.0%	0.0%	0.0%	0.0%
Monthly pass	0.0%	23.6%	18.1%	0.1%	2.8%
Exemption/violations	29.6%	1.1%	0.7%	0.4%	0.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Client TMS Data, Crisil Intelligence

5 Base traffic estimation

5.1 Seasonality factors

Traffic volumes on roads varies throughout the year, influenced by socio-economic activities in the surrounding regions. To accurately estimate the Annual Average Daily Traffic (AADT) for the road, it is crucial to account for these seasonal variations. To achieve this, a seasonal correction factor is applied, which is derived from secondary data sources such as historical traffic data, fuel sales and similar indicators.

The traffic on the project stretch has witnessed volatility on account of recent network developments such as partial operational DME, post pandemic recovery and diversion of traffic from nearby highways on account of construction activity (impacted Q2 FY 26 traffic on project on account of construction of flyover between Indore-Deewas section). In order to understand the normalised trend in traffic, SCF has been considered across FY 19, FY 20, FY 24 and FY 25. The average Seasonal correction Factors (SCF) across these years has been presented in the tables below.

Table 5-1: Seasonal correction factors for FY 19, FY 20, FY 24 and FY 25

Month	Car	LCV/Minibus	Bus	Truck	MAV
Chokala					
Apr	0.95	0.96	0.90	1.02	0.99
May	0.98	0.99	0.91	1.10	1.02
Jun	1.04	1.03	0.96	1.13	1.05
Jul	1.07	1.05	1.02	1.11	1.08
Aug	1.02	1.06	1.07	1.04	1.01
Sep	1.13	1.04	1.10	0.96	0.96
Oct	1.20	1.06	1.10	0.97	0.97
Nov	1.00	1.07	1.01	1.07	1.08
Dec	0.94	0.98	0.99	0.93	1.00
Jan	0.90	0.98	1.01	0.97	1.03
Feb	0.85	0.93	0.95	0.91	0.96
Mar	1.03	0.89	1.02	0.90	0.91
Chikliya					
Apr	0.98	0.97	0.91	1.01	0.99
May	1.01	1.02	0.92	1.09	1.02
Jun	1.03	1.03	0.96	1.12	1.03
Jul	1.07	1.03	1.01	1.09	1.07
Aug	1.01	1.03	1.06	1.02	1.02
Sep	1.11	1.03	1.10	0.93	0.97
Oct	1.17	1.04	1.09	0.94	0.98
Nov	0.99	1.05	1.01	1.08	1.08
Dec	0.95	1.00	0.98	1.00	1.01
Jan	0.91	1.01	1.00	1.01	1.02

Month	Car	LCV/Minibus	Bus	Truck	MAV
Feb	0.85	0.93	0.96	0.91	0.95
Mar	1.01	0.89	1.05	0.90	0.91

Source: Client TMS Data, Crisil Intelligence

5.2 Base traffic estimation

For base traffic (annual average daily traffic) estimation in the present study Q1 FY 26 (Apr-25 to Jun-25) of TMS traffic data were annualized using SCF factor of FY25, FY24, FY20 and FY19 traffic data to arrive at the annual average daily traffic (AADT) for FY 26.

For base traffic estimation only Q1 FY 26 traffic is considered, since Q2 FY 26 traffic on project road is impacted on account of construction activities (flyover) between Indore-Deewas section of NH-52.

The AADT estimation for the base case for FY26 is presented tables below

Table 5-2: Base traffic estimation FY26 AADT for Chokala TP

Particulars	FY year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	PCU
ADT (Apr-June)	FY 26	6,362	571	143	1,634	738	2,335	11,783	25,271
SCF	FY19, FY20, FY 24, FY 25	0.98	0.99	0.92	1.08	1.02	1.02		
AADT	**FY 26**	**6,253**	**567**	**132**	**1,772**	**752**	**2,380**	**11,855**	**25,778**

Source: Client TMS Data, Crisil Intelligence

Table 5-3: Base traffic estimation FY26 AADT for Chikliya TP

Particulars	FY year	Car	LCV/Minibus	Bus	Truck	3 Axle Truck	MAV	Total	PCU
ADT (Apr-June)	FY 26	7,864	634	173	1,664	700	2,399	13,433	27,218
SCF	FY19, FY20, FY 24, FY 25	1.01	1.01	0.93	1.07	1.01	1.01		
AADT	**FY 26**	**7,908**	**638**	**161**	**1,784**	**709**	**2,430**	**13,628**	**27,757**

Source: Client TMS Data, Crisil Intelligence

6 Network developments in the Region

6.1 Overview

Overview of impact due to network developments

In the case of the project road, the major impact on the traffic is expected to be from the development of Delhi-Mumbai expressway (DME) and the DME spur connecting the to the expressway at Garoth (starting from Ujjain with a length of 130 km). The DME intersects with the project stretch near Nayapura (Towards Jaora).

These two developments are like to have two-pronged impact on the project stretch's traffic in terms of long distance traffic and short distance traffic.

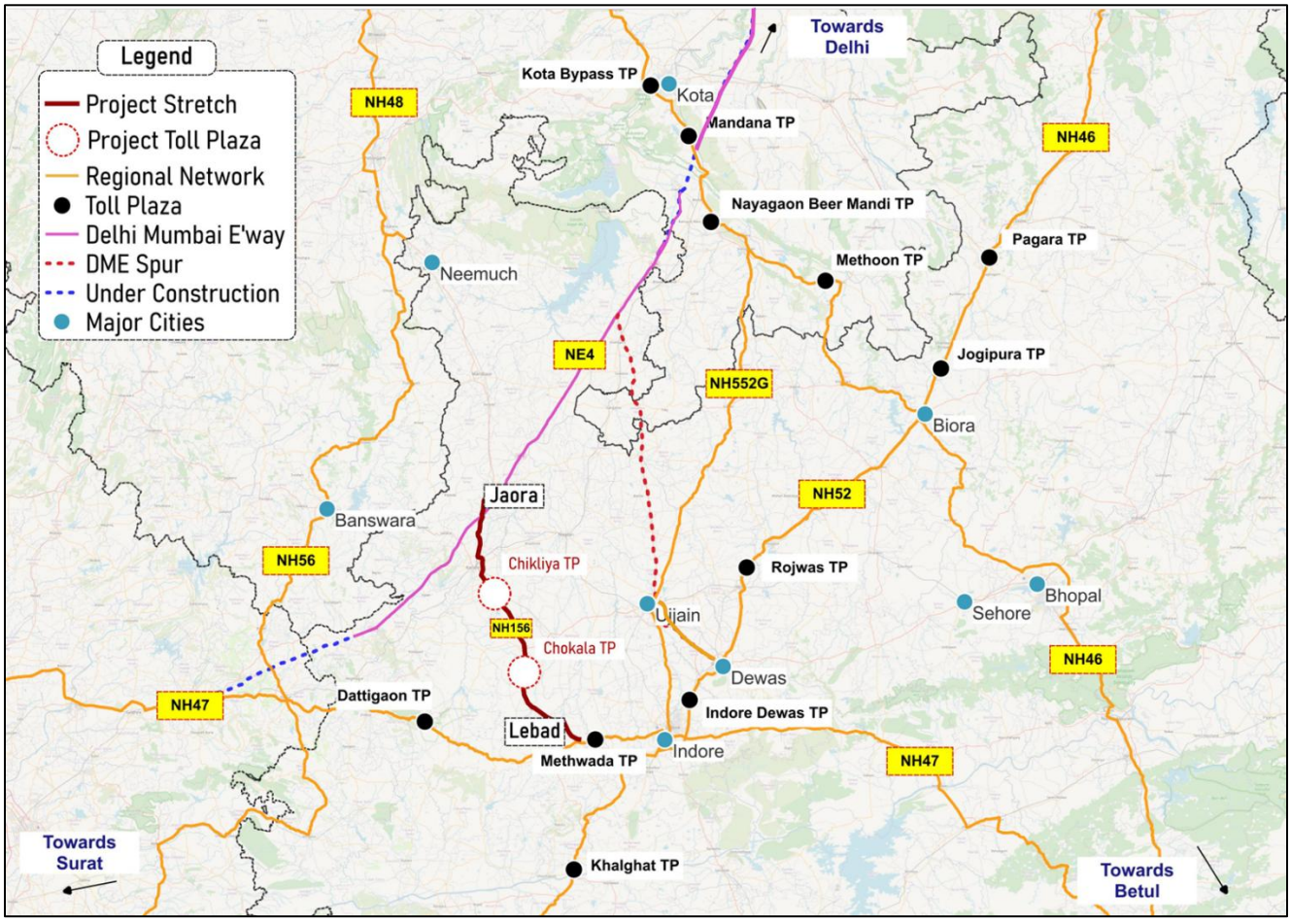
6.1.1 Delhi-Mumbai Expressway (intersecting project stretch near Jaora)

- The Delhi–Mumbai Expressway is India's longest planned greenfield corridor, running about 1,350 km through Delhi, Haryana, Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra. Developed by NHAI under Bharatmala Pariyojana, it is an 8-lane access-controlled highway, upgradable to 12 lanes, designed for 120 km/h speeds. With an investment of over Rs 1 lakh crore, it shortens the Delhi–Mumbai route by roughly 150 km and cuts travel time from around 24 hours to 12–13 hours, strengthening logistics links to key cities including Jaipur, Kota, Udaipur, Ahmedabad, and Vadodara.
- By late 2025, about 82% of the network (around 1,156 km of ~1,386 km) is complete or operational, with 774 km already open—covering Sohna–Dausa, the Bandikui–Jaipur spur (July 2025), and sections of Delhi–Vadodara. The Delhi–Vadodara stretch is nearing full completion by December 2025, while Vadodara–Mumbai and other spurs target early 2026; remaining bottlenecks include the Ankleshwar–Kim section (circa 90% done) and a 4.9 km tunnel near Kota.

6.1.2 Ujjain Garoth Spur (connecting Indore catchment region traffic to the DME)

- The Ujjain–Garoth Spur is a 130 km, four-lane NHAI project linking Ujjain to the Delhi–Mumbai Expressway, aimed at high-speed travel (100+ km/h) and faster market access. With an estimated cost of Rs 2,660 crore, the corridor is nearly complete as of late 2025. Initiated in November 2022, the project was split among GHV, Ravi Infra, and MKC Infra. The road traverses 89 villages across Ujjain, Ghattiya, Mahidpur, Barod, Dag, Gangdhar, Suwasara, Shamgarh, and Garoth, and is already easing travel, cutting the Ujjain–Garoth trip to roughly 1–1.5 hours and reducing time and fuel on routes toward Delhi, Mumbai, and Vadodara.

Figure 6-1: Network Development around project road

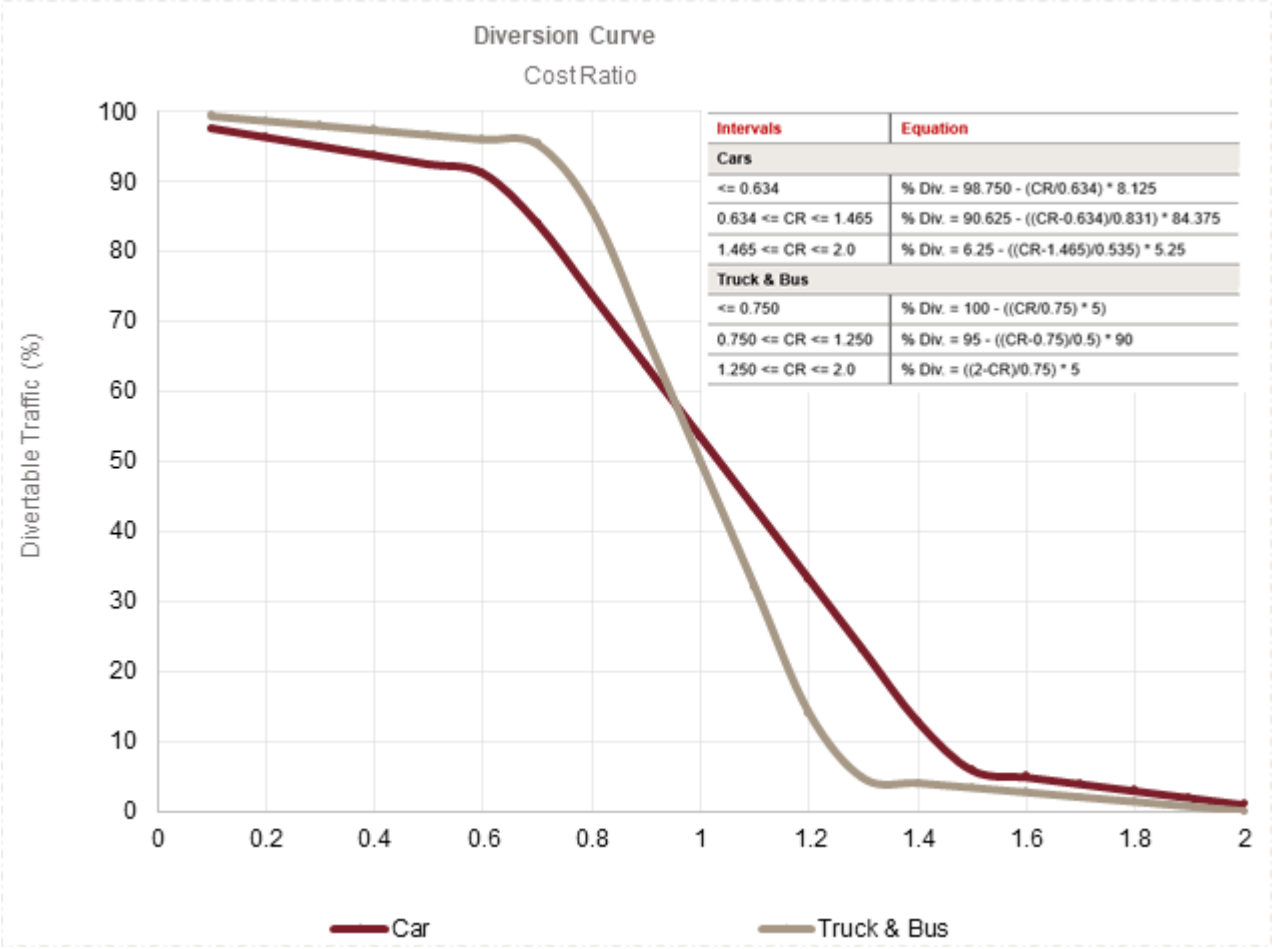


Source: Open Street Map, Crisil Intelligence

6.2 Approach and methodology for diversion analysis

The assessment of traffic diversion if any away from the project road has been done using cost ratio analysis. The road user cost is estimated based on the vehicle operating cost (VOC) and Value of time (VOT) as mentioned in IRC: SP30-2019. The generalized cost ({VOC} + t{VOT} + {toll rates}) for the project road and the alternate or proposed route is then compared to obtain a cost ratio. Cost ratio is applied on the diversion curve equations (Binary logit model) to estimate the expected percentage of traffic diverting, based on users perceived costs on the existing and alternate or proposed facility. The diversion percentages are then applied on the in-scope traffic derived from the OD analysis to estimate the traffic that would shift to/from the project road. Diversion curve (equation) mentioned in IRC:108-2015 and is presented below.

Figure 6-2: Diversion curve as per IRC:108-2015



Source: Crisil Intelligence

6.3 Impact of Delhi Mumbai Expressway

The completion of the Delhi-Mumbai expressway and its spur on the will have negative impact on project road traffic. Status of the Delhi Mumbai-Expressway is given in annexures

The details of the development in term of impacted traffic, phasing of impact and possible impact to project road traffic is presented in below table.

Table 6-1: Details of network development and possible impact

Sr. no	Network development	Traffic impacted	Impact Type	Phasing	Possible impact
1	Delhi Mumbai Expressway long distance Traffic	Mumbai/Pune/South and beyond to Delhi/Jaipur/Haryana/UP and beyond	Negative	33% in FY27, 66% in FY 28 and 100% from FY29	The long-distance traffic on the project stretch which is originating/destined for Delhi & North and Mumbai/Pune/Bangalore & South is considered as potential divertible traffic
2	Delhi Mumbai Expressway short	Indore/Dhule & South till Nashik and surroundings to Rajasthan/Delhi	Negative	20% in FY27 and 100% from FY30- Considering the construction of the Western Indore	The traffic present on the project stretch which is originating and destined for the catchment area around Indore/Pithampur, Dhule, and Nashik have an alternative in the form of the

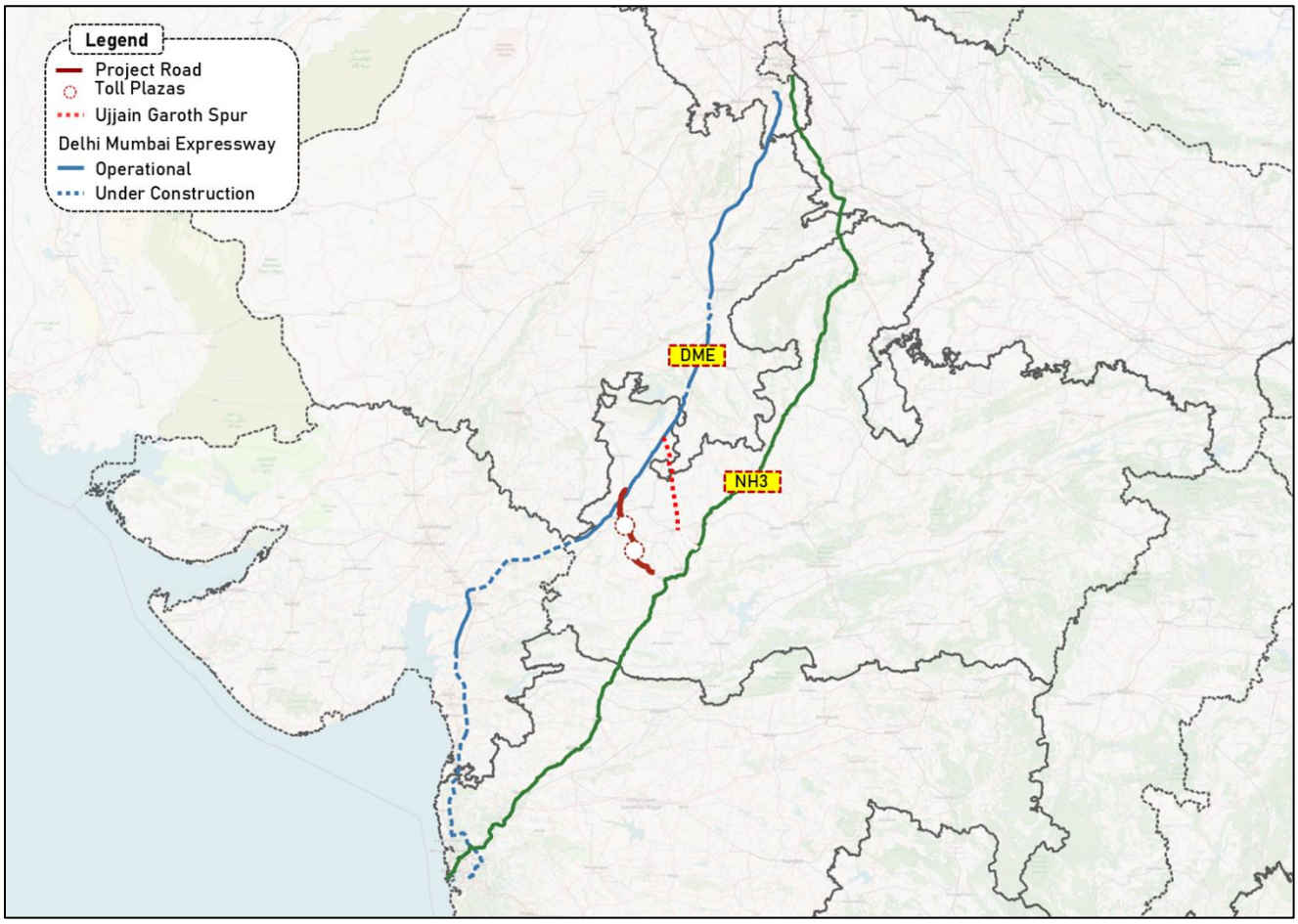
Sr. no	Network development	Traffic impacted	Impact Type	Phasing	Possible impact
	distance Traffic			Bypass in the future the diversion percentage is different from FY 29 onwards	Ujjain-Garoth spur to connect to DME and travel to Rajasthan (Jaipur catchment) and Delhi/North India. Thus, this short distance traffic is considered as potential divertible traffic.

Source: Crisil Intelligence

6.3.1 Potential traffic (OD survey)

The Q2 of FY 26 traffic on the project stretch has witnessed volatility on account of recent construction activities (Flyover) between Indore-Deewas section of NH-52 which has resulted in the positive traffic on the project road. The OD survey conducted by consultant on September (Q2 - FY 26), which had potential traffic for DME impacts which has the additional traffic due to construction activity on Indore bypass, considering this stickiness factor (referred to nearby stretch plaza traffic data and OD data) has considered on the potential traffic.

Figure 6-3: Long distance alignment of the project stretch, Ujjain Spur, DME, and Mumbai-Agra section (old NH-3)



Source: Open Street Map, Crisil Intelligence

Table 6-2: Length via Project Road and Alternate Road-Long Distance

Impacted traffic	Via Project Road (in Km)	Via Alternate Road (in Km)
Long Distance	1,371	1,299

Source: Crisil Intelligence

Table 6-3: Toll Rates and Cost Ratio-Long Distance

Road	Parameter	LCV/Minibus	Truck	3 Axle Truck	MAV
Project Road	Toll Rate	4,099	8,740	12,370	12,740
Alternate Road		4,195	8,995	11,390	13,305
Project Road	Generalised Cost	63,545	68,864	101,379	102,180
Alternate Road		60,312	64,139	92,568	94,807
Cost Ratio		0.95	0.93	0.91	0.93
Diversion Percentage		59%	62%	66%	63%

Table 6-4: Details of average impact on long distance to DME across Chokala and Chikliya TP

Impacted traffic	Vehicle type	Potential divertible traffic	Diverted traffic
Long Distance	LCV/Minibus	9.2%	-5.0%
	2 Axle Truck	13.5%	-8.9%
	3 Axle	12.3%	-9.1%
	MAV	17.5%	-11.7%

Source: Crisil Intelligence

Table 6-5: Length via Project Road and Alternate Road-Short Distance (Before Indore Western Bypass)

Impacted traffic	Via Project Road (in Km)	Via Alternate Road (in Km)
Short Distance (Before Indore Western Bypass)	250	227

Source: Crisil Intelligence

Table 6-6: Toll Rates and Cost Ratio-Short Distance (Before Indore Western Bypass)

Road	Parameter	LCV/Minibus	Truck	3 Axle Truck	MAV
Project Road	Toll Rate	994	2,230	3,615	3,615
Alternate Road		860	1,820	2,630	2,630
Project Road	Generalised Cost	11,810	13,049	19,715	19,796
Alternate Road		10,734	11,991	17,775	17,858
Cost Ratio		0.91	0.92	0.90	0.90
Diversion Percentage		66%	65%	68%	68%

Table 6-7: Length via Project Road and Alternate Road-Short Distance (After Indore Western Bypass)

Impacted traffic	Via Project Road (in Km)	Via Alternate Road (in Km)
Short Distance (Before Indore Western Bypass)	250	221

Source: Crisil Intelligence

Table 6-8: Toll Rates and Cost Ratio-Short Distance (After Indore Western Bypass)

Road	Parameter	LCV/Minibus	Truck	3 Axle Truck	MAV
Project Road	Toll Rate	994	2,230	3,615	3,615
Alternate Road		635	1,345	1,605	2,045
Project Road	Generalised Cost	11,810	13,049	19,715	19,796
Alternate Road		10,233	11,223	16,314	16,835
Cost Ratio		0.87	0.86	0.83	0.85
Diversion Percentage		74%	75%	81%	77%

Table 6-9: Details of average impact on short distance traffic

Impacted traffic	Vehicle type	Potential divertible traffic	Diverted traffic (Ujjain Spur)-Till FY 28 (Before Indore Western Bypass)	Diverted traffic (Western Bypass)-FY 29 onwards
Short Distance	LCV/Minibus	6.1%	-4.1%	-4.5%
	2 Axle Truck	7.8%	-5.0%	-5.8%
	3 Axle	8.9%	-5.2%	-6.3%
	MAV	9.6%	-6.0%	-6.8%

Source: Crisil Intelligence

7 Traffic growth estimation & traffic forecast

7.1 Traffic projections – Outline

Traffic projections for the asset are done through Crisil's proprietary commodity-based approach (bottom-up). This section provides an overview and detailing the approach.

7.2 Traffic projections – Commodity based approach

Crisil, based on its coverage of 80+ sectors and the MSME industry, has developed a knowledge base to understand the growth of industries and demand across various regions and clusters. The growth expectations for various industries are applied to each vehicle category based on the commodity composition of the vehicle category. For example, the share of light commercial vehicles (LCV/Minibuss) carrying agricultural commodities is expected to grow as per agricultural output growth; the share of LCV/Minibuss carrying consumer products is expected to grow as per the volume growth of durables; and the share of Multi axle vehicles (MAVs) carrying steel commodities is expected to grow as per demand/supply volume of steel products based on regional dynamics. This approach helps Crisil provide a more accurate growth rate of commercial traffic in the region.

For passenger traffic, Crisil assesses the sale of passenger cars in the region, growth of vehicular population, purpose and frequency of passenger travel, population growth, expansion of the city, and infrastructure development in the catchment area.

Further, Crisil also examines the various factors that will impact traffic over the concession period, such as upcoming alternative road routes, truck aggregation by logistics players, dedicated freight corridors and other transportation options. Thus, the analysis considers the impact of central and state policies, growth in production and consumption centres along the stretch, and infrastructure in the adjoining regions. The report covers both growth drivers and restraints for the traffic along the stretch. Crisil has enumerated and detailed the parameters that will positively/negatively impact the traffic on the stretch in the future.

Crisil has used its proprietary traffic projection methodology to project traffic using regional industry growth assumptions, macroeconomic developments, infra development and consumption centre growth factors of the catchment area and adjacent regions.

Figure 7-1: Commodity based approach: Illustrative example for Commercial vehicles

Commodity	MAV (Vehicles) Year 1	YoY growth	MAV (Vehicles) Year 2
Construction materials	300	9%	327
Consumer products	100	4%	104
Agri Produce	200	3%	206
Iron & Steel products	50	9%	55
Chemical products	200	5%	210
Total vehicles	XX		YY

Commodity	LCV (Vehicles) Year 1	YoY growth	LCV (Vehicles) Year 2
Construction materials	100	9%	109
Consumer products	200	4%	208
Agri Produce	50	3%	52
Iron & Steel products	300	9%	327
Chemical products	200	5%	210
Total vehicles	XX		YY

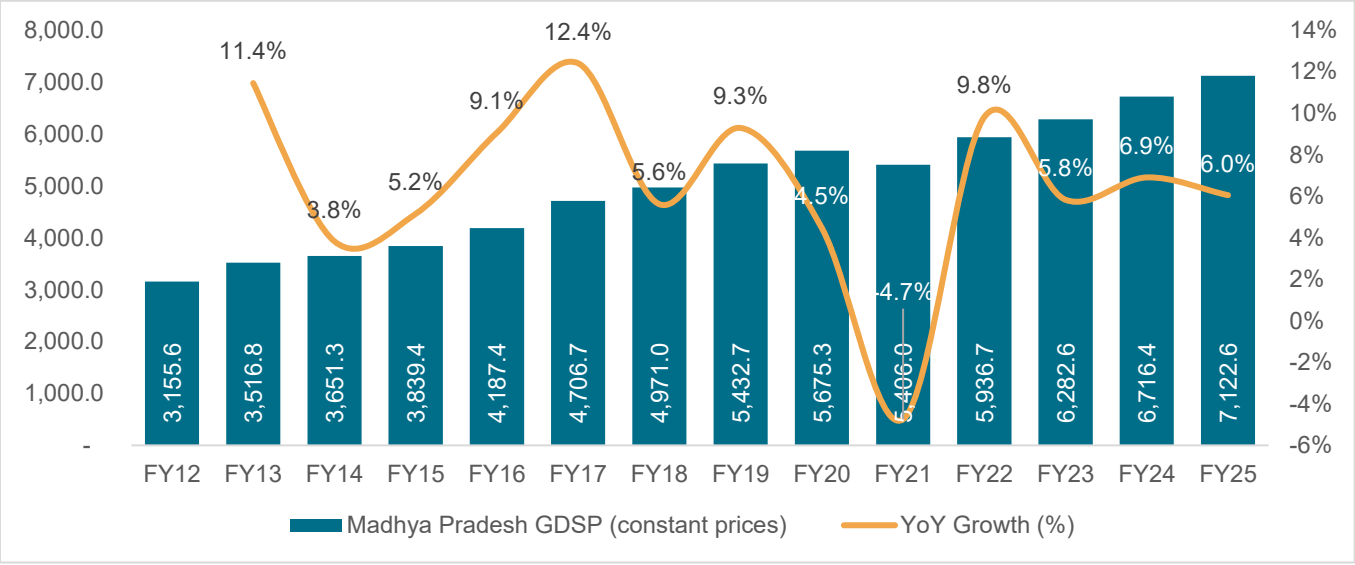
Growth rates for commodities are based on commodity specific demand/supply drivers and regional dynamics

7.2.1 Madhya Pradesh state profile

Madhya Pradesh centrally located and often called the “Heart of India,” combines rich cultural heritage with diverse geography spanning the Vindhya–Satpura ranges and the Narmada–Chambal river basins. As one of India’s largest states by area and population, it contributes meaningfully to national GDP through a balanced mix of agriculture, industry, and services. The state’s industrial profile is anchored by auto and engineering (Indore–Pithampur, Mandideep, Dewas), textiles and garments, pharmaceuticals and chemicals, cement and building materials (supported by extensive limestone reserves), and mining (coal in Singrauli, bauxite, copper, and diamonds in Panna). Services are expanding across IT/ITES, tourism, healthcare, education, and logistics, with Indore as the commercial engine and Bhopal as the administrative and manufacturing hub; Gwalior, Jabalpur, and Rewa serve as important regional nodes. A strong agricultural base—wheat, soybean (a national leader), pulses, rice, and oilseeds—underpins food processing and agro-based industries, while horticulture (citrus, garlic, onion) is rising. Infrastructure momentum—from national corridors like the Delhi–Mumbai Expressway traversing the state to spurs such as Ujjain–Garoth, as well as improving rail links and multiple airports (Indore, Bhopal, Jabalpur, Gwalior, Khajuraho)—is tightening connectivity to northern, western, and central markets. Tourism spans UNESCO sites (Khajuraho, Sanchi), spiritual centers (Ujjain, Omkareshwar), and flagship wildlife reserves (Kanha, Bandhavgarh, Pench), drawing visitors year-round and supporting allied services.

Madhya Pradesh, with a GSDP of Rs 7,122.6 billion in 2024-25, has consistently demonstrated robust economic growth, achieving a compounded annual growth rate (CAGR) of 6.5% from 2011-12 to 2024-25. After experiencing a 4.7% decline in FY21 due to the COVID-19 pandemic, the state’s economy rebounded with a 9.8% growth in FY22, underscoring its resilience. The tertiary sector dominates Madhya Pradesh’s economy, contributing 40.0% to the GSDP in 2024-25, followed by the primary sector at 35.6%, and secondary sector at 24.6%.

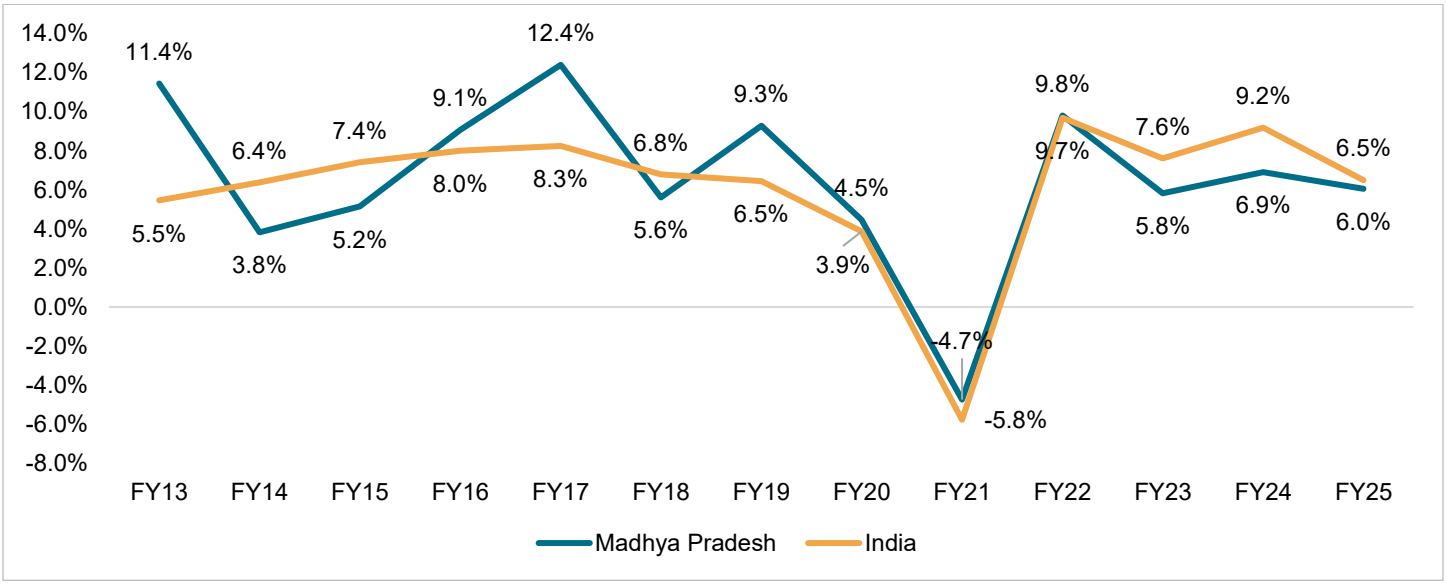
Figure 7-2: Madhya Pradesh GSDP (Rs Billion)



Note: FY23 are provisional estimates, FY24 are quick estimates and FY25 are advance estimates as reported by Directorate of Economics & Statistics, Madhya Pradesh

Source: DES, Crisil Intelligence

Figure 7-3: Madhya Pradesh GSDP vs India GDP against on-year growth



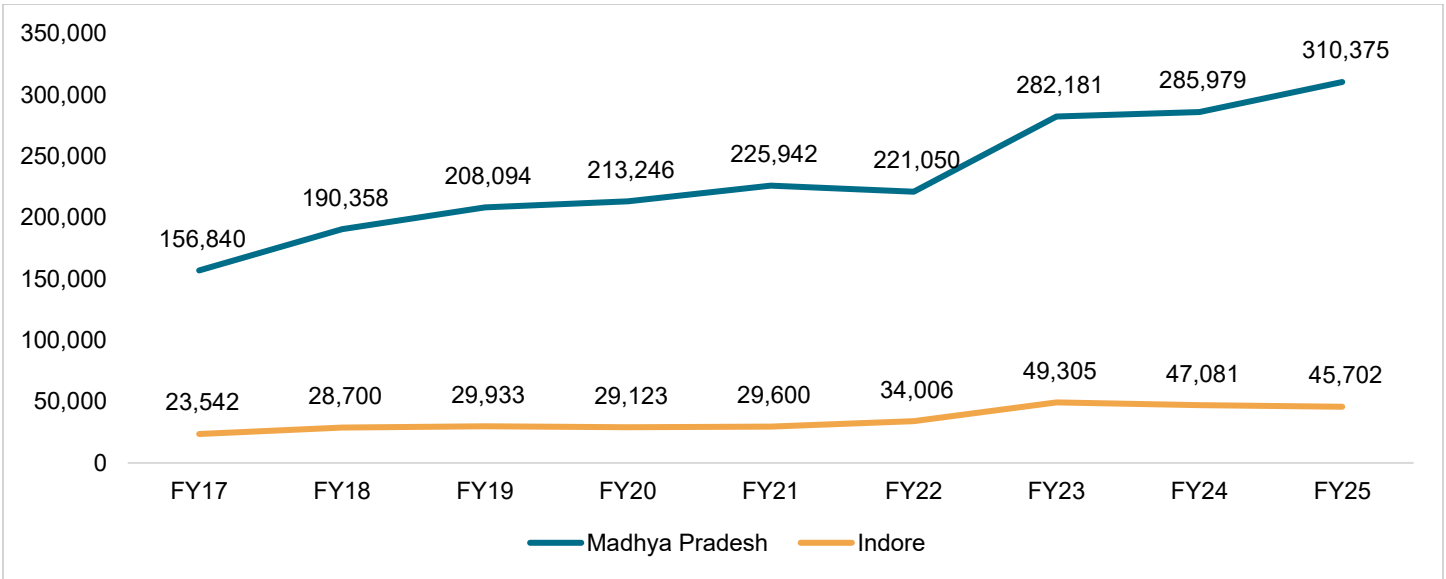
Source: MOSPI, Crisil Intelligence

7.2.2 Review of car growth

The rate of car ownership in India has increased from 6.6 per 1,000 people in 2001 to 25 per 1,000 people in 2019. Despite India's car fleet growing at an annual rate of 10% for nearly 25 years, the rate of car ownership remains low compared to countries with similar economic status and significantly lower than developed countries, which have a rate of around 450 per 1,000 people. This low rate of car ownership indicates potential for continued growth in the coming years. With the ongoing increase in car ownership and improvements in the road network, the use of cars for inter-urban travel is showing a growing trend.

Madhya Pradesh and Indore's LMV registration has grown at a CAGR of 8.9% and 8.6% respectively for the period FY17-25.

Figure 7-4: LMV registration count in Madhya Pradesh and Indore RTO



Source: Vahan Dashboard, Ministry of Road Transport & Highways (MoRTH)

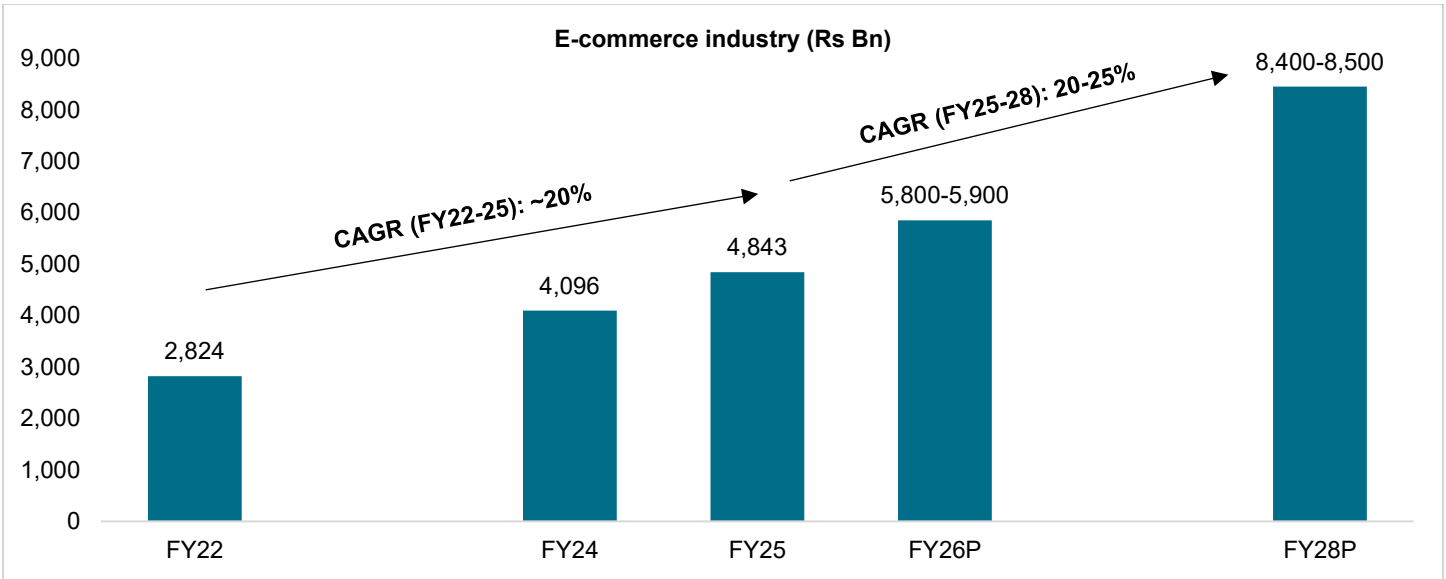
7.2.3 Commodity overview

As mentioned in section primary data collection & analysis, the analysis of freight movement across the toll plaza reveals that the major commodities being transported include Agri produce, courier & parcel. construction materials, iron and steel products and consumer foods and products.

7.2.3.1 Courier & parcels

The project road provide connectivity for major population center and warehousing hubs such as Indore, Mumbai, and Delhi. As a result of which, the project stretch observes strong proportion of courier and parcel traffic driven by the growing e-commerce industry. The Indian e-commerce sector — estimated at ~Rs 4,850 billion in fiscal 2025 — has seen phenomenal growth barring in fiscal 2021 when it was weighed down by the pandemic. The market has managed to attract not only consumers, but also investors across the world, and has grown more than 2.5 times between fiscals 2020 and 2025 on the back of rising internet penetration, increasing awareness of online shopping, and lucrative deals and discounts offered by well-established players and start-ups. Demand is expected to improve in fiscal 2026 to reach 20-22%, led by improving consumer sentiment and moderating inflation. Crisil Intelligence projects the e-commerce industry to reach Rs 8.5 trillion by fiscal 2028, logging a CAGR of 20-25%

Figure 7-5: Ecommerce industry in India



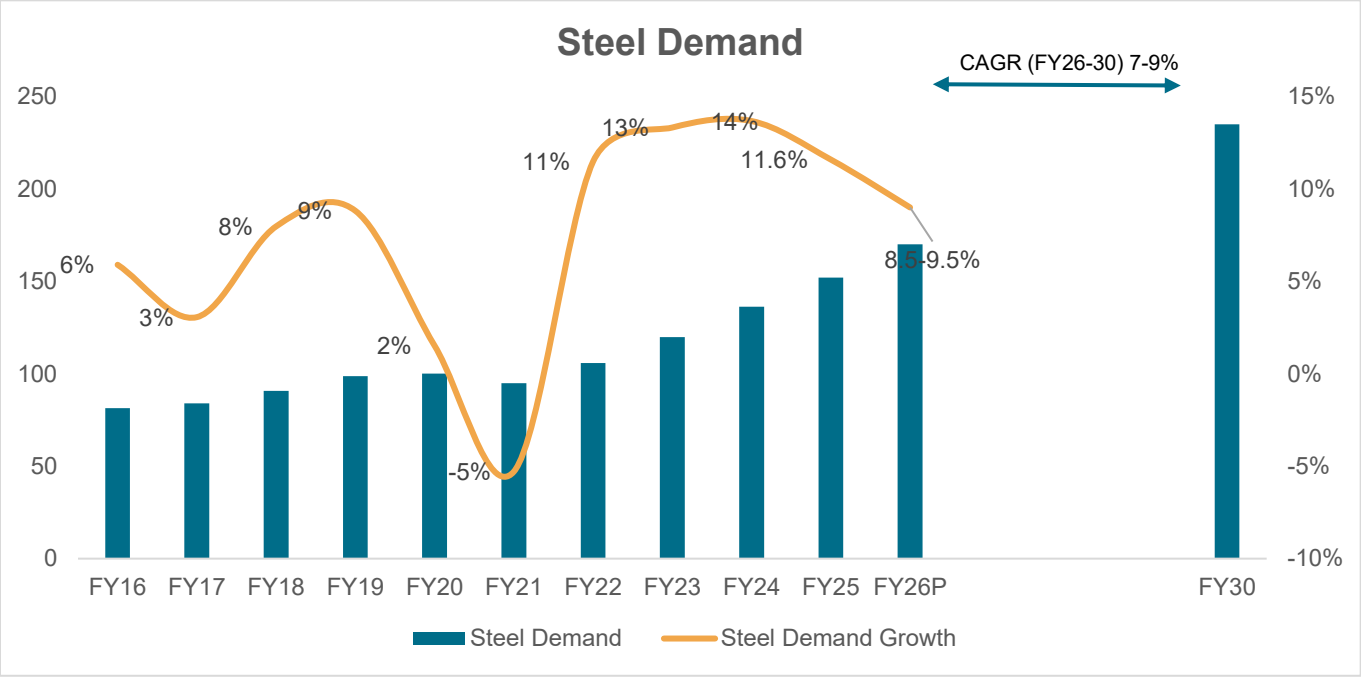
Source: Crisil Intelligence

The e-commerce industry is on a rise with increasing consumption levels and moderating inflation and project corridor being an important link in connecting the important cities of Madhya Pradesh, Rajasthan, Maharashtra and Delhi/North India. Crisil expects CAGR of 6.7% from fiscal FY27-FY32 for Courier and parcels related traffic on the project road.

7.2.3.2 Iron & steel products

Iron & steel is one of major commodity plying on the project road. The consumption of iron and steel in Madhya Pradesh has been increasing steadily over the years, driven by the growth of the construction, infrastructure, and manufacturing sectors. On-going and up-coming infrastructure activities have been key driving factors to the growth of this sector. A healthy housing market and an increase in individual house construction across the country are supporting this segment. Government initiatives, such as the Pradhan Mantri Awas Yojana (PMAY), are further supporting this segment. Cold storage, food processing units, warehouses, and irrigation structures also create consistent steel demand, linking back to the agrarian strength of the state.

Figure 7-6: Steel demand in India



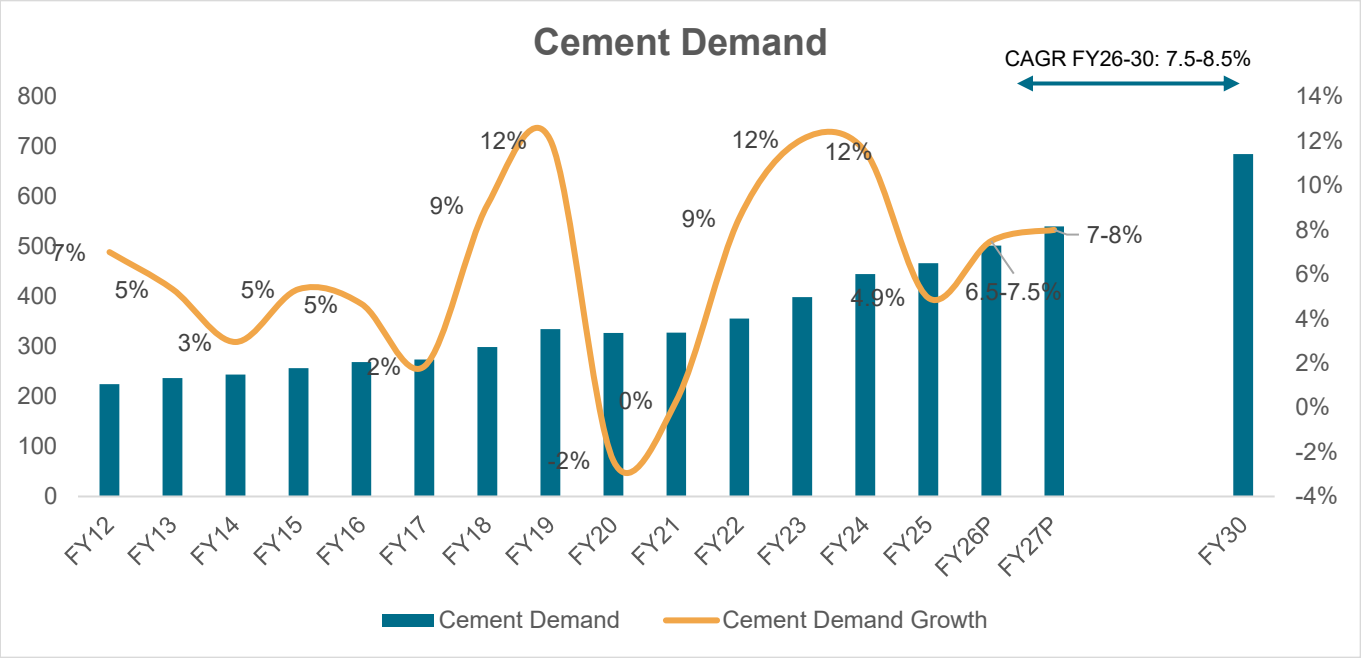
Source: Crisil Intelligence

7.2.3.3 Construction materials

Construction Material is another commodity, which majorly travels on the road stretch of which cement is the major commodity crossing the toll plaza owning to presence of various cement industries in and around the project corridor

The construction industry in India is expected to grow steadily at an annual rate of 6-8% between fiscal years 2026 and 2030. This growth will be mainly driven by increased spending on infrastructure projects such as roads and railways, supported by both central and state government investments.

Figure 7-7: Cement demand in India



Source: Crisil Intelligence

Demand growth moderated in fiscal 2025 to ~5%, following three years of healthy growth. While infrastructure segment continued to remain the key demand driver, growth moderated owing to slowdown in state capex roll outs during first half of fiscal 2025. However, with revival in state spending in the second half, infra projects picked up pace. Demand from the housing sector moderated to 3.5-4.5% with higher growth from rural housing segment. However, urban housing growth slowed down owing to slower execution under PMAY-U along with muted traction from real estate. In the industrial and commercial (I&C) segment growth slowed down after three consecutive years of healthy growth; however, continued traction from the PLI scheme and commercial real estate demand supported the growth. At an overall level, demand growth moderated to 5% in fiscal 2025 after three consecutive years of healthy demand growth.

7.2.3.4 Consumer food and products

The fast-moving consumer goods (FMCG) industry or consumer packaged goods (CPG) industry is mainly responsible for producing, distributing, and marketing fast-moving consumer goods. Fast-moving consumer goods (FMCG) sector is India's fourth-largest sector and has been expanding at a healthy rate over the years because of rising disposable income, a rising youth population, and rising brand awareness among consumers. Improved penetration of the organized snacks sector post the pandemic and new product offerings to drive growth of the industry over the medium term

7.2.4 Commodity outlook

Crisil Intelligence has forecasted the freight traffic growth based on the growth in relevant sectors influencing traffic in the region. Industry growth has been analysed and forecasted based on our proprietary database of industries for the surrounding regions that impact traffic on project road as well as our internal assessment on a relevant set of sectors at the pan India level.

Package wise forecast incorporates the regional dynamics including, but not limited to, investments, commodity trends, district output (GDDP) profile (primary/secondary, construction/manufacturing) etc.

The traffic for the coming years is projected by factoring in the impact of these parameters on commodity wise growth rates and is presented in below table.

Table 7-1: Commodity outlook for the project section

Commodity	FY 27 - FY 39
Agri Produce	4.0%
Automobiles	2.3%
Chemical products	4.7%
Coal	3.3%
Construction materials	2.4%
Consumer Foods	6.8%
Consumer Products	3.6%
Container	3.6%
Courier & parcel	4.8%
Iron & Steel Products	6.4%
Machinery	4.9%
Milk & Animal Food	3.0%
Others	3.4%
Paper products	3.6%
Petroleum Products	3.6%
Pharmaceuticals	2.0%
Plastic products	3.6%
Plywood & Timber products	3.6%
Rubber products	3.6%
Textile & Footwear	3.6%
Tiles & Ceramic products	3.0%

Source: Industry, Crisil Intelligence
Source: Crisil Intelligence

7.3 Implied growth rate for the project section

Mode wise implied growth rates adopted for the project road is presented in the below table.

Table 7-2: Pre-Diversion growth rates: Chokala (TP01)

Traffic	FY 26-FY 30	FY 31-FY 35	FY 36- FY 39	FY 26-FY 39
Cars	6.9%	6.3%	5.8%	6.3%
LCV/Minibus	1.9%	1.7%	1.6%	1.7%
2 Axle Bus	1.9%	1.7%	1.6%	1.7%
2 Axle Truck	4.4%	4.0%	3.7%	4.0%
3 Axle Truck	1.2%	1.1%	0.9%	1.1%
MAV	5.0%	4.6%	4.2%	4.6%

Traffic	FY 26-FY 30	FY 31-FY 35	FY 36- FY 39	FY 26-FY 39
Total	**5.5%**	**5.1%**	**4.8%**	**5.1%**
PCU	**4.9%**	**4.5%**	**4.2%**	**4.5%**

Source: Crisil Intelligence

Table 7-3: Pre-Diversion growth rates: Chikliya (TP01)

Traffic	FY 26-FY 30	FY 31-FY 35	FY 36- FY 39	FY 26-FY 39
Cars	6.9%	6.3%	5.8%	6.3%
LCV/Minibus	3.5%	3.1%	2.8%	3.2%
2 Axle Bus	3.4%	3.1%	2.8%	3.1%
2 Axle Truck	3.8%	3.4%	3.0%	3.4%
3 Axle Truck	1.6%	1.2%	0.8%	1.2%
MAV	5.4%	4.9%	4.5%	5.0%
Total	**5.8%**	**5.4%**	**5.0%**	**5.4%**
PCU	**5.1%**	**4.8%**	**4.4%**	**4.8%**

Source: Crisil Intelligence

7.3.1 Traffic projections

The total traffic projected in terms of PCUs based on most likely growth rates considering the impacts is presented in below table.

Table 7-4: Traffic projections: Chokala (TP01)-Post Diversion

FY	Cars	LCV/Minibus	2 Axle Bus	2 Axle Truck	3 Axle Truck	MAV	Total	PCU
2026	6,253	567	132	1,772	752	2,380	**11,855**	**25,778**
2027	6,700	573	137	1,766	732	2,384	**12,290**	**26,188**
2028	7,171	576	141	1,747	707	2,364	**12,707**	**26,459**
2029	7,661	576	146	1,710	675	2,316	**13,084**	**26,541**
2030	8,166	587	151	1,737	669	2,380	**13,688**	**27,423**
2031	8,670	605	156	1,794	675	2,498	**14,398**	**28,692**
2032	9,204	625	161	1,852	681	2,620	**15,142**	**30,010**
2033	9,791	645	166	1,913	687	2,749	**15,951**	**31,426**
2034	10,415	665	171	1,975	693	2,882	**16,801**	**32,899**
2035	11,068	685	176	2,036	698	3,018	**17,681**	**34,405**
2036	11,716	704	181	2,096	702	3,155	**18,556**	**35,910**
2037	12,402	724	186	2,157	706	3,297	**19,473**	**37,474**
2038	13,117	744	191	2,219	709	3,443	**20,424**	**39,087**
2039	13,872	765	197	2,282	713	3,596	**21,425**	**40,777**
CAGR (2026-39)	6.3%	2.3%	3.1%	2.0%	-0.4%	3.2%	**4.7%**	**3.6%**

Source: Crisil Intelligence

Table 7-5: Traffic projections: Chikliya (TP02)-Post Diversion

FY	Cars	LCV/Minibus	2 Axle Bus	2 Axle Truck	3 Axle Truck	MAV	Total	PCU
2026	7,908	638	161	1,784	709	2,430	**13,628**	**27,757**
2027	8,473	645	166	1,783	693	2,437	**14,197**	**28,332**
2028	9,070	649	172	1,768	672	2,419	**14,751**	**28,769**
2029	9,688	650	178	1,736	644	2,372	**15,267**	**29,010**
2030	10,327	662	184	1,766	641	2,439	**16,019**	**30,067**
2031	10,964	684	189	1,828	649	2,562	**16,876**	**31,517**
2032	11,640	705	195	1,890	657	2,689	**17,777**	**33,026**
2033	12,382	728	202	1,956	666	2,823	**18,757**	**34,651**
2034	13,172	751	208	2,023	674	2,963	**19,790**	**36,344**
2035	13,997	774	214	2,089	681	3,104	**20,860**	**38,080**
2036	14,817	796	220	2,154	688	3,248	**21,924**	**39,815**
2037	15,685	819	226	2,220	694	3,397	**23,041**	**41,621**
2038	16,588	842	233	2,287	699	3,550	**24,200**	**43,485**
2039	17,543	866	239	2,356	705	3,711	**25,420**	**45,441**
CAGR (2026-39)	6.3%	2.4%	3.1%	2.2%	0.0%	3.3%	**4.9%**	**3.9%**

Source: Crisil Intelligence

8 Revenue forecast

8.1 User fee schedule

The rate revision is dictated by Schedule-R of the concession agreement which sets the basis using Indian tolls act and notification of the state government. The agreement defines two sections i.e. 1st homogeneous section of 66.25 km and 2nd homogeneous section of 57.90 km. Additionally, the agreement sets forth 7% YoY growth rate for the toll increase. The same has been used for estimation of revenue.

Table 8-1: Toll rates as per schedule R

Ticket type	Toll rate (Rs per km)
Private car, Jeep	0.33
LCV/Minibus	0.79
Bus	1.64
Truck	1.97
MAV	3.93

Source: Concession agreement, Crisil Intelligence

Table 8-2: Tolling tickets

Ticket	Maximum number of one-way journeys allowed	Period of validity
Single/Normal	Single	-
Local Monthly Pass	Multiple	One month from the date of payment
Monthly Pass	Multiple	One month from the date of payment

Source: Concession agreement, Crisil Intelligence

8.2 Toll segmentation

For the present study, trip segmentation based on H1FY26 has been adopted for the projections

Table 8-3: Adopted toll segmentation at the Chokala toll plaza

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Single journey	68.2%	76.0%	85.0%	99.2%	99.2%
Monthly pass (local)	0.5%	0.0%	0.0%	0.0%	0.0%
Monthly pass	1.8%	22.5%	14.4%	0.5%	0.5%
Exemption/violations	29.5%	1.5%	0.6%	0.3%	0.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Client TMS Data, Crisil Intelligence

Table 8-4: Adopted toll segmentation at the Chikliya toll plaza

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Single journey	69.3%	75.3%	81.3%	99.5%	97.1%
Monthly pass (local)	1.2%	0.0%	0.0%	0.0%	0.0%

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Monthly pass	0.0%	23.6%	18.1%	0.1%	2.8%
Exemption/violations	29.6%	1.1%	0.7%	0.4%	0.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Client TMS Data, Crisil Intelligence

Table 8-5: Overloading toll segmentation at the Chokala toll plaza (% Single Journey)

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Overload - 50%	0.0%	2.0%	0.2%	0.7%	0.5%
Overload – 100%	0.0%	2.7%	0.1%	0.2%	0.4%

Source: Client TMS Data, Crisil Intelligence

Table 8-6: Overloading toll segmentation at the Chikliya toll plaza (% Single Journey)

Ticket type	Car	LCV/Minibus	Bus	Truck	MAV
Overload - 50%	0.0%	0.0%	0.0%	0.0%	0.0%
Overload – 100%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Client TMS Data, Crisil Intelligence

8.3 Trip rates

The trip rates are adopted based on the FY 25 historic traffic data and trip rates for the present study for FY26 onwards is presented in below table.

Table 8-7: Adopted trip rates for Chokala TP

Type of vehicle	Single	Monthly	Local Monthly
Car/Jeep/Van	1.0	26.0	30.0
LCV/Minibus	1.0	62.0	
2 Axle Bus	1.0	69.0	
2 Axle Truck	1.0	62.0	
3Axle bus and Truck	1.0	46.0	
MAV	1.0	46.0	

Source: Historical toll data, Crisil Intelligence

Table 8-8: Adopted trip rates for Chikliya TP

Type of vehicle	Single	Monthly	Local Monthly
Car/Jeep/Van	1.0	29.0	30.0
LCV/Minibus	1.0	58.0	
2 Axle Bus	1.0	61.0	
2 Axle Truck	1.0	42.0	
3Axle bus and Truck	1.0	48.0	
MAV	1.0	48.0	

Source: Historical toll data, Crisil Intelligence

8.4 Revenue estimates

The revenue projections for the project road are presented in the below table.

Table 8-9: Mode wise revenue in Rs millions for the project section –Chokala TP

FY	Car/Jeep/ Van	LCV/Minibus	2 Axle Bus	2 Axle Truck	3Axle bus and Truck	MAV	Total	YoY Growth (%)
2026	127	35	17	305	259	820	1,563	
2027	146	38	19	325	270	879	1,677	7.3%
2028	168	41	21	345	280	935	1,790	6.7%
2029	191	44	23	361	285	978	1,881	5.1%
2030	218	48	26	392	302	1,074	2,059	9.5%
2031	247	53	29	434	326	1,207	2,294	11.4%
2032	282	58	32	480	353	1,357	2,562	11.7%
2033	319	64	35	529	380	1,520	2,847	11.1%
2034	363	71	38	585	410	1,705	3,173	11.4%
2035	412	78	42	645	442	1,910	3,529	11.2%
2036	470	86	47	712	477	2,143	3,935	11.5%
2037	528	94	51	782	512	2,390	4,357	10.7%
2038	599	104	56	861	550	2,671	4,841	11.1%
2039	679	114	62	947	592	2,984	5,379	11.1%
CAGR (2026-39)	13.8%	9.5%	10.3%	9.1%	6.6%	10.4%	10.0%	

Source: Crisil Intelligence

Table 8-10: Mode wise revenue in Rs millions for the project section –Chikliya TP

FY	Car/Jeep/ Van	LCV/Minibus	2 Axle Bus	2 Axle Truck	3Axle bus and Truck	MAV	Total	YoY Growth (%)
2026	138	34	18	268	210	721	1,389	
2027	159	36	20	286	220	774	1,496	7.7%
2028	182	39	22	304	229	824	1,601	7.1%
2029	209	42	25	319	234	862	1,691	5.6%

FY	Car/Jeep/ Van	LCV/Minibus	2 Axle Bus	2 Axle Truck	3Axle bus and Truck	MAV	Total	YoY Growth (%)
2030	238	46	27	347	249	949	1,857	9.8%
2031	269	51	30	385	270	1,066	2,071	11.5%
2032	307	56	33	426	294	1,201	2,318	11.9%
2033	348	62	37	471	317	1,345	2,580	11.3%
2034	397	68	40	521	344	1,511	2,881	11.7%
2035	450	75	44	576	372	1,694	3,211	11.4%
2036	511	83	49	637	403	1,902	3,585	11.6%
2037	576	91	54	700	433	2,122	3,977	10.9%
2038	655	100	59	772	467	2,373	4,427	11.3%
2039	741	110	65	851	504	2,654	4,927	11.3%
CAGR (2026-39)	13.8%	9.6%	10.3%	9.3%	7.0%	10.5%	10.2%	

Source: Crisil Intelligence

9 Annexures

9.1 Top OD Pairs

Ratlam to Indore and Ratlam to Badnawar is the top OD pair, accounting in passenger traffic (cars). Top 10 OD pairs contribute nearly 43% of the car traffic at Chokala and 56% at Chikliya. Ratlam-Indore, Ratlam to Badnawar and Delhi to Mumbai are the key pairs for goods traffic

Table 9-1: Top OD pairs at Chokala TP

OD pair	Cars %
Ratlam to Indore	11.9%
Badnawar/Satrunda to Kanvan/Kod/Chho Kalan	6.3%
Badnawar/Satrunda to Dhar	6.3%
Ratlam to Dhar	4.9%
Badnawar/Satrunda to Indore	4.9%
Jaora to Indore	3.6%
Badnawar/Satrunda to Nagda/Sadalpur/Khandigara	3.5%
Ratlam to Nagda/Sadalpur/Khandigara	2.0%

OD pair	Bus %
Ratlam to Indore	16.0%
Ratlam to Dhar	16.0%
Udaipur/Banswara/Pratapgarh/Nathdwara/Sirohi/Samaliya/ Darada/Pipliya/Saroda to Indore	11.8%
Jaora to Indore	9.5%
Jodhpur/Bagri/Sohara to Pune/Baramati/Pipalgaon	3.9%
Badnawar/Satrunda to Dhar	2.9%
Badnawar/Satrunda to Badnawar/Satrunda	2.5%
Ratlam to Methwada	2.5%

OD pair	LCV/Minibus %
Badnawar/Satrunda to Nagda/Sadalpur/Khandigara	6.1%
Ratlam to Dhar	4.0%
Jaora to Indore	3.7%
Badnawar/Satrunda to Kanvan/Kod/Chho Kalan	3.2%
Ratlam to Indore	2.8%
Jaora to Dhar	2.8%
Badnawar/Satrunda to Dhar	1.9%
Badnawar/Satrunda to Indore	1.8%

OD pair	Truck %
Ratlam to Indore	4.2%
Badnawar/Satrunda to Dhar	2.7%
Jaora to Indore	2.4%
Badnawar/Satrunda to Indore	2.4%
Ratlam to Dhar	2.4%
Badnawar/Satrunda to Kanvan/Kod/Chho Kalan	2.1%
Badnawar/Satrunda to Nagda/Sadalpur/Khandigara	1.8%
Delhi to Pune/Baramati/Pipalgaon	1.7%

OD pair	3 Axle Truck %
Ratlam to Indore	4.7%
Badnawar/Satrunda to Indore	2.4%
Delhi to Mumbai/Thane/Raigad/Bhiwandi	2.3%
Badnawar/Satrunda to Dhar	2.2%
Badnawar/Satrunda to Kanvan/Kod/Chho Kalan	2.2%
Badnawar/Satrunda to Nagda/Sadalpur/Khandigara	1.9%
Neemuch/Manasa/Nayagaon to Indore	1.7%
Jaora to Indore	1.7%

OD pair	MAV %
Delhi to Mumbai/Thane/Raigad/Bhiwandi	5.1%
Delhi to Bangalore/Hubli/Belgaum/Karnataka	2.7%
Jaipur/Khatushyam/Alwar/kotputli/Bhalesar/Satpura/Malpura to Indore	2.6%
Jaipur/Khatushyam/Alwar/kotputli/Bhalesar/Satpura/Malpura to Mumbai/Thane/Raigad/Bhiwandi	2.4%
Ratlam to Indore	2.2%
Jaora to Indore	2.1%
Neemuch/Manasa/Nayagaon to Indore	2.0%
Ludhiana/Bhatinda/Ambala/Amritsar/Jalandhar/Patiala/Hoshiarpur/Mansa/Punjab to Mumbai/Thane/Raigad/Bhiwandi	2.0%

Source: Crisil Intelligence

Table 9-2: Top OD pairs at Chikliya TP

OD pair	Cars %
Ratlam to Badnawar/Satrunda	17.8%
Ratlam to Indore	11.5%

OD pair	Cars %
Jaora to Indore	5.5%
Ratlam to Ratlam	5.0%
Jaora to Badnawar/Satrunda	4.6%
Ratlam to Dhar	4.5%
Ratlam to Ujjain/Baloda	4.4%
Jaora to Dhar	2.9%

OD pair	Bus %
Ratlam to Badnawar/Satrunda	20.0%
Ratlam to Indore	17.8%
Ratlam to Dhar	9.3%
Ratlam to Ujjain/Baloda	7.5%
Udaipur/Banswara/Pratapgarh/Nathdwara/Sirohi/Samaliya/ Darada/Pipliya/Saroda to Indore	4.9%
Ratlam to Ratlam	4.0%
Ratlam to Surat/Vapi	2.6%
Neemuch/Manasa/Nayagaon to Badnawar/Satrunda	2.3%

OD pair	LCV/Minibus %
Ratlam to Badnawar/Satrunda	10.6%
Ratlam to Indore	8.9%
Delhi to Mumbai/Thane/Raigad/Bhiwandi	2.9%
Ratlam to Ujjain/Baloda	2.7%
Jaora to Indore	2.6%
Jaora to Badnawar/Satrunda	2.5%
Delhi to Bangalore/Hubli/Belgaum/Karnataka	2.4%
Ratlam to Ratlam	2.3%

OD pair	Truck %
Ratlam to Badnawar/Satrunda	5.4%
Ratlam to Indore	4.9%
Delhi to Mumbai/Thane/Raigad/Bhiwandi	3.5%
Ratlam to Ujjain/Baloda	3.3%
Delhi to Pune/Baramati/Pipalgaon	3.1%
Delhi To Indore	2.1%
Neemuch/Manasa/Nayagaon to Indore	2.1%
Jaora to Indore	1.9%

OD pair	3 Axle Truck %
Delhi to Pune/Baramati/Pipalgaon	5.1%
Ratlam to Badnawar/Satrunda	4.5%
Ratlam to Indore	4.0%
Delhi to Mumbai/Thane/Raigad/Bhiwandi	3.3%
Jaora to Badnawar/Satrunda	2.9%
Delhi to Bangalore/Hubli/Belgaum/Karnataka	2.4%
Jaora to Indore	2.3%
Ratlam to Ujjain/Baloda	2.1%

OD pair	MAV %
Ratlam to Badnawar/Satrunda	5.0%
Delhi to Pune/Baramati/Pipalgaon	3.7%
Delhi to Mumbai/Thane/Raigad/Bhiwandi	3.6%
Ratlam to Indore	3.4%
Delhi to Bangalore/Hubli/Belgaum/Karnataka	2.6%
Jaora to Indore	1.9%
Jaora to Badnawar/Satrunda	1.7%
Delhi To Indore	1.4%

Source: Crisil Intelligence

9.2 Direction wise commodity distribution

Direction wise commodity distribution is presented in the below tables.

Table 9-3: Commodity distribution (in %) direction wise for Chokala TP

Commodity	LCV/Minibus	Truck	3 Axle Truck	MAV	Total	LCV/Minibus	Truck	3 Axle Truck	MAV	Total
	Lebad-Jaora					Jaora-Lebad				
Agri Produce	48.9%	40.8%	35.8%	32.2%	38.6%	26.5%	32.6%	27.6%	23.7%	27.8%
Courier & parcel	20.1%	18.6%	21.6%	21.3%	20.3%	14.5%	13.0%	12.1%	13.9%	13.4%
Machinery	1.0%	1.8%	1.0%	5.6%	2.9%	8.7%	4.7%	6.2%	9.9%	7.3%
Iron & Steel Products	1.7%	4.8%	6.1%	4.7%	4.3%	9.1%	5.8%	7.6%	8.7%	7.7%
Automobiles	3.4%	2.4%	4.8%	6.4%	4.4%	2.5%	2.5%	4.3%	6.0%	3.9%
Tiles & Ceramic products	1.2%	1.8%	1.6%	2.4%	1.9%	2.5%	4.0%	5.8%	8.7%	5.5%
Consumer Products	3.4%	2.7%	3.9%	3.5%	3.3%	6.5%	11.2%	10.9%	5.7%	8.6%
Empty	6.1%	4.8%	4.5%	6.6%	5.7%	10.6%	3.6%	1.8%	1.3%	3.9%
Construction materials	3.4%	4.8%	4.8%	3.1%	3.9%	1.8%	3.3%	2.9%	4.9%	3.4%
Others	2.4%	5.4%	3.5%	2.5%	3.5%	5.5%	4.7%	4.1%	3.6%	4.4%
Consumer Foods	2.0%	2.7%	2.9%	3.3%	2.8%	3.6%	2.5%	2.1%	1.5%	2.3%

Commodity	LCV/Minibus	Truck	3 Axle Truck	MAV	Total	LCV/Minibus	Truck	3 Axle Truck	MAV	Total
	Lebad-Jaora					Jaora-Lebad				
Plastic products	1.3%	1.8%	1.3%	1.5%	1.5%	0.4%	3.3%	3.3%	3.2%	2.7%
Textile & Footwear	1.0%	0.6%	0.0%	0.7%	0.7%	1.8%	1.8%	3.7%	3.3%	2.7%
Chemical products	0.3%	0.6%	1.3%	1.7%	1.1%	0.4%	0.7%	1.8%	1.9%	1.2%
Pharmaceuticals	0.0%	0.6%	1.0%	1.2%	0.8%	0.7%	0.7%	0.8%	0.6%	0.7%
Plywood & Timber products	1.3%	1.8%	1.0%	0.5%	1.1%	1.8%	1.4%	1.6%	0.9%	1.4%
Coal	0.3%	0.6%	1.0%	0.6%	0.6%	0.0%	0.0%	0.0%	0.4%	0.1%
Petroleum Products	0.5%	1.5%	1.9%	0.6%	1.0%	0.7%	1.1%	1.4%	0.3%	0.8%
Container	0.0%	0.3%	0.3%	0.5%	0.3%	0.4%	0.0%	0.8%	0.4%	0.4%
Milk & Animal Food	1.4%	0.3%	0.3%	0.0%	0.4%	1.8%	1.8%	0.8%	0.9%	1.3%
Rubber products	0.0%	0.9%	1.0%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Paper products	0.0%	0.3%	0.3%	0.4%	0.3%	0.0%	1.1%	0.6%	0.3%	0.5%
Grand Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Crisil Intelligence

Table 9-4: Commodity distribution (in %) direction wise for Chikliya TP

Commodity	LCV/Minibus	Truck	3 Axle Truck	MAV	Total	LCV/Minibus	Truck	3 Axle Truck	MAV	Total
	Lebad-Jaora					Jaora-Lebad				
Agri Produce	39.8%	33.1%	33.3%	34.8%	35.1%	11.9%	7.6%	8.9%	9.6%	9.2%
Courier & parcel	15.4%	13.2%	14.6%	9.5%	12.2%	19.7%	26.9%	39.0%	28.9%	28.0%
Machinery	3.7%	2.5%	1.1%	4.4%	3.3%	0.3%	1.8%	1.5%	2.9%	2.0%
Iron & Steel Products	6.0%	4.5%	6.9%	6.9%	6.0%	0.9%	1.8%	3.3%	7.0%	4.1%
Automobiles	2.1%	5.6%	10.3%	6.5%	5.8%	1.1%	2.2%	2.2%	3.5%	2.6%
Tiles & Ceramic products	1.0%	2.5%	2.3%	2.4%	2.2%	0.5%	2.2%	3.0%	2.4%	2.1%
Consumer Products	2.9%	2.8%	4.6%	3.3%	3.2%	10.2%	10.9%	8.6%	10.1%	10.2%
Empty	10.9%	15.1%	9.6%	12.2%	12.6%	30.3%	17.1%	13.0%	11.7%	16.1%
Construction materials	6.3%	4.2%	4.2%	7.0%	5.7%	6.1%	4.4%	5.2%	11.4%	7.8%
Others	1.0%	2.2%	1.9%	1.6%	1.7%	2.4%	5.5%	1.5%	1.2%	2.8%
Consumer Foods	4.9%	2.8%	1.9%	2.7%	3.1%	1.1%	0.4%	0.7%	0.5%	0.6%
Plastic products	0.2%	1.4%	0.8%	0.4%	0.7%	1.2%	1.8%	2.6%	1.7%	1.8%
Textile & Footwear	0.3%	1.7%	1.1%	1.5%	1.3%	3.8%	1.1%	0.7%	1.5%	1.6%
Chemical products	0.0%	0.0%	0.4%	0.1%	0.1%	0.0%	1.1%	0.7%	1.0%	0.9%
Pharmaceuticals	0.7%	1.1%	0.4%	0.3%	0.6%	2.4%	1.5%	0.4%	1.0%	1.3%
Plywood & Timber products	1.8%	2.2%	0.8%	1.6%	1.7%	1.9%	1.5%	1.5%	0.4%	1.1%
Coal	0.0%	0.6%	1.1%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Petroleum Products	1.0%	0.8%	0.4%	1.3%	1.0%	0.3%	3.6%	1.9%	1.2%	1.9%

Commodity	LCV/Minibus	Truck	3 Axle Truck	MAV	Total	LCV/Minibus	Truck	3 Axle Truck	MAV	Total
	Lebad-Jaora					Jaora-Lebad				
Container	1.0%	0.3%	0.8%	1.5%	0.9%	0.0%	0.4%	0.4%	0.1%	0.2%
Milk & Animal Food	0.5%	2.0%	2.7%	1.0%	1.4%	5.5%	8.0%	4.1%	2.7%	4.9%
Rubber products	0.2%	0.6%	0.4%	0.4%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%
Paper products	0.3%	0.8%	0.4%	0.5%	0.6%	0.5%	0.4%	0.7%	1.0%	0.7%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Crisil Intelligence

9.3 Zonal influence

The key influencing zones/regions from the origin destination survey are Indore, Ratlam, Dhar for passenger traffic, indicating more local movements and for goods traffic

Table 9-5: Major Zonal influence in % for passenger and goods traffic at Chokala TP

Zone	Cars %
Indore	16.3%
Badnawar	15.5%
Ratlam	14.6%
Dhar	10.2%
Jaora	6.2%
Nagda	5.2%
Jaipur	2.8%
Ujjain	2.2%

Zone	Bus %
Indore	23.7%
Ratlam	19.8%
Dhar	10.3%
Badnawar	7.9%
Udaipur	7.5%
Jaora	5.8%
Pithampur	2.6%
Jaipur	2.6%

Zone	LCV/Minibus & Truck %
Indore	10.5%
Badnawar	9.3%

Zone	LCV/Minibus & Truck %
Ratlam	7.6%
Jaora	6.9%
Dhar	6.7%
Nagda	5.2%
Jaipur	3.8%
Neemuch	3.1%

Zone	3 Axle Truck %
Indore	12.2%
Badnawar	7.7%
Ratlam	6.0%
Dhar	4.9%
Jaora	4.2%
Nagda	3.9%
Jaipur	3.9%
Jodhpur	3.6%

Zone	MAV %
Indore	10.2%
Jaipur	5.9%
Badnawar	5.3%
Ratlam	4.4%
Jaora	4.1%
Nagda	3.1%
Dhar	3.0%
Pithampur	2.8%

Source: Crisil Intelligence

Table 9-6: Major Zonal influence in % for passenger and goods traffic at Chikliya TP

Zone	Cars %
Ratlam	30.4%
Badnawar	14.0%
Indore	12.1%
Jaora	9.5%
Dhar	5.5%
Ujjain/ Baloda	4.3%

Zone	Cars %
Neemuch	3.0%
Jaipur	2.7%

Zone	Bus %
Ratlam	35.8%
Indore	13.2%
Badnawar	11.7%
Dhar	7.5%
Ujjain/ Baloda	5.4%
Jaora	4.8%
Jaipur	3.2%
Udaipur	2.5%

Zone	LCV/Minibus & Truck %
Ratlam	15.8%
Indore	9.2%
Badnawar	7.3%
Jaora	4.4%
Neemuch	3.3%
Jaipur	3.2%
Ujjain/	3.1%
Udaipur	2.4%

Zone	3 Axle Truck %
Ratlam	9.9%
Indore	7.4%
Badnawar	6.4%
Jaora	5.8%
Jaipur	4.7%
Neemuch	3.3%
Dhar	2.8%
Ujjain	2.6%

Zone	MAV %
Ratlam	9.8%
Indore	7.3%
Badnawar	6.9%
Jaora	5.4%
Jaipur	3.9%
Udaipur	3.0%
Neemuch	2.6%
Sri Ganganagar	2.1%

Source: Crisil Intelligence

9.4 Delhi Mumbai Expressway Status

Table 9-7: Delhi-Mumbai Expressway package wise details and status

Section	S. no	Package name	Package length (Km)	Awarded to	State	Current status
Delhi-Vadodara	1	Pkg 1	18	APCO Infratech	Haryana	Operational
	2	Pkg 2	29	APCO Infratech	Haryana	Operational
	3	Pkg 3	32	Centrodorstroy India	Haryana	Operational
	4	Pkg 4	37	HG Infra	Rajasthan	Operational
	5	Pkg 5	31	KCC Buildcon	Rajasthan	Operational
	6	Pkg 6	33	KCC Buildcon	Rajasthan	Operational
	7	Pkg 7	30	Gawar Constructions	Rajasthan	Operational
	8	Pkg 8	33	HG Infra	Rajasthan	Operational
	9	Pkg 9	46	HG Infra	Rajasthan	Operational
	10	Pkg 10	44	Dhaya Maju Infra - Crescent EPC Projects	Rajasthan	95%
	11	Pkg 11	42	Larsen & Toubro	Rajasthan	100%
	12	Pkg 12	38	GR Infra	Rajasthan	Operational
	13	Pkg 13	29	CDS Infra Projects	Rajasthan	Operational
	14	Pkg 14	28	Dhaya Maju Infra - Crescent EPC Projects	Rajasthan	94%
	15	Pkg 15	8	Dilip Buildcon + Altis Holding Corporation	Rajasthan	83%
	16	Pkg 16	19	DRA Infracon	Madhya Pradesh	Operational
	17	Pkg 17	36	JiangXi Construction - MKC Infrastructure	Madhya Pradesh	Operational
	18	Pkg 18	30	GR Infra	Madhya Pradesh	Operational
	19	Pkg 19	25	JiangXi Construction - MKC Infrastructure	Madhya Pradesh	Operational
	20	Pkg 20	24	GHV India	Madhya Pradesh	Operational
	21	Pkg 21	25	GR Infra	Madhya Pradesh	Operational
	22	Pkg 22	25	Larsen & Toubro	Madhya Pradesh	Operational
	23	Pkg 23	24	GR Infra	Madhya Pradesh	Operational
	24	Pkg 24	23	GR Infra	Madhya Pradesh	Operational
	25	Pkg 25	30	GR Infra	Madhya Pradesh	Operational
	26	Pkg 26	23	Atlas Construction - NKC	Gujarat	75%
	27	Pkg 27	26	GHV India	Gujarat	98%
	28	Pkg 28	26	GHV India	Gujarat	56%
	29	Pkg 29	21	PNC Infratech	Gujarat	90%

Section	S. no	Package name	Package length (Km)	Awarded to	State	Current status
	30	Pkg 30	22	Patel Infrastructure	Gujarat	97%
	31	Pkg 31	17	PNC Infratech	Gujarat	99%
Vadodara-Virar	1	Pkg 1	24	IRB Infra	Gujarat	Operational
	2	Pkg 2	30	IRCON	Gujarat	Operational
	3	Pkg 3	27	Patel Infrastructure	Gujarat	Operational
	4	Pkg 4	29	Ashoka Buildcon	Gujarat	100%
	5	Pkg 5	25	Sadbhav Engineering/Gawar Construction	Gujarat	87%
	6	Pkg 6	28	GR Infra	Gujarat	Operational
	7	Pkg 7	35	IRB Infra	Gujarat	Operational
	8	Pkg 8	35	Roadways Solutions India Infra	Gujarat	79%
	9	Pkg 9	26	Roadways Solutions India Infra	Gujarat	49%
	10	Pkg 10	25	Roadways Solutions India Infra	Gujarat	41%
	11	Pkg 11	26	RKC Infrabuilt	Maharashtra	100%
	12	Pkg 12	24	Montecarlo	Maharashtra	87%
	13	Pkg 13 (JNPT Spur)	3	GR Infra	Maharashtra	85%
DND-Faridabad	1	Pkg 1	9	DRA Infracon	Haryana	Operational
	2	Pkg 2	20	DRA Infracon	Haryana	Operational
	3	Pkg 3	30	IRB Infra	Haryana	Operational
	4	Jewar Spur	31	APCO Infratech	Haryana/Uttar Pradesh	57%
JNPT Spur	1	Pkg 14	17	IRCON	Maharashtra	78%
	2	Pkg 15	20	Agroh Infrastructure	Maharashtra	87%
	3	Pkg 16	20	Shivalaya Construction	Maharashtra	33%
	4	Pkg 17	17	IRCON	Maharashtra	9%
	5	Pkg 18	18	Merged with MSRDC's Virar-Alibaug Multi Modal Corridor Project	Maharashtra	0%

Source: Crisil Intelligence, NHAI.

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ANNEXURE D – AUDITED CONSOLIDATED FINANCIAL STATEMENTS

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INDEPENDENT AUDITOR'S REPORT

To The Board of Directors,
Cube Highways Fund Advisors Private Limited (the "Investment Manager")

(Acting in capacity as the Investment Manager of Cube Highways Trust (the "Trust"))

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the accompanying Consolidated Financial Statements of Cube Highways Trust (the "Trust") and its subsidiaries [as listed in note 1(ii) of the Consolidated Financial Statements], (together referred to as the "Group") which comprise of the Consolidated Balance Sheet as at September 30, 2025, the Consolidated Statement of Profit and Loss (including Other Comprehensive Income), the Consolidated Statement of Cash Flows, the Consolidated Statement of Changes in Unitholders' Equity, the Statement of Net Distributable Cash Flows of the Trust and each of the subsidiaries for the half year ended on that date, and notes to the Consolidated Financial Statements, including a summary of material accounting policies and other explanatory information (together hereinafter referred as the "Consolidated Financial Statements").

In our opinion and to the best of our information and according to the explanations given to us and based on consideration of reports of the other auditors on separate financial statements of the subsidiaries referred to in the paragraph (a) of the Other Matters section below, the aforesaid Consolidated Financial Statements

(i) are presented in accordance with the requirements of Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended (the "InvIT Regulations"); and

(ii) in the context of the InvIT Regulations prevailing over certain Ind AS requirements, as explained in the Emphasis of Matter paragraph below, give a true and fair view in conformity with the Indian Accounting Standard 34 " Interim Financial Reporting" ("Ind AS 34"), prescribed under Section 133 of the Companies Act, 2013 (the "Act"), as amended and other accounting principles generally accepted in India of the consolidated state of affairs of the Group as at September 30, 2025, its consolidated profit (including other comprehensive income), its consolidated cash flows, its consolidated changes in unitholder's equity, and its net distributable cash flows of the Trust and each of the its subsidiaries for the half year ended on September 30, 2025.

Basis for Opinion

We conducted our audit of the Consolidated Financial Statements in accordance with the Standards on Auditing (SAs) issued by Institute of Chartered Accountants of India (the "ICAI"). Our responsibilities under those Standards are further described in the Auditor's Responsibility for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the Code of Ethics issued by the ICAI together with the ethical requirements that are relevant to our audit of the Consolidated Financial Statements under the provisions of the InvIT Regulations, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ICAI's Code of Ethics. We believe that the audit evidence obtained by us and the audit evidence obtained by the other auditors in terms of their reports referred to in Other Matters section below, is sufficient and appropriate to provide a basis for our audit opinion on the Consolidated Financial Statements.

Emphasis of Matter

We draw attention to Note 19(a)(v) of the Consolidated Financial Statements, which describes the presentation of "Unit Capital" as "Equity" to comply with the InvIT Regulations.

Our opinion is not modified in respect of this matter.

Key Audit Matter

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. We have determined the matters described below to be the key audit matters to be communicated in our report.

Key Audit Matter	**Auditor's Response**
A) Impairment of Rights under Service Concession Arrangements (Intangibles Assets) and Receivables under Service Concession Arrangements The Group through its subsidiaries have right to collect toll or annuity under the Service Concession Arrangements (SCA) entered into by the respective subsidiaries having net carrying value of Rs. 280,471.18 million (Net of impairment) as at September 30, 2025. As per the requirement of Ind AS 36 "Impairment of assets", the Management of the Investment Manager regularly reviews whether there are any indicators of impairment of rights under SCA and receivables under SCA, and where impairment indicators exist, the Management of the Investment Manager estimates the recoverable amounts of the assets, basis value in use. The recoverable amounts of the aforesaid assets is determined by the Management of the Investment Manager on the basis of valuation report of the independent valuer, using discounted cash flow method which involves significant management judgement in respect of various key assumptions used as inputs such as determination of future cash flows, traffic estimates, assessment of the variation in concession period in certain subsidiaries considered on account of target traffic/ target revenue at the Target date as per the terms of respective SCA subject to approvals from the authorities, discount rates, revenue growth rate, inflation rate and other economic factors. There is an inherent risk in the determination of above recoverable amounts, as it involves estimation and significant management judgements. Considering complexity and significant management judgements, impairment assessment of Rights under SCA (Intangibles Assets) and Receivables under SCA are considered as a key audit matter.	Principal audit procedures performed included the following: • We obtained an understanding of the Group's process to identify indicators of impairment of Rights under Service Concession Arrangement (Intangibles Assets) and Receivables under Service Concession Arrangement, and process for determination of recoverable amount of these assets on the basis of valuation report of the independent valuer, including involvement of independent valuer and other management experts. • We assessed competence, capability and objectivity of independent valuer and other management experts involved in the process by the Management. • We obtained and read the valuation report of the independent valuer used by the Group to determine the recoverable amounts. • We assessed the reasonableness of the valuation methodology and assumptions (including those provided by the Management of the Investment Manager) used by the independent valuer in determining the recoverable amounts. • We assessed the reliability of management's cashflow forecast through the review of actual performance against previous forecasts, including the considerations due to current economic and market factors. • We assessed the reasonableness of the Management's assessment of the expected variations to the concession period including in respect of matters under arbitration with reference to the terms of the relevant concession agreements, the methodology followed by the Group and the legal advice obtained by the Management in respect of such matters, as applicable.

Refer Notes 2(III)(d)(11) and 2(III)(x) for material accounting policies and Notes 6, 9, 16 and 62 to the Consolidated Financial Statements.	• In performing the above procedures, we involved our internal specialists, who assessed the reasonableness of (i) management's forecast of revenue which mainly included traffic growth, revenue projections based on the independent experts' traffic study reports and inflation factor for assessing user toll fee and (ii) discount rate used in valuation, by challenging underlying assumptions used in such estimates and the methodology to determine the recoverable amounts. • We tested the arithmetical accuracy of the data used in determination of recoverable amounts and also of computation of impairment loss, if any. • We evaluated the appropriateness and adequacy of disclosures made by the Management of the Investment Manager.
B) Computation and disclosures relating to Consolidated Statement of Net Assets at Fair Value and Consolidated Statement of Total Returns at Fair Value as per InvIT Regulations In accordance with the InvIT Regulations, the Group discloses Consolidated Statement of Net Assets at Fair Value and Consolidated Statement of Total Returns at Fair Value, which is based on fair value determined on the basis of valuation report of the independent valuer appointed by the Trust. As at September 30, 2025, fair value of total assets was Rs. 376,018.55 million; out of which enterprise value of investments in subsidiaries as determined by independent valuer is Rs. 3,65,199.18 million representing 97.12% of the fair value of total assets. The fair value of investments in subsidiaries is determined by the Management of the Investment Manager on the basis of valuation report of the independent valuer, using discounted cash flow method which involves significant management judgement in respect of various key assumptions used as inputs such as determination of future cash flows, traffic estimates, assessment of the variation in concession period in certain subsidiaries considered on account of target traffic/ target revenue at the Target date as per the terms of respective SCA subject to approvals from the authorities, revenue growth rate, discount rates, inflation rates and other economic factors. The determination of fair value involve judgement due to inherent high estimation uncertainty in the underlying assumptions. Considering the importance of disclosure required under the InvIT Regulations, significant judgement involved in determination of fair values due to inherent uncertainty and complexity of the assumptions used in determination of fair values, this matter is considered as a key audit matter.	Principal audit procedures performed included the following: • We read the requirements of the InvIT Regulations for disclosures relating to Consolidated Statement of Net Assets at Fair Value and Consolidated Statement of Total Returns at Fair Value. • We obtained understanding of the Trust's process for preparation of Consolidated Statement of Net Assets at Fair Value and Consolidated Statement of Total Returns at Fair Value as per InvIT Regulations and the assumptions used by the Management of the Investment Manager including involvement of independent valuer and other management experts. • We assessed competence, capability and objectivity of independent valuer and other management experts involved in the process by the Management. • We obtained and read the valuation report of the independent valuer used by the Trust to determine fair value. • We reviewed the reasonableness of the valuation methodology and assumptions (including those provided by the Management of the Investment Manager) used by the independent valuer in determining the fair valuation. • We assessed the reliability of management's cashflow forecast through the review of actual performance against previous forecasts including the considerations due to current economic and market factors. • We assessed the reasonableness of the Management's assessment of the expected variations to the concession period including in respect of matters under arbitration with reference to the

Refer Note 2(III)(d)(2) for material accounting policies, Note 58 for Consolidated Statement of Net Assets at Fair Value and Note 59 for Consolidated Statement of Total Returns at Fair Value in the Consolidated Financial Statements.	terms of the relevant concession agreements, the methodology followed by the Group and the legal advice obtained by the Management in respect of such matters, as applicable. • In performing the above procedures, we involved our internal specialists, who assessed the reasonableness of (i) management's forecast of revenue which mainly included traffic growth, revenue projections based on the independent experts' traffic study reports and inflation factor for assessing user toll fee and (ii) discount rate used in valuation, by challenging underlying assumptions used in such estimates and the methodology to determine the fair value. • We tested the arithmetical accuracy of the data used in determination of fair value and also of computation of Net Assets at Fair Value and Total Returns at Fair Value. • We evaluated the appropriateness and adequacy of disclosures made by Management of the Investment Manager for compliance with the relevant requirements of the InvIT Regulations.
C) Provision for Periodic Major Maintenance (MM) expenses In accordance with Ind AS 37 "Provisions, contingent liabilities and contingent assets", the Group estimates and provides for contractual obligations as per Service Concession Arrangement (SCA) with National Highways Authority of India ("NHAI") / State Authorities to restore the infrastructure to a specified level of serviceability at periodic intervals during the SCA period or before it is handed over to NHAI and State Authorities. The Group has Provision for Periodic Major Maintenance (MM) expenses amounting to Rs. 7,649.66 million outstanding as at September 30, 2025. The MM expense estimate is based on maintenance strategy/ methodology prepared by the Management in accordance with the requirements of the respective SCA and after taking into account road survey reports issued by an independent expert. These estimates are further corroborated through purchase orders/ work orders placed or to be placed by the Management generally close to the maintenance execution period. The projected MM expense is periodically reviewed and updated for factors such as new information and past experience. As the estimated cost is based on the various assumptions such as current infrastructure (road, pavements, etc.) condition, inflation in material costs, government policies etc., the Group Management is required to apply judgement over these factors for estimating the provision for MM expenses.	Principal audit procedures performed included the following: • We assessed the appropriateness of the accounting policy followed by the Group for accounting Periodic Major Maintenance (MM) expenses with reference to requirements as per the applicable accounting standards. • Obtained an understanding and evaluated the Management process of estimating provision for periodic MM expense including involvement of the management experts. • We assessed competence, capability and objectivity of independent experts involved in the process by the Management. • We evaluated reasonableness of the method, assumptions and judgements used by the Management. It included evaluation of: a) contractual obligation to restore infrastructure at specified level of serviceability as per the SCA. Corroborating the quantities from the bill of quantity as per technical report issued by independent expert prepared based on MM strategy using the road survey reports issued by the field experts; b) current prevailing or forecasted rates of materials and services, and inflation adjustments thereupon;

Considering the high inherent estimation uncertainty in measurement of Provision for Periodic Major Maintenance expense and amount involved, this matter is considered as a key audit matter. Refer Notes 2(III)(d)(6) and 2(III)(y) for material accounting policy and Notes 23, 29 and 48 (a) to the Consolidated Financial Statements.	c) discount rate used for determining the present value of the projected MM expenditure; and d) appropriateness of above inputs used in estimation of MM expenses by comparing them with the previous completed MM cycle. • We have tested the arithmetical accuracy, where required, involved in the above estimation. • We assessed and validated the adequacy and appropriateness of the disclosures made by the Management of the Investment Manager in the Consolidated Financial Statements.

Responsibilities of the Board of Directors of the Investment Manager for the Consolidated Financial Statements

The Board of Directors of the Investment Manager is responsible for the preparation of these Consolidated Financial Statements that give a true and fair view of the consolidated financial position of the Group as at September 30, 2025, their consolidated financial performance including other comprehensive income, their consolidated cash flows, their consolidated changes in unitholder's equity, their net distributable cash flows of the Trust and each of the subsidiaries for the half year ended on that date, consolidated net assets at fair value as at September 30, 2025 and consolidated total returns at fair value for the half year then ended and other financial information of the Group in accordance with the InvIT Regulations, Ind AS 34 as prescribed under section 133 of the Companies Act 2013, as amended and other accounting principles generally accepted in India to the extent not inconsistent with the InvIT Regulations.

The Board of the Investment Manager and the respective Board of Directors of the subsidiaries included in the Group are responsible for maintenance of adequate accounting records including (where applicable) in accordance with the provisions of the Companies Act, 2013, for safeguarding the assets of the Group and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and the design, implementation and maintenance of adequate internal controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the Consolidated Financial Statements that give a true and fair view and are free from material misstatement, whether due to fraud or error which have been used for the purpose of preparation of the Consolidated Financial Statements by the Board of the Investment Manager, as aforesaid.

In preparing the Consolidated Financial Statements, the Board of the Investment Manager and the respective Board of Directors of the subsidiaries included in the Group are responsible for assessing the ability of the InvIT and respective entities to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board the Investment Manager and the respective Board of Directors of the subsidiaries included in the Group either intend to liquidate their respective entities or to cease operations, or has no realistic alternative but to do so.

The Board of the Investment Manager and the respective Board of Directors of the subsidiaries included in the Group are also responsible for overseeing the respective financial reporting process of the entities included in the Group.

Auditor's Responsibility for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the Consolidated Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Consolidated Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit, We also:

- Identify and assess the risks of material misstatement of the Consolidated Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of such internal controls.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of the Investment Manager.

- Conclude on the appropriateness of the Board of the Investment Manager's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the ability of the Group to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Consolidated Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the Consolidated Financial Statements, including the disclosures, and whether the Consolidated Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Perform procedures in accordance with Regulation 13(2)(e) of the InvIT Regulations, as amended, to the extent applicable.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities within the Group to express an opinion on the Consolidated Financial Statements. We are responsible for the direction, supervision and performance of the audit of the financial information of such entities included in the Consolidated Financial Statements of which we are the independent auditors. For the other entities included in the Consolidated Financial Statements, which have been audited by the other auditors, such other auditors remain responsible for the direction, supervision and performance of the audits carried out by them. We remain solely responsible for our audit opinion.

Materiality is the magnitude of misstatements in the Consolidated Financial Statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the Consolidated Financial Statements may be influenced. We consider quantita tive materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the Consolidated Financial Statements.

We communicate with those charged with governance of the Investment Manager and such other entities included in the Consolidated Financial Statements of which we are the independent auditors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal controls that we identify during our audit. We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the Consolidated Financial Statements of the current period and are therefore key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

We have performed procedures in accordance with Regulation 13(2)(e) of the InvIT Regulations, as amended, to the extent applicable.

Other Matters

a) The Consolidated Financial Statements include audited financial statements of 4 subsidiaries, whose financial statements reflect total assets of Rs. 50,549.84 million as at September 30, 2025, total revenues of Rs. 2,882.63, total comprehensive loss of Rs. 742.68 million and net cash outflows amounting to Rs. 2,914.70 million, for the half year ended on that date, as considered in the Consolidated Financial Statements, which have been audited by their respective independent auditors. These independent auditor's report on the financial statements of these entities have been furnished to us by the Management and our opinion on the Consolidated Financial Statements, in so far as it relates to the amounts and disclosures included in respect of these entities, and our report in terms of InvIT Regulations, in so far as it relates to the these entities is based solely on the reports of such auditors and the procedures performed by us as stated above.

b) The comparative consolidated financial statements as at and for the years ended March 31, 2025, 2024 and 2023 were approved by the Board of Directors of the Investment Manager in their meeting held on May 28, 2025, May 22, 2024 and May 23, 2023 on which we had issued audit reports dated May 28, 2025, May 22, 2024 and May 23, 2023 respectively which expressed an unmodified opinion on those consolidated financial statements for the respective years. The Management of Investment Manager has made additional disclosures and changes to presentation (to the extent applicable) in such comparative consolidated financial information to comply with the SEBI Master Circular SEBI/HO/DDHS-PoD2/P/CIR/2025/102 dated July 11, 2025, which have been audited by us and in so far it relates to the disclosure and changes to presentation for the entities audited by other auditors and referred below, our reporting is solely based on the reports of such other auditors.

   The audit reports on the consolidated financial statements for the respective years were unmodified and includes following explanatory paragraphs:

   i) As at and for the year ended March 31, 2025

      1) Emphasis of Matter Paragraph:
         We draw attention to Note 20 (v) of the consolidated financial statements, which describes the presentation of "Unit Capital" as "Equity" to comply with the SEBI InvIT Regulations. Our opinion is not modified in respect of this matter.

         Note 20(v) as described above is reproduced as Note 19(a)(v) of the accompanying Consolidated Financial Statements.

2) Other Matter Paragraph:
We did not audit the standalone financial statements of 2 subsidiaries, whose financial information reflect total assets of Rs. 19,837.90 million as at March 31, 2025, total revenues of Rs. 1,983.96 million, total comprehensive income of Rs. 14.40 million and net cash inflows amounting to Rs. 784.99 million for the year ended on that date, as considered in the consolidated financial statements. These financial have been audited by other auditors whose reports have been furnished to us by the Investment Manager and our opinion and conclusion on the consolidated financial information, in so far as it relates to the amounts and disclosures included in respect of these subsidiaries are based solely on the reports of the other auditors. Our opinion on the consolidated financial statements above and our report on Other Legal and Regulatory Requirements below, is not modified in respect of the above matters with respect to our reliance on the work done and the reports of the other auditors.

ii) As at and for the year ended March 31, 2024

1) Emphasis of Matter Paragraph:
We draw attention to Note 20 of the consolidated financial statements, which describes the presentation of "Unit Capital" as "Equity" to comply with the SEBI InvIT Regulations. Our opinion is not modified in respect of this matter.

Note 20 as described above is reproduced as Note 19(a)(v) of the accompanying Consolidated Financial Statements.

2) Other Matter Paragraph:
We did not audit the standalone financial statements of 2 subsidiaries, whose financial information reflect total assets of Rs. 26,795.34 million as at March 31, 2024, total revenues of Rs. 7,338.73 million, total comprehensive loss of Rs. 344.19 and net cash inflows amounting to Rs. 1,928.51 million for the year ended on that date, as considered in the consolidated financial statements. These financial have been audited by other auditors whose reports have been furnished to us by the Investment Manager and our opinion and conclusion on the consolidated financial information, in so far as it relates to the amounts and disclosures included in respect of these subsidiaries are based solely on the reports of the other auditors. Our opinion on the consolidated financial statements above and our report on Other Legal and Regulatory Requirements below, is not modified in respect of the above matters with respect to our reliance on the work done and the reports of the other auditors.

Our opinion on the Consolidated Financial Statements and our report on Other Legal and Regulatory Requirements below, is not modified in respect of the above matters.

Report on Other Legal and Regulatory Requirements

As required by the InvIT regulations, based on our audit and on the consideration of report of other auditors on the financial statements as mentioned in "Other Matters" section above, we report that:

a) We have sought and obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purpose of our audit.

b) The Consolidated Balance Sheet and the Consolidated Statement of Profit and Loss (including Other Comprehensive Income) are in agreement with the books of account maintained by the Trust for the purpose of preparation of the Consolidated Financial Statements.

c) In our opinion, the aforesaid Consolidated Financial Statements comply with the InvIT Regulations, and in the context of the InvIT Regulations prevailing over certain Ind AS requirements, as explained in the Emphasis of Matter paragraph above, the aforesaid Ind AS 34 and other accounting principles generally accepted in India.

d) In our opinion and to the best of our information and according to the explanations given to us, the 'Consolidated Statement of Net Assets at Fair Value' as at September 30, 2025 and 'Consolidated Statement of Total Returns at Fair Value' for the half year ended on September 30, 2025 have been prepared in accordance with the requirements of the InvIT Regulations [Refer note 4 to the Consolidated Statement of Net Assets at Fair Value and note (i) to the Consolidated Statement of Total Returns at Fair Value].

For **S.B. Billimoria & Co. LLP**
Chartered Accountants
(Firm's Registration No. 101496W/ W-100774)

Pramod B Shukla
Partner
(Membership No. 104337)
UDIN: 25104337BMOYLB6784

Place: Gurugram
Date: December 05, 2025

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Balance Sheet as at September 30, 2025
(All amounts in Rs. million unless otherwise stated)

	Notes	As at September 30, 2025 (Audited)	As at September 30, 2024 (Audited)	As at March 31, 2025 (Audited)	As at March 31, 2024 (Audited)	As at March 31, 2023 (Audited)
ASSETS						
Non-current assets						
Property, plant and equipment	3	456.15	324.14	412.91	250.89	-
Capital work-in-progress	4	0.85	54.88	3.86	14.10	-
Investment properties	5	8.52	6.77	6.73	6.80	-
Intangible assets	6	2,38,265.75	2,23,388.74	2,44,382.18	2,21,160.26	-
Intangible assets under development	7	67.98	1,531.75	222.55	1,126.94	-
Financial assets:						
Investments	8	0.01	0.01	0.01	0.01	-
Other financial assets	9	26,667.42	9,009.17	7,465.08	18.88	-
Deferred tax assets (net)	24B	822.78	352.92	643.79	243.23	-
Current tax assets (net)	10A	1,641.00	1,280.47	1,009.01	541.94	-
Other non-current assets	11	839.53	97.03	146.13	120.18	-
Total non-current assets		**2,68,769.99**	**2,36,045.88**	**2,54,292.25**	**2,23,483.23**	**-**
Current assets						
Inventories	12	415.08	313.93	346.54	223.64	-
Financial assets:						
Investments	12A	-	11,393.73	-	13,527.76	-
Trade receivables	13	2,396.51	2,070.31	1,636.71	600.79	-
Cash and cash equivalents	14	7,501.28	350.09	8,467.08	2,416.84	-
Bank balances other than cash and cash equivalents	15	4,667.05	3,470.00	6,091.68	3,593.98	-
Other financial assets	16	17,504.10	9,648.72	7,936.75	1,808.76	-
Current tax assets (net)	10A	-	0.80	0.02	-	-
Other current assets	17	1,262.46	1,354.23	1,230.52	602.42	0.24
Total current assets		**33,746.48**	**28,601.81**	**25,709.30**	**22,774.19**	**0.24**
Assets held for sale	18	3.66	-	-	0.10	-
Total assets		**3,02,520.13**	**2,64,647.69**	**2,80,001.55**	**2,46,257.52**	**0.24**
EQUITY AND LIABILITIES						
EQUITY						
Unit Capital	19	1,34,396.03	1,37,183.89	1,37,183.89	1,44,773.67	-
Other equity	20A	(17,619.15)	(12,231.43)	(15,969.77)	(15,284.29)	(289.96)
Distribution-Repayment of Capital	20B	(10,361.08)	(3,477.42)	(6,840.23)	-	-
Equity attributable to Non-controlling interests	20C	0.74	0.58	0.66	0.53	-
Total unit holder's equity		**1,06,416.54**	**1,21,475.62**	**1,14,374.55**	**1,29,489.91**	**(289.96)**
LIABILITIES						
Non-current liabilities						
Financial liabilities						
Borrowings	21	1,73,852.76	1,22,505.10	1,46,296.27	1,02,630.24	-
Other financial liabilities	22	2.11	133.56	114.17	185.09	-
Provisions	23	5,978.17	3,459.42	4,390.01	2,338.04	-
Deferred tax liabilities (net)	24A	3,627.96	1,050.34	2,289.14	311.81	-
Total non-current liabilities		**1,83,461.00**	**1,27,148.42**	**1,53,089.59**	**1,05,465.18**	**-**
Current liabilities						
Financial liabilities						
Borrowings	25	5,122.29	4,496.59	4,850.58	4,722.49	-
Trade payables	26					
- total outstanding dues of micro enterprises and small enterprises		1,046.30	382.05	937.36	273.52	-
- total outstanding dues of creditors other than micro enterprises and small enterprises		1,271.73	1,553.50	1,290.25	1,372.02	265.97
Other financial liabilities	27	1,640.82	6,861.09	1,536.54	1,407.31	-
Other current liabilities	28	175.42	139.11	283.74	214.69	24.23
Provisions	29	3,371.32	2,583.23	3,638.94	3,312.38	-
Current tax liabilities (net)	10B	14.71	8.08	-	0.02	-
Total current liabilities		**12,642.59**	**16,023.65**	**12,537.41**	**11,302.43**	**290.20**
Total liabilities		**1,96,103.59**	**1,43,172.07**	**1,65,627.00**	**1,16,767.61**	**290.20**
Total equity and liabilities		**3,02,520.13**	**2,64,647.69**	**2,80,001.55**	**2,46,257.52**	**0.24**

The above Consolidated Balance Sheet should be read in conjunction with the accompanying notes 1 to 73

As per our report of even date attached

For S.B. Billimoria & Co. LLP
Chartered Accountants

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(in its capacity as the Investment Manager of Cube Highways Trust)

Pramod B. Shukla
Partner
Place: Gurugram
Date: December 05, 2025

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: December 05, 2025

Vinay Chandramouli Sekar
Chief Executive Officer

Place: Gurugram
Date: December 05, 2025

Pankaj Vasani
Chief Financial Officer

Place: Mumbai
Date: December 05, 2025

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: December 05, 2025

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Statement of Profit and Loss for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

	Notes	For the half year ended September 30, 2025 (Audited)	For the half year ended September 30, 2024 (Audited)	For the year ended March 31, 2025 (Audited)	For the year ended March 31, 2024 (Audited)	For the year ended March 31, 2023 (Audited)
Income						
Revenue from operations	30	19,958.97	16,115.97	33,071.44	29,161.37	-
Other income	31	692.62	774.58	1,460.08	1,579.68	-
Total income		**20,651.59**	**16,890.55**	**34,531.52**	**30,741.05**	**-**
Expenses						
Cost of construction	32	112.72	411.81	634.14	4,025.77	-
Operation and maintenance expenses	33	3,870.75	3,709.25	7,554.62	5,046.42	-
Employee benefits expense	34	346.01	244.44	514.68	429.66	-
Finance costs	36	7,471.31	5,372.68	11,171.01	8,731.29	-
Depreciation and amortisation expense	37	7,084.72	6,397.72	13,129.12	11,825.72	-
Impairment of intangible assets	62	-	-	-	5,871.87	-
Other expenses	35	1,205.74	881.96	2,031.08	1,678.77	277.88
Total expenses		**20,091.25**	**17,017.86**	**35,034.65**	**37,609.50**	**277.88**
Profit/(loss) before tax		**560.34**	**(127.31)**	**(503.13)**	**(6,868.45)**	**(277.88)**
Less: Tax expense/(income)	39					
Current tax		221.45	164.29	367.11	287.41	-
Tax for earlier years		4.52	-	18.54	5.40	-
Deferred tax		(72.48)	(31.24)	(531.58)	(102.11)	-
Total Tax Expense/(income)		**153.49**	**133.05**	**(145.93)**	**190.70**	**-**
Profit/(loss) after tax for the half year/year		**406.85**	**(260.36)**	**(357.20)**	**(7,059.15)**	**(277.88)**
Other comprehensive income						
Items that will not be reclassified to profit or loss						
Re-measurement (losses)/gains on defined benefit obligations		(0.36)	(1.06)	0.70	0.35	-
Income tax relating to these items		(0.12)	(0.01)	(0.15)	0.10	-
Total other comprehensive income/(loss) for the half year/year		**(0.48)**	**(1.07)**	**0.55**	**0.45**	**-**
Total comprehensive income/(loss) for the half year/year		**406.37**	**(261.43)**	**(356.65)**	**(7,058.70)**	**(277.88)**
Net Income/(loss) for the half year/year						
Attributable to:						
Unit holders		406.77	(260.41)	(357.33)	(7,059.22)	(277.88)
Non controlling interests		0.08	0.05	0.13	0.07	-
Total comprehensive income/(loss) for the half year/year						
Attributable to:						
Unit holders		406.29	(261.48)	(356.78)	(7,058.77)	(277.88)
Non controlling interests		0.08	0.05	0.13	0.07	-
Earnings per unit (Face value Rs. 100/- per unit)	38					
Basic (Rs. absolute amount)		0.30	(0.20)	(0.27)	(5.72)	-
Diluted (Rs. absolute amount)		0.30	(0.20)	(0.27)	(5.72)	-

The above Consolidated Statement of Profit and Loss should be read in conjunction with the accompanying notes 1 to 73
As per our report of even date attached

For S.B. Billimoria & Co. LLP
Chartered Accountants

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(in its capacity as the Investment Manager of Cube Highways Trust)

Pramod B. Shukla
Partner
Place: Gurugram
Date: December 05, 2025

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: December 05, 2025

Vinay Chandramouli Sekar
Chief Executive Officer

Place: Gurugram
Date: December 05, 2025

Pankaj Vasani
Chief Financial Officer

Place: Mumbai
Date: December 05, 2025

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: December 05, 2025

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Statement of Changes in Unit Holder's Equity for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

A Unit Capital

i) Ordinary unit capital

Particulars	Unit in Nos.	Amount
Balance as at April 01, 2025	1,33,44,48,362	1,33,433.89
Add: Units issued during the half year	-	-
Add:Subordinate units reclassified to Ordinary units during the half year (Refer note 65)	96,21,400	962.14
Balance as at September 30, 2025	**1,34,40,69,762**	**1,34,396.03**
Balance as at April 01, 2024	1,29,03,46,112	1,29,023.67
Add: Units issued during the half year	-	-
Add: Subordinate units reclassified to Ordinary units during the half year (Refer note 64)	4,41,02,250	4,410.22
Balance as at September 30, 2024	**1,33,44,48,362**	**1,33,433.89**
Balance as at April 01, 2024	1,29,03,46,112	1,29,023.67
Add: Units issued during the year	-	-
Add: Subordinate units reclassified to Ordinary units during the year (Refer note 64)	4,41,02,250	4,410.22
Balance as at March 31, 2025	**1,33,44,48,362**	**1,33,433.89**
Balance as at April 01, 2023	-	-
Add: Units issued during the year (Refer note 19)	1,29,03,46,112	1,29,034.61
Less: Issue expenses	-	(10.94)
Balance as at March 31, 2024	**1,29,03,46,112**	**1,29,023.67**
Balance as at April 01, 2022	-	-
Add: Units issued during the year	-	-
Balance as at March 31, 2023	**-**	**-**

ii) Subordinate unit capital

Particulars	Unit in Nos.	Amount
Balance as at April 01, 2025	3,75,00,000	3,750.00
Add: Units issued during the half year	-	-
Less:Subordinate units reclassified to Ordinary units during the half year (Refer note 65)	(96,21,400)	(962.14)
Less:Subordinate units extinguished during the half year (Refer note 65)	(2,78,78,600)	(2,787.86)
Balance as at September 30, 2025	**-**	**-**
Balance as at April 01, 2024	15,75,00,000	15,750.00
Add: Units issued during the half year	-	-
Less:Subordinate units reclassified to Ordinary units during the half year (Refer note 64)	(4,41,02,250)	(4,410.22)
Less:Subordinate units extinguished during the half year (Refer note 64)	(7,58,97,750)	(7,589.78)
Balance as at September 30, 2024	**3,75,00,000**	**3,750.00**
Balance as at April 01, 2024	15,75,00,000	15,750.00
Add: Units issued during the year	-	-
Less:Subordinate units reclassified to Ordinary units during the year (Refer note 64)	(4,41,02,250)	(4,410.22)
Less:Subordinate units extinguished during the year (Refer note 64)	(7,58,97,750)	(7,589.78)
Balance as at March 31, 2025	**3,75,00,000**	**3,750.00**
Balance as at April 01, 2023	-	-
Add: Units issued during the year (Refer note 19)	15,75,00,000	15,750.00
Less: Issue expenses	-	-
Balance as at March 31, 2024	**15,75,00,000**	**15,750.00**
Balance as at April 01, 2022	-	-
Add: Units issued during the year	-	-
Balance as at March 31, 2023	**-**	**-**

iii)	**Total Unit Capital as at September 30, 2025 (i+ii)**	**1,34,396.03**
	Total Unit Capital as at September 30, 2024 (i+ii)	**1,37,183.89**
	Total Unit Capital as at March 31, 2025 (i+ii)	**1,37,183.89**
	Total Unit Capital as at March 31, 2024 (i+ii)	**1,44,773.67**
	Total Unit Capital as at March 31, 2023 (i+ii)	**-**

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CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Statement of Changes in Unit Holder's Equity for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

B Other equity

Particulars	Capital reserve	Retained earnings	Total attributable to Unitholders of the Trust	Attributable to Non-Controlling Interest	Total
Balance as at April 01, 2025	**7,589.78**	**(23,559.55)**	**(15,969.77)**	**0.66**	**(15,969.11)**
Subordinate units extinguished during the half year	2,787.86	-	**2,787.86**	-	**2,787.86**
Profit for the half year	-	406.77	**406.77**	0.08	**406.85**
Other comprehensive income/(loss):					
Re-measurement loss on defined benefit obligations (net of income tax) for the half year	-	(0.48)	**(0.48)**	-	**(0.48)**
Total comprehensive Income for the half year	**-**	**406.29**	**406.29**	**0.08**	**406.37**
Distribution during the quarter ended June 30, 2025	-	(3,055.89)	(3,055.89)	-	**(3,055.89)**
Distribution during the quarter ended September 30, 2025	-	(1,787.64)	(1,787.64)	-	**(1,787.64)**
Balance as at September 30, 2025	**10,377.64**	**(27,996.79)**	**(17,619.15)**	**0.74**	**(17,618.41)**

Particulars	Capital reserve	Retained earnings	Total attributable to Unitholders of the Trust	Attributable to Non-Controlling Interest	Total
Balance as at April 01, 2024	**-**	**(15,284.29)**	**(15,284.29)**	**0.53**	**(15,283.76)**
Subordinate units extinguished during the half year	7,589.78	-	**7,589.78**	**-**	**7,589.78**
Loss for the half year	**-**	(260.41)	**(260.41)**	0.05	**(260.36)**
Other comprehensive income/(loss):		-			**-**
Re-measurement loss on defined benefit obligations (net of income tax) for the half year	**-**	(1.07)	**(1.07)**	-	**(1.07)**
Total comprehensive loss for the half year	**-**	**(261.48)**	**(261.48)**	**0.05**	**(261.43)**
Distribution during the quarter ended June 30, 2024	-	(2,580.69)	(2,580.69)	-	**(2,580.69)**
Distribution during the quarter ended September 30, 2024	-	(1,694.75)	(1,694.75)	-	**(1,694.75)**
Balance as at September 30, 2024	**7,589.78**	**(19,821.21)**	**(12,231.43)**	**0.58**	**(12,230.85)**

Particulars	Capital reserve	Retained earnings	Total attributable to Unitholders of the Trust	Attributable to Non-Controlling Interest	Total
Balance as at April 01, 2024	**-**	**(15,284.29)**	**(15,284.29)**	**0.53**	**(15,283.76)**
Subordinate units extinguished during the year	7,589.78	**-**	**7,589.78**	**-**	**7,589.78**
Loss for the year	**-**	(357.33)	**(357.33)**	0.13	**(357.20)**
Other comprehensive income/(loss):					**-**
Re-measurement loss on defined benefit obligations (net of income tax) for the year	**-**	0.55	**0.55**	-	**0.55**
Total comprehensive loss for the year	**-**	**(356.78)**	**(356.78)**	**0.13**	**(356.65)**
Distribution during the quarter ended June 30, 2024	-	(2,580.69)	(2,580.69)	-	**(2,580.69)**
Distribution during the quarter ended September 30, 2024	-	(1,694.75)	(1,694.75)	-	**(1,694.75)**
Distribution during the quarter ended December 31, 2024	-	(1,721.44)	(1,721.44)	-	**(1,721.44)**
Distribution during the quarter ended March 31, 2025	-	(1,921.60)	(1,921.60)	-	**(1,921.60)**
Balance as at March 31, 2025	**7,589.78**	**(23,559.55)**	**(15,969.77)**	**0.66**	**(15,969.11)**

Particulars	Capital reserve	Retained earnings	Total attributable to Unitholders of the Trust	Attributable to Non-Controlling Interest	Total
Balance as at April 01, 2023	**-**	**(289.96)**	**(289.96)**	**-**	**(289.96)**
Additions on account of acquisition (Refer note 50)	-	-	-	0.46	**0.46**
Loss for the year	-	(7,059.15)	(7,059.15)	0.07	**(7,059.08)**
Other comprehensive income/(loss):					
Re-measurement loss on defined benefit obligations (net of income tax) for the year	-	0.45	0.45	-	**0.45**
Total comprehensive loss for the year	**-**	**(7,058.70)**	**(7,058.70)**	**0.53**	**(7,058.17)**
Distribution during the quarter ended June 30, 2023	-	-	-	-	**-**
Distribution during the quarter ended September 30, 2023		(2,774.25)	(2,774.25)	-	**(2,774.25)**
Distribution during the quarter ended December 31, 2023		(2,580.69)	(2,580.69)	-	**(2,580.69)**
Distribution during the quarter ended March 31, 2024		(2,580.69)	(2,580.69)	-	**(2,580.69)**
Balance as at March 31, 2024	**-**	**(15,284.29)**	**(15,284.29)**	**0.53**	**(15,283.76)**

Particulars	Capital reserve	Retained earnings	Total attributable to Unitholders of the Trust	Attributable to Non-Controlling Interest	Total
Balance as at April 01, 2022	**-**	**(12.08)**	**(12.08)**	**-**	**(12.08)**
Loss for the year	-	(277.88)	(277.88)	-	**(277.88)**
Other comprehensive income/(loss):			-		
Re-measurement loss on defined benefit obligations (net of income tax) for the year	-	-	-	-	**-**
Total comprehensive loss for the year	**-**	**(277.88)**	**(277.88)**	**-**	**(277.88)**
Distribution during the year	-	-	-	-	**-**
Balance as at March 31, 2023	**-**	**(289.96)**	**(289.96)**	**-**	**(289.96)**

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CUBE HIGHWAYS TRUST
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SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Statement of Changes in Unit Holder's Equity for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

C Distribution-Repayment of Capital [(ii)]

Particulars	Total
Balance as at April 01, 2025	**(6,840.23)**
Distribution during the quarter ended June 30, 2025	(1,948.29)
Distribution during the quarter ended September 30, 2025	(1,572.56)
Balance as at September 30, 2025	**(10,361.08)**
Balance as at April 01, 2024	-
Distribution during the quarter ended June 30, 2024	(2,503.27)
Distribution during the quarter ended September 30, 2024	(974.15)
Balance as at September 30, 2024	**(3,477.42)**
Balance as at April 01, 2024	-
Distribution during the quarter ended June 30, 2024	(2,503.27)
Distribution during the quarter ended September 30, 2024	(974.15)
Distribution during the quarter ended December 31, 2024	(947.46)
Distribution during the quarter ended March 31, 2025	(2,415.35)
Balance as at March 31, 2025	**(6,840.23)**
Balance as at April 01, 2023	-
Distribution during the year	-
Balance as at March 31, 2024	**-**
Balance as at April 01, 2022	-
Distribution during the year	-
Balance as at March 31, 2023	**-**

Notes:

(i) The distributions made by the Trust to its unitholders are based on the Net Distributable Cash Flows (NDCFs) of the Trust under the InvIT Regulations. Refer Note 63 for distribution to Unitholders for distribution made during the respective periods.

(ii) As the Trust had reduced the Retained Earnings (under Other Equity) for the amount of NDCF distribution in the nature of repayment of capital in past periods, in terms of Clause 4.2.8(b) of the SEBI Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, the Trust is required to regroup the figures for Retained Earnings (under Other Equity) for prior periods presented in the Standalone Financial Statements and shown the same as a separate line item on the face of Consolidated Balance Sheet. Accordingly the Trust has regrouped Repayment of Capital from Retained earnings to Distribution-Repayment of Capital.

The above Consolidated Statement of Changes in Unit Holder's Equity should be read in conjunction with the accompanying notes 1 to 73

As per our report of even date attached

For S.B. Billimoria & Co. LLP
Chartered Accountants

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(in its capacity as the Investment Manager of Cube Highways Trust)

Pramod B. Shukla
Partner
Place: Gurugram
Date: December 05, 2025

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: December 05, 2025

Vinay Chandramouli Sekar
Chief Executive Officer
Place: Gurugram
Date: December 05, 2025

Pankaj Vasani
Chief Financial Officer
Place: Mumbai
Date: December 05, 2025

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: December 05, 2025

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Statement of Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

	For the half year ended September 30, 2025 (Audited)	For the half year ended September 30, 2024 (Audited)	For the year ended March 31, 2025 (Audited)	For the year ended March 31, 2024 (Audited)	For the year ended March 31, 2023 (Audited)
A. Cash flows from operating activities					
Profit/ (Loss) before tax	560.34	(127.31)	(503.13)	(6,868.45)	(277.88)
Adjustments for:					
Depreciation and amortisation expense	7,084.72	6,397.72	13,129.12	11,825.72	-
Loss on remeasurement of Contingent Consideration	23.76	-	-	-	-
Loss on sale/write-off of property, plant and equipment (net)	0.09	0.35	0.62	1.91	-
Net gain on sale of mutual funds	(235.21)	(308.32)	(771.34)	(719.07)	-
Net gain on investments measured at fair value through profit or loss	-	(186.72)	-	(296.31)	-
Liabilities no longer required written back	(42.26)	(28.96)	(76.53)	(79.00)	-
Reversal of impairment loss allowance on trade receivables	(17.63)	-	-	-	-
Interest income	(288.75)	(209.12)	(403.34)	(435.04)	-
Interest on income tax refund	(16.57)	(6.44)	(30.99)	(8.28)	-
Impairment of intangible assets	-	-	-	5,871.87	-
Impairment loss allowance on financial assets (including write-offs)	57.07	-	27.47	59.74	-
Allowance for doubtful advances	-	-	12.31	-	-
Finance costs	7,471.31	5,372.68	11,171.01	8,731.29	-
Operating cash flows before working capital changes and other adjustments	**14,596.87**	**10,903.88**	**22,555.20**	**18,084.38**	**(277.88)**
Working capital changes and other adjustments:					
Increase in inventories	(68.54)	(37.03)	(61.88)	(64.03)	-
Decrease/(Increase) in trade receivables	(795.37)	116.07	542.58	151.16	-
Decrease/(Increase) in financial assets and non financial assets	3,435.59	(203.54)	4,363.99	1,605.42	(0.24)
(Decrease)/Increase in trade payables	(11.64)	8.18	282.88	(597.79)	253.89
Increase in provisions	1,364.07	452.98	1,570.82	2.39	-
(Decrease)/Increase in financial liabilities and non financial liabilities	(477.08)	(361.02)	1.53	(114.97)	24.23
Cash flow generated from operating activities post working capital changes	**18,043.90**	**10,879.52**	**29,255.12**	**19,066.56**	**-**
Income tax (paid)/ refund (net)	(397.80)	(163.03)	(91.54)	(367.10)	-
Net cash generated from operating activities (A)	**17,646.10**	**10,716.49**	**29,163.58**	**18,699.46**	**-**
B. Cash flows from investing activities					
Payment towards property, plant and equipment & intangible assets (after adjustment of increase/decrease in capital work-in progress, intangible assets under development (net)	(499.94)	(906.49)	(1,928.97)	(5,107.58)	-
Proceeds from sale of property, plant and equipment	-	0.94	115.93	(1.91)	-
Movement in bank balances (including deposits) not considered as cash and cash equivalents (net)	5,386.09	1,142.35	(738.53)	(3,287.78)	-
Consideration paid for acquisition of Subsidiaries	(10,112.88)	(5,395.31)	(17,884.00)	-	-
Investment/(redemption) from mutual funds (net)	235.21	4,729.05	16,841.17	(2,187.13)	-
Interest received	291.49	333.22	574.98	255.51	-
Net cash used in investing activities (B)	**(4,700.03)**	**(96.24)**	**(3,019.42)**	**(10,328.89)**	**-**
C. Cash flows from financing activities					
Proceeds from issue of unit capital	-	-	-	38,025.92	-
Expense incurred towards issue of units	-	-	-	(10.94)	-
Proceeds from long term borrowings	41,720.00	22,480.00	48,790.00	1,08,800.00	-
Proceeds from short term borrowings	13,292.87	-	-	-	-
Repayment of long term borrowings	(44,774.01)	(22,850.23)	(44,094.23)	(1,33,798.23)	-
Repayment of short term borrowings	(13,292.87)	-	-	-	-
Processing Fees paid	(146.02)	(106.23)	(208.36)	(638.00)	-
Interest paid (including interest capitalised)	(7,444.66)	(5,857.03)	(11,593.73)	(16,683.62)	-
Payment of distributions to unitholders	(8,364.38)	(7,752.86)	(14,758.71)	(7,935.63)	-
Net cash used in financing activities (C)	**(19,009.07)**	**(14,086.35)**	**(21,865.03)**	**(12,240.50)**	**-**
D. Net increase/(decrease) in cash and cash equivalents (A+B+C)	**(6,063.00)**	**(3,466.10)**	**4,279.13**	**(3,869.93)**	**-**
E. Cash and cash equivalents at the beginning of the half year/ year	8,163.86	2,415.24	2,415.24	-	-
Cash and cash equivalents acquired on asset acquisition (Refer Note 50)	4,877.55	1,400.95	1,469.49	6,285.17	-
Cash and cash equivalents at the end of the half year/year (D+E) (Refer reconciliation below)	**6,978.41**	**350.09**	**8,163.86**	**2,415.24**	**-**
Reconciliation of cash and cash equivalents as per Consolidated Statement of Cash Flows					
Cash and cash equivalents comprise of following:					
Cash and cash equivalents [Refer note 14]	7,501.28	350.09	8,467.08	2,416.84	-
Less: Earmarked balances [Refer note 14]	(522.87)	-	(303.22)	(1.60)	-
As per Consolidated Statement of Cash Flows	**6,978.41**	**350.09**	**8,163.86**	**2,415.24**	**-**

Notes:

(i) The above Consolidated Statement of Cash Flows has been prepared under the 'Indirect Method' as set out in Ind AS 7, 'Statement of Cash Flows'.

(ii) During the half year ended September 30, 2025 , there was reclassification of 9.62 million (September 30, 2024: 44.10 million, March 31, 2025 : 44.10 million , March 31, 2024: Nil and March 31, 2023: Nil) Subordinate Units to Ordinary Units and extinguishment of 27.87 million (September 30, 2024: 75.90 million, March 31, 2025 : 75.90 million , March 31, 2024: Nil and March 31, 2023: Nil)) Subordinate Units. These transactions being the non cash transaction have been excluded from Consolidated Statement of Cash Flows.

(iii) The working capital changes and other adjustments excludes those arising on the date of asset acquisitions.

(iv) The Trust has issued units in exchange for equity interest in SPVs (Refer note 19(a)(i)) during the year ended March 31, 2024. The same has not been reflected in Consolidated Statement of Cash Flow since these were non-cash transaction.

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CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Statement of Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

(iv) Changes in financial liabilities arising from financing activities

For the half year ended September 30, 2025 (Audited)

Particulars	Balance as at April 01, 2025	Addition on account of acquisition (refer note 50)	Cash flows from financing activities		Processing fees Paid	Non-cash Adjustment	Balance as at September 30, 2025
			Inflow	Outflow			
Long Term Borrowings							
Term loan	1,19,035.52	28,508.40	22,000.00	(41,982.31)	(109.44)	166.75	1,27,618.92
Non Convertible Debentures, Debt Securities and Optionally Convertible Debentures	31,960.34	2,346.87	19,720.00	(2,791.70)	(36.58)	6.21	51,205.14
Other long term borrowings	150.99	-	-	-	-	-	150.99
TOTAL (A)	**1,51,146.85**	**30,855.27**	**41,720.00**	**(44,774.01)**	**(146.02)**	**172.96**	**1,78,975.05**
Short Term Borrowings							
Commercial Papers	-	-	13,292.87	(13,292.87)	-	-	-
TOTAL (B)	**-**	**-**	**13,292.87**	**(13,292.87)**	**-**	**-**	**-**
Total liabilities from financing activities (A+B)	**1,51,146.85**	**30,855.27**	**55,012.87**	**(58,066.88)**	**(146.02)**	**172.96**	**1,78,975.05**

For the half year ended September 30, 2024 (Audited)

Particulars	Balance as at April 01, 2024	Addition on account of acquisition (refer note 50)	Cash flows from financing activities		Processing fees Paid	Non-cash Adjustment	Balance as at September 30, 2024
			Inflow	Outflow			
Long Term Borrowings							
Term loan	95,119.30	6,639.20	16,000.00	(8,473.47)	(101.13)	30.24	1,09,214.14
Non Convertible Debentures, Debt Securities and Optionally Convertible Debentures	12,082.44	13,454.08	6,480.00	(14,376.76)	(5.10)	1.90	17,636.56
Other long term borrowings	150.99	-	-	-	-	-	150.99
TOTAL (A)	**1,07,352.73**	**20,093.28**	**22,480.00**	**(22,850.23)**	**(106.23)**	**32.14**	**1,27,001.69**
Short Term Borrowings							
Loans from others	-		-	-		-	-
TOTAL (B)	**-**		**-**	**-**		**-**	**-**
Total liabilities from financing activities	**1,07,352.73**	**20,093.28**	**22,480.00**	**(22,850.23)**	**(106.23)**	**32.14**	**1,27,001.69**

For the year ended March 31, 2025 (Audited)

Particulars	Balance as at April 01, 2024	Addition on account of acquisition (refer note 50)	Cash flows from financing activities		Processing fees Paid	Non-cash Adjustment	Balance as at March 31, 2025
			Inflow	Outflow			
Long Term Borrowings							
Term loan	95,119.30	10,966.86	27,710.00	(14,657.02)	(163.29)	59.67	1,19,035.52
Non Convertible Debentures, Debt Securities and Optionally Convertible Debentures	12,082.44	28,271.26	21,080.00	(29,437.21)	(45.07)	8.92	31,960.34
Other long term borrowings	150.99	-	-	-	-	-	150.99
TOTAL (A)	**1,07,352.73**	**39,238.12**	**48,790.00**	**(44,094.23)**	**(208.36)**	**68.59**	**1,51,146.85**
Short Term Borrowings							
Loans from others	-		-	-		-	-
TOTAL (B)	**-**		**-**	**-**		**-**	**-**
Total liabilities from financing activities	**1,07,352.73**	**39,238.12**	**48,790.00**	**(44,094.23)**	**(208.36)**	**68.59**	**1,51,146.85**

For the year ended March 31, 2024 (Audited)

Particulars	Balance as at March 31, 2023	Addition on account of acquisition (refer note 50)	Cash flows from financing activities		Processing fees Paid	Non-cash Adjustment	Balance as at March 31, 2024
			Inflow	Outflow			
Long Term Borrowings							
Term loan	-	64,115.33	98,500.00	(66,973.38)	(609.02)	86.37	95,119.30
Non Convertible Debentures, Debt Securities and Optionally Convertible Debentures	-	68,359.81	10,300.00	(66,554.85)	(28.98)	6.46	12,082.44
Other long term borrowings	-	419.28	-	(270.00)	-	1.71	150.99
Total liabilities from financing activities	**-**	**1,32,894.42**	**1,08,800.00**	**(1,33,798.23)**	**(638.00)**	**94.54**	**1,07,352.73**

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/22-23/0022
Consolidated Statement of Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

Changes in financial liabilities arising from financing activities (Continued.)

For the year ended March 31, 2023 (Audited)

Particulars	Balance as at April 01, 2022	Addition on account of acquisition (refer note 50)	Cash flows from financing activities		Processing fees Paid	Non-cash Adjustment	Balance as at March 31, 2023
			Inflow	Outflow			
Long Term Borrowings							
Term loan	-	-	-	-	-	-	-
Non Convertible Debentures, Debt Securities and Optionally Convertible Debentures	-	-	-	-	-	-	-
Other long term borrowings	-	-	-	-	-	-	-
Total liabilities from financing activities	**-**	**-**	**-**	**-**	**-**	**-**	**-**

The above Consolidated Statement of Cash Flows should be read in conjunction with the accompanying notes 1 to 73

As per our report of even date attached

For S.B. Billimoria & Co. LLP
Chartered Accountants

Pramod B. Shukla
Partner
Place: Gurugram
Date: December 05, 2025

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(in its capacity as the Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: December 05, 2025

Vinay Chandramouli Sekar
Chief Executive Officer

Place: Gurugram
Date: December 05, 2025

Pankaj Vasani
Chief Financial Officer

Place: Mumbai
Date: December 05, 2025

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: December 05, 2025

Cube Highways Trust
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

Disclosures as required by section F of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

A Statement of Net Distributable Cash Flows (NDCFs) of the Cube Highways Trust

Particulars	Half Year		Year ended
	September 30, 2025 (Audited)	September 30, 2024 (Audited)	March 31, 2025 (Audited)
Cashflows from operating activities of the Trust	**(372.32)**	**(237.26)**	**(628.18)**
(+) Cash flows received from SPV's/ Investment entities which represent distributions of NDCF computed as per relevant framework (Refer note i)	17,261.43	11,462.29	26,536.85
(+) Treasury income / income from investing activities of the Trust (interest income received from FD, any investment entities as defined in Regulation 18(5), tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis) (refer note iii)	50.55	77.86	98.05
(+) Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs/Holdcos or Investment Entity adjusted for the following Applicable capital gains and other taxes Related debts settled or due to be settled from sale proceeds Directly attributable transaction costs Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-
(+) Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs/ Hold cos or Investment Entity not distributed pursuant to an earlier plan to re-invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-
(-) Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss account of the Trust	(6,765.40)	(5,025.92)	(10,593.82)
(-) Debt repayment at Trust level (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt in any form or funds raised through issuance of units)	(2,563.34)	(2,039.95)	(4,139.09)
(-) any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with financial institution, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, or (iv). agreement pursuant to which the Trust operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations; or	(126.16)	(450.00)	(450.00)
(-) any capital expenditure on existing assets owned / leased by the InvIT, to the extent not funded by debt / equity or from contractual reserves created in the earlier years	-	-	-
NDCF at Trust Level	**7,484.76**	**3,787.02**	**10,823.81**

Notes:

i) This includes Rs. 3,900.89 million received from SPVs after September 30, 2025 but before the date of the Board meeting for adoption of the unaudited financial information for the quarter and half year ended September 30, 2025 i.e. October 30, 2025, and excludes Rs. 3,171.92 million received from SPVs during the current half year and had been considered for computation of NDCF for the quarter ended March 31, 2025.

ii) Subsequent to the quarter ended September 30, 2025, the Board of Directors of the Investment Manager in its meeting dated October 30, 2025 approved a distribution of Rs. 3.60 per unit aggregating Rs. 4,838.65 million for the quarter ended September 30, 2025. This distribution is subsequently paid. This includes Rs. 716.49 million from surplus cash available with the Trust on or after acquisition of the SPVs by the Trust.

iii) Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

iv) In accordance with the SEBI circular no SEBI/HO/DDHS-PoD-2/P/CIR/2024/44 dated May 15, 2024, the framework for computation of Net Distributable cash flows ("NDCF") is revised with effect from April 01, 2024. Accordingly NDCF for the periods on or before March 31, 2024 was calculated and presented as per the earlier framework.

Cube Highways Trust
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

Disclosures as required by section F of chapter 3 to the Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2023/115 dated July 06, 2023

Statement of Net Distributable Cash Flows (NDCFs) of the Cube Highways Trust-Contd.

Particulars	**For the year ended March 31, 2024**
Cash flows received from the SPVs in the form of:	
-Interest (net of applicable taxes, if any)	15,558.12
-Dividend (net of applicable taxes, if any)	1,513.26
-Repayment of the debt issued to the SPVs by the Trust or redemption of debentures issued by the SPVs to the Trust	3,054.20
Add: Proceeds from the SPVs for any capital reduction / buy back / redemption subject to Applicable Laws (net of applicable Taxes, if any)	-
Add: Proceeds from sale or transfer or liquidation or redemption or otherwise realization of investments, assets or shares of/interest in SPVs (net of applicable taxes and / or directly attributable transaction costs , if any)	-
Add: Proceeds from sale of assets of the SPVs not distributed pursuant to an earlier plan to re-invest, if such proceeds are not intended to be invested subsequently	-
Add: Any other income accruing at the Trust level and not captured above, including but not limited to interest / return on surplus cash invested by the Trust	119.75
Total cash inflow at the Trust level (A)	**20,245.33**
Less: Any payment of fees, interest and expense incurred at the Trust level, including but not limited to the Investment Manager fees, security trustee fees, annual fees for traffic, technical and other studies and fees for annual valuation.	(8,696.53)
Less: Any capital expenditure at any SPV level where sufficient cash is not available	-
Less: Costs/retention associated with sale of assets of the SPVs, including transaction costs paid on sale of the assets of the SPVs	-
Add: Additional borrowings (including debentures / other securities) adjusted for the following:[(1)]	1,46,176.98
any prepayment of borrowings if deemed necessary by the Investment Manager;	-
any identified end use as specified in the lender agreement or as deemed necessary by the Investment Manager.	-
Less: Repayment of external debt	(3,069.92)
Less: Income tax (if applicable) at the Standalone Trust Level (including capital gains taxes on sale of assets / share in SPVs / other investments) (net of any tax refunds)	(51.17)
Less: Related debts settled or due to be settled from sale proceeds of SPVs	-
Less: Investment in shares or debentures of SPVs or other similar investments or lending to SPVs [(2)]	(1,43,842.92)
Less: Proceeds reinvested or planned to be reinvested in accordance with Regulation 18(7)(a) of the InvIT Regulations	-
Less: Net cash set aside (i) to comply with reserve requirements under the loan agreements (including but not limited to DSRA and MMRA) adjusted for amount released from DSRA/MMRA or any other reserve in lieu of providing bank guarantee, and/or (ii) on a prudential basis for repayments of borrowings etc., as appropriate.	-
Less: Any cash reserve deemed necessary by the IM Board for expenses which may be due but for which there may not be commensurate cash available by the date such expenses become due	-
Less: Any other adjustment to be undertaken by the Investment Manager to ensure that there is no double counting of the same item for the above calculations	-
Total Adjustments (B)	**(9,483.56)**
Net Distributable Cash Flows (C) = (A+B) [(3)]	**10,761.77**

Notes:

(1) Includes proceeds from issue of Ordinary Unit Capital (net of issue expenses) and excludes processing costs.
(2) Includes Subordinate loan of Rs. 3,083.20 million being given to NKTPL (SPV) for maintaining Debt Service Reserve Account (DSRA) at InvIT level.
(3) The difference between SPV level NDCF and InvIT level NDCF is primarily on account of utilization of opening cash at the SPV level.
(4) The Trust has issued units on April 17, 2023, hence the NDCF is not presented for the year ended March 31, 2023.

The above Statement of Net Distributable Cash Flows (NDCFs) should be read in conjunction with the accompanying notes 1 to 73

As per our report of even date attached

For S.B. Billimoria & Co. LLP
Chartered Accountants

Pramod B. Shukla
Partner
Place: Gurugram
Date: December 05, 2025

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(the "Investment Manager" in its capacity as the Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: December 05, 2025

Vinay Chandramouli Sekar
Chief Executive Officer
Place: Gurugram
Date: December 05, 2025

Pankaj Vasani
Chief Financial Officer
Place: Mumbai
Date: December 05, 2025

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: December 05, 2025

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
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Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2025 to September 30, 2025 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL	MKTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**658.49**	**462.94**	**316.11**	**337.11**	**463.26**	**282.88**	**717.75**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	7.76	3.36	5.45	3.02	1.98	13.03	4.01
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.08)	(0.47)	(0.91)	(2.18)	(1.91)	(0.78)	(2.12)
Net Distributable Cash Flows	**666.17**	**465.83**	**320.65**	**337.95**	**463.33**	**295.13**	**719.64**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2025 to September 30, 2025 (contd.)

Particulars	NKTPL	SMTPL	NDEPL	APEPL	MBEL	JMTPL	WUPTPL**
Cash flow from operating activities as per Cash Flow Statement of SPV	**347.23**	**365.14**	**447.60**	**561.10**	**397.05**	**908.88**	**558.84**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	59.96	0.99	2.96	9.83	(3.48)	13.97	(7.50)
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(49.63)	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(198.88)	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	(155.33)	(120.12)	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.58)	(1.62)	(1.17)	(0.31)	(0.30)	(0.68)	(0.44)
Net Distributable Cash Flows	**405.61**	**364.51**	**449.39**	**415.29**	**24.64**	**922.17**	**550.90**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

**For the half year ended September 30, 2025, WUPTPL is not able to declare dividend and therefore not able to make distribution as required by SEBI InvIT Regulations to Trust due to negative free reserves and no outstanding debts to the Trust.

WUPTPL has filed a first motion application with the National Company Law Tribunal (NCLT) for reduction and reorganisation of capital under Section 230 read with Section 66 and Section 52 and other applicable provisions of the Companies Act, 2013 in view of significant accumulated losses which has substantially wiped off the value of the Applicant Company represented by its equity share capital, securities premium, deemed capital contribution and Equity Component NCDs. The petition was filed on 22 August, 2025 and an order dispensing the meetings of the shareholders and the creditors was passed by the NCLT on October 07,2025. A second motion with the NCLT is filed on 14 October 2025 for seeking approval of the proposed scheme of capital reduction and reorganisation; which is yet to be heard as of date.

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Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2025 to September 30, 2025 (contd.)

Particulars	GAEPL	WVEPL	FRHPL	DATRPL	BWHPL	SIPL	SPPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**1,653.36**	**448.50**	**1,063.62**	**2,503.85**	**(33.52)**	**445.47**	**496.41**
(+) Opening balance (reserve created earlier years)	-	-	-	-	159.93	45.45	32.58
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	(10.30)	1.98	2.44	11.98	7.04	3.27	7.83
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	(0.01)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	(34.63)	(32.58)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(9.32)	(0.04)	(2.58)	(9.31)	(0.06)	(0.02)	(0.99)
Net Distributable Cash Flows	**1,633.74**	**450.44**	**1,063.48**	**2,506.52**	**133.39**	**459.54**	**503.24**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
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Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2025 to September 30, 2025 (contd.)

Particulars	THPL	MHPL	MSHPL	NAMEL	QEPL***	AJUHPL**
Cash flow from operating activities as per Cash Flow Statement of SPV	**532.69**	**269.11**	**476.41**	**1,353.57**	**2,388.20**	**(386.60)**
(+) Opening balance (reserve created earlier years)	37.58	62.19	53.54	-	-	-
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	12.48	3.44	8.08	107.12	104.17	94.78
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(276.35)	(173.93)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(8.93)	(984.05)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	(29.33)	(62.19)	(62.54)	-	(291.87)	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.10)	(0.41)	(0.06)	(18.11)	(1.44)	(1.31)
Net Distributable Cash Flows	**552.32**	**272.14**	**475.43**	**1,442.58**	**1,913.78**	**(1,451.11)**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

**On account of negative NDCF no reserve is created for expected cash outflows towards operating expenses and statutory dues till receipt of next annuity payment from NHAI.

***Expenses amounting to Rs. 216.49 million (forming part of the cash flow from operations) have been incurred from date of acquisition until the receipt of the first annuity post acquisition. Since annuities are received on a semi-annual basis, these expenses have been considered as funded from the surplus cash available with the entity at the time of acquisition and, accordingly, have been paid by the entity to the Trust over and above the Net Distributable Cash Flow (NDCF).

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Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to September 30, 2024 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**548.86**	**449.32**	**301.61**	**246.47**	**430.52**	**269.57**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	10.04	16.07	13.48	3.41	9.83	9.06
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.54)	(3.90)	(4.35)	(4.60)	(10.08)	(16.42)
Net Distributable Cash Flows	**558.36**	**461.49**	**310.74**	**245.28**	**430.27**	**262.21**

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to September 30, 2024 (contd.)

Particulars	MKTPL	NKTPL	SMTPL	NDEPL	APEPL	MBEL
Cash flow from operating activities as per Cash Flow Statement of SPV	**455.59**	**222.12**	**272.02**	**414.46**	**(319.50)**	**198.30**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	3.74	236.11	2.28	10.11	38.37	46.84
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(34.55)	(55.70)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(125.84)	(150.00)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	(180.00)	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(4.59)	(4.89)	(4.75)	(3.19)	-	(0.26)
Net Distributable Cash Flows	**454.74**	**273.34**	**269.55**	**421.38**	**(441.52)**	**39.18**

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to September 30, 2024 (contd.)

Particulars	JMTPL	WUPTPL	GAEPL	WVEPL	FRHPL	DATRPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**446.66**	**439.33**	**1,400.95**	**409.55**	**1,007.14**	**2,383.10**
Add: Opening cash and bank balance*	**-**	256.68	**-**	**-**	**-**	**-**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	13.04	20.64	39.92	4.05	13.34	25.01
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.65)	(0.42)	(0.27)	(0.14)	(0.50)	(15.81)
Net Distributable Cash Flows	**459.05**	**716.23**	**1,440.60**	**413.46**	**1,019.98**	**2,392.30**

*Amount reflected in opening cash and bank balance as on 01 April 2024 represent reserves created Rs. 256.68 millions as per SEBI guidelines as on 31 March 2024.

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to September 30, 2024 (contd.)

Particulars	BWHPL	SIPL	SPPL	THPL	MHPL	MSHPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**(13.98)**	**468.20**	**67.87**	**(108.20)**	**334.07**	**548.04**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	15.94	13.60	6.21	6.43	3.81	10.63
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	(3.78)	(3.33)	(4.07)	(57.08)	(36.85)	(3.68)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	(4.52)	(4.67)	(9.39)	(9.00)	(10.88)	(9.82)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.00)	-	(0.03)	(0.23)	(8.37)	(0.02)
Net Distributable Cash Flows	**(7.34)**	**473.80**	**60.59**	**(168.08)**	**281.78**	**545.15**

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL	MKTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**1,174.16**	**907.37**	**609.65**	**495.74**	**880.38**	**602.67**	**909.39**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	33.01	22.64	22.29	9.91	12.74	37.34	7.91
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.63)	(6.64)	(7.16)	(5.25)	(11.31)	(27.80)	(5.13)
Net Distributable Cash Flows	**1,206.54**	**923.37**	**624.78**	**500.40**	**881.81**	**612.21**	**912.17**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025 (contd.)

Particulars	NKTPL	SMTPL	NDEPL	APEPL***	MBEL	JMTPL	WUPTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**453.87**	**545.70**	**882.63**	**41.61**	**657.07**	**1,362.55**	**1,070.64**
Add: Opening cash and bank balance**	-	-	-	-	-	-	279.30
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	406.89	5.15	15.28	65.85	66.84	14.87	29.87
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	(34.55)	(108.11)	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	(125.49)	(150.00)	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	(180.00)	-	-	-	(149.76)	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(7.35)	(5.20)	(4.25)	-	(0.47)	(0.95)	(0.72)
Net Distributable Cash Flows	**673.41**	**545.65**	**893.66**	**(52.58)**	**315.57**	**1,376.47**	**1,379.09**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.
**Amount reflected in opening cash and bank balance as on 01 April 2024 represent reserves created Rs. 279.30 millions as per SEBI guidelines as on 31 March 2024.
***On account of negative NDCF no reserve is created for expected cash outflows towards operating expenses and statutory dues till receipt of next annuity payment from NHAI.

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025 (contd.)

Particulars	GAEPL	WVEPL	FRHPL	DATRPL	BWHPL	SIPL	SPPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**3107.39**	**828.09**	**2,082.54**	**5,097.43**	**971.12**	**966.19**	**595.77**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	87.06	7.98	20.55	45.07	32.54	46.22	54.36
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	(2.66)	(3.94)	(3.36)	(4.22)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(4.52)	(4.67)	(9.39)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	(159.93)	(45.46)	(32.58)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.72)	(1.01)	(4.40)	(24.28)	(1.20)	(1.06)	(0.28)
Net Distributable Cash Flows	**3,192.73**	**835.06**	**2,098.69**	**5,115.56**	**834.07**	**957.86**	**603.66**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025

Particulars	THPL	MHPL	MSHPL	NAMEL
Cash flow from operating activities as per Cash Flow Statement of SPV	**504.90**	**796.94**	**1,019.39**	**328.97**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	100.65	10.53	25.64	28.88
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	(57.10)	(36.93)	(3.78)	(78.28)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	(9.00)	(10.88)	(9.82)	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	(37.58)	(62.19)	(53.54)	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.46)	(10.94)	(1.86)	(4.40)
Net Distributable Cash Flows	**501.41**	**686.53**	**976.03**	**275.17**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

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Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2023 to March 31, 2024 (contd.)

(Amounts in Rs. Million)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL
Profit after tax as per Statement of Profit and Loss of the SPV (standalone) - A	**(568.73)**	**30.15**	**57.13**	**(604.09)**	**(664.97)**	**(131.48)**
Add: Depreciation, impairment, and amortisation as per profit and loss account. In case of impairment reversal, same needs to be deducted from profit and loss.	327.14	196.84	125.55	199.76	326.91	163.11
Add/less: Loss/gain on sale / transfer / disposal / liquidation of infrastructure assets, investments, other assets of the SPVs (if applicable)(1)	-	-	-	0.04	1.29	0.83
Add: Proceeds from sale / transfer / disposal / liquidation of infrastructure assets, investments, other assets of the SPVs (if applicable), adjusted for the following:(1)	-	-	-	-	-	-
related debts settled or due to be settled.	-	-	-	-	-	-
directly attributable transaction costs.	-	-	-	-	-	-
proceeds reinvested or planned to be reinvested as per Regulation 18(7)(a) of the InvIT Regulations.	-	-	-	-	-	-
Add: Additional borrowings (including debentures / other securities) (external as well as borrowings from Trust) adjusted for the following:	9,814.65	4,940.03	3,051.06	5,988.28	8,310.03	4,194.23
any prepayment of borrowings if deemed necessary by the Investment Manager;(2)	(9,814.65)	(4,940.03)	(3,051.06)	(5,988.28)	(8,310.03)	(4,194.23)
any identified end use as specified in the lender agreement or as deemed necessary by the Investment Manager	-	-	-	-	-	-
Less: Repayment of accrued interest/principal component of senior and additional debt as approved by NHAI	-	-	-	-	-	-
Add : Amount invested by the Trust in the SPV.	-	-	-	-	-	-
Add: Any amount received from toll or annuities not recognised as income for the purposes of working out the Profit after tax	-	-	-	-	-	-
Less: Any amount payable to third parties as deemed necessary by the Investment Manager, including but not limited to NHAI, any engineering, procurement and construction contractors, if such amount has not already been considered for the determination of profit after tax	-	-	-	-	-	-
Add: Interest (or other similar payments) on borrowings (loan, debentures or other instruments) provided by the Trust	1,200.04	606.31	375.68	798.39	1,032.57	506.30
Add: Amount received from settlement of any claims. including from NHAI or any engineering, procurement and construction contractors, to the extent not already considered in profit after tax and adjusted for	-	-	-	-	-	-
(i) any amount payable to any other group entity / third party as per their contractual agreement(s) and/or	-	-	-	-	-	-
(ii) any tax obligation arising from the receipt of such claims	-	-	-	-	-	-
Less : Capital expenditure (if any)	(107.37)	(36.85)	(35.16)	(48.95)	(86.98)	-
Less: Any amount retained for future earnout payments to Walayar Vadakkencherry Expressways Private Limited, DA Toll Road Private Limited, Farakka Raiganj Highways Limited and Ghaziabad Aligarh Expressway Private Limited as per their contractual agreement(s)	-	-	-	-	-	-
Add/less: Any other item of non-cash expense / non cash income (net of actual cash flows for these items), including but not limited to	-	-	-	-	-	-
any decrease/increase in carrying amount of an asset or a liability recognised in Statement of Profit and Loss on measurement of the asset or the liability at fair value;	(27.26)	(53.23)	(43.66)	(7.17)	(30.89)	(30.25)
interest cost as per effective interest rate method (difference between accrued and actual paid)	-	-	-	-	-	-
deferred tax, lease rents recognised on a straight line basis;	-	10.88	19.65	-	-	(9.96)
unwinding of interest cost on interest free loan or other debentures;(3)	5.26	0.99	1.09	3.25	4.59	10.70
portion reserve for major maintenance which has not been accounted for in Statement of Profit and Loss;	-	-	-	-	-	-
reserve for debenture/ loan redemption.	-	-	-	-	-	-
others	-					
Less: Net cash set aside (i) to comply with reserve requirements under the loan agreements (including but not limited to DSRA and MMRA) or as decided by the IM Board from time to time, adjusted for amount released from DSRA/MMRA or any other reserve in lieu of providing bank guarantee, and/or	-	-	-	-	-	-
(ii) on a prudential basis for repayments of borrowings etc., as appropriate.	-	-	-	-	-	-
Add/Less: Other adjustments, including but not limited to net changes in security deposits, working capital, deferred / prepaid income or deferred / prepaid expenditure, at the SPV.	(167.68)	(14.04)	(5.69)	78.33	12.65	(12.41)
Less: Any cash reserve deemed necessary by the board of directors of the Investment manager ("IM Board") for expenses which may be due in the next financial year but for which there may not be commensurate cash available by the date such expenses become due	-	-	-	-	-	-
Less: Any other adjustment to be undertaken by the Investment Manager to ensure that there is no double counting of the same item for the above calculations	106.98	36.43	33.76	47.68	86.98	-
Total Adjustments (B)	**1,337.11**	**747.33**	**471.22**	**1,071.33**	**1,347.12**	**628.32**
Net Distributable Cash Flows (C) = (A +B)*	**768.38**	**777.48**	**528.35**	**467.24**	**682.15**	**496.84**

*The difference between SPV level NDCF and InvIT level NDCF is primarily on account of utilization of opening cash at the SPV level.

(1) Excludes Investments in mutual funds and loss/ gain thereon representing temporary investments.
(2) Includes payment of interest accrued on these borrowings.
(3) Includes unwinding of interest on provisions.

CUBE HIGHWAYS TRUST
Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
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Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2023 to March 31, 2024 (contd.)

(Amounts in Rs. Million)

Particulars	MKTPL	NKTPL	SMTPL	NDEPL	APEPL[5]	MBEL[4]
Profit after tax as per Statement of Profit and Loss of the SPV (standalone) - A	**(567.09)**	**(790.67)**	**(593.90)**	**(26.25)**	**(74.56)**	**198.18**
Add: Depreciation, impairment, and amortisation as per profit and loss account. In case of impairment reversal, same needs to be deducted from profit and loss.	308.80	243.58	200.13	300.42	0.63	170.95
Add/less: Loss/gain on sale / transfer / disposal / liquidation of infrastructure assets, investments, other assets of the SPVs (if applicable)[1]	-	-	-	-	0.03	0.29
Add: Proceeds from sale / transfer / disposal / liquidation of infrastructure assets, investments, other assets of the SPVs (if applicable), adjusted for the following:[1]	-	-	-	-	-	-
related debts settled or due to be settled.	-	-	-	-	-	-
directly attributable transaction costs.	-	-	-	-	-	-
proceeds reinvested or planned to be reinvested as per Regulation 18(7)(a) of the InvIT Regulations.	-	-	-	-	-	-
Add: Additional borrowings (including debentures / other securities) (external as well as borrowings from Trust) adjusted for the following:	7,539.69	10,515.97	5,948.65	4,096.67	2,050.18	858.44
any prepayment of borrowings if deemed necessary by the Investment Manager;[2]	(7,539.69)	(7,140.48)	(5,948.65)	(4,096.67)	(1,750.18)	(858.44)
any identified end use as specified in the lender agreement or as deemed necessary by the Investment Manager	-	-	-	-	-	-
Less: Repayment of accrued interest/principal component of senior and additional debt as approved by NHAI	-	-	-	-	(692.00)	(161.55)
Add : Amount invested by the Trust in the SPV.	-	-	-	-	-	-
Add: Any amount received from toll or annuities not recognised as income for the purposes of working out the Profit after tax	-	-	-	-	701.80	-
Less: Any amount payable to third parties as deemed necessary by the Investment Manager, including but not limited to NHAI, any engineering, procurement and construction contractors, if such amount has not already been considered for the determination of profit after tax	-	(87.18)	-	-	-	-
Add: Interest (or other similar payments) on borrowings (loan, debentures or other instruments) provided by the Trust	1,016.46	1,143.56	788.19	481.12	227.84	110.74
Add: Amount received from settlement of any claims. including from NHAI or any engineering, procurement and construction contractors, to the extent not already considered in profit after tax and adjusted for	-	-	-	-	-	-
(i) any amount payable to any other group entity / third party as per their contractual agreement(s) and/or	-	-	-	-	-	-
(ii) any tax obligation arising from the receipt of such claims	-	-	-	-	-	-
Less : Capital expenditure (if any)	(44.20)	(62.37)	(37.20)	(3.78)	(0.56)	(7.80)
Less: Any amount retained for future earnout payments to Walayar Vadakkencherry Expressways Private Limited, DA Toll Road Private Limited, Farakka Raiganj Highways Limited and Ghaziabad Aligarh Expressway Private Limited as per their contractual agreement(s)	-	-	-	-	-	-
Add/less: Any other item of non-cash expense / non cash income (net of actual cash flows for these items), including but not limited to	-	-	-	-	-	-
any decrease/increase in carrying amount of an asset or a liability recognised in Statement of Profit and Loss on measurement of the asset or the liability at fair value;	(5.41)	(22.59)	(1.89)	1.15	(22.65)	(14.97)
interest cost as per effective interest rate method (difference between accrued and actual paid)	-	-	-	-	1.81	2.44
deferred tax, lease rents recognised on a straight line basis;	-	-	-	-	(0.02)	(10.36)
unwinding of interest cost on interest free loan or other debentures;[3]	-	3.14	4.17	-	-	62.03
portion reserve for major maintenance which has not been accounted for in Statement of Profit and Loss;	-	-	-	-	-	-
reserve for debenture/ loan redemption.	-	-	-	-	-	-
others	-	-	-	-	(5.82)	22.32
Less: Net cash set aside (i) to comply with reserve requirements under the loan agreements (including but not limited to DSRA and MMRA) or as decided by the IM Board from time to time, adjusted for amount released from DSRA/MMRA or any other reserve in lieu of providing bank guarantee, and/or	-	(3,288.31)	-	-	(300.00)	-
(ii) on a prudential basis for repayments of borrowings etc., as appropriate.	-	-	-	-	-	-
Add/Less: Other adjustments, including but not limited to net changes in security deposits, working capital, deferred / prepaid income or deferred / prepaid expenditure, at the SPV.	58.12	(273.05)	66.17	(33.21)	590.10	(220.70)
Less: Any cash reserve deemed necessary by the board of directors of the Investment manager ("IM Board") for expenses which may be due in the next financial year but for which there may not be commensurate cash available by the date such expenses become due	-	-	-	-	-	-
Less: Any other adjustment to be undertaken by the Investment Manager to ensure that there is no double counting of the same item for the above calculations	42.32	59.90	33.79	-	-	-
Total Adjustments (B)	**1,376.09**	**1,092.17**	**1,053.36**	**745.70**	**801.16**	**(46.61)**
Net Distributable Cash Flows (C) = (A +B)*	**809.00**	**301.50**	**459.46**	**719.45**	**726.60**	**151.57**

*The difference between SPV level NDCF and InvIT level NDCF is primarily on account of utilization of opening cash at the SPV level.

(1) Excludes Investments in mutual funds and loss/ gain thereon representing temporary investments.
(2) Includes payment of interest accrued on these borrowings.
(3) Includes unwinding of interest on provisions.
(4) MBEL has retained amounts payable towards major maintenance.
(5) APEPL has retained amounts payable towards major maintenance, debt payment, operating expense.

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Statement of Net Distributable Cash Flows for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

SPV wise statement of net distributable cash flows for the period from April 01, 2023 to March 31, 2024

Particulars	JMTPL	WUPTPL	GAEPL	WVEPL	FRHPL	DATRPL
Profit after tax as per Statement of Profit and Loss of the SPV (standalone) - A	**1,218.25**	**140.36**	**(269.72)**	**(127.64)**	**(843.14)**	**(610.96)**
Add: Depreciation, impairment, and amortisation as per profit and loss account. In case of impairment reversal, same needs to be deducted from profit and loss.	349.09	792.94	567.89	239.83	538.49	1,196.04
Add/less: Loss/gain on sale / transfer / disposal / liquidation of infrastructure assets, investments, other assets of the SPVs (if applicable)[(1)]	0.46	0.24	0.36	-	0.20	0.13
Add: Proceeds from sale / transfer / disposal / liquidation of infrastructure assets, investments, other assets of the SPVs (if applicable), adjusted for the following:[(1)]	-	-	-	4.57	-	-
related debts settled or due to be settled.	-	-	-	-	-	-
directly attributable transaction costs.	-	-	-	-	-	-
proceeds reinvested or planned to be reinvested as per Regulation 18(7)(a) of the InvIT Regulations.	-	-	-	-	-	-
Add: Additional borrowings (including debentures / other securities) (external as well as borrowings from Trust) adjusted for the following:	1,974.58	2,585.15	21,154.60	5,226.39	16,641.28	28,953.03
any prepayment of borrowings if deemed necessary by the Investment Manager;[(2)]	(1,974.58)	(2,585.15)	(16,298.35)	(5,226.39)	(16,641.28)	(28,953.03)
any identified end use as specified in the lender agreement or as deemed necessary by the Investment Manager	-	-	-	-	-	-
Less: Repayment of accrued interest/principal component of senior and additional debt as approved by NHAI	-	-	-	-	-	-
Add : Amount invested by the Trust in the SPV.	-	-	-	-	-	-
Add: Any amount received from toll or annuities not recognised as income for the purposes of working out the Profit after tax	-	-	-	-	-	-
Less: Any amount payable to third parties as deemed necessary by the Investment Manager, including but not limited to NHAI, any engineering, procurement and construction contractors, if such amount has not already been considered for the determination of profit after tax	-	-	(1,200.50)	-	-	-
Add: Interest (or other similar payments) on borrowings (loan, debentures or other instruments) provided by the Trust	203.44	279.31	2,519.47	656.98	2,084.13	3,304.36
Add: Amount received from settlement of any claims. including from NHAI or any engineering, procurement and construction contractors, to the extent not already considered in profit after tax and adjusted for	-	-	-	-	-	-
(i) any amount payable to any other group entity / third party as per their contractual agreement(s) and/or	-	-	-	-	-	-
(ii) any tax obligation arising from the receipt of such claims	-	-	-	-	-	-
Less : Capital expenditure (if any)	(1.92)	(1.16)	(3,808.50)	(4.35)	(6.98)	(36.41)
Less: Any amount retained for future earnout payments to Walayar Vadakkencherry Expressways Private Limited, DA Toll Road Private Limited, Farakka Raiganj Highways Limited and Ghaziabad Aligarh Expressway Private Limited as per their contractual agreement(s)	-	-	-	-	-	-
Add/less: Any other item of non-cash expense / non cash income (net of actual cash flows for these items), including but not limited to	-	-	-	-	-	-
any decrease/increase in carrying amount of an asset or a liability recognised in Statement of Profit and Loss on measurement of the asset or the liability at fair value;	(2.50)	(6.45)	3.28	0.29	(9.71)	(20.92)
interest cost as per effective interest rate method (difference between accrued and actual paid)	-	-	-	-	-	-
deferred tax, lease rents recognised on a straight line basis;	(202.90)	-	-	-	-	89.87
unwinding of interest cost on interest free loan or other debentures;[(3)]	15.56	18.83	36.53	0.99	5.18	6.68
portion reserve for major maintenance which has not been accounted for in Statement of Profit and Loss;	-	-	-	-	-	-
reserve for debenture/ loan redemption.	-	-	-	-	-	-
others	3.79	4.65	(12.27)	0.23	(2.74)	(20.68)
Less: Net cash set aside (i) to comply with reserve requirements under the loan agreements (including but not limited to DSRA and MMRA) or as decided by the IM Board from time to time, adjusted for amount released from DSRA/MMRA or any other reserve in lieu of providing bank guarantee, and/or	-	-	-	-	-	-
(ii) on a prudential basis for repayments of borrowings etc., as appropriate.	-	-	-	-	-	-
Add/Less: Other adjustments, including but not limited to net changes in security deposits, working capital, deferred / prepaid income or deferred / prepaid expenditure, at the SPV.	(117.00)	(47.23)	(818.80)	(265.11)	(82.26)	(1,633.28)
Less: Any cash reserve deemed necessary by the board of directors of the Investment manager ("IM Board") for expenses which may be due in the next financial year but for which there may not be commensurate cash available by the date such expenses become due	-	-	(1,000.00)	-	-	(100.00)
Less: Any other adjustment to be undertaken by the Investment Manager to ensure that there is no double counting of the same item for the above calculations	-	-	1,653.10	-	-	-
Total Adjustments (B)	**248.02**	**1,041.13**	**2,796.81**	**633.43**	**2,526.31**	**2,785.79**
Net Distributable Cash Flows (C) = (A +B)*	**1,466.27**	**1,181.49**	**2,527.09**	**505.79**	**1,683.17**	**2,174.83**

*The difference between SPV level NDCF and InvIT level NDCF is primarily on account of utilization of opening cash at the SPV level.

(1) Excludes Investments in mutual funds and loss/ gain thereon representing temporary investments.
(2) Includes payment of interest accrued on these borrowings.
(3) Includes unwinding of interest on provisions.
(4) The Trust has issued units on April 17, 2023, hence the NDCF is not presented for the year ended March 31, 2023.

The above Statement of Net Distributable Cash Flows (NDCFs) should be read in conjunction with the accompanying notes 1 to 73

As per our report of even date attached

For S.B. Billimoria & Co. LLP
Chartered Accountants

Pramod B. Shukla
Partner
Place: Gurugram
Date: December 05, 2025

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(the "Investment Manager" in its capacity as the Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: December 05, 2025

Vinay Chandramouli Sekar
Chief Executive Officer

Place: Gurugram
Date: December 05, 2025

Pankaj Vasani
Chief Financial Officer

Place: Mumbai
Date: December 05, 2025

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: December 05, 2025

Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025

1. Group Information

(i) The Consolidated Financial Statements comprise financial statements of the Cube Highways Trust and its subsidiaries (referred as "SPVs").

Cube Highways and Transportation Assets Advisors Private Limited ("Settlor") set up Cube Highways Trust (the "Trust") by way of the Original Trust Deed dated December 7, 2021 as a contributory irrevocable trust under the provisions of the Indian Trusts Act, 1882. The registered office address of the Trust is B-376, UGF, Nirman Vihar, New Delhi 110092.

On April 5, 2022, the Trust got registered as an infrastructure investment trust under the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, having registration number IN/InvIT/22-23/0022. The Original Trust Deed was amended and restated by way of the Trust Deed dated July 8, 2022. The Trust got its units listed on National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) w.e.f. April 19, 2023. The Trustee to the Trust is Axis Trustee Services Limited (the "Trustee"). The Investment Manager for the Trust is Cube Highways Fund Advisors Private Limited (the "Investment Manager").

The objective of the Trust is to carry on the activities of an infrastructure investment trust, as permissible under the InvIT Regulations. The Trust has been formed to invest in infrastructure assets primarily being in the road sector in India. All the Road projects of entities to be included in the Trust Group held through 27 special purpose vehicles ("SPVs/Project SPV's /Subsidiaries" together with the Trust referred as " Trust Group") including 2 SPV's acquired during the current half year.

(ii) The Trust acquired the following SPVs, which have entered into concession agreements with NHAI or State Authorities on Design, Build, Finance, Operate and Transfer (DBFOT) or Toll Operate Transfer (TOT) or Hybrid Annuity Model (HAM):

Sr. No.	Name of SPVs	Date of incorporation	Date of acquisition	Principal activity	Principal place of business	Percentage of Shareholding acquired by the Trust
1	Western UP Tollway Private Limited (WUPTPL) (formerly known as Western UP Tollway Limited)	20-Apr-05	17-Apr-23	Construction, operation & maintenance of toll roads including toll collection	Uttar Pradesh	100%
2	Andhra Pradesh Expressway Private Limited (APEPL) (formerly known as Andhra Pradesh Expressway Limited)	11-Nov-05	17-Apr-23	Construction, operation & maintenance of toll roads under BOT Annuity Model	Andhra Pradesh	100%
3	Jaipur-Mahua Tollway Private Limited (JMTPL) (formerly known as Jaipur-Mahua Tollway Limited)	18-Mar-05	17-Apr-23	Construction, operation & maintenance of toll roads including toll collection.	Rajasthan	100%
4	Mahua Bharatpur Expressways Limited (MBEL)	23-Mar-05	17-Apr-23		Rajasthan	Trust - 99.97% Madhucon Infra Limited- 0.03%

Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025

Sr. No.	Name of SPVs	Date of incorporation	Date of acquisition	Principal activity	Principal place of business	Percentage of Shareholding acquired by the Trust
5	Farakka Raiganj Highways Private Limited (FRHPL) (formerly known as Farakka Raiganj Highways Limited)	11-Mar-10	17-Apr-23	Construction, operation & maintenance of toll roads including toll collection	West Bengal	100%
6	DA Toll Road Private Limited (DATRPL)	26-Jun-10	17-Apr-23		Haryana and Uttar Pradesh	100%
7	Ghaziabad Aligarh Expressway Private Limited (GAEPL)	18-Dec-09	17-Apr-23		Uttar Pradesh	100%
8	Walayar Vaddakencherry Expressways Private Limited (WVEPL) (formerly known as "KNR Walayar Tollways Private Limited")	16-Aug-12	17-Apr-23		Kerala	100%
9	Nelamangala Devihalli Expressway Private Limited (NDEPL) (formerly known as "Gradient Infra Assets Advisors Private Limited")	20-Nov-17	17-Apr-23		Karnataka	100%
10	Hazaribagh Tollway Private Limited (HTPL) (formerly known as Hazaribagh Tollway Limited)	13-Dec-19	17-Apr-23		Jharkhand	100%
11	Jhansi-Lalitpur Tollway Private Limited (JLTPL) (formerly known as Jhansi-Lalitpur Tollway Limited)	17-Dec-19	17-Apr-23		Madhya Pradesh	100%
12	Jhansi-Vigakhet Tollway Private Limited (JVTPL) (formerly known as Jhansi-Vigakhet Tollway Limited)	13-Dec-19	17-Apr-23		Madhya Pradesh	100%
13	Kanyakumari-Etturavattam Tollway Private Limited (KETPL) (formerly known as Kanyakumari-Etturavattam Tollway Limited)	13-Dec-19	17-Apr-23	Toll collection from the users and operation and maintenance of Road Projects.	Tamil Nadu	100%

Sr. No.	Name of SPVs	Date of incorporation	Date of acquisition	Principal activity	Principal place of business	Percentage of Shareholding acquired by the Trust
14	Kotwa-Muzaffarpur Tollway Private Limited (KMTPL) (formerly known as Kotwa-Muzaffarpur Tollway Limited)	13-Dec-19	17-Apr-23	Toll collection from the users and operation and maintenance of Road Projects.	Bihar	100%
15	Lucknow-Raebareli Tollway Private Limited (LRTPL) (formerly known as Lucknow-Raebareli Tollway Limited)	13-Dec-19	17-Apr-23	Toll collection from the users and operation and maintenance of Road Projects.	Uttar Pradesh	100%
16	Madurai-Kanyakumari Tollway Private Limited (MKTPL) (formerly known as Madurai-Kanyakumari Tollway Limited)	13-Dec-19	17-Apr-23	Toll collection from the users and operation and maintenance of Road Projects.	Tamil Nadu	100%
17	Nanguneri-Kanyakumari Tollway Private Limited (NKTPL) (formerly known as Nanguneri-Kanyakumari Tollway Limited)	13-Dec-19	17-Apr-23	Toll collection from the users and operation and maintenance of Road Projects.	Tamil Nadu	100%
18	Salaipudhur-Madurai Tollway Private Limited (SMTPL) (formerly known as Salaipudhur-Madurai Tollway Limited)	13-Dec-19	17-Apr-23	Toll collection from the users and operation and maintenance of Road Projects.	Tamil Nadu	100%
19	Srirangam Infra Private Limited (SIPL) (formerly KNR Srirangam Infra Private Limited)	11-Apr-18	4-Jun-24	Operation and maintenance of Road Projects under Hybrid Annuity Model	Tamil Nadu	100%
20	Shankarampet Projects Private Limited (SPPL) (formerly KNR Shankarampet Projects Private Limited)	11-Apr-18	4-Jun-24		Telangana	100%
21	Tirumala Highways Private Limited (THPL) (formerly KNR Tirumala Infra Private Limited)	11-Apr-18	4-Jun-24		Andhra Pradesh	100%
22	Borgaon Watembare Highways Private Limited (BWHPL)	11-Apr-18	4-Jun-24		Maharashtra	100%

Sr. No.	Name of SPVs	Date of incorporation	Date of acquisition	Principal activity	Principal place of business	Percentage of Shareholding acquired by the Trust
23	Mangalwedha Solapur Highways Private Limited (MSHPL)	11-Apr-18	4-Jun-24	Operation and maintenance of Road Projects under Hybrid Annuity Model	Maharashtra	100%
24	Mangloor Highways Private Limited (MHPL)	11-Apr-18	4-Jun-24		Maharashtra	100%
25	N.A.M. Expressway Limited (NAMEL)	15-Jun-10	12-Feb-25	Construction, operation & maintenance of toll roads including toll collection	Andhra Pradesh and Telangana	100%
26	Quazigund Expressway Private Limited (QEPL)	21-May-10	12-Jun-25	Construction, operation & maintenance of toll roads under BOT Annuity Model	Jammu and Kashmir	100%
27	Athaang Jammu Udhampur Highway Private Limited (AJUHPL)	25-Jun-10	12-Jun-25	Construction, operation & maintenance of toll roads under BOT Annuity Model	Jammu and Kashmir	100%

Note: SPVs at Sr.No. 19 to 24 are hereafter being collectively referred as "HAM SPVs".

Since the Trust has acquired various SPVs at different dates as detailed above, the Consolidated Financial Statements for the half year ended September 30, 2025 are not comparable with the previous periods as included in the Consolidated Financial Statements.

2. Basis of preparation and material accounting policies

I. Basis of preparation

The Consolidated Financial Statements of the Trust Group comprising of the Consolidated Balance Sheet as at September 30, 2025, the Consolidated Statement of Profit and Loss (including Other Comprehensive Income), the Consolidated Statement of Cash Flows, the Consolidated Statement of Changes in Unitholders' Equity, the Statement of Net Distributable Cash Flows (NDCFs) of the Trust and each of its subsidiaries for the half year then ended on that date (together referred to as the "Consolidated Financial Statements") and a summary of material accounting policies and other explanatory notes to the Consolidated Financial Statements.

The Consolidated Financial Statements also include the following comparative information:

- Consolidated Balance Sheet as at September 30, 2024, March 31, 2025, March 31, 2024 and March 31, 2023.
- Consolidated Statement of Profit and Loss (including Other Comprehensive Income) for the half year ended September 30, 2024 and for the years ended March 31, 2025, March 31, 2024 and March 31, 2023.
- Consolidated Statement of Cash Flows for the half year ended September 30, 2024 and for the years ended March 31, 2025, March 31, 2024 and March 31, 2023.
- Consolidated Statement of Net Distributable Cash Flows (NDCF) of the Trust and its subsidiaries for the half year months ended September 30, 2024 and for the years ended March 31, 2025, March 31, 2024.

These Consolidated Financial Statements have been prepared in accordance with the Indian Accounting Standard (Ind AS) -34 "Interim Financial Reporting", prescribed under Section 133 of the Companies Act, 2013 (the "Act") to the extent not inconsistent with the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended (the "SEBI InvIT Regulations" or "InvIT Regulations") (Refer note 19(a)(v) of Consolidated Financial Statements on presentation of "Unit capital" as "Equity" instead of compound financial instruments under Ind AS 32- Financial Instruments: Presentation), other relevant provisions relating to disclosures required as per of the SEBI InvIT Regulations, including Chapter 3 of the SEBI InvIT Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025 for Infrastructure Investment Trusts (InvITs) ("Master Circular") and other accounting principles generally accepted in India.

The comparative Consolidated Financial Statements as at and for the years ended March 31, 2025, March 31, 2024, and March 31, 2023 were approved by the Board of Directors of the Investment Manager in their meeting held on May 28, 2025, May 22, 2024 and May 23, 2023 on which auditors had issued unmodified opinion on those Consolidated Financial Statements vide their audit reports dated May 28, 2025, May 22, 2024 and May 23, 2023 respectively. The Management of the Investment Manager has made additional disclosures and changes to presentation (to the extent applicable) in such comparative Consolidated Financial Statements to comply with Master Circular.

Accounting policies have been consistently applied except where a newly issued accounting standard is initially adopted or a revision to an existing accounting standard requires a change in the accounting policy hitherto in use.

The Consolidated Financial Statements have been prepared on going concern basis in accordance with accounting principles generally accepted in India. Further, the Consolidated Financial Statements have been prepared on historical cost basis using uniform policies as explained in the material accounting policies below for like transactions and other events in similar circumstances, except for certain financial instruments and contingent consideration which are measured at fair value at the end of each reporting period as explained in relevant accounting policies.

The Consolidated Financial Statements are presented in India Rupees which is also the functional currency of the Trust Group, and all values are rounded to the nearest million, unless otherwise stated.

New Accounting Standards issued but not effective /Recent Accounting Developments

Ministry of Corporate Affairs ("MCA") notifies new standards or amendments to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time.

In May 2025, MCA notified amendments to Ind AS 21 - The Effects of Changes in Foreign Exchange Rates, applicable w.e.f. April 1, 2025. The Trust Group has reviewed the amendment and based on its evaluation has determined that it does not have any impact in its consolidated financial statements.

In August 2025, MCA notified the following amendments to:

1. Ind AS 1, Presentation of Financial Statements, applicable w.e.f April 1, 2025 - The amendment relates to classification of liabilities as current or non -current and non-current liabilities with covenants. In the context of classifying a liability as current, it removes the requirement of existence of a right to defer settlement for at least 12 months after the reporting date and instead requires that the said right should exist on the reporting date and have substance. The amendment also introduces guidance on classification of liabilities with covenants. The Group has no impact of these amendments in its classification criteria of current and non-current liabilities.

2. Ind AS 7, Statement of Cash Flows and Ind AS 107, Financial Instruments - Disclosures, applicable w.e.f April 1, 2025 – The amendment in Ind AS 7 requires to inform users of financial statements of the existence of supplier finance arrangements and explain the nature of the arrangements, the carrying amount of liabilities and the range of payment due dates. Ind AS 107 has been amended to add supplier finance arrangements as a factor that may cause concentration of liquidity risk. The Group has reviewed the amendment and based on its evaluation has determined that it does not have any impact in its consolidated financial statements.

3. Ind AS 12, International Tax Reform – Pillar Two Model Rules applicable immediately - The amendments provide a temporary mandatory relief from deferred tax accounting for top-up tax and disclose that they have applied the relief. This relief is immediate and applies retrospectively. The amendments also require companies to provide new disclosures to compensate for potential loss of information resulting from the relief. Such disclosures are to be provided for annual reporting periods beginning on or after April 1, 2025. The Group has reviewed the amendment and based on its evaluation has determined that it does not have any impact in its consolidated financial statements

II. Statement of Compliance

The Consolidated Financial Statements have been prepared in accordance with the Indian Accounting Standard as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended, presentation and disclosure requirements of Division II of Schedule III and other accounting principles generally accepted in India to the extent not inconsistent with the SEBI InvIT Regulations as more fully described above and as given in Note 19(a)(v) to the Consolidated Financial Statements and presentation.

III. Summary of Material Accounting Policies

a) Basis of Consolidation

Trust Group consolidates entities which it owns or controls. Control exists when the Trust has power over the entity, is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns by using its power over the entity. Power is demonstrated through existing rights that give the ability to direct relevant activities, those which significantly affect the entity's returns. Subsidiaries are Consolidated from the date on which control is transferred to the Trust Group until the date control ceases.

Consolidated Financial Statements are prepared using uniform accounting policies for like transactions and other events in similar circumstances. The Trust Group combines the financial statements of the Trust and its subsidiaries line by line adding together like items of assets, liabilities, equity, income and expenses. Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated.

b) Asset Acquisition

If the acquisition of the asset or a group of assets does not constitute a business, the Trust identifies and recognises the individual identifiable assets acquired (including those assets that meet the definition of, and recognition criteria for, intangible assets in Ind AS 38, Intangible Assets) and liabilities assumed. The cost of

the group is allocated to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of purchase and no goodwill is recognised.

When the consideration transferred by the Trust in the asset acquisition includes a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred. Contingent consideration is remeasured to fair value at subsequent reporting dates with changes in fair value recognised in profit or loss.

c) Current and non-current classification

Based on the time involved between the acquisition of assets for processing and their realisation in cash and cash equivalents, the Trust Group has identified twelve months as its operating cycle for determining current and non- current classification of assets and liabilities in the balance sheet.

d) Critical accounting judgements and key sources of estimation uncertainty

The preparation of these Consolidated Financial Statements requires management to make judgements, estimates and assumptions that affect the reported amounts of assets, liabilities, income and expenses, and the accompanying disclosures.

The Management believes that the estimates used in preparation of the Consolidated Financial Statements are prudent and reasonable. However, actual results could differ from these estimates. Any revision to accounting estimates is recognised prospectively in the current and future periods.

1. Classification of Unitholders funds:

The Unit Capital has been presented as "Equity" in accordance with the SEBI InvIT Regulations instead of compound financial instrument. Refer note 19(a)(v) of Consolidated Financial Statements on presentation of "Unit capital" as "Equity" instead of compound financial instruments under Indian Accounting Standard (Ind AS) 32- Financial Instruments: Presentation.

2. Fair valuation and disclosures

SEBI Master Circular issued under the SEBI InvIT Regulations require disclosures relating to net assets at fair value and total returns at fair value. In estimating the fair value of investments in subsidiaries (which constitute a substantial portion of the net assets), the Trust engages independent qualified external valuers to perform the valuation. The Investment Manager of the Trust works closely with the valuers to establish the appropriate valuation techniques and inputs to the valuation model. The inputs to the valuation models are taken from observable markets where possible, but where this is not feasible, a degree of judgement is required in establishing fair values. Judgements include considerations of inputs such as determination of future cash flows, traffic estimates, assessment of the variation in concession period in certain subsidiaries considered on account of Target Traffic subject to approvals from the authorities, discount rates, revenue growth rate and inflation and other economic factors, tax rates, etc. Changes in assumptions about these factors could affect fair value (Refer note 58(5) of Consolidated Financial Statements).

3. Applicability of service concession arrangement (SCA) accounting to the concessionaire arrangements entered into by the SPVs

The Trust Group has determined that Appendix C to Ind AS 115 "Revenue from Contracts with Customers" relating to 'Service Concession Arrangements' is applicable to the SPVs which provides an accounting by the operators of public to private service concession arrangements. The SPVs have entered into concession arrangement with National Highway Authority of India (NHAI) or respective State Highway Authority (the "Authority") as per which the individual SPVs would participate in Design, Build, Finance, Operate and Transfer (DBFOT) or Toll Operate Transfer (TOT) or Hybrid Annuity Model (HAM) of the toll roads infrastructure. After the end of the Concession arrangement, the SPVs have to transfer the infrastructure i.e. toll roads constructed to the Authority.

Accordingly, the SPVs other than APEPL, AJUHPL, QEPL and HAM SPVs have recognized the intangible assets as per the accounting policy mentioned in Note (f) Intangible Assets.

The accounting for Receivables against SCA ("financial assets") requires APEPL, AJUHPL, QEPL and HAM SPVs to allocate the consideration over Construction and Operating & Maintenance (O&M) activities. Revenue is allocated over "Operating & Maintenance (O&M) activities" based on estimated future operating & maintenance cash flows. The estimates of operating & maintenance cash flows require management to make significant judgments and estimates, which include assumptions related to expected future expenses and inflation. The judgments and estimates including assumptions related to expected future expenses, inflation and reliability of forecast of future expenses through the review of actual expenses against previous forecasts are reviewed periodically by the management.

4. Assessment of concession period under Service Concession Arrangements (SCA)

The concession period is specified under the SCA agreement entered into by the respective SPVs with the Grantor (NHAI/ State authorities). However, it may vary based on the terms of the respective SPVs depending upon achievement of conditions relating to Target Traffic or Target revenue generated at Target date specified in the SCA. For the purposes of estimation of variation in the concession period at each reporting period, the Trust evaluates the contractual entitlement to variations in concession period on a case-to-case basis taking into account the provisions of the concession agreement of the respective SPVs, the facts and circumstances giving rise to such variations and the status of the approvals for such variation. Estimating the concession period under Appendix C of Ind AS 115 requires a careful analysis of the specific service concession arrangement. For estimation of the concession period, the Management considers future traffic estimates with the help of an independent expert, assessment of outcomes with respect to disputes/ arbitration with the Grantor for the SPVs claims for variation in concession period on account of Target Traffic, etc. based on the legal advice received, discount rates, revenue growth rate and inflation and other economic factors, as considered relevant. Based on the above, the Management has considered variation in concession period for certain SPVs (Refer Note 52) for the purpose of estimating amortization of Intangible Assets- Toll Road Carriageway, estimating fair value of net assets of SPVs and also for determination of recoverable amounts for Intangible Assets- Toll Road Carriageway of SPVs.

5. Amortisation of Rights under Service Concession Arrangements (SCA) i.e. Intangible Assets- Toll Road Carriageway

Certain SPVs (viz. MBEL, JMTPL, WUPTPL, GAEPL and NAMEL) which has toll collection rights in respect of SCA commenced before April 1, 2014, recognizes the amortization of intangible assets relating to SCA based on proportion of actual revenue earned for the period over the sum of actual revenue for the period and projected revenue from Toll Road Carriageway expected to be earned over the balance concession period as estimated by the management of respective SPVs. The future revenue projections are based on the assumptions made by the Trust Group's management regarding future traffic growth, concession period referred above and inflation factor for assessing user toll fee as supported by the studies from the third-party independent consultant for individual SPV done at reasonable intervals.

For other SPVs which has toll collection rights in respect of SCA commenced after April 1, 2014, the intangible assets relating to Service Concession Agreements is being amortised over the estimated useful life (being the concession period referred above).

The estimated useful life of Rights under Service Concession Arrangement – Intangible assets and the projected revenue is reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

6. Provision for periodic maintenance (overlay expenses)

The Trust Group estimates and provides for contractual obligations as per SCA with NHAI to restore the infrastructure to a specified level of serviceability at periodic intervals during the concession period or before it is handed over to NHAI. These estimates are corroborated through purchase orders/ work orders placed or to be placed by the Trust Group as per the road survey reports issued by an independent field expert and major maintenance strategy/ methodology approved by the Independent Consultant appointed by NHAI. As the estimated cost is based on the various assumptions such as current infrastructure (road, pavements, etc.) condition, expected timings of costs, inflation in material cost, discount rate, government policies etc., hence the Trust Group's

management is required to apply judgement over these factors for revalidating the provision for expenses which is reviewed on annual basis.

7. Provision for Improvement works

Certain SPVs estimates and provides for contract liability in respect of unavoidable obligations to improve/upgrade the infrastructure to be undertaken as per the Concession Agreement with NHAI. These estimates are corroborated through purchase orders/ work orders placed or to be placed by these SPVs as per the road survey reports issued by an independent field expert. As the estimated cost is based on the various assumptions such as current infrastructure (road, pavements, etc.) condition, inflation in material cost etc., hence the Trust Group's management is required to apply judgement over these factors.

8. Income taxes and deferred tax

Judgements are involved in determining the provision for income taxes including judgement on whether tax positions are probable of being sustained in tax assessments. A tax assessment can involve interpretation issues, which can only be resolved over extended time periods.

Significant management judgement is also required to determine the amount of deferred tax assets that can be recognised, based upon the likely timing and the level of future taxable profits together with future tax planning strategies.

The Trust Group reviews the carrying amount of deferred tax assets (net) at the end of each reporting period. The Trust Group has recognised the deferred tax assets relating to carried forward losses and minimum alternate tax (MAT) credit to the extent there are sufficient taxable temporary differences available against which the unused tax losses can be utilized. Further, deferred tax assets have been recognised to the extent of deferred tax liabilities, in the absence of reasonable certainty that future taxable amounts will be available to utilize temporary differences.

The Trust Group has not recognised the deferred tax assets and liabilities on deductible temporary differences and tax losses reversing or originating and reversing during tax holiday period under section 80IA of the Income-tax Act, 1961 which have been estimated basis the future projections.

Deferred tax assets and liabilities are classified as non- current assets and liabilities.

9. Accounting for acquisition of Subsidiaries

The Trust Group has applied the optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated in Intangible Assets-Rights under Service Concession Arrangements (other than APEPL, AJUHPL, QEPL and HAM SPVs) and Receivable under Service Concession Arrangements (for APEPL, AJUHPL, QEPL and HAM SPVs), with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition (Refer Note 50).

10. Impairment of financial assets

The impairment provision for financial assets is based on assumptions about risk of default and expected loss rates. The Trust Group uses judgement in making these assumptions and selecting the inputs to the impairment calculation, based on the existing market conditions as well as forward looking estimates at the end of each reporting period.

11. Impairment of intangible assets - Rights under Service Concession Arrangements

The Trust Group uses the estimated future cash flows in assessing value in use for intangible assets. Future estimated cash flows are discounted to their present value using a pre-tax discount rate that reflects the current market assessments of the time value of money and the risks specific to the asset for which the estimated future cash flows have not been adjusted.

The inputs to the valuation models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. The recoverable

amounts for the intangible assets are based on value in use of the underlying SPVs as determined by an independent valuer using discounted cash flow method which involves management judgement in respect of various key assumptions used as inputs such as determination of future cash flows, estimation of concession period considering the relevant terms of the SCA dealing with modification of the concession period, future traffic estimates with the help of an independent expert, assessment of outcomes with respect to disputes/ arbitration with the Grantor for the SPVs claims for variation in concession period on account of Target Traffic, etc. supported by the legal advice, discount rates, revenue growth rate and inflation and other economic factors. The cash flows are derived from forecasts over the remaining SCA period of the SPVs.

12. Accounting of Compound financial instruments

Certain SPVs included in the Trust Group have issued Unsecured, Optionally Convertible Debentures (OCDs) on private placement basis to various related parties (Subscribers) in previous years. During the current year, the OCD Subscribers sought premature redemption of the OCDs at face value with accrued but unpaid interest on the OCDs. The SPVs have allocated the consideration paid for redemption of OCDs to the liability and equity components of the instrument at the date of the redemption.

13. Useful lives of property, plant, and equipment

Management of the Trust Group reviews the useful lives of property, plant and equipment at each reporting date to ensure that the useful lives represent the expected utility of the assets to the Trust Group.

14. Obligations relating to employee benefits

The employee benefit obligation depends on several factors (including applicable laws) that are determined on an actuarial basis using several assumptions. The assumptions used in determining the net cost/ (income) include the discount rate, inflation and mortality assumptions. Any changes in these assumptions will impact upon the carrying amount of employee benefit obligations.

e) Property, plant, and equipment

Property, plant and equipment are stated at historical cost, as applicable, less accumulated depreciation and cumulative impairment losses, if any.

Historical cost includes purchase price, borrowing costs and any cost directly attributable to bringing the assets to its working condition for its intended use.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that the future economic benefits associated with the item will flow to the entity and the cost of the item can be measured reliably. Cost includes expenditure that is directly attributable to qualifying assets and includes borrowing costs capitalised in accordance with the Trust Group's accounting policy. Such properties are classified to the appropriate categories of property, plant, and equipment when completed and ready for intended use.

Depreciation on Plant and Equipment is provided using straight-line method based on estimated useful life. The estimated useful life of all the property, plant and equipment is ascertained by the management using the best estimate on the basis of technical evaluation, which is depreciated based on useful life as prescribed in Schedule II of the Companies Act, 2013. Depreciation on additions/ deductions is calculated pro-rata from/ to the month of additions/ deductions.

The residual values, useful lives and methods of depreciation of Property, plant and equipment are reviewed at each period end and adjusted prospectively, if appropriate.

Non-current assets classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell.

Gains or losses arising from derecognition of a Property, plant and equipment are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognised in the Consolidated Statement of Profit and Loss when the asset is derecognised.

f) Intangible assets

Intangible assets are recognised when it is probable that future economic benefits that are attributable to the asset will flow to the Trust Group and the cost of the asset can be measured reliably. Intangible assets are stated at original cost net of tax/duty credits availed, if any, or deemed cost less accumulated amortisation, and cumulative impairment, if any.

Intangible Assets are stated at historical cost/deemed cost in certain SPVs (elected in accordance with Ind AS 101), as applicable, less accumulated amortisation and cumulative impairment losses, if any.

(i) Rights under Service Concession Arrangements (SCA)

Rights under SCA obtained in consideration for concession fee for development of toll roads under Toll-Operate-Transfer (TOT) or Build-Operate-Transfer (BOT) basis respectively represent the right to collect toll revenue during the concession period. The cost also includes corresponding obligations of the SPVs under the Concession Agreement entered with the Authority related to construction /improvements of the Project Highway granted to the SPVs. Rights under SCA are capitalized as intangible assets upon obtaining the commencement of operation certificate from the authorities at cumulative development costs. The revenue from toll collection/other income during the construction period is reduced from cost of development of intangible assets. Till the completion of the construction, the development costs are recognised under intangible assets under development.

Obligation towards negative grants and the cost incurred for work beyond the original scope per SCA (normally referred as "Change of Scope") or upgrade services is capitalized as intangible assets under development as and when incurred. Reimbursement in respect of such amounts from the Authority is reduced from the carrying amount of intangible assets under development to the extent of actual receipts. Any grant from the Authority in connection with project development is reduced from the cost of the intangible assets.

Extension of concession period by the Authority in respect of compensation for claims made by the SPVs are capitalized as part of Toll Collection Rights on acceptance of the claim. Where the SPVs have a contractual right to an extension in the concession period as per the concession agreement, the same is capitalized when the right to extension in the concession period is established at the estimated amounts of eligible claims.

Pre-operative expenses including administrative and other general overhead expenses that are directly attributable to the development or acquisition of intangible assets are allocated and capitalized as part of cost of the intangible assets.

Amortisation of intangible assets (Rights under SCA)

The Rights under SCA in respect of road projects of certain SPVs (viz. MBEL, JMTL, WUPTL, GAEPL and NAMEL) are amortized over the period of concession using the revenue-based amortization method prescribed under Schedule II to the Companies Act, 2013. Under the revenue-based method, amortization is based on proportion of actual revenue earned for the period over the sum of actual revenue for the current period and projected revenue from Toll Road Carriageway expected to be earned over the balance concession period as estimated by the management of respective SPVs. Total projected revenue is reviewed at the end of each period end and is adjusted to reflect the changes in earlier estimate vis-a-vis the actual revenue earned till the end of the period so that the whole of the cost of the intangible asset is amortized over the concession period.

For all the other SPVs, the Rights under SCA is amortised over the shorter of the estimated period of future economic benefits which the intangible assets are expected to generate or the concession period, from the date they are available for use. The estimated useful life is reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

An asset carried under concession arrangements is derecognised on disposal or when no future economic benefits are expected from its future use or disposal.

(ii) Other intangible assets

Other intangible assets comprise of cost of software acquired for in-house use. These assets are stated at cost less accumulated amortization and accumulated impairment losses, if any. Intangible assets are derecognized when no future economic benefits are expected from use or disposal. Amortization is recognized on a straight-line basis over their useful life. The estimated useful life is reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

Gains or losses arising from derecognition of an intangible asset are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognised in the statement of profit or loss when the asset is derecognised. Intangible assets that are not ready for the intended use on the date of the Balance Sheet are disclosed as "Intangible assets under development".

g) Foreign currency transactions and translations

The Consolidated Financial Statements are presented in Indian Rupee (INR), which is the Trust Group's functional and presentational currency. Foreign currency transactions are recorded at the exchange rate prevailing on the date of the respective transactions between the functional currency and the foreign currency.

Monetary items

Monetary foreign currency assets and liabilities remaining unsettled at the Balance Sheet date are translated at the rates of exchange prevailing on that date. Gains / losses arising on account of realisation / settlement of foreign currency transactions and on translation of foreign currency assets and liabilities are recognized in the Consolidated Statement of Profit and Loss.

Exchange differences arising on the settlement of monetary items or on reporting date's monetary items at rates different from those at which they were initially recorded during the period, or reported in previous financial Statements, are recognized as income or as expenses in the period in which they arise.

h) Revenue recognition

Revenue from contracts with customers is recognised when control of the goods or services are transferred to the customer at an amount that reflects the consideration to which the Trust Group expects to be entitled in exchange for those goods or services. The Trust Group has concluded that it is the principal in its revenue arrangements because it typically controls the services before transferring them to the customer. Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Trust Group and the revenue can be reliably measured, regardless of when the payment is being made. Revenue is measured at the transaction price of the consideration received or receivable, excluding the estimates of variable consideration that is allocated to that performance obligation, taking into account contractually defined terms of payment and excluding taxes or duties collected on behalf of the government. The specific recognition criteria described below must also be met before revenue is recognised.

Revenue is recognised either at a point in time or over time, when (or as) the Trust Group satisfies performance obligations by transferring the promised goods or services to its customers.

Service concession arrangements - Recognition and measurement

The Trust Group builds, operate and maintain roads and other infrastructure assets under public-to-private Service Concession Arrangements (SCAs), which is an arrangement between the "grantor" (a public sector entity/authority) and the "operator" (a private sector entity/ the Concessionaire) to provide services that give the public access to major economic and social facilities utilizing private-sector funds and expertise.

With respect to SCA, revenue and costs are allocated between those relating to construction services and those relating to operation and maintenance services and are accounted for separately.

Consideration received or receivable is allocated by reference to the relative fair value of services delivered when the amounts are separately identifiable. For operation & maintenance services, such costs are executory in nature and are expensed off as and when incurred.

The Trust Group's revenue is divided into following categories:

A. Toll collections from the users of the infrastructure facility operated or maintained by the Trust Group under the Service Concession Arrangements are accounted for based on actual collection (net of amount charged over and above the normal user fee payable to NHAI). Revenue from electronic toll collection is recognized on accrual basis.

B. Under financial asset model, finance income for SCA is recognized using effective interest method. Revenues from operations and maintenance services and overlay services are recognized in each period as and when services are rendered in accordance with Appendix C to Ind AS 115.

1. Revenue from construction contracts

Contract revenue for fixed price contracts is recognized only to the extent of cost incurred till such time the outcome of the contract cannot be ascertained reliably. When the outcome of the contract is ascertained reliably, contract revenue is recognized at cost of work performed on the contract plus proportionate margin, using the percentage of completion method.

Percentage of completion is determined based on the proportion of actual cost incurred to the total estimated cost of the project. The percentage of completion method is applied on a cumulative basis in each accounting period to the current estimates of contract revenue and contract costs. The effect of a change in the estimate of contract revenue or contract costs, or the effect of a change in the estimate of the outcome of a contract, is accounted for as a change in accounting estimate and the effect of which are recognized in the Consolidated Statement of Profit and Loss in the period in which the change is made and in subsequent periods.

For the purposes of recognising revenue, contract revenue comprises the initial amount of revenue agreed in the contract, the variations in contract work, claims and incentive payments to the extent that it is probable that they will result in revenue, and they are capable of being reliably measured.

When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense in the Consolidated Statement of Profit and Loss in the period in which such probability occurs.

2. Interest income

Interest income from a financial asset is recognized when it is probable that the economic benefits will flow to the Trust Group and the amount of income can be measured reliably. Interest is accrued on time proportion basis, by reference to the principle outstanding at the effective interest rate.

i) Government grants

Grants from governments are recognized at fair value where there is reasonable assurance that the Trust Group will comply with the conditions attaching to them and that the grants will be received.

Government grants related to income are deferred and recognized in profit or loss over the periods in which the Trust Group recognizes as expenses the related costs for which the grants are intended to compensate.

Government grants whose primary condition is that the Trust Group should purchase, construct, or otherwise acquire non-current assets are deducted from the carrying amount of such non-current assets.

j) Distribution to unit holders

The Trust recognises a liability to make distribution to Unit holders when the distribution is approved by the Board of Directors of the Investment Manager to the Trust Group and a legal obligation has been created as per the SEBI InvIT Regulations. A corresponding amount is recognised directly in other equity other than Repayment of Capital.

k) Operating segments

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision maker.

Identification of segments:

In accordance with Ind AS 108- Operating Segment, the operating segments used to present segment information are identified on the basis of information reviewed by the Chief Operating Decision Maker to allocate resources to the segments and assess their performance. An operating segment is a component of the Trust that engages in business activities from which it earns revenues and incurs expenses, including revenues and expenses that relate to transactions with any of the Trust's Group component.

Based on an analysis of Trust structure and powers conferred to the Investment Manager to Trust, the Board of Directors of the Investment Manager has been identified as the Chief Operating Decision Maker ('CODM'), since they are empowered for all major decisions w.r.t. the management, administration, investment, disinvestment, etc.

As the Trust Group is primarily engaged in the business of toll operations and maintenance in India, CODM reviews the entire business as a single operating in respect of reportable segments are not applicable.

l) Financial Instruments

Financial assets and financial liabilities are recognized when the Trust Group become a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. However, transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss ("FVTPL") are recognized immediately in the Consolidated Statement of Profit and Loss.

If the Trust Group determines that the fair value at initial recognition differs from the transaction price, the Trust Group accounts for that instrument at that date as follows:

- at the measurement basis mentioned above if that fair value is evidenced by a quoted price in an active market for an identical asset or liability (i.e. a Level 1 input) or based on a valuation technique that uses only data from observable markets. The Trust Group recognises the difference between the fair value at initial recognition and the transaction price as a gain or loss.

- in all other cases, at the measurement basis mentioned above, adjusted to defer the difference between the fair value at initial recognition and the transaction price. After initial recognition, the Trust Group recognises that deferred difference as a gain or loss only to the extent that it arises from a change in a factor (including time) that market participants would take into account when pricing the asset or liability.

Subsequent measurement of financial assets and financial liabilities is described below:

i. Financial assets

All recognized financial assets are subsequently measured in their entirety at either amortised cost or fair value, depending on the classification of the financial assets.

Classification of Financial Assets

Financial Assets that meet the following conditions are subsequently measured at amortised cost (unless the same are designated as fair value through profit or loss (FVTPL)):

- The asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows; and
- The contractual terms of instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at FVTPL is a residual category for debt instruments and all changes are recognized in profit or loss.

Amortized cost and effective interest method

Income is recognized on an effective interest method as per Ind AS 109 "Financial Instruments" for financial assets other than those financial assets classified as at FVTPL. Interest income is recognized in the Consolidated Statement of Profit and Loss and is included in the "Other income" line item.

Impairment of financial assets (Expected credit loss model)

An impairment loss on financial asset is established when there is objective evidence that the Trust Group will not be able to collect all amounts due according to the original terms of the receivables. Impairment loss if any are recognised in Consolidated Statement of Profit or Loss for the period.

De-recognition of financial assets

The Trust Group derecognize a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party.

On de-recognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss if such gain or loss would have otherwise been recognized in the Consolidated Statement of Profit or Loss on disposal of that financial asset.

Modification of cash flows of financial assets and revision in estimates of cash flows

Modification of cash flows of financial assets and revision in estimates of cash flows when the contractual cash flows of a financial asset are renegotiated or otherwise modified and the renegotiation or modification does not result in the de-recognition of that financial asset in accordance with Ind AS 109, HAM SPV's recalculate the gross carrying amount of the financial asset and recognize a modification gain or loss in the Statement of Profit and loss. The gross carrying amount of the financial asset is recalculated as the present value of the renegotiated or modified contractual cash flows that are discounted at the financial asset's original effective interest rate. Any costs or fees incurred are adjusted to the carrying amount of the modified financial asset and are amortized over the remaining term of the modified financial asset. If HAM SPV's revise its estimates of payments or receipts (excluding modifications and changes in estimates of expected credit losses), it adjusts the gross carrying amount of the financial asset or amortized cost of a financial liability to reflect actual and revised estimated contractual cash flows. HAM SPV's re-calculates the gross carrying amount of the financial asset or amortized cost of the financial liability as the present value of the estimated future contractual cash flows that are discounted at the financial instrument's original effective interest rate. The adjustment is recognized in the Statement of Profit and Loss as an income or expense.

ii. Financial Liabilities

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Loans and borrowings are subsequently measured at amortized costs using Effective Interest Rate method. Financial liabilities at fair value through profit or loss (FVTPL) are subsequently measured at fair value.

De-recognition of financial liabilities

Financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability substantially modified, such an exchange or modification is treated as the de-recognition of the original liability and the recognition of the new liability. The difference in the respective carried amount is recognized in the Consolidated Statement of Profit and Loss.

iii. Classification as debt or equity

Debt and equity instruments issued by Trust Group are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

iv. Fair value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Trust Group considers the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these financial Statements is determined on such a basis and measurements that have some similarities to fair value but are not fair value, such as net realisable value in Ind AS 2 "Inventory" or value in use in Ind AS 36 "Impairment of Assets".

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that entity can access at measurement date

Level 2 inputs other than quoted prices included in Level 1, that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices); and

Level 3 inputs for the asset or liability that are not based on observable market data (unobservable inputs).

m) Cash and cash equivalents

Cash and cash equivalents in the Consolidated Balance Sheet comprise of cash at banks and on hand and short-term deposits with an original maturity of three months or less and highly liquid instruments (overnight mutual funds) which are subject to an insignificant risk of changes in value.

n) Consolidated Statement of Cash Flows

Consolidated Statement of Cash flows is prepared segregating the cash flows from operating, investing and financing activities. Cash flows from operating activities is reported using indirect method. Under the indirect method, the net profit/(loss) is adjusted for the effects of:

a. transactions of a non-cash nature;
b. any deferrals or accruals of past or future operating cash receipts or payments and,
c. all other items of income or expense associated with investing or financing cash flows.

The cash flows from operating, investing and financing activities of the Trust Group are segregated based on the available Statements. Cash and cash equivalents are reflected as such in the Consolidated Statement of Cash Flow and excludes balances which are not available for general use as on the date of Consolidated Balance with a specific disclosure.

o) Investment property

Property that is held for long-term rental yields or for capital appreciation (including property under construction for such purposes) or both and that is not occupied by the Trust Group, is classified as investment property. Investment property is measured initially at cost, including related transaction costs and where applicable borrowing costs. Subsequent expenditure is capitalized to the assets carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Trust Group and the cost of the item can be measured reliably.
An investment property is derecognized upon disposal or when the investment property is permanently withdrawn from use and no future economic benefits are expected from the disposal. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

p) Borrowings

Borrowings are initially recognized at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortized cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognized in profit or loss over the period of the borrowings using effective interest method.

The fair value of the liability portion of the optionally convertible debentures is determined by discounting the projected future cashflows of the principal and interest component at coupon rate. The amount is recorded as a liability on an amortized cost basis until extinguished on conversion or redemption of debentures. The reminder of the proceeds is attributable to the equity portion of the compound instrument. This is recognized and included in shareholders' equity, net of income tax effects, and not subsequently remeasured.

Borrowings are removed from the balance sheet when the obligation specified in the contract is discharged, cancelled or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss as other gains/(losses).

Borrowings are classified as current liabilities unless the Trust Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period. Where there is breach of a material provision of a long-term loan arrangement on or before the end of the reporting period with the effect that the liability becomes payable on demand on the reporting date, the entity does not classify the liability as current, if lender agreed, after the reporting period and before the approval of the financial Statements for issue, not to demand payment as a consequence of the breach.

q) Borrowing costs

Borrowing costs include interest calculated using the effective interest method, amortization of ancillary costs and other costs the Trust Group incurs in connection with the borrowing of funds. General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying assets are capitalized during the period of time that is required to complete and prepare the qualifying asset for its intended use or sale. Capitalization of borrowing costs is suspended and charged to the Consolidated Statement of Profit and Loss during extended periods when active development activity on the qualifying assets is interrupted.

Income earned on the temporary investment of specific borrowings pending their expenditure on qualifying asset is deducted from the borrowing costs eligible for capitalization.

Other borrowing costs are expensed in the period in which they are incurred.

r) Employee benefits

Employee benefits includes provident fund, gratuity and compensated absences.

Short-term employee benefit

All employee benefits falling due wholly within twelve months of rendering the service are classified as short- term employee benefits. The benefits like salaries, wages, short-term compensated absences etc. and the expected cost of bonus, and ex-gratia are recognised in the period the related service is rendered at undiscounted amount of benefits expected to be paid in exchange for that service.

The cost of short-term compensated absences is accounted as under:
- in case of accumulated compensated absences, when employees render the services that increase their entitlement of future compensated absences; and
- in case of non-accumulating compensated absences, when the absences occur.

Post-employment benefits

(a) Defined contribution plans:

The Trust Group offers its employees State governed provident fund linked with employee pension scheme as defined contribution plans. The contribution paid/ payable under the scheme is recognised during the period in which the employee renders the related service.

(b) Defined benefit plans:

The SPVs operate an unfunded defined benefit gratuity plan other than two of the SPVs viz. DATRPL and WUPTPL, that make contributions to a separately administered fund through annual contributions to Life Insurance Corporation of India under its Employee Gratuity Scheme. Trust Group's liability towards gratuity is determined at each period end.

For defined benefit gratuity plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each annual reporting period. Re- measurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding net interest), is reflected immediately in the balance sheet with a charge or credit recognized in other comprehensive income in the period in which they occur. Remeasurement recognised in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service costs are recognised in profit or loss on the earlier of the date of the plan amendment or curtailment, and the date that the Trust Group recognises related restructuring costs.

Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset.

Defined benefit costs are categorized as follows:
- service cost (including current service cost, past service cost, as well as gains and losses on curtailments);
- net interest expense or income; and
- re-measurement

The Trust Group presents the first two components of defined benefit costs in Consolidated Statement of Profit and Loss in the line item 'Employee benefits expense'. Curtailment gains and losses are accounted for as past service costs.

The present value of the defined benefit liability is calculated using a discount rate which is determined by reference to market yields at the end of the reporting period on government bonds.

(c) Other long-term employee benefit
The obligation for other long-term employee benefits such as long-term compensated absences, are measured at the present value of the estimated future cash outflows expected to be made by the Trust Group in respect of services provided by employees up to the reporting date.

Liability with regard to compensated absences is accrued based on actuarial valuations determined using projected unit credit method, at the Balance Sheet date, carried out by an independent actuary. Gains or losses arising out of actuarial valuations are recognised immediately in the Statement of Profit and Loss as income or expense respectively. Long-term incentive plan (LTIP) is structured as a cash-settled scheme, wherein notional LTIP Cash Points ("LCPs") are awarded to participants based on a Board defined performance measure of Cube Highways Trust over future years. Liability with regard to LTIP is accrued based on actuarial valuations determined using projected unit credit method, at the Balance Sheet date, carried out by an independent actuary.

s) Inventories

Inventories include stores and spares used in operation and maintenance of the road highways. Inventories are stated at the lower of cost and net realisable value. Cost of inventories include all costs incurred in bringing the inventories to their present location and condition. Costs are assigned to individual items of inventory based on first-in-first-out basis. Cost of purchased inventory are determined after deducting rebates and discounts.

t) Insurance claims

Insurance claims are accounted for based on claims admitted / expected to be admitted and to the extent that the amount recoverable can be measured reliably and it is reasonable to expect ultimate collection.

u) Leases

The Trust Group assesses whether a contract contains a lease, at inception of a contract. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an sidentified asset, the Trust Group assesses whether: (i) the contract involves the use of an identified asset

(ii) the Trust Group has substantially all of the economic benefits from use of the asset through the period of the lease and (iii) the Trust Group has the right to direct the use of the asset

At the date of commencement of the lease, the Trust Group recognizes a right-of-use asset ("ROU") and a corresponding lease liability for all lease arrangements in which it is a lessee, except for leases with a term of twelve months or less (short-term leases) and low value leases, which are accounted for as under.

Short-term leases and leases of low-value assets

Short term leases are leases with a term of twelve months or less. For short-term and low value leases, the Trust Group recognises the lease payments as an operating expense on a straight-line basis over the term of the lease.

Currently, the Trust Group has lease contracts which are short-term leases or leases of low-value assets.

v) Provisions, contingencies and contingent assets

A provision is recognized when the Trust Group has a present obligation (legal or constructive) as a result of past event and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, in respect of which a reliable estimate can be made of the amount of the obligation.

Contingent liabilities are disclosed in notes in case of a possible obligation arising from past events whose existence will be confirmed by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity or a present obligation arising from past events but is not recognized because it is not probable that an outflow of embodying economic benefits will be required to settle the obligation or the amount of the obligation cannot be measured with sufficient reliability.

A contingent asset is not recognised unless it becomes virtually certain that an inflow of economic benefits will arise. When an inflow of economic benefits is probable, contingent assets are disclosed in the financial statements. Contingent liabilities and contingent assets are reviewed at each balance sheet date.

w) Taxation

Income tax

Income tax expense or credit for the period is the tax payable on current period's taxable income based on the applicable income tax rate adjusted by changes in deferred tax assets and liabilities attributable to temporary differences and to unused tax losses. The current income tax charge is calculated based on tax laws enacted or substantively enacted at the end of the reporting period. Management periodically evaluates, positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation and provisions are established where appropriate based on amounts expected to be paid to the tax authorities.

Current tax items are recognized in correlation to the underlying transaction either in OCI or directly in equity. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred Tax

Deferred tax is recognised on temporary differences, being the differences between the tax bases of assets and liabilities and their carrying amount in the financial Statements. Deferred tax is measured using the tax rates and the tax laws enacted or substantively enacted as at the reporting date. Deferred tax liabilities are recognised for all temporary differences. Deferred tax assets are recognised for temporary differences of items other than unabsorbed depreciation and carry forward losses only to the extent that reasonable certainty exists that sufficient future taxable income will be available against which these can be realized. However, if there are unabsorbed depreciation and carry forward of losses and items relating to capital losses, deferred tax assets are recognised only if there is reasonable certainty supported by convincing evidence that there will be sufficient future taxable income available to realize the deferred tax assets. Deferred tax assets and liabilities are offset if such items relate to taxes on income levied by the same governing tax laws and the entity has a legally enforceable right for such set off. Deferred tax assets are reviewed at each reporting date for their realisability.

Minimum Alternate Tax (MAT) paid in accordance with the tax laws, which gives future economic benefits in the form of adjustment to future income tax liability, is considered as an asset if there is convincing evidence that the entity will pay normal income tax. Accordingly, MAT is recognised as a deferred tax asset in the Consolidated Balance Sheet when it is highly probable that future economic benefit associated with it will flow to the Trust Group.

Current and deferred tax relating to items directly recognised in other comprehensive income and reserves are recognised in other comprehensive income and reserves respectively and not in the Consolidated Statement of Profit and Loss.

x) Impairment of non-financial assets

The carrying values of assets / cash generating units at each reporting date are reviewed for impairment if any indication of impairment exists. If any indication exists, the Trust Group estimates the asset's recoverable amount. use.

If the carrying amount of the assets exceed the estimated recoverable amount, an impairment is recognized for such excess amount. The impairment loss is recognized as an expense in the Consolidated Statement of Profit and Loss.

The recoverable amount is the value in use which is based on the estimated future cash flows discounted to their present value using a pre-tax discount rate that reflects the current market assessments of the time value of money and the risks specific to the asset for which the estimated future cash flows have not been adjusted.

When there is indication that an impairment loss recognized for an asset (other than a revalued asset) in earlier accounting periods no longer exists or may have decreased, such reversal of impairment loss is recognized in the Consolidated Statement of Profit and Loss.

y) Provision for periodic maintenance / resurfacing obligations

The Trust Group estimates and provides for contractual obligations as per Service Concession Arrangement (SCA) with the Authority to restore the infrastructure to a specified level of serviceability at periodic intervals or restore the infrastructure to a specified condition before it is handed over to the Authority. Provisions are measured based on management’s estimate required to settle the obligation at the balance sheet date and are discounted using a rate that reflects the time value of money. When discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost. The same is reviewed at each balance sheet date and adjustments if any to the carrying amount is provided for accordingly.

z) Earnings per Unit

Basic earnings per unit are calculated by dividing the net profit / (loss) for the period attributable to unit holders of the Trust by the weighted average number of units outstanding during the period.

For the purpose of calculating diluted earnings per unit, the profit or loss for the period attributable to unit holders of the Trust and the weighted average number of units outstanding during the period are adjusted for the effects of all dilutive potential units.

Dilutive potential units are deemed converted as of the beginning of the reporting date, unless they have been issued at a later date. In computing diluted earnings per unit, only potential equity units that are dilutive and which either reduces earnings per unit or increase loss per units are included.

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
3 Property, plant and equipment					
Net carrying value	456.15	324.14	412.91	250.89	-
	456.15	**324.14**	**412.91**	**250.89**	**-**

Description	Land[(ii)]	Office equipment	Computers	Furniture and fixtures	Plant and equipment	Vehicles	Total
Gross carrying value							
Balance as at April 01, 2022	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Additions for the year	-	-	-	-	-	-	**-**
Disposals/adjustments for the year	-	-	-	-	-	-	**-**
Balance as at March 31, 2023	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Additions on account of acquisition (Refer note 50)	-	42.27	38.79	17.60	118.97	21.50	**239.13**
Additions for the year	1.15	8.11	14.56	1.63	32.16	3.86	**61.47**
Disposals/adjustments for the year	-	(12.44)	(6.03)	(2.22)	(0.31)	-	**(21.00)**
Balance as at March 31, 2024	**1.15**	**37.94**	**47.32**	**17.01**	**150.82**	**25.36**	**279.60**
Additions on account of acquisition (Refer note 50)	-	6.80	5.21	1.80	28.80	6.27	**48.88**
Additions for the year	-	12.13	14.94	5.42	137.95	1.03	**171.47**
Disposals/adjustments for the year	-	(1.34)	(0.20)	(0.93)	(3.21)	-	**(5.68)**
Balance as at March 31, 2025	**1.15**	**55.53**	**67.27**	**23.30**	**314.36**	**32.66**	**494.27**
Balance as at April 01, 2024	**1.15**	**37.94**	**47.32**	**17.01**	**150.82**	**25.36**	**279.60**
Additions on account of acquisition (Refer note 50)	-	2.87	0.69	1.29	14.32	5.82	**24.99**
Additions for the half year	-	3.95	6.46	1.57	63.84	0.09	**75.91**
Disposals/adjustments for the half year	-	-	-	-	(1.59)	-	**(1.59)**
Balance as at September 30, 2024	**1.15**	**44.76**	**54.47**	**19.87**	**227.39**	**31.27**	**378.91**
Balance as at April 01, 2025	**1.15**	**55.53**	**67.27**	**23.30**	**314.36**	**32.66**	**494.27**
Additions on account of acquisition (Refer note 50)	-	15.77	0.34	2.03	17.14	7.51	**42.79**
Additions for the half year	-	1.36	9.07	0.08	24.00	1.73	**36.24**
Disposals/adjustments for the half year	-	-	-	-	(1.83)	-	**(1.83)**
Balance as at September 30, 2025	**1.15**	**72.66**	**76.68**	**25.41**	**353.67**	**41.90**	**571.47**
Accumulated depreciation							
Balance as at April 01, 2022	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Charge for the year	-	-	-	-	-	-	**-**
Disposals for the year	-	-	-	-	-	-	**-**
Balance as at March 31, 2023	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Charge for the year	-	13.22	16.61	2.56	12.83	2.95	**48.17**
Disposals for the year	-	(12.00)	(5.62)	(1.64)	(0.20)	-	**(19.46)**
Balance as at March 31, 2024	**-**	**1.22**	**10.99**	**0.92**	**12.63**	**2.95**	**28.71**
Charge for the year	-	15.10	15.40	2.76	19.26	3.81	**56.33**
Disposals for the year	-	(1.16)	(0.20)	(0.48)	(1.84)	-	**(3.68)**
Balance as at March 31, 2025	**-**	**15.16**	**26.19**	**3.20**	**30.05**	**6.76**	**81.36**
Balance as at April 01, 2024	-	**1.22**	**10.99**	**0.92**	**12.63**	**2.95**	**28.71**
Charge for the half year	-	7.14	7.31	1.32	8.61	1.98	**26.36**
Disposals/adjustments for the half year	-	-	-	-	(0.30)	-	**(0.30)**
Balance as at September 30, 2024	**-**	**8.36**	**18.30**	**2.24**	**20.94**	**4.93**	**54.77**
Balance as at April 01, 2025	**-**	**15.16**	**26.19**	**3.20**	**30.05**	**6.76**	**81.36**
Charge for the half year	-	9.32	7.80	1.94	14.34	2.30	**35.70**
Disposals/adjustments for the half year	-	-	-	-	(1.74)	-	**(1.74)**
Balance as at September 30, 2025	**-**	**24.48**	**33.99**	**5.14**	**42.65**	**9.06**	**115.32**
Net carrying value:							
As at March 31, 2023	**-**	**-**	**-**	**-**	**-**	**-**	**-**
As at March 31, 2024	**1.15**	**36.72**	**36.33**	**16.09**	**138.19**	**22.41**	**250.89**
As at March 31, 2025	**1.15**	**40.37**	**41.08**	**20.10**	**284.31**	**25.90**	**412.91**
As at September 30, 2024	**1.15**	**36.40**	**36.17**	**17.63**	**206.45**	**26.34**	**324.14**
As at September 30, 2025	**1.15**	**48.18**	**42.69**	**20.27**	**311.02**	**32.84**	**456.15**

Notes:
(i) For details of property, plant and equipment hypothecated as security for borrowings refer note 21.
(ii) The land has been mortgaged for the borrowings vide Indenture of Mortgage dated April 12, 2024 (refer note 21).

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

4 Capital work-in-progress	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Plant and equipment	0.85	54.88	3.86	13.86	-
Office Equipment	-	-	-	0.19	-
Computers	-	-	-	0.05	-
	0.85	**54.88**	**3.86**	**14.10**	**-**

Capital work-in-progress (CWIP) ageing schedule

As at September 30, 2025	**Amount in CWIP for the period of**				
Particulars	**Less than 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
Plant and equipment	-	0.85	-	-	**0.85**
Office Equipment	-	-	-	-	**-**
Computers	-	-	-	-	**-**
Total	**-**	**0.85**	**-**	**-**	**0.85**

As at September 30, 2024	**Amount in CWIP for the period of**				
Particulars	**Less than 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
Plant and equipment	36.58	18.30	-	-	**54.88**
Office Equipment	-	-	-	-	**-**
Computers	-	-	-	-	**-**
Total	**36.58**	**18.30**	**-**	**-**	**54.88**

As at March 31, 2025	**Amount in CWIP for the period of**				
Particulars	**Less than 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
Plant and equipment	-	3.86	-	-	**3.86**
Office Equipment	-	-	-	-	**-**
Computers	-	-	-	-	**-**
Total	**-**	**3.86**	**-**	**-**	**3.86**

As at March 31, 2024	**Amount in CWIP for the period of**				
Particulars	**Less than 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
Plant and equipment	13.86	-	-	-	**13.86**
Office Equipment	0.19	-	-	-	**0.19**
Computers	0.01	0.04	-	-	**0.05**
Total	**14.06**	**0.04**	**-**	**-**	**14.10**

As at March 31, 2023	**Amount in CWIP for the period of**				
Particulars	**Less than 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
Plant and equipment	-	-	-	-	**-**
Office Equipment	-	-	-	-	**-**
Computers	-	-	-	-	**-**
Total	**-**	**-**	**-**	**-**	**-**

Notes:
(i) The Trust Group does not have any Capital-work-in progress which are suspended or whose completion is overdue or has exceeded its cost compared to its original plan.

(ii) For details of capital work-in-progress hypothecated as security for borrowings, refer note 21.

5 Investment properties	**As at September 30, 2025**	**As at September 30, 2024**	**As at March 31, 2025**	**As at March 31, 2024**	**As at March 31, 2023**
Net carrying value	8.52	6.77	6.73	6.80	-
	8.52	**6.77**	**6.73**	**6.80**	**-**

Description	**Land-Freehold**	**Flat-Freehold**	**Total**
Gross carrying value			
Balance as at April 01, 2022	**-**	**-**	**-**
Additions for the year	-	-	**-**
Disposals for the year	-	-	**-**
Balance as at March 31, 2023	**-**	**-**	**-**
Additions on account of acquisition (refer note 50)	6.12	1.16	**7.28**
Disposals for the year	-	-	**-**
Balance as at March 31, 2024	**6.12**	**1.16**	**7.28**
Additions for the year	-	-	**-**
Disposals for the year	-	-	**-**
Balance as at March 31, 2025	**6.12**	**1.16**	**7.28**
Balance as at April 01, 2024	**6.12**	**1.16**	**7.28**
Additions for the half year	**-**	**-**	**-**
Disposals for the half year	**-**	**-**	**-**
Balance as at September 30, 2024	**6.12**	**1.16**	**7.28**
Balance as at April 01, 2025	**6.12**	**1.16**	**7.28**
Additions on account of acquisition (refer note 50)[(v)]	1.82	-	**1.82**
Additions for the half year	-	-	**-**
Balance as at September 30, 2025	**7.94**	**1.16**	**9.10**
Accumulated depreciation			
Balance as at April 01, 2022	**-**	**-**	**-**
Charge for the year	-	-	**-**
Balance as at March 31, 2023	**-**	**-**	**-**
Charge for the year	-	0.48	0.48
Balance as at March 31, 2024	**-**	**0.48**	**0.48**
Charge for the year	-	0.07	0.07
Balance as at March 31, 2025	**-**	**0.55**	**0.55**
Balance as at April 01, 2024	**-**	**0.48**	**0.48**
Charge for the half year	**-**	0.03	**0.03**
Balance as at September 30, 2024	**-**	**0.51**	**0.51**
Balance as at April 01, 2025	**-**	**0.55**	**0.55**
Charge for the half year	**-**	0.03	0.03
Balance as at September 30, 2025	**-**	**0.58**	**0.58**
Net carrying value:			
As at March 31, 2023	**-**	**-**	**-**
As at March 31, 2024	**6.12**	**0.68**	**6.80**
As at March 31, 2025	**6.12**	**0.61**	**6.73**
As at September 30, 2024	**6.12**	**0.65**	**6.77**
As at September 30, 2025	**7.94**	**0.58**	**8.52**

Details of the latest fair value of SPV wise investment properties are as under:

Entity	**Valuer [(i)]**	**Dated**	**As at September 30, 2025**	**As at September 30, 2024**	**As at March 31, 2025**	**As at March 31, 2024**	**As at March 31, 2023**
APEPL	External valuer	August 06, 2023	0.72	0.72	0.72	0.72	-
DATRPL	External valuer	August 06, 2023	1.46	1.46	1.46	1.46	-
FRHPL	External valuer	August 06, 2023	0.41	0.41	0.41	0.41	-
JMTPL	External valuer	August 06, 2023	3.59	3.59	3.59	3.59	-
MBEL	External valuer	August 06, 2023	3.80	3.80	3.80	3.80	-

(i) External valuer is registered valuer as defined under rule 2 of Companies (Registered Valuers and Valuation) Rules, 2017.

(ii) The fair value was derived using the market comparable approach based on prevailing market prices without any significant adjustments being made to the market observable data. SPV obtains independent valuation for its respective investment property once in a block of three years. Management considers that the carrying amount of the investment property as reported above approximates its fair value.

(iii) Investment properties of MBEL (September 30, 2024: MBEL ,March 31, 2025: MBEL ,March 31, 2024: APEPL & MBEL, March 31, 2023: NA) is hypothecated as security for borrowings, refer note 21.

(iv) The charges on Investment properties of DATRPL, FRHPL, MBEL, APEPL and JMTPL have been fully satisfied during the year ended March 31, 2024. However, the respective SPVs are in the process of getting the pledge mortgage vacated with the concerned authorities.

(v) The Trust Group acquired an investment property amounting to Rs. 1.82 million as part of the acquisition transaction referred to in note 50A.

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
6 Intangible assets					
Net carrying value	2,38,265.75	2,23,388.74	2,44,382.18	2,21,160.26	-
	2,38,265.75	**2,23,388.74**	**2,44,382.18**	**2,21,160.26**	**-**

Description	**Rights under Service Concession Arrangements**	**Computer software**	**Total**
Gross carrying value			
Balance as at April 01, 2022	**-**	**-**	**-**
Additions for the year	-	-	**-**
Balance as at March 31, 2023	**-**	**-**	**-**
Additions on account of acquisition (Refer note 50)	2,33,470.43	2.24	**2,33,472.67**
Additions for the year	5,341.97	2.23	**5,344.20**
Adjustments for the year	(7.67)	(0.05)	**(7.72)**
Balance as at March 31, 2024	**2,38,804.73**	**4.42**	**2,38,809.15**
Additions on account of acquisition (Refer note 50)	34,847.93	0.73	**34,848.66**
Additions for the year	1,560.35	0.63	**1,560.98**
Adjustments for the year	(115.00)	-	**(115.00)**
Balance as at March 31, 2025	**2,75,098.01**	**5.78**	**2,75,103.79**
Balance as at April 01, 2024	**2,38,804.73**	**4.42**	**2,38,809.15**
Additions on account of acquisition (Refer note 50)	8,599.81	**-**	**8,599.81**
Additions for the half year	**-**	**-**	**-**
Balance as at September 30, 2024	**2,47,404.54**	**4.42**	**2,47,408.96**
Balance as at April 01, 2025	**2,75,098.01**	**5.78**	**2,75,103.79**
Additions on account of acquisition (Refer note 50)	697.64	-	**697.64**
Additions for the half year	233.03	1.89	**234.92**
Balance as at September 30, 2025	**2,76,028.68**	**7.67**	**2,76,036.35**
Accumulated amortisation and impairment			
Balance as at April 01, 2022	**-**	**-**	**-**
Charge for the year	-	-	**-**
Balance as at March 31, 2023	**-**	**-**	**-**
Charge for the year	11,775.97	1.10	**11,777.07**
Impairment loss for the year (Refer Note 62)	5,871.87	-	**5,871.87**
Adjustments for the year	-	(0.05)	**(0.05)**
Balance as at March 31, 2024	**17,647.84**	**1.05**	**17,648.89**
Charge for the year	13,071.44	1.28	**13,072.72**
Balance as at March 31, 2025	**30,719.28**	**2.33**	**30,721.61**
Balance as at April 01, 2024	**17,647.84**	**1.05**	**17,648.89**
Charge for the half year	6,370.69	0.64	**6,371.33**
Balance as at September 30, 2024	**24,018.53**	**1.69**	**24,020.22**
Balance as at April 01, 2025	**30,719.28**	**2.33**	**30,721.61**
Charge for the half year	7,047.99	1.00	**7,048.99**
Balance as at September 30, 2025	**37,767.27**	**3.33**	**37,770.60**
Net carrying value:			
As at March 31, 2023	**-**	**-**	**-**
As at March 31, 2024	**2,21,156.89**	**3.37**	**2,21,160.26**
As at March 31, 2025	**2,44,378.73**	**3.45**	**2,44,382.18**
As at September 30, 2024	**2,23,386.01**	**2.73**	**2,23,388.74**
As at September 30, 2025	**2,38,261.41**	**4.34**	**2,38,265.75**

Notes:

(i) Refer note 52 for information (including remaining amortisation period) related to Service Concession Arrangements.
(ii) For details of Intangible Assets hypothecated as security for borrowings, refer note 21.
(iii) Adjustments are on account of change in estimated contractual liability for infrastructure upgrade work. [refer note 48(b)]

7 Intangible assets under development (IAUD) - (Relating to Rights under Service Concession Arrangements)	**As at September 30, 2025**	**As at September 30, 2024**	**As at March 31, 2025**	**As at March 31, 2024**	**As at March 31, 2023**
Opening balance	222.55	1,126.94	1,126.94	-	-
Additions on account of acquisition (refer note 50)	-	-	67.07	2,097.21	-
Additions during the half year/year [(i)]	78.46	404.81	588.89	4,371.70	-
Capitalised during the half year/year	(233.03)	-	(1,560.35)	(5,341.97)	-
Closing balance	**67.98**	**1,531.75**	**222.55**	**1,126.94**	**-**

Intangible assets under development (IAUD) ageing schedule

As at September 30, 2025	**Amount in IAUD for the period of**				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project-in-progress	67.98	-	-	-	67.98
Projects temporarily suspended	-	-	-	-	-
Total	**67.98**	**-**	**-**	**-**	**67.98**

As at September 30, 2024	**Amount in IAUD for the period of**				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project-in-progress	1,531.75	-	-	-	1,531.75
Projects temporarily suspended	-	-	-	-	-
Total	**1,531.75**	**-**	**-**	**-**	**1,531.75**

As at March 31, 2025	**Amount in IAUD for the period of**				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project-in-progress	222.55	-	-	-	222.55
Projects temporarily suspended	-	-	-	-	-
Total	**222.55**	**-**	**-**	**-**	**222.55**

As at March 31, 2024	**Amount in IAUD for the period of**				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project-in-progress	1,126.94	-	-	-	1,126.94
Projects temporarily suspended	-	-	-	-	-
Total	**1,126.94**	**-**	**-**	**-**	**1,126.94**

As at March 31, 2023	**Amount in IAUD for the period of**				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project-in-progress	-	-	-	-	-
Projects temporarily suspended	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**

Notes:

(i) Includes construction costs aggregating Rs. 78.46 million (September 30, 2024: Rs. 396.61 million, March 31, 2025: Rs. 580.69 million, March 31, 2024: Rs. 4,345.48 million, March 31, 2023: Nil) and borrowing costs aggregating Rs. nil million (September 30, 2024: Rs. 8.20 million, March 31, 2025: Rs. 8.20 million, March 31, 2024: Rs. 26.22 million, March 31, 2023: Nil). The weighted average rate used to determine the amount of general borrowing cost eligible for capitalisation is Nil (September 30, 2024: 8.19%, March 31, 2025 : 8.19%, March 31, 2024 : 8.30%, March 31, 2023: Nil).

(ii) For details of Intangible assets hypothecated as security for borrowings, refer note 21.

(iii) There is no IAUD whose completion is overdue or has exceeded its cost compared to the original plan.

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	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
8 Investments					
Non-current					
Investments in equity instruments (Unquoted) - at cost					
400 Equity shares of Rs.10 each in Cube Highways Root Foundation, fully paid	0.01	0.01	0.01	0.01	-
	0.01	**0.01**	**0.01**	**0.01**	**-**

On September 12, 2020, APEPL, JMTPL, MBEL and WUPTPL each subscribed 100 shares of Cube Highways Root Foundation (CHRF), incorporated under Section 8 of the Companies Act, 2013 to carry out CSR activities in line with Schedule VII of the Companies Act, 2013 as amended from time to time. As per Memorandum of Association of CHRF, upon a winding up or dissolution of CHRF, there remains, after the satisfaction of all the debts and liabilities, any property whatsoever, the same shall not be distributed amongst the members of the CHRF but shall be given or transferred to such other Company having objects similar to the Objects of CHRF, subject to such conditions as the concerned National Company Law Tribunal may impose, or may be sold and proceeds thereof credited to the Insolvency and Bankruptcy Fund formed under Section 224 of the Insolvency and Bankruptcy Code, 2016.

9 Other financial assets					
Non-current					
Unsecured, considered good					
Security deposits	31.82	28.19	30.54	18.88	-
Receivable under service concession arrangements [(i)]	26,512.80	8,980.98	7,311.43	-	-
Amount paid on behalf of Grantor (Andhra Pradesh Road Development Corporation)	122.80	-	123.11	-	-
	26,667.42	**9,009.17**	**7,465.08**	**18.88**	**-**

(i) Refer foot note (iii) to Note 16

10 Current tax assets/(liabilities) (net)					
10A Current tax assets (net)					
Non current					
Income tax assets (net of tax provisions)	1,641.00	1,280.47	1,009.01	541.94	-
Current					
Income tax assets (net of tax provisions)	-	0.80	0.02	-	-
	1,641.00	**1,281.27**	**1,009.03**	**541.94**	**-**
10B Current tax liabilities (net)					
Income tax liabilities (net of tax payments)	(14.71)	(8.08)	-	(0.02)	-
	(14.71)	**(8.08)**	**-**	**(0.02)**	**-**

11 Other non-current assets					
Capital advances	171.50	39.11	132.19	92.13	-
Less: Allowance for doubtful advances	(1.25)	-	(1.34)	-	-
	170.25	39.11	130.85	92.13	-
Balance with government authorities	686.33	57.92	32.33	28.05	-
Less: Provision for doubtful receivable	(17.05)	-	(17.05)	-	-
	669.28	57.92	15.28	28.05	-
	839.53	**97.03**	**146.13**	**120.18**	**-**

12 Inventories					
Valued at lower of cost or net realisable value					
Stores and spares	415.08	313.93	346.54	223.64	-
	415.08	**313.93**	**346.54**	**223.64**	**-**

Note:
The cost of inventories recognised as an expense in the Consolidated Statement of Profit and Loss amounts to Rs. 168.04 million (September 30, 2024: Rs. 130.71 million, March 31, 2025: Rs. 798.45 million, March 31, 2024: Rs. 290.44 million, March 31, 2023: Nil).

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	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
12A Investments					
Current					
Investments in Mutual Funds at fair value through profit or loss (FVTPL):*					
Nil (September 30, 2024: 65,868.644, March 31, 2025: Nil, March 31, 2024: 27,980.47, March 31, 2023: Nil) units in SBI Liquid Fund - Growth Option	-	257.93	-	105.75	-
Nil (September 30, 2024: 7,87,68,491.173, March 31, 2025: Nil, March 31, 2024: 4,94,00,976.75, March 31, 2023: Nil) units in SBI Saving Fund - Growth Option	-	3,306.37	-	1,997.84	-
Nil (September 30, 2024: 3,21,820.545, March 31, 2025: Nil, March 31, 2024: 22,77,382.48, March 31, 2023: Nil) units in SBI Magnum Low Duration Fund - Direct Growth	-	1,172.21	-	7,509.48	-
Nil (September 30, 2024: 1,594.51, March 31, 2025: Nil, March 31, 2024: 3,17,836.71, March 31, 2023: Nil) units in Axis Liquid Fund - Direct Plan - Growth Option	-	4.44	-	852.97	-
Nil (September 30, 2024: 8,31,860.807, March 31, 2025: Nil, March 31, 2024: Nil, March 31, 2023: Nil) units in Axis Treasury Advantage Fund Direct Growth	-	2,540.10	-	-	-
Nil (September 30, 2024: 28,70,635.205, March 31, 2025: Nil, March 31, 2024: 92,965.00, March 31, 2023: Nil) units in Axis Money Market Fund Direct Growth	-	3,910.61	-	121.97	-
Nil (September 30, 2024: 2,80,621.405, March 31, 2025: Nil, March 31, 2024: 13,65,356.00, March 31, 2023: Nil) units in ICICI Money Market Fund Direct Growth	-	101.72	-	476.82	-
Nil (September 30, 2024: 26,859.816, March 31, 2025: Nil, March 31, 2024: Nil, March 31, 2023: Nil) units in Nippon Low Duration Fund Direct Growth	-	100.35	-	-	-
Nil (September 30, 2024: Nil, March 31, 2025: Nil, March 31, 2024: 8,38,192.07, March 31, 2023: Nil) units in Axis Treasury Advantage Fund - Direct Growth	-	-	-	2,462.93	-
Total	**-**	**11,393.73**	**-**	**13,527.76**	**-**
Aggregate amount of unquoted investment- Carrying value					
*Carrying value of unquoted investments is same as the fair value which is based on net asset value(NAV).	-	11,393.73	-	13,527.76	-

Notes:

(i)	Includes amount earmarked pursuant to loan covenant of common loan				
(a)	Debt Service Reserve Account (DSRA)	-	751.26	-	513.97	-
(b)	Major Maintenance Reserve Account (MMRA)	-	224.05	-	800.84	-

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	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
13 Trade receivables					
Current					
Trade receivables					
- Unsecured, considered good	2,396.51	2,070.31	1,636.71	600.79	-
- Unsecured, which have significant increase in credit risk	-	-	-	-	-
- Unsecured, credit impaired	167.88	171.17	168.98	180.65	-
Less: Impairment loss allowance (expected credit loss)	(167.88)	(171.17)	(168.98)	(180.65)	-
	2,396.51	**2,070.31**	**1,636.71**	**600.79**	**-**

		Outstanding for following periods from due date of payment				
Trade receivable ageing schedule	**Not due**	**Less than 6 month**	**6 month - 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
As at September 30, 2025							
Undisputed trade receivables – considered good	-	1,197.01	23.17	147.01	147.93	358.13	**1,873.25**
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	**-**
Undisputed trade receivables – credit impaired	-	-	-	8.88	9.23	149.77	**167.88**
Disputed trade receivables - considered good	-	-	-	279.20	-	244.06	**523.26**
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	**-**
Disputed trade receivables – credit impaired	-	-	-	-	-	-	**-**
Provision for doubtful debt receivable	-	-	-	(8.88)	(9.23)	(149.77)	**(167.88)**
Total Trade receivables	-	**1,197.01**	**23.17**	**426.21**	**147.93**	**602.19**	**2,396.51**

		Outstanding for following periods from due date of payment				
Trade receivable ageing schedule	**Not due**	**Less than 6 month**	**6 month - 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
As at September 30, 2024							
Undisputed trade receivables – considered good	-	674.62	234.69	260.68	68.67	308.36	**1,547.02**
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	**-**
Undisputed trade receivables – credit impaired	-	1.77	-	-	-	169.40	**171.17**
Disputed trade receivables - considered good	-	-	279.23	112.72	-	131.34	**523.29**
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	**-**
Disputed trade receivables – credit impaired	-	-	-	-	-	-	**-**
Provision for doubtful debt receivable	-	(1.77)	-	-	-	(169.40)	**(171.17)**
Total Trade receivables	-	**674.62**	**513.92**	**373.40**	**68.67**	**439.70**	**2,070.31**

		Outstanding for following periods from due date of payment				
Trade receivable ageing schedule	**Not due**	**Less than 6 month**	**6 month - 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
As at March 31, 2025							
Undisputed trade receivables – considered good	-	187.52	121.23	171.57	307.79	305.90	**1,094.01**
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	**-**
Undisputed trade receivables – credit impaired	-	-	-	-	-	168.98	**168.98**
Disputed trade receivables - considered good	-	-	-	298.59	-	244.11	**542.70**
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	**-**
Disputed trade receivables – credit impaired	-	-	-	-	-	-	**-**
Provision for doubtful debt receivable	-	-	-	-	-	(168.98)	**(168.98)**
Total Trade receivables	-	**187.52**	**121.23**	**470.16**	**307.79**	**550.01**	**1,636.71**

		Outstanding for following periods from due date of payment				
Trade receivable ageing schedule	**Not due**	**Less than 6 month**	**6 month - 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
As at March 31, 2024							
Undisputed trade receivables – considered good	-	115.73	1.48	65.57	141.87	144.80	**469.45**
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	**-**	**-**	**-**	**-**
Undisputed trade receivables – credit impaired	-	2.58	8.67	**-**	4.39	165.01	**180.65**
Disputed trade receivables - considered good	-	-	-	**-**	**-**	131.34	**131.34**
Disputed trade receivables – which have significant increase in credit risk	-	-	-	**-**	**-**	-	**-**
Disputed trade receivables – credit impaired	-	-	-	**-**	**-**	-	-
Provision for doubtful debt receivable	-	(2.58)	(8.67)	-	(4.39)	(165.01)	**(180.65)**
Total Trade receivables	-	**115.73**	**1.48**	**65.57**	**141.87**	**276.14**	**600.79**

		Outstanding for following periods from due date of payment				
Trade receivable ageing schedule	**Not due**	**Less than 6 month**	**6 month - 1 year**	**1-2 years**	**2-3 years**	**More than 3 years**	**Total**
As at March 31, 2023							
Undisputed trade receivables – considered good	-	-	-	**-**	**-**	**-**	**-**
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	**-**	**-**	**-**	**-**
Undisputed trade receivables – credit impaired	-	-	-	**-**	**-**	**-**	**-**
Disputed trade receivables - considered good	-	-	-	**-**	**-**	**-**	**-**
Disputed trade receivables – which have significant increase in credit risk	-	-	-	**-**	**-**	**-**	**-**
Disputed trade receivables – credit impaired	-	-	-	**-**	**-**	**-**	**-**
Provision for doubtful debt receivable	-	-	-	**-**	**-**	**-**	
Total Trade receivables	-	**-**	**-**	**-**	**-**	**-**	**-**

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
14 Cash and cash equivalents					
Cash on hand	12.36	12.87	15.02	16.13	-
Balances with banks:					
- current accounts	749.43	337.22	1,862.21	357.57	-
- deposits with original maturity of less than three months(i)	261.27	-	150.10	2,043.14	-
Liquid investments- mutual funds[(i) &(ii)]	6,478.22	-	6,439.75	-	-
	7,501.28	**350.09**	**8,467.08**	**2,416.84**	**-**
Notes:					
(i) Includes amount earmarked pursuant to loan covenant of common loan agreement and debenture trust deed of the Trust Group towards:					
(a) Debt Service Reserve Account (DSRA)	149.61	-	0.54	0.56	-
(b) Major Maintenance Reserve Account (MMRA)	373.26	-	302.68	1.04	-
(ii) Comprises Overnight mutual funds that are readily convertible to known amounts of cash and which are subject to insignificant risk of change in value.					
15 Bank balances other than cash and cash equivalents					
Deposits with original maturity more than three months but less than twelve months(i)	4,667.05	3,470.00	6,091.68	3,593.98	-
	4,667.05	**3,470.00**	**6,091.68**	**3,593.98**	**-**
Note:					
(i) Includes amount earmarked pursuant to loan covenant of common loan agreement and debenture trust deed of the Trust group towards:					
(a) Debt Service Reserve Account (DSRA)	3,232.42	3,450.00	3,044.00	3,083.20	-
16 Other financial assets					
Current - Unsecured, considered good					
Interest accrued on fixed deposits with banks	204.41	153.28	156.69	233.61	-
Deposits with banks with original maturity of more than twelve months[(i)]	1,396.99	2,168.03	446.82	957.29	-
Security deposits	4.79	0.22	1.49	0.27	-
Grant receivable [(ii)]	181.03	-	181.03	-	-
Receivable under service concession arrangements[(iii)]	15,696.52	7,307.56	7,122.52	600.91	-
Receivable from related parties [Refer note 46]	6.94	0.92	14.94	0.08	-
Net Plan assets for Gratuity fund (Refer note 40)	12.73	12.73	12.96	16.59	-
Other receivables	0.69	5.98	0.30	0.01	-
	17,504.10	**9,648.72**	**7,936.75**	**1,808.76**	**-**
Notes:					
(i) Includes amount earmarked pursuant to loan covenant of common loan agreement and debenture trust deed of the Trust group towards:					
(a) Debt Service Reserve Account (DSRA)	839.20	-	250.00	834.93	-
(b) Major Maintenance Reserve Account (MMRA)	-	-	-	355.97	-
(ii) **Movement in grant receivable**					
Particulars					
Opening Balance	**181.03**	**-**	**-**	**-**	-
Additions on account of acquisition (refer note 50)	-	**-**	66.48	83.14	-
Accrued during the half year/year	-	**-**	-	-	-
Grant received during the half year/year	-	**-**	-	(5.00)	-
Grant adjusted in Intangible assets during the half year/year	-	**-**	114.55	(78.14)	-
Closing balance	**181.03**	**-**	**181.03**	**-**	**-**
(iii) **Movement in receivables under service concession arrangements during the half year/year:**					
Particulars					
Opening balance	**14,433.95**	**600.91**	**600.91**	**-**	**-**
Additions on account of acquisition (refer note 50)	31,084.29	15,231.56	15,231.56	1,330.99	-
Add: Interest income on annuity receivable from National Highway Authority of India ('NHAI') [Refer note 30]	1,306.16	439.79	1,106.90	105.68	-
Add: Recoverable for operation and maintenance income for the half year/year [Refer note 30]	1,594.70	955.65	1,862.68	294.64	-
Add: Recoverable for renewal and overlay income for the half year/year [Refer note 30]	-	974.82	1,166.12	-	-
Less: Annuity received from NHAI	(6,209.78)	(1,914.19)	(5,587.93)	(1,130.40)	-
Add: Transfer from CWIP	-	-	53.71	-	-
Closing balance	**42,209.32**	**16,288.54**	**14,433.95**	**600.91**	**-**
- Non-current	26,512.80	8,980.98	7,311.43	-	-
- Current	15,696.52	7,307.56	7,122.52	600.91	-

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
17 Other current assets					
Advance to suppliers	195.06	156.45	76.04	130.19	-
Less: Allowance for doubtful advances	(7.14)	-	(10.97)	-	-
	187.92	156.45	65.07	130.19	-
Balance with government authorities	351.14	793.31	349.81	167.55	-
Less: Provision for doubtful receivable	(4.18)	(2.91)	(2.91)	(2.91)	-
	346.96	790.40	346.90	164.64	-
Advance to others	0.48	1.48	1.19	0.75	-
Amount paid under protest	197.36	37.88	226.22	33.00	-
Advance to employees	7.80	5.52	6.99	4.14	-
Unbilled revenue related to construction	320.64	286.35	335.18	107.25	-
Prepaid expenses	201.30	76.15	248.97	161.43	0.24
Other receivables	-	-	-	1.02	-
	1,262.46	**1,354.23**	**1,230.52**	**602.42**	**0.24**

Note:
(i) Also refer note 44A for impairment loss allowance movement.

18 Assets held for sale					
Building	2.82	-	-	-	-
Land	0.84	-	-	0.10	-
	3.66	**-**	**-**	**0.10**	**-**

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	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
19 Unit Capital					
1,344,069,762 units (September, 30, 2024: 1,334,448,362 units, March 31, 2025: 1,334,448,362 units, March 31, 2024: 1,290,346,112 units and March 31, 2023: Nil units) Ordinary units of Rs.100 (absolute amount) each (fully paid)	1,34,396.03	1,33,433.89	1,33,433.89	1,29,023.67	-
Nil units (September, 30, 2024: 37,500,000 units, March 31, 2025: 37,500,000 units, March 31, 2024: 157,500,000 units and March 31, 2023: Nil units) Subordinate units of Rs.100 (absolute amount) each (fully paid)	-	3,750.00	3,750.00	15,750.00	-
Total	**1,34,396.03**	**1,37,183.89**	**1,37,183.89**	**1,44,773.67**	**-**

(a) Reconciliation of units outstanding at the beginning and at the end of the half year/ year :

	September 30, 2025		September 30, 2024		March 31, 2025		March 31, 2024		March 31, 2023	
	No. of units	Rs. in million	No. of units	Rs. in million	No. of units	Rs. in million	No. of units	Rs. in million	No. of units	Rs. in million
Ordinary unit capital of Rs.100 (absolute amount) each fully paid up										
Opening Balance	1,33,44,48,362	1,33,433.89	1,29,03,46,112	1,29,023.67	1,29,03,46,112	1,29,023.67	-	-	-	-
Add: Ordinary units issued during the half year/year	-	-	-	-	-	-	1,29,03,46,112	1,29,034.61	-	-
Add:Subordinate units reclassified to Ordinary units during the half year/year (Refer note 64 and 65)	96,21,400	962.14	4,41,02,250	4,410.22	4,41,02,250	4,410.22	-	-	-	-
Units issue Expenses[iv]	-	-	-	-	-	-	-	(10.94)	-	-
Closing Balance	**1,34,40,69,762**	**1,34,396.03**	**1,33,44,48,362**	**1,33,433.89**	**1,33,44,48,362**	**1,33,433.89**	**1,29,03,46,112**	**1,29,023.67**	**-**	**-**

	September 30, 2025		September 30, 2024		March 31, 2025		March 31, 2024		March 31, 2023	
	No. of units	Rs. in million	No. of units	Rs. in million	No. of units	Rs. in million	No. of units	Rs. in million	No. of units	Rs. in million
Subordinate unit capital of Rs.100 (absolute amount) each fully paid up										
Opening Balance	3.75.00.000	3.750.00	15.75.00.000	15.750.00	15.75.00.000	15.750.00	-	-	-	-
Add:Subordinate units issued during the half year/year	-	-	-	-	-	-	15.75.00.000	15.750.00	-	-
Less:Subordinate units reclassified to Ordinary units during the half year/year (Refer note 64 and 65)	(96,21,400)	(962.14)	(4,41,02,250)	(4,410.22)	(4,41,02,250)	(4,410.22)	-	-	-	-
Less:Subordinate units extinguished during the half year/year (Refer note 64 and 65)	(2,78,78,600)	(2,787.86)	(7,58,97,750)	(7,589.78)	(7,58,97,750)	(7,589.78)	-	-	-	-
Closing Balance	**-**	**-**	**3,75,00,000**	**3,750.00**	**3,75,00,000**	**3,750.00**	**15,75,00,000**	**15,750.00**	**-**	**-**

Notes:

(i) **Units allotted for consideration other than cash, bonus units or units bought back during last five financial years:**

On April 17,2023, the acquisition of equity interest in the SPV has been done by the first allotment of 910,086,940 Ordinary Units of Rs. 100 (absolute amount) each and 157,500,000 Subordinate Units of Rs. 100 (absolute amount) each aggregating to Rs. 106,758.69 million to the Sponsors (viz. Cube Highways and Infrastructure Pte. Ltd. and Cube Highways and Infrastructure III Pte. Ltd., collectively referred to as "Sponsors") and/or their associates (viz. Cube Highways and Infrastructure II Pte. Ltd., Cube Highways and Infrastructure I-D Pte. Ltd. and Cube Mobility Investments Pte. Ltd., collectively referred to as "Associates").

Details of Numbers of Units alloted for aquiring all the equity interest held by the sponsor and its associates in the following SPVs:

Name of SPVs	Ordinary Units		Total Ordinary Units	Subordinate Units
	Sponsor	Sponsor-associates		Sponsor
MBEL	1.01.94.395	-	1,01,94,395	69.03.914
JMTPL	4.51.78.514	-	4,51,78,514	3.05.96.086
WUPTPL	26.25.197	-	26,25,197	-
APEPL	16,92,117	-	16,92,117	-
GAEPL	10,35,17,584	-	10,35,17,584	-
NDEPL	-	2,46,55,095	2,46,55,095	-
FRHPL	-	14,02,82,874	14,02,82,874	-
DATRPL	27.80.74.813	-	27,80,74,813	12.00.00.000
WVEPL	3.46.10.065	-	3,46,10,065	-
HTPL	-	4.32.83.656	4,32,83,656	-
JLTPL	-	3.85.85.743	3,85,85,743	-
JVTPL	-	2,59,56,285	2,59,56,285	-
KETPL	-	1,01,23,890	1,01,23,890	-
KMTPL	-	3,86,82,134	3,86,82,134	-
LRTPL	-	4,27,41,236	4,27,41,236	-
MKTPL	-	4.02.28.259	4,02,28,259	-
NKTPL	-	1,25,32,849	1,25,32,849	-
SMTPL	-	1,71,22,234	1,71,22,234	-
Total	**47.58.92.685**	**43.41.94.255**	**91.00.86.940**	**15.75.00.000**

(ii) During the year ended March 31, 2024, the Trust alloted 380,259,172 Ordinary Units of Rs. 100 each as Fresh Issue aggregating to Rs. 38,025.92 million. The details of utilisation of fresh proceeds are as follows:-

Particulars	Proposed Utilisation	Actual Utilisation upto March 31, 2024	Unutilised Amount as at March 31, 2024
Providing loans to SPV's for repayment or pre-payment of debt, including any accrued interest, availed by them from certain banks and financial institutions and the Sponsors and its Associates (including all accrued interest), certain capital expenditure and creation of debt service reserve account for the InvIT Loan.	34,742.92	34,742.92	-
General Purposes including funding of expenses of the InvIT (including interest on InvIT Loan) and refinance fees	3,268.00	3,268.00	-
Offer Expense	15.00	15.00	-
Total	**38,025.92**	**38,025.92**	-

(iii) There is reclassification during the half year ended September 30, 2025 of 9.62 million (September 30, 2024: 44.10 million, March 31, 2025: 44.10 million , March 31, 2024: Nil , March 31, 2023: Nil) Subordinate Units to Ordinary Units and extinguishment of 27.87 million (September 30, 2024: 75.90 million, March 31, 2025: 75.90 million, March 31, 2024: Nil, March 31, 2023: Nil) Subordinate Units (Refer note 64 and 65).

(iv) Issue expenses of Rs. 10.94 million incurred during year ended March 31, 2024 in connection with issue of units had been reduced from the Unit capital in accordance with Ind AS 32 Financial Instruments: Presentation.

(v) Under the provisions of the InvIT Regulations, the Trust is required to distribute to Unitholders not less than 90% of the Net Distributable Cash Flows of the Trust for each financial year. Accordingly, a portion of the Unit Capital contains a contractual obligation of the Trust to pay to its Unitholders as cash distributions. Hence, the Unit Capital is a compound financial instrument which contain both equity and liability components in accordance with Ind AS 32 - Financial Instruments: Presentation. However, in accordance with SEBI Circulars issued under the InvIT Regulations, the Unit Capital has been presented as "Equity" in order to comply with the requirements of Chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025 (as amended) dealing with the minimum disclosures for key financial information/statements. Consistent with Unit Capital being classified as equity, the distributions to Unitholders is also presented in Consolidated Statement of Changes in Unitholders' Equity when the distributions are approved by the Board of Directors of Investment Manager other than repayment of capital. As per Clause 4.2.8(b) of the SEBI Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, distributions made by an InvIT to its unitholders that represent a repayment of capital should be disclosed as a negative item on the face of the Consolidated Balance Sheet. However, for reporting periods up to March 31, 2025, such distributions were previously reflected as a reduction in retained earnings.

(vi) **Sponsor lock in**

In terms of the SEBI InvIT Regulations, the Sponsors are required to, collectively, hold not less than 15% (fifteen percent) of the Ordinary Units on a post-Offer basis which it shall be locked-in for a period of three years from the date of listing of the Ordinary Units. Further, the unitholding of Ordinary Units of the Sponsors, exceeding 15% (fifteen percent) on a post-Offer basis, shall be locked-in for a period of not less than one year from the date of listing of the Ordinary Units.On April 19, 2023 (listing date) and on March 31, 2024, Cube Highways and Infrastructure III Pte. Ltd. ("CH III") holds 246,578,212 Ordinary Units, aggregating to 19.11% of the Ordinary Units on a post-Offer basis, out of which 193,551,917 Ordinary Units held by CH-III, aggregating to 15% of the Ordinary Units on a post-Offer basis, shall be locked-in for a period of three years from the date of listing of the Ordinary Units. As on March 31, 2025, CH III holds 279,654,900 Ordinary Units, aggregating to 20.96% of the Ordinary Units on a post-Offer basis, out of which 200,167,255 Ordinary Units held by CH-III, aggregating to 15% of the Ordinary Units on a post-Offer basis, are locked-in for a period of three years from the date of listing of the Ordinary Units. Further, the unitholding of Ordinary Units of the Sponsors, exceeding 15% (fifteen percent) on a post-Offer basis, shall be locked-in for a period of not less than one year from the date of listing of the Ordinary Units.

As at September 30, 2025, Cube Highways and Infrastructure III Pte. Ltd. ("CH III") holds 279,654,900 Units, aggregating to 20.81% of the Units on a post-Offer basis, out of which 201,610,464 Units held by CH-III, aggregating to 15% of the Units on a post-Offer basis, are locked-in for a period of three years from the date of listing of the Units (i.e. from April 19, 2023).

(b) Terms and rights attached to unit:

The Trust has two class of units having a par value of Rs. 100 per unit namely Ordinary Unit and Subordinate Unit.

Terms in relation to Ordinary unit: Each unit represents an undivided beneficial interest in the Trust . Each holder of Ordinary unit is entitled to one vote per unit. The Ordinary Unitholders have the right to receive at least 90% of the Net Distributable Cash Flows of the Trust at least once in each financial year in accordance with the SEBI InvIT Regulations. The Board of Directors of the Investment Manager approves distributions. The distribution will be in proportion to the number of units held by the unitholders. The Trust declares and pays distributions in Indian rupees. The distributions will be as per the distribution policy of the Trust.

The Unitholder(s) shall not have any personal liability or obligation with respect to the Trust.

Terms in relation to Subordinate unit: The Subordinate Unitholders shall not be entitled to any distribution rights or other economic rights or any other rights available in relation to the Ordinary Units.

The Subordinate Unitholders shall not be entitled to any voting rights in relation to the Trust and/or its Project SPVs. Further, the Subordinate Unitholders shall not be entitled to receive notices of or participate in, any meeting of the Unitholders holding Ordinary Units, including the annual meeting of Unitholders, in their capacity as holders of the Subordinate Units, unless it is proposed to vary the terms of the Subordinate Units. Further, subject to applicable law and except as required for the purposes of Trust Deed, the Subordinate Unitholders shall not be considered, for the purposes of the rights of unitholders under Regulation 22 of the InvIT Regulations.

The Sponsors shall not transfer the Subordinate Units to any entity which is not a sponsor of the Trust or an Associate of the Sponsors. The Subordinate Units shall remain unlisted at all times unless if mandated under applicable law or by any regulatory and statutory authority.

(1) Entitlement Event A (Refer note 64)

Date of Trigger	June 30, 2024 (Completed reclassification on July 19, 2024)
Underlying Reference Initial Portfolio Asset	DATRPL
Actual Performance Metric	Cumulative actual toll revenues (excluding Overloading Revenue and Penalty Revenue) for financial years ended March 31, 2023 and March 31, 2024, as provided under the audited financials of DATRPL, rounded off to the nearest multiple of one lakh.
Base Performance Metric	Rs. 9,900 million
Entitlement Terms	For every additional Rs. 0.10 million of Actual Performance Metric over and above the Base Performance Metric, number of Initial Tranche Subordinate Units as defined below will be entitled to carry the same rights as Ordinary Units, subject to limit defined under Maximum Entitlement Event A Number of Initial Tranche Subordinate Units = 425,000/ issue price per Ordinary Unit allotted in the Initial Offer
Maximum Entitlement Event A	Maximum number of initial Tranche Subordinate Units that can be entitled to carry the same rights as Ordinary Units based on occurrence of Entitlement Event A = 12,000 million/ issue price per Ordinary Unit allotted in the Initial Offer

(2) Entitlement Event B (Refer note 65)

Date of Trigger	June 30, 2025 (Completed reclassification on July 14, 2025)
Underlying Reference Portfolio Assets	JMTPL & MBEL
Actual Performance Metric	Cumulative actual toll revenues (excluding Overloading Revenue and Penalty Revenue) for the financial years ended March 31, 2023, March 31, 2024 and March 31, 2025, as provided under the audited financials of JMTPL and MBEL, rounded off to the nearest multiple of one lakh.
Base Performance Metric A	Rs. 9,375 million
Base Performance Metric B	Rs. 9,750 million
Entitlement Terms	1. For every additional Rs. 0.1 million of Actual Performance Metric over the Base Performance Metric A and up to Base Performance Metric B, number of Initial Tranche Subordinate Units as defined below will be entitled to carry the same rights as Ordinary Units Number of Initial Tranche Subordinate Units = 1,40,000/ issue price per Ordinary Unit allotted in the Initial Offer. 2. For every additional Rs. 0.1 million of Actual Performance Metric over and above the Base Performance Metric B, number of Initial Tranche Subordinate Units as defined below will be entitled to carry the same rights as Ordinary Units. Number of Initial Tranche Subordinate Units = 220,000/ issue price per Ordinary Unit allotted in the Initial Offer.
Maximum Entitlement Event B	Maximum number of Initial Tranche Subordinate Units that can be entitled to carry the same rights as Ordinary Units based on occurrence of Entitlement Event B = 3,750 million/ issue price per Ordinary Unit allotted in the Initial Offer

(c) Unitholders holding more than 5% units as at balance sheet date

(i) Ordinary units

Name of the Unitholders	As at September 30, 2025		As at September 30, 2024		As at March 31, 2025		As at March 31, 2024		As at March 31, 2023	
	No. of units	% holding	No. of units	% holding	No. of units	% holding	No. of units	% holding	No. of units	% holding
Cube Mobility Investment Pte. Ltd.	17,25,97,336	12.84%	22,41,34,052	16.80%	24,12,56,286	18.08%	26,92,56,286	20.87%	-	-
Cube Highways and Infrastructure-III Pte Ltd.	27,96,54,900	20.81%	27,96,54,900	20.96%	27,96,54,900	20.96%	24,65,78,212	19.11%	-	-
BCI IRR India Holdings INC.	24,92,41,294	18.55%	24,74,13,228	18.54%	24,74,13,228	18.54%	23,90,33,801	18.53%	-	-
Cube Highways and Infrastructure II Pte Ltd.	10,41,28,887	7.75%	10,41,56,208	7.81%	10,41,28,887	7.80%	12,37,56,208	9.59%	-	-
Larsen and Toubro Limited	8,85,50,000	6.59%	8,88,00,000	6.65%	8,59,50,000	6.44%	-	-	-	-
Cube Highways and Infrastructure Pte Ltd	-	-	-	-	-	-	10,35,17,584	8.02%	-	-
Seventy Second Investment Company LLC	8,06,43,273	6.00%	8,00,65,989	6.00%	8,00,65,989	6.00%	7,74,19,854	6.00%	-	-

(ii) Subordinate units

Name of the Unitholders	As at September 30, 2025		As at September 30, 2024		As at March 31, 2025		As at March 31, 2024		As at March 31, 2023	
	No. of units	% holding	No. of units	% holding	No. of units	% holding	No. of units	% holding	No. of units	% holding
Cube Highways and Infrastructure-III Pte Ltd.	-	-	-	-	-	-	12,00,00,000	76.19%	-	-
Cube Highways and Infrastructure Pte Ltd	-	-	3,75,00,000	100.00%	3,75,00,000	100.00%	3,75,00,000	23.81%	-	-

(d) Details of Units held by Sponsors

Ordinary Units

Sponsors name	As at September 30, 2025			
	No. of units at the beginning of the half year	Change during the half year	No. of units at the end of the half year	% change during the half year
Cube Highways and Infrastructure Pte. Ltd	-	-	-	-
Cube Highways and Infrastructure-III Pte Ltd	27,96,54,900	-	27,96,54,900	-

Sponsors name	As at September 30, 2024			
	No. of units at the beginning of the half year	Change during the half year	No. of units at the end of the half year	% change during the half year
Cube Highways and Infrastructure Pte. Ltd	10,35,17,584	(10,35,17,584)	-	-100.00%
Cube Highways and Infrastructure-III Pte Ltd	24,65,78,212	3,30,76,688	27,96,54,900	13.41%

Soonsors name	As at March 31, 2025			
	No. of units at the beginning of the year	Change during the year	No. of units at the end of the year	% change during the year
Cube Highways and Infrastructure Pte. Ltd	10,35,17,584	(10,35,17,584)	-	-100.00%
Cube Highways and Infrastructure-III Pte Ltd	24,65,78,212	3,30,76,688	27,96,54,900	13.41%

Sponsors name	As at March 31, 2024			
	No. of units at the beginning of the year	Change during the year	No. of units at the end of the year	% change during the year
Cube Highways and Infrastructure Pte. Ltd	-	10,35,17,584	10,35,17,584	100.00%
Cube Highways and Infrastructure-III Pte Ltd	-	24,65,78,212	24,65,78,212	100.00%

Sponsors name	As at March 31, 2023			
	No. of units at the beginning of the year	Change during the year	No. of units at the end of the year	% change during the year
Cube Highways and Infrastructure Pte. Ltd	-	-	-	-
Cube Highways and Infrastructure-III Pte Ltd	-	-	-	-

Subordinate Units

As at September 30, 2025			
No. of units at the beginning of the half year	Change during the half year	No. of units at the end of the half year	% change during the half year
3,75,00,000	(3,75,00,000)	-	-100.00%
-	-	-	-

As at September 30, 2024			
No. of units at the beginning of the half year	Change during the half year	No. of units at the end of the half year	% change during the half year
3,75,00,000	-	3,75,00,000	0.00%
12,00,00,000	(12,00,00,000)	-	-100.00%

As at March 31, 2025			
No. of units at the beginning of the year	Change during the year	No. of units at the end of the year	% change during the year
3,75,00,000	-	3,75,00,000	0.00%
12,00,00,000	(12,00,00,000)	-	-100.00%

As at March 31, 2024			
No. of units at the beginning of the year	Change during the year	No. of units at the end of the year	% change during the year
-	3,75,00,000	3,75,00,000	100.00%
-	12,00,00,000	12,00,00,000	100.00%

As at March 31, 2023			
No. of units at the beginning of the year	Change during the year	No. of units at the end of the year	% change during the year
-	-	-	-
-	-	-	-

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		As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
20A	**Other equity**					
i)	**Capital reserve**					
	Opening Balance	**7,589.78**	**-**	**-**	**-**	**-**
	Subordinate units extinguishment during the half year/ year (Refer Note 19b & 64 & 65)	2,787.86	7,589.78	7,589.78	-	-
	Closing Balance	**10,377.64**	**7,589.78**	**7,589.78**	**-**	**-**
ii)	**Retained earnings**					
	Opening Balance	**(23,559.55)**	**(15,284.29)**	**(15,284.29)**	**(289.96)**	**(12.08)**
	Net Profit/(loss) for the half year/year	406.77	(260.41)	(357.33)	(7,059.15)	(277.88)
	Other comprehensive income/(loss):					
	Re-measurement (losses)/gains on defined benefit obligations (net of tax)	(0.48)	(1.07)	0.55	0.45	-
	Distribution during the half year/year (Refer Note 63)	(4,843.53)	(4,275.44)	(7,918.48)	(7,935.63)	-
	Closing Balance	**(27,996.79)**	**(19,821.21)**	**(23,559.55)**	**(15,284.29)**	**(289.96)**
	Total other equity	**(17,619.15)**	**(12,231.43)**	**(15,969.77)**	**(15,284.29)**	**(289.96)**

Retained earnings
Retained earnings are created from the profits earned by the Trust as adjusted for distribution to the unitholders .The distributions by the Trust to its unitholders are based on the Net Distributable Cash Flows of the Trust under the SEBI InvIT regulations.

Capital Reserve
Capital reserve is created on account of extinguishment of Subordinate Units held by a sponsor(Refer note 64 and 65).

20B	**Distribution-Repayment of Capital***					
	Particulars					
	Opening Balance	(6,840.23)	-	-	-	-
	Distribution during the half year/year (Refer Note 63)	(3,520.85)	(3,477.42)	(6,840.23)	-	-
	Closing Balance	**(10,361.08)**	**(3,477.42)**	**(6,840.23)**	**-**	**-**

*As the Trust had reduced the Retained Earnings (under Other Equity) for the amount of NDCF distribution in the nature of repayment of capital in past periods, in terms of Clause 4.2.8(b) of the SEBI Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, the Trust is required to regroup the figures for Retained Earnings (under Other Equity) for prior periods presented in the Consolidated Financial Statements and shown the same as a separate line item on the face of the Consolidated Balance sheet. Accordingly the Trust has regrouped the Repayment of Capital from Retained earnings to Distribution-Repayment of Capital.

20C	**Non-Controlling interest**					
	Opening Balance	0.66	0.53	0.53	-	-
	Addition on account of Acquisition (Refer Note 50)	-	-	-	0.46	-
	Net Profit for the half year/year	0.08	0.05	0.13	0.07	-
	Re-measurement (losses)/gains on defined benefit obligations (net of tax)	-	-	-	-	-
	Total other equity (attributable to Non-Controlling interest)	**0.74**	**0.58**	**0.66**	**0.53**	**-**

21	**Borrowings - Non-current**	**As at September 30, 2025**	**As at September 30, 2024**	**As at March 31, 2025**	**As at March 31, 2024**	**As at March 31, 2023**
	At amortised cost					
	Secured:					
	a) Non - Convertible Debentures (NCD) [Refer note 21(i)]					
	- Rated, listed and redeemable	1,044.27	1,241.98	1,243.15	1,956.65	-
	b) Non - Convertible Debt Securities [Refer note 21(i)]					
	- Rated, listed and redeemable	50,044.95	16,294.58	30,617.19	10,025.79	-
	Sub-total (A)	**51,089.22**	**17,536.56**	**31,860.34**	**11,982.44**	**-**
	c) Term Loan [Refer note 21(ii) A]					
	- from Banks	1,02,235.50	91,360.22	98,293.40	80,836.17	-
	- from Financial institution	25,383.42	17,853.92	20,742.12	14,283.13	-
	Sub-total (B)	**1,27,618.92**	**1,09,214.14**	**1,19,035.52**	**95,119.30**	**-**
	Unsecured:					
	Non Convertible Debentures From others [Refer note 21(iii)]					
	National Investment & Infrastructure Fund	15.92	-	-	-	-
	Reliance Infrastructure Ltd.	100.00	100.00	100.00	100.00	-
	Sub-total (C)	**115.92**	**100.00**	**100.00**	**100.00**	**-**
	At fair value through profit or loss					
	Unsecured term loan [Refer note 21(ii) B]:					
	KNR Constructions Limited	150.99	150.99	150.99	150.99	-
	Sub-total (D)	**150.99**	**150.99**	**150.99**	**150.99**	**-**
	Less: Current maturities of long term borrowings					
	Secured:					
	a) Non - convertible debentures (NCD)					
	- Rated, listed and redeemable	105.00	100.00	200.00	611.00	-
	b) Non - Convertible Debt Securities					
	- Rated, listed and redeemable	521.60	435.60	521.60	360.50	-
	c) Term loan					
	- from Banks	3,435.94	3,138.80	3,267.15	2,975.00	-
	- from Financial institution	792.84	571.20	610.84	525.00	-
	Unsecured:					
	a) Non - convertible debentures - from others	115.92	100.00	100.00	100.00	-
	b) Term loans - from others	150.99	150.99	150.99	150.99	-
	Total current maturities of borrowings (E) (Refer note 25)	**5,122.29**	**4,496.59**	**4,850.58**	**4,722.49**	**-**
	Total non-current borrowings (A+B+C+D-E)	**1,73,852.76**	**1,22,505.10**	**1,46,296.27**	**1,02,630.24**	**-**

21(i) Borrowing footnote NCDs and Debt Securities

For repayment terms and security details of the outstanding non-current borrowings (including current maturities) refer the table below:

Secured NCDs:[1]

S.No.	Nature of Borrowings	Name of the Entity	Lender	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023	Interest and repayment terms
1(a)	Non Convertible Debt Securities	Cube Highways Trust	Listed NCDs	8,179.96	-	-	-	-	On August 13, 2025, the Trust allotted 42,000 (Forty two thousand) 6.93% and 40,000 (Forty thousand) 7.3015% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities respectively having a face value of Rs. 1,00,000 (Rupees One Lakh) each aggregating to Rs. 82,000 million (Rupees eighty two thousand million Only) ("Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows: **(Amount Rs. Million)** **Particulars** | **Proposed Utilisation** | **Actual Utilisation upto September 30, 2025** | **Unutilised Amount as at September 30, 2025** for refinancing of part or full commercial papers (CPs) issued by the issuer | 2,620.00 | 2,620.00 | - for on lending to the tranche III Project SPVs (AJUHPL and QEPL) for the purpose of repayment of the existing facilities availed by such Tranche III Project SPVs (AJUHPL and QEPL) | 5,580.00 | 5,580.00 | - **Redemption terms**: As at September 30, 2025, Rs. 4,200.00 million repayable as on February 20, 2029 and Rs. 4000.00 million repayable as on August 20, 2035 **Put Option available with the Debt Security Holder** At least 90 (ninety) days prior to the Coupon Payment Date falling on the last day of the Fiscal Year 2026 (i.e. 31 March 2026), and every 2 (two) year anniversary of such Coupon Payment Date thereafter or such other period as may be mutually agreed between the Debt Security Holders. **Call Option available with the Trust** At least 90 (ninety) days prior to the Coupon Payment Date falling on the last day of the Fiscal Year 2026 (i.e. 31 March 2026), and every 2 (two) year anniversary of such Coupon Payment Date thereafter or such other period as may be mutually agreed between the Debt Security Holders and the Issuer (such Coupon Payment Dates being the "Call Option Date"), the Issuer may issue a notice to the Debt Security Trustee in the manner provided under the SEBI Guidelines, setting out the Coupon that will be payable in relation to the Debt Securities from the Call Option Date ("Coupon Notice"). In the event that the acceptance of the Coupon set out in the Coupon Notice is not notified by any Debt Security Holder to the Issuer , the Issuer shall, on the Call Option Date, prepay the entire Outstanding Dues in relation to the Debt Securities held by that Debt Security Holder.
1 (b)	Non Convertible Debt Securities	Cube Highways Trust	Listed NCDs	11,505.36	-	-	-	-	On April 25, 2025, the Trust allotted 55,200 (Fifty five thousand two hundred) 7.2503% and 60,000 (Sixty thousand) 7.3006% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities respectively having a face value of Rs. 1,00,000 (Rupees One Lakh) each aggregating to Rs. 11,520 million (Rupees eleven thousand five hundred twenty million Only) ("Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows: **(Amount Rs. Million)** **Particulars** | **Proposed Utilisation** | **Actual Utilisation upto September 30, 2025** | **Unutilised Amount as at September 30, 2025** for part or full repayment of any of outstanding amounts in relation to any one or more of the Senior Debt Facilities. | 11,520.00 | 11,520.00 | - **Redemption terms:** As at September 30, 2025, Rs. 5,520.00 million repayable as on April 25, 2028 and Rs. 6000.00 million repayable as on April 25, 2032. **Put Option available with the Debt Security Holder** At least 90 (ninety) days prior to the Coupon Payment Date falling on the last day of the Fiscal Year 2026 (i.e. 31 March 2026), and every 2 (two) year anniversary of such Coupon Payment Date thereafter or such other period as may be mutually agreed between the Debt Security Holders. **Call Option available with the Trust** At least 90 (ninety) days prior to the Coupon Payment Date falling on the last day of the Fiscal Year 2026 (i.e. 31 March 2026), and every 2 (two) year anniversary of such Coupon Payment Date thereafter or such other period as may be mutually agreed between the Debt Security Holders and the Issuer (such Coupon Payment Dates being the "Call Option Date"), the Issuer may issue a notice to the Debt Security Trustee in the manner provided under the SEBI Guidelines, setting out the Coupon that will be payable in relation to the Debt Securities from the Call Option Date ("Coupon Notice"). In the event that the acceptance of the Coupon set out in the Coupon Notice is not notified by any Debt Security Holder to the Issuer , the Issuer shall, on the Call Option Date, prepay the entire Outstanding Dues in relation to the Debt Securities held by that Debt Security Holder.

21(i) Borrowing footnote NCDs and Debt Securities
For repayment terms and security details of the outstanding non-current borrowings (including current maturities) refer the table below:

Secured NCDs:[1]

S.No.	Nature of Borrowings	Name of the Entity	Lender	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023	Interest and repayment terms
1 (c)	Non Convertible Debt Securities	Cube Highways Trust	Listed NCDs	6,378.25	6,442.61	6,410.43	-	-	On June 26, 2024, the Trust allotted 64,800 (Sixty four thousand eight hundred) 7.95% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities having a face value of Rs. 1,00,000 (Rupees One Lakh) each aggregating to Rs. 6,480 million (Rupees Six thousand four hundred eighty million Only) ("Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows: **(Amount Rs. Million)** **Particulars** | **Proposed Utilisation** | **Actual Utilisation upto September 30, 2025** | **Unutilised Amount as at September 30, 2025** For on lending to the HAM SPVs for the repayment of the Existing Facilities availed by the HAM SPVs in part or in full; and/or for general corporate purposes. | 6,480.00 | 6,480.00 | - **Redemption terms:** As at September 30, 2025, Rs. 6,382.80 million repayable in remaining 37 structured half yearly instalments ending on March 31, 2044. **Put Option available with the Debt Security Holder** At least 90 (ninety) days prior to the Coupon Payment Date falling on the last day of the Fiscal Year 2026 (i.e. 31 March 2026), and every 2 (two) year anniversary of such Coupon Payment Date thereafter or such other period as may be mutually agreed between the Debt Security Holders. **Call Option available with the Trust** At least 90 (ninety) days prior to the Coupon Payment Date falling on the last day of the Fiscal Year 2026 (i.e. 31 March 2026), and every 2 (two) year anniversary of such Coupon Payment Date thereafter or such other period as may be mutually agreed between the Debt Security Holders and the Issuer (such Coupon Payment Dates being the "Call Option Date"), the Issuer may issue a notice to the Debt Security Trustee in the manner provided under the SEBI Guidelines, setting out the Coupon that will be payable in relation to the Debt Securities from the Call Option Date ("Coupon Notice"). In the event that the acceptance of the Coupon set out in the Coupon Notice is not notified by any Debt Security Holder to the Issuer , the Issuer shall, on the Call Option Date, prepay the entire Outstanding Dues in relation to the Debt Securities held by that Debt Security Holder.
1 (d)	Non Convertible Debt Securities	Cube Highways Trust	Listed NCDs	8,517.09	-	8,559.25	-	-	On February 12, 2025, the Trust allotted 86,000 (Eighty Six Thousand) 7.67% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities having a face value of Rs. 1,00,000 (Rupees One Lakh) each aggregating Rs. 8,600 million (Rupees Eighty Six Hundred Million Only) ("Listed Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows: **(Amount Rs. Million)** **Particulars** | **Proposed Utilisation** | **Actual Utilisation upto September 30, 2025** | **Unutilised Amount as at September 30, 2025** Acquisition of shares of N.A.M. Expressway Limited ("NAMEL") from Cube Highways and Infrastructure Pte. Ltd (subject to withholding tax Rs 828.42 million) | 7,176.02 | 7,176.02 | - For on-lending of amount to NAMEL | 1,423.98 | 1,423.98 | - **Redemption terms:** As at September 30, 2025, Rs. 8,535.50 million repayable in remaining 69 structured quarterly instalments ending on December 31, 2042. **Put Option available with the Debt Security Holder** Any Debt Security Holder may, at least 60 (sixty) days prior: (i) to the Coupon Payment Date immediately preceding the end of the 10th (tenth) year from (and including) the Deemed Date of Allotment (February 04, 2025); and (ii) to any subsequent Coupon Payment Date specified in the Coupon Notice (such Coupon Payment Date, the "Put Option Date"), demand for redemption of the Debt Securities of such Debt Security Holder. **Call Option available with the Trust** At least 60 (sixty) days prior to each Call Option Date, the Issuer shall issue a notice to the Debt Security Trustee in the manner provided under the SEBI Guidelines, setting out: (A) the revised Coupon that will be payable in relation to the Debt Securities from the Call Option Date; (B) the next Call Option Date, if any, which shall not be earlier than 2 (two) years from the date of such notice ("Coupon Notice"). In the event that the acceptance of the Coupon set out in the Coupon Notice is not notified by any Debt Security Holder to the Issuer , the Issuer shall, on the Call Option Date, prepay the entire Outstanding Dues in relation to the Debt Securities held by that Debt Security Holder.
1 (e)	Non Convertible Debt Securities	Cube Highways Trust	Listed NCDs	5,980.64	-	5,979.71	-	-	On February 21, 2025, the Trust allotted 60,000 (Sixty Thousand) 7.59% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities having a face value of Rs. 1,00,000 (Rupees One Lakh) each aggregating Rs. 6000 million (Rupees Six Thousand Million Only) ("Listed Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows: **(Amount Rs. Million)** **Particulars** | **Proposed Utilisation** | **Actual Utilisation upto September 30, 2025** | **Unutilised Amount as at September 30, 2025** For on-lending of amount to NAMEL | 6,000.00 | 6,000.00 | - **Redemption terms**: As at September 30, 2025, Rs. 6,000 million repayable in remaining 57 structured quarterly instalments starting from March 31, 2030 ending on December 31, 2044. **Put Option available with the Debt Security Holder** Debt security holder , at least 90 (ninety) days prior to the Date falling on the 5 (five) year anniversary from the Deemed Date of Allotment (February 21, 2025, and every 3 (three) year anniversary of thereafter or such other period as may be mutually agreed between the Debt Security Holders and the Issuer **Call Option available with the Trust** At least 90(ninety) days prior to the Coupon Payment Date immediately The Issuer may issue a notice ("Coupon Notice") to the Debt Security Trustee in the manner provided under the SEBI Guidelines, setting out the Coupon that will be payable in relation to the Debt Securities from the date immediately succeeding the date falling on: (A) 5 (five) year anniversary of the Deemed Date of Allotment; and (B) every 3 (three) year anniversary thereafter; and/or (C) such other period as may be mutually agreed between the Debt Security Holders and the Issuer. In the event that the acceptance of the Coupon set out in the Coupon Notice is not notified by any Debt Security Holder to the Issuer , the Issuer shall, on the Call Option Date, prepay the entire Outstanding Dues in relation to the Debt Securities held by that Debt Security Holder.

21(i) Borrowing footnote NCDs and Debt Securities
For repayment terms and security details of the outstanding non-current borrowings (including current maturities) refer the table below:

Secured NCDs:[1]

S.No.	Nature of Borrowings	Name of the Entity	Lender	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023	Interest and repayment terms
1 (f)	Non Convertible Debt Securities	Cube Highways Trust	Listed NCDs	9,483.65	9,851.97	9,667.80	10,025.79	-	During the year ended March 31, 2024, the Trust allotted 103,000 (one lakh three thousand) 7.49% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities having a face value of Rs. 100,000 each aggregating to Rs. 10,300 million ("Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows:

(Amount Rs. Million)

Particulars	Proposed Utilisation	Actual Utilisation upto September 30, 2025	Unutilised Amount as at September 30, 2025
Providing loan to GAEPL for repaying existing facilities, in full and meeting any capital expenditure in relation to the Project developed/operated and any other project-related expenses; and/or general corporate purposes.	10,300.00	10,300.00	-

Redemption terms: As at September 30, 2025, Rs. 9,506.90 million repayable in remaining 63 structured quarterly instalments ending on April 15, 2041.

Put Option available with the Debt Security Holder

Debt Security Holder may, at least 60 days prior to the Coupon Payment Date immediately succeeding the end of the 12th (twelfth) year from (and including) the Date of Allotment (June 28, 2023) (such Coupon Payment Date, the "Put Option Date"), demand for redemption of the Debt Securities of such Debt Security Holder.

Call Option available with the Trust

At least 60 (sixty) days prior to the Coupon Payment Date immediately preceding the end of the 12th (twelfth) year from (and including) the Deemed Date of Allotment (such Coupon Payment Date, the "Call Option Date"), the Issuer shall issue a notice to the Debt Security Trustee in the manner provided under the SEBI Guidelines, setting out the Coupon that will be payable in relation to the Debt Securities from the Call Option Date ("Coupon Notice"). The Debt Security Holders shall notify the Issuer of their acceptance of the Coupon set out in the Coupon Notice within 30 days and the Coupon as specified in the Coupon Notice shall be payable by the Issuer.

In the event that the acceptance of the Coupon set out in the Coupon Notice is not notified by any Debt Security Holder to the Issuer , the Issuer shall, on the Call Option Date, prepay the entire Outstanding Dues in relation to the Debt Securities held by that Debt Security Holder.

1 (g)	Non Convertible Debentures	APEPL	Listed NCDs	-	-	-	565.90	-	On November 6, 2012, APEPL issued 5300 secured, rated, listed and redeemable NCD of Rs. 1 million each fully paid up in seven series A to G carrying a yield to maturity of 10.00% p.a. compounded semi-annually on private placement basis. These NCD are redeemable in 26 instalments commencing from April 15, 2013 and ending on October 15, 2025. The Company has the right to purchase such debentures at any time at the price available in the Debt market in accordance with the applicable laws. Series A to E were redeemed as per stipulated terms by March 31, 2024. Series F to G redemption details are given as under:

(Amount Rs. Million)

Series of Debentures Redeemed	Redemption Date	No of Debenture / Bonds	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Series F	15-Apr-24	461	-	-	-	125.84	-
	15-Oct-24		-	-	-	335.16	-
Series G	15-Oct-25	106	-	-	-	106.00	-
Total			-	-	-	**567.00**	**-**
Less - upfront fee adjusted from the listed NCDs #			-	-	-	1.10	-
Total Listed NCDs			-	-	-	**565.90**	**-**

The upfront fee adjusted from the listed NCDs is recouped in borrowing through interest charge basis effective interest rate after considering this amount.

Series F and G Debentures were early redeemed on August 21, 2024.

Secured by :
- First and exclusive charge on all the following assets of the SPV in favour of the Debenture Trustee, acting for the benefit of the debenture holders;
- immovable property of the SPV:
- all tangible movable assets;
- the escrow account and Its sub-accounts, monies standing to their credit and permitted Investments;
- all receivables (including annuity receivables from NHAI)
- rights of the SPV under the project documents (other than the concession agreement)
- Rights under the substitution agreement.

1 (h)	Non Convertible Debentures	MBEL	Listed NCDs	1,044.27	1,241.98	1,243.15	1,390.75	-	On October 16, 2017, the Company issued 1920 secured, rated, listed and redeemable NCD of Rs. 1 million each fully paid up in two series A and B carrying a yield to maturity of 8.40% p.a. compounded semi-annually on private placement basis. These NCD are redeemable in 32 instalments commencing from April 03, 2018 and ending on March 29, 2030. Series A redemption details are given as under:

(Amount Rs. Million)

Series of Debentures Redeemed	Redemption Date	No of Debenture / Bonds	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Series A	03-Apr-24	150	-	-	-	75.00	-
	03-Oct-24		-	-	-	75.00	-
	03-Apr-25	200	-	100.00	100.00	100.00	-
	03-Oct-25		-	100.00	100.00	100.00	-
	06-Apr-26	210	105.00	105.00	105.00	105.00	-
	05-Oct-26		105.00	105.00	105.00	105.00	-
	05-Apr-27	220	110.00	110.00	110.00	110.00	-
	04-Oct-27		110.00	110.00	110.00	110.00	-
	04-Apr-28	250	125.00	125.00	125.00	125.00	-
	03-Oct-28		125.00	125.00	125.00	125.00	-
	03-Apr-29	250	125.00	125.00	125.00	125.00	-
	03-Oct-29		125.00	125.00	125.00	125.00	-
	29-Mar-30	120	120.00	120.00	120.00	120.00	-
Total			**1,050.00**	**1,250.00**	**1,250.00**	**1,400.00**	-
Less - upfront fee adjusted from the listed NCDs #			5.73	8.02	6.85	9.25	-
Total			**1,044.27**	**1,241.98**	**1,243.15**	**1,390.75**	-

The upfront fee adjusted from the listed NCDs is recouped in borrowing through interest charge basis effective interest rate after considering this amount.

NCD are secured against:

Except project assets of MBEL as specified in the concession agreement, first pari passu charge on the following assets of MBEL in favour of the Debenture Trustee:
- All tangible movable assets and intangible assets both present and future.
- All bank accounts (excluding the Distribution Account and the DRR Investments), permitted investments and all receivables along with monies received/ receivable by the SPV both present and future;
- The SPV rights, titles, interest, benefits, claims and demands under the insurance contracts together with any receivables or proceeds thereunder, the Concession Agreement (in accordance with the substitution agreement) and the Project Documents along with rights thereunder.

	Total Secured NCDs			**51,089.22**	**17,536.56**	**31,860.34**	**11,982.44**	**-**	

(i) All numbers are net of transaction / processing fees

21(ii) Borrowing footnote term loans

For repayment terms and security details of the outstanding non-current borrowings (including current maturities) refer the table below:

A Secured Loan [(i)]:

Sl. No.	Nature of Borrowings	Name of Entity	Lender	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
1	Term loans from banks and financial institution	Cube Highways Trust	1) State Bank of India 2) HDFC Bank limited 3) ICICI Bank Limited 4) Axis Bank Limited 5) National Bank for financing Infrastructure and Development ("NABFID")	1,27,618.92	1,09,214.14	1,19,035.52	95,119.30	-

Interest and repayment terms

Term Loan facilities from Banks and a Financial Institution availed by the Trust have been utilised for onward lending to its subsidiaries for refinancing of existing secured loans and existing subordinate debts and for funding of ongoing capex of the subsidiaries.

Banks	Interest Rate as at September 30, 2025	Repayment period: Remaining unstructured quarterly instalments as at September 30, 2025	Repayment period: Last instalment due on	Outstanding balance as at September 30, 2025	Outstanding balance as at September 30, 2024	Outstanding balance as at March 31, 2025	Outstanding balance as at March 31, 2024	Outstanding balance as at March 31, 2023
State Bank of India ("SBI") Tranche 1	7.90%	66	March 31, 2042	54,825.46	56,959.80	55,905.69	58,013.43	-
State Bank of India ("SBI") Tranche 2	7.90%	73	December 31, 2043	9,250.65	5,093.76	9,297.50	-	-
State Bank of India ("SBI") Tranche 3	7.90%	73	December 31, 2043	4,938.85	-	-	-	-
HDFC Bank Limited ("HDFC") Tranche 1	7.70%	66	March 31, 2042	6,294.84	6,539.85	6,419.11	6,660.56	-
HDFC Bank Limited ("HDFC") Tranche 2	7.70%	73	December 31, 2043	4,632.31	2,553.24	4,654.83	-	-
HDFC Bank Limited ("HDFC") Tranche 3	7.70%	73	December 31, 2043	5,923.23	-	-	-	-
ICICI Bank Limited ("ICICI")* Tranche 1	NA	NA			11,678.36	11,465.89	11,893.90	-
ICICI Bank Limited ("ICICI") Tranche 2	8.10%	73	December 31, 2043	1,774.67	1,791.26	1,782.64	-	-
Axis Bank Limited ("AXIS-1")	7.20%	66	March 31, 2042	4,033.30	4,190.71	4,113.05	4,268.28	-
Axis Bank Limited-2 ("AXIS-2")	8.30%	73	December 31, 2043	4,632.04	2,553.24	4,654.69	-	-
Axis Bank Limited-2 ("AXIS-3")	7.70%	73	December 31, 2043	5,930.15	-	-	-	-
Total				**1,02,235.50**	**91,360.22**	**98,293.40**	**80,836.17**	**-**

Financial Institution	Interest Rate as at September 30, 2025	Repayment period: Remaining unstructured quarterly instalments as at September 30, 2025	Repayment period: Last instalment due on	Outstanding balance as at September 30, 2025	Outstanding balance as at September 30, 2024	Outstanding balance as at March 31, 2025	Outstanding balance as at March 31, 2024	Outstanding balance as at March 31, 2023
National Bank for Financing Infrastructure and Development ("NABFID-1")	8.15%	66	March 31, 2042	13,498.01	14,023.99	13,764.77	14,283.13	-
National Bank for Financing Infrastructure and Development-2 ("NABFID-2")	7.80%	73	December 31, 2043	6,943.59	3,829.93	6,977.35	-	-
National Bank for Financing Infrastructure and Development-3 ("NABFID-3")	7.65%	73	December 31, 2043	4,941.82	-	-	-	-
Total				**25,383.42**	**17,853.92**	**20,742.12**	**14,283.13**	**-**

Put Option available with the Lenders

At the end of the 10th year and the 15th year from the Initial Drawdown Date (each such date being "Put Option Exercise Date"), each of the Lenders shall have the option to, within a period of 120 days from each such Put Option Exercise Date ("Put Option Exercise Period"), require the Trust to mandatorily prepay the Outstanding Obligations in respect of its Commitment, in full, without any Prepayment Premium (the "Put Option"), by issuing a notice to the Trust requesting for such prepayment ("Put Option Exercise Notice"). Upon exercise of the Put Option, the Trust shall mandatorily prepay the entire Outstanding Obligations in relation to the Commitment of such Lender within 120 days of the date of Put Option Exercise Notice.

* In accordance with clause 5.2.1(b)(i)(B) of the Amended and Reinstated Facility Agreement of ICICI Bank Limited, the Board of Direcors of Investment Manager (acting on behalf of Trust) has passed resolution dated March 27, 2025 to refinance the ICICI Bank's loan. The said loan is refinanced subsequent to the year end on April 25, 2025.

(i) All numbers are net of transaction / processing fees

21(ii) Borrowing footnote term loans

For repayment terms and security details of the outstanding non-current borrowings (including current maturities) refer the table below:

Security Terms:

Below are the common security details for the Term loans and Non Convertible Debt Securities:

a)First ranking pari-passu charge, by way of hypothecation on the following (as more stipulated under the Deed of Hypothecation):-

(i) on all moveable assets and the receivables of the Issuer in relation to the Project SPVs, present and future including but not limited to:
(I) all receivables of the Issuer from the Project SPVs;
(II) loans and advances (and all rights, title, security and interest thereunder) made by the Issuer to Project SPVs except for the Excluded SPVs, including the rights under the Substitution Agreement – Project SPVs, Escrow Agreement – Project SPVs and all other Project Documents;
(III) the interest and principal repayment of loans advanced by the Issuer to Project SPVs;
(IV) dividends and any other amounts to be paid or payable by the Project SPVs to the Issuer;
(V) inventories, contractual rights, securities, patents, trademarks, other Intellectual Property and Intellectual Property Rights, equipment and/or insurances (in each instance, if any); and
(VI) all other current assets of the Issuer, including all the Issuer's tangible and intangible assets, including but not limited to its goodwill, undertaking and uncalled capital, both present and future.

(ii) all the Accounts and all other bank accounts of the Issuer in which the Free Cashflows from the Project SPVs owned by the Issuer will be deposited/ credited or any other account opened / maintained by the Issuer in relation to such Project SPVs. It is hereby clarified that bank accounts opened by the Issuer in pursuance to Regulation 9(1) of the Securities and Exchange Board of India (Investment Infrastructure) Regulations, 2014 shall not be included for the purposes of this Section.

(b) A first ranking exclusive Security Interest, by way of hypothecation on the DSR;
(c) An agreement to assign the loans advanced by the Issuer to the Project SPVs (except for the Excluded SPVs) and securities created in favour of the Issuer in respect of such loans (including the right of substitution and termination and invocation of the provisions of Escrow Agreement-Project SPVs in case of default by such Project SPVs except for the Excluded SPVs) in relation to such loans granted by the Issuer. Provided that such assignment shall be effective upon occurrence of an Event of Default;
(d) A pledge of all bonds, non-convertible debentures, or any other securities (except the equity shares) of Project SPVs (other than the Excluded SPVs) held by the Issuer.
(e) A pledge of 100% equity shares (including QEPL which was pledged on October 03, 2025) on a Fully Diluted Basis of all Project SPVs (except for the Excluded SPVs), other than the Nominees' Shares.
(f) A negative lien, other than on Permitted Disposals, on the immovable and movable assets (including current assets and cash flows) of the Project SPVs except for the Excluded SPVs, subject to the rights of the Authorities under the respective Concession Agreements.
(g) In respect of 7.49% Debt Securities, a corporate guarantee and a shortfall undertaking from the Project SPVs except by the Excluded SPVs, in relation to upstreaming of funds and/or direct payment to the Debt Security Holders towards dues owed and payable by the Issuer in relation to the Debt Securities in a form and manner instructed by the Debt Security Holders. The same was waived off w.e.f May 31, 2024.
(h) A pledge of bonds, non-convertible debentures, or any other security (except equity shares) of the Excluded SPVs held by the Issuer and pledge over 100% (one hundred percent) equity shares of APEL and pledge over 99.97% (ninety-nine-point nine seven percent) equity shares of MBEL and a pledge over 100% (one hundred percent) of the equity shares of the other Excluded SPVs, in each case other than the Nominees' Shares.

"Excluded SPVs" referred above shall mean, collectively:
1) Andhra Pradesh Expressways Limited till November 20, 2024*
2) Mahua Bharatpur Expressways Limited; and
3) such other Project SPVs (other than the Tranche I SPVs), in respect of which the Debt Security Holders do not have any Security Interest in accordance with the terms of this Deed.
*Pursuant to the Clause 31.2 (e) and 31.2 (c) of Debt Security Trust Deed dated June 19,2024, and June 14, 2023 respectively, post receipt of no objection certificate for satisfaction of charge for its borrowing from existing lenders by APEPL, Trust has pledged the securities held in APEL in favour of Security Trustee on November 21, 2024.

21(ii) Borrowing footnote term loans

For repayment terms and security details of the outstanding non-current borrowings (including current maturities) refer the table below:

B Unsecured Loan:

Sl. No.	Nature of Borrowings	Name of SPV	Lender	As at					Significant terms and conditions of the loan (including interest and repayment terms)
				September 30, 2025	September 30, 2024	March 31, 2025	March 31, 2024	March 31, 2023	
1	Term Loan - Others	WVEPL	KNR Constructions Limited	150.99	150.99	150.99	150.99	-	During the year ended March 31, 2021, Cube Highways and Infrastructure III Pte. Ltd (erstwhile holding company of WVEPL) ("Cube Highways") acquired 100% equity share capital of WVEPL from KNR Constructions Limited ("KNR" or "Seller") pursuant to the Share Purchase Agreement dated January 9, 2020 as amended by Amendment Agreement dated September 18, 2020 (collectively referred as "SPA") entered into between Cube Highways, KNR and WVEPL. During the year ended March 31, 2021, WVEPL and KNR agreed to the amount and terms of repayment etc. of Seller Loans by converting existing subordinate loan of KNR in accordance with the terms of SPA. The repayment terms of outstanding Subordinated Outstanding Seller Loans as per the Seller Loan Agreement are as under: Rs. 2.10 million (A portion of the outstanding unsecured loan equal to the Transition Tax Holdback Amounts shall continue to remain outstanding till the income tax assessment for the financial years 2017-18 and 2018-19 is completed by the relevant taxation authorities. The substantial amount was repaid in May 2021.) Rs. 148.89 million (The portion of the outstanding unsecured loan equal to the working capital Pass Through Amounts shall be payable only after it has actually received such amounts from the National Highways Authority of India, Insurance company, State transport Authorities and the relevant Government/ taxation authorities in terms of the Claims Management Agreement, as amended. (The matter is expected to be settled within next one year.)

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21(iii) Borrowing footnote NCDs

For repayment terms and security details of the outstanding non-current borrowings (including current maturities) refer the table below:

Unsecured NCDs

S.No.	Nature of Borrowings	Name of SPV	Lender	As at					Description of NCDs and Significant term with respect to repayment schedule and interest
				September 30, 2025	September 30, 2024	March 31, 2025	March 31, 2024	March 31, 2023	
1	Non Convertible Debentures	DATRPL	Reliance Infrastructure Ltd.	100.00	100.00	100.00	100.00	-	On December 23, 2020, the SPV had issued 5,252,059,146 Unsecured, Seller Debentures ("NCDs") of Rs.1.00 each fully paid up on private placement basis to Reliance Infrastructure Limited ("RIL") (the erstwhile holding company of DATRPL) by conversion of subordinate debt, repayment of creditor and Inter corporate deposit of RIL amounting to Rs. 5,252.06 millions. The Seller Debenture carry coupon rate of 0% per annum on the maturity amount including redemption premium payable while redeeming relevant tranche of Seller Debentures. The current balance of Rs. 100 million represents the balance payment heldback by DATRPL subject to fulfilment of agreed conditions.
2	Non Convertible Debentures	QEPL	National Investment & Infrastructure Fund	15.92	-	-	-	-	QEPL had issued 1,592 non-convertible debentures (NCD), having a face value of INR 10,000 each to National Investment and Infrastructure Fund (NIIF) (the erstwhile holding company of QEPL) . Pursuant to terms of the amendment agreement dated June 11, 2025 entered into with NIIF, redemption of the debentures is contingent and shall be due & payable only on the occurrence of certain redemption events as defined in the said amendment agreement. Further, such NCD shall not carry any coupon but will be redeemed at a redemption premium to be calculated based on conditions defined in the amendment agreement.
	Total Unsecured NCDs			**115.92**	**100.00**	**100.00**	**100.00**	**-**	

21 (iv) Bank Guarantee

The Trust has obtained a irrevocable and unconditional Bank Guarantee amounting to Rs. 2,500 million from Indusind Bank towards meeting the DSRA (Debt Service Reserve Account) in relation to secured loan taken by the Trust.

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	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
22 Other non-current financial liabilities					
Interest accrued but not due on debentures	-	-	-	185.09	-
Security deposits	2.11	-	2.11	-	-
Hold back amount payable to an EPC contractor	-	133.56	112.06	-	-
	2.11	**133.56**	**114.17**	**185.09**	**-**
23 Non-current provisions					
Provision for employee benefits					
- Gratuity [Refer note 40]	36.06	26.79	33.49	23.42	-
- Compensated absences	21.01	16.99	21.71	14.36	-
- Long term incentive plan	25.96	-	-	-	-
Provision for periodic major maintenance works [Refer note 48 (a)]	5,895.14	3,415.64	4,334.81	2,300.26	-
	5,978.17	**3,459.42**	**4,390.01**	**2,338.04**	**-**

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	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
24 Deferred Tax Asset/Liabilities					
24A Deferred tax liabilities (net)					
Deferred tax liability arising on account of :					
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	16,452.60	9,554.71	13,641.98	7,824.32	-
Unamortised processing fees on borrowings	0.61	-	-	0.28	-
Income taxable on receipt basis	4.45	37.34	9.70	77.53	-
	-				
Deferred tax asset arising on account of :					
Unused tax losses carried forward	(118.18)	(296.95)	(236.27)	(154.32)	-
Interest disallowed u/s 94B of Income-tax Act, 1961 carried forward	(40.32)	(84.93)	(68.00)	(112.34)	-
Expense allowed in tax on payment basis	(1,127.25)	(643.73)	(888.67)	(426.90)	-
Unabsorbed depreciation carried forward	(11,412.76)	(7,470.92)	(10,078.52)	(6,877.81)	-
MAT credit entitlement	(131.19)	(45.18)	(91.08)	(18.95)	-
Deferred tax liabilities (net)	**3,627.96**	**1,050.34**	**2,289.14**	**311.81**	**-**
24B Deferred tax assets (net)					
Deferred tax liabilities arising on account of :					
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	(426.04)	(536.57)	(514.96)	(408.58)	-
Income taxable on receipt basis	(1.02)	(1.80)	(2.90)	-	-
Deferred tax assets arising on account of :					
Expense allowed in tax on payment basis	141.16	1.60	19.39	-	-
Unabsorbed depreciation carried forward	107.70	135.23	252.94	-	-
MAT credit entitlement	1,000.98	754.46	889.32	651.81	-
Deferred tax assets (net)	**822.78**	**352.92**	**643.79**	**243.23**	**-**
Net Deferred tax assets/(liabilities) for the purpose of below disclosures:	**(2,805.18)**	**(697.42)**	**(1,645.35)**	**(68.58)**	**-**

Movement in deferred tax liabilities (net)

Particulars	**Balance as at April 01, 2025**	**Addition on account of Acquisition (refer note 50)**	**Recognised in Consolidated Statement of Profit and Loss**	**Recognised in other comprehensive income/ equity**	**Balance as at September 30, 2025**
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service	(14,156.94)	(2,639.02)	(82.69)	-	(16,878.65)
Unamortised processing fees on borrowings	-	(19.26)	18.65	-	(0.61)
Income taxable on receipt basis	(12.61)	(8.28)	15.42	-	(5.47)
Unused tax losses carried forward	236.27	-	(118.10)	-	118.18
Interest disallowed u/s 94B of Income-tax Act, 1961 carried forward	68.00	-	(27.68)	-	40.32
Expense allowed in tax on payment basis	908.07	0.61	359.85	(0.12)	1,268.41
Unabsorbed depreciation carried forward	10,331.46	1,433.74	(244.75)	-	11,520.47
MAT credit entitlement	980.40	-	151.78	-	1,132.18
Total deferred tax assets/(liabilities)	**(1,645.35)**	**(1,232.21)**	**72.48**	**(0.12)**	**(2,805.18)**

Particulars	**Balance as at April 01, 2024**	**Addition on account of Acquisition (refer note 50)**	**Recognised in Consolidated Statement of Profit and Loss**	**Recognised in other comprehensive income/ equity**	**Balance as at September 30, 2024**
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	(8,232.90)	(1,105.52)	(752.86)	-	(10,091.28)
Unamortised processing fees on borrowings	(0.28)	-	0.28	-	-
Income taxable on receipt basis	(77.53)	(1.91)	40.31	-	(39.13)
Unused tax losses carried forward	154.32	-	142.63	-	296.95
Interest disallowed u/s 94B of Income-tax Act, 1961 carried forward	112.34	-	(27.40)	-	84.94
Expense allowed in tax on payment basis	426.90	6.64	211.79	(0.01)	645.32
Unabsorbed depreciation carried forward	6,877.81	440.71	287.62	-	7,606.15
MAT credit entitlement	670.76	-	128.87	-	799.63
Total deferred tax assets/(liabilities)	**(68.58)**	**(660.08)**	**31.24**	**(0.01)**	**(697.42)**

Particulars	**Balance as at April 01, 2024**	**Addition on account of Acquisition (refer note 50)**	**Recognised in Consolidated Statement of Profit and Loss**	**Recognised in other comprehensive income/ equity**	**Balance as at March 31, 2025**
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	(8,232.90)	(2,553.65)	(3,370.39)	-	(14,156.94)
Unamortised processing fees on borrowings	(0.28)	-	0.28	-	-
Income taxable on receipt basis	(77.53)	(1.92)	66.84	-	(12.61)
Unused tax losses carried forward	154.32	-	81.95	-	236.27
Interest disallowed u/s 94B of Income-tax Act, 1961 carried forward	112.34	-	(44.34)	-	68.00
Expense allowed in tax on payment basis	426.90	6.65	474.67	(0.15)	908.07
Unabsorbed depreciation carried forward	6,877.81	440.72	3,012.93	-	10,331.46
MAT credit entitlement	670.76	-	309.64	-	980.40
Total deferred tax assets/(liabilities)	**(68.58)**	**(2,108.20)**	**531.58**	**(0.15)**	**(1,645.35)**

24 Deferred Tax Asset/Liabilities

Particulars	Balance as at April 01, 2023	Addition on account of Acquisition (refer note 50)	Recognised in Consolidated Statement of Profit and Loss	Recognised in other comprehensive income/ equity	Balance as at March 31, 2024
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	-	(6,866.47)	(1,366.43)	-	(8,232.90)
Unamortised processing fees on borrowings	-	(1.17)	0.89	-	(0.28)
Income taxable on receipt basis	-	(26.83)	(50.70)	-	(77.53)
Unused tax losses carried forward	-	143.37	10.95	-	154.32
Interest disallowed u/s 94B of Income-tax Act, 1961 carried forward	-	185.66	(73.32)	-	112.34
Expense allowed in tax on payment basis	-	211.37	215.44	0.10	426.90
Unabsorbed depreciation carried forward	-	5,741.34	1,136.45	-	6,877.81
MAT credit entitlement	-	441.93	228.83	-	670.76
Total deferred tax assets/(liabilities)	**-**	**(170.80)**	**102.11**	**0.10**	**(68.58)**

Particulars	Balance as at April 01, 2022	Addition on account of Acquisition (refer note 50)	Recognised in Consolidated Statement of Profit and Loss	Recognised in other comprehensive income/ equity	Balance as at March 31, 2023
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	-	-	-	-	-
Unamortised processing fees on borrowings	-	-	-	-	-
Income taxable on receipt basis	-	-	-	-	-
Equity component of optionally convertible debentures	-	-	-	-	-
Unused tax losses carried forward	-	-	-	-	-
Interest disallowed u/s 94B of Income-tax Act, 1961 carried forward	-	-	-	-	-
Expense allowed in tax on payment basis	-	-	-	-	-
Unabsorbed depreciation carried forward	-	-	-	-	-
MAT credit entitlement	-	-	-	-	-
Total deferred tax assets/(liabilities)	**-**	**-**	**-**	**-**	**-**

Also, refer note 39 (ii) for unrecognised deferred tax.

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
25 Current borrowings					
Current maturities of long term borrowings [Refer note 21]	5,122.29	4,496.59	4,850.58	4,722.49	-
	5,122.29	**4,496.59**	**4,850.58**	**4,722.49**	**-**
26 Trade payables					
Current					
Total outstanding dues of micro enterprises and small enterprises [Refer note 49]	1,046.30	382.05	937.36	273.52	-
Total outstanding dues to creditors other than micro enterprises and small enterprises	1,271.73	1,553.50	1,290.25	1,372.02	265.97
	2,318.03	**1,935.55**	**2,227.61**	**1,645.54**	**265.97**

Note:

Credit period varies as per the contractual terms of various suppliers/vendors. The Trust Group has appropriate policy in place to ensure that all dues are paid within the credit terms agreed with the parties. Also, refer Group's credit risk management policy.

Trade payables ageing schedule

As at September 30, 2025	**Outstanding for following period from due date of payment**						
Particulars	**Unbilled**	**Not due**	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 years**	**Total**
Undisputed outstanding dues of micro enterprises and small enterprises	523.20	183.33	217.73	51.40	55.29	15.35	1,046.30
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	759.86	142.84	52.46	235.11	3.16	78.30	1,271.73
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-
Total Trade Payables	**1,283.06**	**326.17**	**270.19**	**286.51**	**58.45**	**93.65**	**2,318.03**

As at September 30, 2024	**Outstanding for following period from due date of payment**						
Particulars	**Unbilled**	**Not due**	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 years**	**Total**
Undisputed outstanding dues of micro enterprises and small enterprises	73.41	111.22	174.20	5.05	18.17	-	382.05
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	766.56	171.92	444.90	11.50	155.20	3.42	1,553.50
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-
Total Trade Payables	**839.97**	**283.14**	**619.10**	**16.55**	**173.37**	**3.42**	**1,935.55**

As at March 31, 2025	**Outstanding for following period from due date of payment**						
Particulars	**Unbilled**	**Not due**	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 years**	**Total**
Undisputed outstanding dues of micro enterprises and small enterprises	241.97	158.91	415.96	44.33	61.30	14.89	937.36
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	522.78	108.33	234.02	263.23	20.92	140.97	1,290.25
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-
Total Trade Payables	**764.75**	**267.24**	**649.98**	**307.56**	**82.22**	**155.86**	**2,227.61**

Trade payables ageing schedule (Continued.)

As at March 31, 2024

Particulars	Unbilled	Not due	Outstanding for following period from due date of payment: Less than 1 year	1-2 year	2-3 year	More than 3 years	Total
Undisputed outstanding dues of micro enterprises and small enterprises	41.92	62.31	137.68	29.76	1.68	0.17	273.52
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	508.73	78.50	333.33	36.57	96.73	318.16	1,372.02
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-
Total Trade Payables	**550.65**	**140.81**	**471.01**	**66.33**	**98.41**	**318.33**	**1,645.54**

As at March 31, 2023

Particulars	Unbilled	Not due	Outstanding for following period from due date of payment: Less than 1 year	1-2 year	2-3 year	More than 3 years	Total
Undisputed outstanding dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	-	265.97	-	-	-	-	265.97
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-
Total Trade Payables	**-**	**265.97**	**-**	**-**	**-**	**-**	**265.97**

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
27 Other financial liabilities					
Current					
Interest accrued but not due on retention money	8.70	8.62	8.70	-	-
Interest accrued but not due on borrowings	163.74	162.45	181.66	409.91	-
Security deposits	4.24	4.15	4.23	4.25	-
Payable to NHAI	35.79	6.01	6.86	14.90	-
Creditors for capital supplies and services	100.90	120.64	151.03	855.42	-
Payable to related parties [Refer note 46]	7.85	31.38	31.38	30.35	-
Payable to employees*	50.56	40.77	75.64	68.89	-
Contingent consideration payable towards acquisiiton of Subsidiaries	1,112.33	677.46	1,001.40	-	-
Consideration payable towards acquisition of HAM SPVs (Refer note 46)	-	5,735.39	-	-	-
Hold back amount payable to an EPC contractor	101.10	-	-	-	-
Other payable	55.61	74.22	75.64	23.59	-
	1,640.82	**6,861.09**	**1,536.54**	**1,407.31**	**-**

*Refer note 67

28 Other current liabilities					
Statutory dues payable	166.23	136.06	265.58	214.69	24.23
Advance from customers	2.90	3.05	5.14	-	-
Unspent CSR*	6.29	-	13.02	-	-
	175.42	**139.11**	**283.74**	**214.69**	**24.23**

*The unspent amount of Rs. 6.29 million (September, 30, 2024 : Nil , March 31, 2025: Rs. 13.02 million, March 31, 2024: Nil, March 31, 2023: Nil), relating to the ongoing CSR project, has been transferred to a special account in compliance with Section 135(6) of the Companies Act, 2013.

29 Provisions					
Current					
Provision for employee benefits					
- Gratuity [Refer note 40]	9.72	6.22	7.86	6.63	-
- Compensated absences	6.27	4.42	4.16	3.22	-
- Long term incentive plan	1.56	-	-	-	-
Provisions for infrastructure upgrade work [Refer note 48 (b)]	1,599.25	2,215.11	1,896.07	2,403.54	-
Provision for periodic major maintenance works [Refer note 48 (a)]	1,754.52	357.48	1,730.85	898.99	-
	3,371.32	**2,583.23**	**3,638.94**	**3,312.38**	**-**

	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
30 Revenue from operations*					
Revenue from toll fee collections**	16,237.33	13,332.09	28,275.30	24,715.17	-
Construction income	112.72	411.81	634.14	4,025.77	-
Operation and maintenance income	1,594.70	955.65	1,862.68	294.64	-
Finance Income on annuity receivables	1,306.16	439.79	1,106.90	105.68	-
Revenue from additional work (net of related cost)	-	1.81	26.30	8.78	-
Renewals and overlay income	-	974.82	1,166.12	-	-
Claims for compensation from TNSTC / NHAI***	708.06	-	-	11.33	-
	19,958.97	**16,115.97**	**33,071.44**	**29,161.37**	**-**

*Refer note 51 for Revenue from contracts with customers

**Revenue from operations for the half year ended September 30, 2025 includes Rs. 196.50 million being compensation receivable from National Highways Authority of India (NHAI) towards revenue estimated by the Trust SPVs, arising out of Annual Pass with effect from August 15, 2025, priced at Rs. 3,000 for F.Y. 2025-26 which entitles the holder to either 200 Toll-free crossings or One year of Validity which occurs earlier, which is included under Trade receivables as at September 30, 2025.

***Revenue from operations for the half-year ended 30 September 2025, includes Rs. 708.06 million, which was settled pursuant to the order dated 31 July 2025, of the High Court of Judicature at Madras between Tamil Nadu State Transport Corporation (TNSTC) and Trust SPVs (SMTPL, MKTPL, NKTPL, and KETPL) towards toll fees for the period from November 2020 to 17 July 2025. This pertains to TNSTC's buses passing through the four tolls at Madurai-Kanyakumari (MK) stretch. Of this amount, the Trust SPVs received Rs. 293.39 million on 21 August 2025, Rs. 39.28 million on 22 August 2025, and the remaining Rs. 375.39 million (including Rs. 42.71 million for the period from 1 April 2025 until the settlement date of 17 July 2025) on 14 October 2025.

	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
31 Other income					
Interest on financial assets carried at amortised cost:					
- bank deposits	288.75	209.12	403.34	435.04	-
Interest on income tax refund	16.57	6.44	30.99	8.28	-
Sale of scrap	12.79	12.41	25.25	10.25	-
Insurance claim received	11.12	17.92	76.47	24.57	-
Net gain on sale of mutual funds	235.21	308.32	771.34	719.07	-
Net gain on investments measured at fair value through profit and loss	57.67	186.72	64.02	296.31	-
Profit on sale/write off of property, plant and equipment (net)	-	1.10	1.10	-	-
Liabilities no longer required written back	42.26	28.96	76.53	79.00	-
Reversal of impairment loss allowance on trade receivables	17.63	-	-	-	-
Miscellaneous income	10.62	3.59	11.04	7.16	-
	692.62	**774.58**	**1,460.08**	**1,579.68**	**-**
32 Cost of construction					
Construction cost	112.72	411.81	634.14	4,025.77	-
	112.72	**411.81**	**634.14**	**4,025.77**	**-**
33 Operation and maintenance expenses					
Periodic major maintenance expense [Refer note 48(a)]	1,523.63	1,896.34	3,298.54	1,663.92	-
Repair and maintenance of carriageway	1,094.75	779.86	2,083.61	1,603.79	-
Toll operation expenses	426.64	387.26	795.57	745.06	-
Security charges	65.31	63.44	128.11	124.23	-
Change of scope expenses (net of revenue)	0.13	-	-	-	-
Vehicle hire charges	232.20	182.00	377.36	286.58	-
Power and fuel	256.10	171.58	373.40	257.68	-
Route patrolling expenses	204.84	178.74	382.59	285.82	-
Professional charges - site	67.08	50.02	115.40	79.23	-
Miscellaneous expenses	0.07	0.01	0.04	0.11	-
	3,870.75	**3,709.25**	**7,554.62**	**5,046.42**	**-**
34 Employee benefits expense					
Salary and wages	288.98	223.12	458.90	389.40	-
Gratuity expenses [Refer note 40]	6.54	4.16	9.19	5.57	-
Contribution to provident and other funds	13.99	11.09	23.09	18.83	-
Staff welfare expenses	8.98	6.07	23.50	15.86	-
Long term incentive plan*	27.52	-	-	-	-
	346.01	**244.44**	**514.68**	**429.66**	**-**

*The Trust Group has instituted a Long-Term Incentive Plan ("LTIP" or the "Plan") effective April 1, 2024, to incentivise and retain key executives of SPVs. The Plan was approved by the Board of Directors of Investment Manager on February 28, 2025, and is applicable to eligible employees as and when determined by the Board. The LTIP is structured as a cash-settled scheme, wherein notional LTIP Cash Points ("LCPs") are awarded to participants based on a defined performance measure of Trust (Cube group entity) over future years. LCPs are granted annually on April 01, from FY 2024 to FY 2027, over four grant cycles. Each grant vests over three years in the ratio of 20% after the first year, 30% after the second year, and 50% after the third year. The Board may extend or modify the Plan beyond 2027 at its discretion with appropriate modifications. The LTIP does not involve the issuance of any shares or units and therefore does not result in equity dilution. Accordingly, the Trust Group has recognized a liability based on an actuarial valuation using a discount rate of 5.90%. The expense recognized for the half year ended September 30, 2025 is Rs. 27.52 million (September 30, 2024: Nil, March 31, 2025: Nil, March 31, 2024: Nil, March 31, 2023: Nil).

	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
35 Other expenses					
Rent [(i)]	3.59	2.10	4.79	2.74	-
Project management charges (Refer note 60(i))	444.88	302.45	738.31	542.14	-
Investment management fees (Refer note 60(ii))	205.20	158.67	331.64	299.17	273.88
Rates and taxes	10.61	10.94	22.87	11.81	2.00
Advertising expenses	1.60	1.56	2.87	1.87	-
Insurance expense	107.33	114.86	220.04	217.74	-
Legal and professional fees	161.58	169.21	356.19	285.09	-
Audit fees[(ii)]	34.35	28.76	65.63	59.51	1.06
Travelling and conveyance	10.20	7.84	19.16	14.29	-
Printing and stationary	3.30	2.51	4.99	3.96	-
Communication expenses	10.59	8.32	17.31	12.14	-
Penalty to NHAI for delay in execution of major maintenance expenses	-	-	0.55	4.56	-
Impairment loss allowance on trade receivables/unbilled revenues	18.11	-	17.05	35.71	-
Trustee Fees	0.47	0.47	0.94	0.94	0.94
Custodian fees	4.00	2.40	4.72	3.51	-
Valuation expense	5.41	4.26	12.53	15.12	-
Doubtful advance/balances written off	-	-	8.91	-	-
Allowance for doubtful advances	-	-	12.31	-	-
Bad debts written off (net of adjustments from impairment loss allowance on trade receivables)	38.96	-	1.51	24.03	-
Information Technology related cost	10.12	6.08	16.26	25.49	-
Royalty expenses	38.84	32.63	76.45	48.15	-
Net loss on foreign currency transaction	-	0.08	0.11	0.16	-
Corporate social responsibility expense	32.00	23.15	26.59	15.61	-
Loss on write-off of property, plant and equipment (net)	0.09	0.35	0.62	1.91	-
Loss on remeasurement of Contingent Consideration	23.76	-	-	-	-
Miscellaneous expenses	40.75	5.32	68.73	53.12	-
Total	**1,205.74**	**881.96**	**2,031.08**	**1,678.77**	**277.88**

Note:
(i) The Trust Group has taken office premises on lease for which average lease term is 11 months (Short Term Leases).

(ii) Audit Fees

Payments to auditors (including taxes)*:					
- As auditors- for statutory audit and limited review	29.78	26.14	59.74	46.34	1.06
- As auditors- for audit of Special Purpose Combined Financial Statements	-	-	-	5.31	-
- Other Services (certification)	1.84	1.39	3.06	4.81	-
- Out of pocket expenses	2.73	1.23	2.83	3.05	-
	34.35	**28.76**	**65.63**	**59.51**	**1.06**

*includes Rs. 0.95 million (September 30, 2024: Rs. 0.88 million, March 31, 2025: Rs. 1.79 million, March 31, 2024: Rs. 1.32 million, March 31, 2023: Nil) for payments to other auditors

36 Finance costs					
Interest on financial liabilities classified at amortised cost:					
- term loans	5,112.96	4,406.61	9,123.24	7,672.86	-
- non-convertible debentures	1,654.27	647.48	1,475.60	655.03	-
- optionally convertible debentures	-	0.35	0.78	98.00	-
- commercial papers	207.13	-	-	-	-
Interest on delayed payment of statutory dues	0.73	-	-	-	-
Interest on delayed payment to MSME vendors	0.95	1.44	1.75	6.91	-
Interest others	-	-	-	3.07	-
Unwinding of interest:					
- on processing fees	172.96	32.14	68.59	68.32	-
- on major maintenance / infrastructure upgrade	252.45	124.88	233.60	142.36	-
- on unsecured loan	-	-	-	2.64	-
Other borrowing costs	69.86	159.78	267.45	82.10	-
	7,471.31	**5,372.68**	**11,171.01**	**8,731.29**	**-**

37 Depreciation and amortisation expense					
Depreciation of property, plant and equipment	35.70	26.36	56.33	48.17	-
Depreciation of investment property	0.03	0.03	0.07	0.48	-
Amortisation of intangible assets	7,048.99	6,371.33	13,072.72	11,777.07	-
	7,084.72	**6,397.72**	**13,129.12**	**11,825.72**	**-**

	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
38 Earnings per unit (EPU)					
Basic EPU amounts are calculated by dividing the profit /(loss) for the half year/year attributable to unit holders by the weighted average number of units outstanding during the half year / year.					
Diluted EPU amounts are calculated by dividing the profit/ (loss) attributable to unit holders by the weighted average number of units outstanding during the half year/year plus the weighted average number of units that would be issued on conversion of all the dilutive potential units into unit capital.					
The following table reflects the income and unit data used in the basic and diluted EPU computations:					
Profit/(loss) attributable to unit holders:					
Profit/(loss) for the half year/year attributable to owners of the Trust Group for calculating basic EPU (Rs. in million)	406.77	(260.41)	(357.33)	(7,059.22)	(277.88)
Adjustments for reclassification of subordinate units	-	-	-	-	-
Profit/(loss) for the half year/year attributable to owners of the Trust Group for calculating diluted EPU (Rs. in million)	**406.77**	**(260.41)**	**(357.33)**	**(7,059.22)**	**(277.88)**
Calculation of weighted average number of units outstanding (units in Million):					
Weighted average number of Ordinary units outstanding (Units in million)	1,344.07	1,334.45	1,334.45	1,233.94	-
Add:Estimated Subordinate Units to be reclassified to ordinary Units[(i)]	-	-	0.03	0.12	-
Weighted average number of units outstanding for calculating basic EPU (units in million)	**1,344.07**	**1,334.45**	**1,334.48**	**1,234.06**	**-**
Add:Estimated Subordinate Units to be reclassified to ordinary Units[(iii)]	-	-	-	-	-
Weighted average number of units outstanding for calculating diluted EPU (units in million)	**1,344.07**	**1,334.45**	**1,334.48**	**1,234.06**	**-**
Basic earnings per unit (Rs. absolute amount)[(V)]	0.30	(0.20)	(0.27)	(5.72)	-
Diluted earnings per unit (Rs. absolute amount)[(V)]	0.30	(0.20)	(0.27)	(5.72)	-

Notes:

(i) Subordinate units considered for calculating Basic and Diluted EPU (Refer note 64 & 65)

Particulars	Date considered for Basic and Diluted EPU	Units to be reclassified	Date of reclassification	Units reclassified
DATRPL Subordinate Units (Units in million)	March 31, 2024	44.10	July 19, 2024	44.10
JMTPL & MBEL Subordinate Units (Units in million)	March 31, 2025	9.62	July 14, 2025	9.62

(ii) The Trust has issued units on April 17, 2023, hence, the disclosures in respect of the Earnings per units have not been given for the year ended March 31, 2023.

(iii) There are no other dilutive units to be considered for the purpose of calculating diluted EPU.

(iv) There have been no other transactions involving units or potential units between the reporting date and the date of authorisation of these Consolidated Financial Statements.

(V) Earning per unit for the half year ended September 30, 2025 and September 30, 2024 are not annualised.

39 Tax expense

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
(i) Income tax expense recognised in Consolidated Statement of Profit and Loss					
Current tax	221.45	164.29	367.11	287.41	-
Tax for earlier years	4.52	-	18.54	5.40	-
Deferred tax	(72.48)	(31.24)	(531.58)	(102.11)	-
	153.49	**133.05**	**(145.93)**	**190.70**	**-**

The major components of income tax expense and the reconciliation of expense based on the respective effective tax rate and the reported tax expense in Consolidated Statement of Profit and Loss are as follows :

Particulars					
Profit/(loss) before tax	560.34	(127.31)	(503.13)	(6,868.45)	(277.88)
Blended Tax Rate [(ii)]	39.98%	37.80%	38.29%	36.68%	42.74%
Expected tax expense [A]	**224.02**	**(48.12)**	**(192.65)**	**(2,519.21)**	**(118.77)**
Tax effect of adjustment to reconcile expected income tax expense to reported income tax expense:					
(a) Effect of transactions that are not considered in determining taxable income	17.11	12.97	(0.27)	27.87	118.77
(b) Impact of income not allowable u/s 10(23FC) and related expenditure including consolidation adjustments not deductible as per Income-tax Act, 1961	(443.47)	(365.45)	(534.23)	1,589.28	-
(c) Effect due to change in tax rate	-	-	-	15.70	-
(d) Effect of income that is exempt from taxation u/s 80IA of the Income-tax Act, 1961	(346.59)	(212.17)	(586.11)	(557.89)	-
(e) Impact of tax adjustments related to earlier years	4.52	-	(330.04)	5.40	-
(f) Others	0.02	0.16	0.07	1.64	-
Effects of recognised deferred tax on temporary differences earlier unrecognised	(176.83)	(292.43)	110.13	(171.80)	-
Effects of unrecognised deferred tax on deductible temporary differences and tax losses including those reversing or originating and reversing during tax holiday period u/s 80IA of the Income tax Act, 1961					
- Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	(130.92)	(37.57)	(130.32)	(4.43)	-
- Effects of unrecognised deferred tax assets/liabilities on deductible temporary differences	-	-	-	-	-
- Income taxable on receipt basis	1.52	(2.37)	2.85	0.16	-
- Expense allowed in tax on payment basis	94.88	(14.54)	213.29	(156.07)	-
- Unamortised processing fees on borrowings	12.45	0.36	(7.26)	3.61	-
- Unabsorbed depreciation and carry forward losses	988.82	1,092.21	1,292.37	2,054.79	-
- Interest disallowed u/s 94B of the Income-tax Act, 1961 carried forward	(92.04)	-	16.24	(98.35)	-
Total adjustments [B]	**(70.53)**	**181.17**	**46.72**	**2,709.92**	**118.77**
Actual tax expense [C=A+B]	**153.49**	**133.05**	**(145.93)**	**190.70**	**-**

Note:
(i) Trust is a business trust registered under SEBI InvIT Regulations. Hence, the interest and dividend received or receivable by Trust from SPV's is exempt from tax under section 10(23FC) of the Income-tax Act, 1961(Act). Further any expenditure incurred in relation to earning the exempt income is not tax deductible in view of the provisions of section 14A of the Act.

The income of Trust other than exempt income mentioned above, is chargeable to tax at the maximum marginal rates in force of 42.74% (for the half year ended September 30, 2025: 42.74% , for the half year ended September 30, 2024: 42.74%, for the year ended March 31, 2025: 42.74%, for the year ended March 31, 2024: 42.74%) except for the income chargeable to tax on transfer of short term capital assets under section 111A of the Act and long term capital assets under section 112 of the Act.

(ii) Applicable rate to SPV and Cube Highways Trust Standalone wise tax rate ranges between 25.17% - 42.74%. Blended tax rate has been considered for effective tax rate reconciliation.

(iii) In JMTPL, MBEL, WUPTPL, WVEPL, GAEPL, NDEPL, NAMEL, DATRPL and FRHPL - The Company has elected not to exercise the option permitted under section 115BAA of the Income Tax Act, 1961 as introduced by the Taxation Laws (Amendment) Ordinance, 2019.

(ii) Unrecognised deferred tax:

(A) Deferred tax assets/(liability) has not been recognised in respect of following items because the said temporary differences, business losses etc. will reverse during the holiday period u/s 80IA of the Income-tax Act, 1961 and deferred tax assets are not recognised in the absence of reasonable certainty that future taxable amounts will be available to utilize these temporary differences and business losses:

Particulars					
Business losses and unabsorbed depreciation	8,265.01	1,848.72	1,454.45	2,007.53	-
Interest disallowed under section 94B of the Income Tax Act, 1961	2,052.02	-	2,406.02	-	-
Minimum Alternate Tax (MAT) credits	-	-	2.95	-	-
Difference between tax written down value (WDV) and book WDV of intangible assets	(8,159.37)	(2,024.71)	(1,872.73)	(2,189.79)	-
Expense allowed in tax on payment basis	2,932.21	1,217.69	2,664.64	1,490.58	-
Income taxable on receipt basis	(34.69)	(4.31)	(5.37)	(7.28)	-
Total	**5,055.18**	**1,037.39**	**4,649.96**	**1,301.04**	**-**

	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023

(B) Deferred tax assets as at September 30, 2025, September 30, 2024, March 31, 2025 , March 31, 2024 & March 31, 2023 in respect of following deductible temporary items have been restricted only to the extent of deferred tax liabilities in the absence of convincing evidence that future taxable amounts will be available to utilize the temporary differences.

Particulars					
Unabsorbed depreciation	11,257.99	8,983.44	16,112.60	21,232.16	-
Business losses	9,900.30	20,823.30	8,028.93	4,856.05	-
Interest disallowed under section 94B of the Income tax Act, 1961	37.87	681.90	370.10	1,156.79	-
Difference between tax written down value (WDV) and book WDV of intangible assets	8,579.35	(14,463.47)	(6,220.68)	(13,909.74)	-
Amount allowed in tax on actual basis	603.19	556.85	816.97	385.61	-
Total	**30,378.70**	**16,582.02**	**19,107.92**	**13,720.87**	**-**

(C) Deferred income tax liabilities are recognised for all taxable temporary differences except in respect of taxable temporary differences associated with investments in subsidiaries where the timing of the reversal of the temporary difference can be controlled and it is probable that the temporary difference will not reverse in the foreseeable future. Accordingly, deferred income tax liabilities on undistributed cumulative earnings of subsidiaries as at September 30, 2025, September 30, 2024, March 31, 2025 and March 31, 2024 has not been recognised. Further, it is not practicable to estimate the amount of the unrecognized deferred tax liabilities for these undistributed earnings.

(iii) Unused business loss and interest u/s 94B can be carried forward based on the year of origination as follows:

Financial year/period of originati	Financial year of expiry	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
March 31, 2021	March 31, 2029	-	-	-	-	-
March 31, 2022	March 31, 2030	488.29	23.61	-	208.23	-
March 31, 2023	March 31, 2031	401.15	658.29	370.10	948.57	-
March 31, 2024	March 31, 2032	5,370.62	4,927.53	4,898.00	4,429.13	-
March 31, 2025	March 31, 2033	3,379.34	2,326.30	3,472.45	-	-
March 31, 2026	March 31, 2034	2,898.86	-	-	-	-

(iv) Minimum alternate tax (MAT):

Tax credits have been recognised on the basis that recovery is probable in the foreseeable future. This recognised MAT credit expires, if unused, based on the year of origination as follows:

Financial year of origination	Financial year of expiry*	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
March 31, 2018	March 31, 2032	5.25	5.25	5.25	5.25	-
March 31, 2019	March 31, 2032	54.56	54.56	54.56	54.56	-
March 31, 2020	March 31, 2032	62.37	62.37	62.37	62.37	-
March 31, 2021	March 31, 2032	72.62	72.62	72.62	72.62	-
March 31, 2022	March 31, 2032	88.10	88.10	88.10	88.10	-
March 31, 2023	March 31, 2032	153.86	153.86	153.86	153.86	-
March 31, 2024	March 31, 2032	233.84	234.02	233.84	234.02	-
March 31, 2025	March 31, 2032	309.64	128.87	309.64	-	-
March 31, 2026	March 31, 2032	151.96	-	-	-	-

* Restricted upto the Service Concession Agreement (SCA) expiry date of SPVs - MBEL and JMTPL.

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40 Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits

(a) Defined contribution plan

The Trust Group contribution to Provident Fund amounting to Rs. 13.99 million (September 30, 2024: Rs. 11.09 million, March 31, 2025: Rs. 23.09 million, March 31, 2024: Rs. 18.83 million, March 31, 2023: Nil) has been recognised in the Consolidated Statement of Profit and Loss under the head Employee benefits expense.

(b) Defined benefit plans

The Trust Group provides for gratuity for employees in India as per The Payment of Gratuity Act, 1972. Employees who are in continuous service for 5 years are eligible for gratuity. The amount of gratuity payable on retirement/termination is the employees last drawn basic salary per month completed proportionately for 15 days salary multiplied for number of completed years of service. The gratuity plan is funded plan for 2 SPVs viz. DATRPL and WUPTPL, these 2 SPVs makes contribution to recognised funds with Life Insurance Corporation of India (pension and group schemes department). For other SPVs, the Trust Group operates the unfunded gratuity scheme.

The gratuity scheme covers substantially all regular employees. Commitments are actuarially determined at year-end. The actuarial valuation is done based on "Projected Unit Credit" method. Gains and losses of changed actuarial assumptions are charged to Consolidated Statement of Profit and Loss.

Gratuity

(i) **Amount recognised in the Consolidated Statement of Profit and Loss is as under:**

Description	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Current Service Cost	5.55	3.80	7.82	5.15	-
Interest cost on defined benefit obligations	1.58	0.94	2.56	1.49	-
Interest income on plan assets	(0.59)	(0.58)	(1.19)	(1.07)	-
Amount recognised in the Consolidated Statement of Profit and Loss	**6.54**	**4.16**	**9.19**	**5.57**	**-**

(ii) **Bifurcation of Actuarial (loss)/gain on obligations:**

Description					
Actuarial (loss)/gain on arising from change in demographic assumption	0.26	-	-	-	-
Actuarial (loss)/gain on arising from change in financial assumption	(0.45)	(2.37)	(0.34)	(0.72)	-
Actuarial (loss)/gain on arising from experience adjustment	(0.17)	1.31	1.04	1.07	-
Actuarial (loss)/gain for the half year/year on obligations	**(0.36)**	**(1.06)**	**0.70**	**0.35**	**-**

(iii) **Actuarial (loss)/gain on plan asset**

Description					
Actual income on plan asset	0.59	0.58	1.15	1.00	-
Expected interest income	0.59	0.58	1.19	1.07	-
Actuarial (loss)/gain for the half year/year on plan asset	**-**	**-**	**(0.04)**	**(0.07)**	**-**

(iv) **Other Comprehensive Income (OCI)**

Description					
Actuarial (loss)/gain for the year on DBO	(0.36)	(1.06)	0.70	0.35	-
Actuarial (loss)/gain for the year on plan asset	-	-	(0.04)	(0.07)	-
Unrecognized actuarial (loss)/gain for the half year/year	**(0.36)**	**(1.06)**	**0.66**	**0.28**	**-**

(v) **Change in plan assets**

Description					
Fair value of plan assets at the beginning of the half year/year	17.74	16.59	16.59	-	-
Additions on account of acquisition (refer note 50)	-	-	-	15.59	-
Actual return on plan assets	0.59	0.58	1.15	1.00	-
Fair value of plan assets at the end of the half year/year	**18.33**	**17.17**	**17.74**	**16.59**	**-**

(vi) **Change in defined benefit obligations**

Description					
Defined benefit liability at the start of the half year/year	46.13	30.05	30.05	-	-
Additions on account of acquisition (refer note 50)	1.06	1.18	7.17	23.96	-
Adjustments related to employees transferred to/from Cube group entities	(0.99)	0.51	0.11	0.41	-
Interest Cost	1.58	0.94	2.56	1.49	-
Current service cost	5.55	3.80	7.82	5.15	-
Re-measurements (gain)/loss for the half year/year	0.36	1.06	(0.70)	(0.35)	-
Benefit paid directly by the Group	(2.31)	(0.09)	(0.88)	(0.61)	-
Defined benefit liability at the end of the half year/year	**51.38**	**37.45**	**46.13**	**30.05**	**-**

(vii) **The amount included in the Consolidated Balance Sheet arising in respect of its defined benefit obligations/plans**

Description					
Present value of defined benefit obligations/ plans	51.38	37.45	46.13	30.05	-
Fair value of plan assets*	(18.33)	(17.17)	(17.74)	(16.59)	-
Net defined benefit obligations	**33.05**	**20.28**	**28.39**	**13.46**	**-**

Bifurcation of Present Benefit Obligations (PBO) and Plan Assets at the end of half year/year in current and non current

Description					
Current provision (Amount due within one year)*	15.32	10.66	12.64	6.63	-
Non-Current provision (Amount due after one year)	36.06	26.79	33.49	23.42	-
Total PBO at the end of half year/year	**51.38**	**37.45**	**46.13**	**30.05**	**-**
Net plan assets at the end of half year/year*	18.33	17.17	17.74	16.59	-
Net PBO at the end of half year/year	**33.05**	**20.28**	**28.39**	**13.46**	**-**

*Plan assets of Rs. 5.60 million (September 30, 2024: Rs. 4.44 million, March 31, 2025 : Rs. 4.78 million, March 31, 2024 : Nil , March 31, 2023 : Nil) is adjusted from current provision.

(viii) **Sensitivity analysis for gratuity liability:**

Description	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Impact of change in discount rate					
Present value of obligations at the end of the period	**51.38**	**37.45**	**46.13**	**30.05**	-
- Impact due to decrease of 1.00%	2.36	1.61	3.71	2.50	-
- Impact due to increase of 1.00%	(1.81)	(1.40)	(3.19)	(2.17)	-
Impact of change in salary increase					
Present value of obligations at the end of the period	**51.38**	**37.45**	**46.13**	**30.05**	-
- Impact due to decrease of 1.00%	(2.41)	(1.41)	(3.27)	(2.21)	-
- Impact due to increase of 1.00%	1.75	1.56	3.63	2.48	-

The above sensitivity analysis is based on a change an assumption while holding all other assumptions constant. In practice, this is unlikely to occur and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligations to significant actuarial assumptions the same method (present value of the defined benefit obligations calculated with the projected unit credit method at the end of the reporting period) has been applied which was applied while calculating the defined benefit obligations liability recognised in the Consolidated Balance Sheet.

Sensitivities due to mortality and withdrawals are not material and hence impact of change due to these not calculated.
Sensitivities as rate of increase of pensions in payment, rate of increase of pensions before retirement and life expectancy are not applicable.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to previous periods.

(ix) **Actuarial assumptions:**

Description					
Discount rate range	6.95%	6.95%	6.70%	7.15%	-
Rate of increase in compensation levels range	7.50% for first year, 6.30% thereafter	7.50% for first year, 6.30% thereafter	7.50% for first year, 6.30% thereafter	7.50% for first year, 6.30% thereafter	-
Retirement age	58 years	58 years	58 years	58 years	-
Mortality rate	100% of IALM (2012-14)	100% of IALM (2012-14)	100% of IALM (2012-14)	100% of IALM (2012-14)	-
Attrition at age (Withdrawal rate %)					
Up to 30 Years	9% per annum	9% per annum	9% per annum	9% per annum	-
From 31 to 44 years	9% per annum	9% per annum	9% per annum	9% per annum	-
Above 44 years	9% per annum	9% per annum	9% per annum	9% per annum	-

Notes:
(i) The plan assets are maintained with LIC of India Gratuity scheme. The details of investment maintained by LIC are not available and therefore not been disclosed.

41 Capital and other commitments

Particulars	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Estimated amount of contracts remaining to be executed on capital account not provided for (Net of Advance) towards:					
- Property, plant and equipment	-	11.45	-	21.82	-
- Intangible assets- Rights under Service Concession Arrangements	100.27	649.60	464.92	753.13	-
Total	**100.27**	**661.05**	**464.92**	**774.95**	**-**

The Trust Group has other commitments for purchase orders which are issued after considering requirements per operating cycle for purchase of goods and services in normal course of business. The Trust Group does not have any other long term commitments or material non-cancellable contractual commitments/contracts, which might have material impact on the Consolidated Financial Statements.

42 Contingent liabilities and claims

i) Particulars	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Claims against the Trust Group not acknowledged as debt					
a) In respect of Income-tax matters, disputed by SPVs	562.56	519.52	686.83	225.18	-
b) In respect of Indirect tax matters (VAT/Entry tax/Service tax/GST) disputed by SPVs[(i)]	4,361.56	5,399.56	4,309.77	140.05	-
c) Damages/Penalties levied by NHAI/Independent engineer on account of default/deficiencies in terms of the concession agreement	20.61	61.10	20.61	61.10	-
d) Revenue Claim levied by State Authority (In terms of the SPA entered between the SPVs and erstwhile promoters, these matters are covered under specific indemnity from erstwhile promoters)	114.40	-	-	-	-
e) In respect of Stamp Duty matters, disputed by SPVs[(ii)]	932.70	932.70	932.70	932.70	-
f) Civil suits related to accident claim and land encroachment matter at one SPV	7.70	7.70	7.70	7.80	-

Notes:

(i) Includes GST demand of Rs. 3,571.72 million (inclusive of interest and penalty) received by certain HAM SPVs (acquired by the Trust on June 04, 2024) alleging liability to GST on entire Bid Project Cost amount upfront on receipt of completion certificate, in relation to which the SPVs have filed a writ before the High Court/ appeal before the relevant appellate authority/rectification application before the jurisdiction assessing officer . In terms of the SPA entered between the SPVs and erstwhile promoters, these matters are covered under specific indemnity from erstwhile promoters.

(ii) In light of a Supreme Court decision in Rewa Tollway P. Limited v. The State of Madhya Pradesh & ORS., the Trust has reassessed stamp duty obligations (including for stamp duty matters disputed by certain SPVs referred above) for the concession agreements entered into by the SPVs with NHAI/State authorities, considering inter-alia, types of concession agreement (DBFOT/BOT/TOT/HAM/Annuity), rights under terms and conditions of the concession agreements, indemnity under the Share Purchase Agreements entered by the Trust at the time of acquisition of the SPVs, jurisdiction of the relevant authority, and status of ongoing proceedings. Based on the assessment above supported by the legal advice, the Trust group does not expect the ultimate outflow of resources embodying economic benefits, which could materially affect the financial performance and position of the Trust Group.

(iii) The Management of the Group assesses all material claims in the nature of demands and the show cause notices ("SCNs"), including intimation prior to SCNs, relating to Income tax, Indirect taxes and other litigations against the Group and based on legal advice in certain cases, evaluates whether it is probable, possible or remote ("PPR"). The Group discloses matters as contingent liability that are assessed as possible. The relevant SPVs are contesting the aforesaid notices /order before various authorities and are confident that the matters will be decided in Favor of the SPVs and ultimately no liability is likely to be devolved on the respective SPVs. Future ultimate outflow of resources embodying economic benefits in respect of the above matters are uncertain as it depends on the final outcome of the matter involved.

43 Financial instruments by fair value and category

i) Fair values hierarchy

Financial assets and financial liabilities measured at fair value in the Consolidated Balance Sheet are divided into three levels of fair value hierarchy. The three levels are defined based on the observability of significant inputs to the measurement, as follows:

Level 1: Quoted prices (unadjusted) in active markets for financial instruments.
Level 2: The fair value of financial instruments that are not traded in an active market is determined using valuation techniques which maximise the use of observable market data rely as little as possible on entity specific estimates.
Level 3: If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3.

Financial assets/(liabilities) measured at fair value - recurring fair value measurements:

As at September 30, 2025	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets at fair value through profit or loss				
Liquid Investments-mutual funds	-	6,478.22	**-**	**6,478.22**
Liabilities at fair value through profit or loss				
Unsecured term loan from KNR Constructions Limited	**-**	**-**	150.99	**150.99**

As at September 30, 2024	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets at fair value through profit or loss				
Investments	-	11,393.73	**-**	**11,393.73**
Liabilities at fair value through profit or loss				
Unsecured term loan from KNR Constructions Limited	**-**	**-**	150.99	**150.99**

As at March 31, 2025	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets at fair value through profit or loss				
Liquid Investments-mutual funds	-	6,439.75	**-**	**6,439.75**
Liabilities at fair value through profit or loss				
Unsecured term loan from KNR Constructions Limited	**-**	**-**	150.99	**150.99**

As at March 31, 2024	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets at fair value through profit or loss				
Investments	-	13,527.76	**-**	**13,527.76**
Liabilities at fair value through profit or loss				
Unsecured term loan from KNR Constructions Limited	**-**	**-**	150.99	**150.99**

As at March 31, 2023	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets at fair value through profit or loss				
Investments	-	-	**-**	**-**
Liabilities at fair value through profit or loss				
Unsecured term loan from KNR Constructions Limited	**-**	**-**	-	**-**

Valuation process and technique used to determine fair value

The fair value of investments in mutual fund units are based on the net asset value ('NAV') as stated by the issuers of these mutual fund units in the published statements as at each reported balance sheet dates. NAV represents the price at which the issuer will issue further units of mutual fund and the price at which issuers will redeem such units from the investors.

(ii) Fair value of instruments measured at amortised cost

Fair value of instruments measured at amortised cost for which fair value is disclosed as follows using Level 3 inputs:

Particulars	As at September 30, 2025		As at September 30, 2024		As at March 31, 2025		As at March 31, 2024		As at March 31, 2023	
	Carrying value	Fair value	Carrying value	Fair value	Carrying value	Fair value	Carrying value	Fair value	Carrying value	Fair value
Financial assets measured at amortised cost:										
Investments	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Trade receivables	2,396.51	2,396.51	2,070.31	2,070.31	1,636.71	1,636.71	600.79	600.79	-	-
Cash and cash equivalents*	1,023.06	1,023.06	350.09	350.09	2,027.33	2,027.33	2,416.84	2,416.84	-	-
Bank balance other than cash and cash equivalents	4,667.05	4,667.05	3,470.00	3,470.00	6,091.68	6,091.68	3,593.98	3,593.98	-	-
Other financial assets	44,171.52	44,171.52	18,657.89	18,657.89	15,401.83	15,401.83	1,827.64	1,827.64	-	-
Total financial assets	**52,258.15**	**52,258.15**	**24,548.30**	**24,548.30**	**25,157.56**	**25,157.56**	**8,439.26**	**8,439.26**	**-**	**-**
Financial liabilities (excluding equity component)										
Borrowings	1,78,824.06	1,78,824.06	1,26,850.70	1,26,850.70	1,50,995.86	1,50,995.86	1,07,201.74	1,07,201.74	-	-
Trade payables	2,318.03	2,318.03	1,935.55	1,935.55	2,227.61	2,227.61	1,645.54	1,645.54	265.97	265.97
Other financial liabilities	1,642.93	1,642.93	6,994.65	6,994.65	1,650.71	1,650.71	1,592.40	1,592.40	-	-
Total financial liabilities	**1,82,785.02**	**1,82,785.02**	**1,35,780.90**	**1,35,780.90**	**1,54,874.18**	**1,54,874.18**	**1,10,439.68**	**1,10,439.68**	**265.97**	**265.97**

The management assessed that cash and cash equivalents, bank balances other than cash and cash equivalents, trade receivables, other financial assets, trade payables, borrowings and other financial liabilities are approximate to their carrying amounts largely due to the short-term maturities of these instruments. The fair value of the financial assets and liabilities is included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

*Excludes liquid investments.

iii) Valuation process and technique used to determine fair value

The Trust is required to present the Statement of Total Assets at Fair Value and Statement of Total Returns at Fair Value as per SEBI Master Circular No.SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025 as a part of these consolidated financial statements (Refer Statement of Net Assets at Fair Value and Statement of Total Returns at Fair Value) and in terms of Ind AS 36 "Impairment of Assets" impairment assessment of Trust's investment in individual SPV, the Trust has used the significant unobservable inputs in the fair value measurement required for these disclosures, categorised within Level 3 of the fair value hierarchy- level 3, together with a quantitative sensitivity analysis is given below:

Particulars	Input for September 30, 2025	Sensitivity of Input to Fair Value	Increase/ (decrease) in fair value as at September 30, 2025
a. WACC	7.30% to11.10%	+ 0.50%	(12,833.00)
		-0.50%	13,645.00
b. Inflation rate (Wholesale Price Index)	2.05% to 5.10%	+ 1%	15,970.00
		-1%	(12,729.00)

Particulars	Input for September 30, 2024	Sensitivity of Input to Fair Value	Increase/ (decrease) in fair value as at September 30, 2024
a. WACC	8.50% to10.60%	+ 0.50%	(11,327.00)
		-0.50%	12,087.00
b. Inflation rate (Wholesale Price Index)	4.10% to 5.10%	+ 1%	12,676.00
		-1%	(11,159.00)

Particulars	Input for March 31, 2025	Sensitivity of Input to Fair Value	Increase/ (decrease) in fair value as at March 31, 2025
a. WACC	8.30% to 11.57%	+ 0.50%	(11,950.00)
		-0.50%	12,724.00
b. Inflation rate (Wholesale Price Index)	4.10% to 5.10%	+ 1%	15,273.00
		-1%	(14,072.00)

Particulars	Input for March 31, 2024	Sensitivity of Input to Fair Value	Increase/ (decrease) in fair value as at March 31, 2024
a. WACC	10.2% to 11.0%	+ 0.50%	(10,690.00)
		-0.50%	11,426.00
b. Inflation rate (Wholesale Price Index)	4.10% to 5.10%	+ 1%	14,550.30
		-1%	(12,516.20)

Sensitivity analysis is not given for March 31, 2023 as the Trust acquired all the SPVs on and after April 17, 2023.

Further, the key assumptions used as inputs for fair valuation includes determination of future cash flows, traffic estimates, assessment of the variation in concession period in certain subsidiaries considering target traffic/ target revenue subject to approvals from the authorities, revenue growth rate, discount rates, inflation rates and other economic factors. [Also, refer Note 2(III)(d)(2), Note 58 and 59 to Consolidated Financial Statement].

iv) Financial instruments by category

Particulars	As at September 30, 2025			As at September 30, 2024			As at March 31, 2025		
	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost
Financial assets									
Investments	-	-	0.01	11,393.73	-	0.01	-	-	0.01
Other financial assets	-	-	44,171.52	-	-	18,657.89	-	-	15,401.83
Trade receivables	-	-	2,396.51	-	-	2,070.31	-	-	1,636.71
Cash and cash equivalents (including liquid investments in Mutual Funds)	6,478.22	-	1,023.06	-	-	350.09	6,439.75	-	2,027.33
Bank balances other than cash and cash equivalents	-	-	4,667.05	-	-	3,470.00	-	-	6,091.68
Total	**6,478.22**	**-**	**52,258.15**	**11,393.73**	**-**	**24,548.30**	**6,439.75**	**-**	**25,157.56**
Financial liabilities (excluding equity component)									
Borrowings	150.99	-	1,78,824.06	-	-	1,26,850.70	150.99	-	1,50,995.86
Trade payables	-	-	2,318.03	-	-	1,935.55	-	-	2,227.61
Other financial liabilities	-	-	1,642.93	-	-	6,994.65	-	-	1,650.71
Total	**150.99**	**-**	**1,82,785.02**	**-**	**-**	**1,35,780.90**	**150.99**	**-**	**1,54,874.18**

Particulars	As at March 31, 2024			As at March 31, 2023		
	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost
Financial assets						
Investments	13,527.76	-	0.01	-	-	-
Other financial assets	-	-	1,827.64	-	-	-
Trade receivables	-	-	600.79	-	-	-
Cash and cash equivalents (including liquid investments in Mutual Funds)	-	-	2,416.84	-	-	-
Bank balances other than cash and cash equivalents	-	-	3,593.98	-	-	-
Total	**13,527.76**	**-**	**8,439.26**	**-**	**-**	**-**
Financial liabilities (excluding equity component)						
Borrowings	150.99	-	1,07,201.74	-	-	-
Trade payables	-	-	1,645.54	-	-	265.97
Other financial liabilities	-	-	1,592.40	-	-	-
Total	**150.99**	**-**	**1,10,439.68**	**-**	**-**	**265.97**

44 Financial risk management

i) Risk Management

The Trust Group activities expose it to variety of financial risks : credit risk, liquidity risk and market risk. The Board of Directors of the Investment Manager("IM") has overall responsibility for the establishment and oversight of the Trust Group's risk management framework. The Trust Group's risk management framework is established to identify and analyse the key risks faced by the Trust Group, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management framework systems are reviewed periodically to reflect changes in market conditions and Trust Group's activities.

The Board of Directors of the IM oversee compliance with Trust Group's risk management policies and procedures, and reviews the risk management framework in relation to the risk faced by the Trust. The Audit committee as assisted by the internal audit undertakes regular reviews of risk management controls and procedure, the results of which are taken on record by Audit committee.

A) Credit risk

Credit risk is the risk of financial loss to the Trust Group if a counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Trust Group's Cash and cash equivalents, other bank balances, trade receivables, unbilled revenue and other financial assets. Trust Group maximum exposure to credit risk is limited to the carrying amount of financial assets.

Credit risk management

The Trust Group establishes an allowance account for impairment that represents its estimate of losses in respect of its financial assets. The main component of this allowance is estimated losses that relate to specific counterparties. The allowance account is used to provide for impairment losses. Subsequently when the Trust Group is satisfied that no recovery of such losses is possible, the financial asset is considered irrecoverable and the amount charged to the allowance account is then written off against the carrying amount of the impaired financial asset.

Credit risk related to cash and cash equivalents and bank deposits is managed by only accepting highly rated banks and diversifying bank deposits and accounts in different banks. Other financial assets measured at amortised cost includes security deposits, annuity receivable, receivable from related parties and other Credit risk related to these other financial assets is managed by monitoring the recoverability of such amounts continuously, while at the same time internal control system in place ensure the amounts are within defined limits.

As at the reporting date, there is no significant concentrations of credit risk. The maximum exposure to credit risk is represented by the carrying value of each financial asset on the Balance Sheet.

Reconciliation of loss allowance for trade receivable, unbilled revenue and other assets from beginning to end of reporting period:

Particulars	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Opening Balance	201.25	183.56	183.56	-	-
Additions on account of acquisition (refer note 50)	-	-	-	143.97	-
Movement in expected credit loss allowance on trade receivables calculated at lifetime expected credit losses	18.11	-	19.20	42.70	-
Reversal in expected credit loss allowance on trade receivables and advances	(21.86)	-	-	-	-
Adjustment against bad debts written off	-	(9.48)	(1.51)	(3.11)	-
Closing Balance	**197.50**	**174.08**	**201.25**	**183.56**	**-**

The Trust Group estimates the expected credit loss based on specific identified basis. In respect of disputed trade receivables as of September 30, 2025 aggregating Rs 523.26 million relating to the pre acquisition period, the Trust Group has withheld amount of Rs 410.54 million payable to erstwhile shareholders and for remaining amount of Rs 112.72 million the Trust Group will be indemnified by the erstwhile shareholders. In case of majority of other Trade Receivables (including those outstanding for more than 1 year) as of September 30, 2025, the counter party being the Government Undertaking as such does not have significant credit risk.

Other financial assets measured at amortised cost includes security deposits, annuity receivable, receivable from related parties and other. Credit risk related to these other financial assets is managed by monitoring the recoverability of such amounts continuously, while at the same time internal control system in place ensure the amounts are within defined limits.

B) Liquidity risk

Liquidity risk is the risk that the Trust Group may encounter difficulty in meeting its present and future obligations associated with financial liabilities that are required to be settled by delivering cash or another financial asset. The Trust Group is exposed to liquidity risk due to borrowings, trade and other payables. Trust Group measures risk by forecasting cash flows. The Trust Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due without incurring unacceptable losses or risking damage to the Trust Group's reputation. The Trust Group ensures that it has sufficient fund to meet expected operational expenses and servicing of financial obligations.

The Trust Group's objective is to, at all times maintain optimum levels of liquidity to meet its cash and collateral obligations. The Trust Group requires funds both for short-term operational needs as well as long-term investment programs mainly in growth projects. The Trust Group closely monitors its liquidity position and deploys a robust cash management system. It aims to minimize these risks by generating sufficient cashflows from its current operations, which in addition to the available cash and cash equivalents, liquid investments and sufficient committed fund facilities, will provide liquidity.

Consequently, the Trust Group believes its revenue, along with proceeds from financing activities will continue to provide the necessary funds to cover its short term liquidity needs. In addition, the Trust Group projects cash flows and considering the level of liquid assets necessary to meet liquidity requirement.

The Trust Group has no undrawn borrowing facilities as at reporting date.

(a) Maturities of financial liabilities

The tables below analyse the Trust Group's financial liabilities into relevant maturity categories based on their contractual maturities for all non-derivative financial liabilities:
The amounts (undiscounted) disclosed in the table are the carrying value as at the balance sheet date.

As at September 30, 2025	**Less than 1 year**	**1-2 year**	**2-5 year**	**More than 5 years**	**Total**
Borrowings	5,122.29	5,338.63	27,801.08	1,41,497.69	**1,79,759.69**
Trade payables	2,318.03	-	-	-	**2,318.03**
Other financial liabilities	1,640.82	2.11	-	-	**1,642.93**
Total	**9,081.14**	**5,340.74**	**27,801.08**	**1,41,497.69**	**1,83,720.65**

As at September 30, 2024	**Less than 1 year**	**1-2 year**	**2-5 year**	**More than 5 years**	**Total**
Borrowings	4,496.59	4,195.60	13,305.90	1,05,673.03	**1,27,671.12**
Trade payables	1,935.55	-	-	-	**1,935.55**
Other financial liabilities	6,861.09	133.56	-	-	**6,994.65**
Total	**13,293.23**	**4,329.16**	**13,305.90**	**1,05,673.03**	**1,36,601.32**

As at March 31, 2025	**Less than 1 year**	**1-2 year**	**2-5 year**	**More than 5 years**	**Total**
Borrowings	4,850.58	4,609.58	13,848.45	1,28,573.38	**1,51,881.99**
Trade payables	2,227.61	-	-	-	**2,227.61**
Other financial liabilities	1,536.54	114.17	-	-	**1,650.71**
Total	**8,614.73**	**4,723.75**	**13,848.45**	**1,28,573.38**	**1,55,760.31**

As at March 31, 2024	**Less than 1 year**	**1-2 year**	**2-5 year**	**More than 5 years**	**Total**
Borrowings	4,722.49	4,275.70	12,051.20	86,647.69	**1,07,697.08**
Trade payables	1,645.54	-	-	-	**1,645.54**
Other financial liabilities	1,407.31	185.09	-	-	**1,592.40**
Total	**7,775.34**	**4,460.79**	**12,051.20**	**86,647.69**	**1,10,935.02**

As at March 31, 2023	**Less than 1 year**	**1-2 year**	**2-5 year**	**More than 5 years**	**Total**
Borrowings	-	-	-	-	**-**
Trade payables	265.97	-	-	-	**265.97**
Other financial liabilities	-	-	-	-	**-**
Total	**265.97**	**-**	**-**	**-**	**265.97**

C) Market risk

(a) Interest rate risk

i) Liabilities

The Trust Group's policy is to minimise interest rate cash flow risk exposures on long-term financing. At the reporting periods end, the Trust Group is exposed to changes in market interest rates through bank borrowings at variable interest rates.

Interest rate risk exposure

Below is the overall undiscounted exposure of the Trust Group to interest rate risk:

Particulars (Undiscounted Basis)	**As at September 30, 2025**	**As at September 30, 2024**	**As at March 31, 2025**	**As at March 31, 2024**	**As at March 31, 2023**
Variable rate borrowings	1,28,297.59	1,09,844.83	1,19,695.00	95,677.28	-
Fixed rate borrowings	51,462.10	17,826.29	32,186.99	12,019.80	-
Total borrowings	**1,79,759.69**	**1,27,671.12**	**1,51,881.99**	**1,07,697.08**	**-**

Sensitivity

Below is the sensitivity of profit or loss and equity changes in interest rates.

Particulars	**For the half year ended September 30, 2025**	**For the half year ended September 30, 2024**	**For the year ended March 31, 2025**	**For the year ended March 31, 2024**	**For the year ended March 31, 2023**
Interest sensitivity					
Interest rates – increase by 50 bps [(i)]	(320.74)	(274.61)	(598.47)	(478.39)	-
Interest rates – decrease by 50 bps [(i)]	320.74	274.61	598.47	478.39	-

(i) Holding all other variables constant

ii) Financial Assets

The Trust Group's fixed deposits are carried at amortised costs and are fixed rate deposits. They are therefore not subject to interest rate risk as defined in Ind AS 107 'Financial Instruments Disclosures', since neither the carrying amount nor the future cash flows will fluctuate because of a change in market interest rates.

(b) Price risk

i) Exposure

The Trust Group requires for implementation (construction, operation and maintenance) of the projects various commodities such as cement, bitumen, steel and other construction materials which are exposed to price risk. The Trust Group are able to manage its exposure to price increases through bulk purchases and negotiations. Hence, the sensitivity analysis is not required to be provided.

The Trust Group's exposure to price risk arises from investments held and classified at fair value through profit or loss. To manage the price risk arising from investments, the Trust Group diversifies its portfolio of assets through fixed rate investment like deposit with bank and investment in mutual funds (Growth Scheme).

ii) Sensitivity

The table below summarises the impact of increase/decrease of the index on the Trust Group's profit for the half year/ year :

Impact on loss before tax

Particulars	**As at September 30, 2025**	**As at September 30, 2024**	**As at March 31, 2025**	**As at March 31, 2024**	**As at March 31, 2023**
Mutual Funds					
Net assets value – increase by 100 bps	64.78	113.94	64.40	135.28	-
Net assets value – decrease by 100 bps	(64.78)	(113.94)	(64.40)	(135.28)	-

(c) Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. The Trust Group has no significant exposure to the risk of changes in foreign exchange rates.

45 Capital management

For the purpose of the Trust Group's capital management, capital includes issued unit capital and all other reserves attributable to the unit holders of the Trust Group. The primary objective of the Trust Group's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business and maximise unit holder value.

The Trust Group manages its capital structure and makes adjustments to it in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Trust Group may adjust the distribution to unitholders (subject to the provisions of InvIT regulations which require distribution of at least 90% of the net distributable cash flows of the Trust Group to unit holders), return capital to unitholders or issue new units.

The Trust Group monitors capital using a gearing ratio, which is net debt divided by total equity. The Trust Group's policy is to keep the gearing ratio optimum. The Trust Group net debt includes non-current borrowings [including current maturity of non-current borrowings, interest accrued but due on borrowings & interest accrued but not due on debentures less cash and cash equivalent and other bank deposits (net of restricted deposits)].

Debt equity ratio

Particulars	**As at September 30, 2025**	**As at September 30, 2024**	**As at March 31, 2025**	**As at March 31, 2024**	**As at March 31, 2023**
Debts (including interest accrued)	1,79,138.79	1,27,164.14	1,51,328.51	1,07,947.73	-
Less : Cash & cash equivalents, other bank balances and current investments*	(8,970.83)	(12,956.54)	(15,005.58)	(15,138.97)	-
Net Debt	**1,70,167.96**	**1,14,207.60**	**1,36,322.93**	**92,808.76**	**-**
Total equity	1,06,416.54	1,21,475.62	1,14,374.55	1,29,489.91	-
Net debt to equity ratio (in times)	**1.60**	**0.94**	**1.19**	**0.72**	**-**

Net of restricted cash & cash equivalents, other bank balances and current investments

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46 Information on related party transactions

The name of the related parties and nature of relationship are as identified by the management of the Investment Manager with reference to the Trust and its subsidiaries which are considered for the Consolidated Financial Statements pursuant to the InvIT Regulations.

46.1 A) List of related parties as per the requirements of Ind-AS 24- Related Party Disclosures

Cube Group Entities* (with whom transactions have taken place)

Cube Highways and Infrastructure 1D Pte. Ltd.
Cube Highways and Infrastructure II Pte. Ltd.
Cube Mobility Investment Pte. Ltd.
Cube Highways Operations Management Private Limited
Cube Highways Technologies Private Limited
Cube Highways and Infrastructure V Pte. Ltd.
Baharampore Farakka Highways Limited (w.e.f. March 28, 2023)
Cube Highways Growth Advisory Private Limited (w.e.f. December 05, 2023)
Delhi Hapur Meerut Expressway Private Limited (w.e.f. January 02, 2024)
Kokhraj Handia Expressway Private Limited (w.e.f. November 10, 2023)
Malayagiri Highways Private Limited (w.e.f. January 02, 2024)
Western M P Infrastructure & Toll Roads Private Limited (w.e.f. Febraury 14, 2024)

B) List of related parties as per Regulation 2(1) (zv) of the InvIT Regulations

1) Parties to the Trust

Sponsor- Cube Highways and Infrastructure Pte. Ltd. (CHIPL)
Sponsor- Cube Highways and Infrastructure III Pte. Ltd. (CHIPL-III)
Project Manager of the Trust(for all SPVs)- Cube Highways and Transportation Assets Advisors Private Limited (CHATAAPL)
Subsidiary of CHATAAPL- Cube Highways Roots Foundation
Investment Manager of the Trust- Cube Highways Fund Advisors Private Limited (CHFAPL)
Trustee of the Trust- Axis Trustee Services Limited (ATSL)

2) Promoters of the parties to the Trust specified in (1) above

Promoter of CHIPL- ISQ Asia Aggregator Pte. Ltd.
Promoter of CHIPL-III- ISQ Asia Infrastructure Holdings II Pte. Ltd.
Promoter of CHATAAPL- Cube Highways and Infrastructure Pte. Ltd. (upto December 28, 2023) ,Cube Highways Advisory Pte. Ltd. (w.e.f December 29, 2023)
Promoter of CHFAPL- Cube Highways Advisory Pte. Ltd.
Promoter of ATSL- Axis Bank Limited

3) Directors of the parties to the Trust specified in (1) above

i) Directors of CHIPL

Spyros John Mantzavinatos (upto June 22, 2023)
Kenichi Yoshihara (upto February 07, 2024)
George Currie Crawford (upto September 01, 2025)
Siew Hean Meng (upto August 31, 2023)
Harsh Agrawal
Marcus Christopher Hill (upto March 04, 2025)
Tsuneo Kawasaki (w.e.f February 07, 2024)
Lin Le (w.e.f February 07, 2024)
Heng Hong Kiong (upto February 07, 2024)

ii) Directors of CHIPL-III

Kunal Agarwal
Heng Hong Kiong (upto February 07, 2024)
George Currie Crawford (upto September 01, 2025)
Marcus Christopher Hill (upto March 04, 2025)
Harsh Agrawal
Lin Le (w.e.f February 07, 2024)

iii) Directors of CHATAAPL

Pooja Aggarwal (upto June 18, 2024)
Bovin Kumar
Mukul Shastry
Gaurav Malhotra (upto August 18, 2023)
Ankit Jain (w.e.f August 21, 2023)
Harikishan Reddy Koppula (w.e.f. April 02, 2025)
Varun Unnikrishnan (w.e.f. May 16, 2025)
Raviraj Vipul Acharya (w.e.f May 16, 2025)
Angela Mary Bouzanis (w.e.f June 06, 2025)

iv) Directors of CHFAPL

Upendra Kumar Sinha
Surinder Chawla
Fereshte Dhunjishaw Sethna
Jayesh Ramniklal Desai
Sandeep Lakhanpal
Harikishan Reddy Koppula (upto June 07, 2023)
Zaman Velji (w.e.f June 08, 2023 upto November 07, 2023)
Chirdeep Singh Bagga (w.e.f June 08, 2023 upto May 31, 2024)
Helly Bharat Ajmera (w.e.f November 07, 2023)
Raviraj Vipul Acharya (w.e.f July 31, 2024)

v) Directors of ATSL

Rajesh Kumar Dahiya (upto January 15, 2024)
Deepa Rath (upto February 05, 2025)
Ganesh Sankaran (upto January 15, 2024)
Arun Mehta (w.e.f. May 03, 2024)
Pramod Kumar Nagpal (w.e.f. May 03, 2024)
Sumit Bali (w.e.f. January 16, 2024 upto August 16, 2024)
Prashant Joshi (w.e.f. January 16, 2024 upto August 16, 2024)
Rahul Ranjan Choudhary (w.e.f February 06, 2025)
Bipin Saraf Kumar (w.e.f. April 11, 2025)

* Considered as Related Parties although not covered under the definition of Related Parties as per Ind AS 24, Related party disclosures. These have been included as voluntary disclosure, following the best corporate governance practices.

46 Information on related party transactions

46.2

	Transactions during the half year/ year	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
1	**Issue of ordinary & subordinate unit capital in exchange of shareholdings of the SPVs (Refer foot note (i) to note 19)**					
	i) Ordinary unit capital*	-	-	-	**91,008.69**	-
	Cube Highways and Infrastructure Pte. Limited	-	-	-	16,320.78	-
	Cube Highways and Infrastructure I-D Pte Limited	-	-	-	2,465.51	-
	Cube Highways and Infrastructure II Pte Limited	-	-	-	14,028.28	-
	Cube Highways and Infrastructure III Pte Limited	-	-	-	31,268.49	-
	Cube Mobility Investment Pte Limited	-	-	-	26,925.63	-
	ii) Subordinate unit capital	-	-	-	**15,750.00**	-
	Cube Highways and Infrastructure Pte. Limited	-	-	-	3,750.00	-
	Cube Highways and Infrastructure III Pte Limited	-	-	-	12,000.00	-
2	**OCD repayment during the half year/year**	-	**212.43**	**812.43**	**50,484.29**	-
	Cube Highways and Infrastructure Pte. Limited	-	-	600.00	9,555.00	-
	Cube Highways and Infrastructure I-D Pte Limited	-	-	-	1,151.76	-
	Cube Highways and Infrastructure II Pte Limited	-	-	-	6,531.05	-
	Cube Highways and Infrastructure III Pte Limited	-	212.43	212.43	14,256.43	-
	Cube Mobility Investments Pte. Ltd.	-	-	-	18,990.05	-
3	**Reclassification of Subordinate units to Ordinary units (Refer note 19)**					
	Cube Highways and Infrastructure III Pte. Ltd.	-	4,410.23	4,410.23	-	-
	Cube Highways and Infrastructure Pte. Limited	962.14	-	-	-	-
4	**Extinguishment of Subordinate units (Refer note 19)**					
	Cube Highways and Infrastructure III Pte. Ltd.	-	7,589.78	7,589.78	-	-
	Cube Highways and Infrastructure Pte. Limited	2,787.86	-	-	-	-
5	**NCD repayment during the half year/year**					
	Cube Highways and Infrastructure Pte. Limited	-	-	6,000.00	4,410.10	-
6	**Interest on non-convertible debentures**					
	Cube Highways and Infrastructure Pte. Limited	-	-	4.60	5.73	-
7	**Interest on optionally-convertible debentures**	-	**0.35**	**0.78**	**98.00**	-
	Cube Highways and Infrastructure Pte. Limited	-	-	0.43	0.51	-
	Cube Highways and Infrastructure I-D Pte Limited	-	-	-	2.87	-
	Cube Highways and Infrastructure II Pte Limited	-	-	-	16.28	-
	Cube Highways and Infrastructure III Pte Limited	-	0.35	0.35	31.72	-
	Cube Mobility Investments Pte. Ltd.	-	-	-	46.62	-
8	**Interest payment on non-convertible debentures**					
	Cube Highways and Infrastructure Pte. Limited	-	-	4,020.79	738.36	-
9	**Interest payment on optionally-convertible debentures**	-	**7.63**	**198.42**	**7,175.47**	-
	Cube Highways and Infrastructure Pte. Limited	-	-	190.79	32.20	-
	Cube Highways and Infrastructure I-D Pte Limited	-	-	-	300.05	-
	Cube Highways and Infrastructure II Pte Limited	-	-	-	1,394.29	-
	Cube Highways and Infrastructure III Pte Limited	-	7.63	7.63	978.78	-
	Cube Mobility Investments Pte. Ltd.	-	-	-	4,470.15	-
10	**Consideration paid/payable towards acquisition of equity shares of HAM SPVs (Refer note 50B)**					
	Cube Highways and Infrastructure III Pte Limited	23.76	11,709.19	11,709.19	-	-
11	**Interest payable in terms of SPA towards acquisition of HAM SPVs**					
	Cube Highways and Infrastructure III Pte Limited	-	98.97	152.66	-	-
12	**Consideration paid towards acquisition of equity shares of NAMEL (Refer note 50C)**					
	Cube Highways and Infrastructure Pte. Ltd.	-	-	7,176.02	-	-
13	**Investment Management fees (Refer note 60(ii))**					
	Cube Highways Funds Advisors Private Limited	205.20	158.67	331.64	299.17	273.88
14	**Project Management fees (Refer note 60(i))**					
	Cube Highways and Transportation Assets Advisors Private Limited	444.88	302.45	738.31	542.14	-
15	**Rent Expenses**					
	Cube Highways and Transportation Assets Advisors Private Limited	0.29	0.22	0.44	0.44	-
16	**Donations (including corporate social responsibility)**					
	Cube Highways Roots Foundation	35.77	23.09	66.24	54.34	-

	Transactions during the half year/ year	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
17	**Reimbursement of expenses**	**6.08**	**31.30**	**31.55**	**28.05**	**3.18**
	Cube Highways Funds Advisors Private Limited	0.18	-	0.25	13.48	3.18
	Cube Highways and Transportation Assets Advisors Private Limited	-	-	-	13.65	-
	Cube Highways and Infrastructure V Pte. Ltd.	-	31.30	31.30	0.83	-
	Cube Mobility Investments Pte. Ltd.	-	-	-	0.09	-
	Kokhraj Handia Expressway Private Limited	5.90	-	-	-	-
18	**Trustee fee**					
	Axis Trustee Services Limited	0.47	0.47	0.94	0.94	0.94
19	**Term loan received**					
	Axis Bank Limited	6,000.00	2,580.00	4,710.00	16,252.50	-
20	**Term loan repaid (including downsell of loan)**					
	Axis Bank Limited	147.83	91.86	189.07	22,616.69	-
21	**NCD issued**					
	Axis Bank Limited	4,200.00	-	-	-	-
22	**NCD repaid**					
	Axis Bank Limited	-	5,944.34	5,944.34	2,061.57	-
22	**Interest expense on NCD**					
	Axis Bank Limited	33.49	7.40	7.40	0.74	-
23	**Interest expense on Term loan**					
	Axis Bank Limited	432.65	244.66	546.95	1,208.10	-
24	**Interest income on fixed deposits**					
	Axis Bank Limited	32.22	49.19	70.41	120.14	-
25	**Bank charges paid**					
	Axis Bank Limited	0.01	0.06	0.08	0.22	-
26	**Bank guarantee commission**					
	Axis Bank Limited	3.39	5.56	10.06	15.74	-
27	**Fixed Deposits placed**					
	Axis Bank Limited	1,144.86	134.78	570.78	3,127.01	-
28	**Fixed Deposits matured**					
	Axis Bank Limited	308.15	3,632.55	4,172.59	2,872.17	-
29	**Payable/Receivable on account of employees transferred**	**2.65**	-	**0.08**	**0.54**	-
	Cube Highways and Transportation Assets Advisors Private Limited	-	-	-	0.54	-
	Delhi Hapur Meerut Expressway Private Limited	0.40	-	0.08	-	-
	Cube Highways Technologies Private Limited	0.22	-	-	-	-
	Baharampore Farakka Highways Limited	0.14	-	-	-	-
	Kokhraj Handia Expressway Private Limited	1.11	-	-	-	-
	Malayagiri Highways Private Limited	0.02	-	-	-	-
	Western M P Infrastructure & Toll Roads Private Limited	0.76	-	-	-	-
30	**Share pledge fee**					
	Axis Bank Limited	0.91	-	-	1.98	-
31	**Project Maintenance services**					
	Cube Highways Technologies Private Limited	-	0.25	7.49	40.93	-
32	**Distributions to Unitholders (return on capital & return of capital)**	**3,752.92**	**4,626.67**	**7,908.53**	**4,721.75**	-
	Cube Highways and Infrastructure Pte. Limited	18.04	614.90	615.13	636.63	-
	Cube Highways and Infrastructure I-D Pte Limited	-	146.45	146.56	151.63	-
	Cube Highways and Infrastructure II Pte Limited	650.80	735.11	1,281.84	761.10	-
	Cube Highways and Infrastructure III Pte Limited	1,747.85	1,530.83	2,999.02	1,516.46	-
	Cube Mobility Investment Pte Limited	1,336.23	1,599.38	2,865.98	1,655.93	-

*Subsequent to allocation of units in exchange of shares of SPVs, the following unitholders have offered for sale 142,323,555 units (aggregating to Rs. 14,232.35 million) as follows:-

Total offered for sale	-	-	-	**14,232.35**	-
Cube Highways and Infrastructure Pte. Limited	-	-	-	5,969.02	-
Cube Highways and Infrastructure II Pte Limited	-	-	-	1,652.67	-
Cube Highways and Infrastructure III Pte Limited	-	-	-	6,610.66	-

46 Information on related party transactions

46.3	Balances at the half year/year end	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
1	**Trade Payables**					
	Cube Highways Funds Advisors Private Limited	(77.53)	(51.57)	(55.45)	(25.69)	(264.91)
	Cube Highways and Transportation Assets Advisors Private Limited	(310.82)	(104.36)	(213.20)	(81.94)	-
	Cube Highways Technologies Private Limited	(4.62)	(2.45)	(7.46)	(0.81)	-
	Axis Trustee Services Limited	(0.47)	-	-	-	-
2	**Term loan Payable**					
	Axis Bank Limited	(14,669.59)	(6,784.90)	(8,817.52)	(4,296.77)	-
3	**NCD payable**					
	Axis Bank Limited	(4,200.00)	-	-	-	-
4	**Interest accrued but not due on NCD**					
	Axis Bank Limited	(0.80)	-	-	-	-
5	**Bank Balance/Fixed Deposits***					
	Axis Bank Limited	1,599.43	755.91	1,163.58	3,359.05	-
6	**Other receivable**					
	Cube Highways and Infrastructure V Pte Ltd	1.83	0.83	1.83	0.83	-
	Cube Mobility Investments Pte. Ltd.	0.09	0.09	0.09	0.09	-
	Cube Highways Roots Foundation	-	-	13.02	-	-
	Cube Highways Technologies Private Limited	0.22	-	-	-	-
	Baharampore Farakka Highways Limited	0.06	-	-	-	-
	Kokhraj Handia Expressway Private Limited	4.74	-	-	-	-
7	**Other payable**					
	Cube Highways and Infrastructure V Pte. Ltd.	(2.84)	(31.30)	(31.30)	-	-
	Delhi Hapur Meerut Expressway Private Limited	(0.47)	(0.08)	(0.08)	-	-
	Cube Highways Growth Advisory Private Limited	(0.32)	-	-	-	-
	Cube Highways Roots Foundation	(3.26)	-	-	-	-
	Malayagiri Highways Private Limited	(0.02)	-	-	-	-
	Western M P Infrastructure & Toll Roads Private Limited	(0.76)	-	-	-	-
	Cube Highways Funds Advisors Private Limited	(0.18)	-	-	-	-
8	**Payable towards acquisition of equity shares of HAM SPVs (including interest)**					
	Cube Highways and Infrastructure III Pte. Ltd.	(989.52)	(6,412.85)	(1,001.40)	-	-

*No transactions of the bank account maintained with Axis Bank Limited has been disclosed as being in the ordinary course of business being a commercial banking operations.

46.4 Details in respect of related party transactions involving acquisition of SPV as required by paragraph 4 of the chapter 3 to the SEBI master circular no. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

For the half year ended September 30, 2025: Nil

For the year ended March 31, 2025 (including for the half year ended September 30, 2024):

A) Summary of the valuation reports (issued by the independent valuer appointed under the InvIT Regulations):

Name of the SPVs	Date of acquisition	Discounting Rate (WACC)	Method of caclulation	Enterprise value as at date of acquisition
SIPL	June 04, 2024	8.30%	Discounted Cash flow method	4,486.00
MHPL	June 04, 2024	8.30%		3,383.00
MSHPL	June 04, 2024	8.30%		4,720.00
THPL	June 04, 2024	8.30%		5,389.00
SPPL	June 04, 2024	8.30%		4,645.00
BWHPL	June 04, 2024	8.30%		4,032.00
NAMEL	February 12, 2025	10.62%		25,267.72

B) Material conditions or obligations in relation to the transactions:
Share Purchase Agreement dated May 31, 2024 (for HAM SPVs) and June 04, 2024 (for NAMEL) executed, inter alia, individually between the respective SPVs and the Trust, prescribing certain terms and conditions as agreed between the parties thereto, including without limitation, indemnification provisions for claims in relation to pre-acquisition period subject to limitations on liability, de-minimis values and claim basket values; representations and warranties; payment(s) to erstwhile sellers etc., governing law etc. (as more particularly stipulated under the Share Purchase Agreements) which govern the transfer of shareholding in the Project SPVs to Cube Highways Trust. Acquisition of shares of N.A.M. Expressway Limited ("NAMEL") has been financed from senior, secured, rated, listed, redeemable, non-convertible debt securities bearing coupon interest rate of 7.67%.

46.4 Details in respect of related party transactions involving acquisition of SPV as required by paragraph 4 of the chapter 3 to the SEBI master circularSEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

For the year ended March 31, 2024:

A) Summary of the valuation reports (issued by the independent valuer appointed under the InvIT Regulations):

Name of the SPVs	Date of acquisition	Discounting Rate (WACC)	Method of caclulation	Enterprise value as at date of acquisition
HTPL	April 17, 2023	10.10%	Discounted Cash flow method	19,216.40
JLTPL	April 17, 2023	10.10%		12,659.66
JVTPL	April 17, 2023	10.10%		8,476.00
KETPL	April 17, 2023	10.10%		8,869.01
KMTPL	April 17, 2023	10.10%		16,920.07
LRTPL	April 17, 2023	10.10%		12,336.43
MKTPL	April 17, 2023	10.10%		15,961.81
NKTPL	April 17, 2023	10.10%		10,430.56
SMTPL	April 17, 2023	10.10%		10,052.02
DATRPL	April 17, 2023	9.70%		77,792.83
FRHL	April 17, 2023	10.20%		30,105.01
WVEPL	April 17, 2023	10.20%		8,486.66
NDEPL	April 17, 2023	10.40%		7,338.13
WUPTPL	April 17, 2023	9.90%		4,231.85
JMTPL	April 17, 2023	10.30%		13,652.05
APEPL	April 17, 2023	11.00%		2,096.87
GAEPL	April 17, 2023	10.20%		26,083.89
MBEL	April 17, 2023	10.00%		6,061.63

B) Material conditions or obligations in relation to the transactions:
Share Purchase Agreement dated March 30, 2023 executed, inter alia, individually between the respective SPVs and the Trust, prescribing certain terms and conditions as agreed between the parties thereto, including without limitation, indemnification provisions for claims in relation to pre-acquisition period subject to limitations on liability, de-minimis values and claim basket values; representations and warranties; payment(s) to erstwhile sellers etc., governing law etc. (as more particularly stipulated under the Share Purchase Agreements) which govern the transfer of shareholding in the Project SPVs to Cube Highways Trust.

For the year ended March 31, 2023:
No acquisition during the year ended March 31, 2023.

47 Information on segment reporting pursuant to Ind AS 108 - Operating Segments

The Trust group is engaged in the business of setting up of infrastructure facility by way of development of infrastructure projects, operation and maintenance of Infrastructural facilities. As such, all activities undertaken by the SPVs are incidental to the main business. The directors of the SPV and Investment Manager, who have been identified as being the chief operating decision maker (CODM), evaluates the SPVs performance, allocates resources based on the analysis of the previous performance indicators of the SPVs as a single unit. Therefore, there are no separate reportable business segments as per IND AS 108-"Operating Segment".

48 Provisions

(a) Provision for periodic major maintenance work

The Trust Group is required to operate and maintain the project highway during the entire concession period and hand over the project back to the Authority as per the maintenance standards prescribed in Concession agreement.

For this purpose, a regular maintenance along with periodic maintenances is required to be performed. Normally periodic maintenance includes resurface of pavements, repairs of structures and other equipment's and maintenance of service roads.

The maintenance cost/ bituminous overlay may vary based on the actual usage during maintenance period. Accordingly on the grounds of matching cost concept and based on technical estimates, a provision for major maintenance expenses is reviewed and is provided for in the financial statements at each reporting period.

Movement in provisions for periodic major maintenance work

Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Opening balance	6,065.66	3,199.25	3,199.25	-	-
Add: Additions on account of acquisition (refer note 50)	-	-	1,070.47	3,067.69	-
Add : Provision charged to Consolidated Statement of Profit and Loss[(iii)]	1,523.63	1,149.34	2,410.28	1,663.92	-
Less : Utilised	(192.08)	(700.35)	(847.94)	(1,645.95)	-
Less : Unused amounts reversed	-	-	-	(10.73)	-
Add : Unwinding of discount and changes in discount rate	252.45	124.88	233.60	124.32	-
Closing balance	**7,649.66**	**3,773.12**	**6,065.66**	**3,199.25**	**-**
Non-current [(i)]	5,895.14	3,415.64	4,334.81	2,300.26	-
Current [(ii)]	1,754.52	357.48	1,730.85	898.99	-

Notes:

(i) The expected period of utilisation of non current provision is within 2-7 years.

(ii) The expected period of utilisation of current provision is within next 1 year.

(iii) Excludes periodic major maintenance at APEPL of Rs. Nil million (September 30, 2024: Rs. 747.00 million, March 31, 2025 : 888.26 million, March 31, 2024 : Nil, March 31, 2023 : Nil) being an annuity concession arrangement.

(b) Provisions for contractual obligation for infrastructure upgrade works

Certain SPVs estimates and provides for contract liability in respect of unavoidable obligations to improve/upgrade the infrastructure to be undertaken as per Concession Agreement with NHAI. These estimates are corroborated through purchase orders/ work orders placed or to be placed by these SPVs as per the road survey reports issued by an independent field expert. As the estimated cost is based on the various assumptions such as current infrastructure (road, pavements, etc.) condition, inflation in material cost etc., hence the Management is required to apply judgement over these factors.

Movement in Provisions for contractual obligation for infrastructure upgrade works

Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Opening balance	1,896.07	2,403.54	2,403.54	-	-
Add: Additions on account of acquisition (refer note 50)	-	-	-	2,803.91	-
Add : Additional provision capitalised under service concession arrangement	48.40	-	-	128.25	-
Less : Utilised	(296.82)	(188.43)	(507.47)	(418.42)	-
Add : Unwinding of discount and changes in discount rate	-	-	-	18.05	-
Less : Reversal on account of change in estimation [Refer note 6]	(48.40)	-	-	(128.25)	-
Closing balance	**1,599.25**	**2,215.11**	**1,896.07**	**2,403.54**	**-**
Non-current	-	-	-	-	-
Current [(i)]	1,599.25	2,215.11	1,896.07	2,403.54	-

(i) The expected period of utilisation of current provision is within next 1 year.

49 Details of dues to Micro, Small and Medium Enterprises

The details of dues to MSMEs as defined under Micro, Small and Medium Enterprises Development Act, 2006 (MSMED Act), and disclosures pursuant to the MSMED Act are as follows:

Particulars	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
(i) Principal amount remaining unpaid to any supplier as at the end of the accounting year / half year	493.40	353.70	688.72	246.86	-
(ii) Interest due thereon remaining unpaid to any supplier as at the end of the accounting year / half year	4.90	0.12	4.88	0.31	-
(iii) The amount of interest paid along with the amounts of the payment made to the supplier beyond the appointed day					
- Principal	66.17	38.55	86.58	134.02	-
- Interest	0.16	0.92	0.42	38.95	-
(iv) The amount of interest due and payable for the year / half year	0.95	2.26	2.47	6.91	-
(v) The amount of interest accrued and remaining unpaid at the end of the accounting year / half year	29.71	28.35	28.75	26.66	-
(vi) The amount of further interest due and payable even in the succeeding year, until such date when the interest dues as above are actually paid	-	-	0.12	-	-

Notes:

(i) Dues to Micro Enterprises and Small Enterprises have been determined to the extent such parties have been identified on the basis of information collected by the Management. This has been relied upon by the auditors.

(ii) The above disclosure excludes Rs. 523.19 million (September 30, 2024: Rs. Nil million, March 31, 2025 : Rs. 219.89 million, March 31, 2024 : Nil million, March 31, 2023 : Nil) towards amount accrued but not yet billed by MSME vendors.

50 Asset Acquisition

A) i) Acquisition of AJUHPL SPV (Half year ended September 30, 2025)

In terms of Share Purchase Agreement (SPA) dated February 7, 2025 entered amongst the Trust (acting through its Investment Manager), Athaang Infrastructure Private Limited, National Investment and Infrastructure Fund (through its Investment Manager) (Seller) and AJUHPL on June 12, 2025 the Trust has acquired the 100% equity holding of AJUHPL for consideration of Rs. 4,145.13 million (including contingent consideration of Rs. 122.99 million) referred to in note 1(ii).

The management applied optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated under Receivable under Service Concession Arrangements , with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition. The management identified and recognized the individual identifiable assets acquired and liabilities assumed; and allocated the purchase consideration to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of acquisition.

The allocated value of the identifiable assets and liabilities as at the date of acquisition were:

Assets	**Amount Rs. Million**
Property, Plant and Equipment (net of accumulated depreciation)	26.34
Intangible assets	545.19
Receivable under service concession arrangements	12,051.38
Assets held for sale	3.66
Trade receivables	3.19
Cash and cash equivalents	5,425.07
Other assets	656.39
Total Assets (A)	**18,711.22**
Liabilities	
Borrowings (including current maturities of Non-current borrowings)	12,933.56
Trade Payables	84.67
Other liabilities	1,547.86
Total Liabilities (B)	**14,566.09**
Net Assets/Consideration (A-B)	**4,145.13**

ii) Acquisition of QEPL SPV (Half year ended September 30, 2025)

In terms of Share Purchase Agreement (SPA) dated February 7, 2025 entered amongst the Trust (acting through its Investment Manager), Quazigund Expressway Private Limited (QEPL) and National Investment and Infrastructure Fund (through its Investment Manager) (Seller) on June 12, 2025 the Trust has acquired the 100% equity holding of QEPL for consideration of Rs. 6,055.10 million referred to in note 1(ii).

The management applied optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated under Receivable under Service Concession Arrangements , with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition. The management identified and recognized the individual identifiable assets acquired and liabilities assumed; and allocated the purchase consideration to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of acquisition.

The allocated value of the identifiable assets and liabilities as at the date of acquisition were:

Assets	**Amount Rs. Million**
Property, Plant and Equipment (net of accumulated depreciation)	16.45
Intangible assets	152.45
Receivable under service concession arrangements	19,032.91
Trade receivables	0.68
Cash and cash equivalents	1,904.97
Other assets	3,312.61
Total Assets (A)	**24,420.07**
Liabilities	
Borrowings (including current maturities of Non-current borrowings)	17,921.71
Trade Payables	58.95
Other liabilities	384.31
Total Liabilities (B)	**18,364.97**
Net Assets/Consideration (A-B)	**6,055.10**

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50 Asset Acquisition

B) Acquisition of HAM SPVs (FY 2024-25)

In terms of Share Purchase Agreements (SPAs) dated May 31, 2024 entered amongst Trust (acting through its Investment Manager), Axis Trustee Services Limited (acting in its capacity as Trustee of the Trust), Cube Highways and Infrastructure III PTE. Ltd. ("Seller") and the Hybrid Annuity Model SPVs referred to in note 1(ii). (thereinafter referred to as "the parties"), on June 04, 2024 the Trust completed the acquisition of 51% equity holding of HAM SPVs for consideration of Rs. 5,973.80 million (including contingent consideration of Rs. 578.49 million) and the remaining 49% equity of HAM SPVs for consideration of Rs. 5,735.39 million (including contingent consideration of Rs. 555.80 million) on December 03, 2024. The contingent consideration is mainly towards various remedies and indemnities available to the Trust against money held back from annuities by NHAI, claims related to changes in law, claims for balance work, claims under Singapore International Arbitration Centre (SIAC). Further, one of HAM SPV viz. MHPL has initiated arbitration with NHAI with respect to damages amounting to Rs. 1,347.84 million imposed by NHAI mainly on account of default in performing repair and rectification works and NHAI has withheld Rs. 112.72 million from the annuity payments due to MHPL (included under trade receivables). The management, after reviewing the facts and circumstances of the case supported by the legal opinion, believes that the likelihood of any ultimate outflow is remote. Also, under the terms of the SPA, the Seller is responsible for indemnifying, defending, and holding the Trust and the SPV harmless against any losses related to this dispute with NHAI.

The management applied optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated under Receivable under Service Concession Arrangements , with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition.

The management identified and recognized the individual identifiable assets acquired and liabilities assumed; and allocated the purchase consideration to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of acquisition.

The allocated value of the identifiable assets and liabilities of the 6 HAM SPVs as at the date of acquisition were:

Assets	**Amount Rs. Million**
Property, Plant and Equipment (net of accumulated depreciation)	24.99
Intangible assets	8,599.81
Capital work-in-progress	80.80
Receivable under service concession arrangements	15,231.56
Investments in Mutual Funds	2,099.98
Trade receivables	1,585.60
Cash and cash equivalents	1,400.95
Bank balance other than cash and cash equivalents	710.37
Other assets	3,399.76
Total Assets (A)	**33,133.82**
Liabilities	
Borrowings (including current maturities of Non-current borrowings)	20,093.28
Trade Payables	241.43
Deferred Tax Liability (net)	660.09
Other liabilities	429.83
Total Liabilities (B)	**21,424.63**
Net Assets/Consideration (A-B)	**11,709.19**

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50 Asset Acquisition

C) Acquisition of NAMEL (FY 2024-25)

In terms of Share Purchase Agreements (SPAs) dated June 04, 2024 entered amongst the Trust (acting through its Investment Manager), Axis Trustee Services Limited (acting in its capacity as Trustee of the Trust), Cube Highways and Infrastructure PTE. Ltd. ("Seller") and N.A.M. Expressway Limited (NAMEL) (thereinafter referred to as "the parties") referred to in note 1(ii), on February 12, 2025 the Trust completed the acquisition of 100% equity holding of NAMEL for consideration of Rs. 7,176.02 million. Accordingly the financial statements of the aforesaid subsidiary for the period February 12, 2025 to March 31, 2025 have been considered in the consolidated financial statements of the Trust Group.

The management applied optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated in Intangible Assets- Rights under Service Concession Arrangements with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition.

The management identified and recognized the individual identifiable assets acquired and liabilities assumed; and allocated the purchase consideration to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of acquisition.

The allocated value of the identifiable assets and liabilities of the SPV as at the date of acquisition were:

Assets	**Amount Rs. Million**
Property, Plant and Equipment (net of accumulated depreciation)	23.89
Intangible assets	26,248.85
Intangible assets under development	67.07
Current tax assets (net)	4.10
Investments	442.09
Cash and cash equivalents	68.54
Bank balance other than cash and cash equivalents	1,797.24
Other assets	477.64
Total Assets (A)	**29,129.42**
Liabilities	
Borrowings (including current maturities of Non-current borrowings)	19,144.85
Trade Payables	155.46
Provisions	1,079.14
Deferred Tax Liability (net)	1,448.12
Other liabilities	125.83
Total Liabilities (B)	**21,953.40**
Net Assets/Consideration (A-B)	**7,176.02**

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50 Asset Acquisition

D) Acquisition of 18 Subsidiaries (FY 2023-24)

Pursuant to the Share Purchase Agreements dated March 30, 2023, the Trust (acting through its Investment Manager) acquired the entire equity share capital (except for 0.03% of the equity share capital of MBEL) of HTPL, JLTPL, JVTPL, KETPL, KMTPL, LRTPL, MKTPL, NKTPL, SMTPL, DATRPL, FRHPL, WVEPL, NDEPL, WUPTPL, JMTPL, APEL, GAEPL, MBEL on April 17, 2023 for an equity consideration of Rs. 106,758.69 million (referred to in note 1(ii)). Accordingly the financial statements of the aforesaid subsidiaries for the period April 17, 2023 to March 31, 2024 have been considered in the consolidated financial statements of the Trust Group.

The management applied optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated in Intangible Assets- Rights under Service Concession Arrangements (other than APEL) and Receivable under Service Concession Arrangements (for APEL), with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition.

The management identified and recognized the individual identifiable assets acquired and liabilities assumed; and allocated the purchase consideration to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of acquisition.

The allocated value of the identifiable assets and liabilities of the 18 SPVs as at the date of acquisition were:

Assets	**Amount Rs. Million**
Property, Plant and Equipment (net of accumulated depreciation)	239.13
Capital work-in-progress	8.87
Investment properties	7.28
Intangible assets- Rights under Service Concession Arrangements (including other intangible assets)	2,33,472.67
Intangible assets under development	2,097.21
Deferred tax assets (net)	341.16
Current tax assets (net)	459.35
Investments	10,325.25
Trade receivables	809.89
Cash and cash equivalents	6,285.17
Bank balance other than cash and cash equivalents	307.80
Assets held for sale	4.67
Other assets	4,340.59
Total Assets (A)	**2,58,699.04**
Liabilities	
Borrowings (including current maturities of Non-current borrowings)	1,32,894.35
Trade Payables	2,035.57
Provisions	5,906.38
Deferred Tax Liability (net)	511.94
Other liabilities	10,591.65
Total Liabilities (B)	**1,51,939.89**
Non-controlling interest (C)	**0.46**
Net Assets (A-B-C)	**1,06,758.69**

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51 Revenue from contracts with customers

1 Disaggregation of revenue

Revenue recognised mainly comprises of revenue from toll collection, claims with NHAI/State authorities, contract revenue. Set out below is the disaggregation of the Trust Group revenue from contracts with customers

	Description	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
	Operating revenue					
(a)	Revenue from toll fee collections	16,237.33	13,332.09	28,275.30	24,715.17	-
(b)	Construction income	112.72	411.81	634.14	4,025.77	-
(c)	Finance and Operation & Maintenance Income on annuity receivable from NHAI	2,900.86	1,395.44	2,969.58	400.32	-
(d)	Revenue from additional work (net of related cost)	-	1.81	26.30	8.78	-
(e)	Renewals and overlay income	-	974.82	1,166.12	-	-
(f)	Claims for compensation from NHAI/TNSTC	708.06	-	-	11.33	-
	Total revenue	**19,958.97**	**16,115.97**	**33,071.44**	**29,161.37**	**-**

The table below represents disaggregated revenues from contracts with customers based on nature, amount and timing for the half year ended September 30, 2025 and year ended March 31, 2025, March 31, 2024 and March 31, 2023.

Timing of revenue recognition	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
At point in time	16,945.39	13,332.09	28,275.30	24,726.50	-
Over time	3,013.58	2,783.88	4,796.14	4,434.87	-
Total revenue	**19,958.97**	**16,115.97**	**33,071.44**	**29,161.37**	**-**

2 Assets and liabilities related to contracts with customers

The following table provides information about receivables, contract assets and contract liabilities from contracts with customers:

Description	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Contract Assets					
Trade Receivables	2,396.51	2,070.31	1,636.71	600.79	-
Receivables under service concession arrangements*	42,209.32	16,288.54	14,433.95	600.91	-
Unbilled Revenue	320.64	286.35	335.18	107.25	-
Total	**44,926.47**	**18,645.20**	**16,405.84**	**1,308.95**	**-**

*For movement of annuity receivables for HAM SPVs , APEL, AJUHPL and QEPL refer note 16(iii).

Contract Liability					
Advance from customers	2.90	3.05	5.14	-	-
	2.90	**3.05**	**5.14**	**-**	**-**

3 Performance Obligation

Income from toll collection
The performance obligation in service of toll collection is recorded as per rates notified by the NHAI/State authorities and payment is generally due at the time of providing service.

Contract revenue
The performance obligation under service concession arrangements (SCA) is due on completion of work as per terms of SCA.

4 Refer note 52 for disclosure in accordance with Appendix D: Service Concession Arrangements Disclosures of Ind AS 115: Revenue from Contracts with Customers.

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

HTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Hazaribagh – Ranchi Section (KM 41.500 – KM 115.290) Road Project on NH-33 in the state of Jharkhand as agreed between the SPV and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-33 (NH-33) from KM-41.50 to KM 115.29
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
End of Concession period	October 18, 2050
Stage of Completion	Completed with Commercial Operation Date (COD) as at September 04, 2013
Premature termination	On force majeure event or parties defaulting on their obligation
Operation & Maintenance ("O&M") Handover Date	March 31, 2028
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods from O&M handover date.
Remaining concession period of rights under SCA as at September 30, 2025	25 years and 18 days

JLTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Jhansi-Lalitpur Section (KM 00.00 – KM 49.70) Road Project on NH-25 in the state of Uttar Pradesh as agreed between the Company and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-25 (NH-25) from KM-00.00 to KM 49.70
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
Estimated Reduction period	1826 Days
End of Concession period	October 18, 2045 (including estimated reduction period)[(i)]
Stage of Completion	Completed with Commercial Operation Date (COD) as at November 12, 2014
Premature termination	On force majeure event or parties defaulting on their obligation
Operation & Maintenance ("O&M") Handover Date	March 31, 2027
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods from O&M handover date.
Remaining concession period of rights under SCA as at September 30, 2025	20 years and 18 days (including estimated reduction period)

JVTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Jhansi-Lalitpur Section (KM 49.70 – KM 99.00) Road Project on NH-26 in the state of Uttar Pradesh as agreed between the SPV and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-26 (NH-26) from KM-49.70 to KM 99.00
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
Estimated Reduction period	1826 Days
End of Concession period	October 18, 2045 (including estimated reduction period)[(i)]
Stage of Completion	Completed with Commercial Operation Date (COD) as at March 19, 2012
Premature termination	On force majeure event or parties defaulting on their obligation
Operation & Maintenance ("O&M") Handover Date	March 31, 2027
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods from O&M handover date.
Remaining concession period of rights under SCA as at September 30, 2025	20 years and 18 days (including estimated reduction period)

KETPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Madurai-Kanyakumari Section (KM 52.300 – KM 116.500) Road Project on NH-07 in the state of Tamil Nadu as agreed between the SPV and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-07 (NH-07) from KM-52.30 to KM 116.50
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
End of Concession period	October 18, 2050
Stage of Completion	Completed with Commercial Operation Date (COD) as at August 15, 2011
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	25 years and 18 days

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

KMTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Kotwa-Muzaffarpur Section (KM 440.00 – KM 520.00) Road Project on NH-28 in the state of Bihar as agreed between the SPV and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-28 (NH-28) from KM-440.00 to KM 520.00
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
Estimated Reduction period	1644 Days
End of Concession	April 18, 2046 (including estimated reduction period)[(i)]
Stage of Completion	Completed with Commercial Operation Date (COD) as at December 09, 2012
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	20 years, 06 months and 18 days (including estimated reduction period)

LRTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Lucknow-Raibareli Section (KM 12+700 to KM 82+700) Road Project on NH 24B in the state of Uttar Pradesh as agreed between the SPV and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-24B (NH-24B) from KM-12+700 to KM 82+700
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 years
End of Concession	October 18, 2050
Stage of Completion	Completed with Commercial Operation Date (COD) as at March 05, 2015
Premature termination	On force majeure event or parties defaulting on their obligation
Operation & Maintenance ("O&M") Handover Date	March 31, 2029
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods from O&M handover date.
Remaining concession period of rights under SCA as at September 30, 2025	25 years and 18 days

MKTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Madurai-Kanyakumari Section (KM 00.00 – KM 52.30) Road Project on NH-07 in the state of Tamil Nadu as agreed between the SPV and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-07 (NH-07) from KM-00.00 to KM 52.30
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
Estimated Reduction period	1826 days
End of Concession period	October 18, 2045 (Including Estimated reduction period)(i)
Stage of Completion	Completed with Commercial Operation Date (COD) as at September 10, 2012
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	20 years and 18 days (Including Estimated reduction period)

NKTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Madurai-Kanyakumari Section (KM 180.00 – KM 243.47) Road Project on NH-07 in the state of Tamil Nadu as agreed between the Company and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-07 (NH-07) from KM-180.00 to KM 243.47
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
Estimated extension of concession period	164 days
End of Concession period	March 31, 2051 (Including estimated extention period)[(i)]
Stage of Completion	Completed with Commercial Operation Date (COD) as at May 23, 2011
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	Operation and routine maintenance of the highway
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	25 years and 6 months (Including Estimated extension period)

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

SMTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Madurai-Kanyakumari Section (KM 116.50 – KM 180.00) Road Project on NH-07 in the state of Tamil Nadu as agreed between the SPV and National Highway Authority of India (NHAI) on Tolling, operation, maintenance and transfer (TOT) basis.
Project	National Highway-07 (NH-07) from KM-116.50 to KM 180.00
Nature of Asset	Intangible
Year when SCA granted	October 20, 2020
Concession Period	30 Years
End of Concession period	October 18, 2050
Stage of Completion	Completed with Commercial Operation Date (COD) as at May 23, 2011
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	Operation and maintenance of the project
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	25 years and 18 days

DATRPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of six lanes Delhi - Agra Section (KM 20.500 – KM 200.000) Road Project on NH-2 in the state of Haryana/Uttar Pradesh as agreed between the Company and National Highway Authority of India (NHAI) on Design, Built, Finance, Operate and Transfer (DBFOT) basis under National Highway Development Program (NHDP) phase - V.
Project	Project Six lanes Delhi-Agra Section (KM 20.500 – KM 200.000) Road Project on NH-2
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) for Toll Road Carriageway)
Year when SCA granted	October 16, 2012
Concession period	26 Years
Estimated extension of concession period	1899 days
Stage of completion	Completed with Provisional Commercial Operation Date (COD) as May 20, 2022. The date of issue of this Provisional Completion date shall be the COD, as defined in the said concession agreement.
End of concession period	February 12, 2044 (Including estimated extension period)[(i)]
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	To establish, develop, finance, design, construct the roads & bridges and operation and maintenance of rehabilitation and strengthening of existing 6 lane highway of KM 20.500 to KM 200.000 of NH-2 (Delhi - Agra section) in state of Haryana/Uttar Pradesh on DBFOT basis under National Highway Development Program (NHDP) phase -V.
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	18 years, 4 months and 12 days (Including Estimated extension period)

FRHPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of four lanes Farakka – Raiganj Section (KM 295.00 – KM 398.000) Road Project on NH-34 in the state of West Bengal as agreed between the SPV and National Highway Authority of India (NHAI) on Design, Built, Finance, Operate and Transfer (DBFOT) basis under National Highway Development Program (NHDP) phase - III
Project	Four lanes Farakka – Raiganj Section (KM 295.00 – KM 398.000) Road Project on NH-34
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) i.e. Intangible Assets-Toll Road Carriageway)
Year when SCA granted	February 01, 2011
Concession period	30 Years
Estimated extension of concession period	90 Days
Stage of completion	Completed with Commercial Operation Date (COD) as at May 03, 2021
End of concession period	May 01, 2041 (Including estimated extension period)[(i)]
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	To establish, develop, finance, design, construct the roads & bridges and operation and maintenance of rehabilitation and strengthening of existing 4 lane divided highway of (KM 295.00 to KM 398.00) of NH-34 (Farakka- Raiganj section) in state of West Bengal on DBFOT basis under National Highway Development Program (NHDP) phase -III.
Major Overlays	In terms of the SCA , the SPVs obligation to carry out overlay of the roads has not been defined. However, basis quality parameters to be maintained as per SCA, the management is expecting to carry out the overlay of the roads at interval of five to six years.
Remaining concession period of rights under SCA as at September 30, 2025	15 years, 7 months and 01 day (Including Estimated extension period)

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

WVEPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Walayar – Vadakkancherry (KM 182.250 to KM 240.000) Road Project on NH-47 (Now NH-544) in the State of Kerala as agreed between the SPV and National Highway Authority of India (NHAI) on Design, Build, Finance, Operate and Transfer (DBFOT) basis.
Project	National Highway-47 (Now NH-544) from KM 182.250 to KM 240.000 (approx 54 km) on the Walayar- Vadakkencherry section.
Nature of Asset	Intangible
Year when SCA granted	September 17, 2012
Cash support by way of grant	2646.00 million (29% of the total project cost) adjusted with intangible asset.
Concession period	20 Years
Estimated extension of concession period	1550 days
Stage of completion	Completed with commercial operation date (COD) as at October 31, 2015
End of concession period	August 06, 2037 (Including estimated extension period)[ii]
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	Establish, develop, finance and design and construct the roads and bridges on NH-47 (NH-544) and to operate and maintain the project.
Major Overlays	In terms of the SCA , the SPVs obligation to carry out overlay of the roads has not been defined. However, basis quality parameters to be maintained as per SCA, the management is expecting to carry out the overlay of the roads at interval of six to seven years.
Remaining concession period of rights under SCA as at September 30, 2025	11 years, 10 months and 6 days (Including Estimated extension period)

NDEPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of four lanes (KM 28.200 – KM 110.000) Road Project on NH-48 in the state of Karnataka as agreed between the SPV and National Highway Authority of India (NHAI) on Built, Operate and Transfer (BOT) basis under National Highway Development Program (NHDP) phase -III A.
Project	Four lanes (KM 28.200 – KM 110.000) Road Project on NH-48
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) i.e. Intangible Assets-Toll Road Carriageway)
Year when SCA granted	July 9, 2007
Original Concession Period	25 Years w.e.f January 5, 2008 i.e. Appointed Date (180 days from date of signing of agreement i.e. July 07, 2007)
Details of substitution of concessionaire	Substitution of concessionaire vide Supplementary agreement dated January 11, 2021 to Original concession agreement dated July 9, 2007 for balance concession period from January 11, 2021 to January 29, 2033.(Including estimated extension period)
Premature termination	On force majeure event or parties defaulting on their obligation
Stage of completion	Completed with Provisional Commercial Operation Date (COD) as June 23, 2012. The date of issue of this Provisional Completion date shall be the COD, as defined in the said concession agreement.
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay during the entire concession period and hand over the project back to the Authority (NHAI) as per the maintenance standards prescribed in Concession agreement.
Obligation to provide services:	To establish, design, engineering, financing, construction and operation and maintenance of rehabilitation and strengthening of existing 2- lane road and widening to 4 lane divided highway of KM 28.200 to KM 110.000 of NH-48 in state of Karnataka on BOT basis under National Highway Development Program (NHDP) phase -III A.
Remaining concession period of rights under SCA as at September 30, 2025	7 years, 3 months, 30 days

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

WUPTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of four lanes Meerut – Muzaffarnagar Section (KM 52.250 – KM 131.000) Road Project on NH-58 in the state of Uttar Pradesh as agreed between the Company and National Highway Authority of India (NHAI) on Built, Operate and Transfer (BOT) basis under National Highway Development Program (NHDP) phase -III A.
Project	Four lanes Meerut – Muzaffarnagar Section (KM 52.250 – KM 131.000) Road Project on NH-58
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) i.e. Intangible Assets-Toll Road Carriageway)
Year when SCA granted	September 09, 2005
Appointed Date	March 09, 2006
Concession period	20 Years
Estimated extension of concession period	109 days
End of Concession Period	June 25, 2026 (Including estimated extension period)
Stage of completion	Completed with Commercial Operation Date (COD) as at April 25, 2011
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	To establish, develop, finance, design, construct the roads & bridges and operation and maintenance of rehabilitation and strengthening of existing 2- lane road and widening to 4 lane divided highway of KM 52.250 to KM 131.000 of NH-58 (Meerut- Muzaffarnagar section) in state of Uttar Pradesh on BOT basis under National Highway Development Program (NHDP) phase -III A.
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	8 months and 25 days (Including Estimated extension period)

JMTPL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of Jaipur – Mahua Section (KM 120.000 – KM 228.000) Road Project on NH-21 in the state of Rajasthan as agreed between the Company and National Highway Authority of India (NHAI) on Built, Operate and Transfer (BOT) basis. ("Project Highway")
Project	National Highway-21 (NH-21) from KM-120.00 to KM 228.00
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) i.e. Intangible Assets-Toll Road Carriageway)
Year when SCA granted	September 23, 2005
Concession period	25 Years
Estimated extension of concession period	47 Days
End of Concession period	June 09, 2031 (Including estimated extension period)
Stage of completion	Completed with Commercial Operation Date (COD) as at March 08, 2008
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	To establish, develop, finance and design and construct the roads and bridges on NH-21 and to operate and maintain the project.
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	5 years, 08 months and 09 days (Including Estimated extension period)

MBEL

Description and right to use specified asset	Toll collection from the users and operation and maintenance of four lanes Bharatpur – Mahua Section (KM 63.000 – KM 120.000) Road Project on NH-11 in the state of Rajasthan as agreed between the Company and National Highway Authority of India (NHAI) on Built, Operate and Transfer (BOT) basis. ("Project Highway")
Project	Four lanes Bharatpur – Mahua Section (KM 63.000 – KM 120.000) Road Project on NH-11
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) i.e. Intangible Assets-Toll Road Carriageway)
Year when SCA granted	October 13, 2005
Appointed date	April 10, 2006
Concession period	25 Years
Estimated extension of concession period	49 Days
End of Concession period	June 21, 2031 (Including estimated extension period)
Stage of completion	Completed with Commercial Operation Date (COD) as at May 08, 2009
Premature termination	On force majeure event or parties defaulting on their obligation
Obligation to provide services:	To establish, develop, finance and design and construct the roads and bridges on NH-11 and to operate and maintain the project
Major Overlays	In terms of the SCA , the SPV is obligated to carry out overlay of the roads at the end of specified periods.
Remaining concession period of rights under SCA as at September 30, 2025	5 years, 08 months and 21 days (Including Estimated extension period)

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

GAEPL

Description and right to use specified asset	Design, Engineering, Finance, Construction, Operation and Maintenance of Ghaziabad – Aligarh Section of NH-91 from Km. 23.600 to Km. 149.900 in the State of Uttar Pradesh under NHDP Phase III on Design, Build, Finance, Operate and Transfer (the "DBFOT") Basis
Project	Project 4/6 lanes Ghaziabad – Aligarh Section of NH-91 from Km. 23.600 to Km. 149.900
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) for Toll Road Carriageway)
Year when SCA granted	May 20, 2010
Concession period	24 Years
Estimated extension of concession period	1578 Days
End of concession period	June 20, 2039
Premature termination	On force majeure event or parties defaulting on their obligation
Major Overlays	In terms of the SCA , the SPVs obligation to carry out overlay of the roads has not been defined. However, basis quality parameters to be maintained as per SCA, the management is expecting to carry out the overlay of the roads at interval of six to seven years.
Remaining concession period of rights under SCA as at September 30, 2025	13 years, 08 months and 20 days

NAMEL

Description and right to use specified asset:	Toll collection from the users and operation and maintenance of four lanes Narketpally-Addanki-Medarametla Road (SH-2) from Km 0.000 to Km 212.500 Road Project in the state of Andhra Pradesh and Telangana under Public-Private Partnership as agreed between the Company and Chief Engineer (R&B) Core Road Network & Managing Director, A.P Road Development Corporation, Hyderabad and Engineer - in -Chief (R&B)- PPP, NH, CRF&LWE Telangana State, Hyderabad on Design, Built, Finance, Operate and Transfer (DBFOT) basis.
Project	Project four lanes Narketpally-Addanki-Medarametla Road (SH-2) from Km 0.000 to Km 212.500 Road Project.
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) for Toll Road Carriageway)
Year when SCA granted	July 23, 2010
Concession period	24 Years
Estimated extension of concession period	1838 Days
End of concession period	26-11-2039 (Including estimated extension period)[(i)]
Premature termination	On force majeure event or parties defaulting on their obligation
Major Overlays	In terms of the SCA , the Companies obligation to carry out overlay of the roads has not been defined. However, basis quality parameters to be maintained as per SCA, the management is expecting to carry out the overlay of the roads at interval of six to seven years
Remaining concession period of rights under SCA as at September 30, 2025	14 years, 01 month and 26 days (Including Estimated extension period)

APEPL

Project	Kothakota (km.136+077) to Kurnool (Km.210+699) on NH-44 (NH-7) in the state of Andhra Pradesh under North South Corridor (NHDP Phase II)
Nature of Asset	BOT (Annuity) Basis
Year when SCA granted	March 20, 2006
Concession period	20 Years
Commercial Operation Date ("COD")	September 30, 2009
End of Concession period	September 30, 2026
Number of Toll Plaza and Lanes	1 Toll Plaza at Km 200+700 (Pullur) with 6 Lanes (5+1Lanes) in each direction (Since the asset is under Annuity model, APEPL does not receive annuity revenue. APEPL receives fixed annuity over the concession period)
Remaining concession period of rights under SCA as at September 30, 2025	1 year

THPL

Tirumala Highway Private Limited is formed as a special purpose vehicle (SPV) to implement a road project envisaging Six Laning of Chittor (Design Km 0.000/Existing Km 158.000) to Mallavaram (Design Km 61.128/Existing Km 41.8000) of NH -140 under Bharatmala Pariyojana on Hybrid Annuity Mode in the State of Andhra Pradesh.	Bid Project Cost of the project is Rs. 10,566 million with O& M cost of Rs. 30 million
	The authority shall pay the total BPC to the concessionaire in two parts. 40% of the BPC shall be payable in 5 installments during construction period and the remaining BPC of 60% will be payable in 30 biannual installments after 180 days from Completion date of the project.
	Concession period comprises of 2.5 years of construction period and operation of 17.5 years commencing from Completion Date starting from the appointed date i.e. January 04, 2019.
	In terms of the SCA , the Company is obligated to carry out overlay of the roads at the end of specified periods.
	The project has achieved partial completion certificate on May 10, 2021
	Infrastructure return at the end of project concession period ending on May 09, 2036
	Remaining concession period of rights under SCA as at September 30, 2025 is 10 years 7 month 9 days

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

BWHPL

Borgaon Watambare Highways Private Limited is formed as a special purpose vehicle (SPV) to implement a road project envisaging Four Laning of Sangli- Solapur (Package- II: Borgaon to Watambare) section of NH-166 from existing Ch. Km 219.956 to Ch. 272.394 (Design Ch. Km. 224.000 to Km. 276.000) of length 52 Km. in the state of Maharashtra on Hybrid Annuity Mode	Bid Project Cost of the project is Rs. 10,294 million with O&M cost of Rs. 30 million
	The authority shall pay the total BPC to the concessionaire in two parts. 40% of the BPC shall be payable in 5 installments during construction period and the remaining BPC of 60% will be payable in 30 biannual installments after 180 days from Completion date of the project.
	Concession period comprises of 730 days of construction period and operation of 15 years commencing from Completion Date starting from the appointed date i.e. September 24, 2021
	In terms of the SCA , the Company is obligated to carry out overlay of the roads at the end of specified periods.
	The project has achieved provisional completion on September 24, 2021
	Infrastructure return at the end of project concession period ending on September 23, 2036.
	Remaining concession period of rights under SCA as at Septemebr 30, 2025 is 10 years 11 months 23 days

SIPL

Srirangam Infra Private Limited is formed as a special purpose vehicle (SPV) to implement a road project envisaging Four Laning of Trichy (Km 0.000) to Kallagam (Km 38.700) Section of NH-227 under Bharatmala Pariyojana (Residual projects under NHDP) on Hybrid Annuity Mode in the State of Tamilnadu on Hybrid Annuity Mode	Bid Project Cost of the project is Rs. 10,206 million with O& M cost of Rs. 30 million
	The authority shall pay the total BPC to the concessionaire in two parts. 40% of the BPC shall be payable in 5 installments during construction period and the remaining BPC of 60% will be payable in 30 biannual installments after 180 days from Completion date of the project.
	Concession period comprises of 2 years of construction period and operation of 15 years commencing from Completion Date starting from the appointed date i.e. March 01, 2019.
	In terms of the SCA , the Company is obligated to carry out overlay of the roads at the end of specified periods.
	The project has achieved partial completion certificate on May 30, 2021
	Infrastructure return at the end of project concession period ending on May 29, 2036
	Remaining concession period of rights under SCA as at September 30, 2025 is 10 years 7 month 29 days

SPPL

Shankarampet Projects Private Limited is formed as a special purpose vehicle (SPV) to implement a road project envisaging Four Laning of NH-161 from Ramsanpalee village (Design Km 39.980/Existing Km 44.757) to Mangloor village (Design Km 86.788/Existing Km 91.350) (Design length = 46.808 Km) in the state of Telangana under Bharatmala Pariyojana on Hybrid Annuity Mode.	Bid Project Cost of the project is Rs. 8,230 million with O& M cost of Rs. 30 million
	The authority shall pay the total BPC to the concessionaire in two parts. 40% of the BPC shall be payable in 5 installments during construction period and the remaining BPC of 60% will be payable in 30 biannual installments after 180 days from Completion date of the project.
	Concession period comprises of 2 years of construction period and operation of 15 years commencing from Completion Date starting from the appointed date i.e. May 02, 2019
	In terms of the SCA , the Company is obligated to carry out overlay of the roads at the end of specified periods.
	The project has achieved partial completion certificate on October 05, 2021
	Infrastructure return at the end of project concession period ending on October 04, 2036
	Remaining concession period of rights under SCA as at September 30, 2025 is 11 years and 4 days

MHPL

Mangloor Highways Private Limited is formed as a special purpose vehicle (SPV) to implement a road project envisaging Four Laning of NH- 161 from Mangloor Existing Km 91.350 to Telangana Maharashtra Border Existing Km 140.873 in the state of Telangana under Bharatmala Pariyojana on Hybrid Annuity mode	Bid Project Cost of the project is Rs. 9,360 million with O& M cost of Rs. 30 million
	The authority shall pay the total BPC to the concessionaire in two parts. 40% of the BPC shall be payable in 5 installments during construction period and the remaining BPC of 60% will be payable in 30 biannual installments after 180 days from Completion date of the project.
	Concession period comprises of 730 days of construction period and operation of 15 years commencing from Completion Date starting from the appointed date i.e. April 22, 2019.
	In terms of the SCA , the Company is obligated to carry out overlay of the roads at the end of specified periods.
	The project has achieved provisional completion on December 15, 2021.
	Infrastructure return at the end of project concession period ending on December 14, 2036
	Remaining concession period of rights under SCA as at September 30, 2025 is 11 years 2 months 14 days

52 Service Concession Arrangement

The details of service concession arrangements of all the SPVs are as follows:

MSHPL

DBL Mangalwedha Solapur Highways Private Limited is formed as a special purpose vehicle (SPV) for construction of road project envisaging four laning of Sangli- solapur (Package -IV: Mangalwedha to Solapur) Section of NH- 166 in the state of Maharashtra on Hybrid Annuity Mode	Bid Project Cost of the project is Rs. 11,410 million with O& M cost of Rs. 30 million
	The authority shall pay the total BPC to the concessionaire in two parts. 40% of the BPC shall be payable in 5 installments during construction period and the remaining BPC of 60% will be payable in 30 biannual installments after 180 days from Completion date of the project.
	Concession period comprises of 730 days of construction period and operation of 15 years commencing from Completion Date starting from the appointed date i.e. May 23 ,2019
	In terms of the SCA , the Company is obligated to carry out overlay of the roads at the end of specified periods.
	The project has achieved Provisional Completion on December 14, 2021
	Infrastructure return at the end of project concession period ending on December 13, 2036
	Remaining concession period of rights under SCA as at September 30, 2025 is 11 years 2 months 13 days

AJUHPL

Project	Rehabilitation, strengthening and four laning of Jammu- Udhampur Section from KMs 15 to Kms 67 of NH-1A (now NH-44) on BOT (annuity) basis on DBFOT pattern, in the Union Territory of J&K
Nature of Asset	BOT (Annuity) Basis
Appointed date	June 17, 2011
Concession period	20 Years
Commercial Operation Date ("COD")	May 31, 2018
End of Concession period	June 16, 2031
Remaining concession period of rights under SCA as at September 30, 2025	5 Years, 08 months and 16 days

QEPL

Project	16.268 (4 lane) Augmentation of the existing road from km 189.350 to km 204.700 including construction of two tunnels (2 lane) of 0.69 kms and 8.45 kms on the Quazigund-Banihal section of NH 1A on DBFOT (annuity) basis, in the Union Territory J&K
Nature of Asset	BOT (Annuity) Basis
Appointed date	June 05, 2011
Concession period	20 Years
Commercial Operation Date ("COD")	December 15, 2022
End of Concession period	June 04, 2031
Remaining concession period of rights under SCA as at September 30, 2025	5 Years, 08 months and 04 days

(i) Variation in concession period has been estimated by the management after considering contractual entitlement to variations in concession period on a case-to-case basis taking into account the provisions of the concession agreement of the respective SPVs, the facts and circumstances giving rise to such variations and the status of the approvals for each such variation. The Management has considered variation in concession period for the purpose of estimating amortization of Intangible Assets- Toll Road Carriageway, estimating fair value of net assets of SPVs and also for determination of recoverable amounts for Intangible Assets- Toll Road Carriageway of SPVs [Also, refer note 2(III)(d)(4)].

(ii) In respect of WVEPL, the SPV has invoked arbitration as per the terms of the SCA with respect to reduction of 1.5 years in the concession period by NHAI as against the claims lodged by the SPV with NHAI towards the extension of concession period on account of decrease in target traffic etc. Considering the terms of the Concession Agreement, traffic studies, workings and independent legal advice obtained, the Management is confident that the SPV will be able to succeed in arbitration and will get extension in concession period as claimed. Pending final outcome of the matter under arbitration, the Management has considered the extended concession period for purpose of preparation of these consolidated financial statements.

53 WVEPL has certain potential claims against various third parties inter alia including National Highway Authority of India, state transport authorities, insurance companies and also certain receivables for the period prior to March 31, 2019. The SPV has entered Claims Management Agreement dated January 9, 2020 as amended by the Amendment Agreement dated September 18, 2020 with KNR ("Agreement') wherein the SPV and KNR have commercially agreed that any monetary compensation received by the SPV pursuant to such claims shall be passed through to KNR, net of related costs and expenses, applicable taxes and adjustments as defined under the Agreement. No amounts have been received from third parties referred above and therefore, no adjustments have been made in these Consolidated Financial Statements for the same.

Disclosures pursuant to SEBI Master circular

Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

54 Project wise operating cash flows -For the half year ended September 30, 2025

Particulars	WUPTPL	APEPL	JMTPL	MBEL	FRHPL	DATRPL	GAEPL	WVEPL	NDEPL	HTPL	JLTPL	JVTPL	KETPL	KMTPL
Profit/(loss) before tax	258.53	(6.88)	655.47	244.88	(478.63)	(377.61)	(134.26)	(94.91)	31.19	(183.44)	129.27	115.24	(255.94)	(355.78)
Depreciation and amortisation expense	364.95	0.08	204.64	100.36	281.87	628.07	404.36	125.51	158.27	171.08	102.73	65.68	103.41	168.58
Loss on sale/write-off of property, plant and equipment (net)	-	-	0.09	-	-	-	-	-	-	-	-	-	-	-
Net gain on sale of mutual funds	(5.04)	(3.86)	(12.88)	(4.53)	(3.97)	(6.55)	(2.48)	(1.98)	(2.98)	(5.89)	(4.39)	(3.90)	(3.04)	(2.31)
Liabilities no longer required written back	(38.02)	-	-	(0.01)	-	-	-	-	(0.41)	(0.13)	(0.06)	(0.07)	(0.11)	(0.01)
Interest income	(0.50)	(6.40)	(1.14)	(9.44)	-	(5.43)	-	-	-	(10.17)	(2.38)	(3.89)	(2.27)	-
Finance costs	34.79	121.25	65.36	73.30	1,207.12	1,946.04	1,355.20	381.25	202.10	690.89	245.91	147.09	494.22	588.98
Reversal of Impairment Loss Allowance on Trade Receivable	(3.03)	-	-	(14.60)	-	-	-	-	-	-	-	-	-	-
Operating cash flows before working capital changes and other adjustments	**611.68**	**104.19**	**911.54**	**389.96**	**1,006.39**	**2,184.52**	**1,622.82**	**409.87**	**388.17**	**662.34**	**471.08**	**320.15**	**336.27**	**399.46**
Working capital changes and other adjustments:														
Decrease/(Increase) in inventories	(2.57)	0.47	(4.03)	1.77	(3.58)	0.43	0.62	(3.35)	(4.18)	(0.92)	(9.19)	(7.71)	(1.28)	(18.04)
Decrease/(Increase) in trade receivables	(23.84)	(0.10)	(12.26)	13.54	(3.84)	(55.28)	(48.71)	(2.47)	(5.56)	(5.66)	(4.34)	(1.18)	(53.98)	(2.24)
Decrease/(Increase) in financial assets and non financial assets	(15.33)	452.88	50.67	2.72	(5.50)	37.79	3.89	(3.55)	5.01	(0.24)	(1.59)	(1.45)	3.21	0.26
(Decrease)/Increase in trade payables	40.44	(10.82)	1.75	(0.77)	(19.13)	(8.39)	(55.51)	(3.30)	3.10	(1.82)	7.63	7.97	0.16	8.91
(Decrease)/Increase in provisions	(12.90)	1.88	97.16	29.32	94.72	344.31	111.13	50.46	65.16	1.80	1.11	0.15	55.07	77.87
(Decrease)/Increase in financial liabilities and non financial liabilities	(35.37)	(0.97)	(18.67)	(3.62)	(3.44)	(13.57)	19.95	(2.34)	(3.43)	5.05	(1.19)	(0.57)	(1.46)	(2.38)
Cash flow generated from operating activities post working capital changes	**562.11**	**547.53**	**1,026.16**	**432.92**	**1,065.62**	**2,489.81**	**1,654.19**	**445.32**	**448.27**	**660.55**	**463.51**	**317.36**	**337.99**	**463.84**
Income tax (paid)/ refund (net)	(3.27)	13.57	(117.28)	(35.87)	(2.00)	14.04	(0.83)	3.18	(0.67)	(2.06)	(0.57)	(1.25)	(0.88)	(0.58)
Net cash generated from operating activities	**558.84**	**561.10**	**908.88**	**397.05**	**1,063.62**	**2,503.85**	**1,653.36**	**448.50**	**447.60**	**658.49**	**462.94**	**316.11**	**337.11**	**463.26**

Project wise operating cash flows -For the half year ended September 30, 2025

Particulars	LRTPL	MKTPL	NKTPL	SMTPL	SIPL	SPPL	THPL	BWHPL	MSHPL	MHPL	NAMEL	QEPL	AJHUPL
Profit/(loss) before tax	(46.47)	180.71	(313.72)	(239.81)	64.43	26.59	130.20	98.72	100.52	16.10	(574.40)	(111.02)	32.78
Depreciation and amortisation expense	86.97	161.62	122.50	104.64	0.65	0.45	0.48	0.56	0.63	0.58	288.54	1.34	1.36
Net gain on sale of mutual funds	(4.64)	(4.58)	(5.32)	(2.26)	(4.26)	(7.98)	(7.59)	(7.52)	(5.29)	(6.56)	(21.46)	(41.65)	(33.12)
Liabilities no longer required written back	(0.03)	(0.24)	(0.09)	(0.02)	-	-	(0.27)	-	-	-	(1.03)	(1.98)	(2.84)
Interest income	(21.09)	(0.35)	(135.31)	(0.32)	-	(0.10)	(1.26)	-	(3.71)	-	(25.62)	(34.86)	(26.35)
Impairment loss allowance on financial assets (including write-offs)	-	-	-	-	4.96	9.23	-	21.33	12.68	8.88	-	-	-
Finance costs	278.31	551.72	708.73	493.08	92.15	178.10	122.96	103.93	129.63	140.90	1,465.85	667.95	360.48
Operating cash flows before working capital changes and other adjustments	**293.05**	**888.88**	**376.79**	**355.31**	**157.93**	**206.29**	**244.52**	**217.02**	**234.46**	**159.90**	**1,131.88**	**479.78**	**332.31**
Working capital changes and other adjustments:													
Decrease/(Increase) in inventories	1.53	(1.74)	2.91	1.92	(2.03)	(0.75)	0.84	(0.91)	(1.07)	(0.81)	(8.01)	(3.99)	(4.88)
Decrease/(Increase) in trade receivables	(5.99)	(228.89)	(81.13)	(49.65)	29.95	65.98	-	(366.97)	77.40	2.89	(1.40)	-	1.24
Decrease/(Increase) in financial assets and non financial assets	0.87	1.99	6.83	(1.74)	294.75	260.13	358.18	179.21	195.77	152.74	(34.80)	1,903.44	(425.71)
(Decrease)/Increase in trade payables	(2.06)	8.42	6.65	6.66	(1.44)	3.57	(2.10)	1.39	(5.30)	(13.47)	(10.51)	21.80	(7.87)
(Decrease)/Increase in provisions	0.75	53.28	52.74	53.78	0.16	1.75	0.08	(0.01)	0.08	(0.23)	283.57	0.16	0.14
(Decrease)/Increase in financial liabilities and non financial liabilities	(2.53)	(3.10)	(2.08)	(0.83)	(0.79)	(1.41)	(4.03)	(63.25)	9.40	(2.96)	(3.58)	(0.81)	(276.10)
Cash flow generated from operating activities post working capital changes	**285.62**	**718.84**	**362.71**	**365.45**	**478.53**	**535.56**	**597.49**	**(33.52)**	**510.74**	**298.06**	**1,357.15**	**2,400.38**	**(380.87)**
Income tax (paid)/ refund (net)	(2.74)	(1.09)	(15.48)	(0.31)	(33.06)	(39.15)	(64.80)	-	(34.33)	(28.95)	(3.58)	(12.18)	(5.73)
Net cash generated from/(used in) operating activities	**282.88**	**717.75**	**347.23**	**365.14**	**445.47**	**496.41**	**532.69**	**(33.52)**	**476.41**	**269.11**	**1,353.57**	**2,388.20**	**(386.60)**

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Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

Disclosures pursuant to SEBI Master circular

Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

Project wise operating cash flows -For the half year ended September 30, 2024

Particulars	WUPTPL	APEPL	JMTPL	MBEL	FRHPL	DATRPL	GAEPL	WVEPL	NDEPL	HTPL	JLTPL	JVTPL
Profit/(loss) before tax	118.79	173.08	601.95	150.09	(413.29)	(281.36)	(310.16)	(126.92)	(49.05)	(310.03)	73.81	80.94
Depreciation and amortisation expense	407.53	0.18	186.07	90.51	281.52	624.36	341.06	125.43	157.15	171.03	102.75	65.13
Loss on sale/write-off of property, plant and equipment (net)	-	-	-	(0.52)	-	0.35	-	(0.58)	-	-	-	-
Net gain on sale of mutual funds	(13.97)	(17.75)	(13.04)	(21.45)	(13.00)	(23.25)	(19.38)	(3.30)	(10.04)	(10.04)	(16.07)	(13.48)
Net gain on investments measured at fair value through profit or loss	(4.60)	(5.32)	(0.29)	(7.53)	(2.71)	(0.24)	(26.34)	(0.71)	(0.84)	(11.85)	(3.50)	(4.62)
Liabilities no longer required written back	-	-	-	-	(0.86)	(2.32)	-	(0.67)	(2.22)	(0.32)	(0.61)	(0.75)
Interest income	(6.67)	(20.84)	-	(1.05)	(0.34)	(0.81)	(20.54)	(0.07)	(0.08)	-	-	-
Finance costs	106.89	188.31	113.65	127.37	1,063.50	1,840.60	1,379.54	371.27	250.83	721.12	286.43	173.75
Operating cash flows before working capital changes and other adjustments	**607.97**	**317.66**	**888.34**	**337.42**	**914.82**	**2,157.33**	**1,344.18**	**364.45**	**345.75**	**559.91**	**442.81**	**300.97**
Working capital changes and other adjustments:												
Decrease/(Increase) in inventories	(4.27)	1.90	7.89	8.24	2.07	(16.14)	(1.11)	(1.82)	2.48	(0.05)	(4.94)	(6.84)
Decrease/(Increase) in trade receivables	2.72	2.67	2.12	0.70	0.73	1.45	2.46	(7.36)	1.80	(0.44)	(1.39)	(0.52)
Decrease/(Increase) in financial assets and non financial assets	17.24	(720.14)	(0.59)	21.04	13.06	48.52	(4.81)	3.95	12.17	0.58	13.29	10.53
(Decrease)/Increase in trade payables	(4.69)	69.66	9.66	(39.83)	(15.32)	(47.66)	(5.21)	7.34	(9.29)	(10.20)	(0.21)	(1.72)
(Decrease)/Increase in provisions	93.45	0.39	(343.87)	(88.00)	88.35	244.13	97.45	41.57	60.33	0.25	0.29	0.17
(Decrease)/Increase in financial liabilities and non financial liabilities	(272.12)	(12.62)	(12.32)	(11.33)	(2.31)	(3.67)	(28.71)	0.08	0.09	(0.84)	0.53	0.61
Cash flow generated from operating activities post working capital changes	**440.30**	**(340.48)**	**551.23**	**228.24**	**1,001.40**	**2,383.96**	**1,404.25**	**408.21**	**413.33**	**549.21**	**450.38**	**303.20**
Income tax (paid)/ refund (net)	(0.97)	20.98	(104.57)	(29.93)	5.74	(0.86)	(3.30)	1.34	1.13	(0.34)	(1.06)	(1.59)
Net cash generated from operating activities	**439.33**	**(319.50)**	**446.66**	**198.31**	**1,007.14**	**2,383.10**	**1,400.95**	**409.55**	**414.46**	**548.87**	**449.32**	**301.61**

Project wise operating cash flows -For the half year ended September 30, 2024

Particulars	KETPL	KMTPL	LRTPL	MKTPL	NKTPL	SMTPL	SIPL	SPPL	THPL	BWHPL	MSHPL	MHPL
Profit/(loss) before tax	(343.35)	(359.34)	(81.02)	(255.84)	(455.15)	(323.11)	56.62	22.87	43.16	77.71	49.12	(4.15)
Depreciation and amortisation expense	103.42	171.97	85.45	161.57	124.32	104.73	0.39	0.26	0.26	0.28	0.31	0.14
Loss on sale/write-off of property, plant and equipment (net)	-	-	-	-	-	-	-	-	-	-	-	-
Net gain on sale of mutual funds	(3.41)	(9.83)	(9.06)	(3.74)	(7.82)	(2.28)	(6.62)	(0.80)	(4.62)	(2.69)	(2.41)	(2.44)
Net gain on investments measured at fair value through profit or loss	(3.86)	(0.87)	(16.16)	(1.71)	(21.04)	(1.36)	(7.91)	(10.11)	(39.41)	(1.48)	(6.16)	(7.33)
Liabilities no longer required written back	(1.34)	(2.15)	(1.00)	(1.74)	(3.38)	(1.96)	(2.15)	(2.70)	(2.76)	(0.58)	(1.02)	(0.45)
Interest income	-	-	-	-	(121.90)	-	(9.09)	(10.81)	(9.15)	(9.78)	(5.23)	1.21
Finance costs	451.86	552.31	274.74	516.46	686.17	455.28	119.80	158.74	197.12	95.58	121.10	131.58
Operating cash flows before working capital changes and other adjustments	**203.32**	**352.09**	**252.95**	**415.00**	**201.20**	**231.30**	**151.04**	**157.45**	**184.60**	**159.04**	**155.71**	**118.56**
Working capital changes and other adjustments:												
Decrease/(Increase) in inventories	(1.22)	(0.86)	(0.77)	0.23	(0.61)	(0.49)	(0.48)	0.35	(1.15)	(3.67)	(6.12)	4.69
Decrease/(Increase) in trade receivables	0.61	(0.83)	-	1.07	(1.10)	0.24	471.56	55.84	1.78	(466.16)	101.42	(53.26)
Decrease/(Increase) in financial assets and non financial assets	2.12	12.44	18.78	5.81	2.73	5.19	(119.72)	(210.82)	(172.33)	254.55	348.70	284.87
(Decrease)/Increase in trade payables	(8.46)	0.34	(1.23)	(13.70)	(15.11)	(13.04)	0.29	16.83	20.92	6.11	(13.96)	10.34
(Decrease)/Increase in provisions	50.68	68.57	0.36	46.59	47.55	48.46	0.05	0.56	(0.24)	0.02	(0.07)	(0.08)
(Decrease)/Increase in financial liabilities and non financial liabilities	0.02	(0.30)	0.67	0.95	0.13	0.49	0.74	(1.99)	(140.87)	(3.60)	0.27	(0.04)
Cash flow generated from operating activities post working capital changes	**247.07**	**431.45**	**270.76**	**455.95**	**234.79**	**272.15**	**503.48**	**18.22**	**(107.29)**	**(53.71)**	**585.95**	**365.08**
Income tax (paid)/ refund (net)	(0.60)	(0.93)	(1.18)	(0.36)	(12.67)	(0.13)	(35.28)	49.65	(0.91)	39.73	(37.91)	(31.01)
Net cash generated from/(used in) operating activities	**246.47**	**430.52**	**269.58**	**455.59**	**222.12**	**272.02**	**468.20**	**67.87**	**(108.20)**	**(13.98)**	**548.04**	**334.07**

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Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

Disclosures pursuant to SEBI Master circular

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Project wise operating cash flows -For the year ended March 31, 2025

Particulars	WUPTPL	APEPL	JMTPL	MBEL	FRHPL	DATRPL	GAEPL	WVEPL	NDEPL	HTPL	JLTPL	JVTPL	KETPL
Profit/(loss) before tax	155.91	184.16	1,383.62	412.31	(759.87)	(311.52)	(493.36)	(233.06)	(23.00)	(552.39)	172.10	172.65	(694.58)
Depreciation and amortisation expense	837.04	0.33	395.70	195.24	561.67	1,245.03	715.93	250.19	313.65	341.18	205.11	130.09	206.33
Loss/(profit) on sale/write-off of property, plant and equipment (net)	-	-	0.12	(0.52)	-	0.43	0.07	(0.58)	-	-	-	-	-
Net gain on sale of mutual funds	(28.01)	(35.51)	(18.55)	(47.31)	(21.06)	(33.69)	(74.39)	(7.27)	(15.16)	(36.12)	(24.86)	(24.43)	(11.73)
Liabilities no longer required written back	(3.21)	(0.34)	(4.64)	(0.83)	(2.59)	(3.89)	(0.78)	(3.35)	(3.77)	(1.66)	(0.95)	(1.12)	(2.16)
Interest income	(6.67)	(25.13)	-	(3.73)	-	(3.75)	(20.54)	-	-	(2.58)	(0.52)	(1.02)	(0.49)
Interest on income tax refund	-	(1.13)	-	-	(0.39)	(6.71)	(0.48)	(0.07)	(0.21)	(0.02)	(0.01)	0.06	(0.01)
Impairment loss allowance on financial assets (including write-offs)	1.51	-	-	-	1.75	-	15.30	-	-	0.06	0.06	-	-
Allowance for doubtful advances	2.18	-	-	-	1.07	0.05		0.15	0.25	0.04	0.35	0.32	1.23
Finance costs	164.26	332.37	194.12	233.39	2,095.03	3,591.40	2,717.45	722.84	473.29	1,434.56	542.49	328.03	899.57
Operating cash flows before working capital changes and other adjustments	**1,123.01**	**454.75**	**1,950.37**	**788.55**	**1,875.61**	**4,477.35**	**2,859.20**	**728.85**	**745.05**	**1,183.07**	**893.77**	**604.58**	**398.16**
Working capital changes and other adjustments:													
Decrease/(Increase) in inventories	(2.07)	1.97	10.81	6.47	(2.50)	(15.77)	(12.95)	(1.90)	4.08	(0.97)	(2.15)	(2.26)	(2.96)
Decrease/(Increase) in trade receivables	(3.00)	2.61	1.30	(1.86)	(10.40)	18.90	2.32	(0.83)	(0.15)	0.55	0.60	(1.11)	(1.26)
Decrease/(Increase) in financial assets and non financial assets	18.04	(467.05)	14.22	20.60	23.76	63.17	18.85	3.22	7.62	(10.22)	13.03	9.39	1.05
(Decrease)/Increase in trade payables	(5.22)	26.04	(6.80)	(45.55)	19.24	(38.21)	84.39	12.10	(4.51)	1.49	2.63	(0.02)	0.20
(Decrease)/Increase in provisions	257.18	0.57	(369.42)	(26.54)	170.03	520.47	197.79	85.62	126.80	0.35	0.52	0.31	100.93
(Decrease)/Increase in financial liabilities and non financial liabilities	(286.79)	(12.09)	4.30	(8.69)	(12.47)	(4.30)	(46.90)	(0.28)	(0.33)	0.47	(0.10)	(0.27)	(0.39)
Cash flow generated from operating activities post working capital changes	**1,101.15**	**6.80**	**1,604.78**	**732.98**	**2,063.27**	**5,021.61**	**3,102.70**	**826.78**	**878.56**	**1,174.74**	**908.30**	**610.62**	**495.73**
Income tax (paid)/ refund (net)	(30.51)	34.81	(242.23)	(75.91)	19.27	75.82	4.70	1.31	4.07	(0.58)	(0.93)	(0.97)	0.01
Net cash generated from operating activities	**1,070.64**	**41.61**	**1,362.55**	**657.07**	**2,082.54**	**5,097.43**	**3,107.40**	**828.09**	**882.63**	**1,174.16**	**907.37**	**609.65**	**495.74**

Project wise operating cash flows -For the year ended March 31, 2025

Particulars	KMTPL	LRTPL	MKTPL	NKTPL	SMTPL	SIPL	SPPL	THPL	BWHPL	MSHPL	MHPL	NAMEL
Profit/(loss) before tax	(660.62)	(96.49)	(522.23)	(939.09)	(654.68)	165.11	72.30	179.51	(6.11)	(17.71)	(68.50)	(159.22)
											-	
Depreciation and amortisation expense	343.34	171.12	322.35	248.08	208.96	1.01	0.68	0.66	0.84	0.95	0.56	74.42
Net gain on sale of mutual funds	(13.45)	(40.05)	(8.93)	(52.34)	(6.07)	(25.56)	(23.31)	(71.50)	(11.24)	(12.94)	(14.55)	(15.39)
Liabilities no longer required written back	(9.08)	(1.13)	(4.74)	(4.36)	(4.06)	(2.74)	(4.87)	(4.83)	(4.72)	(3.62)	(1.60)	-
Interest income	0.00	(7.88)	-	(237.34)	0.00	(9.53)	(13.87)	(20.08)	(14.76)	(9.99)	1.20	(23.27)
Interest on income tax refund	(0.02)	(0.02)	(0.02)	(1.04)	(0.01)	(0.64)	(7.46)	(0.85)	(5.28)	(3.58)	(3.04)	-
Impairment loss allowance on financial assets (including write-offs)	0.06	0.27	-	-	-	1.15	3.20	0.86	1.28	0.69	1.22	-
Allowance for doubtful advances	2.17	0.44	1.74	0.09	1.41	-	-	-	0.29	0.28	0.25	-
Finance costs	1,088.51	553.21	1,027.88	1,360.91	904.54	248.99	365.90	376.31	218.57	271.44	290.50	353.29
Gain on extinguishment of optionally convertible debentures						-	-	-	-	-	-	-
Operating cash flows before working capital changes and other adjustments	**750.91**	**579.47**	**816.05**	**374.91**	**450.09**	**377.79**	**392.57**	**460.08**	**178.87**	**225.52**	**206.04**	**229.83**
Working capital changes and other adjustments:												
Decrease/(Increase) in inventories	(6.83)	(2.14)	(2.02)	(3.20)	(1.65)	(9.55)	(1.46)	(3.48)	(1.40)	2.48	4.73	(2.74)
Decrease/(Increase) in trade receivables	0.13	0.36	(1.63)	(3.98)	(2.75)	471.56	(11.47)	1.78	-	101.42	(0.54)	3.07
Decrease/(Increase) in financial assets and non financial assets	9.90	19.17	6.88	1.34	4.65	132.98	92.35	135.28	661.07	689.98	557.94	4.27
(Decrease)/Increase in trade payables	(13.81)	5.29	(1.77)	(9.61)	(0.73)	15.78	30.46	41.37	8.95	(4.98)	20.94	42.46
(Decrease)/Increase in provisions	142.52	0.50	92.10	96.55	98.70	0.12	0.68	(0.17)	0.09	0.12	0.06	80.30
(Decrease)/Increase in financial liabilities and non financial liabilities	(1.87)	1.32	(0.22)	(0.90)	(2.58)	(1.07)	(3.81)	(144.12)	79.22	0.17	1.45	(18.28)
Cash flow generated from operating activities post working capital changes	**880.95**	**603.98**	**909.39**	**455.11**	**545.73**	**987.61**	**499.32**	**490.74**	**926.80**	**1,014.71**	**790.62**	**338.91**
Income tax (paid)/ refund (net)	(0.57)	(1.30)	-	(1.24)	(0.03)	(21.42)	96.45	14.16	44.32	4.68	6.32	(9.94)
Net cash generated from operating activities	**880.38**	**602.67**	**909.39**	**453.87**	**545.70**	**966.19**	**595.77**	**504.90**	**971.12**	**1,019.39**	**796.94**	**328.97**

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Disclosures pursuant to SEBI Master circular

Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

Project wise operating cash flows -For the year ended March 31, 2024

Particulars	**WUPTPL**	**APEPL**	**JMTPL**	**MBEL**	**FRHPL**	**DATRPL**	**GAEPL**	**WVEPL**	**NDEPL**
Profit/(loss) before tax	142.13	(74.64)	1,236.41	206.84	(843.14)	(521.09)	(269.72)	(127.63)	(26.29)
	-	-	-	-	-	-	-	-	-
Depreciation and amortisation expense	792.93	0.62	349.10	170.95	538.49	1,196.04	567.89	239.84	300.42
Loss/(profit) on sale/write-off of property, plant and equipment (net)	0.24	0.03	0.46	0.29	0.20	0.13	0.36	-	-
Net gain on sale of mutual funds	(42.30)	(5.55)	(39.75)	(25.25)	(65.14)	(89.75)	(133.50)	(15.65)	(38.11)
Net gain on investments measured at fair value through profit or loss	(6.45)	(22.64)	(2.51)	(14.97)	(9.71)	(20.92)	3.28	0.29	1.15
Liabilities no longer required written back	(0.56)	(5.82)	(3.06)	(5.32)	(3.15)	(10.99)	(36.15)	(1.58)	(10.72)
Impairment loss allowance on financial assets (including write-offs)	5.21	-	3.79	22.32	-	-	23.89	1.81	0.03
Interest income	(18.04)	(63.65)	(1.71)	(25.00)	(2.59)	(2.96)	(55.99)	(0.83)	(6.56)
Interest on income tax refund	(1.25)	-	-	-	(5.62)	-	(0.16)	(0.27)	(0.02)
Finance costs	298.69	340.34	220.50	292.73	2,112.75	3,391.69	2,289.86	669.70	486.58
Operating cash flows before working capital changes and other adjustments	**1,170.60**	**168.69**	**1,763.23**	**622.59**	**1,722.09**	**3,942.15**	**2,389.76**	**765.68**	**706.48**
Working capital changes and other adjustments:									
Decrease/(Increase) in inventories	(5.43)	(6.66)	(1.97)	(20.40)	(17.30)	2.47	41.55	1.91	(7.54)
Decrease/(Increase) in trade receivables	1.06	123.38	3.86	3.64	2.31	22.76	(25.31)	6.01	6.37
Decrease/(Increase) in financial assets and non financial assets	(28.48)	907.18	41.92	90.61	8.61	63.86	415.52	26.94	29.65
(Decrease)/Increase in trade payables	24.38	(85.18)	(140.85)	70.71	(73.69)	(83.02)	(59.37)	28.27	(49.16)
(Decrease)/Increase in provisions	172.45	0.64	(23.31)	(361.00)	143.34	317.99	(692.82)	(15.95)	13.56
(Decrease)/Increase in financial liabilities and non financial liabilities	(7.07)	6.74	4.28	10.37	(14.38)	(50.69)	31.72	(12.43)	(7.75)
Cash flow generated from operating activities post working capital changes	**1,327.51**	**1,114.79**	**1,647.16**	**416.52**	**1,770.98**	**4,215.52**	**2,101.05**	**800.43**	**691.61**
Income tax (paid)/ refund (net)	19.73	(15.50)	(212.03)	(18.88)	(7.93)	(40.19)	(6.73)	(27.99)	(3.30)
Net cash generated from operating activities	**1,347.24**	**1,099.29**	**1,435.13**	**397.64**	**1,763.05**	**4,175.33**	**2,094.32**	**772.44**	**688.31**

Project wise operating cash flows -For the year ended March 31, 2024

Particulars	**HTPL**	**JLTPL**	**JVTPL**	**KETPL**	**KMTPL**	**LRTPL**	**MKTPL**	**NKTPL**	**SMTPL**
Profit/(loss) before tax	(568.69)	41.03	76.78	(604.08)	(666.34)	(141.44)	(566.96)	(790.66)	(593.91)
	-	-	-	-	-	-	-	-	-
Depreciation and amortisation expense	327.14	196.84	125.55	199.77	326.90	163.12	308.80	243.58	200.13
Loss on disposal of property, plant and equipment	-	-	-	0.00	0.13	0.08	-	-	-
Net gain on sale of mutual funds	(24.52)	(22.53)	(17.22)	(15.65)	(32.51)	(19.68)	(21.17)	(7.23)	(5.88)
Net gain on investments measured at fair value through profit or loss	(27.26)	(53.23)	(43.67)	(7.17)	(30.89)	(30.25)	(5.41)	(22.59)	(1.89)
Liabilities no longer required written back	(0.10)	(0.53)	(0.13)	(0.05)	(0.47)	(0.15)	(0.05)	(0.09)	(0.08)
Impairment loss allowance on financial assets (including write-offs)	0.01	-	0.01	0.48	-	-	0.69	0.43	1.07
Interest income	(1.61)	(1.17)	(0.55)	(0.47)	(1.04)	(2.47)	(0.90)	(228.36)	(0.44)
Interest on income tax refund	(0.16)	(0.15)	(0.12)	(0.06)	(0.15)	(0.15)	(0.07)	(0.07)	(0.03)
Finance costs	1,216.82	613.64	380.61	809.64	1,049.44	521.69	1,025.86	1,156.87	799.21
Operating cash flows before working capital changes and other adjustments	**921.63**	**773.90**	**521.26**	**382.41**	**645.07**	**490.75**	**740.79**	**351.88**	**398.18**
Working capital changes and other adjustments:									
Decrease/(Increase) in inventories	(1.00)	(3.25)	(3.70)	(10.63)	(4.60)	(5.77)	(8.90)	(9.81)	(10.77)
Decrease/(Increase) in trade receivables	1.61	2.22	1.61	(1.81)	8.91	1.40	(2.60)	(1.90)	(2.38)
Decrease/(Increase) in financial assets and non financial assets	0.19	21.38	0.60	6.10	4.44	(6.48)	5.17	(0.92)	(0.60)
(Decrease)/Increase in trade payables	5.22	(2.04)	1.23	11.61	6.56	2.69	(3.08)	19.71	12.27
(Decrease)/Increase in provisions	(4.97)	(0.74)	(0.85)	88.10	119.88	(9.85)	85.20	82.56	84.23
(Decrease)/Increase in financial liabilities and non financial liabilities	(13.01)	(7.82)	(3.73)	(10.71)	(14.97)	(4.57)	(10.59)	(12.78)	(9.39)
Cash flow generated from operating activities post working capital changes	**909.67**	**783.65**	**516.42**	**465.07**	**765.29**	**468.17**	**805.99**	**428.74**	**471.54**
Income tax (paid)/ refund (net)	3.73	2.95	2.51	1.25	3.47	2.31	1.38	(21.29)	0.72
Net cash generated from operating activities	**913.40**	**786.60**	**518.93**	**466.32**	**768.76**	**470.48**	**807.37**	**407.45**	**472.26**

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Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

Disclosures pursuant to SEBI Master circular
Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

55 Capitalisation statement

Particulars	Pre-issue as at September 30, 2025	As adjusted for issue
Debt:		Corresponding details post issue of units are not available, hence the required disclosure in respect of the same have not been provided and will be determined on finalisation of issue price.
Non-current borrowings (Refer note 21)	1,73,852.76	
Current borrowings (Refer note 25)	5,122.29	
Interest accrued on borrowings (Refer note 27)	163.74	
Total adjusted debt (A)	**1,79,138.79**	
Equity:		
Unit Capital (Refer note 19)	1,34,396.03	
Other equity and Distribution-Repayment of Capital (Refer note 20A & 20B)	(27,980.23)	
Total equity (B)	**1,06,415.80**	
Debt equity ratio [A/B]	**1.68**	

56 Debt payment history

Particulars	For the half year ended September 30, 2025					For the half year ended September 30, 2024				For the year ended March 31, 2025				For the year ended March 31, 2024			
	Term loans	Non Convertible Debentures	Other long term borrowings	Commercial Papers	Total	Term loans	Non Convertible Debentures	Other long term borrowings	Total	Term loans	Non Convertible Debentures and Optionally Convertible Debentures	Other long term borrowings	Total	Term loans	Non Convertible Debentures and Optionally Convertible Debentures	Other long term borrowings	Total
Carrying amount of debt at the beginning of the year	**1,19,035.52**	**31,960.34**	**150.99**	**-**	**1,51,146.85**	**95,119.30**	**12,082.44**	**150.99**	**1,07,352.73**	**95,119.30**	**12,082.44**	**150.99**	**1,07,352.73**	**-**	**-**	**-**	**-**
Cash adjustments:																	
Addition on account of acquisition	28,508.40	2,346.87	-	-	**30,855.27**	6,639.20	13,454.08	-	**20,093.28**	10,966.86	28,271.26	-	**39,238.12**	64,115.33	68,359.81	419.28	**1,32,894.42**
Additional borrowings during the half year/year	22,000.00	19,720.00	-	13,292.87	**55,012.87**	16,000.00	6,480.00	-	**22,480.00**	27,710.00	21,080.00	-	**48,790.00**	98,500.00	10,300.00	-	**1,08,800.00**
Repayments during the half year/year	(41,982.31)	(2,791.70)	-	(13,292.87)	**(58,066.88)**	(8,473.47)	(14,376.76)	-	**(22,850.23)**	(14,657.02)	(29,437.21)	-	**(44,094.23)**	(66,973.38)	(66,554.85)	(270.00)	**(1,33,798.23)**
Processing fees Paid	(109.44)	(36.58)	-	-	**(146.02)**	(101.13)	(5.10)	-	**(106.23)**	(163.29)	(45.07)	-	**(208.36)**	(609.02)	(28.98)	-	**(638.00)**
Other adjustments:																	
Non-cash adjustment:																	
- Unwinding of interest	166.75	6.21	-	-	**172.96**	30.24	1.90	-	**32.14**	59.67	8.92	-	**68.59**	86.37	6.46	1.71	**94.54**
- Others	-	-	-	-	**-**	-	-	-	**-**	-	-	-	**-**	-	-	-	**-**
Carrying amount of debt at the end of half year/year	**1,27,618.92**	**51,205.14**	**150.99**	**-**	**1,78,975.05**	**1,09,214.14**	**17,636.56**	**150.99**	**1,27,001.69**	**1,19,035.52**	**31,960.34**	**150.99**	**1,51,146.85**	**95,119.30**	**12,082.44**	**150.99**	**1,07,352.73**
Interest paid (including capitalised) during the half year/year					**(7,444.66)**				**(5,857.03)**				**(11,593.73)**				**(16,683.62)**

Reconciliation of borrowings and debt repayment history

Particulars	As at September 30, 2025	As at September 30, 2024	As at March 31, 2025	As at March 31, 2024	As at March 31, 2023
Long Term Borrowings	1,73,852.76	1,22,505.10	1,46,296.27	1,02,630.24	-
Short Term Borrowings	5,122.29	4,496.59	4,850.58	4,722.49	-
Total Borrowings	**1,78,975.05**	**1,27,001.69**	**1,51,146.85**	**1,07,352.73**	**-**

For the year ended March 31, 2023, the Trust did not have any borrowings; accordingly, Debt payment history is not presented.

Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

57

Additional information pursuant to paragraph 12.3 of Division II of Schedule III to the Companies Act, 2013 - 'General instructions for the preparation of consolidated financial statements of Division II of Schedule III.

As at and for the half year ended September 30, 2025

Name of entity in the group	Net Assets (total Assets minus total liabilities)		Share in Profit or (loss)		Share in other comprehensive income/(loss)		Share in total comprehensive income/(loss)	
	As a % of consolidated net assets	Amount	As a % of consolidated net profit or (loss)	Amount	As a % of consolidated other comprehensive income	Amount	As a % of consolidated Total comprehensive income	Amount
Parent								
Cube Highways Trust	124.89%	1,32,906.94	1476.79%	6,008.33	-	-	1478.54%	6,008.33
Subsidiaries				-		-		
Indian				-		-		
WUPTPL	0.51%	540.42	62.83%	255.64	20.83%	(0.10)	62.88%	255.54
APEL	(0.41%)	(441.53)	(1.69%)	(6.88)	50.00%	(0.24)	(1.75%)	(7.12)
JMTPL	2.79%	2,973.36	189.90%	772.60	(2.08%)	0.01	190.12%	772.61
MBEL	0.69%	734.77	62.91%	255.93	6.25%	(0.03)	62.97%	255.90
FRHPL	(6.74%)	(7,172.86)	(117.64%)	(478.63)	25.00%	(0.12)	(117.81%)	(478.75)
DATRPL	(3.85%)	(4,098.13)	(92.81%)	(377.61)	2.08%	(0.01)	(92.93%)	(377.62)
GAEPL	1.88%	2,005.47	(33.00%)	(134.26)	(14.58%)	0.07	(33.02%)	(134.19)
WVEPL	(2.07%)	(2,204.20)	(23.33%)	(94.91)	4.17%	(0.02)	(23.36%)	(94.93)
NDEPL	(0.67%)	(710.61)	7.67%	31.19	10.42%	(0.05)	7.66%	31.14
HTPL	(1.51%)	(1,604.73)	(45.09%)	(183.44)	8.33%	(0.04)	(45.15%)	(183.48)
JLTPL	0.52%	557.30	23.69%	96.40	60.42%	(0.29)	23.65%	96.11
JVTPL	0.40%	427.99	21.11%	85.89	(8.33%)	0.04	21.15%	85.93
KETPL	(1.68%)	(1,792.46)	(62.91%)	(255.94)	-	-	(62.98%)	(255.94)
KMTPL	(1.42%)	(1,507.19)	(87.45%)	(355.78)	33.33%	(0.16)	(87.59%)	(355.94)
LRTPL	0.22%	229.62	(11.42%)	(46.47)	(12.50%)	0.06	(11.42%)	(46.41)
MKTPL	(0.87%)	(923.30)	44.42%	180.71	(12.50%)	0.06	44.48%	180.77
NKTPL	(2.22%)	(2,367.21)	(77.11%)	(313.72)	12.50%	(0.06)	(77.22%)	(313.78)
SMTPL	(1.61%)	(1,710.62)	(58.94%)	(239.81)	27.08%	(0.13)	(59.04%)	(239.94)
SIPL	0.81%	865.33	11.81%	48.06	-	-	11.83%	48.06
SPPL	0.67%	709.49	4.89%	19.89	(16.67%)	0.08	4.91%	19.97
THPL	1.29%	1,370.35	23.74%	96.60	-	-	23.77%	96.60
BWHPL	0.41%	432.55	18.15%	73.86	(12.50%)	0.06	18.19%	73.92
MSHPL	0.38%	405.08	18.49%	75.21	6.25%	(0.03)	18.50%	75.18
MHPL	0.05%	48.12	2.94%	11.98	(10.42%)	0.05	2.96%	12.03
NAMEL	(4.06%)	(4,324.43)	(152.82%)	(621.75)	(68.75%)	0.33	(152.92%)	(621.42)
AJUHPL	3.38%	3,596.77	(0.79%)	(3.20)	(8.33%)	0.04	(0.78%)	(3.16)
QEPL	5.44%	5,791.63	(27.29%)	(111.02)	-	-	(27.32%)	(111.02)
Non controlling Interest	0.00%	0.74	0.02%	0.08	-	-	0.02%	0.08
Intra Group Eliminations	(17.22%)	(18,322.12)	(1077.08%)	(4,382.10)	-	-	(1078.35%)	(4,382.10)
Total	**100.00%**	**1,06,416.54**	**100.00%**	**406.85**	**100.00%**	**(0.48)**	**100.00%**	**406.37**

Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

57

Additional information pursuant to paragraph 12.3 of Division II of Schedule III to the Companies Act, 2013 - 'General instructions for the preparation of consolidated financial statements of Division II of Schedule III.

As at and for the half year ended September 30, 2024

Name of entity in the group	Net Assets (total Assets minus total liabilities)		Share in Profit or (loss)		Share in other comprehensive income/(loss)		Share in total comprehensive income/(loss)	
	As a % of consolidated net assets	Amount	As a % of consolidated net profit or (loss)	Amount	As a % of consolidated other comprehensive income	Amount	As a % of consolidated Total comprehensive income	Amount
Parent								
Cube Highways Trust	113.46%	1,37,826.29	(2132.82%)	5,553.11	-	-	(2124.17%)	5,553.11
Subsidiaries		-		-				
Indian		-		-				
WUPTPL	0.23%	277.44	(45.62%)	118.79	37.38%	(0.40)	(45.29%)	118.39
APEL	(0.37%)	(445.60)	(66.48%)	173.08	11.21%	(0.12)	(66.16%)	172.96
JMTPL	1.59%	1,933.50	(230.27%)	599.54	22.43%	(0.24)	(229.24%)	599.30
MBEL	0.15%	180.90	(57.65%)	150.09	22.43%	(0.24)	(57.32%)	149.85
FRHPL	(5.23%)	(6,347.73)	158.73%	(413.29)	(0.93%)	0.01	158.09%	(413.28)
DATRPL	(3.04%)	(3,690.46)	106.83%	(278.14)	(14.02%)	0.15	106.34%	(277.99)
GAEPL	1.91%	2,322.63	119.13%	(310.16)	12.15%	(0.13)	118.69%	(310.29)
WVEPL	(1.65%)	(2,003.19)	48.75%	(126.92)	10.28%	(0.11)	48.59%	(127.03)
NDEPL	(0.63%)	(767.84)	18.84%	(49.05)	15.89%	(0.17)	18.83%	(49.22)
HTPL	(0.97%)	(1,178.99)	119.08%	(310.03)	4.67%	(0.05)	118.61%	(310.08)
JLTPL	0.42%	508.90	(21.19%)	55.16	(12.15%)	0.13	(21.15%)	55.29
JVTPL	0.33%	395.39	(23.26%)	60.55	2.80%	(0.03)	(23.15%)	60.52
KETPL	(0.98%)	(1,185.35)	131.87%	(343.35)	4.67%	(0.05)	131.36%	(343.40)
KMTPL	(0.70%)	(850.02)	138.01%	(359.34)	(6.54%)	0.07	137.43%	(359.27)
LRTPL	0.24%	291.45	31.12%	(81.02)	4.67%	(0.05)	31.01%	(81.07)
MKTPL	(0.69%)	(837.72)	98.26%	(255.84)	8.41%	(0.09)	97.90%	(255.93)
NKTPL	(1.29%)	(1,569.57)	174.81%	(455.15)	3.74%	(0.04)	174.12%	(455.19)
SMTPL	(0.94%)	(1,139.14)	124.10%	(323.11)	3.74%	(0.04)	123.61%	(323.15)
SIPL	0.55%	668.55	(16.27%)	42.35	(4.67%)	0.05	(16.22%)	42.40
SPPL	0.57%	693.89	(6.54%)	17.04	5.61%	(0.06)	(6.50%)	16.98
THPL	0.97%	1,182.35	(12.54%)	32.66	(22.43%)	0.24	(12.58%)	32.90
BWHPL	0.35%	422.53	(22.02%)	57.34	0.93%	(0.01)	(21.93%)	57.33
MSHPL	0.25%	306.65	41.19%	(107.24)	(3.74%)	0.04	41.01%	(107.20)
MHPL	0.02%	19.19	1.20%	(3.13)	(6.54%)	0.07	1.17%	(3.06)
Non controlling Interest	0.00%	0.58	(0.02%)	0.05	-	-	(0.02%)	0.05
Intra Group Eliminations	(4.56%)	(5,539.01)	1422.75%	(3,704.35)			1416.98%	(3,704.35)
Total	**100.00%**	**1,21,475.62**	**100.00%**	**(260.36)**	**100.00%**	**(1.07)**	**100.00%**	**(261.42)**

Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

57

Additional information pursuant to paragraph 12.3 of Division II of Schedule III to the Companies Act, 2013 - 'General instructions for the preparation of consolidated financial statements of Division II of Schedule III.

As at and for the year ended March 31, 2025

Name of entity in the group	Net Assets (total Assets minus total liabilities)		Share in Profit or (loss)		Share in other comprehensive income/(loss)		Share in total comprehensive income/(loss)	
	As a % of consolidated net assets	Amount	As a % of consolidated net profit or (loss)	Amount	As a % of consolidated other comprehensive income	Amount	As a % of consolidated Total comprehensive income	Amount
Parent								
Cube Highways Trust	118.26%	1,35,263.00	(2798.32%)	9,995.67	-	-	(2802.63%)	9,995.67
Subsidiaries		-		-				
Indian		-		-				
WUPTPL	0.25%	284.87	(35.26%)	125.96	(25.45%)	(0.14)	(35.28%)	125.82
APEL	(0.38%)	(434.46)	(51.55%)	184.15	(9.09%)	(0.05)	(51.62%)	184.10
JMTPL	2.38%	2,717.09	(387.16%)	1,382.94	(10.91%)	(0.06)	(387.74%)	1,382.88
MBEL	0.42%	478.87	(125.37%)	447.83	(3.64%)	(0.02)	(125.56%)	447.81
FRHPL	(5.85%)	(6,694.10)	212.73%	(759.87)	40.00%	0.22	212.99%	(759.65)
DATRPL	(3.25%)	(3,720.51)	86.29%	(308.22)	34.55%	0.19	86.37%	(308.03)
GAEPL	1.87%	2,139.66	138.12%	(493.36)	16.36%	0.09	138.31%	(493.27)
WVEPL	(1.84%)	(2,109.26)	65.25%	(233.07)	(5.45%)	(0.03)	65.36%	(233.10)
NDEPL	(0.65%)	(741.75)	6.45%	(23.03)	(16.36%)	(0.09)	6.48%	(23.12)
HTPL	(1.24%)	(1,421.26)	154.64%	(552.38)	5.45%	0.03	154.87%	(552.35)
JLTPL	0.51%	582.12	(35.94%)	128.39	20.00%	0.11	(36.03%)	128.50
JVTPL	0.41%	463.55	(36.03%)	128.69	(1.82%)	(0.01)	(36.08%)	128.68
KETPL	(1.34%)	(1,536.52)	194.45%	(694.57)	1.82%	0.01	194.74%	(694.56)
KMTPL	(1.01%)	(1,151.28)	184.94%	(660.60)	12.73%	0.07	185.20%	(660.53)
LRTPL	0.24%	276.05	27.01%	(96.48)	3.64%	0.02	27.05%	(96.46)
MKTPL	(0.97%)	(1,104.06)	146.20%	(522.24)	(5.45%)	(0.03)	146.44%	(522.27)
NKTPL	(1.80%)	(2,053.45)	262.90%	(939.08)	1.82%	0.01	263.30%	(939.07)
SMTPL	(1.29%)	(1,470.70)	183.28%	(654.69)	(3.64%)	(0.02)	183.57%	(654.71)
SIPL	0.77%	877.01	(70.22%)	250.83	7.27%	0.04	(70.34%)	250.87
SPPL	0.73%	836.21	(44.61%)	159.34	12.73%	0.07	(44.70%)	159.41
THPL	1.11%	1,273.76	(34.73%)	124.05	32.73%	0.18	(34.83%)	124.23
BWHPL	0.31%	358.64	1.61%	(5.75)	(1.82%)	(0.01)	1.62%	(5.76)
MSHPL	0.29%	329.90	(16.90%)	60.36	3.64%	0.02	(16.93%)	60.38
MHPL	0.03%	36.06	(3.84%)	13.73	12.73%	0.07	(3.87%)	13.80
NAMEL	(3.24%)	(3,703.01)	47.47%	(169.58)	(21.82%)	(0.12)	47.58%	(169.70)
Non controlling Interest	0.00%	0.66	(0.04%)	0.13	-	-	(0.04%)	0.13
Intra Group Eliminations	(4.72%)	(5,402.54)	2028.64%	(7,246.35)	-	-	2031.77%	(7,246.35)
Total	**100.00%**	**1,14,374.55**	**100.00%**	**(357.20)**	**100.00%**	**0.55**	**100.00%**	**(356.65)**

Cube Highways Trust
Notes forming part of Consolidated Financial Statements for the half year ended September 30, 2025
(All amounts in Rs. million unless otherwise stated)

57

Additional information pursuant to paragraph 12.3 of Division II of Schedule III to the Companies Act, 2013 - 'General instructions for the preparation of consolidated financial statements of Division II of Schedule III.

As at and for the year ended March 31, 2024

Name of entity in the group	Net Assets (total Assets minus total liabilities)		Share in Profit or (loss)		Share in other comprehensive income/(loss)		Share in total comprehensive income/(loss)	
	As a % of consolidated net assets	Amount	As a % of consolidated net profit or (loss)	Amount	As a % of consolidated other comprehensive income	Amount	As a % of consolidated Total comprehensive income	Amount
Parent								
Cube Highways Trust	108.14%	1,40,026.04	(49.27%)	3,477.96	-	-	(49.27%)	3,477.96
Subsidiaries		-		-				
Indian		-		-				
WUPTPL	0.12%	159.06	(1.99%)	140.36	70.58%	0.33	(1.99%)	140.69
APEL	(0.48%)	(618.56)	1.06%	(74.56)	23.24%	0.11	1.05%	(74.45)
JMTPL	1.64%	2,120.52	(17.26%)	1,218.25	12.37%	0.06	(17.26%)	1,218.31
MBEL	0.02%	31.06	(2.81%)	198.19	(33.90%)	(0.16)	(2.81%)	198.03
FRHPL	(4.58%)	(5,934.45)	11.94%	(843.14)	8.10%	0.04	11.94%	(843.10)
DATRPL	(2.64%)	(3,412.47)	8.65%	(610.96)	16.84%	0.08	8.65%	(610.88)
GAEPL	2.03%	2,632.93	3.82%	(269.72)	(7.46%)	(0.04)	3.82%	(269.76)
WVEPL	(1.45%)	(1,876.16)	1.81%	(127.64)	11.09%	0.05	1.81%	(127.59)
NDEPL	(0.55%)	(718.63)	0.37%	(26.25)	(1.49%)	(0.01)	0.37%	(26.26)
HTPL	(0.67%)	(868.91)	8.06%	(568.71)	(5.76%)	(0.03)	8.06%	(568.74)
JLTPL	0.35%	453.62	(0.43%)	30.15	(3.62%)	(0.02)	(0.43%)	30.13
JVTPL	0.26%	334.87	(0.81%)	57.13	(1.92%)	(0.01)	(0.81%)	57.12
KETPL	(0.65%)	(841.96)	8.56%	(604.09)	0.85%	0.00	8.56%	(604.09)
KMTPL	(0.38%)	(490.75)	9.42%	(664.95)	30.06%	0.16	9.42%	(664.79)
LRTPL	0.29%	372.51	1.86%	(131.46)	(24.95%)	(0.12)	1.86%	(131.58)
MKTPL	(0.45%)	(581.79)	8.03%	(567.09)	11.73%	0.04	8.03%	(567.05)
NKTPL	(0.86%)	(1,114.38)	11.20%	(790.67)	(1.92%)	(0.01)	11.20%	(790.68)
SMTPL	(0.63%)	(816.00)	8.41%	(593.90)	(3.84%)	(0.02)	8.41%	(593.92)
Non controlling Interest	0.00%	0.53	(0.00%)	0.05	-	-	(0.00%)	0.05
Intra Group Eliminations	0.49%	632.83	89.36%	(6,308.10)	-	-	89.37%	(6,308.10)
	100.00%	**1,29,489.91**	**100.00%**	**(7,059.15)**	**100.00%**	**0.45**	**100.00%**	**(7,058.70)**

As at and for the year ended March 31, 2023

Name of entity in the group	Net Assets (total Assets minus total liabilities)		Share in Profit or (loss)		Share in other comprehensive income/(loss)		Share in total comprehensive income/(loss)	
	As a % of consolidated net assets	Amount	As a % of consolidated net profit or (loss)	Amount	As a % of consolidated other comprehensive income	Amount	As a % of consolidated Total comprehensive income	Amount
Parent								
Cube Highways Trust	100.00%	(289.96)	100.00%	(277.88)	-	-	100.00%	(277.88)
Non controlling Interest	0.00%	-	-	-	-	-	-	-
Total	**100.00%**	**(289.96)**	**100.00%**	**(277.88)**	**-**	**-**	**100.00%**	**(277.88)**

Disclosures pursuant to SEBI Master circular
Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

58 Consolidated Statement of Net Assets at Fair Value

As at September 30, 2025

Particulars	Book value	Fair value
A. Assets	3,02,520.13	3,76,018.55
B. Liabilities of Consolidated Trust Group[4]	1,96,103.59	1,83,809.78
C. Net assets (A-B)	**1,06,416.54**	**1,92,208.77**
D. Less: Non-controlling interests	0.74	1.00
E. Net Assets attributable to unit holders of the Trust (C-D)	**1,06,415.80**	**1,92,207.77**
F. Number of Ordinary units	1,344.07	1,344.07
G. Net Asset Value ("NAV") (E/F) (Rs.)	**79.17**	**143.00**
H. Number of Ordinary units	1,344.07	1,344.07
Add: Estimated Subordinate units to be reclassified to Ordinary units	-	-
Total Number of Ordinary and estimated reclassified Subordinate units	1,344.07	1,344.07
I. NAV (including subordinate units) [E/H] (Rs.)	**79.17**	**143.00**

As at September 30, 2024

Particulars	Book value	Fair value
A. Assets	2,64,647.69	3,08,928.80
B. Liabilities of Consolidated Trust Group[4]	1,43,172.07	1,33,652.53
C. Net assets (A-B)	**1,21,475.62**	**1,75,276.27**
D. Less: Non-controlling interests	0.58	1.10
E. Net Assets attributable to unit holders of the Trust (C-D)	**1,21,475.04**	**1,75,275.17**
F. Number of Ordinary units	1,334.45	1,334.45
G. Net Asset Value ("NAV") (E/F) (Rs.)	**91.03**	**131.35**
H. Number of Ordinary units	1,334.45	1,334.45
Add: Estimated Subordinate units to be reclassified to Ordinary units [2(iii)]	37.50	37.50
Total Number of Ordinary and estimated reclassified Subordinate units	1,371.95	1,371.95
I. NAV (including subordinate units) [E/H] (Rs.)	**88.54**	**127.76**

As at March 31, 2025

Particulars	Book value	Fair value
A. Assets	2,80,001.55	3,33,121.06
B. Liabilities of Consolidated Trust Group[4]	1,65,627.00	1,54,545.71
C. Net assets (A-B)	**1,14,374.55**	**1,78,575.35**
D. Less: Non-controlling interests	0.66	1.62
E. Net Assets attributable to unit holders of the Trust (C-D)	**1,14,373.89**	**1,78,573.73**
F. Number of Ordinary units	1,334.45	1,334.45
G. Net Asset Value ("NAV") (E/F) (Rs.)	**85.71**	**133.82**
H. Number of Ordinary units	1,334.45	1,334.45
Add: Estimated Subordinate units to be reclassified to Ordinary units [2(i)]	9.62	9.62
Total Number of Ordinary and estimated reclassified Subordinate units	1,344.07	1,344.07
I. NAV (including subordinate units) [E/H] (Rs.)	**85.10**	**132.86**

As at March 31, 2024

Particulars	Book value	Fair value
A. Assets	2,46,257.52	2,78,221.03
B. Liabilities of Consolidated Trust Group[4]	1,16,767.61	1,08,161.43
C. Net assets (A-B)	**1,29,489.91**	**1,70,059.60**
D. Less: Non-controlling interests	0.53	1.75
E. Net Assets attributable to unit holders of the Trust (C-D)	**1,29,489.38**	**1,70,057.85**
F. Number of Ordinary units	1,290.35	1,290.35
G. Net Asset Value ("NAV") (E/F) (Rs.)	**100.35**	**131.79**
H. Number of Ordinary units	1,290.35	1,290.35
Add: Estimated Subordinate units to be reclassified to Ordinary units [2(ii)]	52.50	52.50
Total Number of Ordinary and estimated reclassified Subordinate units	1,342.85	1,342.85
I. NAV (including subordinate units) [E/H] (Rs.)	**96.43**	**126.64**

Notes:

1 The above Consolidated Statement of Net Assets at Fair Value (NAV) is prepared and calculated in accordance with SEBI (Infrastructure Investment Trusts) Regulations, 2014 and the Circulars issued there under. The Trust's projected expenses have not been considered for calculating the fair value of assets at the Trust and NAV.

2 (i) Estimated reclassification of Subordinate Units to Ordinary units on achievement of actual performance matrix in respect of JMTPL and MBEL (as per entitlement Event B as defined in note 19).

(ii) Estimated reclassification of Subordinate Units to Ordinary Units on achievement of actual performance matrix in respect of DATRPL (Entitlement Event A as per terms defined in note 19) and projected achievable actual performance matrix in respect of JMTPL and MBEL (Entitlement Event B as per terms defined in note 19).

(iii) Estimated reclassification of Subordinate Units to Ordinary Units based on projected achievable actual performance matrix in respect of JMTPL and MBEL (Entitlement Event B as per terms defined in note 19).

3 The Consolidated Statement of Net Assets at Fair Value is not given for March 31, 2023 as the Trust has acquired all the SPVs on and after April 17, 2023 (Refer note 1(ii)).

4 Fair values of assets of subsidiaries/SPVs are calculated based on their independent fair value done by the expert appointed by the Trust under SEBI (Infrastructure Investments Trust) Regulations, 2014, as amended and after making necessary adjustments to arrive at fair value of all assets. Fair value of liabilities is different from book value of liabilities on account of exclusion of liabilities which have already been considered by the valuer while computing the fair value of assets. Refer Annexure A for adjustments made to the valuation arrived by the independent valuer to compute the fair value of assets presented in the Consolidated Statement of Net Assets at Fair Value.

5 The key assumptions used as inputs for the calculation of Enterprise Value and fair value include determination of future cash flows, traffic estimates, assessment of the variation in concession period in certain subsidiaries, considering target traffic/ target revenue subject to approvals from the authorities, revenue growth rate, discount rates, inflation rates and other economic factors.

During the half year ended September 30, 2025, NHAI, vide its Policy Circular dated September 13, 2025, revised the Wholesale Price Index (WPI) linking factor from 1.641 to 1.561, resulting in a reduction of around 3–5% in base toll rates. The said Circular was challenged before the High Court of Delhi by various parties (including the Highway Operators Association of India) by filing Writ petitions (Civil) and Civil Miscellaneous Applications.

The Hon’ble High Court of Delhi, vide order dated October 17, 2025, has directed that the aforesaid Policy/ Circular dated 13.09.2025 be kept in abeyance. The matter is to be re-examined by the NHAI within a fixed timeline, after considering the representations and submissions of stakeholders, and a reasoned order is to be passed thereafter, taking into account all relevant aspects of the matter.

As of the reporting date, the Enterprise Value, as determined by the independent valuer, has been computed using the WPI linking factor of 1.641.

Disclosures pursuant to SEBI Master circular

Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

58 Consolidated Statement of Net Assets at Fair Value

Annexure A: Adjustments made to the valuation arrived at by the independent valuer to compute the fair value of assets

As at September 30, 2025

SPVs	Enterprise Value as given by Independent valuer	Liabilities *	Fair value of assets
	A	B	A+B
AJUHPL	12,173.00	1,442.53	13,615.53
APEPL	1,001.35	152.04	1,153.39
BWHPL	3,799.00	120.61	3,919.61
DATRPL	76,804.93	54.79	76,859.72
FRHPL	27,240.00	127.68	27,367.68
GAEPL	35,502.00	370.95	35,872.95
HTPL	20,546.00	140.95	20,686.95
JLTPL	12,687.00	247.71	12,934.71
JMTPL	7,890.00	142.65	8,032.65
JVTPL	7,926.00	207.11	8,133.11
KETPL	10,558.50	136.35	10,694.85
KMTPL	14,341.00	65.19	14,406.19
LRTPL	8,403.15	93.24	8,496.39
MBEL	3,984.00	441.07	4,425.07
MHPL	2,818.00	239.26	3,057.26
MKTPL	16,275.00	89.10	16,364.10
MSHPL	4,114.85	91.04	4,205.89
NAMEL	27,312.00	1,651.49	28,963.49
NDEPL	4,859.00	54.92	4,913.92
NKTPL	14,474.60	358.65	14,833.25
QEPL	18,837.80	2,329.86	21,167.66
SIPL	3,765.00	236.90	4,001.90
SMTPL	11,404.00	156.85	11,560.85
SPPL	4,177.00	389.77	4,566.77
THPL	4,926.00	324.35	5,250.35
TRUST	-	304.25	304.25
WUPTPL	31.00	787.76	818.76
WVEPL	9,349.00	62.30	9,411.30
Total	**3,65,199.18**	**10,819.37**	**3,76,018.55**

As at September 30, 2024

SPVs	Enterprise Value as given by Independent valuer	Liabilities *	Fair value of assets
	A	B	A+B
APEPL	1,403.00	1,287.39	2,690.39
BWHPL	4,057.00	364.11	4,421.11
DATRPL	75,859.00	272.27	76,131.27
FRHPL	27,450.00	163.35	27,613.35
GAEPL	30,857.00	951.98	31,808.98
HTPL	17,291.00	599.86	17,890.86
JLTPL	12,027.00	315.89	12,342.89
JMTPL	10,129.00	127.31	10,256.31
JVTPL	7,441.00	420.43	7,861.43
KETPL	8,545.00	217.26	8,762.26
KMTPL	13,608.00	98.14	13,706.14
LRTPL	7,760.00	769.02	8,529.02
MBEL	4,445.00	985.63	5,430.63
MHPL	3,144.00	345.71	3,489.71
MKTPL	14,097.00	18.01	14,115.01
MSHPL	4,221.00	538.96	4,759.96
NDEPL	5,196.00	100.38	5,296.38
NKTPL	9,369.00	4,313.04	13,682.04
SIPL	4,194.00	1,047.30	5,241.30
SMTPL	9,664.00	109.73	9,773.73
SPPL	4,626.00	1,085.00	5,711.00
THPL	5,546.00	2,537.95	8,083.95
TRUST	-	79.82	79.82
WUPTPL	1,024.00	456.86	1,480.86
WVEPL	9,671.00	99.40	9,770.40
Total	**2,91,624.00**	**17,304.80**	**3,08,928.80**

*Excludes borrowings (net of Cash and Cash Equivalents) and liabilities already considered by Independent Valuer for calculation of Enterprise Value.

Disclosures pursuant to SEBI Master circular

Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

58 Consolidated Statement of Net Assets at Fair Value

Annexure A: Adjustments made to the valuation arrived at by the independent valuer to compute the fair value of assets

As at March 31, 2025

SPVs	Enterprise Value as given by Independent valuer	Liabilities *	Fair value of assets
	A	B	A+B
APEPL	1,315.71	1,342.83	2,658.54
BWHPL	3,579.87	822.50	4,402.37
DATRPL	74,916.86	135.46	75,052.32
FRHPL	26,853.11	129.42	26,982.53
GAEPL	32,781.86	542.99	33,324.85
HTPL	18,223.96	291.41	18,515.37
JLTPL	12,260.61	350.97	12,611.58
JMTPL	9,493.15	549.06	10,042.21
JVTPL	7,738.00	334.83	8,072.83
KETPL	9,526.96	154.76	9,681.72
KMTPL	13,261.16	111.85	13,373.01
LRTPL	7,709.62	293.31	8,002.93
MBEL	4,319.70	708.50	5,028.20
MHPL	2,939.71	468.87	3,408.58
MKTPL	14,168.25	(64.85)	14,103.40
MSHPL	4,207.50	212.90	4,420.40
NAMEL	27,676.30	1,914.93	29,591.23
NDEPL	5,076.11	60.71	5,136.82
NKTPL	12,913.44	1,137.08	14,050.52
SIPL	4,011.89	357.52	4,369.41
SMTPL	10,344.93	101.46	10,446.39
SPPL	4,432.32	443.47	4,875.79
THPL	5,330.37	453.63	5,784.00
TRUST	-	(898.64)	(898.64)
WUPTPL	165.39	467.90	633.29
WVEPL	9,410.37	41.04	9,451.41
Total	**3,22,657.15**	**10,463.91**	**3,33,121.06**

As at March 31, 2024

SPVs	Enterprise Value as given by Independent valuer	Liabilities *	Fair value of assets
	A	B	A+B
APEPL	1,014.00	1,972.13	2,986.13
DATRPL	73,155.00	840.50	73,995.50
FRHPL	26,570.00	806.66	27,376.66
GAEPL	29,946.00	2,352.55	32,298.55
HTPL	16,703.00	688.91	17,391.91
JLTPL	11,648.00	1,207.85	12,855.85
JMTPL	10,046.00	510.63	10,556.63
JVTPL	7,269.00	994.31	8,263.31
KETPL	8,289.00	208.85	8,497.85
KMTPL	13,139.00	693.65	13,832.65
LRTPL	7,652.00	739.27	8,391.27
MBEL	4,429.00	1,049.23	5,478.23
MKTPL	13,640.00	175.96	13,815.96
NDEPL	5,329.00	743.98	6,072.98
NKTPL	9,076.00	3,683.15	12,759.15
SMTPL	9,329.00	103.38	9,432.38
TRUST	-	2,308.91	2,308.91
WUPTPL	1,370.00	942.36	2,312.36
WVEPL	9,502.00	92.75	9,594.75
Total	**2,58,106.00**	**20,115.03**	**2,78,221.03**

*Excludes borrowings (net of Cash and Cash Equivalents) and liabilities already considered by Independent Valuer for calculation of Enterprise Value.

Disclosures pursuant to SEBI Master circular

Additional disclosures as required by paragraph 4 of chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

59 Consolidated Statement of Total Returns at Fair Value

Particulars	Half Year ended		Year ended	
	September 30, 2025 (Audited)	September 30, 2024 (Audited)	March 31, 2025 (Audited)	March 31, 2024 (Audited)
Total comprehensive income/(loss) for the half year/year (as per the Consolidated Statement of Profit and Loss)	406.37	(261.43)	(356.65)	(7,058.70)
Add/Less: Other changes in fair value not recognized in Total Comprehensive Loss[(i)]	21,591.42	13,230.97	23,631.12	40,569.69
Total returns at fair value	**21,997.79**	**12,969.54**	**23,274.47**	**33,510.99**

Notes:

(i) Computed based on difference in fair value based on the valuation done by independent valuer appointed by the Trust and book value of net assets as at September 30, 2025, September 30, 2024, March 31, 2025 and March 31, 2024.

(ii) The Consolidated Statement of Total Returns at Fair Value is not given for March 31, 2023 as the Trust has acquired all the SPVs on and after April 17, 2023 (Refer note 1(ii)).

60 Investment Management and Project Management Fees

(i) Project Management Fees

Pursuant to Project Implementation and Management Agreement dated January 02, 2023 (PM Agreement) in consideration of services to be rendered by Project Manager in accordance with and subject to agreement and applicable law, each project SPV's agree to pay fees ("Fee") from their respective funds, on an arm length basis, to the Project Manager. The fee shall be calculated annually and shall be higher of :-
(a) 1.55% of the standalone revenue of the project SPV based on audited financial statements of Project SPV.
OR
(b) During the terms of relevant Concession Agreement for each Project SPV the Minimum Threshold as specified in Schedule 4 of the PM Agreement in relation to each Project SPV, subject to escalation of 7% per annum.

(ii) Investment Management Fees

In terms of the InvIT Regulations, the Trust has entered into Investment Management Agreement dated March 11, 2022 with Cube Highways Fund Advisors Private Limited ("the Investment Manager"), which got amended on May 30, 2022, on December 16, 2022, March 08, 2024 and on July 24, 2024 (herein after referred to as IM Agreement).

As per Schedule II of the IM Agreement as amended from time to time, the Investment Manager shall be entitled to a fee from the funds of the Trust in accordance with the IM Agreement ("Management Fee") as under:

For the period of March 11, 2022 to May 30, 2022 (in terms IM Agreement dated March 11, 2022)	Higher of: (a) 1% of the consolidated revenue of the Project SPVs ("fee percentage"); or (b) Rs. 210 million subject to an escalation of 9% per annum.
For the period upto December 15, 2022 (in terms of Amended and Restated IM Agreement dated May 30, 2022)	Higher of: (a) Subsequent to the Initial Offer, the Management Fee shall be 0.88% of the revenue of the Initial SPVs ("Fee Percentage"); (b) Rs. 190 million ("Minimum Threshold") subject to an escalation of 7% per annum
For the period upto May 31, 2024 (in terms of Amended and Restated IM Agreement dated December 16, 2022)	Higher of: (a) Subsequent to the Initial Offer, the Management Fee shall be 0.94% of the revenue of the Initial SPVs ("18 SPV's");or (b) Rs. 190 million ("Minimum Threshold") subject to an escalation of 7% per annum from 31 March 2023
For the period from and after June 01, 2024 (in terms of Amended and Restated IM Agreement dated July 24, 2024)	Higher of: (a) 0.81% of the revenue of the Project SPVs ("24 SPV's including 6 HAM SPV's"); or (b) Rs. 190 million ("Minimum Threshold") subject to an escalation of 7% per annum from 31 March 2023
For the period from and after February 12, 2025 (in terms of Amended and Restated IM Agreement dated July 24, 2024)	Higher of: (a) 0.75% of the revenue of the Project SPVs ("27 SPV's including 6 HAM SPV's and NAMEL, QEPL and AJUHPL"); or (b) Rs. 190 million ("Minimum Threshold") subject to an escalation of 7% per annum from 31 March 2023

61 During the half year ended September 30, 2025, the Trust has been assigned/reaffirmed the credit ratings for its borrowings as follows:-

Sr. No.	Nature of Borrowings	Rating Agency	Rating	Date
1	Rupee Term Loan	CRISIL	"CRISIL AAA/Stable"	Reaffirmed on June 04, 2025
		ICRA	"ICRA AAA/Stable"	Reaffirmed on April 17, 2025, August 13, 2025. Assigned/Reaffirmed on August 28, 2025
		India Ratings	"IND AAA/Stable"	Reaffirmed on April 18, 2025, April 22, 2025, June 09, 2025 and August 14, 2025
2	Bank Guarantee	CRISIL	"CRISILA1+"/"CRISIL AAA/Stable"	Reaffirmed on June 04, 2025
		ICRA	"ICRA AAA/Stable"	Reaffirmed on April 17, 2025, August 13, 2025. Assigned/Reaffirmed on August 28, 2025
		India Ratings	"IND AAA/Stable"	Reaffirmed on April 18, 2025, April 22, 2025, June 09, 2025 and August 14, 2025
3	Non-Convertible Debt Securities	ICRA	"ICRA AAA/Stable"	Assigned/Reaffirmed on April 17, 2025, August 13, 2025 and August 28, 2025
		CRISIL	"CRISIL AAA/Stable"	Reaffirmed on June 04, 2025
		India Ratings	"IND AAA/Stable"	Reaffirmed on April 18, 2025, April 22, 2025, and June 09, 2025. Assigned/Reaffirmed on August 14, 2025. Reaffirmed on August 28, 2025
4	Commercial papers	CRISIL	"CRISIL A1+"	Assigned on June 04, 2025
		India Ratings	"IND A1+"	Assigned on June 09, 2025 and affirmed on August 14, 2025

62 At the end of each reporting period, in terms of Ind AS 36 "Impairment of Assets" the Management carries out impairment assessment for Intangible assets Rights Under Service Concession Arrangements in individual subsidiary (cash generating unit) and determine the recoverable amount of non-current investments in subsidiaries as at the reporting date.

An impairment loss is recognised if the carrying amount of the Intangible assets exceeds its recoverable amount. The recoverable amount is determined by the Management based on the value in use approach using an External Independent Valuer. The key judgements in determining the value in use approach included revenue and other cash flow projections for the remaining concession period, changes in interest rates, discount rates, risk premium for market conditions etc. The revenue projection is based on assumptions made by the Management regarding future traffic growth and inflation factor for assessing user toll fee as supported by the studies from the Third-party Independent Consultant.

Based on the aforesaid impairment assessment done by the management of Investment Manager, the Trust has recognized following impairment loss / (reversal) - net in respect of Intangible assets Rights Under Service Concession Arrangements in the Consolidated Statement of Profit and Loss:

(Amounts in Rs. Million)

Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Impairment loss / (reversal) - Net	-	-	-	5,871.87	-

For the year ended March 31, 2024

Name of SPV	Impairment Loss	Recoverable Value	Discounting rate (%)
WUPTPL	122.51	1,656.00	10.70
GAEPL	1,421.00	28,525.00	10.60
NDEPL	368.10	4,960.90	10.70
FRHPL	3,039.42	23,530.57	10.60
LRTPL	920.84	6,731.16	10.40
Total	**5.871.87**	**65.403.63**	

The aforesaid recoverable value of these Intangible assets – Rights under Service Concession Arrangements is based on Enterprise Value as determined by the External Independent valuer. For valuation process and technique used to determine fair value refer note 58(4) of Consolidated Financial Statements.

63 Distribution

A) Details of distribution made by the Trust to Unitholders is as under:

(Amounts in Rs. Million)

Particulars	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Interest (Return on capital)	4,403.17	3,697.55	7,313.90	6,849.16	-
Dividend	427.02	551.65	564.99	1.032.28	-
Other Income on surplus fund at Trust	13.34	26.24	39.59	54.19	-
Repayment of capital	3,520.85	3,477.42	6,840.23	-	-
	8,364.38	**7,752.86**	**14,758.71**	**7,935.63**	**-**

B) Subsequent to the quarter ended September 30, 2025, the Board of Directors of Investment Manager in its meeting dated October 30, 2025 approved a distribution of Rs. 3.60 per unit aggregating Rs. 4,838.65 million for the quarter ended September 30, 2025 to be paid within 5 days from the record date. This distribution is subsequently paid.

64 The Board of Directors of the Investment Manager in its meeting held on July 1, 2024 approved the reclassification of 44.10 million Subordinate Units out of the total 120 million Subordinate Units, issued as part of the initial offer to Cube Highways & Infrastructure III Pte. Ltd. (CH-III), Sponsor of the InvIT, into 44.10 million Ordinary Units, in terms of the performance metrics and the Entitlement Event as defined in the Trust Deed and disclosed in the Final Placement Memorandum dated April 17, 2023. The Board of Directors, accordingly, also approved the extinguishment of the balance 75.90 million Subordinate Units held by CH-III not reclassified into Ordinary Units. These 44.10 million Subordinate Units reclassified into Ordinary Units on July 19, 2024 and got listed on Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) on July 29, 2024.

65 The Board of Directors of the Investment Manager in its meeting held on July 01, 2025 approved the reclassification of 9.62 million Subordinate Units out of the total 37.50 million Subordinate Units, issued as part of the initial offer to Cube Highways and Infrastructure Pte Ltd (CH-I), Sponsor of the InvIT, in terms of the performance metrics and the Entitlement Event as defined in the Trust Deed. The Board of Directors, accordingly, also approved the extinguishment of the balance 27.87 million Subordinate Units held by CH-I not reclassified into Ordinary Units. These 9.62 million Subordinate Units reclassified into Ordinary Units on July 14, 2025 and got listed on Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) on July 17, 2025.

66 Subsequent non-adjusting event

The Government of India has announced the implementation of the four Labour Codes - the Code on Wages, 2019, the Industrial Relations Code, 2020, the Code on Social Security, 2020, and the Occupational Safety, Health and Working Conditions Code, 2020, with effect from 21st November 2025, rationalising 29 existing labour laws.
The new labour codes introduce new definitions for wages, classification of employees and workers, expanded social security coverage, revised employment norms and many other changes that will impact the human capital. Certain amendments will also have a retrospective catch-up impact on organisations, e.g., the recomputation of gratuity and other benefits based on the revised definition of wages.

The Government will engage the public and stakeholders in the framing of the corresponding rules, regulations, schemes, etc., under the Codes. During transition, the relevant provisions of the existing labour Acts and their respective rules, regulations, notifications, standards, schemes, etc. will continue to remain in force. The Trust Group is assessing the detailed requirements and potential implications of the new Codes on its existing human resource practices and operating model, particularly regarding wage structuring, compliance obligations, and contractor engagement norms. The assessment will be updated once the rules, clarifications, and implementation framework under the Labour Codes are issued.

In view of this, the financial impact of these changes cannot be reasonably estimated at this stage.

67 The Trust group has reclassified the accruals relating to employees' salaries and wages from "Trade payables" to "Other financial liabilities" in view of the opinion of Expert Advisory Committee of the Institute of Chartered Accountants of India considering the said disclosure could be more relevant to the users of the financial statements. This change doesn't result in any impact on the total current liabilities.

68 The Trust Group has not traded or invested in Cryptocurrency or Virtual Currency during half year ended September 30, 2025, half year ended September 30, 2024 , year ended March 31, 2025 , year ended March 31, 2024 and year ended March 31, 2023.

69 The Trust Group has made transactions with the Companies which were struck off under section 248 of the Companies Act, 2013 or section 560 of Companies Act, 1956, The detail of the same is as follows:

Name of Struck Off companies	Nature of Transaction	For the half year ended September 30, 2025	For the half year ended September 30, 2024	For the year ended March 31, 2025	For the year ended March 31, 2024	For the year ended March 31, 2023
Tollways Infra Projects Private Limited	COS Contractor	-	0.63	0.63	-	-
Markolines Pavement Technologies Limited	MMR Works-Retention and Holdback	-	-	-	5.48	-
Rousing Trading India Pvt. Ltd.	Boundary Wall Construction-Retention	-	-	-	0.06	-
Kritsnam Technologies Private Limited	Dhaara Smart Ultrasonic Water Flow Meter	0.75	-	-	-	-

70 The Trust Group does not have any transaction which is not recorded in the books of accounts that has been surrendered or disclosed as income during the half year / year in the tax assessments under the Income Tax Act, 1961 (such as, search or survey or any other relevant provisions of the Income Tax Act, 1961).

71 The Trust Group has not been declared as a wilful defaulter by any bank or financial institution or other lender.

72 The Trust Group does not have any Benami property, where any proceeding has been initiated or pending against the Trust Group for holding any Benami property.

73 The Consolidated Financial Statements have been approved by the Board of Directors of the Investment Manager to the Trust thorugh resolution by circulation dated December 05, 2025.

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(in its capacity as the Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: December 05, 2025

Vinay Chandramouli Sekar
Chief Executive Officer

Place: Gurugram
Date: December 05, 2025

Pankaj Vasani
Chief Financial Officer

Place: Mumbai
Date: December 05, 2025

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: December 05, 2025

ANNEXURE E -PROJECTIONS OF REVENUE FROM OPERATIONS AND CASH FLOW FROM OPERATING ACTIVITIES

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S. B. BILLIMORIA
& CO. LLP

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DLF Cyber City Complex
DLF Cty Phase - II
Gurugram - 122 002
Haryana, India

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AUDITORS' REPORT ON PROJECTIONS OF REVENUE FROM OPERATIONS AND CASH FLOWS FROM OPERATING ACTIVITIES

To
The Board of Directors,
Cube Highways Fund Advisors Private Limited (the "Investment Manager") in its capacity as an Investment Manager of the Cube Highways Trust (the "Issuer" or the "Trust")
B-376, UGF, Nirman Vihar,
New Delhi-110092

1. We have examined, the accompanying statement of projections of revenue from operations and cash flows from operating activities and the underlying assumptions of Baharampore-Farakka Highways Limited (the "SPV") in the Projection Information for the years ending March 31, 2026, 2027, 2028 and 2029 (collectively, hereinafter referred to as the "Projection Information"), in accordance with Standard on Assurance Engagement 3400, "The Examination of Prospective Financial Information", issued by the Institute of Chartered Accountants of India. The preparation and presentation of the projections including the underlying assumptions, set out in Note (b) to the Projection Information, is the responsibility of the Investment Manager and has been approved by the Board of Directors of the Investment Manager. Our responsibility is to examine the evidence supporting the assumptions (excluding the hypothetical assumption) and other information in the Projection Information. Our responsibility does not include verification of the accuracy of projections. Therefore, we do not vouch for the accuracy of the same.

2. These projections have been prepared for the proposed conversion of Cube Highways Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust (the "Offer") in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD2/P/CIR/2025/102 dated July 11, 2025, as amended ("InvIT Regulations"). The projections have been prepared using a set of assumptions that include hypothetical assumptions about future events and the Investment Manager's actions that are not necessarily expected to occur, as set out in Note (b) to the Projection Information and has been approved by the Board of Directors of the Investment Manager. Consequently, users are cautioned that this projection may not be appropriate for purposes other than that described above.

3. We have carried out our examination of the Projection Information on a test basis. Based on our examination of the evidence supporting the assumptions (excluding the hypothetical assumptions), nothing has come to our attention which causes us to believe that these assumptions do not provide a reasonable basis for the Projection Information.

4. Further, in our opinion, the Projection Information, read with the basis of preparation and notes therein, is properly prepared on the basis of the assumptions as set out in Note (b) to the Projection Information and consistent with the accounting policies, to the extent applicable, used for preparation of the historical financial statements of the SPV which are included in the draft offer document (the "DOD"). Even if the events anticipated under the hypothetical assumptions described above occur, actual results are still likely to be different from the projection since other anticipated events frequently do not occur as expected and the variation may be material.

5. This report is required by InvIT Regulations requiring the independent auditor to issue a report on the projections and is issued for the sole purpose of the Offer in accordance with the InvIT Regulations. Our work has not been carried out in accordance with auditing or other standards or practices accepted in jurisdictions outside India, including the United States of America, and accordingly should not be relied upon as if it had been carried upon in accordance with those standards and practices. US Securities regulations do not require profit forecast to be reported by a third party. This report should not be relied upon by prospective investors in the United States of America, including persons who are qualified institutional buyers as defined under Rule 144A under the United States Securities Act of 1933, as amended participating in the Issue. We accept no responsibility and deny any liability to any person who seeks to rely on this report and who may seek to make claim in connection with any offering of securities on the basis that they had acted in reliance on such information under the protections accorded by United States of America law and regulation.

6. This report is addressed to and is provided to enable the Investment Manager to include this report in the DOD in connection with the proposed offer for sale of Units of the Trust and that the Projection Information may not be meaningful for any other purpose.

For **S.B. BILLIMORIA & CO.LLP**
Chartered Accountants
(Firm's Reg. No. 101496W/ W-100774)

Robin Joseph
Partner
(Membership No. 512029)
(UDIN: 26512029JFFOTN1951)

Location: Gurugram
Date: February 27, 2026

Projection Information of Baharampore - Farakka Highways Limited
(All amounts in ₹ million unless otherwise stated)

Statement of Projection Information of Baharampore - Farakka Highways Limited

Particulars	For the year ending March 31, 2026	For the year ending March 31, 2027	For the year ending March 31, 2028	For the year ending March 31, 2029
I. Projected revenue from operations	2,073	2,352	2,646	2,728
II. Projected cash flows from operating activities	1,125	1,865	2,120	2,186

See accompanying notes forming an integral part of the Projection Information

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

Notes to the Projection Information of Baharampore - Farakka Highways Limited

a) General Information

Cube Highways Trust (the "Trust") was set up on December 7, 2021, as a contributory irrevocable trust under the provision of the Indian Trusts Act, 1882. The Trust was registered as an infrastructure investment trust under the Securities Exchange Board of India ("SEBI") (Infrastructure Investment Trust) Regulations, 2014, as amended read together with circulars and guidelines issued thereunder (the "SEBI InvIT Regulations") on April 5, 2022, having registration number IN/InvIT/22-23/0022. The registered office address of the Trust is B-376, UGF, Nirman Vihar, New Delhi - 110092, India.

The investment objective of the Trust is to carry on the activities of an infrastructure investment trust, as permissible under the SEBI InvIT Regulations. The Trust has been formed to invest in infrastructure assets primarily being in the road sector in India. All the Trust's Road projects are implemented and held through special purpose vehicle ("SPV").

Pursuant to the unitholder resolution of Cube Highways Trust (Trust) dated 20 February 2026, the Trust proposes to acquire from Cube Highways and Infrastructure V Pte. Ltd. (CH-V) 100% of the fully paid-up equity shares of Baharampore-Farakka Highways Limited. In consideration thereof, the Trust proposes to issue and allot ordinary units of the Trust to CH-V.

b) Basis of preparation of Projection Information

The statements of projection of revenue from operations and projection of cash flows from operating activities of the proposed subsidiary for the financial years ending March 31, 2026, 2027, 2028 and 2029 along with the underlying assumptions and other explanatory information (the "Projection Information") have been compiled by Cube Highways Fund Advisors Private Limited in its capacity as an Investment Manager of the Trust solely for the purpose of inclusion in the Draft Offer Document (DOD) in connection with the proposed conversion of the Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, as amended ("SEBI InvIT Regulations") (hereinafter referred to as the "proposed offer of units of the Trust"). Therefore, the Projection Information should not be used or relied upon for any purpose other than described above.

The Projection Information have been prepared based on the accounting policies used for preparation of the historical financial statements of the proposed subsidiary, together with the effect of Qualifications, Emphasis of Matters and Other Comments in the Audit Report on Historical Financial Statements in relation to the Projection Information summarised below, as required by the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended including circulars and guidelines issued thereunder ("SEBI InvIT Regulations"), which are prepared in accordance with accounting principles of Indian Accounting Standards ("Ind AS") as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended prescribed under Section 133 of the Companies Act, 2013 read with SEBI InvIT Regulations and the Guidance Note issued by the Institute of Chartered Accountants of India. Projected cash flow from operating activities have been calculated using the direct method under Ind AS 7 - Statement of Cash Flows and is computed by deducting the projected expenses and income taxes from the projected revenue from operations and adjusted for working capital changes and projected non-cash expenses (if any). Projected cash flow from operating activities do not include any items pertaining to financing or investing in nature. Though the aforesaid Projections are prepared under the Ind AS framework, they do not provide for all the detailed disclosures as required under Ind AS.

The Projection Information are presented in Indian Rupees which is also the functional currency of the Trust. All values are rounded to the nearest million, unless otherwise indicated.

The proposed subsidiary follows March 31 as its accounting year end. Accordingly, the Projection Information are prepared for the financial years ending March 31, 2026, March 31, 2027, March 31, 2028, and March 31, 2029 ('Projections Period'). However, the assumed date of acquisition (April 01, 2026) may be postponed and accordingly, the actual result in the first financial period of the Trust post-acquisition of the Proposed Subsidiary may be different from the numbers disclosed in the Projection Information. For the year ending March 31, 2026 the Projection information considers actual financial information upto September 30, 2025 which is the latest historical period available for preparation of the Projection Information.

It is clarified that the Projection Information have been prepared using a combination of best-estimate assumptions reflecting management's expectations of future events and actions as at that date.
The Projections have been prepared based on the significant assumptions stated in Note d) below. The Projection Information contain forecasts and projections that relate to future events including hypothetical assumptions, which are, by their nature, subject to significant risks and uncertainties. Events, circumstances and hypothetical assumptions relating to future events and actions that may or may not materialise. Even if the events anticipated under the hypothetical assumptions described in the Projection Information occur, actual results are still likely to be different from those stated in the Projection Information since other anticipated events frequently do not occur as expected and the variation may be material. The actual results may therefore differ materially from those forecasted and projected.

Summary of Qualifications, Emphasis of Matters and Other Comments in the Audit Report on Historical Financial Statements used as base for the preparation of the Projection Information

A. There are no audit qualifications in the auditor report for the year ended March 31, 2025.

B. There are no Emphasis of Matter paragraphs in the auditor report for the year ended March 31, 2025.

C. In addition to the audit opinion on the financial statements, the auditors are required to comment upon the matters included in the Companies (Auditor's Report) Order, 2020 ("the CARO 2020 Order") issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013 on the Financial Statements as at and for the year ended March 31, 2025.

Certain statements/comments included in the CARO in the Auditor's Report are reproduced below in respect of the financial statements presented, along with its impact, if any, on the Projection Statement:

i.) Clause (vii)(b) of Para 3 of the CARO, 2020 Order for FY 2024-25

"There are no statutory dues referred to in sub-clause (a) which have not been deposited on account of any dispute except as given below:

Name of Statute	*Nature of Dues*	*Disputed Amount (Rs in lacs)*	*Period to which the amount relates*	*Forum where dispute is pending*
The West Bengal value Added tax, 2003	*VAT*	*0.65*	*FY 2016-17*	*West Bengal Sales Tax Authority*
Income Tax demand	*Income tax*	*0.34*	*FY 2017-18*	*Matter pending with ITO*
Goods and Services Tax	*GST*	*59.49*	*FY 2022-23*	*West Bengal GST Authority*
Goods and Services Tax	*GST*	*44.50*	*FY 2021-22*	*West Bengal GST Authority*

The above matters are currently sub judice and continue to remain outstanding as on date and will be updated upon final resolution of the litigation. These matters currently do not have any impact on the Projection Information.

ii.) Clause (xi)(c) of Para 3 of the CARO, 2020 Order for FY 2024-25

"We have taken into consideration the whistle blower complaints received by the company during the year while determining the nature, timing and extent of audit procedures."

In terms of the assessment by BFHL's management, there is no impact in respect of the above whistle blower complaints on the Projection Information.

c) Summary of Projections

All figures are in INR million

Particulars	Actual (April'25 to September'25)	Projected (October'25 to March'26)	Total FY26	FY27	FY28	FY29
I. Projected Revenue from Operations	**1,011**	**1,062**	**2,073**	**2,352**	**2,646**	**2,728**
Projected Expenses:						
Operational Expenses	(133)	(160)	(293)	(313)	(335)	(358)
Routine Maintenance Expense	(42)	(14)	(56)	(44)	(61)	(64)
Project Manager Fees	-	-	-	(52)	(58)	(60)
Overloading sharing with Erstwhile seller	(22)	(23)	(45)	(51)	(58)	(58)
Major Maintenance Expense	(290)	(88)	(378)	-	-	-
Taxes	-	(24)	(24)	(27)	(14)	(2)
Working Capital Changes	(152)	-	(152)	-	-	-
II.Projected Cash Flow from Operations	**372**	**753**	**1,125**	**1,865**	**2,120**	**2,186**

d) Significant assumptions

The Projection Information have been prepared based on the significant assumptions including hypothetical assumptions summarised below. The Investment Manager considers the assumptions to be appropriate and reasonable as at the date of the reporting. However, the investors should consider these assumptions as well as the Projection Information and make their own assessment of the future performance of the SPV.

i. Revenue from operations:

The SPV revenue from operations primarily consists of income from toll collection.

Toll income:

The Investment Manager has obtained reports from an independent third-party traffic consultant i.e. Crisil Intelligence ("Traffic Consultant") in assessment of the assumptions, market fundamentals, industry drivers and outlook including the potential impact of loss of revenue arising from alternative diversion routes that may affect the traffic on the SPV's road, among other factors, in connection with the estimation of the projected revenue from operations. These assumptions and factors have been set out in the Traffic Consultant's report.

The revenue projection for the year ending March 31, 2026 is derived from annualizing the base traffic data of 7-months (April'25 to October'25) as adjusted for seasonality and tariff rates for the financial year 2025-26. As per Concession Agreement, toll rates shall increase by fixed base rate increase of 3% plus the impact of 40% of the change in WPI (December).

Key variables for the balance projection period includes traffic growth and WPI, the details of the assumptions are as set forth below:

Assumptions	For the year ending March 31, 2027	For the year ending March 31, 2028	For the year ending March 31, 2029
Traffic growth rate (Note 1)	9.2%	7.3%	-1.8%
WPI (Dec) (Note 2)	2.40%	5.00%	5.10%

Notes

1. Traffic growth rate is based on average Passenger Car Units (PCU) growth rate for both toll plazas (post-diversion).
2. WPI stands here for Wholesale Price Index for all commodities as published by the Ministry of Industry, Government of India.

ii. Projected Expenses:

Major components of projected expenses are as under:

A) Operational and Routine Maintenance Expense

The operational and routine maintenance cost includes routine maintenance, manpower costs and other operational expenses, including, but not limited to, road and site work expenses, and other toll operations cost.

In forecasting these costs, the SPV considers the report provided by the technical consultant i.e. M/s Knight Frank India (KFI) for the SPV (the "Technical Report"). This is further adjusted to reflect the expected operational and routine maintenance costs required to align the target assets with the Trust's operational standards based on management's assessment ("Base Cost"). Refer summary below:

Particulars	OPEX FY 26 (in Mn)	RM FY 26 (in Mn)
Total Operational Expense (OPEX) / Routine Maintenance (RM) Expense as per Technical Report	152	47
Add: Additional Expense as per Management's Estimate	141	9
Base Cost for FY26	**293**	**56**

The following assumptions have been made regarding Operational and Routine Maintenance:

Particulars	Description
Operational Expense (OPEX)	• Operational Expenses: Base Cost Escalation at 1.4 times of WPI of respective year. • Insurance Expenses: Escalation at WPI;
Routine Maintenance (RM) Expenses	• Base Cost Escalation at WPI of the respective year • RM savings during year of Major Maintenance (FY 2026): 25% • RM savings during Defect Liability Period in the following year of completion of Major Maintenance (FY 2027): 25%

B) Project Manager Fees

The Project Manager Fees are mainly projected based on the terms and conditions of the relevant agreements and / or based on Management's experience and judgement. These expenses consist of below:

i) Project manager fee

Based on the agreement to be entered with Cube Highways and Transportation Assets Advisors Private Limited (Project Manager) in relation to the specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

The Project Manager is entitled to a Project Manager fee to be calculated @ 1.55% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

ii) Professional Consultancy Charges

Based on the Expert Services Agreement to be entered with Cube Highways Technologies Private Limited in relation to specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

These charges are calculated @ 0.35% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

C) Overloading Sharing with Erstwhile Seller

BFHL has entered into an Agreement with HCC Concession Limited ("HCon"), under which BFHL has received an upfront lumpsum consideration and in lieu of that agreed to passthrough to HCon over the balance concession period, all amount that will be collected on account of overloading revenue net off 20% of overloading revenue retained for operation, routine and maintenance expenses incurred due to overloaded vehicles. This is estimated based on 80% of the projected overloading revenue.

D) Major Maintenance Expense

Under the terms of the concession agreement, the SPV is required to conduct periodic major maintenance, which consists of restoring the infrastructure to a specified level of serviceability at periodic intervals during the concession period or before it is handed over to NHAI. Major maintenance (MM) is expected to be incurred after every five years, depending on pavement conditions, traffic loads and concession requirements. It involves substantial expenditure on large-scale resurfacing, repair and replacement of road furniture, rehabilitation of structures and restoration of pavement quality.

The periodic overlay and resurfacing cycles require substantial expenditure, with major costs comprising of construction materials such as bitumen and aggregates. These costs are supported by purchase orders or work orders placed or proposed to be placed, based on road survey reports issued by independent field experts and the major maintenance strategy developed by the internal technical team.

For FY 2026, the MM cost reflects the price currently agreed with the contractor for MM work in progress, which is expected to be completed by end of FY 2026. As a result, no major maintenance expenditure is assumed over the balance Projected period, with the next maintenance cycle currently planned for FY 2031.

For the purposes of projected cash flow from operations, the projected periodic / major maintenance expense is considered in the year in which the actual outflow is expected to occur. The projections do not envisage any unanticipated expenses which may be incurred due to any unforeseen circumstances.

WPI escalation (on financial year basis) used for above projected expense is as under :

WPI assumptions	FY26	FY27	FY28	FY29
WPI (FY)	2.4%	5.00%	5.10%	4.90%

Note: WPI stands here for Wholesale Price Index for all commodities as published by the Ministry of Industry, Government of India

iii. Taxes

Current income tax is measured at the amount expected to be paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in India, being the jurisdiction in which the SPV operates and generates taxable income. Projected income tax expense is measured considering the impact of Finance Bill 2026.

As on year ended March 31, 2025, the SPV's has:

1. Carry forwarded business losses to the tune of INR 1,337 million;
2. Carry forwarded Unabsorbed Depreciation to the tune of INR 4 million;
3. Set off available on account of carry forwarded business losses and unabsorbed depreciation as per books of accounts for the calculation of Book Profit under MAT provisions to the tune of INR 958 million and 461 million respectively.

In addition, the SPV is also eligible for deduction under section 80IA of the Income Tax Act, 1961 for ten consecutive years, starting from FY 2024-25.

Considering the above the SPV is not projected to be liable for Income tax on its core operations. The SPV does have interest income on which tax is projected to be paid based on current tax rates.

iv. Changes in working capital

The SPV has considered September 2025 working capital as the base working capital, which is based on the actual changes for the period April 2025 to September 2025. For the balance concession period, it is assumed that since the entire collection of tolls is in cash and routine expenses are in cash or a credit period as available, the effective working capital deployed would be relatively low or negative in certain instances. Further, we believe the working capital is stable and not expected to vary materially over a period. Accordingly, changes in working capital are not significant and no impact of that has been considered in the projected cash flows from operating activities for the balance projected period.

v. Other assumptions

a) Acquisition of SPV and refinancing of external debt through InvIT loan been assumed on 1st April'2026 amounting to INR 6,534 million at the annual interest rate of 13.00% and expected repayment of INR 775 million in Aug'26, INR 2,810 million in Aug'27 and INR 1,440 million in Aug'28. The balance repayment has been assumed post March 31, 2029.

b) It has been assumed that no outflow on account of any litigation related matters including current pending litigations/contingent liabilities is expected to become due during the Projection Period.

c) On November 21, 2025, the Government of India notified the four Labour Codes — The Code on Wages, 2019, The Industrial Relations Code, The Code on Social Security, 2020, and The Occupational Safety, Health and Working Conditions Code, 2020 — consolidating 29 existing labour laws. Based on the draft rules and FAQs issued by the Ministry of Labour and Employment and best available information (including legal assessments and existing contractual arrangements) the SPV has estimated that these Codes have no material financial impact on the Projection Information. The SPV continues to monitor the finalisation of rules by the central/state government and other developments pertaining to labour codes and would provide appropriate accounting effect, if any, on the basis of such developments.

d) The taxation legislation or other applicable legislation is assumed to be same over the Projection Period as per the currently enacted or substantively enacted tax laws at the reporting date in India. The relevant tax exemptions, tax remissions, and preferential tax treatments granted remain valid and applicable and that the terms and conditions thereto are assumed to be complied with.

e) It has been assumed that no liability or liquidated damages on account of default in concession agreement shall devolve upon the SPV during the Projections Period.

f) The Projections are based on assumptions and are subject to several factors. Investors should be aware that future events, including actual traffic growth rates, cannot be predicted with any certainty and there may be deviations from the figures projected in the Projection Information.

g) No gain or loss has been considered on account of changes in foreign exchange rates.

These Projection Information has been adopted by the Board of Director of the Investment Manager on February 27, 2026.

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

S. B. BILLIMORIA
& CO. LLP

Chartered Accountants
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AUDITORS' REPORT ON PROJECTIONS OF REVENUE FROM OPERATIONS AND CASH FLOWS FROM OPERATING ACTIVITIES

To
The Board of Directors,
Cube Highways Fund Advisors Private Limited (the "Investment Manager") in its capacity as an Investment Manager of the Cube Highways Trust (the "Issuer" or the "Trust")
B-376, UGF, Nirman Vihar,
New Delhi-110092

1. We have examined, the accompanying statement of projections of revenue from operations and cash flows from operating activities and the underlying assumptions of Devanahalli Tollway Private Limited (the "SPV") in the Projection Information for the years ending March 31, 2026, 2027, 2028 and 2029 (collectively, hereinafter referred to as the "Projection Information"), in accordance with Standard on Assurance Engagement 3400, "The Examination of Prospective Financial Information", issued by the Institute of Chartered Accountants of India. The preparation and presentation of the projections including the underlying assumptions, set out in Note (b) to the Projection Information, is the responsibility of the Investment Manager and has been approved by the Board of Directors of the Investment Manager. Our responsibility is to examine the evidence supporting the assumptions (excluding the hypothetical assumption) and other information in the Projection Information. Our responsibility does not include verification of the accuracy of projections. Therefore, we do not vouch for the accuracy of the same.

2. These projections have been prepared for the proposed conversion of Cube Highways Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust (the "Offer") in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD2/P/CIR/2025/102 dated July 11, 2025, as amended ("InvIT Regulations"). The projections have been prepared using a set of assumptions that include hypothetical assumptions about future events and the Investment Manager's actions that are not necessarily expected to occur, as set out in Note (b) to the Projection Information and has been approved by the Board of Directors of the Investment Manager. Consequently, users are cautioned that this projection may not be appropriate for purposes other than that described above.

3. We have carried out our examination of the Projection Information on a test basis. Based on our examination of the evidence supporting the assumptions (excluding the hypothetical assumptions), nothing has come to our attention which causes us to believe that these assumptions do not provide a reasonable basis for the Projection Information.

4. Further, in our opinion, the Projection Information, read with the basis of preparation and notes therein, is properly prepared on the basis of the assumptions as set out in Note (b) to the Projection Information and consistent with the accounting policies, to the extent applicable, used for preparation of the historical financial statements of the SPV which are included in the draft offer document (the "DOD"). Even if the events anticipated under the hypothetical assumptions described above occur, actual results are still likely to be different from the projection since other anticipated events frequently do not occur as expected and the variation may be material.

5. This report is required by InvIT Regulations requiring the independent auditor to issue a report on the projections and is issued for the sole purpose of the Offer in accordance with the InvIT Regulations. Our work has not been carried out in accordance with auditing or other standards or practices accepted in jurisdictions outside India, including the United States of America, and accordingly should not be relied upon as if it had been carried upon in accordance with those standards and practices. US Securities regulations do not require profit forecast to be reported by a third party. This report should not be relied upon by prospective investors in the United States of America, including persons who are qualified institutional buyers as defined under Rule 144A under the United States Securities Act of 1933, as amended participating in the Issue. We accept no responsibility and deny any liability to any person who seeks to rely on this report and who may seek to make claim in connection with any offering of securities on the basis that they had acted in reliance on such information under the protections accorded by United States of America law and regulation.

6. This report is addressed to and is provided to enable the Investment Manager to include this report in the DOD in connection with the proposed offer for sale of Units of the Trust and that the Projection Information may not be meaningful for any other purpose.

For **S.B. BILLIMORIA & CO.LLP**
Chartered Accountants
(Firm's Reg. No. 101496W/ W-100774)

Robin Joseph
Partner
(Membership No. 512029)
(UDIN: 26512029XSOHWJ4606)

Location: Gurugram
Date: February 27, 2026

Projection Information of Devanahalli Tollway Private Limited

(All amounts in ₹ million unless otherwise stated)

Statement of Projection Information of Devanahalli Tollway Private Limited

Particulars		For the year ending March 31, 2026	For the year ending March 31, 2027	For the year ending March 31, 2028	For the year ending March 31, 2029
I.	Projected revenue from operations	3,592	3,962	4,281	4,668
II.	Projected cash flows from operating activities	2,426	2,963	3,218	2,894

See accompanying notes forming an integral part of the Projection Information

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

Notes to the Projection Information of Devanahalli Tollway Private Limited

a) General Information

Cube Highways Trust (the "Trust") was set up on December 7, 2021, as a contributory irrevocable trust under the provision of the Indian Trusts Act, 1882. The Trust was registered as an infrastructure investment trust under the Securities Exchange Board of India ("SEBI") (Infrastructure Investment Trust) Regulations, 2014, as amended read together with circulars and guidelines issued thereunder (the "SEBI InvIT Regulations") on April 5, 2022, having registration number IN/InvIT/22-23/0022. The registered office address of the Trust is B-376, UGF, Nirman Vihar, New Delhi - 110092, India.

The investment objective of the Trust is to carry on the activities of an infrastructure investment trust, as permissible under the SEBI InvIT Regulations. The Trust has been formed to invest in infrastructure assets primarily being in the road sector in India. All the Trust's Road projects are implemented and held through special purpose vehicle ("SPV").

Pursuant to the unitholder resolution of Cube Highways Trust (Trust) dated 20 February 2026, the Trust proposes to acquire from Cube Highways and Infrastructure V Pte. Ltd. (CH-V) 100% of the fully paid-up equity shares of Devanahalli Tollway Private Limited. In consideration thereof, the Trust proposes to issue and allot ordinary units of the Trust to CH-V.

b) Basis of preparation of Projection Information

The statements of projection of revenue from operations and projection of cash flows from operating activities of the proposed subsidiary for the financial years ending March 31, 2026, 2027, 2028 and 2029 along with the underlying assumptions and other explanatory information (the "Projection Information") have been compiled by Cube Highways Fund Advisors Private Limited in its capacity as an Investment Manager of the Trust solely for the purpose of inclusion in the Draft Offer Document (DOD) in connection with the proposed conversion of the Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, as amended ("SEBI InvIT Regulations") (hereinafter referred to as the "proposed offer of units of the Trust").

The Projection Information have been prepared based on the accounting policies used for preparation of the historical financial statements of the proposed subsidiary, together with the effect of Qualifications, Emphasis of Matters and Other Comments in the Audit Report on Historical Financial Statements in relation to the Projection Information summarised below, as required by the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended including circulars and guidelines issued thereunder ("SEBI InvIT Regulations"), which are prepared in accordance with accounting principles of Indian Accounting Standards ("Ind AS") as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended prescribed under Section 133 of the Companies Act, 2013 read with SEBI InvIT Regulations and the Guidance Note issued by the Institute of Chartered Accountants of India. Projected cash flow from operating activities have been calculated using the direct method under Ind AS 7 - Statement of Cash Flows and is computed by deducting the projected operating expenses and income taxes from the projected revenue from operations and adjusted for working capital changes and projected non-cash expenses (if any). Projected cash flow from operating activities do not include any items pertaining to financing or investing in nature. Though the aforesaid Projections are prepared under the Ind AS framework, they do not provide for all the detailed disclosures as required under Ind AS.

The Projection Information are presented in Indian Rupees which is also the functional currency of the Trust. All values are rounded to the nearest million, unless otherwise indicated.

The proposed subsidiary follows March 31 as its accounting year end. Accordingly, the Projection Information are prepared for the financial years ending March 31, 2026, March 31, 2027, March 31, 2028, and March 31, 2029 ('Projections Period'). However, the assumed date of acquisition (April 01, 2026) may be postponed and accordingly, the actual result in the first financial period of the Trust post-acquisition of the Proposed Subsidiary may be different from the numbers disclosed in the Projection Information. For the year ending March 31, 2026, the Projection information considers actual financial information upto September 30, 2025 which is the latest historical period available for preparation of the Projection Information.

It is clarified that the Projection Information have been prepared using a combination of best-estimate assumptions reflecting management's expectations of future events and actions as at that date.

The Projections have been prepared based on the significant assumptions stated in Note d) below. The Projection Information contain forecasts and projections that relate to future events including hypothetical assumptions, which are, by their nature, subject to significant risks and uncertainties. Events, circumstances and hypothetical assumptions relating to future events and actions that may or may not materialise. Even if the events anticipated under the hypothetical assumptions described in the Projection Information occur, actual results are still likely to be different from those stated in the Projection Information since other anticipated events frequently do not occur as expected and the variation may be material. The actual results may therefore differ materially from those forecasted and projected.

Summary of Qualifications, Emphasis of Matters and Other Comments in the Audit Report on Historical Financial Statements used as base for the preparation of the Projection Information

A. There are no audit qualifications in the auditor report for the year ended March 31, 2025.

B. There are no Emphasis of Matter paragraphs in the auditor report for the year ended March 31, 2025.

C. In addition to the audit opinion on the financial statements, the auditors are required to comment upon the matters included in the Companies (Auditor's Report) Order, 2020 ("the CARO 2020 Order") issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013 on the Financial Statements as at and for the year ended March 31, 2025.

Certain statements/comments included in the CARO in in the Auditor's Report are reproduced below in respect of the financial statements presented, along with its impact, if any, on the Projection Statement:

i.) Clause (iii)(c) of Para 3 of the CARO, 2020 Order for FY 2024-25

"In respect of a loan granted to the group company the schedule of repayment of principal and payment of interest has not been stipulated in the agreement. Hence, we are unable to make a specific comment on the regularity of repayment of principal and payment of interest in respect of such loan."

The above matter does not have any impact on the Projection Information.

ii.) Clause (vii)(b) of Para 3 of the CARO, 2020 Order for FY 2024-25

"According to records of the Company, the dues of income-tax, sales-tax, duty of custom, duty of excise, value added tax, cess and other statutory dues on account of dispute, are as follow

Name of Statute	*Nature of the Dues*	*Amount (Rs. in lakhs)*	*Amount paid under protest (Rs. in lakhs)*	*Period to which the amount relates*	*Forum where the dispute is pending*
Income Tax Act, 1961	*Income tax*	*16.57*	-	*FY - 2011-12 AY – 2012-13*	*Commissioner of Income Tax Appeals (CIT A)*

Income Tax Act, 1961	*Income tax*	*402.15*	*86.06*	*FY - 2011-12 AY – 2012-13*	*Commissioner of Income Tax Appeals (CIT A)*
Income Tax Act, 1961	*Income tax*	*1,034.35*	*-*	*FY - 2011-12 AY – 2012-13*	*Commissioner of Income Tax Appeals (CIT A)"*

The above matters are currently sub judice and continues to remain outstanding as on date and will be updated upon final resolution of the litigation. These matters currently do not have any impact on the Projection Information.

c) Summary of Projections

All figures are in INR million

Particulars	FY 26			FY27	FY28	FY29
	Actual (April'25 to September'25)	Projected (October'25 to March'26)	Total			
I. Projected revenue from operations	**1,747**	**1,845**	**3,592**	**3,962**	**4,281**	**4,668**
Projected Expenses:						
Operational Expenses	(159)	(196)	(355)	(390)	(416)	(445)
Routine Maintenance expenses	(26)	(16)	(42)	(56)	(59)	(46)
Project Management Fees	-	-	-	(89)	(96)	(105)
Upfront Improvement works	-	(430)	(430)	-	-	-
Major Maintenance Expense	-	-	-	-	-	(750)
Taxes	(214)	(138)	(352)	(464)	(492)	(428)
Working Capital Changes	13	-	13			
II. Projected Cash flow from operations	**1,361**	**1,065**	**2,426**	**2,963**	**3,218**	**2,894**

d) Significant assumptions

The Projection Information have been prepared based on the significant assumptions including hypothetical assumptions summarised below. The Investment Manager considers the assumptions to be appropriate and reasonable as at the date of the reporting. However, the investors should consider these assumptions as well as the Projection Information and make their own assessment of the future performance of the SPV.

i. Revenue from operations:

The SPV revenue from operations primarily consists of income from toll collection.

Toll income:

The Investment Manager has obtained reports from an independent third-party traffic consultant i.e. Crisil Intelligence ("Traffic Consultant") in assessment of the assumptions, market fundamentals, industry drivers and outlook including the potential impact of loss of revenue arising from alternative diversion routes that may affect the traffic on the SPV's road, among other factors, in connection with the estimation of the projected revenue from operations. These assumptions and factors have been set out in the Traffic Consultant's report.

The revenue projection for the year ending March 31, 2026 is derived from annualizing the base traffic data of 6 months (April'25 to September'25) as adjusted for seasonality and tariff rates for the financial year 2025-26. As per Concession Agreement, toll rates shall increase by fixed base rate increase of 3% plus the impact of 40% of the change in WPI(December).

Key variables for the balance projection period includes traffic growth and WPI, the details of the assumptions are as set forth below:

Assumptions	For the year ending March 31, 2027	For the year ending March 31, 2028	For the year ending March 31, 2029
Traffic growth rate (Note 1)	6.9%	2.8%	4.5%
WPI (Dec) (Note 2)	2.40%	5.00%	5.10%

Notes

1. Traffic growth rate is based on average Passenger Car Units (PCU)) growth rate for the toll plaza (post-diversion)
2. WPI stands here for Wholesale Price Index for all commodities as published by the Ministry of Industry, Government of India.

ii. Projected Expenses:

Major components of projected expenses are as under:

A) Operational and Routine Maintenance Expense

The operational and routine maintenance cost includes routine maintenance, manpower costs and other operational expenses, including, but not limited to, road and site work expenses, and other toll operations cost.

In forecasting these costs, the SPV considers the report provided by the technical consultant i.e. M/s Knight Frank India (KFI) for the SPV (the "Technical Report"). This is further adjusted to reflect the expected operational and routine maintenance costs based on management's assessment ("Base cost").. Refer summary below:

Particulars	OPEX FY 26 (in Mn)	RM FY 26 (in Mn)
Total Operational Expense (OPEX) / Routine Maintenance (RM) Expense as per Technical Report	131	27
Add: Additional Expense as per Management's Estimate	224	26
Base Cost for FY26	**355**	**53**

The following assumptions have been made regarding Operational and Routine Maintenance:

Particulars	Description
Operational Expense (OPEX)	• Operational Expenses: Base Cost Escalation at 1.4 times of WPI of respective year. • Insurance Expenses: Escalation at WPI;
Routine Maintenance (RM) Expenses	• Base Cost Escalation at WPI of the respective year • RM savings during year of Upfront Improvement Work (FY 2026) / Major Maintenance (FY 2029): 25% • RM savings during Defect Liability Period in the following year of completion of Major Maintenance: 25%

B) Project Manager Fees

The Project Manager Fees are mainly projected based on the terms and conditions of the relevant agreements and / or based on Management's experience and judgement. These expenses consist of below:

i) Project manager fee

Based on the agreement to be entered with Cube Highways and Transportation Assets Advisors Private Limited (Project Manager) in relation to the specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

The Project Manager is entitled to a Project Manager fee to be calculated @ 1.55% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

ii) Professional Consultancy Charges

Based on the Expert Services Agreement to be entered with Cube Highways Technologies Private Limited in relation to specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

These charges are calculated @ 0.35% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

C) Upfront Improvement Works

Additionally, a one-time improvement cost has been estimated for the SPV in FY 2026. As CH-V has acquired this asset in FY26, a detailed technical assessment has been carried out during the takeover of SPV. During the assessment, there are certain deficiency on the project road related to structures repair works, safety improvements and initial maintenance works which required to be carried out.

These costs may not be fully incurred by the end of FY 2026 and could extend into FY 2027 depending on the timing of execution of such works.

D) Major Maintenance Expense

Under the terms of the concession agreement, the SPV is required to conduct periodic major maintenance, which consists of restoring the infrastructure to a specified level of serviceability at periodic intervals during the concession period or before it is handed over to NHAI. Major maintenance (MM) is expected to be incurred after every five years, depending on pavement conditions, traffic loads and concession requirements. It involves substantial expenditure on large-scale resurfacing, repair and replacement of road furniture, rehabilitation of structures and restoration of pavement quality

Major maintenance costs have been derived based on the road surveys and studies conducted by the technical consultant i.e. M/s Knight Frank India (KFI) and in accordance with the assumptions and estimates set out in the technical report (the "Technical Report") provided by the technical consultant for the SPV. It is further adjusted for escalations and on account of any additional cost estimate based on management's assessment. The next major maintenance cycle is planned in FY 2029. Refer to the reconciliation of the same:

Particulars	FY 29 (in Mn)
Major Maintenance Expense as per Technical Report (Without Escalation) (A)	657
Cost estimated for additional measures around traffic and work zone safety	15
WPI impact on the non-bitumen expense out of above (75% of A)	78
Major Maintenance Expense (With Escalation)	**750**

For the purposes of projected cash flow from operations, the projected periodic / major maintenance expense is considered in the year of actual outflow is expected to occur. The projections do not envisage any unanticipated expenses which may be incurred due to any unforeseen circumstances.

The following assumptions have been made regarding the major maintenance expense:

Particulars	Description
Major Maintenance (MM Expense)	• As per Technical Report • Escalation at WPI for Non bitumen expenses (75%). No escalations considered for the bitumen cost (25%).

WPI escalation (on financial year basis) used for operational and routine maintenance expense is as under :

WPI assumptions	FY26	FY27	FY28	FY29
WPI (FY)	2.4%	5.00%	5.10%	4.90%

Note: WPI stands here for Wholesale Price Index for all commodities as published by the Ministry of Industry, Government of India

iii. Taxes

Current income tax is measured at the amount expected to be paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in India, being the jurisdiction in which the SPV operates and generates taxable income. Projected income tax expense is measured considering the impact of Finance Bill 2026.

The SPV is eligible for deduction under section 80IA of the Income Tax Act, 1961 for ten consecutive years, starting from FY 2017-18. The projected income tax expense has been calculated considering the company will opt out of tax holiday period in FY 26-27.

As on year ended March 31, 2025, the SPV has:

Carry forwarded MAT Credit to the tune of INR 579 million.

iv. Changes in working capital

The SPV has considered September 2025 working capital as the base working capital, which is based on the actual changes for the period April 2025 to September 2025. For the balance concession period, it is assumed that since the entire collection of tolls is in cash and routine expenses are in cash or a credit period as available, the effective working capital deployed would be relatively low or negative in certain instances. Further, we believe the working capital is stable and not expected to vary materially over a period. Accordingly, changes in working capital are not significant and no impact of that has been considered on the projected cash flows from operating activities for the balance projected period.

v. Other assumptions

a) Acquisition of SPV and refinancing of external debt through InvIT loan been assumed on 1st April'2026 amounting to INR 4,632 Mn at the annual interest rate of 13.20% and expected repayment of INR 653 Mn in Sep'27. The balance repayment has been assumed post March 31, 2029.

b) It has been assumed that no outflow on account of any litigation related matters including current pending litigations/contingent liabilities is expected to become due during the Projection Period.

c) On November 21, 2025, the Government of India notified the four Labour Codes — The Code on Wages, 2019, The Industrial Relations Code, The Code on Social Security, 2020, and The Occupational Safety, Health and Working Conditions Code, 2020 — consolidating 29 existing labour laws. Based on the draft rules and FAQs issued by the Ministry of Labour and Employment and best available information (including legal assessments and existing contractual arrangements) the SPV has estimated that these Codes have no material financial impact on the Projection Information. The SPV continues to monitor the finalisation of rules by the central/state government and other developments pertaining to labour codes and would provide appropriate accounting effect, if any, on the basis of such developments.

d) The taxation legislation or other applicable legislation is assumed to be same over the Projection Period as per the currently enacted or substantively enacted tax laws at the reporting date in India. The relevant tax exemptions, tax remissions, and preferential tax treatments granted remain valid and applicable and that the terms and conditions thereto are assumed to be complied with.

e) It has been assumed that no liability or liquidated damages on account of default in concession agreement shall devolve upon the SPV during the Projections Period.

f) The Projections are based on assumptions and are subject to several factors. Investors should be aware that future events, including actual traffic growth rates, cannot be predicted with any certainty and there may be deviations from the figures projected in the Projection Information.

g) No gain or loss has been considered on account of changes in foreign exchange rates.

These Projection Information has been adopted by the Board of Director of the Investment Manager on February 27, 2026

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

S. B. BILLIMORIA
& CO. LLP

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AUDITORS' REPORT ON PROJECTIONS OF REVENUE FROM OPERATIONS AND CASH FLOWS FROM OPERATING ACTIVITIES

To
The Board of Directors,
Cube Highways Fund Advisors Private Limited (the "Investment Manager") in its capacity as an Investment Manager of the Cube Highways Trust (the "Issuer" or the "Trust")
B-376, UGF, Nirman Vihar,
New Delhi-110092

1. We have examined, the accompanying statement of projections of revenue from operations and cash flows from operating activities and the underlying assumptions of Chenani Nashri Tunnelway Limited (the "SPV") in the Projection Information for the years ending March 31, 2026, 2027, 2028 and 2029 (collectively, hereinafter referred to as the "Projection Information"), in accordance with Standard on Assurance Engagement 3400, "The Examination of Prospective Financial Information", issued by the Institute of Chartered Accountants of India. The preparation and presentation of the projections including the underlying assumptions, set out in Note (b) to the Projection Information, is the responsibility of the Investment Manager and has been approved by the Board of Directors of the Investment Manager. Our responsibility is to examine the evidence supporting the assumptions (excluding the hypothetical assumption) and other information in the Projection Information. Our responsibility does not include verification of the accuracy of projections. Therefore, we do not vouch for the accuracy of the same.

2. These projections have been prepared for the proposed conversion of Cube Highways Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust (the "Offer") in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD2/P/CIR/2025/102 dated July 11, 2025, as amended ("InvIT Regulations"). The projections have been prepared using a set of assumptions that include hypothetical assumptions about future events and the Investment Manager's actions that are not necessarily expected to occur, as set out in Note (b), to the Projection Information and has been approved by the Board of Directors of the Investment Manager. Consequently, users are cautioned that this projection may not be appropriate for purposes other than that described above.

3. We have carried out our examination of the Projection Information on a test basis. Based on our examination of the evidence supporting the assumptions (excluding the hypothetical assumptions), nothing has come to our attention which causes us to believe that these assumptions do not provide a reasonable basis for the Projection Information.

4. Further, in our opinion, the Projection Information, read with the basis of preparation and notes therein, is properly prepared on the basis of the assumptions as set out in Note (b) to the Projection Information and consistent with the accounting policies, to the extent applicable, used for preparation of the historical financial statements of the SPV which are included in the draft offer document (the "DOD"). Even if the events anticipated under the hypothetical assumptions described above occur, actual results are still likely to be different from the projection since other anticipated events frequently do not occur as expected and the variation may be material.

5. This report is required by InvIT Regulations requiring the independent auditor to issue a report on the projections and is issued for the sole purpose of the Offer in accordance with the InvIT Regulations. Our work has not been carried out in accordance with auditing or other standards or practices accepted in jurisdictions outside India, including the United States of America, and accordingly should not be relied upon as if it had been carried upon in accordance with those standards and practices. US Securities regulations do not require profit forecast to be reported by a third party. This report should not be relied upon by prospective investors in the United States of America, including persons who are qualified institutional buyers as defined under Rule 144A under the United States Securities Act of 1933, as amended participating in the Issue. We accept no responsibility and deny any liability to any person who seeks to rely on this report and who may seek to make claim in connection with any offering of securities on the basis that they had acted in reliance on such information under the protections accorded by United States of America law and regulation.

6. This report is addressed to and is provided to enable the Investment Manager to include this report in the DOD in connection with the proposed offer for sale of Units of the Trust and that the Projection Information may not be meaningful for any other purpose.

For **S.B. BILLIMORIA & CO.LLP**
Chartered Accountants
(Firm's Reg. No. 101496W/ W-100774)

Robin Joseph
Partner
(Membership No. 512029)
(UDIN: 26512029DWQDSZ9837)

Location: Gurugram
Date: February 27, 2026

Projection Information of Chenani Nashri Tunnelway Limited

(All amounts in ₹ million unless otherwise stated)

Statement of Projection Information of Chenani Nashri Tunnelway Limited

Particulars		For the year ending March 31, 2026	For the year ending March 31, 2027	For the year ending March 31, 2028	For the year ending March 31, 2029
I.	Projected revenue from operations	3,590	2,891	2,612	2,326
II.	Projected cash flows from operating activities	4,938	5,606	5,503	4,483

See accompanying notes forming an integral part of the Projection Information

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

Notes to the Projection Information of Chenani Nashri Tunnelway Limited

a) General Information

Cube Highways Trust (the "Trust") was set up on December 7, 2021, as a contributory irrevocable trust under the provision of the Indian Trusts Act, 1882. The Trust was registered as an infrastructure investment trust under the Securities Exchange Board of India ("SEBI") (Infrastructure Investment Trust) Regulations, 2014, as amended read together with circulars and guidelines issued thereunder (the "SEBI InvIT Regulations") on April 5, 2022, having registration number IN/InvIT/22-23/0022. The registered office address of the Trust is B-376, UGF, Nirman Vihar, New Delhi - 110092, India.

The investment objective of the Trust is to carry on the activities of an infrastructure investment trust, as permissible under the SEBI InvIT Regulations. The Trust has been formed to invest in infrastructure assets primarily being in the road sector in India. All the Trust's Road projects are implemented and held through special purpose vehicle ("SPV").

Pursuant to the unitholder resolution of Cube Highways Trust (Trust) dated 20 February 2026, the Trust proposes to acquire from Cube Highways and Infrastructure II Pte. Ltd. (CH-II) upto 100% of the fully paid-up equity shares of Chenani Nashri Tunnelway Limited. In consideration thereof, the Trust proposes to issue and allot ordinary units of the Trust to CH-II.

b) Basis of preparation of Projection Information

The statements of projection of revenue from operations and projection of cash flows from operating activities of the proposed subsidiary for the financial years ending March 31, 2026, 2027, 2028 and 2029 along with the underlying assumptions and other explanatory information (the "Projection Information") have been compiled by the Cube Highways Fund Advisors Private Limited in its capacity as an Investment Manager of the Trust solely for the purpose of inclusion in the Draft Offer Document (DOD) in connection with the proposed conversion of the Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, as amended ("SEBI InvIT Regulations") (hereinafter referred to as the "proposed offer of units of the Trust"). Therefore, the Projection Information should not be used or relied upon for any purpose other than described above.

The Projection Information have been prepared based on the accounting policies used for preparation of the historical financial statements of the proposed subsidiary, together with the effect of Qualifications, Emphasis of Matters and Other Comments in the Audit Report on Historical Financial Statements in relation to the Projection Information summarised below, as required by the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended including circulars and guidelines issued thereunder ("SEBI InvIT Regulations"), which are prepared in accordance with accounting principles of Indian Accounting Standards ("Ind AS") as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended prescribed under Section 133 of the Companies Act, 2013 read with SEBI InvIT Regulations and the Guidance Note issued by the Institute of Chartered Accountants of India. Projected cash flow from operating activities have been calculated using the direct method under Ind AS 7 - Statement of Cash Flows and is computed by deducting the projected expenses and income taxes from the projected revenue from operations and adjusted for working capital changes and projected non-cash expenses (if any). Projected cash flow from operating activities do not include any items pertaining to financing or investing in nature. Though the aforesaid Projections are prepared under the Ind AS framework, they do not provide for all the detailed disclosures as required under Ind AS.

The Projection Information are presented in Indian Rupees which is also the functional currency of the Trust. All values are rounded to the nearest million, unless otherwise indicated.

The proposed subsidiary follows March 31 as its accounting year end. Accordingly, the Projection Information are prepared for the financial years ending March 31, 2026, March 31, 2027, March 31, 2028, and March 31, 2029 ('Projections Period'). However, the assumed date of acquisition (April 01, 2026) may be postponed and accordingly, the actual result in the first financial period of the Trust post-acquisition of the proposed subsidiary may be different from the numbers disclosed in the Projection Information. For the year ending March 31, 2026 the Projection information considers actual financial information upto September 30, 2025 which is the latest historical period available for preparation of the Projection Information.

It is clarified that the Projection Information have been prepared using a combination of best-estimate assumptions reflecting management's expectations of future events and actions as at that date.

The Projections have been prepared based on the significant assumptions stated in Note d) below. The Projection Information contain forecasts and projections that relate to future events including hypothetical assumptions, which are, by their nature, subject to significant risks and uncertainties. Events, circumstances and hypothetical assumptions relating to future events and actions that may or may not materialise. Even if the events anticipated under the hypothetical assumptions described in the Projection Information occur, actual results are still likely to be different from those stated in the Projection Information since other anticipated events frequently do not occur as expected and the variation may be material. The actual results may therefore differ materially from those forecasted and projected.

Summary of Qualifications, Emphasis of Matters and Other Comments in the Audit Report on Historical Financial Statements used as base for the preparation of the Projection Information

The Statutory auditor's report dated August 18, 2025, on the financial statements of CNTL as at and for the year ended March 31, 2025, issued by the statutory auditors, i.e. M/s Gianender & Associates, Chartered Accountants, contains certain qualifications, emphasis of matter paragraphs and other comments. In accordance with applicable regulatory requirements, the Investment Manager and management of CNTL have assessed the implications of such matters on the Projection Information included in this Draft Offer Document.

The following sets out management's evaluation of the relevance and, if any, the implication of such matters on the Projection Information:

Description	Reference	Implications on the Projection Information
Qualification in the Audit Report: Matter related to impairment loss recognised in the carrying amount of "Receivable under Service Concession Arrangements".	Refer Note 1 of Annexure 1 to the Projection Information.	The audit qualification relates to the impairment loss recognised during FY 2018–19 in respect of the carrying value of the "Receivable under Service Concession Arrangements", representing the right to receive annuity cash flows from NHAI (the "Financial Asset"), where the statutory auditor is of the view that the recognition of impairment is not in accordance with the applicable accounting standards and accounting policy of the Company. The Investment Manager and management of the Company have reassessed the projected revenue from operations without giving effect to the above impairment adjustment recognised in FY 2018–19 to comply with the applicable accounting standards and accounting policy of the Company. Further, the Investment Manager and management of the Company have reassessed the recoverable value of the Financial Asset as on September 30, 2025 and is of the view that no impairment adjustment to the carrying value of the Financial Asset is required.

Description	Reference	Implications on the Projection Information
Emphasis of Matter Paragraph a): Matter related to accrual of interest, default interest, and other similar charges not being accounted for after October 15, 2018.	Refer Note 2 of Annexure 1 to the Projection Information.	Considering the underlying liability was settled in November 2025, the Investment Manager and management of the Company concluded that there is no implication of this matter on the Projection Information.
Emphasis of Matter Paragraph b): matter related to non-compliance with certain provisions of the Companies Act, 2013.	Refer Note 3 of Annexure 1 to the Projection Information.	This matter has been evaluated by the Investment Manager and management of the Company and concluded that there is no implication of this matter on the Projection Information.
Emphasis of Matter Paragraph c): matter related to the investigation initiated by the Serious Fraud Investigation Officer.	Refer Note 4 of Annexure 1 to the Projection Information.	This matter has been evaluated by the Investment Manager and management of the Company and concluded that there is no implication of this matter on the Projection Information.
Material Uncertainty Related to Going Concern: matter related to Going Concern	Refer Note 5 of Annexure 1 to the Projection Information.	The matter has been evaluated by the Investment Manager and management of the Company and concluded that, as on the date of the Projection Information, there is no material uncertainty on the Company's ability to continue as a going concern. Accordingly, no adjustment is required in the Projection Information.
Report as per Paragraphs 3 and 4 of the Companies (Auditor's Report) Order, 2020 ("the CARO 2020 Order"	Refer Note 6 of Annexure 1 to the Projection Information for the following matters included in the CARO 2020 Order: Matter 1 related to unpaid statutory dues: Clause (vii)(a) of Para 3 of the CARO, 2020 Order for FY 2024-25 Matter 2 related to disputed statutory dues: Clause (vii)(b) of Para 3 of the CARO, 2020 Order for 2024-25 Matter 3 related to default in repayment of loans or other borrowings: Clause ix(a) of Para 3 of the CARO, 2020 Order for 2024-25 Matter 4 related to material uncertainty related to Going Concern: Clause xix of Para 3 of the CARO, 2020 Order for 2024-25	This matter has been evaluated by the Investment Manager and management of the Company and concluded that there is no implication of this matter on the Projection Information.

Description	Reference	Implications on the Projection Information
	Matter 5 related to unspent CSR amount: Clause xx(a)of Para 3 of the CARO, 2020 Order for 2024-25	

Note: The Projection Information has been prepared after considering the matters referred to in the auditor's report and reflects management's current assumptions, estimates and expectations regarding future performance.

c) Summary of Projections

All figures are in INR million

Particulars	Actual (April'25 to September'25)	Projected (October'25 to March'26)	Total FY26	FY27	FY28	FY29
I. Projected Revenue from Operations	**1,485**	**2,105**	**3,590**	**2,891**	**2,612**	**2,326**
Projected Expenses:						
Operational Expenses	(445)	(372)	(817)	(517)	(551)	(592)
Routine Maintenance Expense	-	-	-	(85)	(59)	(53)
Project Manager Fees	-	-	-	(142)	(142)	(142)
Upfront Improvement Works	-	(474)	(474)			
Major Maintenance Expense	-	(132)	(132)	-	-	-
Taxes	-		-	-	(95)	(1,080)
Working Capital Changes (Note 1)	1,701	1,070	2,771	3,459	3,738	4,024
II.Projected Cash Flow from Operations	**2,741**	**2,197**	**4,938**	**5,606**	**5,503**	**4,483**

Note 1: Working capital adjustments in the projected statements represent difference between cash revenue and revenue recognised by the SPV as per Appendix D to Ind AS 115 "Revenue from Contracts with Customers- Service Concession Arrangements".

d) Significant assumptions

The Projection Information have been prepared based on the significant assumptions including hypothetical assumptions summarised below. The Investment Manager considers the assumptions to be appropriate and reasonable as at the date of the reporting. However, the investors should consider these assumptions as well as the Projection Information and make their own assessment of the future performance of the Trust.

i Revenue from operations:

The SPV revenue from operations primarily consists of revenue from operations and maintenance services and overlay services and finance income:

CNTL has the right to receive fixed annuity payments from NHAI during the concession period and has adopted financial asset model as prescribed by Appendix D to Ind AS 115 "Revenue from Contracts with Customers"- Service Concession Arrangements". The key inputs of the financial asset model comprise of revenue inflows (annuity), projected expenses to earn the revenue, estimations on cost to build and maintain the asset, interest obligations based on financing pattern and other operational efficiencies. These inputs are based on existing circumstances and management judgement / assumption on the future expectations based on current situations. Judgements include estimates on changes in interest rates, cost inflation, government policy changes, etc. which are reviewed periodically by the management.

ii Projected Expenses:

Major components of projected expenses are as under:

A) Operational and Routine Maintenance Expense

The operational and routine maintenance cost includes routine maintenance, manpower costs and other operational expenses, including, but not limited to, road and site work expenses, and other toll operations cost.

For FY 2026, the actual and projected operational expense (OPEX) and Routine Maintenance (RM) expense is based on the existing composite O&M contract entered by the SPV. Since it is a composite contract, the entire amount is recognized as Operational Expense.

In forecasting costs for FY 2027, the SPV considers the report provided by the technical consultant i.e. M/s Knight Frank India (KFI) for the SPV (the "Technical Report"). This is further adjusted to reflect the expected operational and routine maintenance costs required to align the target assets with the Trust's operational standards based on management's assessment ("Base Cost for FY 2026"), with further adjustments for escalation to arrive at expected expense for the respective years. Refer summary below:

Particulars	OPEX FY 27 (in Mn)	RM FY 27 (in Mn)
Total Operational Expense (OPEX) / Routine Maintenance (RM) Expense as per Technical Report	311	23
Add: Additional Expense as per Management's Estimate	174	14
Base Cost for FY 2027	**485**	**37**
WPI impact considered	32	1
Incremental RM Cost from FY 2027 onwards*	-	47
Total Expected Cost for FY 2027	**517**	**85**

*Incremental RM Cost relating to the MEP (Mechanical, Electrical, and Plumbing) system life cycle cost based on management's internal assessment has been considered at INR 47 Mn, INR 18 Mn and INR 11 Mn for FY 2027, FY 2028 and FY 2029, respectively.

The following assumptions have been made regarding Operational and Routine Maintenance:

Particulars	Description
Operational Expense (OPEX)	• Operational Expenses: Base Cost Escalation at 1.4 times of WPI of respective year. • Insurance Expenses: Escalation at WPI;
Routine Maintenance (RM) Expenses	• Base Cost Escalation at WPI of the respective year • Additional MEP Cost considered from FY 27 onwards.

B) Project Manager Fees

The Project Manager Fees are mainly projected based on the terms and conditions of the relevant agreements and / or based on Management's experience and judgement. These expenses consist of below:

i) Project manager fee

Based on the agreement to be entered with Cube Highways and Transportation Assets Advisors Private Limited (Project Manager) in relation to the specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

The Project Manager is entitled to a Project Manager fee to be calculated @ 1.55% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

ii) Professional Consultancy Charges

Based on the Expert Services Agreement to be entered with Cube Highways Technologies Private Limited in relation to specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

These charges are calculated @ 0.35% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

C) Upfront Improvement Works

Additionally, a one-time improvement cost has been estimated for the SPV in FY 2026. As CH-II acquired this asset in FY26, a detailed technical assessment has been carried out during the takeover of SPV. During the assessment, there are certain deficiency on the project road related to structures repair works, safety improvements and initial maintenance works which required to be carried out.

These costs may not be fully incurred by the end of FY 2026 and could extend into FY 2027 depending on the timing of execution of such works.

D) Major Maintenance Expense

Under the terms of the concession agreement, the SPV is required to conduct periodic major maintenance, which consists of restoring the infrastructure to a specified level of serviceability at periodic intervals during the concession period or before it is handed over to NHAI. Major maintenance (MM) is expected to be incurred after every five years, depending on pavement conditions, traffic loads and concession requirements. It involves substantial expenditure on large-scale resurfacing, repair and replacement of road furniture, rehabilitation of structures and restoration of pavement quality

Major maintenance costs have been derived based on the road surveys and studies conducted by the technical consultant i.e. M/s Knight Frank India (KFI) and in accordance with the assumptions and estimates set out in the technical report (the "Technical Report") provided by the technical consultant for the SPV. It is further adjusted on account of any additional cost estimate based on management's assessment. The next major maintenance cycle is planned in FY 2026 and then FY 2031. Refer summary below:

Particulars	FY 26 (in Mn)
Major Maintenance Expense as per Technical Report (A)	123
Additional Cost estimated considering the geography and nature of the project	9
Major Maintenance Expense	**132**

For the purposes of projected cash flow from operations, the projected periodic / major maintenance expense is considered in the year of actual outflow is expected to occur. The projections do not envisage any unanticipated expenses which may be incurred due to any unforeseen circumstances.

The following assumptions have been made regarding the major maintenance expense:

Particulars	Description
Major Maintenance (MM Expense)	• As per Technical Report • Escalation at WPI for Non bitumen expenses. No escalations considered for the bitumen cost. • Current price of bitumen is considered for unit rates calculation for FY 2026.

WPI escalation (on financial year basis) used for all the above projected expense is as under :

WPI assumptions	FY26	FY27	FY28	FY29
WPI (FY)	2.4%	5.00%	5.10%	4.90%

Note: WPI stands here for Wholesale Price Index for all commodities as published by the Ministry of Industry, Government of India.

iii Taxes

Current income tax is measured at the amount expected to be paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in India, being the jurisdiction in which the SPV operates and generates taxable income. Projected income tax expense is measured considering the impact of Finance Bill 2026.

The SPV has opted for taxation under section 115BAA of the Income tax Act, 1961, under which it is liable to pay tax at the effective rate of 25.168%.

As at year ended March 31, 2025, the SPV's has:

Carry forwarded Unabsorbed Depreciation to the tune of INR 5,282 million.

iv Changes in working capital

The SPV has considered September 2025 working capital as the base working capital, which is based on the actual changes for the period April 2025 to September 2025. For balance projection period, the SPV has considered working capital adjustment as the difference of revenue recognised in accordance with Appendix D to Ind AS 115 "Revenue from Contracts with Customers- Service Concession Arrangements" and the actual annuity receipts as per its contractual arrangement with the NHAI. Other working capital changes are not significant and no impact of that has been considered in the projected cash flows from operating activities for the projected period.

v Other assumptions

a) Acquisition of SPV and refinancing of external debt through InvIT loan been assumed on 1st April'2026 amounting to INR 15,213 Mn at the annual interest rate of 12.00% and expected repayment of INR 3,354 Mn in Aug'26, INR 3,725 Mn in Aug'27 and INR 3,680 Mn in Aug'28. The balance repayment has been assumed post March 31, 2029.

b) It has been assumed that no outflow on account of any litigation related matters including current pending litigations/contingent liabilities is expected to become due during the Projection Period.

c) On November 21, 2025, the Government of India notified the four Labour Codes — The Code on Wages, 2019, The Industrial Relations Code, The Code on Social Security, 2020, and The Occupational Safety, Health and Working Conditions Code, 2020 — consolidating 29 existing labour laws. Based on the draft rules and FAQs issued by the Ministry of Labour and Employment and best available information (including legal assessments and existing contractual arrangements) the SPV has estimated that these Codes have no material financial impact on the Projection Information. The SPV continues to monitor the finalisation of rules by the central/state government and other developments pertaining to labour codes and would provide appropriate accounting effect, if any, on the basis of such developments.

d) There will be no material change in taxation legislation or other applicable legislation.

e) It has been assumed that no liability or liquidated damages on account of default in concession agreement shall devolve upon the Project SPV during the Projections Period.

f) The Projections are based on assumptions and are subject to several factors. Investors should be aware that future events, cannot be predicted with any certainty and there may be deviations from the figures projected in the Projection Information.

g) No gain or loss has been considered on account of changes in foreign exchange rates.

These Projection Information has been adopted by the Board of Director of the Investment Manager on February 27, 2026

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

Annexure 1

Summary of Qualifications, Emphasis of Matters and Other Comments in the Audit Report on Historical Financial Statements of CNTL used as base for the preparation of the Projection Information

Note 1

Qualifications in the Audit Report

The Basis of Qualified Opinion in the Auditor's report dated August 18, 2025 on the financial statements for the year ended March 31, 2025 issued by the statutory auditors i.e. M/s Gianender & Associates, Chartered Accountants were modified and included the following qualification:

Basis of Qualified Opinion

"During the FY 2018-19, the Company had recognized and during the year continues to recognize thereafter impairment loss of Rs. 7,107.98 Mn. by comparing the carrying amount of the receivables under the head 'Receivable under Service Concession Arrangements' that were measured at amortized cost and bid received from third party for acquisition of entire Company. Thus, the Company had in the FY 2018-19 and continues thereafter to measure the receivables at fair value then recognized to arrive at present amortized carrying value as at the end of the year, which is not in accordance with Ind AS 109 'Financial Instruments' & read with accounting policy 3.7.4. The consequential impact of the above on the balance under the head 'Receivable under Service Concession Arrangements' reported in the balance sheet and on the profit for the year are unascertainable.

Consequently, the unreserved and explicit statement of compliance with Indian Accounting Standards as notified in the Companies (Indian Accounting Standards) Rules, 2015 and further amendments thereto in Note 2.1 is not proper."

Accounting policy referred in above basis of qualified opinion paragraph is reproduced below:

"3.7.4 Impairment of financial assets

In accordance with Ind AS 109, the Company applies expected credit loss (ECL) model for measurement and recognition of impairment loss on the following financial assets and credit risk exposure:

a) *Financial assets that are debt instruments, and are measured at amortised cost e.g., loans, debt securities, deposits, trade receivables and bank balance*
b) *Trade receivables or any contractual right to receive cash or another financial asset that result from transactions that are within the scope of Ind AS 11 and Ind AS 18 (referred to as 'contractual revenue receivables' in these illustrative financial statements)*
c) *Loan commitments which are not measured as at FVTPL*

The Company measures the loss allowance for a financial instrument at an amount equal to the lifetime expected credit losses if the credit risk on that financial instrument has increased significantly since initial recognition. If the credit risk on a financial instrument has not increased significantly since initial recognition, the Company measures the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. However, for trade receivables, the Company measures the loss allowance at an amount equal to lifetime expected credit losses. In cases where the amounts are expected to be realized upto one year from the due date, loss for the time value of money is not recognized, since the same is not considered to be material.

When making the assessment of whether there has been a significant increase in credit risk since initial recognition, the Company uses the change in the risk of a default occurring over the expected life of the financial instrument instead of the change in the amount of expected credit losses. To make that assessment, the Company compares the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of initial recognition and considers reasonable and supportable information, that is available without undue cost or effort, that is indicative of significant increases in credit risk since initial recognition."

Note 2

Emphasis of Matter Paragraph a)

The auditor's report on the financial statements as at and for the year ended March 31, 2025 includes the following Emphasis of Matter paragraph:

"We draw your attention to:

As mentioned in note no. 32 to the accompanying individual Ind AS Financial Statements regarding NCLAT Orders dated 12th March, 2020. In terms of Paragraph 61 (3) on Pg 87 of the orders, the company has not accounted accrued interest, default interest, penal charges or other similar charges after the cut-off date of 15th October,2018.

Our Opinion is not modified in respect of above matters"

Note 32 referred in above emphasis of matter paragraph is reproduced below:

"Note 32: Debt servicing:

National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and Its 348 croup companies, which includes the Company. Further. NCLAT vide its order dated February 11, 2019 had also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, indicating that it is not able to meet all obligations (financial and operational) including the payment obligations to senior secured financial creditors. Accordingly, the Company is permitted to make only those payments necessary to maintain and preserve the going concern status. NCLAT wide its order dated March 12, 2020, had upheld its interim order of October 15, 2018. The said order specifies October 15, 2018 as the date of initiation of the Resolution Process of the Company. Accordingly, the Company has not accrued any interest, default interest, penal interest and any other similar charges after the said cut off date of October 15,2018 until March 31, 2025.

Considering the delay in the resolution process of the Company, and the significant cash lying with the Company, basis the constant demand from the lenders, during the financial year ended March 31, 2023, the Company approved an Interim Distribution to the Senior Secured Lenders of the Company be undertaken, for an amount of Rs 9,200.00 Mn which is equivalent to the principal amount that would have been paid to them under the debt restructuring plan that has been in-principle approved by the CNTL CoC. Out of Rs 9,200 Mn, Company paid Rs 7,796.82 Mn to the senior lenders during the year March, 31, 2023 and Rs 1,403.18 Mn is being paid to one of the secured senior lenders, during the year March 31, 2024.

The banks have debited an amount of Rs 6,844.17 Mn for Interest & Principal (Interest & Principal for the period of October 18 - March 20) from the Escrow accounts of the Company maintained with them. The Company has written to the banks for reversal of same in view of October 15, 2018 Order of NCLT giving moratorium. The banks have not reversed the same till date. The same amount (after reducing interest upto Oct 15, 2018) was shown as recoverable in the financial statements. These amounts have not been handed back to the Company till date. As part of the interim distribution, the company adjusted Rs 119.90 Mn during the financial year March 31, 2024 and Rs. 5,929.42 Mn during the financial year March 31, 2023 out of Rs 6,844.17 Mn against the loan, which was repaid during the financial year March 31, 2024, and the financial year March 31, 2023."

Note 3

Emphasis of Matter Paragraph b)

The auditor's report on the financial statements as at and for the year ended March 31, 2025 includes the following Emphasis of Matter paragraph:

"We draw your attention to:

Note no. 34 to accompanying IND AS financial statements which states that the Company does not comply with certain requirements/provisions of the Companies Act 2013. In view of the above, the Company has estimated possible obligation arising out of these non-compliances and recognized the provision in the books of accounts.

Our Opinion is not modified in respect of above matters."

Note 34 referred in above emphasis of matter paragraph is reproduced below:

"Note 34: Non-compliance of applicable laws and regulations :

The Company is not in compliance with the Companies Act 2013, as applicable to the Company. These non-compliances pertain to appointment of Directors, filings with Regulators, appointment or Key Management personnel and such other regulations. The Company has estimated possible obligations arising out of these non-compliances and recognised the provision in the books of account."

Note 4

Emphasis of Matter Paragraph c)

The auditor's report on the financial statements as at and for the year ended March 31, 2025 includes the following Emphasis of Matter paragraph:

"We draw your attention to:

As mentioned in note no. 39 to the accompanying IND AS financial statements, the Ministry of Corporate Affairs, Government of India, had initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS Ltd and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of its investigation, SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and relevant information is being provided by ITNL to the agency. The company has not received any direct communication from SFIO. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

Our Opinion is not modified in respect of above matters."

Note 39 referred in above emphasis of matter paragraph is reproduced below:

"Note 39: Investigations by Serious Fraud Investigation Office ("SFIO") and other regulatory agencies

The Ministry of Corporate Affairs (MCA}, Government of India, has vide its letter dated October 1. 2018 initiated investigations by Serious Fraud Investigation Office (SFIO) against IL&FS (ultimate holding company) and its group companies under Section 212 (1) of the Companies Act, 2013. As part of investigation of affairs of ITNL (the Holding Company), SFIO has also been seeking from ITNL various information including to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress, and it is understood that the relevant information is being provided by ITNL to the agency. At this stage, no material impact/implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage"

Note 5

Material Uncertainty Related to Going Concern Paragraph in the Audit Report

The auditor's report on the financial statements as at and for the year ended March 31, 2025 includes the following material uncertainty related to going concern paragraph:

"We draw your attention to Note no. 31 to the accompanying Ind AS financial statements which describes that Entire Group is going through liquidity issue and defaulted In repayment of various loan instruments, Union of India has filed petition against IL&FS Limited & its Group Companies in National Company Law Tribunal and superseded earlier Board of the Holding/Ultimate Holding Company.
These conditions indicate the existence of a material uncertainty that may cast significant doubt about the Company's ability to continue as a going concern. As per the management, going concern assumption is appropriate for preparation of financial statements, as the company has received a bid from third party and which has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares has also been received.

Our Opinion is not modified in respect of above matter."

Note 31 referred in above material uncertainty related to going concern paragraph is reproduced below:

"Note 31: Going Concern :

Union of India has superseded the earlier board of Holding/Ultimate Holding Company and appointed new Board from October 01, 2018. Entire Group is going through severe financial stress. National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 has also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, which means that the Company Is able to meet only financial obligation towards Senior Lenders and operational creditors. In view of this classification and the moratorium order, the Company has stopped servicing. financial obligations towards all its financial creditors. The Company has received a bid from third party and the same has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares has also been received. Hence on the basis of above, these accounts are prepared on the basis of going concern."

Note 6

Report as per Paragraph 3 of the Companies (Auditor's Report) Order, 2020 ("the CARO 2020 Order").

In addition to the audit opinion on the financial statements, the auditors are required to comment upon the matters included in the Companies (Auditor's Report) Order, 2020 ("the CARO 2020 Order") issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013 on the Financial Statements as at and for the period ended March 31, 2025.

Certain statements/comments included in the CARO in the audit report are reproduced below in respect of the financial statements presented:

Matter 1 related to unpaid statutory dues : Clause (vii)(a) of Para 3 of the CARO, 2020 Order for FY 2024-25

"In respect of statutory dues:

The Company has been generally regular in depositing undisputed statutory dues including goods and services tax, provident fund, employee state insurance, income tax, service tax, value added tax, cess and other statutory dues during the year with the appropriate authorities. As on 31st March 2025, there are no undisputed statutory dues payables for a period exceeding for a period more than six months from the date they become payable except undisputed amounts of INR 54.11 million on account of the tax deducted at source are in arrears since March 31, 2021."

Matter 2 related to disputed statutory dues: Clause (vii)(b) of Para 3 of the CARO, 2020 Order for 2024-25

"In respect of statutory dues:

Details of statutory dues referred to in sub-clause (a) which have not been deposited on account of disputes are given below:

Name of the Statute	*Nature of the Dues*	*Forum where Dispute is pending*	*Amount (in Million)*	*Remarks*
Goods and Services Act, 2017	*GST Demand for the period September 2017 to September 2022*	*ZD0102250003780 office of Joint Commissioner*	*15,164.12*	*Writ petition filed on 07.04.25 having No WP(C)/1389/2025"*

Matter 3 related to default in repayment of loans or other borrowings : Clause ix(a) of Para 3 of the CARO, 2020 Order for 2024-25

"In respect to the borrowings:

The Company has defaulted in repayment of loans or other borrowings. Details of the same is as under:

Default in repayment of loan (Principal & Interest) ***(in Rs. Mn.)***

Name of the Lender	*Nature of Due*	*Amount*	*Due Since*
Aditya Birla Finance Ltd	*Principal*	*550.00*	*20th September 2018*
IL&FS Airport Ltd	*Principal*	*470.00*	*28th August 2018*
SREI INFRASTRUCTURES	*Interest*	*63.63*	*30th September 2018*
IL&FS Airport Ltd	*Interest*	*31.82*	*30th September 2018*
IL&FS Transportation Networks Limited	*Interest*	*372.51*	*30th September 2018*
IL&FS Ltd	*Interest*	*307.00*	*30th September 2018*

Note: Principal repayment & interest payment due after 15th October, 2018 have not been disclosed as default under this clause in view of the NCLAT Orders dated 12th March, 2020."

Matter 4 related to material uncertainty related to Going Concern : Clause xix of Para 3 of the CARO, 2020 Order for 2024-25

"On the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, material uncertainty exists as on the date of the audit report that company is capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the Balance sheet date. (Refer "Material Uncertainty Related to Going Concern" paragraph above).

We further state that our reporting is based on the facts up to date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the company as and when they fall due."

Matter 5 related to unspent CSR amount: Clause xx(a)of Para 3 of the CARO, 2020 Order for 2024-25

"The company has not transferred the amount remaining unspent in respect of other than ongoing projects, to a Fund specified in Schedule VII to the Companies Act, 2013 till the date of our report. However, the time period for such transfer i.e. six months of the expiry of the financial year as permitted under the second proviso to sub-section (5) of section 135 of the Act, has not elapsed till the date of our report."

S. B. BILLIMORIA & CO. LLP

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AUDITORS' REPORT ON PROJECTIONS OF REVENUE FROM OPERATIONS AND CASH FLOWS FROM OPERATING ACTIVITIES

To
The Board of Directors,
Cube Highways Fund Advisors Private Limited (the "Investment Manager") in its capacity as an Investment Manager of the Cube Highways Trust (the "Issuer" or the "Trust")
B-376, UGF, Nirman Vihar,
New Delhi-110092

1. We have examined, the accompanying statement of projections of revenue from operations and cash flows from operating activities and the underlying assumptions of Western M P Infrastructure & Toll Roads Pvt. Ltd. (the "SPV") in the Projection Information for the years ending March 31, 2026, 2027, 2028 and 2029 (collectively, hereinafter referred to as the "Projection Information"), in accordance with Standard on Assurance Engagement 3400, "The Examination of Prospective Financial Information", issued by the Institute of Chartered Accountants of India. The preparation and presentation of the projections including the underlying assumptions, set out in Note (b) to the Projection Information, is the responsibility of the Investment Manager and has been approved by the Board of Directors of the Investment Manager. Our responsibility is to examine the evidence supporting the assumptions (excluding the hypothetical assumption) and other information in the Projection Information. Our responsibility does not include verification of the accuracy of projections. Therefore, we do not vouch for the accuracy of the same.

2. These projections have been prepared for the proposed conversion of Cube Highways Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust (the "Offer") in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD2/P/CIR/2025/102 dated July 11, 2025, as amended ("InvIT Regulations"). The projections have been prepared using a set of assumptions that include hypothetical assumptions about future events and the Investment Manager's actions that are not necessarily expected to occur, as set out in Note (b) to the Projection Information and has been approved by the Board of Directors of the Investment Manager. Consequently, users are cautioned that this projection may not be appropriate for purposes other than that described above.

3. We have carried out our examination of the Projection Information on a test basis. Based on our examination of the evidence supporting the assumptions (excluding the hypothetical assumptions), nothing has come to our attention which causes us to believe that these assumptions do not provide a reasonable basis for the Projection Information.

4. Further, in our opinion, the Projection Information, read with the basis of preparation and notes therein, is properly prepared on the basis of the assumptions as set out in Note (b) to the Projection Information and consistent with the accounting policies, to the extent applicable, used for preparation of the historical financial statements of the SPV which are included in the draft offer document (the "DOD"). Even if the events anticipated under the hypothetical assumptions described above occur, actual results are still likely to be different from the projection since other anticipated events frequently do not occur as expected and the variation may be material.

5. This report is required by InvIT Regulations requiring the independent auditor to issue a report on the projections and is issued for the sole purpose of the Offer in accordance with the InvIT Regulations. Our work has not been carried out in accordance with auditing or other standards or practices accepted in jurisdictions outside India, including the United States of America, and accordingly should not be relied upon as if it had been carried upon in accordance with those standards and practices. US Securities regulations do not require profit forecast to be reported by a third party. This report should not be relied upon by prospective investors in the United States of America, including persons who are qualified institutional buyers as defined under Rule 144A under the United States Securities Act of 1933, as amended participating in the Issue. We accept no responsibility and deny any liability to any person who seeks to rely on this report and who may seek to make claim in connection with any offering of securities on the basis that they had acted in reliance on such information under the protections accorded by United States of America law and regulation.

6. This report is addressed to and is provided to enable the Investment Manager to include this report in the DOD in connection with the proposed offer for sale of Units of the Trust and that the Projection Information may not be meaningful for any other purpose.

For **S.B. BILLIMORIA & CO.LLP**
Chartered Accountants
(Firm's Reg. No. 101496W/ W-100774)

robinjoseph
Digitally signed by robinjoseph
Date: 2026.02.27 23:41:39 +05'30'

Robin Joseph
Partner
(Membership No. 512029)
(UDIN: 26512029KGHLTS6006)

Location: Gurugram
Date: February 27, 2026

Projection Information of Western MP Infrastructure and Toll Roads Private Limited
(All amounts in ₹ million unless otherwise stated)

Statement of Projection Information of Western MP Infrastructure and Toll Roads Private Limited

Particulars		For the year ending March 31, 2026	For the year ending March 31, 2027	For the year ending March 31, 2028	For the year ending March 31, 2029
I.	Projected revenue from operations	2,953	3,173	3,391	3,572
II.	Projected cash flows from operating activities	936	2,060	2,144	2,009

See accompanying notes forming an integral part of the Projection Information

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Digitally signed by Sandeep Lakhanpal
Date: 2026.02.27 23:31:04 +05'30'

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

Notes to the Projection Information of Western MP Infrastructure and Toll Roads Private Limited

a) General Information

Cube Highways Trust (the "Trust") was set up on December 7, 2021, as a contributory irrevocable trust under the provision of the Indian Trusts Act, 1882. The Trust was registered as an infrastructure investment trust under the Securities Exchange Board of India ("SEBI") (Infrastructure Investment Trust) Regulations, 2014, as amended read together with circulars and guidelines issued thereunder (the "SEBI InvIT Regulations") on April 5, 2022, having registration number IN/InvIT/22-23/0022. The registered office address of the Trust is B-376, UGF, Nirman Vihar, New Delhi - 110092, India.

The investment objective of the Trust is to carry on the activities of an infrastructure investment trust, as permissible under the SEBI InvIT Regulations. The Trust has been formed to invest in infrastructure assets primarily being in the road sector in India. All the Trust's Road projects are implemented and held through special purpose vehicle ("SPV").

Pursuant to the unitholder resolution of Cube Highways Trust (Trust) dated 20 February 2026, the Trust proposes to acquire from Cube Highways and Infrastructure V Pte. Ltd. (CH-V) upto 100% of the fully paid-up equity shares of Western MP Infrastructure and Toll Roads Pvt. Ltd. (to the extent such equity is held by Cube Highways and Infrastructure V Pte Ltd). In consideration thereof, the Trust proposes to issue and allot ordinary units of the Trust to CH-V.

b) Basis of preparation of Projection Information

The statements of projection of revenue from operations and projection of cash flows from operating activities of the proposed subsidiary for the financial years ending March 31, 2026, 2027, 2028 and 2029 along with the underlying assumptions and other explanatory information (the "Projection Information") have been compiled by Cube Highways Fund Advisors Private Limited in its capacity as an Investment Manager of the Investment Manager to the Trust solely for the purpose of inclusion in the Draft Offer Document (DOD) in connection with the proposed conversion of the Trust from a privately listed infrastructure investment trust to a public listed infrastructure investment trust through an offer for sale of Units of the Trust in accordance with the Securities Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014, read with SEBI Master Circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025, as amended ("SEBI InvIT Regulations") (hereinafter referred to as the "proposed offer of units of the Trust"). Therefore, the Projection Information should not be used or relied upon for any purpose other than described above.

The Projection Information have been prepared based on the accounting policies used for preparation of the historical financial statements of the proposed subsidiary as required by the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended including circulars and guidelines issued thereunder ("SEBI InvIT Regulations"), which are prepared in accordance with accounting principles of Indian Accounting Standards ("Ind AS") as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended prescribed under Section 133 of the Companies Act, 2013 read with SEBI InvIT Regulations and the Guidance Note issued by the Institute of Chartered Accountants of India. Projected cash flow from operating activities have been calculated using the direct method under Ind AS 7 - Statement of Cash Flows and is computed by deducting the projected expenses and income taxes from the projected revenue from operations and adjusted for working capital changes and projected non-cash expenses (if any). Projected cash flow from operating activities do not include any items pertaining to financing or investing in nature. Though the aforesaid Projections are prepared under the Ind AS framework, they do not provide for all the detailed disclosures as required under Ind AS.

The Projection Information are presented in Indian Rupees which is also the functional currency of the Trust. All values are rounded to the nearest million, unless otherwise indicated.

The proposed subsidiary follows March 31 as its accounting year end. Accordingly, the Projection Information are prepared for the financial years ending March 31, 2026, March 31, 2027, March 31, 2028, and March 31, 2029 ('Projections Period'). However, the assumed date of acquisition (April 01, 2026) may be postponed and accordingly, the actual result in the first financial period of the Trust post-acquisition of the proposed subsidiary may be different from the numbers disclosed in the Projection Information. For the year ending March 31, 2026 the Projection information considers actual financial information upto September 30, 2025 which is the latest historical period available for preparation of the Projection Information.

It is clarified that the Projection Information have been prepared using a combination of best-estimate assumptions reflecting management's expectations of future events and actions as at that date.

The Projections have been prepared based on the significant assumptions stated in Note d) below. The Projection Information contain forecasts and projections that relate to future events including hypothetical assumptions, which are, by their nature, subject to significant risks and uncertainties. Events, circumstances and hypothetical assumptions relating to future events and actions that may or may not materialise. Even if the events anticipated under the hypothetical assumptions described in the Projection Information occur, actual results are still likely to be different from those stated in the Projection Information since other anticipated events frequently do not occur as expected and the variation may be material. The actual results may therefore differ materially from those forecasted and projected.

c) Summary of Projections

All figures are in INR million

Particulars	Actual (April'25 to September'25)	Projected (October'25 to March'26)	Total FY26	FY27	FY28	FY29
I. Projected Revenue from operations	**1,530**	**1,423**	**2,953**	**3,173**	**3,391**	**3,572**
Projected Expenses:						
Operational Expenses	(142)	(131)	(273)	(292)	(313)	(333)
Routine Maintenance Expenses	(21)	(34)	(55)	(58)	(81)	(85)
Project Manager Fees	-	-	-	(71)	(76)	(80)
Premium payment to authority	(317)	(296)	(613)	(692)	(777)	(861)
Major Maintenance Expense	(526)	(469)	(995)	-	-	-
Taxes	-	-	-	-	-	(204)
Working Capital Changes	(81)	-	(81)	-	-	-
II. Projected Cash Flow from Operations	**443**	**493**	**936**	**2,060**	**2,144**	**2,009**

d) Significant assumptions

The Projection Information have been prepared based on the significant assumptions including hypothetical assumptions summarised below. The Investment Manager considers the assumptions to be appropriate and reasonable as at the date of the reporting. However, the investors should consider these assumptions as well as the Projection Information and make their own assessment of the future performance of the SPV.

i. Revenue from operations:

The SPV revenue from operations primarily consists of income from toll collection.

Toll income:

The Investment Manager has obtained reports from an independent third-party traffic consultant i.e. Crisil Intelligence ("Traffic Consultant") in assessment of the assumptions, market fundamentals, industry drivers and outlook including the potential impact of loss of revenue arising from alternative diversion routes that may affect the traffic on the SPV's road, among other factors, in connection with the estimation of the projected revenue from operations. These assumptions and factors have been set out in the Traffic Consultant's report.

The revenue projection for the year ending March 31, 2026 is derived from annualizing the base traffic of 3-months (April'25 to Jun'25) as adjusted for seasonality and tariff rates for the financial year 2025-26. As per Concession Agreement, toll rates will increase by fix 7% every year.

Key variables for the balance projection period includes traffic growth and the details of the assumptions are as set forth below:

Assumption	For the year ending March 31, 2027	For the year ending March 31, 2028	For the year ending March 31, 2029
Traffic growth rate (Refer Note below)	1.8%	1.3%	0.6%

Note: Traffic growth rate is based on average Passenger Car Units (PCU) growth rate for both toll plazas (post-diversion).

ii. Projected Expenses

Major components of projected expenses are as under:

A) Operational and Routine Maintenance Expense

The operating and routine maintenance cost includes routine maintenance, manpower costs and other operational expenses, including, but not limited to, road and site work expenses and other toll operations cost.

In forecasting these costs, the SPV considers the report provided by the technical consultant i.e. M/s F P Project Management (FP) for the SPV (the "Technical Report"). This is further adjusted to reflect the expected operational and routine maintenance costs required to align the target assets with the Trust's operational standards based on management's assessment ("Base Cost") Refer summary below:

Particulars	OPEX FY 26 (in Mn)	RM FY 26 (in Mn)
Total Operational Expense (OPEX) / Routine Maintenance (RM) Expense as per Technical Report	253	48
Add: Additional Expense as per Management's Estimate	20	25
Base Cost for FY26	**273**	**73**

The following assumptions have been made regarding Operational and Routine Maintenance:

Particulars	Description
Operational Expense (OPEX)	• Operational Expenses: Base Cost Escalation at 1.4 times of WPI of respective year. • Insurance Expenses: Escalation at WPI; • 1.44% charge of revenue to be paid to acquirer bank
Routine Maintenance (RM) Expenses	• Base Cost Escalation at WPI of the respective year • RM savings during year of Major Maintenance (FY 2026): 25% • RM savings during Defect Liability Period in the following year of completion of Major Maintenance (FY 2027): 25%

B) Project Manager Fees

The Project Manager Fees are mainly projected based on the terms and conditions of the relevant agreements and / or based on Management's experience and judgement. These expenses consist of below:

i) Project manager fee

Based on the agreement to be entered with Cube Highways and Transportation Assets Advisors Private Limited (Project Manager) in relation to the specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

The Project Manager is entitled to a Project Manager fee to be calculated @ 1.55% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

ii) Professional Consultancy Charges

Based on the Expert Services Agreement to be entered with Cube Highways Technologies Private Limited in relation to specialized technical, engineering and operational functions w.e.f. the assumed date of acquisition by the Trust.

These charges are calculated @ 0.35% per annum, exclusive of applicable taxes, of the gross toll revenue of the SPV at the end of the reporting period.

C) Premium Payment to Authority

Premium payment to Authority is fee to be paid to Madhya Pradesh Road Development Corporation ("MPRDC" or the "Authority"), as per the provisions of Concession agreement. This fee is based on toll revenue earned by the SPV and is increased by 1% every year with base year starting from 2010 i.e. 4.672%. Further, it shall be calculated as the higher of (i) the actual PCUs; (ii) 2% greater than the number of PCUs reckoned hereunder in the immediately preceding year.

D) Major Maintenance Expense

Under the terms of the concession agreement, the SPV is required to conduct periodic major maintenance, which consists of restoring the infrastructure to a specified level of serviceability at periodic intervals during the concession period or before it is handed over to NHAI. Major maintenance (MM) is expected to be incurred after every six years depending on pavement conditions, traffic loads and concession requirements. It involves substantial expenditure on large-scale resurfacing, repair and replacement of road furniture, rehabilitation of structures and restoration of pavement quality

The periodic overlay and resurfacing cycles require substantial expenditure, with major costs comprising of construction materials such as bitumen and aggregates. These costs are supported by purchase orders or work orders placed or proposed to be placed, based on road survey reports issued by independent field experts and the major maintenance strategy developed by the internal technical team.

For the FY 2026 ongoing cycle, the MM expense estimate is based on maintenance strategy/ methodology prepared by the management in accordance with the requirements of concession agreement with NHAI and after taking into account road survey reports issued by an independent expert. These estimates are further corroborated through purchase orders/work orders placed or to be placed by management generally close to the maintenance execution period. The projected MM expense is periodically reviewed and updated for factors such as new information and past experience. As the estimated cost is based on the various assumptions such as current infrastructure (road, pavements, etc.) condition, inflation in material cost, government policies etc.

Considering the MM work is in progress, and is expected to be completed by end of FY 2026, as a result, no major maintenance expenditure is assumed over the balance Projected period with the next maintenance cycle currently planned for FY 2032.
For the purposes of projected cash flow from operations, the projected periodic / major maintenance expense is considered in the year of actual outflow is expected to occur. The projections do not envisage any unanticipated expenses which may be incurred due to any unforeseen circumstances.

The following assumptions have been made regarding the major maintenance expense:

Particulars	Description
Major Maintenance (MM Expense)	• Escalation at WPI for Non bitumen expenses. No escalations considered for the bitumen cost. • Current price of bitumen is considered for unit rates calculation for FY 2026.

WPI escalation (on financial year basis) used for all the above projected expense is as under :

WPI assumptions	FY26	FY27	FY28	FY29
WPI (FY)	2.4%	5.00%	5.10%	4.90%

Note: WPI stands here for Wholesale Price Index for all commodities as published by the Ministry of Industry, Government of India

iii. Taxes

Current income tax is measured at the amount expected to be paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in India, being the jurisdiction in which the SPV operates and generates taxable income. Projected income tax expense is measured considering the impact of Finance Bill 2026.

The SPV has opted for taxation under section 115BAA of the Income tax Act, 1961, under which it is liable to pay tax at the effective rate of 25.168%.

As at year ended March 31, 2025, the SPV's has:

Carry forwarded Unabsorbed Depreciation to the tune of INR 4,023 million;

Carry forwarded business losses to the tune of INR 171 million.

iv. Changes in working capital

The SPV has considered September 2025 working capital as the base working capital, which is based on the actual changes for the period April 2025 to September 2025. For the balance concession period, it is assumed that since the entire collection of tolls is in cash and routine expenses are in cash or a credit period as available, the effective working capital deployed would be relatively low or negative in certain instances. Further, we believe the working capital is stable and not expected to vary materially over a period. Accordingly, changes in working capital are not significant and no impact of that has been considered in the projected cash flows from operating activities for the balance projected period.

v. Other assumptions

a) Acquisition of SPV and refinancing of external debt through InvIT loan been assumed on 1st April'2026 amounting to INR 4,235 Mn at the annual interest rate of 13.20% and expected repayment of INR 646 Mn in Aug'26, INR 1,460 Mn in Aug'27 and INR 677 Mn in Aug'28. The balance repayment has been assumed post March 31, 2029.

b) It has been assumed that no outflow on account of any litigation related matters including current pending litigations/contingent liabilities is expected to become due during the Projection Period.

c) On November 21, 2025, the Government of India notified the four Labour Codes — The Code on Wages, 2019, The Industrial Relations Code, The Code on Social Security, 2020, and The Occupational Safety, Health and Working Conditions Code, 2020 — consolidating 29 existing labour laws. Based on the draft rules and FAQs issued by the Ministry of Labour and Employment and best available information (including legal assessments and existing contractual arrangements), the SPV has estimated that these Codes have no material financial impact on the Projection Information. The SPV continues to monitor the finalisation of rules by the central/state government and other developments pertaining to labour codes and would provide appropriate accounting effect, if any, on the basis of such developments.

d) The taxation legislation or other applicable legislation is assumed to be same over the Projection Period as per the currently enacted or substantively enacted tax laws at the reporting date in India. The relevant tax exemptions, tax

remissions, and preferential tax treatments granted remain valid and applicable and that the terms and conditions thereto are assumed to be complied with.

e) It has been assumed that no liability or liquidated damages on account of default in concession agreement shall devolve upon the SPV during the Projections Period.

f) The Projections are based on assumptions and are subject to several factors. Investors should be aware that future events, including actual traffic growth rates, cannot be predicted with any certainty and there may be deviations from the figures projected in the Projection Information.

g) No gain or loss has been considered on account of changes in foreign exchange rates.

These Projection Information has been adopted by the Board of Director of the Investment Manager on February 27, 2026.

For and on behalf of the Board of Directors of Cube Highways Fund Advisors Private Limited
(in its capacity as an Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal
Digitally signed by Sandeep Lakhanpal
Date: 2026.02.27 23:31:22 +05'30'

Sandeep Lakhanpal
Director
DIN: 07171147
Place: Gurugram
Date: February 27, 2026

ANNEXURE F –CONSOLIDATED UNAUDITED FINANCIAL INFORMATION

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INDEPENDENT AUDITOR'S REPORT ON REVIEW OF CONSOLIDATED UNAUDITED FINANCIAL INFORMATION

To The Board of Directors of
Cube Highways Fund Advisors Private Limited (The "Investment Manager")
(Acting in capacity as the Investment Manager of Cube Highways Trust)

1. We have reviewed the accompanying Statement of Consolidated Unaudited Financial Information of Cube Highways Trust ("the Parent") and its subsidiaries (the Parent and its subsidiaries {as listed} in Note 1(B) of the Consolidated Unaudited Financial Information) together referred to as "the Group") for the quarter ended December 31, 2025 and for the period from April 01, 2025 to December 31, 2025 ("the Statement"), being submitted by the Investment Manager pursuant to the requirement of Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulation, 2014, as amended (the "InvIT Regulations").

2. This Statement, which is the responsibility of the Investment Manager's Board of Directors, has been prepared in accordance with the InvIT Regulations, the recognition and measurement principles laid down in the Indian Accounting Standard 34 "Interim Financial Reporting" ("Ind AS 34"), prescribed under Section 133 of the Companies Act 2013, read with relevant rules issued thereunder, and other accounting principles generally accepted in India. Our responsibility is to express a conclusion on the Statement based on our review.

3. We conducted our review of the Statement in accordance with the Standard on Review Engagements (SRE) 2410 'Review of Interim Financial Information Performed by the Independent Auditor of the Entity', issued by the Institute of Chartered Accountants of India ("ICAI"). This standard requires that we plan and perform the review to obtain moderate assurance as to whether the Statement is free of material misstatement. A review of interim financial information consists of making inquiries, primarily of the Investment Manager's personnel responsible for financial and accounting matters and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Standards on Auditing ("SA"), issued by the ICAI, and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion. We have also performed procedures in accordance with Regulation 13(2)(e) of the InvIT Regulations, as amended, to the extent applicable.

4. Based on our review conducted and procedures performed as stated in paragraph 3 above and based on the consideration of the review reports of the other auditors referred to in paragraph 6 below, nothing has come to our attention that causes us to believe that the accompanying Statement, prepared in the context of the InvIT Regulations prevailing over certain Indian Accounting Standard ("Ind AS") requirements, as explained in the Emphasis of Matter paragraph 5 below, in accordance with the recognition and measurement principles laid down in the aforesaid Ind AS and other accounting principles generally accepted in India, and has not disclosed the information required to be disclosed in terms of InvIT Regulations, including the manner in which it is to be disclosed, or that it contains any material misstatement.

5. We draw attention to Note 5 of the Consolidated Unaudited Financial Information, which describes the presentation of "Unit Capital" as "Equity" to comply with the InvIT Regulations.

   Our conclusion on the Statement is not modified in respect of this matter.

6. We did not review the financial information of 4 subsidiaries included in the Consolidated Unaudited Financial Information, whose financial information reflect total revenues of Rs. 1,904.53 million and Rs. 4,787.16 million, total net loss after tax of Rs. 230.39 million and Rs. 973.23 million, and total comprehensive loss of Rs. 230.74 million and Rs. 973.42 million, for the quarter ended December 31, 2025, and for the period from April 01, 2025 to December 31, 2025, respectively, as considered in the Consolidated Unaudited Financial Information.
   These financial information have been reviewed by other auditors whose reports have been furnished to us by the Management and our conclusion on the Statement, in so far as it relates to the amounts and disclosures included in respect of these subsidiaries, is based solely on the reports of the other auditors and the procedures performed by us as stated above.

   Our conclusion on the Statement is not modified in respect of this matter.

For **S.B. Billimoria & Co. LLP**
Chartered Accountants
(Firm's Registration No. 101496W/W-100774)

Pramod Baijnath Shukla

Digitally signed by Pramod Baijnath Shukla
Date: 2026.01.30 20:31:38 +05'30'

Pramod B. Shukla
(Partner)
(Membership No. 104337)
UDIN:26104337DQKFKS3954

Place: Gurugram
Date: January 30, 2026

CUBE HIGHWAYS TRUST

CONSOLIDATED

Registered office : Upper Ground Floor, B-376, Nirman Vihar, New Delhi- 110092
SEBI Registration Number- IN/INVIT/ 22-23/ 0022
Consolidated Unaudited Statement of Profit and Loss for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

Particulars	Quarter ended			Nine months ended		Year ended
	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	December 31, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
Income						
Revenue from operations (refer note 14 and 15)	10,808.26	10,516.18	8,495.26	30,767.23	24,611.23	33,071.44
Other income (refer note 16)	235.87	396.00	360.60	928.49	1,135.18	1,460.08
Total income	**11,044.13**	**10,912.18**	**8,855.86**	**31,695.72**	**25,746.41**	**34,531.52**
Expenses						
Cost of construction	49.37	35.04	123.06	162.09	534.87	634.14
Operation and maintenance expenses	2,102.51	1,968.27	1,693.35	5,973.26	5,402.60	7,554.62
Employee benefits expense	165.49	163.81	145.64	511.50	390.08	514.68
Finance costs	3,661.39	4,023.74	2,803.45	11,132.70	8,176.13	11,171.01
Depreciation and amortisation expense	3,769.11	3,501.50	3,341.05	10,853.83	9,738.77	13,129.12
Other expenses (refer note 17)	779.45	644.29	467.69	1,985.19	1,349.65	2,031.08
Total expenses	**10,527.32**	**10,336.65**	**8,574.24**	**30,618.57**	**25,592.10**	**35,034.65**
Profit/(loss) before tax	**516.81**	**575.53**	**281.62**	**1,077.15**	**154.31**	**(503.13)**
Less: Tax expense/(income)						
Current tax	142.15	126.55	106.83	363.60	271.12	367.11
Tax for earlier periods/ year	0.06	4.52	18.54	4.58	18.54	18.54
Deferred tax	(35.79)	42.24	(363.84)	(108.27)	(395.08)	(531.58)
Total Tax Expense/(income)	**106.42**	**173.31**	**(238.47)**	**259.91**	**(105.42)**	**(145.93)**
Profit/(loss) for the period/year	**410.39**	**402.22**	**520.09**	**817.24**	**259.73**	**(357.20)**
Other comprehensive income						
Items that will not be reclassified to profit or loss						
Re-measurement (losses)/gains on defined benefit obligations	(0.70)	0.53	0.27	(1.06)	(0.79)	0.70
Income tax relating to these items	-	(0.12)	-	(0.12)	(0.01)	(0.15)
Total other comprehensive (loss)/income for the period/year	**(0.70)**	**0.41**	**0.27**	**(1.18)**	**(0.80)**	**0.55**
Total comprehensive (loss)/income for the period/year	**409.69**	**402.63**	**520.36**	**816.06**	**258.93**	**(356.65)**
Net Profit/(loss) for the period/year						
Attributable to:						
Unit holders	410.35	402.18	520.05	817.12	259.64	(357.33)
Non controlling interests	0.04	0.04	0.04	0.12	0.09	0.13
Total comprehensive (loss)/income for the period/year						
Attributable to:						
Unit holders	409.65	402.59	520.33	815.94	258.84	(356.78)
Non controlling interests	0.04	0.04	0.03	0.12	0.09	0.13
Earnings per Unit (Rs. per unit) (Refer note 21)						
Basic (Rs. absolute amount)	0.31	0.30	0.39	0.61	0.19	(0.27)
Diluted (Rs. absolute amount)	0.31	0.30	0.39	0.61	0.19	(0.27)

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

1 (A) The Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025 comprises of the Consolidated Unaudited Statement of Profit and Loss, Statement of Net Distributable Cash Flows of the Trust and its subsidiaries, explanatory notes thereto and the additional disclosures contained in Chapter 4 of SEBI Master Circular no. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025 (as amended) of Cube Highways Trust ("the Trust") (the " Consolidated Unaudited Financial Information"). The Consolidated Unaudited Financial Information has been prepared by Cube Highways Fund Advisors Private Limited (the "Investment Manager") in accordance with recognition and measurement principles laid down in the Indian Accounting Standard as defined in Rule 2(1)(a) of the Companies (Indian Accounting Standards) Rules, 2015, as amended, and other accounting principles generally accepted in India to the extent not inconsistent with the Securities Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014 (as amended) including any guidelines and circulars issued thereunder (the "InvIT Regulations"). (Refer note 5 below on presentation of "Unit capital" as "Equity" instead of compound financial instruments under Indian Accounting Standard (Ind AS) 32- Financial Instruments: Presentation).

1 (B) The Consolidated Unaudited Financial Information comprises financial information of Cube Highways Trust and following of its subsidiaries:

Subsidiaries (w.e.f. April 17, 2023) [where control exists]
Western UP Tollway Private Limited (WUPTPL) (formerly Western UP Tollway Limited)
Andhra Pradesh Expressway Private Limited (APEPL) (formerly Andhra Pradesh Expressway Limited)
Jaipur-Mahua Tollway Private Limited (JMTPL) (formerly Jaipur-Mahua Tollway Limited)
Mahua Bharatpur Expressways Limited (MBEL)
Farakka- Raiganj Highways Private Limited (FRHPL) (formerly Farakka- Raiganj Highways Limited)
DA Toll Road Private Limited (DATRPL)
Ghaziabad Aligarh Expressway Private Limited (GAEPL)
Walayar Vaddakencherry Expressways Private Limited (WVEPL)
Nelamangala Devihalli Expressway Private Limited (NDEPL)
Hazaribagh Tollway Private Limited (HTPL) (formerly Hazaribagh Tollway Limited)
Jhansi-Lalitpur Tollway Private Limited (JLTPL) (formerly Jhansi-Lalitpur Tollway Limited)
Jhansi-Vigakhet Tollway Private Limited (JVTPL) (formerly Jhansi-Vigakhet Tollway Private Limited)
Kanyakumari-Etturavattam Tollway Private Limited (KETPL) (formerly Kanyakumari-Etturavattam Tollway Limited)
Kotwa-Muzaffarpur Tollway Private Limited (KMTPL) (formerly Kotwa-Muzaffarpur Tollway Limited)
Lucknow-Raebareli Tollway Private Limited (LRTPL) (formerly Lucknow-Raebareli Tollway Limited)
Madurai-Kanyakumari Tollway Private Limited (MKTPL) (formerly Madurai-Kanyakumari Tollway Limited)
Nanguneri-Kanyakumari Tollway Private Limited (NKTPL) (formerly Nanguneri-Kanyakumari Tollway Limited)
Salaipudhur-Madurai Tollway Private Limited (SMTPL) (formerly Salaipudhur-Madurai Tollway Limited)

Subsidiaries (w.e.f. June 04, 2024) [where control exists]
Srirangam Infra Private Limited (SIPL) (formerly KNR Srirangam Infra Private Limited)
Shankarampet Projects Private Limited (SPPL) (formerly KNR Shankarampet Projects Private Limited)
Tirumala Highways Private Limited (THPL) (formerly KNR Tirumala Infra Private Limited)
Borgaon Watembare Highways Private Limited (BWHPL)
Mangalwedha Solapur Highways Private Limited (MSHPL)
Mangloor Highways Private Limited (MHPL)

Subsidiaries (w.e.f. February 12, 2025) [where control exists]
N.A.M. Expressway Private Limited (NAMEPL) (formerly N.A.M. Expressway Limited)

Subsidiaries (w.e.f. June 12, 2025) [where control exists]
Quazigund Expressway Private Limited (QEPL)
Jammu Udhampur Highway Private Limited (JUHPL) (formerly Athaang Jammu Udhampur Highway Private Limited)

2 **Basis of Consolidation**
Trust Group consolidates entities which it owns or controls. The Consolidated Unaudited Financial Information comprise the financial information of Cube Highways Trust and its subsidiaries listed in note 1 (B) above. Control exists when the parent has power over the entity, is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns by using its power over the entity. Power is demonstrated through existing rights that give the ability to direct relevant activities, those which significantly affect the entity's returns. Subsidiaries are consolidated from the date control commences until the date control ceases. The procedure for preparing Consolidated Financial Results of Cube Highways Trust Group are stated below:
a) The financial information of Cube Highways Trust Group are consolidated for like items and intragroup balances and transactions for assets and liabilities, equity, income, expenses and cash flows between entities of Cube Highways Trust Group are eliminated in full upon consolidation.
b) The figures in the notes to consolidated unaudited financial information have been consolidated line by line and inter-company transactions and balances including unrealized profits are eliminated in full on consolidation.

3(A) In terms of Share Purchase Agreement (SPA) dated February 7, 2025 entered amongst the Trust (acting through its Investment Manager), Athaang Infrastructure Private Limited, National Investment and Infrastructure Fund acting through its Investment Manager National Investment and Infrastructure Fund Limited (Seller) and Jammu Udhampur Highway Private Limited ("JUHPL") (thereinafter referred to as "the parties"), on June 12, 2025 the Trust has acquired the 100% equity holding of JUHPL for consideration of Rs. 4,145.13 million (including contingent consideration of Rs. 122.99 million).

The management applied the optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated under Receivable under Service Concession Arrangements , with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition. The management identified and recognized the individual identifiable assets acquired and liabilities assumed; and allocated the purchase consideration to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of acquisition.

The allocated value of the identifiable assets and liabilities as at the date of acquisition were:

Assets	**(Amounts in Rs. Million)**
Property, Plant and Equipment (net of accumulated depreciation)	26.34
Intangible assets- Rights under Service Concession Arrangements	545.19
Receivable under Service Concession Arrangements	12,051.38
Assets held for sale	3.66
Trade Receivables	3.19
Cash and Cash Equivalents	5,425.07
Other assets	656.39
Total Assets (A)	**18,711.22**
Liabilities	
Borrowings (including current maturities of Non-current borrowings)	12,933.56
Trade Payables	84.67
Other Liabilities	1,547.86
Total Liabilities (B)	**14,566.09**
Net Assets/Consideration (A-B)	**4,145.13**

3(B) In terms of Share Purchase Agreement (SPA) dated February 7, 2025 entered amongst the Trust (acting through its Investment Manager), Athaang Infrastructure Private Limited, National Investment and Infrastructure Fund acting through its Investment Manager National Investment and Infrastructure Fund Limited (Seller) and Quazigund Expressway Private Limited ("QEPL") (thereinafter referred to as "the parties"), on June 12, 2025 the Trust has acquired the 100% equity holding of QEPL for consideration of Rs. 6,055.10 million.

The management applied the optional concentration test, under Ind AS 103 "Business Combination", and concluded that the acquired set of activities and assets is not a business because substantially all of the fair value of the gross assets acquired is concentrated under Receivable under Service Concession Arrangements , with similar risk characteristics. Accordingly, this transaction has been accounted for as an asset acquisition. The management identified and recognized the individual identifiable assets acquired and liabilities assumed; and allocated the purchase consideration to the individual identifiable assets and liabilities on the basis of their relative fair values at the date of acquisition.

The allocated value of the identifiable assets and liabilities as at the date of acquisition were:

Assets	**(Amounts in Rs. Million)**
Property, Plant and Equipment (net of accumulated depreciation)	16.45
Intangible assets- Rights under Service Concession Arrangements	152.45
Receivable under Service Concession Arrangements	19,032.91
Trade Receivables	0.68
Cash and Cash Equivalents	1,904.97
Other assets	3,312.61
Total Assets (A)	**24,420.07**
Liabilities	
Borrowings (including current maturities of Non-current borrowings)	17,921.71
Trade Payables	58.95
Other Liabilities	384.31
Total Liabilities (B)	**18,364.97**
Net Assets/Consideration (A-B)	**6,055.10**

4 During the nine months ended December 31, 2025, the Trust has availed Secured Rupee Term Loan facility from Banks and a Financial Institution of Rs. 22,000 million. This loan has been utilised by the Trust for onward lending to its subsidiaries for refinancing of existing secured loans and subordinate debts of subsidiaries.

5 Under the provisions of the InvIT Regulations, the Trust is required to distribute to Unitholders not less than 90% of the Net Distributable Cash Flows ("NDCF") of the Trust for each financial year. The Trust undertakes quarterly distributions (as per the Distribution Policy adopted by the Trust) such that the first distribution of a financial year is not less than 90% of NDCF and thereafter, for further distributions, the Trust ensures that at least 90% of the NDCF is distributed to the Unitholders on a cumulative basis for such financial year. Accordingly, a portion of the Unit Capital contains a contractual obligation of the Trust to pay to its Unitholders as cash distributions. Hence, the Unit Capital is a compound financial instrument which contain both equity and liability components in accordance with Ind AS 32 - Financial Instruments: Presentation. However, in accordance with SEBI Circulars issued under the InvIT Regulations, the Unit Capital has been presented as "Equity" in order to comply with the requirements of Chapter 3 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025 (as amended) dealing with the minimum disclosures for key financial information/statements.

6 (A) (i) On August 13, 2025, the Trust has allotted 42,000 (Forty two thousand) 6.93% and 40,000 (Forty thousand) 7.3015% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities respectively having a face value of Rs. 1,00,000 (Rupees One Lakh) each aggregating to Rs. 8,200 million (Rupees eighty two hundred million Only) ("Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows:

(Amounts in Rs. Million)

Sr. No.	**Particulars**	**Proposed Utilisation**	**Actual Utilisation upto December 31, 2025**	**Unutilised Amount as at December 31, 2025**
1	For refinancing part or full commercial papers (CPs) issued by the issuer	2,620.00	2,620.00	-
2	For on lending to the tranche III Project SPVs (QEPL and JUHPL) for the purpose of repayment of the existing facilities availed by such Tranche III Project SPVs	5,580.00	5,580.00	-

(ii) On April 25, 2025, the Trust has allotted 55,200 (fifty five thousand two hundred) 7.2503% and 60,000 (Sixty thousand) 7.3006% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities respectively having a face value of Rs. 1,00,000 (Rupees One Lakh) each aggregating to Rs. 11,520 million (Rupees eleven thousand five hundred twenty million Only) ("Debt Securities") on private placement basis which got listed on Bombay Stock Exchange (BSE). Details of utilisation of these debt securities are as follows:

(Amounts in Rs. Million)

Sr. No.	**Particulars**	**Proposed Utilisation**	**Actual Utilisation upto December 31, 2025**	**Unutilised Amount as at December 31, 2025**
1	For part or full repayment of any of outstanding amounts in relation to any one or more of the Senior Debt Facilities.	11,520.00	11,520.00	-

(iii) On June 11, 2025, the Trust allotted 27,000 rated, listed, unsecured Commercial Papers (CPs). Each CP had a maturity value of Rs. 500,000, aggregating to Rs. 13,500 million, bearing a discount rate of 6.25% per annum and a tenure of 91 days, maturing on September 10, 2025. The CPs were listed on BSE Limited on June 12, 2025 and were fully repaid on their maturity date. This CP has been utilised by the Trust for onward lending to its subsidiaries for repaying of existing subordinate debts.

(B) Details of due dates of the Non-Convertible Debt Securities as at December 31, 2025 are as follows:-

Secured/ Unsecured	**Particulars**	**Previous Due Date**		**Next Due Date**	
		Principal	**Interest**	**Principal**	**Interest**
Secured	7.49% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	15-Oct-25	15-Oct-25	15-Jan-26	15-Jan-26
Secured	7.95% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	30-Sep-25	30-Sep-25	31-Mar-26	31-Mar-26
Secured	7.67% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	31-Dec-25	31-Dec-25	31-Mar-26	31-Mar-26
Secured	7.59% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	N/A	31-Dec-25	31-Mar-30	31-Mar-26
Secured	7.2503% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	N/A	31-Dec-25	25-Apr-28	31-Mar-26
Secured	7.3006% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	N/A	31-Dec-25	25-Apr-32	31-Mar-26
Secured	6.93% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	N/A	31-Dec-25	20-Feb-29	31-Mar-26
Secured	7.3015% Senior, Secured, Rated, Listed, Redeemable, Non-Convertible Debt Securities	N/A	31-Dec-25	30-Sep-32	31-Mar-26

7 In terms of the InvIT Regulations, the Trust has entered into Investment Management Agreement dated March 11, 2022 with Cube Highways Fund Advisors Private Limited ("the Investment Manager"), which got amended on May 30, 2022, on December 16, 2022, March 08, 2024 and on July 24, 2024 (herein after referred to as IM Agreement).

As per Schedule II of the IM Agreement as amended from time to time, the Investment Manager shall be entitled to a fee from the funds of the Trust in accordance with the IM Agreement ("Management Fee") as under:

For the period upto May 31, 2024 (in terms of Amended and Restated IM Agreement dated December 16, 2022)	Higher of: (a) 0.94% of the revenue of the Initial SPVs ("18 SPV's");or (b) Rs. 190 million ("Minimum Threshold") subject to an escalation of 7% per annum from 31 March 2023
For the period from and after June 01, 2024 (in terms of Amended and Restated IM Agreement dated July 24, 2024)	Higher of: (a) 0.81% of the revenue of the Project SPVs ("24 SPV's including 6 HAM SPV's"); or (b) Rs. 190 million ("Minimum Threshold") subject to an escalation of 7% per annum from 31 March 2023
For the period from and after February 12, 2025 (in terms of Amended and Restated IM Agreement dated July 24, 2024)	Higher of: (a) 0.75% of the revenue of the Project SPVs ("27 SPV's including 6 HAM SPV's, NAMEPL, QEPL and JUHPL"); or (b) Rs. 190 million ("Minimum Threshold") subject to an escalation of 7% per annum from 31 March 2023

8 Pursuant to Project Implementation and Management Agreement dated January 02, 2023 (PM Agreement) in consideration of services to be rendered by Project Manager in accordance with and subject to agreement and applicable law, each project SPV's agree to pay fees ("Fee") from their respective funds, on an arm length basis, to the Project Manager. The fee shall be calculated annually and shall be higher of :-
(a) 1.55% of the standalone revenue of the project SPV based on audited financial statements of Project SPV.
OR
(b) During the terms of relevant Concession Agreement for each Project SPV the Minimum Threshold as specified in Schedule 4 of the PM Agreement in relation to each Project SPV, subject to escalation of 7% per annum.

9 The Trust group is engaged in the business of setting up of infrastructure facility by way of development of infrastructure projects, operation and maintenance of Infrastructural facilities. As such, all activities undertaken by the SPVs are incidental to the main business. The directors of the SPV and Investment Manager, who have been identified as being the chief operating decision maker (CODM), evaluates the SPVs performance, allocates resources based on the analysis of the previous performance indicators of the SPVs as a single unit. Therefore, there are no separate reportable business segments as per IND AS 108-"Operating Segment".

10 During the nine months ended December 31, 2025, the Trust has been assigned/reaffirmed the credit ratings for its borrowings as follows:-

Sr. No.	Nature of Borrowings	Rating Agency	Rating	Date
1	Rupee Term Loan	CRISIL	"CRISIL AAA/Stable"	Reaffirmed on June 04, 2025 and September 15, 2025
		ICRA	"ICRA AAA/Stable"	Reaffirmed on April 17, 2025, August 13, 2025. Assigned/Reaffirmed on August 28, 2025
		India Ratings	"IND AAA/Stable"	Reaffirmed on April 18, 2025, April 22, 2025, June 09, 2025 and August 14, 2025
2	Bank Guarantee	CRISIL	"CRISILA1+"/"CRISIL AAA/Stable"	Reaffirmed on June 04, 2025 and September 15, 2025
		ICRA	"ICRA AAA/Stable"	Reaffirmed on April 17, 2025, August 13, 2025. Assigned/Reaffirmed on August 28, 2025
		India Ratings	"IND AAA/Stable"	Reaffirmed on April 18, 2025, April 22, 2025, June 09, 2025 and August 14, 2025
3	Non-Convertible Debt Securities	ICRA	"ICRA AAA/Stable"	Assigned/Reaffirmed on April 17, 2025, August 13, 2025 and August 28, 2025
		CRISIL	"CRISIL AAA/Stable"	Reaffirmed on June 04, 2025
		India Ratings	"IND AAA/Stable"	Reaffirmed on April 18, 2025, April 22, 2025, and June 09, 2025. Assigned/Reaffirmed on August 14, 2025. Reaffirmed on August 28, 2025
4	Commercial Papers	CRISIL	"CRISIL A1+"	Assigned on June 04, 2025
		India Ratings	"IND A1+"	Assigned on June 09, 2025 and affirmed on August 14, 2025

11 On November 21 , 2025, the Government of India notified the four Labour Codes - The Code on Wages, 2019 , The Industrial Relations Code, The Code on Social Security, 2020, and The Occupational Safety, Health and Working Conditions Code, 2020 - consolidating 29 existing Labour Laws. Based on the draft rules and FAQs issued by the Ministry of Labour and Employment and best available information (including legal assessments and existing contractual arrangements), the Trust Group has estimated that these Codes have no material financial impact on the results for the quarter and nine months ended December 31, 2025. The Trust Group continues to monitor the finalisation of rules by the central/state government and other developments pertaining to labour codes and would provide appropriate accounting effect, if any, on the basis of such developments.

12 At the end of each reporting period, in terms of Ind AS 36 "Impairment of Assets" the Management carries out impairment assessment for Intangible assets Rights Under Service Concession Arrangements in individual subsidiary (cash generating unit) and determine the recoverable amount of Intangible assets Rights Under Service Concession in subsidiaries as at the reporting date.

An impairment loss is recognised if the carrying amount of the Intangible assets exceeds its recoverable amount. The recoverable amount is determined by the Management based on the value in use approach using an External Independent Valuer. The key judgements in determining the value in use approach included revenue and other cash flow projections for the remaining concession period of finite life SPVs, changes in interest rates, discount rates, risk premium for market conditions etc. {also refer note 23(4)}. The revenue projection is based on assumptions made by the Management regarding future traffic growth and inflation factor for assessing user toll fee as supported by the studies from the Third-party Independent Consultant.

At each reporting date, the Management has carried out assessment of indicators of impairment and concluded that there are no new internal and external source of information which require further adjustment in the carrying amount of Intangible assets - Rights Under Service Concession Arrangements.

13 Since, the Trust acquired various SPVs at different dates as detailed in 1(B) above, therefore the Consolidated Unaudited Financial Information for the current quarter and nine months ended December 31, 2025 as furnished by the Trust are not comparable with the corresponding quarter and nine months ended December 31, 2024 included in the Consolidated Unaudited Financial Information respectively.

14 Revenue from operations for the quarter and nine months ended December 31, 2025 includes Rs. 752.30 million and Rs. 948.80 million respectively being compensation received/receivable from National Highways Authority of India (NHAI) towards revenue determined by the Trust SPVs, arising out of Annual Pass with effect from August 15, 2025, priced at Rs. 3,000 for F.Y. 2025-26 which entitles the holder to either 200 Toll-free crossings or One year of Validity which occurs earlier.

15 Revenue from operations for the nine months ended December 31, 2025, includes Rs. 708.06 million, which was settled pursuant to the order dated 31 July 2025, of the High Court of Judicature at Madras between Tamil Nadu State Transport Corporation (TNSTC) and Trust SPVs (SMTPL, MKTPL, NKTPL, and KETPL) towards toll fees for the period from November 2020 to July 17, 2025. This pertains to TNSTC's buses passing through the four tolls at Madurai-Kanyakumari (MK) stretch. Of this amount, the Trust SPVs received Rs. 293.39 million on August 21, 2025, Rs. 39.28 million on August 22, 2025, and the remaining Rs. 375.39 million (including Rs. 42.71 million for the period from 1 April 2025 until the settlement date of July 17, 2025) on October 14, 2025.

16 Other Income

Particulars	Quarter ended			Nine months ended		Year ended
	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	December 31, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
Interest on financial assets carried at amortised cost: - bank deposits	87.93	151.31	92.64	376.68	301.76	403.34
Interest on income tax refund	-	8.40	4.92	16.57	11.36	30.99
Sale of scrap	3.49	4.83	8.95	16.28	21.36	25.25
Insurance claim received	4.19	7.44	48.77	15.31	66.69	76.47
Profit on sale of property, plant and equipment (net)	-	-	1.10	-	1.10	-
Gain on mutual funds (net)	111.75	157.74	191.17	404.63	686.21	835.36
Liabilities no longer required written back	4.37	39.80	13.05	46.63	42.01	76.53
Reversal of impairment loss allowance on trade receivables	-	17.63	-	17.63	-	-
Extinguishment of financial liability related contingent consideration	24.14	-	-	24.14	-	-
Miscellaneous Income	-	8.85	-	10.62	4.69	12.14
Total	**235.87**	**396.00**	**360.60**	**928.49**	**1,135.18**	**1,460.08**

17 Other Expense

Particulars	Quarter ended			Nine months ended		Year ended
	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	December 31, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
Legal & professional fees	259.43	113.69	56.97	421.01	226.18	356.19
Investment Management fees (Refer note 7)	114.26	112.29	85.90	319.46	244.57	331.64
Project Management fees (Refer note 8)	245.34	236.78	175.79	690.22	478.24	738.31
Trustee Fees	0.24	0.23	0.24	0.71	0.71	0.94
Custodian fees	0.33	2.91	0.33	4.33	2.73	4.72
Insurance expense	63.41	57.54	55.90	170.74	170.76	220.04
Audit fees (including subsidiaries)*	17.33	19.49	15.42	51.68	44.18	65.63
Valuation expense	2.38	3.00	2.16	7.79	6.42	12.53
Rent	2.37	2.06	1.21	5.96	3.31	4.79
Rates and taxes	3.11	5.53	3.79	13.72	14.73	22.87
Impairment loss allowance on trade receivables/unbilled revenues	-	-	-	18.11	-	6.47
Doubtful advance/balances written off	0.26	0.24	-	39.22	-	19.49
Allowance for doubtful advances	-	-	-	-	-	12.31
Bad debts written off (net of adjustments from impairment loss allowance on trade receivables)	-	-	1.51	-	1.51	1.51
Advertising expenses	0.24	1.35	0.29	1.84	1.85	2.87
Travelling and conveyance	5.81	6.44	4.95	16.01	12.79	19.16
Printing and stationary	1.15	2.04	1.20	4.45	3.71	4.99
Communication expenses	5.39	5.93	4.43	15.98	12.75	17.31
Information Technology related cost	5.62	4.77	2.53	15.74	8.61	16.26
Royalty expenses	18.30	16.29	17.42	57.14	50.05	76.45
Net loss on foreign currency transaction	0.31	-	0.03	0.31	0.11	0.11
Corporate social responsibility expense	2.37	32.00	34.71	34.37	57.86	27.28
Loss on write-off/sale of property, plant and equipment	-	0.09	-	0.09	0.35	0.62
Fair value adjustments for contingent consideration	-	-	-	23.76	-	-
Miscellaneous expenses	31.80	21.62	2.92	72.55	8.24	68.59
Total Expense	**779.45**	**644.29**	**467.69**	**1,985.19**	**1,349.65**	**2,031.08**

*Also refer note 24.5

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CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

Additional disclosures as required by paragraph 6 of chapter 4 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

18 Statement of Net Distributable Cash Flows - Cube Highways Trust

(Amounts in Rs. Million)

Particulars	Quarter ended			Nine months ended		Year ended
	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	December 31, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
Cashflows from operating activities of the Trust	**(103.63)**	**(235.04)**	**(167.49)**	**(475.95)**	**(404.75)**	**(628.18)**
(+) Cash flows received from SPV's/ Investment entities which represent distributions of NDCF computed as per relevant framework (Refer note i)	9,068.14	9,649.21	8,169.56	26,329.57	19,631.85	26,536.85
(+) Treasury income / income from investing activities of the Trust (interest income received from FD, any investment entities as defined in Regulation 18(5), tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis) (refer note iii)	17.38	45.93	7.83	67.93	85.69	98.05
(+) Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs/Holdcos or Investment Entity adjusted for the following • Applicable capital gains and other taxes • Related debts settled or due to be settled from sale proceeds • Directly attributable transaction costs • Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
(+) Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs/ Hold cos or Investment Entity not distributed pursuant to an earlier plan to re-invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
(-) Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss account of the Trust	(3,486.55)	(3,648.53)	(2,652.00)	(10,251.95)	(7,677.92)	(10,593.82)
(-) Debt repayment at Trust level (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt in any form or funds raised through issuance of units)	(1,134.02)	(1,592.03)	(1,008.04)	(3,697.36)	(3,047.99)	(4,139.09)
(-) any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with financial institution, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, or (iv). agreement pursuant to which the Trust operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations; or	-	(126.16)	-	(126.16)	(450.00)	(450.00)
(-) any capital expenditure on existing assets owned / leased by the InvIT, to the extent not funded by debt / equity or from contractual reserves created in the earlier years	-	-	-	-	-	-
NDCF at Trust Level	**4,361.32**	**4,093.38**	**4,349.86**	**11,846.08**	**8,136.88**	**10,823.81**

Notes:

i) This includes Rs. 4,976.02 million received from SPVs after December 31, 2025 but before the date of the Board meeting i.e. January 30, 2026, and excludes Rs. 3,900.89 million received from SPVs during the current quarter which was already considered for computation of NDCF for the quarter ended September 30, 2025.

ii) Subsequent to the quarter ended December 31, 2025, the Board of Directors of Investment Manager, in its meeting dated January 30, 2026, approved a distribution of Rs. 4.10 per unit aggregating Rs. 5,510.51 million for the quarter ended December 31, 2025, to be paid within 5 days from the record date. For the purpose of this distribution, the Management has considered Rs. 1,541.12 million received by the Trust from JUHPL, which represents the expenses appropriated for the period June 12, 2025 (i.e. the acquisition date by the Trust) to December 01, 2025 (being date of receipt of annuity post acquisition) from the SPV's cash balance as on acquisition date as the previous annuity was received prior to SPV's acquisition date.

iii) Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 Statement of net distributable cash flows has been disclosed for the following SPVs

Sr. No.	Name of the SPVs
1	Western UP Tollway Private Limited (WUPTPL) (formerly known as Western UP Tollway Limited)
2	Andhra Pradesh Expressway Private Limited (APEPL) (formerly known as Andhra Pradesh Expressway Limited)
3	Jaipur-Mahua Tollway Private Limited (JMTPL) (formerly known as Jaipur-Mahua Tollway Limited)
4	Mahua Bharatpur Expressways Limited (MBEL)
5	Farakka- Raiganj Highways Private Limited (FRHPL) (formerly known as Farakka- Raiganj Highways Limited)
6	DA Toll Road Private Limited (DATRPL)
7	Ghaziabad Aligarh Expressway Private Limited (GAEPL)
8	Walayar Vaddakencherry Expressways Private Limited (WVEPL)
9	Nelamangala Devihalli Expressway Private Limited (NDEPL)
10	Hazaribagh Tollway Private Limited (HTPL) (formerly known as Hazaribagh Tollway Limited)
11	Jhansi-Lalitpur Tollway Private Limited (JLTPL) (formerly known as Jhansi-Lalitpur Tollway Limited)
12	Jhansi-Vigakhet Tollway Private Limited (JVTPL) (formerly known as Jhansi-Vigakhet Tollway Private Limited)
13	Kanyakumari-Etturavattam Tollway Private Limited (KETPL) (formerly known as Kanyakumari-Etturavattam Tollway Limited)
14	Kotwa-Muzaffarpur Tollway Private Limited (KMTPL) (formerly known as Kotwa-Muzaffarpur Tollway Limited)
15	Lucknow-Raebareli Tollway Private Limited (LRTPL) (formerly known as Lucknow-Raebareli Tollway Limited)
16	Madurai-Kanyakumari Tollway Private Limited (MKTPL) (formerly known as Madurai-Kanyakumari Tollway Limited)
17	Nanguneri-Kanyakumari Tollway Private Limited (NKTPL) (formerly known as Nanguneri-Kanyakumari Tollway Limited)
18	Salaipudhur-Madurai Tollway Private Limited (SMTPL) (formerly known as Salaipudhur-Madurai Tollway Limited)
19	Srirangam Infra Private Limited (SIPL) (formerly KNR Srirangam Infra Private Limited)
20	Shankarampet Projects Private Limited (SPPL) (formerly KNR Shankarampet Projects Private Limited)
21	Tirumala Highways Private Limited (THPL) (formerly KNR Tirumala Infra Private Limited)
22	Borgaon Watembare Highways Private Limited (BWHPL)
23	Mangalwedha Solapur Highways Private Limited (MSHPL)
24	Mangloor Highways Private Limited (MHPL)
25	N.A.M. Expressway Private Limited (NAMEPL) (formerly N.A.M. Expressway Limited)*
26	Quazigund Expressway Private Limited (QEPL)**
27	Jammu Udhampur Highway Private Limited (JUHPL) (formerly Athang Jammu Udhampur Highway Private Limited)**

*Since NAMEL SPV was acquired on February 12, 2025, no NDCF for the comparative periods have been disclosed.
**Since QEPL and JUHPL SPVs were acquired on June 12, 2025 (Refer note 3), no NDCFs for the comparative periods have been disclosed.

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CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2025 to December 31, 2025 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL	MKTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**328.96**	**243.20**	**163.43**	**175.69**	**268.87**	**136.74**	**457.07**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	10.37	8.04	6.23	3.70	2.20	9.21	1.96
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.07)	(19.04)	(13.76)	(0.16)	(24.80)	0.22	(0.89)
Net Distributable Cash Flows	**339.26**	**232.20**	**155.90**	**179.23**	**246.27**	**146.17**	**458.14**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2025 to December 31, 2025 (contd.)

Particulars	NKTPL	SMTPL	NDEPL	APEPL	MBEL	JMTPL	WUPTPL**
Cash flow from operating activities as per Cash Flow Statement of SPV	**191.20**	**174.16**	**231.43**	**(140.02)**	**198.73**	**398.44**	**63.77**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	167.02	2.71	0.82	5.87	22.33	(4.17)	6.22
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(21.17)	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(1.12)	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	138.88	(62.32)	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.31)	-	(0.18)	(0.15)	(2.41)	(0.31)	(1.13)
Net Distributable Cash Flows	**357.91**	**176.87**	**232.07**	**4.58**	**134.04**	**393.96**	**68.86**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

**For the quarter ending 31 December 2025, WUPTPL is unable to declare a dividend or make a distribution to the Trust as required by SEBI InvIT Regulations because of negative free reserves and the absence of outstanding debts to the Trust.

WUPTPL filed an initial application with the National Company Law Tribunal (NCLT) for reduction and reorganisation of capital under Section 230, read with Sections 66 and 52, and other applicable provisions of the Companies Act, 2013, owing to significant accumulated losses ~that have significantly reduced the value of WUPTPL~, represented by its equity share capital, securities premium, deemed capital contribution, and Equity Component on NCDs. The petition was filed on 22 August 2025, and the NCLT passed an order on 7 October 2025, dispensing with the meetings of shareholders and creditors.

Subsequently, a second motion petition was filed with the NCLT on 14 October 2025, seeking final approval of the proposed scheme of capital reduction and reorganisation, which was heard on 12 January 2026. The next hearing is scheduled for 16 February 2026.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2025 to December 31, 2025 (contd.)

Particulars	GAEPL	WVEPL	FRHPL	DATRPL	BWHPL	SIPL	SPPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**977.28**	**226.41**	**516.39**	**1,262.88**	**378.22**	**469.99**	**387.54**
(+) Opening balance (reserve created earlier years)	-	-	-	-	-	-	-
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	49.80	0.73	0.78	3.73	0.40	6.40	(2.20)
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	303.03	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	0.01
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	(100.00)	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	(59.02)	(120.24)	(32.47)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.43)	(1.93)	0.03	(2.94)	-	(0.14)	(0.06)
Net Distributable Cash Flows	**1,026.65**	**225.21**	**517.20**	**1,466.70**	**319.60**	**356.01**	**352.82**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2025 to December 31, 2025 (contd.)

Particulars	THPL	MHPL	MSHPL	NAMEPL	QEPL	JUHPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**535.91**	**366.00**	**457.27**	**633.08**	**(122.18)**	**1,886.78**
(+) Opening balance (reserve created earlier years)	-	-	-	-	-	-
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	10.52	18.69	7.94	2.93	57.60	12.08
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	(55.72)	(83.79)	(109.60)	-	187.28	(271.44)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.22)	(0.13)	-	(1.91)	(0.68)	(0.93)
Net Distributable Cash Flows	**490.49**	**300.77**	**355.61**	**634.10**	**122.02**	**1,626.49**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from July 01, 2025 to September 30, 2025 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL	MKTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**335.29**	**225.90**	**151.12**	**181.72**	**210.99**	**131.51**	**455.16**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	3.03	2.33	4.50	3.36	0.96	8.02	2.86
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.08)	(0.33)	(0.77)	(2.11)	(0.43)	(0.58)	(2.12)
Net Distributable Cash Flows	**338.24**	**227.90**	**154.85**	**182.97**	**211.52**	**138.95**	**455.90**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from July 01, 2025 to September 30, 2025 (contd.)

Particulars	NKTPL	SMTPL	NDEPL	APEPL	MBEL	JMTPL	WUPTPL**
Cash flow from operating activities as per Cash Flow Statement of SPV	**213.76**	**189.38**	**203.63**	**603.18**	**198.90**	**376.81**	**152.45**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	16.12	0.40	1.28	4.27	(1.96)	11.78	(6.43)
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(25.55)	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(98.88)	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	(155.33)	(57.80)	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.58)	(1.62)	(0.51)	-	(0.28)	(0.61)	(0.44)
Net Distributable Cash Flows	**228.30**	**188.16**	**204.40**	**452.12**	**14.43**	**387.98**	**145.58**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

**For the quarter ended September 30, 2025, WUPTPL was not able to declare dividend and therefore was not able to make distribution as required by SEBI InvIT Regulations to Trust due to negative free reserves and no outstanding debts to the Trust.

WUPTPL filed a first motion application with the National Company Law Tribunal (NCLT) for reduction and reorganisation of capital under Section 230 read with Section 66 and Section 52 and other applicable provisions of the Companies Act, 2013 in view of significant accumulated losses which has substantially wiped off the value of the Applicant Company represented by its equity share capital, securities premium, deemed capital contribution and Equity Component NCDs. The petition was filed on 22 August, 2025 and an order dispensing the meetings of the shareholders and the creditors was passed by the NCLT on October 07,2025. A second motion with the NCLT is filed on 14 October 2025 for seeking approval of the proposed scheme of capital reduction and reorganisation; which is yet to be heard as of date.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from July 01, 2025 to September 30, 2025 (contd.)

Particulars	GAEPL	WVEPL	FRHPL	DATRPL	BWHPL	SIPL	SPPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**873.70**	**227.54**	**494.24**	**1,231.86**	**69.77**	**(138.21)**	**92.95**
(+) Opening balance (reserve created earlier years)	**-**	**-**	**-**	**-**	159.93	45.45	32.58
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	(10.94)	0.94	1.03	4.93	2.74	1.61	0.73
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	(101.55)	91.15	14.78
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(7.08)	(0.02)	(2.58)	(9.30)	(0.06)	(0.01)	(0.82)
Net Distributable Cash Flows	**855.68**	**228.46**	**492.69**	**1,227.49**	**130.83**	**(0.01)**	**140.22**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from July 01, 2025 to September 30, 2025 (contd.)

Particulars	THPL	MHPL	MSHPL	NAMEPL	QEPL	JUHPL**
Cash flow from operating activities as per Cash Flow Statement of SPV	**(60.22)**	**333.45**	**531.42**	**699.65**	**2,371.17**	**(72.76)**
(+) Opening balance (reserve created earlier years)	37.58	62.19	53.54	-	-	-
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	7.40	(0.25)	4.96	66.57	64.61	63.94
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(159.08)	(116.24)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(8.93)	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	16.34	(124.38)	(116.08)	-	(291.87)	36.20
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.10)	(0.41)	(0.06)	0.50	(1.44)	(1.31)
Net Distributable Cash Flows	**-**	**270.60**	**473.78**	**766.72**	**1,974.46**	**(90.17)**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.
**On account of negative NDCF no reserve was created for expected cash outflows towards operating expenses and statutory dues till receipt of next annuity payment from NHAI.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2024 to December 31, 2024 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**295.37**	**227.18**	**160.46**	**122.69**	**217.48**	**137.76**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	22.00	7.70	9.71	7.45	2.53	29.04
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.10)	(1.05)	(1.13)	(0.52)	(0.62)	(11.15)
Net Distributable Cash Flows	**317.27**	**233.83**	**169.04**	**129.62**	**219.39**	**155.65**

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2024 to December 31, 2024 (contd.)

Particulars	MKTPL	NKTPL	SMTPL	NDEPL	APEPL	MBEL*
Cash flow from operating activities as per Cash Flow Statement of SPV	**226.98**	**99.83**	**131.10**	**250.33**	**(155.42)**	**217.37**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	4.10	165.96	3.10	3.27	25.02	20.28
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	(26.52)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;(refer note below)	-	-	-	-	-	(91.08)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.14)	(0.27)	(0.21)	(0.75)	-	(0.07)
Net Distributable Cash Flows	**230.94**	**265.52**	**133.99**	**252.85**	**(130.40)**	**119.98**

*Reserve created to maintain DSRA and Major Maintenance Reserve as per debt documents.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2024 to December 31, 2024 (contd.)

Particulars	JMTPL	WUPTPL	GAEPL	WVEPL	FRHPL	DATRPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**366.93**	**325.01**	**839.87**	**219.18**	**519.33**	**1,334.55**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	3.73	11.79	50.06	2.59	5.88	12.21
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	(2.66)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	-	(0.03)	(0.19)	(0.24)	(3.02)	(2.57)
Net Distributable Cash Flows	**370.66**	**336.77**	**889.74**	**221.53**	**522.19**	**1,341.53**

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from October 01, 2024 to December 31, 2024 (contd.)

Particulars	BWHPL	SIPL	SPPL	THPL	MHPL	MSHPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**453.86**	**514.97**	**479.41**	**724.42**	**57.71**	**488.14**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	12.83	33.20	25.79	84.78	9.67	9.93
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	(0.01)	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;*****	(107.12)	(123.73)	(141.23)	(186.44)	-	(204.21)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.03)	(0.12)	(0.12)	(0.12)	(1.89)	(1.77)
Net Distributable Cash Flows	**359.53**	**424.32**	**363.85**	**622.64**	**65.49**	**292.09**

*Amount set aside for expected cash outflows towards operating expenses and statutory dues till receipt of next annuity payment from NHAI.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2025 to December 31, 2025 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL	MKTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**987.45**	**706.14**	**479.54**	**512.80**	**732.13**	**419.62**	**1,174.82**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	18.13	11.40	11.68	6.72	4.18	22.24	5.97
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.15)	(19.51)	(14.67)	(2.34)	(26.71)	(0.56)	(3.01)
Net Distributable Cash Flows	**1,005.43**	**698.03**	**476.55**	**517.18**	**709.60**	**441.30**	**1,177.78**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2025 to December 31, 2025 (contd.)

Particulars	NKTPL	SMTPL	NDEPL	APEPL	MBEL	JMTPL	WUPTPL**
Cash flow from operating activities as per Cash Flow Statement of SPV	**538.43**	**539.30**	**679.03**	**421.08**	**595.78**	**1,307.32**	**622.61**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	226.98	3.70	3.78	15.70	18.85	9.80	(1.28)
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(70.80)	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(200.00)	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	(16.45)	(182.44)	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.89)	(1.62)	(1.35)	(0.46)	(2.71)	(0.99)	(1.57)
Net Distributable Cash Flows	**763.52**	**541.38**	**681.46**	**419.87**	**158.68**	**1,316.13**	**619.76**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

**For the quarter ending 31 December 2025, WUPTPL is unable to declare a dividend or make a distribution to the Trust as required by SEBI InvIT Regulations because of negative free reserves and the absence of outstanding debts to the Trust.

WUPTPL filed an initial application with the National Company Law Tribunal (NCLT) for reduction and reorganisation of capital under Section 230, read with Sections 66 and 52, and other applicable provisions of the Companies Act, 2013, owing to significant accumulated losses ~that have significantly reduced the value of WUPTPL~, represented by its equity share capital, securities premium, deemed capital contribution, and Equity Component on NCDs. The petition was filed on 22 August 2025, and the NCLT passed an order on 7 October 2025, dispensing with the meetings of shareholders and creditors.

Subsequently, a second motion petition was filed with the NCLT on 14 October 2025, seeking final approval of the proposed scheme of capital reduction and reorganisation, which was heard on 12 January 2026. The next hearing is scheduled for 16 February 2026.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2025 to December 31, 2025 (contd.)

Particulars	GAEPL	WVEPL	FRHPL	DATRPL	BWHPL	SIPL	SPPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**2,630.64**	**674.91**	**1,580.01**	**3,766.73**	**344.70**	**915.46**	**883.94**
(+) Opening balance (reserve created earlier years)	-	-	-	-	159.93	45.45	32.58
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	39.50	2.71	3.22	15.71	7.44	9.67	5.63
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	303.03	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	(100.00)	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	(59.02)	(154.87)	(65.05)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(9.75)	(1.97)	(2.55)	(12.25)	(0.06)	(0.16)	(1.04)
Net Distributable Cash Flows	**2,660.39**	**675.65**	**1,580.68**	**3,973.22**	**452.99**	**815.55**	**856.06**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2025 to December 31, 2025 (contd.)

Particulars	THPL	MHPL	MSHPL	NAMEPL	QEPL[ii]	JUHPL[iii]
Cash flow from operating activities as per Cash Flow Statement of SPV	**1,068.60**	**635.11**	**933.68**	**1,986.65**	**2,219.86**	**1,500.18**
(+) Opening balance (reserve created earlier years)	37.58	62.19	53.54	-	-	-
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)(i)	23.00	22.13	16.02	110.05	161.77	106.86
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(179.32)	(166.07)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(59.78)	(991.91)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	(85.05)	(145.98)	(172.14)	-	(104.59)	(271.44)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.32)	(0.54)	(0.06)	(20.02)	(2.14)	(2.24)
Net Distributable Cash Flows	**1,042.81**	**572.91**	**831.04**	**2,076.68**	**2,035.80**	**175.38**

(i) Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

(ii) Expenses incurred during the period June 12, 2025 (i.e. the acquisition date by the Trust) to July 30, 2025 (being date of receipt of annuity post acquisition) aggregating Rs. 216.49 million have been appropriated from the cash balance as on acquisition date as the previous annuity was received prior to acquisition date. Accordingly, these expenses have been adjusted to reflect available distribution for the period.

(iii) Expenses incurred during the period June 12, 2025 (i.e. the acquisition date by the Trust) to December 01, 2025 (being date of receipt of annuity post acquisition) aggregating Rs. 1,541.12 million have been appropriated from the cash balance as on acquisition date as the previous annuity was received prior to acquisition date. Accordingly, these expenses have been adjusted to reflect available distribution for the period.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to December 31, 2024 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**844.23**	**676.50**	**462.07**	**369.16**	**648.00**	**407.33**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	32.04	23.77	23.19	10.86	12.36	38.10
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.64)	(4.95)	(5.48)	(5.12)	(10.70)	(27.57)
Net Distributable Cash Flows	**875.63**	**695.32**	**479.78**	**374.90**	**649.66**	**417.86**

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to December 31, 2024 (contd.)

Particulars	MKTPL	NKTPL	SMTPL	NDEPL	APEPL	MBEL*
Cash flow from operating activities as per Cash Flow Statement of SPV	**682.57**	**321.95**	**403.12**	**664.79**	**(474.92)**	**415.67**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	7.84	402.07	5.38	13.38	63.39	67.12
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	(34.55)	(82.22)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(125.84)	(150.00)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations; (refer note below)	-	(180.00)	-	-	-	(91.08)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(4.73)	(5.16)	(4.96)	(3.94)	-	(0.33)
Net Distributable Cash Flows	**685.68**	**538.86**	**403.54**	**674.23**	**(571.92)**	**159.16**

*Reserve created to maintain DSRA and Major Maintenance Reserve as per debt documents.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to December 31, 2024 (contd.)

Particulars	JMTPL	WUPTPL	GAEPL	WVEPL	FRHPL	DATRPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**813.59**	**1,021.02**	**2,240.82**	**628.73**	**1,526.47**	**3,717.65**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	16.77	32.43	89.98	6.64	19.22	37.22
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	(2.66)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.65)	(0.45)	(0.46)	(0.38)	(3.52)	(18.38)
Net Distributable Cash Flows	**829.71**	**1,053.00**	**2,330.34**	**634.99**	**1,542.17**	**3,733.83**

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to December 31, 2024 (contd.)

Particulars	BWHPL	SIPL	SPPL	THPL	MHPL	MSHPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**439.88**	**983.17**	**547.28**	**616.22**	**391.78**	**1,036.18**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)	28.77	46.80	32.00	91.21	13.48	20.56
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	(3.79)	(3.33)	(4.07)	(57.08)	(36.85)	(3.68)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	(4.52)	(4.67)	(9.39)	(9.00)	(10.88)	(9.82)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;*	(107.12)	(123.73)	(141.23)	(186.44)	-	(204.21)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.03)	(0.12)	(0.15)	(0.35)	(10.26)	(1.79)
Net Distributable Cash Flows	**352.19**	**898.12**	**424.44**	**454.56**	**347.27**	**837.24**

*Amount set aside for expected cash outflows towards operating expenses and statutory dues till receipt of next annuity payment from NHAI.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025 (contd.)

Particulars	HTPL	JLTPL	JVTPL	KETPL	KMTPL	LRTPL	MKTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**1,174.16**	**907.37**	**609.65**	**495.74**	**880.38**	**602.67**	**909.39**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	33.01	22.64	22.29	9.91	12.74	37.34	7.91
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	-	-	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	-	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	-	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.63)	(6.64)	(7.16)	(5.25)	(11.31)	(27.80)	(5.13)
Net Distributable Cash Flows	**1,206.54**	**923.37**	**624.78**	**500.40**	**881.81**	**612.21**	**912.17**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST

Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025

(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025 (contd.)

Particulars	NKTPL	SMTPL	NDEPL	APEPL***	MBEL	JMTPL	WUPTPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**453.87**	**545.70**	**882.63**	**41.61**	**657.07**	**1,362.55**	**1,070.64**
Add: Opening cash and bank balance**	-	-	-	-	-	-	279.30
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	406.89	5.15	15.28	65.85	66.84	14.87	29.87
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	(34.55)	(108.11)	-	-
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	(125.49)	(150.00)	-	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	(180.00)	-	-	-	(149.76)	-	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(7.35)	(5.20)	(4.25)	-	(0.47)	(0.95)	(0.72)
Net Distributable Cash Flows	**673.41**	**545.65**	**893.66**	**(52.58)**	**315.57**	**1,376.47**	**1,379.09**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.
**Amount reflected in opening cash and bank balance as on 01 April 2024 represent reserves created Rs. 279.30 millions as per SEBI guidelines as on 31 March 2024.
***On account of negative NDCF no reserve is created for expected cash outflows towards operating expenses and statutory dues till receipt of next annuity payment from NHAI.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025 (contd.)

Particulars	GAEPL	WVEPL	FRHPL	DATRPL	BWHPL	SIPL	SPPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**3107.39**	**828.09**	**2,082.54**	**5,097.43**	**971.12**	**966.19**	**595.77**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	87.06	7.98	20.55	45.07	32.54	46.22	54.36
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	-	-	-	(2.66)	(3.94)	(3.36)	(4.22)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	-	-	-	-	(4.52)	(4.67)	(9.39)
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	-	-	-	-	(159.93)	(45.46)	(32.58)
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(1.72)	(1.01)	(4.40)	(24.28)	(1.20)	(1.06)	(0.28)
Net Distributable Cash Flows	**3,192.73**	**835.06**	**2,098.69**	**5,115.56**	**834.07**	**957.86**	**603.66**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

CUBE HIGHWAYS TRUST
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

18 SPV wise statement of net distributable cash flows for the period from April 01, 2024 to March 31, 2025

Particulars	THPL	MHPL	MSHPL	NAMEPL
Cash flow from operating activities as per Cash Flow Statement of SPV	**504.90**	**796.94**	**1,019.39**	**328.97**
Add: Cash Flows received from SPV's which represent distributions of NDCF computed as per relevant framework	-	-	-	-
Add:Treasury income / income from investing activities (interest income received from FD, tax refund, any other income in the nature of interest, profit on sale of Mutual funds, investments, assets etc., dividend income etc., excluding any Ind AS adjustments. Further clarified that these amounts will be considered on a cash receipt basis)*	100.65	10.53	25.64	28.88
Add: Proceeds from sale of infrastructure investments, infrastructure assets or shares of SPVs or Investment Entity adjusted for the following: - Applicable capital gains and other taxes - Related debts settled or due to be settled from sale proceeds - directly attributable transaction costs; - Proceeds reinvested or planned to be reinvested as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations	-	-	-	-
Add: Proceeds from sale of infrastructure investments, infrastructure assets or sale of shares of SPVs or Investment Entity not distributed pursuant to an earlier plan to re invest as per Regulation 18(7) of InvIT Regulations or any other relevant provisions of the InvIT Regulations, if such proceeds are not intended to be invested subsequently	-	-	-	-
Less: Finance cost on Borrowings, excluding amortisation of any transaction costs as per Profit and Loss Account and any shareholder debt / loan from Trust	(57.10)	(36.93)	(3.78)	(78.28)
Less: Debt repayment (to include principal repayments as per scheduled EMI's except if refinanced through new debt including overdraft facilities and to exclude any debt repayments / debt refinanced through new debt, in any form or equity raise as well as repayment of any shareholder debt / loan from Trust)	(9.00)	(10.88)	(9.82)	-
Less: any reserve required to be created under the terms of, or pursuant to the obligations arising in accordance with, any: (i). loan agreement entered with banks / financial institution from whom the Trust or any of its SPVs/ HoldCos have availed debt, or (ii). terms and conditions, covenants or any other stipulations applicable to debt securities issued by the Trust or any of its SPVs/ HoldCos, or (iii). terms and conditions, covenants or any other stipulations applicable to external commercial borrowings availed by the Trust or any of its SPVs/ HoldCos, (iv). agreement pursuant to which the SPV/ HoldCo operates or owns the infrastructure asset, or generates revenue or cashflows from such asset (such as, concession agreement, transmission services agreement, power purchase agreement, lease agreement, and any other agreement of a like nature, by whatever name called); or (v). statutory, judicial, regulatory, or governmental stipulations;	(37.58)	(62.19)	(53.54)	-
Less: any capital expenditure on existing assets owned / leased by the SPV or Holdco, to the extent not funded by debt / equity or from reserves created in the earlier years	(0.46)	(10.94)	(1.86)	(4.40)
Net Distributable Cash Flows	**501.41**	**686.53**	**976.03**	**275.17**

*Unrealised gain on overnight mutual funds considered as "Cash and cash equivalents" is excluded from treasury income as the same is recognised on receipt basis for purpose of NDCF calculation.

19 Commitments

Particulars	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
Estimated amount of contracts remaining to be executed on capital account not provided for (Net of Advance) towards:				
- Property, plant and equipment	50.31	-	-	-
- Intangible assets- Rights under Service Concession Arrangements	126.35	100.27	478.19	464.92

The Trust Group has other commitments for services which are received as per requirements per operating cycle in normal course of business. The Trust Group does not have any other long term commitments or material non-cancellable contractual commitments/contracts, which might have material impact on the Consolidated Unaudited Financial Information.

20 Contingent liabilities and claims

Sr. No.	Particulars	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
	Claims against the Trust Group not acknowledged as debt				
a)	In respect of Income-tax matters, disputed by SPVs	461.83	562.56	743.27	686.83
b)	In respect of Indirect tax matters (VAT/Entry tax/Service tax/GST) disputed by SPVs[(i)]	4,515.21	4,361.56	5,692.05	4,309.77
c)	Damages/Penalties levied by NHAI/Independent engineer on account of default/deficiencies in terms of the concession agreement	20.61	20.61	63.01	20.61
d)	Revenue Claim levied by State Authority (In terms of the SPA entered between the SPVs and erstwhile promoters, these matters are covered under specific indemnity from erstwhile promoters)	114.40	114.40	-	-
e)	In respect of Stamp Duty matters, disputed by SPVs[(ii)]	1,931.80	932.70	932.70	932.70
f)	Civil suits related to accident claim and land encroachment matter at one SPV	7.70	7.70	7.70	7.70

Notes:

(i) Includes GST demand of Rs. 3,480.69 million (inclusive of interest and penalty) received by certain HAM SPVs alleging liability to GST on entire Bid Project Cost amount upfront on receipt of completion certificate, in relation to which the SPVs have filed a writ before the High Court/appeal before the relevant appellate authority. In terms of the SPA entered between the SPVs and erstwhile promoters, these matters are covered under specific indemnity from erstwhile promoters.

(ii) In light of a Supreme Court decision in Rewa Tollway P. Limited v. The State of Madhya Pradesh & ORS., the Trust has reassessed stamp duty obligations (including for stamp duty matters disputed by certain SPVs referred above) for the concession agreements entered into by the SPVs with NHAI, considering inter-alia, types of concession agreement (DBFOT/BOT/TOT/HAM/Annuity), rights under terms and conditions of the concession agreements, indemnity to the extent under the Share Purchase Agreements entered by the Trust at the time of acquisition of the SPVs, jurisdiction of the relevant authority, and status of ongoing proceedings. Based on the assessment above supported by the legal advice, the Trust group does not expect the ultimate outflow of resources embodying economic benefits, which could materially affect the financial performance and position of the Trust Group.

(iii) The management of the Group assesses all material claims in the nature of demands and the show cause notices ("SCNs"), including intimation prior to SCNs, relating to Income tax, Indirect taxes and other litigations against the Group and based on legal advice in certain cases, evaluates whether it is probable, possible or remote ("PPR"). The Group discloses matters as contingent liability that are assessed as possible and The relevant SPVs are contesting the aforesaid notices /order before various authorities and are confident that the matters will be decided in Favor of the SPVs and ultimately no liability is likely to be devolved on the respective SPVs. Future ultimate outflow of resources embodying economic benefits in respect of the above matters are uncertain as it depends on the final outcome of the matter involved.

21 Earnings per Unit (EPU)

The following table reflects the income and share data used in the basic and diluted EPU computations:	Quarter ended			Nine months ended		Year ended
	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	December 31, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
Profit/(loss) attributable to unit holders:						
Profit/(loss) for the period attributable to owners of the Trust for calculating basic EPU (Rs. in Million)	410.35	402.18	520.05	817.12	259.64	(357.33)
Adjustments for reclassification of Subordinate Units	-	-	-	-	-	-
Profit/(loss) for the period attributable to owners of the Trust for calculating diluted EPU (Rs. in Million)	**410.35**	**402.18**	**520.05**	**817.12**	**259.64**	**(357.33)**
Calculation of weighted average number of units outstanding (units in Million):						
Weighted average number of Ordinary units outstanding	1,344.07	1,344.07	1,334.45	1,344.07	1,334.45	1,334.45
Add: Estimated Subordinate Units to be reclassified to Ordinary Units[(i)]	-	-	-	-	-	0.03
Weighted average number of units outstanding for calculating basic EPU (units in Million)	**1,344.07**	**1,344.07**	**1,334.45**	**1,344.07**	**1,334.45**	**1,334.48**
Add: Dilutive Units[(ii)]	-	-	-	-	-	-
Weighted average number of units outstanding for calculating diluted EPU (units in Million)	**1,344.07**	**1,344.07**	**1,334.45**	**1,344.07**	**1,334.45**	**1,334.48**
Basic earnings per unit (Rs. absolute amount)	0.31	0.30	0.39	0.61	0.19	(0.27)
Diluted earnings per unit (Rs. absolute amount)	0.31	0.30	0.39	0.61	0.19	(0.27)

(i) Subordinate units considered for calculating Basic and Diluted EPU (Refer note 25 and 26):

Particulars	Date considered for Basic and Diluted EPU	Units to be reclassified (in million)	Date of reclassification	Units reclassified (in million)
DATRPL Subordinate Units	March 31, 2024	44.10	July 19, 2024	44.10
JMTPL & MBEL Subordinate Units	March 31, 2025	9.62	July 14, 2025	9.62

(ii) There are no dilutive units to be considered for the purpose of calculating diluted EPU.

(iii) There have been no transactions involving units or potential units between the reporting date and the date of authorisation of these financial information.

Cube Highways Trust
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

22 Ratios

(Additional disclosures as required by paragraph 6 of chapter 4 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025)

S No	Particulars	Quarter ended			Nine months ended		Year ended
		December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	December 31, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
1	Debt Service Coverage Ratio(in times) Earnings before interest, tax, depreciation and amortisation (EBITDA*)/ (Gross Interest+Principal repayment of Long term debts)	1.72	1.62	1.74	1.55	1.63	1.53
2	Interest Service Coverage Ratio (in times) Earnings before interest, tax, depreciation and amortisation (EBITDA*)/ Interest Expense on Long term borrowings	2.27	2.17	2.40	2.20	2.33	2.24
3	Net worth (Rs. in Million) (Unit Capital+Other Equity)	1,01,986.78	1,06,415.81	1,19,326.92	1,01,986.78	1,19,326.92	1,14,373.90
4	Debt Equity Ratio (in times) [Total Debt(Current and Non Current Borrowing)/ Total equity]	1.74	1.68	1.06	1.74	1.06	1.32
5	Total Asset Cover (Total assets available for secured Debt Securities (secured by either pari passu or exclusive charge on assets) / Total Borrowings (including Debt Securities) (secured by either pari passu or exclusive charge on assets)#	1.72	1.73	2.08	1.72	2.08	1.89
6	Total Debt to Total assets (in times) [Total Debt(Current and Non Current Borrowings)/ Total Assets]	0.60	0.59	0.48	0.60	0.48	0.54
7	Earnings before interest tax depreciation and amortisation margin (EBITDA margin in percentage) ((EBITDA* / Total income)*100)	71.96%	74.24%	72.57%	72.77%	70.18%	68.91%
8	Distribution per unit (in Rs.)##	3.60	2.50	2.00	9.85	7.94	11.19
9	Net Profit Margin (Percentage) (('Profit/(loss) for the period/year)/ Total income)*100)	3.72%	3.69%	5.87%	2.58%	1.01%	-1.03%
10	Current Ratio (in times) (Current assets/Current liabilities)	2.64	2.67	2.27	2.64	2.27	2.05

* EBITDA excludes impairment of intangible assets
#Calculated as per Debt documents for borrowings at standalone Trust.
##Distribution paid during the period/year.

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23 Statement of Net Borrowing Ratio of the Trust Group

(Additional disclosures as required by paragraph 6 of chapter 4 to the SEBI Master Circular No. SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025)

S. No.	Particulars	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
A	Borrowings (refer note 1)	1,78,834.52	1,79,923.44	1,26,978.68	1,52,063.65
B	Deferred Payments (refer note 2)	122.99	568.25	618.00	485.00
C	Cash and Cash Equivalents (refer note 3)	9,832.62	7,501.28	14,038.00	8,467.08
D	Aggregate Borrowings and Deferred Payments net of Cash and Cash Equivalents (A+B-C)	1,69,124.89	1,72,990.41	1,13,558.68	1,44,081.57
E	Value of InvIT assets (refer note 4)	3,60,929.45	3,65,199.18	2,90,292.00	3,22,657.15
F	**Net Borrowings Ratio (D/E)**	**46.86%**	**47.37%**	**39.12%**	**44.65%**

Note 1: Lender wise and entity wise details of borrowings (undiscounted) is as follows:-

Name of Lender	Name of Entity	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
State Bank of India	Trust	68,792.01	69,402.77	61,881.84	65,584.46
HDFC Bank limited	Trust	16,821.99	16,940.00	9,075.90	11,132.83
ICICI Bank Limited	Trust	1,778.33	1,783.51	13,430.80	13,316.90
Axis Bank Limited	Trust	14,572.26	14,669.48	6,738.91	8,817.52
National Bank for financing Infrastructure and Development	Trust	25,313.12	25,501.83	17,802.05	20,843.29
KNR Constructions Limited	WVEPL	150.99	150.99	150.99	150.99
Rated, listed and redeemable Non - Convertible Debentures	MBEL	1,050.00	1,050.00	1,250.00	1,250.00
Rated, listed and redeemable Non - Convertible Debt Securities	Trust	50,031.00	50,145.20	16,232.60	30,686.00
Unsecured Non Convertible Debentures-Reliance Infrastructure Ltd.	DATRPL	-	100.00	100.00	100.00
Unsecured Non Convertible Debentures-National Investment and Infrastructure fund	QEPL	15.92	15.92	-	-
Accrued Interest	Trust ; MBEL and QEPL	308.90	163.74	315.59	181.66
Total Borrowings		**1,78,834.52**	**1,79,923.44**	**1,26,978.68**	**1,52,063.65**

Note 2: Deferred Payments pertains to contingent consideration of assets acquired included by independent valuer while calculating value of InvIT Assets.

Note 3: Entity wise breakup of cash and cash equivalent is as follows:

Name of Entity	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	As at December 31, 2024 (Unaudited)*	March 31, 2025 (Audited)
JUHPL	1,507.88	180.34	-	-
APEPL	204.17	155.19	168.58	400.49
BWHPL	421.19	100.29	474.64	738.41
DATRPL	589.65	166.25	312.34	106.00
FRHPL	120.57	136.23	189.34	144.01
GAEPL	618.07	446.47	804.14	602.54
HTPL	79.14	145.51	662.28	303.12
JLTPL	116.16	134.08	259.74	266.91
JMTPL	418.57	138.70	229.98	537.10
JVTPL	43.05	69.95	310.84	225.10
KETPL	117.44	136.36	210.61	154.56
KMTPL	59.86	69.22	149.58	126.58
LRTPL	97.08	96.31	809.26	293.46
MBEL	620.49	409.93	792.90	621.32
MHPL	485.33	240.60	185.63	461.78
MKTPL	257.92	89.12	146.43	120.14
MSHPL	577.77	82.99	616.42	213.15
NAMEPL	130.77	145.69	-	455.67
NDEPL	69.70	54.88	208.90	63.13
NKTPL	710.54	358.67	4,382.89	1,137.14
QEPL	118.00	2,337.81	-	-
SIPL	552.46	78.75	572.43	208.32
SMTPL	92.19	156.85	98.29	105.38
SPPL	30.51	236.92	441.01	291.95
THPL	631.84	88.67	973.10	200.63
Trust	245.53	391.87	394.71	165.30
WUPTPL	861.70	790.63	541.08	482.22
WVEPL	55.04	63.00	102.88	42.67
Grand Total	**9,832.62**	**7,501.28**	**14,038.00**	**8,467.08**

*As at December 31, 2024, Cash and cash equivalent includes Investment in mutual funds, other bank balances and Deposits with banks with original maturity of more than twelve months.

Note 4 Enterprise Value of InvIT assets is based on the valuation done by independent valuer appointed by the Trust. Entity wise breakup is as follows:

Name of Entity	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	As at December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
JUHPL	10,491.00	12,173.00	-	-
APEPL	1,123.69	1,001.35	1,522.00	1,315.71
BWHPL	3,404.00	3,799.00	3,749.00	3,579.87
DATRPL	77,096.00	76,804.93	76,004.00	74,916.86
FRHPL	27,373.00	27,240.00	27,661.00	26,853.11
GAEPL	35,560.00	35,502.00	30,877.00	32,781.86
HTPL	20,701.50	20,546.00	17,317.00	18,223.96
JLTPL	12,749.00	12,687.00	11,989.00	12,260.61
JMTPL	7,627.00	7,890.00	10,026.00	9,493.15
JVTPL	7,953.00	7,926.00	7,467.00	7,738.00
KETPL	10,627.50	10,558.50	8,639.00	9,526.96
KMTPL	14,418.00	14,341.00	13,649.00	13,261.16
LRTPL	8,454.15	8,403.15	7,761.00	7,709.62
MBEL	3,851.00	3,984.00	4,328.00	4,319.70
MHPL	2,433.00	2,818.00	3,174.00	2,939.71
MKTPL	16,251.00	16,275.00	14,182.00	14,168.25
MSHPL	3,260.00	4,114.85	3,824.00	4,207.50
NAMEPL	27,337.00	27,312.00	-	27,676.30
NDEPL	4,791.00	4,859.00	5,175.00	5,076.11
NKTPL	13,587.60	14,474.60	9,495.00	12,913.44
QEPL	19,165.37	18,837.80	-	-
SIPL	3,278.00	3,765.00	3,834.00	4,011.89
SMTPL	11,515.00	11,404.00	9,715.00	10,344.93
SPPL	4,200.64	4,177.00	4,270.00	4,432.32
THPL	4,432.00	4,926.00	5,088.00	5,330.37
WUPTPL	(83.00)	31.00	799.00	165.39
WVEPL	9,333.00	9,349.00	9,747.00	9,410.37
Grand Total	**3,60,929.45**	**3,65,199.18**	**2,90,292.00**	**3,22,657.15**

The key assumptions used as inputs for the calculation of Enterprise Value and fair value include determination of future cash flows, traffic estimates, assessment of the variation in concession period in certain subsidiaries, considering target traffic/ target revenue subject to approvals from the authorities, revenue growth rate, discount rates, inflation rates and other economic factors.

During the period, NHAI, vide its Policy Circular dated September 13, 2025, revised the Wholesale Price Index (WPI) linking factor from 1.641 to 1.561, resulting in a reduction of around 3–5% in base toll rates. The said Circular was challenged before the High Court of Delhi by various parties (including the Highway Operators Association of India) by filing Writ petitions (Civil) and Civil Miscellaneous Applications. The Hon'ble High Court of Delhi, vide order dated October 17, 2025, has directed that the aforesaid Policy/ Circular dated 13.09.2025 be kept in abeyance. The matter is to be re-examined by the NHAI within a fixed timeline, after considering the representations and submissions of stakeholders, and a reasoned order is to be passed thereafter, taking into account all relevant aspects of the matter. As of the reporting date, the Enterprise Value, as determined by the independent valuer, has been computed using the WPI linking factor of 1.641.

24 Information on related party transactions

The name of the related parties and nature of relationship are as identified by the management of the Investment Manager with reference to the Trust and its subsidiaries which are considered for the Consolidated Unaudited Financial Information pursuant to the InvIT Regulations.

24.1 A) List of related parties as per the requirements of Ind-AS 24- Related Party Disclosures

Cube Group Entities*
Cube Highways and Infrastructure 1D Pte. Ltd.
Cube Highways and Infrastructure II Pte. Ltd.
Cube Mobility Investment Pte. Ltd.
Cube Highways Operations Management Private Limited
Cube Highways Technologies Private Limited
Cube Highways and Infrastructure V Pte. Ltd.
Baharampore Farakka Highways Limited (w.e.f. March 28, 2023)
Cube Highways Growth Advisory Private Limited (w.e.f. December 05, 2023)
Delhi Hapur Meerut Expressway Private Limited (w.e.f. January 02, 2024)
Kokhraj Handia Expressway Private Limited (w.e.f. November 10, 2023)
Malayagiri Highways Private Limited (w.e.f. January 02, 2024)
Western M P Infrastructure & Toll Roads Private Limited (w.e.f. February 14, 2024)

B) List of related parties as per Regulation 2(1) (zv) of the InvIT Regulations
1) Parties to the Trust
Sponsor- Cube Highways and Infrastructure Pte. Ltd. (CHIPL)
Sponsor- Cube Highways and Infrastructure III Pte. Ltd. (CHIPL-III)
Project Manager of the Trust(for all SPVs)- Cube Highways and Transportation Assets Advisors Private Limited (CHATAAPL)
Subsidiary of CHATAAPL- Cube Highways Roots Foundation
Investment Manager of the Trust- Cube Highways Fund Advisors Private Limited (CHFAPL)
Trustee of the Trust- Axis Trustee Services Limited (ATSL)

2) Promoters of the parties to the Trust specified in (1) above
Promoter of CHIPL- ISQ Asia Aggregator Pte. Ltd.
Promoter of CHIPL-III- ISQ Asia Infrastructure Holdings II Pte. Ltd.
Promoter of CHATAAPL- Cube Highways and Infrastructure Pte. Ltd. (upto December 28, 2023) ,Cube Highways Advisory Pte. Ltd. (w.e.f December 29, 2023)
Promoter of CHFAPL- Cube Highways Advisory Pte. Ltd.
Promoter of ATSL- Axis Bank Limited

3) Directors of the parties to the Trust specified in (1) above
i) Directors of CHIPL
George Currie Crawford (upto September 01, 2025)
Harsh Agrawal
Marcus Christopher Hill (upto March 04, 2025)
Tsuneo Kawasaki (w.e.f February 07, 2024)
Ashutosh Goyal (w.e.f October 01, 2025)
Lin Le (w.e.f February 07, 2024)

ii) Directors of CHIPL-III
Kunal Agarwal
George Currie Crawford (upto September 01, 2025)
Marcus Christopher Hill (upto March 04, 2025)
Harsh Agrawal
Ashutosh Goyal (w.e.f October 01, 2025)
Lin Le (w.e.f February 07, 2024)

iii) Directors of CHATAAPL
Pooja Aggarwal (upto June 18, 2024)
Bovin Kumar (Upto December 23, 2025)
Mukul Shastry (Upto December 26, 2025)
Ankit Jain (w.e.f August 21, 2023 Upto December 23, 2025)
Harikishan Reddy Koppula (w.e.f. April 02, 2025)
Varun Unnikrishnan (w.e.f. May 16, 2025)
Raviraj Vipul Acharya (w.e.f May 16, 2025)
Angela Mary Bouzanis (w.e.f June 06, 2025)

iv) Directors of CHFAPL
Upendra Kumar Sinha
Surinder Chawla
Fereshte Dhunjishaw Sethna#
Jayesh Ramniklal Desai
Sandeep Lakhanpal
Chirdeep Singh Bagga (w.e.f June 08, 2023 upto May 31, 2024)
Helly Bharat Ajmera (w.e.f November 07, 2023)
Raviraj Vipul Acharya (w.e.f July 31, 2024)

v) Directors of ATSL
Deepa Rath (upto February 05, 2025)
Arun Mehta (w.e.f. May 03, 2024)
Pramod Kumar Nagpal (w.e.f. May 03, 2024)
Sumit Bali (w.e.f. January 16, 2024 upto August 16, 2024)
Prashant Ramrao Joshi (w.e.f. January 16, 2024)
Rahul Ranjan Choudhary (w.e.f February 06, 2025)
Bipin Saraf Kumar (w.e.f. April 11, 2025)

4) Entity in which director of the Investment Manager of the Trust is partner
#DMD Advocates

* Considered as Related Parties although not covered under the definition of Related Parties as per Ind AS 24, Related party disclosures. These have been included as voluntary disclosure, following the best corporate governance practices.

Cube Highways Trust
Notes forming part of Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025
(All amounts in Rs. million unless otherwise stated)

24 Information on related party transactions

24.2	Transactions during the period/year	Quarter ended			Nine months ended		Year ended
		December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	December 31, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
1	**OCD repayment during the period**	**-**	**-**	**-**	**-**	**212.43**	**812.43**
	Cube Highways and Infrastructure Pte. Limited	-	-	-	-	-	600.00
	Cube Highways and Infrastructure III Pte Limited	-	-	-	-	212.43	212.43
2	**Reclassification of Subordinate units to Ordinary units (Refer note 25 & 26)**	**-**	**962.14**	**-**	**962.14**	**4,410.23**	**4,410.23**
	Cube Highways and Infrastructure III Pte. Ltd.	-	-	-	-	4,410.23	4,410.23
	Cube Highways and Infrastructure Pte. Limited	-	962.14	-	962.14	-	-
3	**Extinguishment of Subordinate units (Refer note 25 & 26)**	**-**	**2,787.86**	**-**	**2,787.86**	**7,589.78**	**7,589.78**
	Cube Highways and Infrastructure III Pte. Ltd.	-	-	-	-	7,589.78	7,589.78
	Cube Highways and Infrastructure Pte. Limited	-	2,787.86	-	2,787.86	-	-
4	**NCD repayment during the period**						
	Cube Highways and Infrastructure Pte. Limited	-	-	-	-	-	6,000.00
5	**Interest on non-convertible debentures**						
	Cube Highways and Infrastructure Pte. Limited	-	-	-	-	-	4.60
6	**Interest on optionally-convertible debentures**	**-**	**-**	**-**	**-**	**0.35**	**0.78**
	Cube Highways and Infrastructure Pte. Limited	-	-	-	-	-	0.43
	Cube Highways and Infrastructure III Pte Limited	-	-	-	-	0.35	0.35
7	**Interest payment on non-convertible debentures**						
	Cube Highways and Infrastructure Pte. Limited	-	-	-	-	-	4,020.79
8	**Interest payment on optionally-convertible debentures**	**-**	**-**	**-**	**-**	**7.63**	**198.42**
	Cube Highways and Infrastructure Pte. Limited	-	-	-	-	-	190.79
	Cube Highways and Infrastructure III Pte Limited	-	-	-	-	7.63	7.63
9	**Consideration paid/payable towards acquisition of equity shares of HAM SPVs**						
	Cube Highways and Infrastructure III Pte Limited	-	-	-	23.76	11,709.19	11,709.19
10	**Interest payable in terms of SPA towards acquisition of HAM SPVs**						
	Cube Highways and Infrastructure III Pte Limited	-	-	53.69	-	152.66	152.66
11	**Consideration paid towards acquisition of equity shares of NAMEL**						
	Cube Highways and Infrastructure Pte. Ltd.	-	-	-	-	-	7,176.02
12	**Extinguishment of financial liability related contingent consideration**						
	Cube Highways and Infrastructure III Pte. Ltd.	24.14	-	-	24.14	-	-
13	**Investment Management fees (Refer note 7)**						
	Cube Highways Funds Advisors Private Limited	114.26	112.29	85.90	319.46	244.57	331.64
14	**Project Management fees (Refer note 8)**						
	Cube Highways and Transportation Assets Advisors Private Limited	245.34	236.78	175.79	690.22	478.24	738.31
15	**Rent Expenses**						
	Cube Highways and Transportation Assets Advisors Private Limited	0.18	0.16	0.11	0.47	0.33	0.44
16	**Donations (including corporate social responsibility)**						
	Cube Highways Roots Foundation	13.86	33.44	34.69	49.63	57.79	66.24
17	**Reimbursement of expenses**	**2.97**	**6.08**	**0.25**	**9.05**	**31.55**	**31.55**
	Cube Highways Funds Advisors Private Limited	-	0.18	0.25	0.18	0.25	0.25
	Cube Highways and Infrastructure V Pte. Ltd.	-	-	-	-	31.30	31.30
	Kokhraj Handia Expressway Private Limited	2.97	5.90	-	8.87	-	-
18	**Trustee fee**						
	Axis Trustee Services Limited	0.24	0.23	0.24	0.71	0.71	0.94
19	**Term loan received**						
	Axis Bank Limited	-	6,000.00	-	6,000.00	2,580.00	4,710.00
20	**Term loan repaid (including downsell of loan)**						
	Axis Bank Limited	97.06	95.51	46.00	244.89	137.86	189.07
21	**NCD issued**						
	Axis Bank Limited	-	4,200.00	-	4,200.00	-	-
22	**NCD repaid**						
	Axis Bank Limited	-	-	-	-	5,944.34	5,944.34
23	**Interest expense on NCD**						
	Axis Bank Limited	73.36	33.49	-	106.85	7.40	7.40
24	**Interest expense on Term loan**						
	Axis Bank Limited	282.41	255.30	142.74	715.06	387.40	546.95
25	**Interest income on fixed deposits**						
	Axis Bank Limited	20.04	20.31	13.12	52.26	62.31	70.41
26	**Bank charges paid**						
	Axis Bank Limited	-	-	0.01	0.01	0.07	0.08
27	**Bank guarantee commission**						
	Axis Bank Limited	3.31	0.74	2.28	6.70	7.83	10.06
28	**Fixed Deposits placed**						
	Axis Bank Limited	-	745.18	155.00	1,144.86	289.78	570.78
29	**Fixed Deposits matured**						
	Axis Bank Limited	354.20	106.83	258.21	662.35	3,890.76	4,172.59
30	**Payable/Receivable on account of employees transferred**	**0.52**	**2.65**	**-**	**3.17**	**-**	**0.08**
	Delhi Hapur Meerut Expressway Private Limited (w.e.f. January 02, 2024)	-	0.40	-	0.40	-	0.08
	Cube Highways Technologies Private Limited	0.45	0.22	-	0.67	-	-
	Baharampore Farakka Highways Limited	-	0.14	-	0.14	-	-
	Kokhraj Handia Expressway Private Limited	0.04	1.11	-	1.15	-	-
	Malayagiri Highways Private Limited	-	0.02	-	0.02	-	-
	Cube Highways and Transportation Assets Advisors Private Limited	0.03	-	-	0.03	-	-
	Western M P Infrastructure & Toll Roads Private Limited	-	0.76	-	0.76	-	-
31	**Share pledge fee**						
	Axis Bank Limited	-	-	-	0.91	-	-
32	**Legal and Professional Charges**						
	Cube Highways Technologies Private Limited	144.50	-	-	144.50	0.25	7.49
	DMD Advocates	2.85	-	-	2.85	-	-
33	**Distributions to Unitholders (return on capital & return of capital)**	**2,002.96**	**1,409.02**	**1,250.48**	**5,755.88**	**5,877.15**	**7,908.53**
	Cube Highways and Infrastructure Pte. Limited	-	18.04	0.24	18.04	615.13	615.13
	Cube Highways and Infrastructure I-D Pte Limited	-	-	0.11	-	146.56	146.56
	Cube Highways and Infrastructure II Pte Limited	374.86	260.32	208.31	1,025.66	943.42	1,281.84
	Cube Highways and Infrastructure III Pte Limited	1,006.76	699.14	559.31	2,754.61	2,090.14	2,999.02
	Cube Mobility Investment Pte Limited	621.34	431.52	482.51	1,957.57	2,081.90	2,865.98

24 Information on related party transactions

24.3	Balances at the period end/year end	December 31, 2025 (Unaudited)	September 30, 2025 (Unaudited)	December 31, 2024 (Unaudited)	March 31, 2025 (Audited)
1	**Trade Payable**				
	Cube Highways Funds Advisors Private Limited	(179.45)	(77.53)	(82.86)	(55.45)
	Cube Highways and Transportation Assets Advisors Private Limited	(235.18)	(310.82)	(117.84)	(213.20)
	Cube Highways Technologies Private Limited	(148.76)	(4.62)	(1.97)	(7.46)
	Axis Trustee Services Limited	(0.71)	(0.47)	-	-
	DMD Advocates	(2.85)	-	-	-
2	**Term loan Payable**				
	Axis Bank Limited	(14,572.26)	(14,669.59)	(6,738.91)	(8,817.52)
3	**NCD payable**				
	Axis Bank Limited	(4,200.00)	(4,200.00)	-	-
4	**Interest accrued but not due on NCD**				
	Axis Bank Limited	(0.80)	(0.80)	-	-
5	**Bank Balance/Fixed Deposits***				
	Axis Bank Limited	1,924.99	1,599.43	607.52	1,163.58
6	**Other receivable**				
	Cube Highways and Infrastructure V Pte Ltd	1.83	1.83	0.83	1.83
	Cube Mobility Investments Pte. Ltd.	0.09	0.09	0.09	0.09
	Cube Highways Roots Foundation	-	-	-	13.02
	Cube Highways Technologies Private Limited	0.67	0.22	-	-
	Baharampoore Farakka Highways Limited	0.06	0.06	-	-
	Kokhraj Handia Expressway Private Limited	7.67	4.74	-	-
7	**Other payable**				
	Cube Highways and Infrastructure III Pte. Ltd.	(788.30)	(989.52)	(1,134.29)	(1,001.40)
	Cube Highways and Infrastructure V Pte. Ltd.	(2.84)	(2.84)	(31.30)	(31.30)
	Delhi Hapur Meerut Expressway Private Limited	(0.47)	(0.47)	-	(0.08)
	Cube Highways Growth Advisory Private Limited	(0.32)	(0.32)	-	-
	Cube Highways Roots Foundation	(1.72)	(3.26)	-	-
	Malavagiri Highways Private Limited	(0.02)	(0.02)	-	-
	Western M P Infrastructure & Toll Roads Private Limited	(0.76)	(0.76)	-	-
	Cube Highways Funds Advisors Private Limited	(0.18)	(0.18)	-	-
8	**Bank Guarantee**				
	Axis Bank Limited	(850.00)	(850.00)	(850.00)	(850.00)

*No transactions of the bank account maintained with Axis Bank Limited has been disclosed as being in the ordinary course of business being a commercial banking operations.

24.4 Details in respect of related party transactions involving acquisition of SPVs as required by paragraph 4 of the chapter 3 to the SEBI master circular SEBI/HO/DDHS-PoD-2/P/CIR/2025/102 dated July 11, 2025

For the nine months ended December 31, 2025: Nil

For the year ended March 31, 2025 (including for the nine months ended December 31, 2024):

A) Summary of the valuation reports (issued by the independent valuer appointed under the InvIT Regulations):

Name of the SPVs	Date of acquisition	Discounting Rate (WACC)	Method of calculation	Enterprise value as at date of acquisition
SIPL	June 04, 2024	8.30%	Discounted Cash flow method	4,486.00
MHPL	June 04, 2024	8.30%		3,383.00
MSHPL	June 04, 2024	8.30%		4,720.00
THPL	June 04, 2024	8.30%		5,389.00
SPPL	June 04, 2024	8.30%		4,645.00
BWHPL	June 04, 2024	8.30%		4,032.00
NAMEPL	February 12, 2025	10.62%		25,267.72

B) Material conditions or obligations in relation to the transactions:

The Share Purchase Agreement dated May 31, 2024 (for HAM SPVs) and June 04, 2024 (for NAMEPL) executed, inter alia, individually between the SPV's and the Trust, prescribing certain terms and conditions as agreed between the parties thereto, including without limitation, indemnification provisions for claims in relation to pre-acquisition period subject to limitations on liability, de-minimis values and claim basket values; representations and warranties; payment(s) to erstwhile sellers etc., governing law etc. (as more particularly stipulated under the Share Purchase Agreements) which govern the transfer of shareholding in the Project SPV's to Cube Highways Trust. Acquisition of shares of N.A.M. Expressway Private Limited ("NAMEPL") has been financed from senior, secured, rated, listed, redeemable, non-convertible debt securities bearing coupon interest rate of 7.67%.

24.5 Pursuant to a resolution passed by the Board of Directors of the Investment Manager acting on behalf of the Trust on November 06, 2025, the Board is evaluating options to explore and evaluate various opportunities, including, inter alia, conversion of the Trust from a privately listed InvIT to a publicly listed InvIT with an offer for sale of its existing units ("Units") subject to necessary approvals. The expenses incurred on various legal advisors and professionals, totalling Rs. 69.47 million upto December 31, 2025, related to the proposed conversion from a privately listed InvIT to a publicly listed InvIT through offer of units of the Trust ("Offer for sale" or "OFS"), will be recoverable from the participating Selling Unitholders (including sponsors such as Cube Highways and Infrastructure III Pte. Ltd (CHIPL-III)). Accordingly, the above expenses of Rs. 69.47 million have been considered by the Management as recoverable as at December 31, 2025.

25 The Board of Directors of the Investment Manager in its meeting held on July 1, 2024 has approved the reclassification of 44.10 million Subordinate Units out of the total 120 million Subordinate Units, issued as part of the initial offer to Cube Highways & Infrastructure III Pte. Ltd. (CH-III), Sponsor of the InvIT, into 44.10 million Ordinary Units, in terms of the performance metrics and the Entitlement Event as defined in the Trust Deed and disclosed in the Final Placement Memorandum dated April 17, 2023. The Board of Directors, accordingly, also approved the extinguishment of the balance 75.90 million Subordinate Units held by CH-III not reclassified into Ordinary Units. These 44.10 million Subordinate Units have been reclassified into Ordinary Units on July 19, 2024 and got listed on Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) on July 29, 2024.

26 The Board of Directors of the Investment Manager in its meeting held on July 01, 2025 has approved the reclassification of 9.62 million Subordinate Units out of the total 37.50 million Subordinate Units, issued as part of the initial offer to Cube Highways and Infrastructure Pte Ltd (CH-I), Sponsor of the InvIT, into 9.62 million Ordinary units, in terms of the performance metrics and the Entitlement Event as defined in the Trust Deed and disclosed in the Final Placement memorandum. The Board of Directors, accordingly, also approved the extinguishment of the balance 27.88 million Subordinate Units held by CH-I not reclassified into Ordinary Units. These 9.62 million Subordinate Units have been reclassified into Ordinary Units on July 14, 2025 and got listed on Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) on July 14, 2025.

27 Investors can view the Consolidated Unaudited Financial Information of the Trust on the Trust's website (www.cubehighwaystrust.com) and on the website of BSE Limited (www.bseindia.com) and NSE Limited (www.nseindia.com).

28 The Consolidated Unaudited Financial Information of the Trust have been reviewed and approved by the Audit Committee and Board of Directors of Investment Manager at their respective meetings held on January 30, 2026. The statutory auditors have carried out limited review of the Consolidated Unaudited Financial Information for the quarter and nine months ended December 31, 2025.

For and on behalf of the Board of Directors of
Cube Highways Fund Advisors Private Limited
(in its capacity as the Investment Manager of Cube Highways Trust)

Sandeep Lakhanpal Digitally signed by Sandeep Lakhanpal Date: 2026.01.30 20:26:39 +05'30'

Sandeep Lakhanpal
Director
DIN: 07171147
Place: New Delhi
Date: January 30, 2026

VINAY C SEKAR Digitally signed by VINAY C SEKAR Date: 2026.01.30 20:27:07 +05'30'

Vinay Chandramouli Sekar
Chief Executive Officer

Place: Gurugram
Date: January 30, 2026

PANKAJ VASANI Digitally signed by PANKAJ VASANI Date: 2026.01.30 20:27:36 +05'30'

Pankaj Vasani
Chief Financial Officer

Place: Noida
Date: January 30, 2026

Richa Gupta Rohatgi Digitally signed by Richa Gupta Rohatgi Date: 2026.01.30 20:28:05 +05'30'

Richa Gupta Rohatgi
Compliance Officer & CS
MRN: A24446
Place: Noida
Date: January 30, 2026

ANNEXURE G - FINANCIAL STATEMENTS OF THE PROPOSED PORTFOLIO ASSETS

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N V C & Associates LLP
Chartered Accountants
903-904, 9th Floor, Raheja Chambers, 213, Nariman Point, Mumbai 400 021. Tel.: (91-22) 6752 7100 Email : nvc@nvc.in

INDEPENDENT AUDITOR'S REPORT

To
The Members of
Baharampore Farakka Highways Limited

Report on the Audit of the Financial Statements

Opinion

We have audited the Financial Statements of Baharampore Farakka Highways Limited ("the Company"), which comprise the Balance Sheet as at March 31, 2025, and the Statement of Profit and Loss (including Other Comprehensive Income), Statement of Changes in Equity and Statement of Cash Flows for the year then ended, and notes to the financial statements, including a summary of Material Accounting Policy Information and other explanatory information (hereinafter referred to as "the Financial Statements").

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid Financial Statements give the information required by the Companies Act, 2013 ("the Act") in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2025, the loss (including other comprehensive income), changes in equity and its cash flows for the year ended on that date.

Basis for Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India (ICAI) together with the ethical requirements that are relevant to our audit of the Financial Statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ICAI's Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on the Financial Statements.

Information Other than the Financial Statements and Auditor's Report thereon

The Company's Board of Directors is responsible for the Other Information. The other information comprises the information included in the Board's report, including the Directors Report but does not include the Financial Statements and our Independent Auditors' Report thereon. Our opinion on the Financial Statements does not cover the Other Information and we do not and will not express any form of assurance or conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the Other Information identified above and, in doing so, consider whether the Other Information is materially inconsistent with the Financial Statements, or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this Other Information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Management and those Charged with Governance for the Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Financial Statements that give a true and fair view of the financial position, financial performance, changes in equity and cash flows of the Company in accordance with the accounting principles generally accepted in India, including the accounting Standards specified under section 133 of the Act. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

The Board of Directors is also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an

auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.
3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
5. Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Materiality is the magnitude of misstatements in the financial statements that, individually or in aggregate, make it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the financial statements

We communicate with those charged with governance regarding, among other matters, the

planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the attached Annexure "A" a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.
2. As required by Section 143(3) of the Act, we report that:
    a. We have sought and obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our audit.
    b. In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books except for the matter stated in paragraph 2(i)(vi) below relating to reporting under rule 11(g) of the Companies (Audit and Auditors) Rule 2014, as amended.
    c. The Balance Sheet, the Statement of Profit and Loss (including Other Comprehensive Income), the Cash Flow Statement and Statement of Changes in Equity dealt with by this Report are in agreement with the books of account.
    d. In our opinion, the aforesaid Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014.
    e. On the basis of the written representations received from the directors as on March 31, 2025 taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2025 from being appointed as a director in terms of Section 164 (2) of the Act.
    f. With reference to maintenance of accounts and other matter therewith, reference is invited to paragraph 2(b) above on reporting under section 143(3)(b) and para 2(i)(vi) below relating to reporting under rule 11(g) of the Companies (Audit and Auditors) Rule 2014, as amended.
    g. With respect to the adequacy of the internal financial controls with reference to financial statements of the Company and the operating effectiveness of such controls, refer to our separate Report in "Annexure B". Our report expresses an unmodified opinion on the adequacy and operating effectiveness of the Company's internal financial controls with reference to financial statements.

h. With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended:

In our opinion and to the best of our information and according to the explanations given to us, there is no remuneration paid by the Company to its directors during the year to which the provisions of section 197 of the Act apply.

i. With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, as amended , in our opinion and to the best of our information and according to the explanations given to us:

i. The Company has disclosed the impact of pending litigations on its financial position in its financial statements – Refer Note 43 to the Financial Statements,

ii. The Company did not have any long-term contracts including derivative contracts for which there were material foreseeable losses,

iii. There are no amounts required to be transferred to the Investor Education and Protection Fund by the Company.

iv. a) The management has represented that, to the best of their knowledge and belief, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the company to or in any other person or entity, including foreign entities ("intermediaries") with the understanding whether recorded in writing or otherwise, that the intermediary shall, whether directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the company ("Ultimate Beneficiaries") or provide any guarantee, security, or the like on behalf of the Ultimate Beneficiaries.

b) The management has represented that, to the best of its knowledge and belief, no funds have been received by the company from any person or entity including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the company shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries,

c) Based on such audit procedures considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (iv)(a) and (iv)(b) above contain any material misstatement.

v. The Company has not declared or paid dividends during the year and therefore the compliance with Section 123 of the Companies Act, 2013 is not applicable in

respect of dividends declared or paid.

vi. Based on our examination which included test checks, the Company, in respect of financial year commencing on 1 April 2024, has used SAP S/4 HANA accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility, the same has operated with effect from March 28, 2025 for all relevant transactions recorded in the software at application level .

However, the audit trail feature is only enabled at Data Definition Language (DDL) and not at Data Manipulation Language (DML) for direct access changes to database.

Based on above, the preservation of audit trail as per the statutory requirements is available only for the period the feature was enabled and operating.

For N V C & Associates LLP
(Formerly known as Natvarlal Vepari & Co LLP)
Chartered Accountants
Firm Reg. No. - 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:37:05 +05'30'

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: September 12, 2025
UDIN: 25124960BMLKML3390

Annexure A to the Independent Auditors' Report

(Referred to in paragraph 1 under 'Report on Other Legal and Regulatory Requirements' section of our report to the Members of Baharampore Farakka Highways Limited of even date)

To the best of our information and according to the explanations provided to us by the Company and the books of account and records examined by us in the normal course of audit, and to the best of our knowledge and belief, we state that:

(i) a. (A) The Company has maintained proper records showing full particulars including quantitative details and situation of its Property, Plant and Equipment.

(B) The company has maintained proper records showing full particulars of intangible assets.

b. Property, Plant and Equipment have been physically verified by the management at reasonable intervals and no material discrepancies were noticed on such verification.

c. There is no immovable property as at Balance sheet date other than investment property. We have received confirmation from the erstwhile Security trustees of the Lenders that they are in possession of the title deeds.

d. The company has not revalued its Property, Plant and Equipment and intangible assets during the year.

e. There are no proceedings initiated during the year or are pending against the Company as at March 31, 2025 for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 and rules made thereunder.

(ii) (a) The management has conducted physical verification of inventory at reasonable intervals during the year. On the basis of examination of records, we are of the opinion that the coverage and procedure of such verification is appropriate and that no discrepancies of 10% or more in the aggregate for each class of inventory were noticed on such verification.

(b) The Company do not have working capital limits and hence Clause 3(ii)(b) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(iii) The Company has not made investments in, provided any guarantee or security or granted any loans or advances in the nature of loans, secured or unsecured, to companies, firms, Limited Liability Partnerships or any other parties. Hence Clause 3(iii)(a), 3(iii)(b), 3(iii)(c), 3(iii)(d), 3(iii)(e) & 3(iii)(f) of the Companies (Auditor's Report) Order, 2020 are not applicable to the Company.

(iv) The Company has not given any loans, or made any investments, or given any

guarantees and security to which section 185 or section 186 of the Companies Act, 2013 applies.

(v) The Company has not accepted deposits from the public or amounts that are deemed to be deposits pursuant to sections 73 to 76 or any other relevant provisions of the Companies Act, 2013 and rules framed thereunder. As informed to us, there is no order that has been passed by Company Law Board or National Company Law Tribunal or Reserve Bank of India or any Court or any other tribunal in respect of the said sections.

(vi) As informed to us, the maintenance of the cost records under the sub-section (1) of section 148 of the Companies Act, 2013 has been prescribed and we are of the opinion that prima facie, the prescribed accounts and records have been made and maintained. We have not, however, carried out a detailed examination of the records to ascertain whether they are accurate or complete.

(vii) (a) The Company is generally regular in depositing undisputed statutory dues including Goods and Services Act, Provident fund, Employees State Insurance, Income Tax, Sales Tax, Service Tax, duty of Customs, duty of Excise, Value Added Tax, Cess and other statutory dues to the appropriate authorities during the year. According to the information and explanations given to us, no undisputed amount payable in respect of the aforesaid dues were outstanding as at March 31, 2025 for a period of more than six months from the date they became payable

(b) There are no statutory dues referred to in sub-clause (a) which have not been deposited on account of any dispute except as given below:

Name of statute	Nature of dues	Disputed Amount (Rs in lacs)	Period to which the amount relates	Forum where dispute is pending
The West Bengal value Added tax, 2003	VAT	0.65	FY 2016-17	West Bengal Sales Tax Authority
Income Tax demand	Income Tax	0.34	FY 2017-18	Matter pending with ITO
Goods and Service Tax	GST	59.49	FY 2022-23	West Bengal GST Authority
Goods and Service Tax	GST	44.50	FY 2021-22	West Bengal GST Authority

(viii) There are no transactions that were not recorded in the books of account, and

which has been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961 (43 of 1961).

(ix) (a) The company has not defaulted in repayment of loans or other borrowings or the payment of interest thereon to any lender also there is no continuing default as at Balance Sheet Date.

In respect of interest payable on Non-convertible debentures to related party the interest is payable on quarterly basis subject to restricted payment clause in Common Loan Agreement (CLA), hence due to restricted payment clause in CLA , the interest which is accrued and not paid as at March 31, 2025 is not considered as default.

(b) The Company has not been declared wilful defaulter by any bank or financial institution or government or any government authority.

(c) The company has applied the money obtained by way of term loans during the year for the purposes for which they were obtained.

(d) On an overall examination of the financial statements of the Company, we report that funds raised on short-term basis have, prima facie, not been used during the year for long-term purposes by the Company.

(e) The Company does not have any subsidiaries, joint ventures or associates and hence clause 3(ix)(e) & 3(ix)(f) of the Companies (Auditor's Report) Order, 2020 are not applicable to the Company.

(x) (a) The company has not raised any money by way of initial public offer / further public offer (including debt instruments) during the year and hence clause 3(x)(a) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(b) The Company has not made private placement or preferential allotment of equity shares or convertible debentures (fully, partially or optionally convertible) during the year under audit.

(xi) (a) No fraud by the Company or any fraud on the Company has been noticed or reported during the year.

(b) No report under sub-section (12) of section 143 of the Companies Act has been filed by us in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government and hence clause 3(xi)(b) of the Companies (Auditors Report) Order 2020 is not applicable to the Company.

(c) We have taken into consideration the whistle blower complaints received by the

company during the year while determining the nature, timing and extent of audit procedures.

(xii) The Company is not a Nidhi Company and hence clauses 3(xii)(a), 3(xii) (b) and 3(xii)(c) of the Companies (Auditors Report) Order 2020 is not applicable to the Company.

(xiii) The provisions of section 177 are not applicable to the Company. All transactions with the related parties are in compliance with sections 188 of the Companies Act, 2013 in so far as our examination of the proceedings of the meetings of the Board of Directors are concerned. The details of related party transactions have been disclosed in the Financial Statements as required by the applicable Accounting Standards.

(xiv) (a) In our opinion and based on our examination, the company has an internal audit system commensurate with the size and nature of its business.

(b) We have considered the internal audit reports of the company issued till the date of auditor's report.

(xv) The Company has not entered into any non-cash transactions with its directors or persons connected with its directors hence clause 3(xv) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(xvi) The nature of business and the activities of the Company are such that the Company is not required to obtain registration under section 45-IA of the Reserve Bank of India Act 1934 and hence sub-clause 3(xvi)(a), 3(xvi)(b), 3(xvi)(c) and 3(xvi)(d) of the Companies (Auditors Report) Order, 2020 is not applicable to the

(xvii) On an examination of the Statement of Profit and Loss account, we are of the opinion that the Company has not incurred cash losses during the current financial year and in the immediately previous financial year.

(xviii) There has been no resignation of the statutory auditors during the year and accordingly clause (3)(xviii) Companies (Auditors Report) Order 2020 is not applicable to the Company.

(xix) On the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions , nothing has come to our attention, which causes us to believe that any material uncertainty exists as on the date of the audit report that the company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date. We, however, state that this is not an assurance as to the future viability of the company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within

a period of one year from the balance sheet date, will get discharged by the company as and when they fall due.

(xx) (a) The company was not required to spend any amount towards Corporate Social Responsibility obligation and hence there are no unspent amounts towards Corporate Social Responsibility (CSR) on other than ongoing projects requiring a transfer to a Fund specified in Schedule VII to the Companies Act in compliance with second proviso to sub-section (5) of Section 135 of the said Act. Accordingly, reporting under clause 3(xx)(a) of the Order is not applicable for the year.

(b) There are no ongoing projects in respect of CSR activities and therefore clause 3(xx)(b) of The Companies (Auditors Report) Order 2020 is not applicable to the Company

For N V C & Associates LLP
(Formerly known as Natvarlal Vepari & Co LLP)
Chartered Accountants
Firm Reg. No. - 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:37:40 +05'30'

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: September 12, 2025
UDIN: 25124960BMLKML3390

ANNEXURE - B TO THE AUDITORS' REPORT

(Referred to in paragraph 2(g) under Report on Other Legal and Regulatory Requirements' section of our report to the Members of Baharampore Farakka Highways Limited of even date)

Report on the Internal Financial Controls with reference to Financial Statements under 143 (3)(i) of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls with reference to Financial Statements of Baharampore Farakka Highways Limited ("the Company") as of March 31, 2025 in conjunction with our audit of the Financial Statement of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control with reference to financial statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India ('ICAI'). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls with reference to Financial Statements based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls with reference to Financial Statements was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system with reference to Financial Statements and their operating effectiveness. Our audit of internal financial controls with reference to Financial Statements included obtaining an understanding of internal financial controls with reference to Financial Statements, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system with reference to Financial Statements.

Meaning of Internal Financial Controls with reference to Financial Statements

A company's internal financial control with reference to Financial Statements is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control with reference to Financial Statements includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Inherent Limitations of Internal Financial Controls with reference to Financial Statements.

Because of the inherent limitations of Financial controls with reference to Financial Statements, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls with reference to Financial Statements to future periods are subject to the risk that the internal financial control with reference to Financial Statements may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system with reference to Financial Statements and such internal financial controls with reference to financial statements were operating effectively as at March 31, 2025, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

For N V C & Associates LLP
(Formerly known as Natvarlal Vepari & Co LLP)
Chartered Accountants
Firm Reg. No. - 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:38:00 +05'30'

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: September 12, 2025
UDIN: 25124960BMLKML3390

Baharampore-Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Balance Sheet as at 31 March 2025
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars	Note	As at March 31, 2025	As at March 31, 2024
ASSETS			
Non-current assets			
Property, plant and equipment	3	236.86	145.57
Capital work in progress	4	-	149.74
Investment Property	5	14.47	14.47
Intangible assets	6	1,00,673.54	1,04,094.78
Intangible Assets under Development	7	-	2,637.38
Non-current tax assets (Net)	8	100.79	807.42
Other financial assets	15a	1,416.87	-
Other non - current assets	9a	20.33	80.95
Total non-current assets		**1,02,462.86**	**1,07,930.31**
Current assets			
Inventory	10	157.88	118.02
Financial assets			
Investment	11	7,668.37	-
Trade Receivables	12	38.74	154.76
Cash and cash equivalents	13	240.23	7,496.61
Bank balances other than cash and cash equivalents	14	6,125.31	4,643.21
Other financial assets	15b	130.59	142.32
Other current assets	9b	49.14	2,889.87
Total current assets		**14,410.26**	**15,444.79**
TOTAL ASSETS		**1,16,873.13**	**1,23,375.10**
EQUITY AND LIABILITIES			
EQUITY			
Equity share capital	16	21,725.30	21,725.30
Other equity	17	(16,053.12)	(10,922.87)
Total equity		**5,672.18**	**10,802.43**
LIABILITIES			
Non-current liabilities			
Financial Liabilities			
Borrowings	18	87,239.27	81,560.26
Other financial liabilities	23a	7,082.85	-
Provisions	21a	22.70	13.55
Deferred tax liabilities (Net)	24		
Other non-current liabilities	22	-	6,250.00
Total non-current liabilities		**94,344.82**	**87,823.81**
Current liabilities			
Financial Liabilities			
Short Term Borrowings	19	3,736.36	2,389.28
Trade payables	20		
i) total outstanding dues of micro and small enterprises		13.32	3.06
ii) total outstanding dues other than (i) above		3,855.49	3,858.16
Other financial liabilities	23b	4,990.38	3,585.17
Provisions	21b	3,778.61	14,277.29
Other current liabilities	22	481.97	635.90
Total current liabilities		**16,856.13**	**24,748.86**
TOTAL EQUITY AND LIABILITIES		**1,16,873.13**	**1,23,375.10**

The accompanying notes are an integral part of the financial statements.

As per our report of even date attached
For N V C & Associates LLP
(Formerly known as Natvarlal Vepari & Co LLP)
Chartered Accountants
Firm Registration No. 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:09:06 +05'30'

Nuzhat Khan
Partner
Membership No.:124960

Place: Mumbai
Date: September 12, 2025

For and on behalf of the Board of Directors

Baharampore-Farakka Highways Limited

RAVINDRANATH KARATI — Digitally signed by RAVINDRANATH KARATI

Ravindranath Karati
Director
DIN No. : 07419535

SANJAY RAY — Digitally signed by SANJAY RAY

Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

ANUJ MAITREY — Digitally signed by ANUJ MAITREY Date: 2025.09.12 17:58:26 +05'30'

Anuj Maitrey
Director
DIN No. : 10481417

Chinmay Kumar Ghadei — Digitally signed by Chinmay Kumar Ghadei Date: 2025.09.12 18:18:01 +05'30'

Chinmay Kumar Ghadei
Chief Financial Officer
PAN : DNIPG4332P

BHUMIKA CHUGH — Digitally signed by BHUMIKA CHUGH Date: 2025.09.12 18:18:27 +05'30'

Bhumika Chugh
Mem No:. A44724

Place: Noida
Date: September 12, 2025

Baharampore-Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Profit and Loss for the year ended 31 March 2025
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars	Note	For the year ended March 31, 2025	For the year ended March 31, 2024
Revenue from operations	26	20,869.38	24,456.74
Other Income	27	736.39	904.12
Total Income		**21,605.77**	**25,360.86**
Expenses			
Cost of Construction	28	987.90	8,544.55
Operation and maintenance expenses	29	9,158.15	3,920.18
Employee benefit & expenses	30	304.26	183.46
Finance costs	31	8,564.97	8,871.38
Depreciation and amortization expense	32	6,338.34	6,413.27
Other expenses	33	1,169.74	2,187.80
Total expenses		**26,523.36**	**30,120.64**
Profit/(Loss) before tax		**(4,917.58)**	**(4,759.77)**
Tax expenses/Income			
Current Tax income		-	-
Deferred Tax expenses	24	-	-
(Excess)/Short provision of earlier years	25	211.94	(16.16)
Profit/(Loss) before tax		**(5,129.52)**	**(4,743.61)**
Other Comprehensive Income			
Items that will not be reclassified to profit or loss			
Remeasurements of (losses)/gains on obligations		(0.73)	(4.53)
Total Comprehensive Income for the year		**(5,130.25)**	**(4,748.14)**
Diluted (Rs) (absolute amount)	34	(2.36)	-
Basic (Rs) (absolute amount)		(2.36)	(2.19)

The accompanying notes are an integral part of these financial statements

As per our report of even date attached
For N V C & Associates LLP
(Formerly known as Natvarlal Vepari & Co LLP)
Chartered Accountants
Firm Registration No. 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:10:11 +05'30'

Nuzhat Khan
Partner
Membership No.:124960

Place: Mumbai
Date: September 12, 2025

For and on behalf of the Board of Directors

Baharampore-Farakka Highways Limited

RAVINDRANATH KARATI — Digitally signed by RAVINDRANATH KARATI Date: 2025.09.12 17:54:57 +05'30'

Ravindranath Karati
Director
DIN No. : 07419535

SANJAY RAY — Digitally signed by SANJAY RAY Date: 2025.09.12 18:04:57 +05'30'

Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

ANUJ MAITREY — Digitally signed by ANUJ MAITREY Date: 2025.09.12 17:58:39 +05'30'

Anuj Maitrey
Director
DIN No. : 10481417

Chinmay Kumar Ghadei — Digitally signed by Chinmay Kumar Ghadei Date: 2025.09.12 18:28:45 +05'30'

Chinmay Kumar Ghadei
Chief Financial Officer
PAN : DNIPG4332P

BHUMIKA CHUGH — Digitally signed by BHUMIKA CHUGH Date: 2025.09.12 18:19:40 +05'30'

Bhumika Chugh
Mem No:. A44724

Place: Noida
Date: September 12, 2025

Baharampore-Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Cash Flow Statement for the year ended 31 March 2025
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars		Year ended March 31, 2025	Year ended March 31, 2024
A Cash Flow from operating activities			
Profit before income tax		(4,917.55)	(4,758.77)
Adjustments for			
Add:			
Depreciation and amortisation expenses		6,338.34	6,413.27
Finance costs		8,620.95	8,454.34
Amortisation of Corporate guarantee		-	269.75
Upfront Fees Amortisation		44.02	127.28
Interest on delayed payment of statutory dues		-	0.48
Other Receivable w/off		31.00	11.51
Fair value loss/(gains) from financial instruments measured at fair value through profit or loss		364.21	
Less:			
Interest Income on Income tax refund		-	(47.91)
Interest received		(597.26)	(825.38)
Fair Valuation on Sale of Investments		(70.88)	-
Change in operating assets and liabilities			
(Increase)/decrease in Inventory		(39.86)	(118.02)
(Increase)/decrease in other financial assets		(128.40)	745.35
(Increase)/decrease in other non-current assets		80.62	137.19
(Increase)/decrease in other non-current financial assets		(1,418.87)	-
(Increase)/decrease in other trade receivable		85.02	(155.36)
(Increase)/decrease in other current assets		2,840.73	(1,691.74)
Increase/(decrease) in other non-current financial liabilities		466.64	-
Increase/(decrease) in trade payables		7.68	(4,287.21)
Increase/(decrease) in other financial liabilities		(1,040.70)	461.81
Increase/(decrease) in provisions		(10,490.26)	(4,063.57)
Increase/(decrease) in other current liabilities		(153.93)	(1,068.70)
Cash generated from operations		(94.66)	(374.65)
Income taxes (paid) / refund		494.70	(89.03)
Net cash inflow/(outflow) from operating activities		400.04	(463.68)
B Cash flow from investing activities:			
Purchase of property, plant and equipment/ amount spent on intangible asset including intangible assets under development.		(221.26)	(8,226.81)
Investment in fixed deposits		(1,402.10)	(1,037.90)
Investment in investments		(7,597.49)	
Interest received		737.39	698.99
Net cash outflow from investing activities		(8,663.46)	(8,565.75)
C Cash flow from financing activities			
Proceeds from borrowings			-
Proceeds from Subordinate Debt			
Proceeds/repayment of Subordinate Debt (Refer Note 15 G)		-	(568.00)
Proceeds from non convertible debentures		-	22,890.00
Proceeds of long term borrowings (including processing fees)		9,466.67	63,714.26
Repayment of long term borrowings		(2,440.57)	(66,129.60)
Interest/Other Borrowing Cost paid (Refer Note (i) below)		(6,119.06)	(6,908.98)
Net cash inflow from financing activities		907.04	12,997.68
Net increase/(decrease) in cash and cash equivalents		(7,356.38)	3,968.25
Add: Cash and cash equivalents at the beginning of the financial year	13	7,496.61	3,528.36
Cash and cash equivalents at the end of the year	13	240.23	7,496.61
Component of Cash and Cash Equivalent			
Cash on hand		20.69	22.75
Balances with Banks		219.54	1,073.86
Term deposits with original maturity of less than three months		-	6,400.00

C ***As per the Amendment to INDAS 7 " Statement of Cash Flow "***
An entity shall provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes.

Particulars	Non Current Borrowing	Current Borrowing	Interest Payable	Total of Borrowings and Interest
Net Debt as at April 01, 2023	56,103.77	7,371.10	187.48	63,662.35
Repayment of Borrowings	(66,129.60)	-	-	(66,129.60)
Loan taken during the year	66,604.26	-	-	66,604.26
Interest Expenses	-	-	-	-
Interest Paid	-	-	8,580.85	8,580.85
Transferred to Current Liabilities	-	-	(6,908.98)	(6,908.98)
Other Non Cash Movements (Reclassification)	4,981.82	(4,981.82)	-	-
Net Debt as at 31 March 2024	61,560.25	2,389.28	1,859.35	65,808.88
Repayment of Borrowings	(2,440.57)	-	-	(2,440.57)
Loan taken during the year	9,466.67	-	-	9,466.67
Interest Expenses	-	-	8,565.45	8,565.45
Interest Paid	-	-	(6,119.06)	(6,119.06)
Transferred to Current Liabilities	-	-	-	-
Other Non Cash Movements (Reclassification)	(1,347.08)	1,347.08	-	-
Net Debt as at 31 March 2025	67,239.27	3,736.36	4,305.74	75,281.37

Note

The above cash flows has been prepared under the 'Indirect Method' as set out in Ind AS 7, 'Statement of Cash Flows'.

As per our report of even date attached
For **N V C & Associates LLP**
(Formerly known as **Natvarlal Vepari & Co LLP**)
Chartered Accountants
Firm Registration No. 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:10:39 +05'30'

Nuzhat Khan
Partner
Membership No.:124950

Place: Mumbai
Date: September 12, 2025

For and on behalf of the Board of Directors
Baharampore-Farakka Highways Limited

RAVINDRANATH ASH KARATI

Ravindranath Karati
Director
DIN No. : 07419535

ANUJ MAITREY

Anuj Maitrey
Director
DIN No. : 10461417

BHUMIKA CHUGH

Bhumika Chugh
Mem No:. A44724

SANJAY RAY

Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

Chinmay Kumar Ghadei

Chinmay Kumar Ghadei
Chief Financial Officer
PAN : DNIPC4332P

Place: Noida
Date: September 12, 2025

Baharampore-Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Changes in Equity as at 31 March 2025
(All amounts are in Rs. lakh, unless stated otherwise)

Statement of Changes in Equity

A

Equity share capital	Amount
as at 31 March 2023	**21,725.30**
Changes in equity share capital	-
as at 31 March 2024	**21,725.30**
Changes in equity share capital	-
as at 31 March 2025	**21,725.30**

B **Other Equity**

Particulars	Capital Contribution	Reserves and Surplus		Total
	Corporate Guarantee	General Reserve	Retained Earnings	
Balance as at 31 March 2023	**550.01**	**-**	**(6,724.74)**	**(6,174.73)**
Loss for the year	-	-	(4,743.61)	**(4,743.61)**
Other Comprehensive Income for the year	-	-	(4.53)	**(4.53)**
Total Comprehensive Income for the year	-	-	(4,748.14)	**(4,748.14)**
Balance as at 31 March 2024	**550.01**	**-**	**(11,472.88)**	**(10,922.87)**
Loss for the year	-		(5,129.52)	**(5,129.52)**
Other Comprehensive Income for the year	-	-	(0.73)	**(0.73)**
Total Comprehensive Income for the year	-	-	(5,130.25)	**(5,130.25)**
Deduction on account of cancellation of Corporate Guarantee (Refer Note 17)	**(550.01)**	550.01	-	-
Balance as at 31 March 2025	**-**	**550.01**	**(16,603.13)**	**(16,053.12)**

As per our report of even date attached
For N V C & Associates LLP
(Formerly known as Natvarlal Vepari & Co LLP)
Chartered Accountants
Firm Registration No. 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:11:07 +05'30'

Nuzhat Khan
Partner
Membership No.:124960

Place: Mumbai
Date: September 12, 2025

For and on behalf of the Board of Directors
Baharampore-Farakka Highways Limited

RAVINDRANATH KARATI Digitally signed by RAVINDRANATH KARATI Date: 2025.09.12 12:58:39 +05'30'

Ravindranath Karati
Director
DIN No. : 07419535

ANUJ MAITREY Digitally signed by ANUJ MAITREY Date: 2025.09.12 18:00:18 +05'30'

Anuj Maitrey
Director
DIN No. : 10481417

BHUMIKA CHUGH Digitally signed by BHUMIKA CHUGH Date: 2025.09.12 18:20:56 +05'30'

Bhumika Chugh
Mem No:. A44724

Place: Noida
Date: September 12, 2025

SANJAY RAY Digitally signed by SANJAY RAY Date: 2025.09.12 18:05:51 +05'30'

Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

Chinmay Kumar Ghadei Digitally signed by Chinmay Kumar Ghadei Date: 2025.09.12 18:29:07 +05'30'

Chinmay Kumar Ghadei
Chief Financial Officer
PAN : DNIPG4332P

Baharampore-Farakka Highways Limited

Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2025.

(All amounts are in Rs. lakh, unless stated otherwise)

1 **Corporate information**

Baharampore-Farakka Highways Limited was incorporated under the Companies Act, 1956, on 11th March, 2010 as a Special Purpose Vehi for Design, Build, Finance, Operate & Transfer (DBFOT) Toll basis of 4 lanes from Kms 191.416 to 294.684 between Baharampore a Farakka in the state of West Bengal under NHDP Phase III.

NHAI has granted concession period of 25 years to the company for the project. Provisional Certificate under Article 14.3.2 (Schedule - J) of t concession Agreement has been obtained for 75.45 kms for the following stretch - 204.550 to 229.300 KMS - 24.75 KMS / 230.600 to 254.8 KMS - 24.20 KMS / 258.350 to 284.850 KMS - 26.50 KMS. Company has started to collect toll from 14th May, 2014 on receipt of provisio certificate of commencement from Independent consultant appointed by National Highway Authority of India. The Company achiev Commerical Operations Date (COD) on June 22, 2024 (Refer Note 40).

W.e.f. from March 29, 2023, the entire shareholding of the Company has been transferred to Cube Highways and Infrastructure V Pte Ltd.

2 **Statement of Compliances**

The Standalone Financial Statements comply in all material aspects with Indian Accounting Standards ("Ind AS") prescribed under Section 1 of the Companies Act, 2013 ("the Act"), the Companies (Indian Accounting Standards) Rules, 2015 as amended and other relevant provisions the Act.

2 **Basis of Preparation, Accounting judgements, estimates and assumptions and Material Accounting Policy Information:**

2.1 **Basis of preparation**

The Financial Statement of the Company comprises of the Balance Sheet, the Statement of Profit and Loss (including other comprehensi income), the Statement of Changes in Equity, and the Summary Statement of Significant Accounting Policies, and other explanatory informati (Collectively, the "Financial Statement").

The financial statements are prepared on an accrual basis of accounting and in accordance with the Indian Accounting Standards (Ind A notified under the companies (Indian Accounting standards) Rules, 2015 as amended by the companies (Indian Accounting standard) Rul 2016.

These financial statements are prepared under the historical cost convention on the accrual basis except for certain financial instruments, whi are measured at fair values, which are disclosed in the Financial Statements viz;

- certain financial assets and liabilities (including derivative instruments) and contingent consideration that is measured at fair value

- assets under service concession arrangement

The classification of assets and liabilities of the Company is done into current and non-current based on the operating cycle of the business the Company. The operating cycle of the business of the Company is less than twelve months and therefore all current and non-curr classifications are done based on the status of reliability and expected settlement of the respective asset and liability within a period of twel months from the reporting date as required by Schedule III to the Companies Act, 2013.

Accounting policies have been consistently applied except whereas newly issued accounting standard is initially adopted or a revision to existing accounting standard requires a change in the accounting policy hitherto in use.

The financial statements are presented in Indian Rupees ('INR') and all values are rounded to the nearest lakh, except otherwise indicat Impact of the initial application of new and amended IND ASs that are effective for current year.

2.2 **Significant accounting judgments, estimates and assumptions**

The preparation of financial statements requires management's judgments, estimates and assumptions that impacts the reported amounts revenues, expenses, assets and liabilities, and the accompanying notes thereon. Uncertainty about these assumptions and estimates co result in outcomes that might require a material adjustment to the carrying amount of assets or liabilities in future periods.

i) **Estimates:**

The preparation of the financial statements in conformity with IND AS requires management to make estimates, judgments and assumptio These estimates, judgments and assumptions affect the application of accounting policies and the reported amounts of assets and liabilities, t disclosures of contingent assets and liabilities at the date of financial statements and reported amounts of revenues and expenses during t period. Accounting estimates could change from period to period. Actual results could differ from those estimates. Appropriate changes estimates are made as management becomes aware of circumstances surrounding the estimates. Changes in estimates are reflected in t financial statement in the period in which changes are made and if material, their effects are disclosed in the notes to the financial statements.

ii) **Judgments:**

The Company's management has made the following judgments, which have the most significant effect on the amounts recognised in t separate financial statements, while formulating the Company's accounting policies:

iii) **Taxes:**

The Company is eligible for 100% tax holiday under section 80-IA of the Income Tax Act, 1961. As a result, timing differences arising a reversing during the tax holiday period are not recognized by the Company.

iv) **Recognition and measurement of other Provisions**

The recognition and measurement of other provisions is based on the assessment of the probability of an outflow of resources, and on pa experience and circumstances known at the closing date. The actual outflow of resources at a future date may therefore, vary from the amou included in other provisions.

v) **Useful lives of property, plant and equipment**

The company reviews the useful life of property, plant and equipment at the end of each reporting period. This reassessment may result change in depreciation expense in future periods.

vi) **Impairment of property, plant and equipment**

For property, plant and equipment and intangibles an assessment is made at each reporting date to determine whether there is an indication th the carrying amount may not be recoverable or previously recognised impairment losses no longer exist or have decreased. If such indicati exists, the Company estimates the asset's or CGU's recoverable amount. A previously recognised impairment loss is reversed only if there h been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised.

vii) **Applicability of service concession arrangement accounting to toll roads concessionaire arrangements**

Appendix A "Service concession arrangements" applies to "public- to-private" service concession arrangements, which can be defined contracts under which the grantor transfers to a concession holder the right to deliver public services that give access to the main public faciliti for a specified period of time in return for managing the infrastructure used to deliver those public services.

More specifically, Appendix C applies to public-to-private service concession arrangements if the grantor:
i. Controls or regulates what services the operator must provide with the infrastructure, to whom it must provide them, and at what price; and
ii. Controls through ownership or otherwise – any significant residual interest in the infrastructure at the end of the term of the arrangement.

In assessing the applicability the management has exercised significant judgement in relation to the underlying ownership of the assets, t ability to enter into power purchase arrangements with any customer, ability to determine prices etc. in concluding that the arrangements do meet the criteria for recognition as service concession arrangements.

viii) **Impairment of concession intangible assets:**

The Company tests intangible assets and cash generating units have suffered any impairment, in accordance with the accounting policy. T recoverable amount of each cash generating unit has been determined based on the greater of value-in-use and fair value less costs to s calculations. Calculations are prepared on the basis of management's assumptions and estimates.

ix) **Fair valuation of Provision for periodic maintenance (overlay expense)**

The Company records the resurfacing obligation for its present obligation as per the concession arrangement to maintain the toll roads duri the concession period. The provision is included in the financial statements at the present value of the expected future payments. T calculations to discount these amounts to their present value are based on the estimated timing of expenditure occurring on the roads.

2.3 **Recent pronouncements**

Ministry of Corporate Affairs ("MCA") notifies new standards or amendments to the existing standards under Companies (Indian Accounti Standards) Rules as issued from time to time. For the year ended March 31, 2025, MCA has notified Ind AS – 117 Insurance Contracts a amendments to Ind AS 116 – Leases, relating to sale and leaseback transactions, applicable to the Company w.e.f. April 1, 2024. T Company has reviewed the new pronouncements and based on its evaluation has determined that it does not have any significant impact in financial statements.

2.4 **Material Accounting Policy Information**

(a) **Current & Non Current classification**

Current Asset :

An asset shall be classified as current when it satisfies any of the following criteria:
(a) it is expected to be realized in, or is intended for sale or consumption in, the company's normal operating cycle;
(b) it is held primarily for the purpose of being traded
(c) it is expected to be realized within twelve months after the reporting date, or
(d) it is cash or cash equivalent unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

All other assets shall be classified as non-current.

Current Liabilities:
A liability shall be classified as current when it satisfies any of the following criteria:
i (a) it is expected to be settled in the company's normal operating cycle;
ii (b) it is held primarily for the purpose of being traded;
iii (c) it is due to be settled within twelve months after the reporting date : or
iv (d) the company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Ter of a liability that could at the option of the counterparty, result in its settlement by the issue of equity instruments do not effect its classification.

All other liabilities shall be classified as non-current.

(b) **Accounting of intangible assets under Service Concession arrangement:**

Company has Toll Road Concession rights where it Designs, Build, Finances, Operates and transfer (DBFOT) infrastructure used to provi public service for a specified period of time. These arrangements may include Infrastructure used in a public-to-private service concessi arrangement for its entire useful life.
These arrangements are accounted for based on the nature of the consideration. The intangible asset model is used to the extent that t Company receives a right (a license) to charge users of the public service. The financial asset model is used when the Company has unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction servic When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for ea component. If the Company performs more than one service (i.e., construction or upgrade services and operation services) under a sin contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, wh the amounts are separately identifiable.

Intangible asset model:
The Company recognises an intangible asset arising from a service concession arrangement when it has a right to charge for usage of t concession infrastructure. An intangible asset received as Consideration for providing construction or upgrade services in a service concessi arrangement is measured at fair value on initial recognition by reference to the fair value of the services provided. Subsequent to init recognition, the intangible asset is measured at cost, which includes capitalised borrowing costs, less accumulated amortisation.

The estimated useful life of an intangible asset in a service concession arrangement is the period from when the Company is able to charge t public for the use of the infrastructure to the end of the concession period.

Amortization of concession intangible assets:
Amortization is charged on a straight-line basis over the estimated useful lives . The estimated useful life and amortization method are review at the end of each annual reporting period, with the effect of any changes in the estimate being accounted for on a prospective basis.

(c) **Property, plant and equipment:**
All items of property, plant and equipment are stated at historical cost less depreciation. Historical cost includes expenditure that is direc attributable to the acquisition of the items. The Company follow Cost Model for Property Plant and Equipment.
Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable th future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. The carryi amount of any component accounted for as a separate asset is derecognised when replaced. All other repairs and maintenance are charged profit or loss during the reporting period in which they are incurred.
Gains and losses on disposals are determined by comparing proceeds with carrying amount. These are included in profit or loss within oth gains/(losses).

Depreciation methods, estimated useful lives and residual value:
Depreciation is provided as per the useful lives of the assets as per schedule II of Companies Act, 2013 using Straight Line Method (SLM).

(d) **Investment property:**
Property that is held for long-term rental yields or for capital appreciation or both, and that is not occupied by the Company, is classified investment property. Investment property is measured initially at its cost, including related transaction costs and where applicable borrowi costs. Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associat with the expenditure will flow to the Company and the cost of the item can be measured reliably. All other repairs and maintenance costs a expensed when incurred. When part of an investment property is replaced, the carrying amount of the replaced part is derecognised.

(e) **Financial Instruments**

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another enti

a Financial Assets

i) Initial Recognition

In the case of financial assets not recorded at fair value through profit or loss, financial assets are recognised initially at fair value pl transaction costs that are directly attributable to the acquisition of the financial asset. Purchases or sales of financial assets that requ delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognised on t trade date, i.e., the date that the Company commits to purchase or sell the asset.

ii) Subsequent Measurement

For purposes of subsequent measurement, financial assets are classified in following categories:

Financial Assets at Amortised Cost

Financial assets are subsequently measured at amortised cost if these financial assets are held within a business model whose objective to hold these assets in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates cash flows that are solely payments of principal and interest on the principal amount outstanding. Interest income from these financial asse is included in finance income using the effective rate interest ("EIR") method. Impairment gains or losses arising on these assets a recognised in Statement of Profit and Loss.

Financial Assets Measured at Fair Value at Other Comprehensive Income

A financial asset that meets the following two conditions is measured at Fair Value through Other Comprehensive Income unless the ass is designated at fair value through profit or loss under the fair value option.

• Business model test: The financial asset is held within a business model whose objective is achieved by both collecting contracti cash flows and selling financial assets.

• Cash flow characteristics test: The contractual terms of the financial asset give rise on specified dates to cash flows that are sol payments of principal and interest on the principal amount outstanding.

Financial Assets Measured at Fair Value at Fair value through Profit and Loss

All the Financial instruments which do not fall under amortised cost or Other Comprehensive Income are carried at fair value through Pr and loss

Derivative financial instruments and hedge accounting Initial recognition and subsequent measurement

The Company uses derivative financial instruments in the form of entering in to a contract of Overloading with the third party for securing t risk of future overloading income and eliminating the risk of traffic of overloading for the balance concesion period.

The upfront payment received in consideration to the said overloading agreement is carried as financial liability carried at Fair value throu Profit and loss. All the overloading collections will be debited to this financial liability. Simultaneously financial asset is created for 20% C of recovery which is carried as financial asset carried at Fair value through Profit and loss and all cost of recovery will be credited to this.

Both the financial liability and financial assets are fair value at each reporting date.

iii) Impairment of Financial Assets

In accordance with Ind AS 109, the Company applies the expected credit loss ("ECL") model for measurement and recognition impairment loss on financial assets and credit risk exposures.

The Company follows 'simplified approach' for recognition of impairment loss allowance on trade receivables. Simplified approach does r require the Company to track changes in credit risk. Rather, it recognises impairment loss allowance based on lifetime ECL at each reporti date, right from its initial recognition.

For recognition of impairment loss on other financial assets and risk exposure, the Company determines that whether there has beer significant increase in the credit risk since initial recognition. If credit risk has not increased significantly, 12-month ECL is used to provide impairment loss. However, if credit risk has increased significantly, lifetime ECL is used. If, in a subsequent period, credit quality of t instrument improves such that there is no longer a significant increase in credit risk since initial recognition, then the entity reverts recognising impairment loss allowance based on 12-month ECL.

iv) De-recognition of Financial Assets

The Company de-recognises a financial asset only when the contractual rights to the cash flows from the asset expire, or it transfers t financial asset and substantially all risks and rewards of ownership of the asset to another entity.

If the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferr asset, the Company recognizes its retained interest in the assets and an associated liability for amounts it may have to pay.

If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

b Equity Instruments and Financial Liabilities

Financial liabilities and equity instruments issued by the Company are classified according to the substance of the contractual arrangemer entered into and the definitions of a financial liability and an equity instrument.

i) Equity Instruments

An equity instrument is any contract that evidences a residual interest in the assets of the Company after deducting all of its liabilities. Equ instruments which are issued for cash are recorded at the proceeds received, net of direct issue costs. Equity instruments which are issu for consideration other than cash are recorded at fair value of the equity instrument.

ii) Financial Liabilities

1) Initial Recognition

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings a payables as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payabl net of directly attributable transaction costs.

2) Subsequent Measurement

The measurement of financial liabilities depends on their classification, as described below

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initi recognition as at fair value through profit or loss. Financial liabilities are classified as held for trading if they are incurred for the purpose of repurchasing in the near term. Gains or losses on liabilities held for trading are recognised in the profit or loss.

Financial guarantee contracts issued by the Company are those contracts that require a payment to be made to reimburse the holder fo loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. Financ guarantee contracts are recognised initially as a liability at fair value, adjusted for transaction costs that are directly attributable to t issuance of the guarantee. Subsequently, the liability is measured at the higher of the amount of loss allowance determined as p impairment requirements of Ind AS 109 and the amount recognised less cumulative amortisation. Amortisation is recognised as finan income in the Statement of Profit and Loss.

Financial liabilities at amortised cost

After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortised cost using the Effective Inter Rate(EIR) method. Any difference between the proceeds (net of transaction costs) and the settlement or redemption of borrowings recognised over the term of the borrowings in the Statement of Profit and Loss.

Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of t EIR. The EIR amortisation is included as finance costs in the Statement of Profit and Loss.

Financial Liabilities are classified as current liabilities unless the company has an unconditional right to defer settlement of the liability for least 12 months after the reporting period. Where there is a breach of a material provision of a long-term loan arrangement on or before t end of the reporting period with the effect that the liability becomes payable on demand on the reporting date, the entity does not classify t liability as current, if the lender agreed, after the reporting period and before the approval of the financial statements for issue, not demand payment as a consequence of the breach.

3) De-recognition of Financial Liabilities

Financial liabilities are de-recognised when the obligation specified in the contract is discharged, cancelled or expired. When an existi financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability a substantially modified, such an exchange or modification is treated as de-recognition of the original liability and recognition of a new liabili The difference in the respective carrying amounts is recognised in the Statement of Profit and Loss.

c Offsetting Financial Instruments

Financial assets and financial liabilities are offset and the net amount is reported in the Balance Sheet if there is a currently enforceal legal right to offset the recognised amounts and there is an intention to settle on a net basis to realise the assets and settle the liabiliti simultaneously.

(f) **Cash and cash equivalents:**

For the purpose of presentation in the statement of cash flows, cash and cash equivalents includes cash on hand, deposits held at call w financial institutions, other short-term, highly liquid investments with original maturities of three months or less that are readily convertible known amounts of cash and which are subject to an insignificant risk of changes in value, and bank overdrafts. Bank overdrafts are sho within borrowings in current liabilities in the balance sheet.

(g) **Income Tax:**

i **Current Income Tax**

Current income tax is recognised based on the estimated tax liability computed after taking credit for allowances and exemptions in accordan with the Income Tax Act, 1961. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, the reporting date.

Minimum Alternative Tax ("MAT") credit is recognised as an asset only when and to the extent there is convincing evidence that the Compa will pay normal income tax during the specified period. In the year in which the MAT credit becomes eligible to be recognised as an asset accordance with the recommendations contained in Guidance Note issued by the Institute of Chartered Accountants of India, the said asse created by way of a credit to the Statement of Profit and Loss and shown as MAT Credit Entitlement. The Company reviews the same at ea Balance Sheet date and writes down the carrying amount of MAT Credit Entitlement to the extent there is no longer convincing evidence to t effect that the Company will pay normal Income Tax during the specified period.

ii **Deferred Tax**

Deferred Tax Asset shall be recognised for the carryforward of unused tax losses and unused tax credits to the extent that it is probable th future taxable profit will be available against which the unsused tax losses and unused tax credits can be utilised.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when t deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a lega enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Current and deferred tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income directly in equity. In this case, the tax is also recognised in other comprehensive income or directly in equity, respectively.

(h) **Impairment of Assets:**

Intangible assets that have an indefinite useful life are not subject to amortisation and are tested annually for impairment, or more frequently events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asse carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and val in use. For the purposes of assessing impairment, assets are companyed at the lowest levels for which there are separately identifiable ca inflows which are largely independent of the cash inflows from other assets or companys of assets (cash-generating units). Non-financial asse other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

(i) **Segment reporting:**

The Company's operations constitutes a single business segment namely "Infrastructure Development" as per Ind As 108, further the Company's operation are within single geographical segment which is India.

(j) **Borrowings Cost:**
General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset a capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are ass that necessarily take a substantial period of time to get ready for their intended use or sale.
Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted fr the borrowing costs eligible for capitalisation.
Other borrowing costs are expensed in the period in which they are incurred.

(k) **Other Financial Asset - Financial guarantee contract:**
Under Ind AS, the financial guarantee given by a holding company to lender on behalf of the Company for its borrowings are recognised initi at fair value which is subsequently amortised as an interest expense to the Statement of Profit and Loss. This transaction was not record under the previous GAAP.
The fair value of financial guarantees is determined as the present value of the difference in net cash flows between the contractual payme under the debt instrument and the payments that would be required without the guarantee.

(l) **Provisions and Contingent Liabilities and Contingent Assets:**

Provisions
Provisions for legal claims are recognised when the Company has a present legal or constructive obligation as a result of past events, it probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are r recognised for future operating losses.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at t end of the reporting period. The discount rate used to determine the present value is a pre-tax rate that reflects current market assessments the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as inter expense.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at t end of the reporting period. The discount rate used to determine the present value is a discount rate that reflects current market assessments the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as inter expense.

Contingent liability is disclosed in the case of :
a) a present obligation arising from a past event, when it is not probable that an outflow of resources will happen to settle the obligation
b) a possible obligation, unless the probability of outflow of resources is remote.

Contingent asset are disclosed (if any), where an inflow of economic benefits are probable.

Contingent Assets
A contingent asset is not recognised unless it becomes virtually certain that an inflow of economic benefits will arise. When an inflow of economic benefits is probable, contingent assets are disclosed in the financial statements. Contingent liabilities and contingent assets are reviewed at each balance sheet date.

(m) **Earnings per share:**
Basic Earnings per share is calculated by dividing the net profit / (loss) after tax for the period attributable to equity shareholders of the Compa by the weighted average number of equity in issue during the period. Diluted earnings per share is calculated by dividing the net profit after t for the year attributable to equity shareholders of the company by the weighted average number of equity shares determined by assumi conversion on exercise of conversion rights for all potential dilutive securities.

(n) **Revenue Recognition:**
Revenue is measured at the fair value of the consideration received or receivable. The Company recognizes revenue when the amount revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have be met for each of the Company's activities, as described below.

Toll revenue
The Income from toll revenue from operations of the facility is accounted on receipt basis.

Contract revenue (construction contracts)
The Company has adopted Ind AS 115 " Revenue from Contracts with Customers " for recognising revenue. The Company derives reven primarily from construction contracts. To recognize revenue, the Company applies the following five step approach: (1) identify the contract w a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to t performance obligation in the contract, and (5) recognize revenue when a performance obligation is satisfied.

At contract inception, the Company assesses its promise to transfer services to a customer to identify separate performance obligations.. T Company applies judgment to determine whether each service promised to a customer are capable of being distinct, and are distinct in t context of the contract, if not, the promised services are combined and accounted as a single performance obligation. For performan obligations where control is transferred over time, revenue are recognized by measuring progress towards completion of the performan obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the services be provided. The method for recognizing revenues and cost depends on the nature of the services rendered.

Other Income
Insurance and other claims are recognized as revenue on certainty of receipt basis.
Dividend income is recognized when the right to receive is established. Other items of income are accounted as and when the right to recei arises and recovery is certain.

(o) **Employee Benefits**

Employee benefits includes provident fund, superannuation fund, employee state insurance scheme, gratuity, compensated absences, long service awards and post-employment medical benefits.

a. Short-term Employee Benefit

All employee benefits falling due wholly within twelve months of rendering the service are classified as short-term employee benefits. The benefits like salaries, wages, short-term compensated absences etc. and the expected cost of bonus, and ex-gratia are recognised in the perio the related service is rendered at undiscounted amount of benefits expected to be paid in exchange for that service.

The cost of short-term compensated absences is accounted as under:
- in case of accumulated compensated absences, when employees render the services that increase their entitlement of future compensated absences; and
- in case of non-accumulating compensated absences, when the absences occur.

b. Post-employment benefits

1) Defined contribution plans:

The Company offers its employees State governed provident fund linked with employee pension scheme as defined contribution plans. The contribution paid/ payable under the scheme is recognised during the period in which the employee renders the related service.

2) Defined benefit plans:

For defined benefit retirement benefit plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each annual reporting period. Re- measurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding net interest), is reflected

immediately in the balance sheet with a charge or credit recognized in other comprehensive income in the period in which they occur. Remeasurement recognised in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit o loss. Past service costs are recognised in profit or loss on the earlier of the date of the plan amendment or curtailment, and the date that the Company recognises related restructuring costs.

Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset.

Defined benefit costs are categorized as follows:
- service cost (including current service cost, past service cost, as well as gains and losses on curtailments and
- net interest expense or income; and
- re-measurement

The Company presents the first two components of defined benefit costs in profit or loss in the line item 'Employee benefits expense'. Curtailment gains and losses are accounted for as past service costs.

The present value of the defined benefit liability is calculated using a discount rate which is determined by reference to market yields at the en of the reporting period on government bonds.

c. Other long-term employee benefit

The obligation for other long-term employee benefits such as long-term compensated absences, are measured at the present value of the estimated future cash outflows expected to be made by the Company in respect of services provided by employees up to the reporting date.

(p) **Inventory**

Inventories are stated at the lower of cost and net realisable value. Cost of inventories include all costs incurred in bringing the inventories their present location and condition. Costs are assigned to individual items of inventory based on first-in-first-out basis. Cost of purchas inventory are determined after deducting rebates and discounts.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated cost of completion and the estimat costs necessary to make the sales.

Baharampore-Farakka Highways Limited
Notes to the financial statements for the year ended March 31, 2025
(All amounts are in Rs. lakh, unless stated otherwise)

3 Property, Plant and Equipment **(Rs. In Lakh)**

Particulars	Plant & Equipment	Furniture	Computers	Office equipment	Vehicles	Total
Balance as at April 01, 2023	**49.93**	**2.04**	**17.30**	**38.01**	**49.94**	**157.22**
Additions for the year	28.07	-	17.48	53.32	5.83	104.70
Disposals	-	-	-	-	-	-
Balance for year ended March 31, 2024	**78.00**	**2.04**	**34.78**	**91.33**	**55.77**	**261.92**
Additions for the year	90.09	17.75	1.39	9.69	-	118.92
Disposals						-
Balance as at 31 March 2025	**168.09**	**19.78**	**36.17**	**101.03**	**55.77**	**380.84**
Accumulated Depreciation						
Balance as at April 01, 2023	**(12.13)**	**(1.31)**	**(17.30)**	**(36.67)**	**(34.77)**	**(102.18)**
Charge for the period	(4.25)	(0.18)	(2.45)	(4.75)	(2.52)	(14.15)
Disposals	-	-	-	-	-	-
Balance for year ended March 31, 2024	**(16.38)**	**(1.49)**	**(19.75)**	**(41.42)**	**(37.29)**	**(116.35)**
Charge for the period	(9.12)	(1.05)	(4.11)	(10.64)	(2.74)	(27.66)
Disposals	-	-	-	-	-	-
Balance as at 31 March 2025	**(25.50)**	**(2.54)**	**(23.86)**	**(52.06)**	**(40.03)**	**(143.98)**
Balance for year ended March 31, 2025	**142.59**	**17.25**	**12.31**	**48.97**	**15.74**	**236.86**
Balance for year ended March 31, 2024	**61.62**	**0.55**	**15.03**	**49.91**	**18.48**	**145.57**

4 Capital work-in-progress	**As at March 31, 2025**	**As at March 31, 2024**
Plant and equipment	-	149.74
	-	**149.74**

(i) Capital work-in-progress (CWIP) ageing schedule

	Amount in CWIP for the period of April 01 2024 to March 31,2025				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project in progress	-	-	-	-	-
Project temporarily suspended	-	-	-	-	-
Total	-	-	-	-	-

	Amount in CWIP for the period of April 01 2023 to March 31,2024				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project in progress	149.74	-	-	-	149.74
Project temporarily suspended	-	-	-	-	-
Total	**149.74**	-	-	-	**149.74**

5 Investment Property

Particulars	As at March 31, 2025	As at March 31, 2024
Land		
Opening balance	14.47	14.47
Additions for the Year	-	-
Closing Balance	**14.47**	**14.47**
Impairment Charges:		
Opening Balance	-	-
Impairment Charge during the year	-	-
Closing balance	-	-
Net block as at reporting date	**14.47**	**14.47**

i The Fair Value of the Land as at the Balance Sheet date is Rs. 18.90 Lakh

ii The Company has fair valued its investment Property vide report dated 15th April 2022, however the valuation is not done by the registered valuer as defined under rule 2 of the Companies (Registered Valuers and Valuation) Rules , 2017.

iii There is no income generated/expense being incurred in relation to investment property.

iv Estimation of fair value

The company obtains independent valuations for its investment properties at once in three year. The best evidence of fair value is current prices in an active market for similar properties. Where such information is not available, the company consider information from a variety of sources including:

The fair values of investment properties have been determined by an accredited independent Valuer. The main inputs used are the rental growth rates, expected vacancy rates, terminal yields and discount rates based on comparable transactions and industry data. The resulting fair value estimates for investment property are included in level 3.

a current prices in an active market for properties of different nature or recent prices of similar properties in less active markets, adjusted to reflect those differences.

6 Intangible assets (Rights under Service Concession Arrangements)

Particulars	Amount
Gross Block	
Balance as at 31 March 2023	**1,01,375.66**
Additions	41,921.53
Disposals	-
Balance as at 31 March 2024	**1,43,297.19**
Additions	2,889.46
Disposals	-
Balance as at 31 March 2025	**1,46,186.64**
Accumulated Depreciation	
Balance as at 01 April 2023	**32,803.29**
Amortisation	6,399.12
Disposals	-
Balance as at 31 March 2024	**39,202.41**
Amortisation	6,310.69
Disposals	-
Balance as at 31 March 2025	**45,513.10**
Net Block	
Balance as at 31 March 2025	**1,00,673.54**
Balance as at 31 March 2024	**1,04,094.78**

Notes:
(i) Please refer note no.40 for information (including remaining amortisation period) related to Service concession arrangements.
(ii) For details of intangible assets pledged as security for borrowings. (Refer note 18)

7 Intangible Assets under Development (IAUD) (Refer Foot Note for details)

Particulars	Amount
Balance as at 01 April 2023	**36,586.52**
Addition : Capitalised to IAUD	7,972.38
Capitalized	(41,921.52)
Balance as at 31 March 2024	**2,637.38**
Addition : Capitalised to IAUD	252.08
Capitalized	(2,889.46)
Balance as at 31 March 2025	**-**

(a) Intangible Asset Under Development (IAUD) Ageing

IAUD for a period of	As at March 31, 2025	As at March 31, 2024
Less than 1 year	-	2,637.38
1-2 years	-	-
2-3 years	-	-
More than 3 years	-	-
Total	**-**	**2,637.38**

(b) Intangible Asset Under Development whose completion is overdue or has exceeded its cost compared to its original plan

IAUD for a period of	As at March 31, 2025	As at March 31, 2024
Less than 1 year	-	2,637.38
1-2 years	-	-
2-3 years	-	-
More than 3 years	-	-
Total	**-**	**2,637.38**

Baharampore-Farakka Highways Limited

Notes to the financial statements for the year ended March 31, 2025

(All amounts are in Rs. lakh, unless stated otherwise)

Foot Note - Intangible Assets under Development

Particulars	As at 01 April 2023	Addition during the year	Capitalized during the year	As at 31 March 2024	Addition during the year	Capitalized during the year	As at 31 March 2025
A) EPC Cost							
Subcontracting Expenses	36,523.13	7,935.45	(41,858.13)	2,600.45	252.08	(2,852.53)	0.00
Sub-total (A)	**36,523.13**	**7,935.45**	**(41,858.13)**	**2,600.45**	**252.08**	**(2,852.53)**	**0.00**
B) Material Cost							
Building Material Consumption	-	-	-	-	-	-	-
Transportations & Others	-	-	-	-	-	-	
Sub-total (B)	**-**	**-**	**-**	**-**	**-**	**-**	
C) Finance Cost							
Interest on Term Loans	-	-	-	-	-	-	
Interest on Sub Debt	-	-	-	-	-	-	
Sub-total (C)	**-**	**-**	**-**	**-**	**-**	**-**	
D) Pre-operative Expenses							
Professional Fees	63.39	36.93	(63.39)	36.93	-	(36.93)	-
Project Development Fees	-	-	-	-			
Sub-total (D)	**63.39**	**36.93**	**(63.39)**	**36.93**	**-**	**(36.93)**	**-**
TOTAL (A+B+C+D)	**36,586.52**	**7,972.38**	**(41,921.52)**	**2,637.38**	**252.08**	**(2,889.46)**	**0.00**
TOTAL (A+B+C+D)	**36,586.52**	**7,972.38**	**(41,921.52)**	**2,637.38**	**252.08**	**(2,889.46)**	**0.00**

8 Non Current Tax assets

Particulars	As at March 31, 2025	As at March 31, 2024
Advance Income Tax (Net of Provision for tax)	100.79	807.42
Total	**100.79**	**807.42**

9 Other Assets

	Particulars	As at March 31, 2025	As at March 31, 2024
9a	**Non current assets**		
	Balance with Government Authorities	20.33	49.07
	Tax paid under Protest	-	31.88
	Total	**20.33**	**80.95**
9b	**Current assets**		
	Prepaid Expenses	33.32	36.17
	Advances to employees	4.73	0.31
	Advances to Contractors /Suppliers	11.09	2,853.39
	Total	**49.14**	**2,889.87**

10 Inventory

Particulars	As at March 31, 2025	As at March 31, 2024
Stores, spares and consumables	157.88	118.02
Total	**157.88**	**118.02**

(a) Items of inventories are valued at lower of cost or estimated net realisable value.

(b) The disclosure of inventories recognized as an expense in accordance with paragraph 36 of Ind AS 2 is as follows:

Particulars	As at March 31, 2025	As at March 31, 2024
Amount of inventories recognized as an expense during the period	481.04	352.02

11 Investments

Particulars	As at March 31, 2025	As at March 31, 2024
Current-quoted		
Investment in mutual funds at fair value through profit or loss (FVTPL) 20,35,846.52 (March 31, 2024: Nil) units in ICICI PRUDENTIAL Money Market Fund Direct Growth	7,668.37	-
Total	**7,668.37**	**-**

12 Trade receivable

Particulars	As at March 31, 2025	As at March 31, 2024
(Unsecured Considered good)		
-Utility shifting and COS	8.35	92.68
-ETC Receivable	30.39	62.08
Total	**38.74**	**154.76**

Note:

Trade receivable includes ₹ 8.35 lakhs (Previous Year ₹ 92.68 lakhs) receivable from National Highway Authority of India(NHAI) pertaining to Utility shifting and change of scope which will be passthrough to Hindustan Construction Company Limited (HCC) as and when received from NHAI.

12b **Trade Receivables Ageing Schedule**

As at March 31, 2025 — **Outstanding for following periods from the invoice date**

Particulars	*Current but not due*	*Less than 6 months*	*6 months - 1 year*	*1-2 year*	*2-3 Year*	*More Than 3 years*	Total
Undisputed trade receivables – considered good	-	38.73	-	-	-	-	**38.73**
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Undisputed trade receivables – credit impaired	-	-	-	-	-	-	-
Disputed trade receivables - considered good	-	-	-	-	-	-	-
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Disputed trade receivables – credit impaired	-	-	-	-	-	-	-

As at March 31, 2024 — **Outstanding for following periods from the invoice date**

Particulars	*Current but not due*	*Less than 6 months*	*6 months - 1 year*	*1-2 year*	*2-3 Year*	*More Than 3 years*	Total
Undisputed trade receivables – considered good	-	154.76	-	-	-	-	**154.76**
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Undisputed trade receivables – credit impaired	-	-	-	-	-	-	-
Disputed trade receivables - considered good	-	-	-	-	-	-	-
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Disputed trade receivables – credit impaired	-	-	-	-	-	-	-

13 Cash and cash equivalents

Particulars	As at March 31, 2025	As at March 31, 2024
Cash on hand	20.69	22.75
Balances with Banks		
In current accounts	219.54	1,073.86
Term deposits with original maturity of less than three months	-	6,400.00
Total	**240.23**	**7,496.61**

There are no repatriation restrictions with regard to cash and cash equivalents as at the end of the reporting period and prior periods.

14 Other bank balances

Particulars	As at March 31, 2025	As at March 31, 2024
Fixed deposits (maturity of more than three months but less than 12 months) (Refer note (i) and (ii) below)	6,125.31	4,643.21
Total	**6,125.31**	**4,643.21**

Note:

(i)	Includes deposits towards Debt service Reserve Account (DSRA) pursuant to loan covenants of loan agreement entered by the Company with its lenders.	2,489.11	2,743.21
(ii)	Includes deposits towards Major Maintenance Reserve Account (MMRA) pursuant to loan covenants of loan agreement entered by the Company with its lenders.	3,636.20	1,900.00

15 Other financial assets
(Unsecured unless otherwise stated)

	Particulars	As at March 31, 2025	As at March 31, 2024
15a	**Non-current**		
	Unsecured, considered good		-
	Carried at Fair value through Profit and Loss		
	Receivable against overloading cost recovery agreement (Refer Note 36C)	1,416.87	-
15b	**Current**		
	Unsecured, considered good		
	Interest accrued on Financial Asset and advances	-	140.13
	Interest accured on deposits	3.06	1.51
	Unbilled revenue	-	-
	Security deposit	0.55	0.68
	Current portion of Receivable against overloading cost recovery agreement (Refer Note 36C)	126.98	-
	Total	**130.59**	**142.32**

16 Equity Share capital

Particulars	As at March 31, 2025	As at March 31, 2024
Authorised		
225,000,000 (31 March 2024: 225,000,000) equity shares of Rs 10/- each	22,500.00	22,500.00
Issued, subscribed and fully paid up		
217,253,000 (31 March 2024: 217,253,000) equity shares of Rs 10/- each.	21,725.30	21,725.30
	21,725.30	**21,725.30**

a Reconciliation of number of shares

No of Equity Shares (In absolute)

Particulars	As at March 31, 2025	As at March 31, 2024
As at the begning of the year	21,72,53,000	21,72,53,000
Add: Issued during the year		-
As at the end of the year	**21,72,53,000**	**21,72,53,000**

b Rights, preferences and restrictions attached to shares

Equity shares:

i) The company has only one class of equity shares having par value of Rs 10 per share. Each holder of equity shares is entitled to one vote per share.

ii) In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.

c Shares held by holding/ ultimate holding company and/ or their subsidiaries/ associates

Out of equity shares issued by the company, shares held by its holding company, ultimate holding company and their subsidiaries/ associates are as below:

Particulars	As at March 31, 2025	As at March 31, 2024
Cube Highways and Infrastructure V Pte. Ltd. and its Nominees, the holding company		
217,253,000 (31 March 2024: 217,253,000) equity shares of Rs 10/- each.	21,725.30	21,725.30

d Details of equity shares held by shareholders holding more than 5% of the aggregate shares in the Company

Particulars	As at March 31, 2025		As at March 31, 2024	
	No of shares	% of Shareholding	No of shares	% of Shareholding
Equity shares of Rs 10/- each fully paid				
Cube Highways and Infrastructure V Pte. Ltd. and its nominees (refer note 15 f)	21,72,53,000	100%	21,72,53,000	100.00%

e Shares reserved for issue under options : Nil

f Shareholding of Promoters

Shares held by promoters at 31 March 2025

Name of the Promoter	No of Shares	% of total shares	% change 2024-25
Cube Highways and Infrastructure V Pte. Ltd. and its nominees	21,72,53,000	100%	-
	21,72,53,000		

g Shareholding of Promoters

Shares held by promoters at 31 March 2024

Name of the Promoter	No of Shares	% of total shares	% change 2023-24
Cube Highways and Infrastructure V Pte. Ltd. and its nominees	21,72,53,000	100%	-
	21,72,53,000		

17 Other Equity

Particulars	As at March 31, 2025	As at March 31, 202
Deemed Capital Contribution (Corporate Guarantee) (Refer Note 17A)	-	550.01
Retained Earnings (Refer Note 17B (i))	(16,603.13)	(11,472.88
General Reserve (Refer Note 17 B (ii))	550.01	-
Total	**(16,053.12)**	**(10,922.87**

A Deemed Capital Contribution (Corporate Guarantee)

Particulars	As at March 31, 2025	As at March 31, 202
Opening balance	550.01	550.0
Deduction on account of cancellation of Corporate Guarantee (Refer note 3 below)	(550.01)	-
Closing Balance	**-**	**550.0**

B Reserves and surplus

Particulars	As at March 31, 2025	As at March 31, 202
Retained Earnings	(16,603.13)	(11,472.8
General Reserve	550.01	-
Closing Balance	**(16,053.12)**	**(11,472.8**

(I) Retained Earnings

Particulars	As at March 31, 2025	As at March 31, 202
Opening balance	(11,472.88)	(6,724.7
Add: Profit / (Loss) for the period	(5,130.25)	(4,748.1
Closing Balance	**(16,603.13)**	**(11,472.8**

(ii) General Reserve

Particulars	As at March 31, 2025	As at March 31, 202
Opening balance	-	-
Add:Transfer from Deemed Capital Contribution (Corporate Guarantee) (Refer note 3 below)	550.01	-
Closing Balance	**550.01**	**-**

Notes: Nature and Purpose of Reserves

1. Retained earnings are created from the profit / loss of the Company, as adjusted for distributions to owners, transfers to other reserve etc. Negative balance represents accumulated losses.

2. Deemed Capital contribution which was the equity component on fair value of the corporate guarantee by the erstwhile promoter of th Company is now no more retained on account of the cancellation of the Corporate Guarantee as at Balance sheet date. The said amou of capital contribution is now therefore transferred to general reserve.

18 Long Term Borrowings

Particulars	As at March 31, 2025	As at March 31, 2024
Secured		
Term loans		
From Banks	68,085.63	61,059.54
Unsecured		
Non Convertible Debentures	22,890.00	22,890.00
Secured - Total	90,975.63	83,949.54
Total non current borrowings	**90,975.63**	**83,949.54**
Less: Current maturity of long term loan from Bank (Refer Note 19)	(3,736.36)	(2,389.28)
Non current borrowings	**87,239.27**	**81,560.26**

1 **Unsecured, Unlisted, Redeemable, Non-Convertible Debentures**

(I) The Company Issued non-convertible debentures to Cube Highways and Infrastructure V Pte Ltd., the Holding Company, as under:

Particulars	Issue date	Amount (in lakhs)
48,90,000 Debentures @100 per debenture	December 05, 2023	4,890.00
174,00,000 Debentures @100 per debenture	May, 11, 2023	17,400.00
6,00,000 Debentures @100 per debenture	April 17, 2023	600.00
		22,890.00

(ii) **Tenure**

The tenure of the NCDs is 19 calendar years from the date of allotment. The instrument is compulsorily redeemable on February 2, 2041.

(Iii) **Coupon Rate**

The NCDs shall carry coupon at annual interest rate of 12.46% (payable quarterly). Subject to the Issuer having met all the restricted payment conditions as defined in the senior loan agreements, the coupon shall be paid to the Subscriber on a quarterly basis.

(iv) **Redemption/ Maturity at Par**

(v) **Redemption Date**

Final Redemption Date is February 2, 2041. The NCDs along with any accrued but unpaid interest on the NCDs can be redeemed any time prior to the Final Redemption Date

2 **New Rupee Term Loan**

(I) Sanction Rupee Term Loan facility of Rs 75,000 lakhs equally between ICICI Bank, Kotak Bank, Bandhan Bank and Yes Bank in th the form of Rupee term Loans i.e.,
RTL 1- Rs 26,880 lakhs
RTL 2 - Rs 16,414 lakhs
RTL 3 - Rs.15,790 lakhs
RTL 4 - Rs15,916 lakhs

(ii)

Particulars	Outstanding Amount as at 31 March 2025				Sanction Amount
	ICICI Bank	Kotak Bank	Bandhan Bank	Yes Bank	
Term Loan 1	10,803.52	6,648.32	4,155.20	3,324.16	26,880.00
Term Loan 2	6,597.06	4,059.73	2,537.33	2,029.86	16,414.00
Term Loan 3	6,341.28	3,902.33	2,438.95	1,951.16	15,790.00
Term Loan 4	6,155.93	3,259.69	2,367.67	1,894.13	15,916.00
Total	**29,897.79**	**17,870.07**	**11,499.15**	**9,199.32**	**75,000.00**

Grand Total	68,466.34

The amount is gross of unamortised upfront fees of Rs 380.70 lacs

(iii)

Drawdown during the year	F.Y 2024-25	F.Y.2023-24
The Company has drawdown following term loans		
ICICI bank	4,333.33	31,857.13
Kotak bank	2,133.33	31,857.13
Yes Bank	1,333.33	-
Bandhan Bank	1,666.67	-
Total	**9,466.66**	**63,714.26**

(iv) **Selldown during the year**

The Lenders has selldown following term loans during the current year:
- INR 8,197.90 lacs 50% from ICICI bank, 50% from Kotak Bank to Yes Bank
- INR 10,247.38 lacs from Kotak bank to Bandhan Bank

(v) **Repayment terms and rate of interest:**

The term loan will be repaid till 31 Dec 2033 in quarterly installments since inception of loan and rate of interest applicable is 6 months MCLR for ICICI Bank and 3 months MCLR for Kotak Mahindra Bank plus spread which is 9.15% in Kotak Mahindra Bank, 9.00% in ICICI Bank, 9.05% in Bandhan Bank and 9.075% in Yes Bank as at 31 March 2025.

(vi) **The term loan is secured by -**

(i) all the Borrower's tangible movable assets (current and non-current assets) including movable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles, and all other movable assets, present and future, related to the Project, save and except the Project Assets;

(ii) First charge over all the accounts of the Company , including Escrow Account and Sub Account, that may be opened in accordance with Loan Agreement and the Supplimentary Escrow Agreement or any other Project Documents and all the funds from time to time deposited therein , the Receivable and all authorised investments or other securities

(iii) Rights under substitution Agreement

(iv) a first charge on all intangible assets including but not limited to goodwill, rights, undertakings, revenue, receivables, and uncalled capital, both present and future excluding the Project Assets;

(v) Assignment of
- all the rights , titles, interest , benefits , claims and demands, whatsoeverof the Company in the Project Documents.
- the right, title and interest of the Company in, to and under all the Government approvals;
- all the rights , title, interest, benefits, claims , and demand whatsoever of the Company in any letter of credit , Guarantee including contractor, guarantee and liquidated damages, and performance bond provided by any party to the Project document;
- all the rights , title, interest, benefits , claims , and demand whatsoever of the Company under all Insurance Contracts.

(vi) Pledge
- pledge of 51% (fifty one percent) of each of the issued and paid up Shares and
- 51% of Non Convertible Debentures (NCD's)
of the Borrower subject to Banking regulation Act.

The Pledge over 51% shareholding of the Company and 51% on Non-Convertible Debentures has been executed during the year on August 30, 2024.

(vii) **Purpose/ Utilisation of Borrowings taken from Bank**

RTL 1 - Proceeds to be utilised for repayment of existing senior debts on the books of the Company
RTL 2 and 3 - Proceeds to be utilised for repayment of existing additional loan on the books of the Company
RTL 4 - Proceeds to be utilised for funding of first cycle of Major Mainteinance, Capex, cost escalation and other transaction related expenses including reimburesement of promoter funds infused for these purpose.

The Company has utilised the above loan for the purpose for which it was to be sanctioned during the current and previous year

(viii) **Contractual Maturity profile of borrowings is as per the sanction terms without Ind AS effects**

	As at March 31, 2025	As at March 31, 2024
Installment payable with in 1 year	3,736.36	2,389.28
Installment payable between 1 to 2 year	4,802.24	3,185.71
Installment payable between 2 to 5 year	21,946.15	15,609.99
Installment payable beyond 5 year	37,964.91	40,299.25
Total **	**68,449.66**	**61,484.23**

** The amount is gross of unamortised upfront fees of Rs 380.70 lacs (Previous year 2023-24 Rs.424.70 lacs)

(ix) **Registration of charges or satisfaction with Registrar of Company**

Registration of charges

As at March 31, 2025, the Company has registered all charges duly with new trustee i.e., Catalyst Trusteeship Limited with Registrar of the Companies in favour of the new lenders

Satisfaction of charges

As per the records of the Registrar of Companies, Maharashtra, available on their website, charges created with erstwhile Trustee i.e.,SBICAP TRUSTEE COMPANY LIMITED dtd. August 20, 2024. As per records of the Company, such loans have been fully repaid and none of the lenders have communicated or demanded any outstanding amount from the Company. Satisfaction is completed during the year

3 **Delay / Default in Repayment of Principal and Interest**

There are no delay and defaults in repayment of principal and interest during the current and previous year.

19 **Short Term Borrowing**

Particulars	As at March 31, 2025	As at March 31, 2024
Secured		
Current Maturities of Long term debt (Refer note 18)	3,736.36	2,389.28
Total	**3,736.36**	**2,389.28**

20 **Trade payables**

Particulars	As at March 31, 2025	As at March 31, 2024
Dues payable to		
- Micro and small enterprises	13.32	3.06
- Others than Micro and small enterprises	3855.49	3,858.16
Total	**3,868.81**	**3,861.22**

20a **Trade Payable Ageing Schedule**

As at March 31, 2025 — Outstanding for following period from the invoice date

Particulars	Unbilled	Not Due	Less than 1 Year	1-2 year	2-3 Year	More Than 3 years	Total
Undisputed outstanding dues of micro enterprises and small enterprises	-	-	13.32	-	-	-	13.32
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	3,237.94	9.78	587.43	16.01	4.34	-	3,855.49
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-

As at March 31, 2024 — Outstanding for following period from the invoice date

Particulars	Unbilled	Not Due	Less than 1 Year	1-2 year	2-3 Year	More Than 3 years	Total
Undisputed outstanding dues of micro enterprises and small enterprises	-	-	3.06	-	-	-	3.06
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	1,773.25	-	2,080.58	4.34	-	-	3,858.16
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-

21 Provisions

	Particulars	As at March 31, 2025	As at March 31, 2024
21a	**Non-current**		
	Provision for gratuity	13.37	7.82
	Provision for leave encashment	9.33	5.73
	Total	**22.70**	**13.55**
21b	**Current**		
	Provision for gratuity	0.97	0.16
	Provision for leave encashment	1.48	0.91
	Provision for major maintenance	3776.16	14,276.22
	Total	**3,778.61**	**14,277.29**

Major maintenance

I) Major maintenance is to preserve the structural integrity of the road i.e. to achieve its original expected operational life. The wear and tear for each year is computed based on the technical report. The maintenance cost / bituminous overlay may vary based on the actual usage during maintenance period. Accordingly on the grounds of matching cost concept and based on technical estimates, a provision for major maintenance expenses is reviewed and is provided for in the accounts annually.

As per the concession agreement, Company has the contractual obligation to carry out resurfacing operation. Provision of Major maintenance are reviewed on yearly basis and based on the technical reports taken during the previous year, resurfacing operation has been estimated as at March 31, 2025. The overlay work is currently being executed and is expected to complete by 31.12.2025

ii) During the year ended March 31 2023, the Company has entered in to Major Maintainence Agreement with HCC Concession Limited vide agreement dated March 20, 2023 for Execution Of Rehabilitation And Overlay At Project Highway for Rs 18,349.88 lakhs. As per the Contract the contractor needs to complete the work of major maintainance within 12 months (excluding 4 months of monsoon). Thus the entire provision amount lying as at March 28, 2023 has been shown as current in the financial statements.
The amount to be incurred for major maintenance is increased by Rs 2,626.12 lakhs which has been taken as provision during the financial year 2024-25.

iii) Movement during the financial year is set out below

Particulars	As at March 31, 2025	As at March 31, 2024
Movements in MM provisions		
Opening Balance	14,276.22	18,349.88
Charged/ (credited) to profit and loss		
Additional Provision	2,626.12	-
Actual Incurred	(13,126.18)	(4,073.66)
Closing Balance	**3,776.16**	**14,276.22**

22 Other liabilities

Particulars	As at March 31, 2025	As at March 31, 2024
Non-Current		
Advance towards Overloading Agreement (Refer Note 36 (C)	-	6,250.00
Total	**-**	**6,250.00**
Current		
Statutory Dues	192.09	335.17
Advances from NHAI (Refer Below Foot Note)	289.88	291.70
Contract Liability- Payable to NHAI	-	9.03
Total	**481.97**	**635.90**

Foot Note

a Advance from NHAI is against change of scope

23 Other financial liabilities

Particulars	As at March 31, 2025	As at March 31, 2024
23a Non-current		
Carried at Fair value through Profit and Loss		
Financial liability towards overloading income (Refer Note 36C)	7,082.85	
Total	**7,082.85**	**-**
23b Current		
Carried at Fair value through Profit and Loss		
Current portion of Financial liability towards overloading income (Refer Note 36C)	634.88	-
Carried at Amortised Cost		
Interest accrued		
- *Others (MSME)*	0.78	1.26
Retention Payable		-
- *Others (MSME)*	-	4.55
- *Others (Other Than MSME)*	-	424.21
Employee Liability	48.98	18.33
Interest accrued on borrowings*	4,305.74	1,859.35
Other payable	-	1,277.47
Total	**4,990.38**	**3,585.17**

(*) **Interest accrued on borrowings**

Interest accrued payable is on Non Convertible Debentures, payable to related party i.e., Cube Highways and Infrastructure V Pte. Ltd. as per the terms of Non Convertible Debenture, Interest needs to be accrued and paid at every quarter end , i..e, June 2024, September 2024, December 31, 2024 and March 31, 2025.

However the above interest will be paid only if there is no restricted payment clause in Common Loan Agreement (CLA).

In view of the CLA, the Company is restricted to pay the interest to its related party on account of interest accrued on Non Convertible Debentures and hence due to this restricted payment clause in CLA , the interest which is accrued throughout the year and not paid as at March 31, 2025 is not considered as default.

24 Deferred tax liabilities (Net)

(a) The Company is eligible for deduction under Section 80- IA of the Income Tax Act, 1961 and the concession period of the Company's project falls within the tax holiday period as defined in Section 80-IA. Since deferred tax on timing differences between Accounting income and Taxable income that arise during the year is reversing during such tax holiday period, no deferred tax asset or liability arises and accordingly no DTA /DTL is created in the accounts.

25 Current Tax Liability (Net)

Particulars	As at March 31, 2025	As at March 31, 2024
Current Tax liability (Net)	-	-
Total		-

Disclosure:

i. **Income tax expense comprises:**

Particulars	As at March 31, 2025	As at March 31, 2024
Current tax	-	-
Deferred tax expense / (credit)	-	-
(Excess)/Short provision of earlier years	211.94	(16.16)
Tax expenses (net) in Statement of Profit and Loss	**211.94**	**(16.16)**

ii The major components of income tax expense and the reconciliation of expense based on the domestic effective tax rate and the reported tax expense in profit or loss are as follows :

	Particulars	2024-25	2023-24
A	**Current Tax**		
	Profit/(Loss) before tax	(4,917.58)	(4,759.77)
	Income tax using the Company's domestic tax rate	26.00%	26.00%
	Computed expected tax expenses	**(1,278.57)**	**(1,237.54)**
	Tax effect on adjustments:		
	Effect of non- deductible expenses	2,435.12	1,957.16
	Effects of deductible Expenses	(2,504.44)	(2,034.04)
	Income tax expenses - Net.....A	**(1,347.89)**	**(1,314.43)**
A	**Tax liability as per Minimum Alternate Tax on book profits**		
	Minimum Alternate Tax rate	15.60%	15.60%
	Computed tax liability on book profits	(767.14)	(742.52)
	Tax effect on adjustments:	-	-
	Effect of non deductible expense	-	-
	Effects of deductible Expenses	-	-
	Income tax expenses - Net.....B	**(767.14)**	**(742.52)**
	Higher of A or B	-	-

iii **Movement in deferred tax assets / Liabilities (net)**

Particulars	As at March 31, 2024	Recognised in Statement of Profit and Loss	Recognised in other comprehensive income/ equity	As at March 31, 2025
Deferred Tax Assets				
Difference between carrying value of intangible assets - Receivable under service concession arrangement as per books and tax	-	5.48	-	5.48
Tax Allowances (allowabe on receipt basis)	-	6.54	-	6.54
Unabsorb losses and depreciation	-	104.81	-	104.81
Deferred Tax Liabilities				
Unamortised processing fees on borrowings	-	(98.98)	-	(98.98)
Unrealised gain on Mutual Funds	-	(17.84)	-	(17.84)
Total deferred tax assets/(liabilities)	-	-	-	-

* Deferred tax asset is recognised to the extent of the deferred tax liabilities in the absence of reasonable certainly that future taxable income will be available to utilize these temporary differences and business losses. The Company intends to avail 80IA tax benefit from the current year

26 Revenue from Operations

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Operating Income		
(i) Toll Income (Refer note (a) below)	19,881.48	15,592.82
(ii) Construction Revenue	252.08	7,972.38
(iii) Change of Scope & Utility Shifting Works	735.82	572.17
Other Operating Income		
(i) Overloading Cost recovery (Refer Note 36)	-	319.37
Total	**20,869.38**	**24,456.74**

(a) Refer note no 40 for Ind AS 115 disclosures

27 Other Income

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Interest income on bank deposits	597.26	823.70
Net gain on sale of investments	8.01	-
Net gain on investments measured at Fair value through profit or loss	70.88	-
Interest income - others	-	1.67
Interest on Income Tax Refund	-	47.91
Miscellaneous Income	60.24	30.84
Total	**736.39**	**904.12**

28 Cost of constructions

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Construction Cost - Project	252.08	7,972.38
Construction Cost - Change of Scope & Utility Shifting Works	735.82	572.17
Total	**987.90**	**8,544.55**

29 Operation and maintenance expenses

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Operation & Maintenance- Carriageways	977.71	2,706.93
Toll Operations - Outsourcing Cost	847.38	864.82
Reimbursement to NHAI (IC Charges)	59.49	83.26
Route patrolling expenses	170.29	172.61
Annual Maintenance Charges	90.32	87.90
Major Maintenance Expenditure	2626.12	-
Rehabilitation and Overlay	4383.22	-
Miscellaneous expense	3.62	4.66
Total	**9,158.15**	**3,920.18**

30 Employee benefit expense

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Salary and wages	277.62	167.07
Provident and other funds	14.36	10.28
Gratuity	5.15	3.45
Staff welfare	7.12	2.66
Total	**304.26**	**183.46**

31 Finance costs

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Interest on Term Loans	5,574.81	6,288.31
Interest on NCD	2,852.09	2,157.12
Interest paid on payment of overloading revenue collected	94.05	-
Interest on Subordinate Debt	-	7.65
Interest on MSME	-	0.78
Interest on delayed payment of statutory dues	-	0.48
Other Borrowing Cost		
Upfront Fees Amortisation	44.02	127.29
Amortisation of Corporate guarantee	-	289.75
Total	**8,564.97**	**8,871.38**

32 Depreciation and amortization expense

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Depreciation on Property, Plant and Equipment	27.66	14.15
Amortization on Intangible assets	6,310.69	6,399.12
Total	**6,338.34**	**6,413.27**

(i) During the year the extention of 5 years is recommended by Independent Engineer to NHAI for its approval as extention to concesssion period vide letter dated August 1, 2024.However NHAI approval is pending as on date. The extended period of 5 years is considered in amortisation of intangible during the year

33 Other expenses

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Building and Other Construction workers (BOCW) Cess	-	734.36
SPV Management fees	371.05	310.92
Insurance	159.58	202.59
Rates and Taxes	26.01	11.52
Travelling	45.37	45.64
Bank Charges	18.19	63.75
IT maintenance	0.74	13.77
Donation	5.00	12.41
Legal, Professional and Consultancy Charges	90.68	158.79
Balances no longer receivable w/off	31.00	11.51
Reimbursement of overloading income	-	595.01
Fair value loss from financial instruments measured at fair value through profit or loss (Refer Note 36C and note (c) below)	384.21	-
Loss on reassessment of financial liabilities (Refer Note 23a)	-	-
MMR Expenses		
Miscellaneous Expenses	57.91	27.53
Total	**1,169.74**	**2,187.80**

(a) Breakup of Auditors' remuneration

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Legal, Professional and Consultancy Charges include:		
Auditors' remuneration and expenses (including GST)		
Statutory Audit fees	6.20	3.25
Certification Fees	0.18	-

(b) Consumption of stores and spares are added to the below mentioned heads of expenses

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
Operation, Repairs & Maintenance	(459.59)	(351.43)
IT maintenance	(19.08)	(0.34)
Miscellaneous Expenses	(2.36)	(0.25)

(c) Fair value loss from financial instruments measured at fair value through profit or loss

Particulars	For the year ended March 31, 2025
Gain on Recognition of Financial Asset (Receivable against overloading cost recovery agreement)	(1,973.21)
Loss on recognistion of Financial Liability (Additional Liability towards overloading agreement)	2,337.42
Fair value loss from financial instruments measured at fair value through profit or loss (Net)	**364.21**

34 Earnings per share (EPS)

Particulars	For the year ended March 31, 2025	For the year ended March 31, 2024
The following reflects the profit and share data used in the basic & diluted computations:		
Net profit/ (loss) for calculation of basic EPS	(5,130.25)	(4,748.14)
Number of share outstanding as on March 31	21,72,53,000	21,72,53,000
Weighted Average number of equity shares for calculating basic EPS	21,72,53,000	21,72,53,000
Basic EPS (not annualised)	(2.36)	(2.19)
Weighted average number of equity shares for diluted EPS (refer note 16 a)	21,72,53,000	21,72,53,000
Diluted EPS (not annualised)	(2.36)	(2.19)

Reconcillation of Equity Shares		
Number of shares at the beginning	21,72,53,000	21,72,53,000
Issued during the year		-
Number of shares at the end	21,72,53,000	21,72,53,000

Note :
There have been no other transactions involving Equity shares or potential Equity shares between the reporting date and the date of authorisation of these Financial Statement

35 Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits

(a) Defined benefit plans (unfunded):

The Company provides for gratuity for employees in India as per Payment of Gratuity Act, 1972.
Employees who are in continuous service for 5 years are eligible for gratuity. The amount of gratuity payable on retirement/termination is the employees last drawn basic salary per month completed proportionately for 15 days salary multiplied fo number of completed years of service.

The gratuity scheme covers substantially all regular employees. Commitments are actuarially determined at year-end. The actuarial valuation is done based on "Projected Unit Credit" method. Gains and losses of changed actuarial assumptions are charged to Statement of Profit and Loss.

(A) Disclosure of Gratuity

(i) **Amount recognised in the Statement of Profit and Loss is as under:**

Description	**March 31, 2025**	**March 31, 202**
Current service cost	4.58	3.4
'Interest cost on defined benefit obligations	0.57	0.0
Total Service Cost	**5.15**	**3.4**

(iii) **Bifurcation of Actuarial Gain/Loss on obligations:**

Description	**March 31, 2025**	**March 31, 202**
Actuarial Loss/(Gain) on arising from change in demographic assumption		-
Actuarial Loss/(Gain) on arising from change in financial assumption	0.14	0.2
Actuarial Loss/(Gain) on arising from experience adjustment	0.59	4.2
Actuarial Loss/(Gain) on for the year on obligations	**0.73**	**4.5**

(iv) **Other Comprehensive Income (OCI)**

Description	**March 31, 2025**	**March 31, 202**
Actuarial Loss/(Gain) for the year on DBO	0.73	4.5
Unrecognized actuarial Loss/(Gain) for the year	**0.73**	**4.5**

(v) **Bifurcation of Present Benefit Obligations (PBO) at the end of year in current and non current**

Description	**March 31, 2025**	**March 31, 202**
Current liability (Amount due within one year)	0.97	0.1
Non-Current liability (Amount due over one year)	13.37	7.8
Total PBO at the end of year	**14.34**	**7.9**

(vi) **Change in defined benefit obligations**

Description	**March 31, 2025**	**March 31, 202**
Defined benefit liability at the start of the year	7.98	-
Adjustments related to employees transferred to/from fellow subsidiaries	-	-
Interest Cost	0.57	0.0
Current service cost	4.58	3.4
Re-measurements (gain)/loss for the year	0.73	4.5
Benefit paid directly by the Company	-	-
Transfer In / (Out)*	0.48	
Defined benefit liability at the end of the year	**14.34**	**7.9**

(vii) **The amount included in the balance sheet arising in respect of its defined benefit obligations/plans**

Description	**March 31, 2025**	**March 31, 202**
Present value of defined benefit obligations/ plans	14.34	7.9
Net defined benefit obligations	**14.34**	**7.9**

Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits (Continued.)

(viii) **Sensitivity analysis for gratuity liability:**

Description	**March 31, 2025**	**March 31, 202**
Impact of change in discount rate		
Present value of obligations at the end of the period/year	**14.34**	**7.9**
- Impact due to decrease of 1%	1.31	0.7
- Impact due to increase of 1%	(1.15)	(0.6
Impact of change in salary increase		
Present value of obligations at the end of the period/year	**14.34**	**7.9**
- Impact due to decrease of 1%	(1.17)	(0.6
- Impact due to increase of 1%	1.31	0.7

The above sensitivity analysis is based on a change an assumption while holding all other assumptions constant. In practice, this is unlikely to occur and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligations to significant actuarial assumptions the same method (present value of the defined benefit obligations calculated with the projected unit credit method at the end of the reporting period) has been applied which was applied while calculating the defined benefit obligations liability recognised in the Balance Sheet.

Sensitivities due to mortality and withdrawals are not material and hence impact of change due to these not calculated.

Sensitivities as rate of increase of pensions in payment, rate of increase of pensions before retirement and life expectancy are not applicable.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to previous periods.

(ix) **Actuarial assumptions:**

Description	**March 31, 2025**	**March 31, 202**
Discount rate range	6.70%	7.15
Rate of increase in compensation levels range	7.0% for the first year and 5.84% thereafter	7.5% for the first ye and 6.3% thereaft
Retirement age	58 years	58 year
Mortality rate	100% of IALM 2012-14	100% of IALM 2012-1
Attrition at age (Withdrawal rate %)		
- Up to 30 Years	9.00%	9.00
- From 31 to 44 years	9.00%	9.00
- Above 44 years	9.00%	9.00

(x) **Maturity profile of defined benefit obligation**

Discription	**March 31, 2025**	**March 31, 2024**
Weighted average duration (based on discounted cashflows)	9 Years	9 Years

Expected cash flows over the next (valued on undiscounted basis):	**(₹ in Lacs)**	**(₹ in Lacs)**
1 year	0.97	0.1
2 to 5 years	5.07	2.9
6 to 10 years	6.69	4.0
More than 10 years	15.71	10.1

36 Fair Value Heirarchy and Financial Risk Management Note

I Financial Instruments

A Financial Instruments by category

i) The carrying value and fair value of financial instruments by categories as at March 31, 2025 were as follows:

Rs. in lakh

Particulars	Amortised cost	Financial assets/ liabilities at fair value through		Total carrying value	Fair Valu
		Profit or Loss	OCI		
Assets:					
Trade receivables	38.74	-	-	38.74	
Cash and cash equivalents	240.23	-	-	240.23	2
Bank balances other than cash and cash equivalents	6,125.31	-	-	6,125.31	6,1
Others financial assets					
Receivable against overloading cost recovery agreement	-	1,543.85		1,543.85	1,5
Others financial assets	3.62	-	-	3.62	
Investment	-	7,668.37	-	7,668.37	7,6
Liabilities:					
Borrowings	90,975.63	-	-	90,975.63	90,9
Trade payables	3,868.81	-	-	3,868.81	3,8
Other financial liabilities					
Financial liability towards overloading income	-	7,717.74	-	7,717.74	7,7
Others financial liabilities	4,355.50	-	-	4,355.50	4,3

ii) The carrying value and fair value of financial instruments by categories as at March 31, 2024 were as follows:

Rs. in lakh

Particulars	Amortised cost	Financial assets/ liabilities at fair value through		Total carrying value	Fair Valu
		Profit or Loss	OCI		
Assets:					
Investments	-	-	-	-	
Trade receivables	154.76	-	-	154.76	1
Cash and cash equivalents	7,496.61	-	-	7,496.61	7,4
Bank balances other than cash and cash equivalents	4,643.21	-	-	4,643.21	4,6
Others financial assets	142.32	-	-	142.32	1
Liabilities:					
Borrowings	83,949.54	-	-	83,949.54	83,9
Trade payables	3,861.22	-	-	3,861.22	3,8
Other financial liabilities	-				
Others financial liabilities	3,585.17	-	-	3,585	4,3

B Fair value hierarchy

Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities
Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices)
Level 3 - Inputs for the assets or liabilities that are not based on observable market data (unobservable inputs)
(i) Reconciliation of fair value measurement of the investment categorised at level 3
(ii) Sensitivity of level 3 financial instrument's fair value to changes in significant unobservable inputs used in their fair valuation:

The following table presents fair value hierarchy of assets and liabilities measured at fair value on a recurring basis as of :

Particulars	Date of Valuation	Fair Value measurement using			Total
		Quoted prices in active markets (Level 1)	Significant observable inputs (Level 2)	Significant unobservable inputs (Level 3)	
Financial assets measured at fair value					
Measured at FVTPL					
Mutual funds	March 31, 2025	7,668.37	-	-	**7,668.37**
Receivable against overloading cost recovery agreement	March 31, 2025	-	-	1,543.85	**1,543.85**
Financial Liabilities measured at fair value					
Measured at FVTPL					-
Financial liability towards overloading income	March 31, 2025	-	-	7,717.74	**7,717.74**

There are no Assets and Liabilities carried at FVTPL or at FVTOCI as at March 31, 2024

C Overloading Agreement

Background on the transaction

Under the agreement, the Company received an upfront amount of Rs. 6250.00 lakhs, against which the company will be transferring all of it's overloading revenue to HCC, and HCC will p company 20% of the overloading revenue (i.e. in effect 80% of the overloading revenue will be assigned to HCC against the upfront amount). Since condition preceedent of the Overlc Agreement was not completed as at March 31, 2024 , the said advance received was shown as Other Non Current Liabilities.

During the year, the Company has concluded the condition precedent wrt overloading agreement with HCC during the year. Under the terms of the agreement, the Company shall pass on 10 toll revenue from overloading vehicle after recovery of 20% cost against the same. The Company has entered in to this arrangement as a hedge against the future risk connected with overlc revenue. The Company has received upfront payment of Rs 62.5 crs from HCC which it has accounted as financial liability carried at fair value through profit and loss. 80% of net overlc collection is adjusted against this financial liability. The Company has simultaneously recognised financial asset towards the 20% Cost of recovery which is carried as financial asset carried a value through Profit and loss. Both the financial liability and financial assets are fair value at each reporting date.

Valuation

These balances are valued by an independent 3rd party valuer at each year end. The valuation of these balances includes significant estimation. The key assumptions used in the valuation incl a)forecasted overloading revenue for future years
b)discount rate to be applied on the cash flows

Movement of Balances During the year

	For the year ended March 31, 2025			For the year ended March 31, 2024		
Description	**Financial Asset**	**Financial Liability**	**Net Balance**	**Financial Asset**	**Financial Liability**	**Net Balan**
Balance At the beginning of the year	-	-	-	-	-	
Additional Liability towards overloading agreement*		7,527.47	7,527.47		-	
Payments (made) / received during the year	429.36	(2,147.16)	(1,717.80)	-	-	
Fair Value (Gains) / Losses (Refer Note 33)	(1,973.21)	2,337.42	364.21	-	-	
Balance At the end of the year (Refer Note 15 & 23)	**1,543.85**	**7,717.74**	**6,173.89**	-	-	

	Financial Asset	Financial Liability
Particulars	**Receivable against overloading cost recovery**	**Additional Liability towards overloading agreement**
- Non Current	1,416.87	7,082.85
- Current	126.98	634.88
Total	**1,543.85**	**7,717.74**

ii Financial risk management

The companies activities exposes it to market risk, liquidity risk and credit risk.
This note explains the source of risk which the entity is exposed to and how the entity is manage the risk.

The company is exposed to several financial risks, including credit risk, market risk related to interest rates, and liquidity risk. Credit risk arises from cash and cash equivalents, as well as financ assets measured at amortized cost. To manage this, the company diversifies its bank deposits and sets credit limits. Market risk, specifically interest rate risk, is associated with long-term borrowings that carry floating interest rates. This risk is actively managed by the company. Liquidity risk stems from trade payables, borrowings, and other financial liabilities. The company addresses this by maintaining access to committed credit lines and borrowing facilities.

The Company`s risk management is carried out by a project finance team and treasury team group under policies approved by board of directors. Company treasury identifies, evaluate hedges financial risk in close co-operation with the group`s operating units. The Management of the Company provides principles for overall risk management, as well as policies covering sp areas, such as , interest rate risk, and credit risk and investments of excess liquidity.

(a) Credit Risk

The company engaged in infrastructure development and construction business under BOT. Credit risk is the risk that counterparty will not meet its obligations leading to a financial loss. Fin assets that are potentially subject to concentrations of credit risk and failures by counter-parties to discharge their obligations in full or in a timely manner consist principally of cash, cash equiv and trade and other accounts receivable. Credit risk on cash balances with Bank are limited because the counterparties are entities with acceptable credit ratings.

(b) Market Risk - Interest rate risk

The exposure of the Company's borrowing is linked to Bank base rate plus fixed spread ,base rate are subject to change in market condition to interest rate changes at the end of the reporting are as follows:

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Floating Rate borrowings	68,085.63	61,059.54
Fixed rate borrowings	22,890.00	22,890.00
Total borrowings	**90,975.63**	**83,949.54**

(c) Risk of Overloading Collection

The risk of overloading traffic is hedged by entering in to an overloading arrangement with third party, where all the risk associated with the overloading traffic is transferred to the third party.

(ii) Sensitivity analysis

Profit or loss is sensitive to higher/lower interest income from borrowings as a result of changes in interest rates.

Impact on Profit after Tax	Year ended March 31, 2025	Year ended March 31, 2024
Interest rates - increase by 50 basis points	(340.43)	(305.30)
Interest rates - decrease by 50 basis points	340.43	305.30

(b) Liquidity Risk

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities and the availability of funding through an adequate amount of committed credit facilities to obligations when due and to close out market positions. The Company treasury maintains flexibility in funding by maintaining availability under committed credit lines.

Management monitors rolling forecasts of the company's liquidity position (comprising the undrawn borrowing facilities below) and cash and cash equivalents on the basis of expected cash flow

(i) Maturities of financial liabilities

The tables below analyse the Company's financial liabilities into relevant maturity groupings based on their contractual maturities for:

As At March-2025

	Less than 1 year	1 to 2 Years	2 to 5 Years	Over 5 Years	Total
Borrowings	3,736.36	4,818.92	21,946.15	60,474.20	90,9
Other Financial liabilities	4,990.38	-	-	7,082.85	12,0
Trade and other payables	3,868.81	-	-	-	3,8
Total	**12,595.56**	**4,818.92**	**21,946.15**	**67,557.06**	**1,06,9**

As At March-2024

	Less than 1 year	1 to 2 Years	2 to 5 Years	Over 5 Years	Total
Borrowings	2,389.28	3,185.71	15,609.99	62,764.56	83,9
Other Financial liabilities	3,585.17	-	-	-	3,5
Trade and other payables	3,861.22	-	-	-	3,8
Total	**9,835.67**	**3,185.71**	**15,609.99**	**62,764.56**	**91,3**

37 Capital management

The primary objective of the Company's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business and maximise shareh value.

The Company monitors capital using a gearing ratio, which is net debt divided by total equity. The Company's policy is to keep the gearing ratio optimum. Net debt includes non-current borro (including current maturity of non-current borrowings less cash and cash equivalents and other bank deposits (net of restricted deposits)).

A ***Net Debt Summary***

Particulars	As at March 31, 2025	As at March 31, 2024
Non Current Borrowings (including Current Maturities)	90,975.63	83,949.54
Interest Payable	4,305.74	1,859.35
	95,281.38	**85,808.89**
Less:		
Investment in Mutual funds	7,668.37	-
Cash and Cash Equivalents	240.23	7,496.61
Bank balances other than cash and cash equivalents	2,489.11	2,743.21
	10,397.71	**10,239.82**
Net Debt	**84,883.67**	**75,569.07**
Total Equity	**5,672.18**	**10,802.43**
Capital and net debt gearing ratio (in times)	**14.96**	**7.00**

Baharampore-Farakka Highways Limited

38 Notes to the financial statements for the year ended March 31, 2025

Sr. No.	Ratio	Numerator	Denominator	Unit of measurement	March 31, 2025	March 31, 2024	Variation	Remarks for Variation in the ratio by more than 25% as compared to previous year
					Ratio	Ratio		
1	Current ratio	Current Asset	Current Liabilities	Times	0.85	0.62	36.99%	The variation is due to increase in current assets and decrease in current liability during the year.
2	Debt-Equity ratio	Total Debts	Shareholders Equity	Times	16.04	7.77	106.39%	The variation is due to increase in total debts during the year.
3	Debt Service Coverage ratio	Earnings for debt service = Net profit after taxes + Non-cash operating expenses (Depreciation & amortisation) + Finance costs	Debt service = Interest + Lease Payments + Principal Repayments	Times	1.14	0.11	946.99%	The variation is due to increase in earnings and total debts during the year.
4	Return on Equity ratio (ROE)	Net Profits after taxes – Preference Dividend	Average Shareholder's Equity	Percentage	(0.62)	(0.36)	72.97%	The variation is due to increase in earnings and decrease in shareholders equity during the year.
5	Inventory Turnover Ratio*	Cost of goods sold OR sales	Average Inventory	Times	NA	NA	-	Not Applicable
6	Trade Receivables turnover ratio*	Net credit sales = Gross credit sales - sales return	Average Trade Receivable	Times	NA	NA	-	Not Applicable
7	Trade payables turnover ratio	Net credit purchases = Gross credit purchases - purchase return	Average Trade Payables	Times	2.63	5.58	-52.89%	The variation is due to balance work expenses incurred in previous year and decrease in Trade payable during the year.
8	Net capital turnover ratio	Revenue from operations	Working capital = Current assets - Current liabilities	Times	(3.55)	(1.29)	174.45%	Variation is due to increase in earnings and decrease in average working capital during the year.
9	Net profit ratio	Net Profit after Tax	Revenue from operations	Times	(0.25)	(0.19)	26.72%	The variation is due to increase in earnings and decrease in net sales during the year.
10	Return on Capital employed (ROCE)	Earning before interest and taxes	Capital Employed = Tangible Net Worth + Total Debt + Deferred Tax Liability	Percentage	0.04	0.04	-13.02%	Variation is due to increase in operational earnings in current year on account of reduced cost of construction.
11	Return on Investment (ROI)	Income generated from investments	Weighted average value of investments	Percentage	0.42	NA	-	Not Applicable

*Since the Company is toll road Company operating under Toll, Operate, Transfer Model basis and is not in the nature of manufacturing or a trading concern, accordingly Inventory turnover ratio and debtors turnover ratio are considered as not applicable.

39 Related Party Transactions

A Name of Related Party with which the Company has transactions and Nature of Relationship

Holding Company	Cube Highways and Infrastructure V Pte. Ltd. (w.e.f. 29 March 2023)
Other related party	Cube Highways and Transportation Assets Advisors Pvt Ltd (till June 24, 2024)
Other related party	Cube Highways Technologies Private Limited
Other related party	Cube Highways Root Foundation
Other related party	Cube Highways Growth Advisory Pvt. Ltd.

Key Managerial Personnel

Ankit Jain (w.e.f. 28 March 2023 till June 24, 2024)	Director
Puneet Panchal (w.e.f. 28 March 2023 till November 12, 2024))	Director
Pooja Aggarwal (w.e.f. 28 March 2023 till June 24, 2024)	Director
Anshuman Gupta (w.e.f. 21 June 2024 till November 05, 2024)	Director
Anuj Maitrey (w.e.f. June 21, 2024)	Director
Sippy Narender Kumar (w.e.f. Septmber 04, 2024)	Director
Ravindranath Karati (w.e.f. November 07, 2024)	Director
Bhumika Chug (w.e.f. September 15, 2023)	Company Secretary (CS)
Sanjay Ray (w.e.f. September 14, 2023)	Chief Executive Officer (CEO)
Bikash Gantait (w.e.f. 14 September 2023 till May 31, 2025)	Chief Financial Officer (CFO)
Chinmay Kumar Ghadei (w.e.f. July 22, 2025)	Chief Financial Officer (CFO)

B Related Party Transactions

Particulars	FY 24-25	FY 23-24
Transactions During the period / year		
SPV Management Fees		
Cube Highways and Transportation Assets Advisors Pvt Ltd (till June 24, 2024)	49.00	310.92
Cube Highways and Transportation Growth Advisory Pvt. Ltd.	30.56	-
Community Development expenses (Donation)		
Cube Highways Root Foundation	5.00	12.41
Other Charges & Reimbursement of Expenses		
Cube Highways and Transportation Assets Advisors Pvt Ltd (till June 24, 2024)	8.92	25.67
Operations & Maintenance		
Cube Highways Technologies Private Limited	415.96	119.29
Professional Fees for IT Services		
Cube Highways and Transportation Assets Advisors Pvt Ltd (till June 24, 2024)	0.00	7.58
Non- convertible Debentures issued		
Cube Highways and Infrastructure V Pte Ltd	-	22,890.00
Interest Accrued on Non Convertible Debentures		
Cube Highways and Infrastructure V Pte Ltd	2,852.09	2,157.12

Particulars	As at 31 March 2025	As at 31 March 2024
Balances at the year end		
Trade payables		
Cube Highways and Transportation Assets Advisors Pvt Ltd (till June 24, 2024)	110.52	17.12
Cube Highways Technologies Private Limited	137.67	1.07
Cube Highways and Transportation Growth	27.97	-
Non Convertible Debentures		
Cube Highways and Infrastructure V Pte Ltd - NCD	22,890.00	22,890.00
Interest accrued on Non Convertible Debentures		
Cube Highways and Infrastructure V Pte Ltd - Interest accrued	4,305.74	1,859.35

40 Disclosures as required by Appendix D of Ind AS 115 relating to "Service Concession Arrangements: Disclosures"

Description of the Arrangement along with salient features of the project:	NHAI has granted concession period of 25 years to the company for the project. Provisional Certificate under Article 14.3.2 (Schedule - J) of the concession Agreement has been obtained for 75.45 kms for the following stretch - 204.550 to 229.300 KMS - 24.75 KMS / 230.600 to 254.800 KMS - 24.20 KMS / 258.350 to 284.850 KMS - 26.50 KMS. Company has started to collect toll from 14th May, 2014 on receipt of provisional certificate of commencement from Independent consultant appointed by National Highway Authority of India.
Year when SCA granted	June 28, 2010
Concession Period	25 Years
Commercial Operation Date (COD)	June 22, 2024
Estimated Extention of Period	5 Years
End of Concession Period (Including estimated extention period)	February 02, 2041
Obligations of Operations and maintenance	The Company is required to carry out operations and maintenance on the road annually with an obligation to carry out periodic maintenance in terms of the Concession at regular intervals.
Changes to the Concession during the period	During the year, there are no changes in the contract alloted to the Company by NHAI.
Classification of the Concession	The Company has applied the principles enumerated in Appendix C of Ind AS – 115 titled "Service Concession Arrangement" and has classified the arrangement as a Intangible Asset resulting in recognition of an Intangible Asset in the Financial Statements, since the Company has a right (a licence) to charge users of the public service.
Remaining amortisation period of rights under SCA as at	15 years and 10 months

II INDAS 115 "Revenue from Contracts with Customers"

1 **Disaggregation of Revenue**

(a) **Based on type of Services**

Particulars	**2024-25**	**2023-24**
Revenue from Toll collection	19,881.48	15,592.82
Construction Revenue	252.08	7,972.38
Change of Scope / Utility Shifting	735.82	572.17
Overloading cost recovery	-	319.37
Total	**20,869.38**	**24,456.74**

(b) **Geographical region**

The Company is in the business of construction vide Design, Build, Finance, Operate & Transfer (DBFOT) Toll basis of 4 lanes from Kms 191.416 to 294.684 between Baharampore and Farakka in the state of West Bengal under NHDP Phase III.

(c) **Market Type**

There is only one Customer / grantor to whom the services is provided - National Highway Authority Limited (NHAI).

(d) **Contract Duration**

NHAI has granted concession period of 25 years to the company for the project (including construction period). The Company has applied for extention for 5 years in the past. During the year the extention of 5 years is recommended by Independent Engineer to NHAI for its approval as extention to concesssion period vide letter dated August 1, 2024.However NHAI approval is pending as on date.

(e) **Timing of transfer of services**

Revenue from Construction activity satisfies the test of over the time and therefore the Revenue from Construction Activity will recognise overtime.

Revenue from toll income is recgonised at a point in time.

2 Movement of Contract Balances

(i)

Advance from Customers	**2024-25**	**2023-24**
Opening Balance	291.70	1,037.39
Advance Received during the year	-	-
Advance Adjusted / Recovered	(1.82)	(745.69)
Closing Balance	**289.88**	**291.70**

41 **Micro Enterprises and Small Enterprises related disclosure**

Particulars	As at March 31, 2025	As at March 31, 2024
(i) Principal amount remaining unpaid to any supplier as at the end of the accounting year	13.32	3.06
(ii) Interest due thereon remaining unpaid to any supplier as at the end of the accounting year	-	0.78
(iii) The amount of interest paid along with the amounts of the payment made to the supplier beyond the appointed day		
- Principal	-	7.60
- Interest	-	0.77
(iv) The amount of interest due and payable for the year	-	0.04
(v) The amount of interest accrued and remaining unpaid at the end of the accounting year	-	0.35
(vi) The amount of further interest due and payable even in the succeeding year, until such date when the interest dues as above are actually paid	-	0.35

Dues to Micro Enterprises and Small Enterprises have been determined to the extent such parties have been identified on the basis of information collected by the Management.

42 **Segment reporting**

The Company being engaged in design, operation development and maintenance of Road on Build, Operate and Transfer (BOT) basis, does not have more than one reportable segments. Further, the Company is carrying its business in only one geographical segment.

43 **Contingent liabilities and Commitments**

	Particulars	As at March 31, 2025	As at March 31, 2024
		Rs	Rs
a	**Contingent liabilities**		
	Income Tax Demand raised by Income Tax Authority - (FY 2017-18)	0.34	0.34
	Entry Tax Demand raised by Sales Tax Authority - West Bengal (FY 2015-16)	-	0.97
	Entry Tax Demand raised by Sales Tax Authority - West Bengal (FY 2016-17)	0.65	0.65
	Mismacth GSTR-3 and GSTR-7	59.49	59.49
	ITC reversible and interest	44.50	-
b	**Commitment**		
	Capital Commitment		
	Estimated amount of contracts remaining to be executed on capital account not provided for (Net of Advance)	-	-

44 **Relationship with struck-off companies:** The information about transaction with struck off companies (defined under section 248 of the companies Act 2013 or section 560 of the Companies Act 1956) has been determined to the extent such parties have been identified on the basis of information available with the company and the same is relied upon by the auditor.

45 The balance sheet, statement of profit and loss, statement of changes in equity, statement of material accounting policy information and the other explanatory notes forms an integral part of the financial statements of the Company for the year ended March 31, 2025.

46 The Code on Social Security, 2020 ('Code') relating to employee benefits during employment and post employment benefits received Presidential assent in September 2020. The Code has been published in the Gazette of India. However, the date on which the Code will come into effect has not been notified. Company will assess the impact of the Code when it comes into effect and will record any related impact in the period the Code becomes effective.

47 There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company.

48 The Company does not have any Benami property, where any proceeding has been initiated or pending against the Company for holding any Benami property.

49 The Company does not have any transactions with struck-off companies under Section 248 of the Companies Act, 2013.

50 The Company is not declared wilful defaulter by any bank or financial institution or other lender.

51 The Company does not have any charges or satisfaction which is yet to be registered with ROC beyond the statutory period.

52 The Company have not traded or invested in Crypto currency or Virtual Currency during the financial year.

53 The Company has not advanced or loaned or invested funds to any other person or entity, including foreign entities (Intermediaries) with the understanding that the Intermediary shall: directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company (Ultimate Beneficiaries); or provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

54 The Company has not received any fund from any person or entity, including foreign entities (Funding Party) with the understanding (whether recorded in writing or otherwise) that the Company shall: directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party (Ultimate Beneficiaries); or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

55 The Company does not have any transaction which is not recorded in the books of accounts that has been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961 (such as, search or survey or any other relevant provisions of the Income Tax Act, 1961).

56 The Company has not availed any working capital facilities from banks on the basis of security of current assets.

57 The company did not have any long term contracts including derivative contracts for which there were any material foreseeable losses.

58 The provision of section 135 of the Companies Act, 2013 in relation to corporate social responsibility does not apply to the Company during the year.

59 As per the requirements of Rule 3(1) of the Companies (Accounts) Rules 2014, the Company uses SAP S/4 HANA as its accounting software for recording all the accounting transactions which has a feature of recording audit trail (edit log) facility and the same has operated with effect from March 28, 2025, for all relevant transactions recorded in the software at application level.

The audit trail feature in respect of the aforesaid accounting software(s) is not being tampered with for the period for which the audit trail feature was enabled and operating.

However, the audit trail feature is only enabled at Data Definition Language (DDL) and not at Data Manipulation Language (DML) for direct access changes to database.

Based on above, the preservation of audit trail as per the statutory requirements is available only for the period the feature was enabled and operating.

60 Pursuant to requirement of the companies (Accounts) fourth Amendment rules, 2022 notified on August 05, 2022. The Company maintains backup on daily basis of the books of account and other relevant books and papers maintained in electronic mode and the same is accessible on servers, physically located in India at all time.

61 The financial statements of the Company were approved for issue by the Board of Directors on September 12, 2025.

As per our report of even date attached
For N V C & Associates LLP
(Formerly known as Natvarlal Vepari & Co LLP)
Chartered Accountants
Firm Registration No. 106971W/W101085

Digitally signed by NUZHAT MOHAMMED KHAN
Date: 2025.09.12 19:13:00 +05'30'

Nuzhat Khan
Partner
Membership No.:124960

Place: Mumbai
Date: September 12, 2025

For and on behalf of the Board of Directors

Baharampore-Farakka Highways Limited

RAVINDRA NATH KARATI — Digitally signed by RAVINDRANATH KARATI, Date: 2025.09.12 17:57:07 +05'30'
Ravindranath Karati
Director
DIN No. : 07419535

SANJAY RAY — Digitally signed by SANJAY RAY, Date: 2025.09.12 18:06:57 +05'30'
Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

ANUJ MAITREY — Digitally signed by ANUJ MAITREY, Date: 2025.09.12 17:57:48 +05'30'
Anuj Maitrey
Director
DIN No. : 10481417

Chinmay Kumar Ghadei — Digitally signed by Chinmay Kumar Ghadei, Date: 2025.09.12 18:09:35 +05'30'
Chinmay Kumar Ghadei
Chief Financial Officer
PAN : DNIPG4332P

BHUMIKA CHUGH — Digitally signed by BHUMIKA CHUGH, Date: 2025.09.12 18:21:18 +05'30'
Bhumika Chugh
Mem No:. A44724

Place: Noida
Date: September 12, 2025

Natvarlal Vepari & Co.
CHARTERED ACCOUNTANTS
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INDEPENDENT AUDITOR'S REPORT

To
The Members of
Baharampore Farakka Highways Limited

Report on the Audit of the Financial Statements

Opinion

We have audited the Financial Statements of Baharampore Farakka Highways Limited ("the Company"), which comprise the Balance Sheet as at March 31, 2024, and the Statement of Profit and Loss (including Other Comprehensive Income), Statement of Changes in Equity and Statement of Cash Flows for the year then ended, and notes to the financial statements, including a summary of Material Accounting Policy Information and other explanatory information (hereinafter referred to as "the Financial Statements").

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid Financial Statements give the information required by the Companies Act, 2013 ("the Act") in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2024, the loss (including other comprehensive income), changes in equity and its cash flows for the year ended on that date.

Basis for Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India (ICAI) together with the ethical requirements that are relevant to our audit of the Financial Statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ICAI's Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on the Financial Statements.

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Information Other than the Financial Statements and Auditor's Report thereon

The Company's Board of Directors is responsible for the Other Information. The other information comprises the information included in the Board's report, including the Directors Report but does not include the Financial Statements and our Independent Auditors' Report thereon. Our opinion on the Financial Statements does not cover the Other Information and we do not and will not express any form of assurance or conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the Other Information identified above and, in doing so, consider whether the Other Information is materially inconsistent with the Financial Statements, or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this Other Information, we are required to report that fact.

With regard to other information that has not been obtained by the us prior to the date of the auditor's report, that management intends to prepare and issue such other information after issuance of our auditor's report. We have nothing to report in this regard.

Responsibilities of Management and those Charged with Governance for the Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Financial Statements that give a true and fair view of the financial position, financial performance, changes in equity and cash flows of the Company in accordance with the accounting principles generally accepted in India, including the accounting Standards specified under section 133 of the Act. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

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The Board of Directors is also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.
3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
5. Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

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Materiality is the magnitude of misstatements in the financial statements that, individually or in aggregate, make it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the financial statements

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the attached Annexure "A" a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.
2. As required by Section 143(3) of the Act, we report that:
    a. We have sought and obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our audit.
    b. In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books except for the matter stated in paragraph 2(i)(vi) below relating to reporting under rule 11(g) of the Companies (Audit and Auditors) Rule 2014, as amended.
    c. The Balance Sheet, the Statement of Profit and Loss (including Other Comprehensive Income), the Cash Flow Statement and Statement of Changes in Equity dealt with by this Report are in agreement with the books of account.
    d. In our opinion, the aforesaid Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014.
    e. On the basis of the written representations received from the directors as on March 31, 2024 taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2024 from being appointed as a director in terms of Section 164 (2) of the Act.
    f. With reference to maintenance of accounts and other matter therewith, reference is invited to paragraph 2(b) above on reporting under section 143(3)(b) and para 2(i)(vi) below relating to reporting under rule 11(g) of the Companies

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(Audit and Auditors) Rule 2014, as amended.

g. With respect to the adequacy of the internal financial controls with reference to financial statements of the Company and the operating effectiveness of such controls, refer to our separate Report in "Annexure B". Our report expresses an unmodified opinion on the adequacy and operating effectiveness of the Company's internal financial controls with reference to financial statements.

h. With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended:

In our opinion and to the best of our information and according to the explanations given to us, there is no remuneration paid by the Company to its directors during the year to which the provisions of section 197 of the Act apply.

i. With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, as amended , in our opinion and to the best of our information and according to the explanations given to us:

i. The Company has disclosed the impact of pending litigations on its financial position in its financial statements – Refer Note 41 to the Financial Statements,

ii. The Company did not have any long-term contracts including derivative contracts for which there were material foreseeable losses,

iii. There are no amounts required to be transferred to the Investor Education and Protection Fund by the Company.

iv. a) The management has represented that, to the best of their knowledge and belief, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the company to or in any other person or entity, including foreign entities ("intermediaries") with the understanding whether recorded in writing or otherwise, that the intermediary shall, whether directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the company ("Ultimate Beneficiaries") or provide any guarantee, security, or the like on behalf of the Ultimate Beneficiaries.

b) The management has represented that, to the best of its knowledge and belief, no funds have been received by the company from any person or entity including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the company shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any

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guarantee, security or the like on behalf of the Ultimate Beneficiaries,

c) Based on such audit procedures considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (iv)(a) and (iv)(b) above contain any material misstatement.

v. The Company has not declared or paid dividends during the year and therefore the compliance with Section 123 of the Companies Act, 2013 is not applicable in respect of dividends declared or paid.

vi. Based on our examination which included test checks, the Company, in respect of financial year commencing on 1 April 2023, has used SAP S/4 HANA accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility , however the audit log (edit log) feature has not been enabled in the aforesaid software throughout the year. Further the audit trail feature is not enabled for direct changes to data as described in note 46 to the financial statements.

As proviso to Rule 3(1) of the Companies (Accounts) Rules, 2014 is applicable from April 01, 2023, reporting under Rule 11(g) of the Companies (Audit and Auditors) Rules,2014 on preservation of audit trail as per the statutory requirements. Since the Company do not have audit log (edit log) feature enabled at application and at database level for the year under review there is no preservation of audit trail by the Company.

For Natvarlal Vepari & Co.
Chartered Accountants
Firm Registration No- 106971W

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: August 6, 2024
UDIN: 24124960BKCZOW9582

Natvarlal Vepari & Co.
CHARTERED ACCOUNTANTS
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Annexure A to the Independent Auditors' Report (Referred to in paragraph 1 under 'Report on Other Legal and Regulatory Requirements' section of our report to the Members of Baharampore Farakka Highways Limited of even date)

To the best of our information and according to the explanations provided to us by the Company and the books of account and records examined by us in the normal course of audit, and to the best of our knowledge and belief, we state that:

(i) a. (A) The Company has maintained proper records showing full particulars including quantitative details and situation of its Property, Plant and Equipment.

(B) The company has maintained proper records showing full particulars of intangible assets.

b. Property, Plant and Equipment have been physically verified by the management at reasonable intervals and no material discrepancies were noticed on such verification.

c. There is no immovable property as at Balance sheet date other than investment property. We have received confirmation from the Security trustees of the Lenders that they are in possession of the title deeds.

d. The company has not revalued its Property, Plant and Equipment and intangible assets during the year.

e. There are no proceedings initiated during the year or are pending against the Company as at March 31, 2024 for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 and rules made thereunder.

(ii) (a) The management has conducted physical verification of inventory at reasonable intervals during the year. On the basis of examination of records, we are of the opinion that the coverage and procedure of such verification is appropriate and that no discrepancies of 10% or more in the aggregate for each class of inventory were noticed on such verification.

(b) The Company do not have working capital limits and hence Clause 3(ii)(b) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(iii) The Company has not made investments in, provided any guarantee or security or granted any loans or advances in the nature of loans, secured or unsecured, to companies, firms, Limited Liability Partnerships or any other parties. Hence Clause 3(iii)(a), 3(iii)(b), 3(iii)(c), 3(iii)(d), 3(iii)(e) & 3(iii)(f) of the Companies (Auditor's Report) Order, 2020 are not applicable to the Company.

(iv) The Company has not given any loans, or made any investments, or given any guarantees and security to which section 185 or section 186 of the Companies Act, 2013 applies.

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(v) The Company has not accepted deposits from the public or amounts that are deemed to be deposits pursuant to sections 73 to 76 or any other relevant provisions of the Companies Act, 2013 and rules framed thereunder. As informed to us, there is no order that has been passed by Company Law Board or National Company Law Tribunal or Reserve Bank of India or any Court or any other tribunal in respect of the said sections.

(vi) As informed to us, the maintenance of the cost records under the sub-section (1) of section 148 of the Companies Act, 2013 has been prescribed and we are of the opinion that prima facie, the prescribed accounts and records have been made and maintained. We have not, however, carried out a detailed examination of the records to ascertain whether they are accurate or complete.

(vii) (a) The Company is generally regular in depositing undisputed statutory dues including Goods and Services Act, Provident fund, Employees State Insurance, Income Tax, Sales Tax, Service Tax, duty of Customs, duty of Excise, Value Added Tax, Cess and other statutory dues to the appropriate authorities during the year. According to the information and explanations given to us, no undisputed amount payable in respect of the aforesaid dues were outstanding as at March 31, 2024 for a period of more than six months from the date they became payable except for Rs 0.04 lacs in case of Provident fund and Rs 0.00 in case of Labour welfare fund.

(b) There are no statutory dues referred to in sub-clause (a) which have not been deposited on account of any dispute except as given below:

Name of statute	Nature of dues	Disputed Amount (Rs in lacs)	Period to which the amount relates	Forum where dispute is pending
The West Bengal value Added tax, 2003	Entry tax	0.97	FY 2015-16	West Bengal Sales Tax Authority
The West Bengal value Added tax, 2003	VAT	0.65	FY 2016-17	West Bengal Sales Tax Authority
Income Tax demand	Income Tax	0.37	FY 2017-18	Matter pending with ITO
Goods and Service Tax	GST	59.49	FY 2022-23	West Bengal GST Authority

(viii) There are no transactions that were not recorded in the books of account, and which has been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961 (43 of 1961).

(ix) (a) The company has not defaulted in repayment of loans or other borrowings or the payment of interest thereon to any lender also there is no continuing default as at Balance Sheet Date.

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In respect of interest payable on Non-convertible debentures to related party the interest is payable on quarterly basis subject to restricted payment clause in Common Loan Agreement (CLA), hence due to restricted payment clause in CLA , the interest which is accrued and not paid as at March 31, 2024 is not considered as default.

(b) The Company has not been declared wilful defaulter by any bank or financial institution or government or any government authority.

(c) The company has applied the money obtained by way of term loans during the year for the purposes for which they were obtained.

(d) On an overall examination of the financial statements of the Company, we report that funds raised on short-term basis have been used for long-term purposes by the Company amounting to Rs 6,914.79 lacs for the year 2023-2024.

(e) The Company does not have any subsidiaries, joint ventures or associates and hence clause 3(ix)(e) & 3(ix)(f) of the Companies (Auditor's Report) Order, 2020 are not applicable to the Company.

(x) (a) The company has not raised any money by way of initial public offer / further public offer (including debt instruments) during the year and hence clause 3(x)(a) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(b) The Company has not made private placement or preferential allotment of equity shares or convertible debentures (fully, partially or optionally convertible) during the year under audit.

(xi) (a) No fraud by the Company or any fraud on the Company has been noticed or reported during the year.

(b) No report under sub-section (12) of section 143 of the Companies Act has been filed by us in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government and hence clause 3(xi)(b) of the Companies (Auditors Report) Order 2020 is not applicable to the Company.

(c) No whistle-blower complaints have been received during the year by the Company.

(xii) The Company is not a Nidhi Company and hence clauses 3(xii)(a), 3(xii) (b) and 3(xii)(c) of the Companies (Auditors Report) Order 2020 is not applicable to the Company.

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(xiii) The provisions of section 177 are not applicable to the Company. All transactions with the related parties are in compliance with sections 188 of the Companies Act, 2013 in so far as our examination of the proceedings of the meetings of the Board of Directors are concerned. The details of related party transactions have been disclosed in the Financial Statements as required by the applicable Accounting Standards.

(xiv) (a) In our opinion and based on our examination, the company has an internal audit system commensurate with the size and nature of it business.

(b) We have considered the internal audit reports of the company issued till the date of auditor's report.

(xv) The Company has not entered into any non-cash transactions with its directors or persons connected with its directors hence clause 3(xv) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(xvi) The nature of business and the activities of the Company are such that the Company is not required to obtain registration under section 45-IA of the Reserve Bank of India Act 1934 and hence sub-clause 3(xvi)(a), 3(xvi)(b), 3(xvi)(c) and 3(xvi)(d) of the Companies (Auditors Report) Order, 2020 is not applicable to the

(xvii) On an examination of the Statement of Profit and Loss account, we are of the opinion that the Company has not incurred cash losses during the current financial year however there was cash loss on immediate previous financial year amounting to Rs 4593.71 lacs.

(xviii) There has been no resignation of the statutory auditors during the year and accordingly clause (3)(xviii) Companies (Auditors Report) Order 2020 is not applicable to the Company.

(xix) According to the information and explanations given to us and on the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions there is excess of current liabilities over current assets by Rs 9,304.08 lacs as at March 31, 2024. The management expects in its cash flow projections future cashflows from tolling operations on the basis of which they intent to service the excess current liabilities. nothing has come to our attention, which causes us to believe that any material uncertainty exists as on the date of the audit report that the company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date unless the cash flows from future tolling operations as projected are not achieved. We, however, state that this is not an assurance as to the future viability of the company. We further state that our reporting is based on the facts up to the date of the audit

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report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the company as and when they fall due.

(xx) (a) The company was not required to spend any amount towards Corporate Social Responsibility obligation and hence there are no unspent amounts towards Corporate Social Responsibility (CSR) on other than ongoing projects requiring a transfer to a Fund specified in Schedule VII to the Companies Act in compliance with second proviso to sub-section (5) of Section 135 of the said Act. Accordingly, reporting under clause 3(xx)(a) of the Order is not applicable for the year.

(b) There are no ongoing projects in respect of CSR activities and therefore clause 3(xx)(b) of The Companies (Auditors Report) Order 2020 is not applicable to the Company

For Natvarlal Vepari & Co.
Chartered Accountants
Firm Registration No- 106971W

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: August 6, 2024
UDIN: 24124960BKCZOW9582

Natvarlal Vepari & Co.
CHARTERED ACCOUNTANTS
903-904, 9th Floor, Raheja Chambers, 213, Nariman Point, Mumbai 400 021. Tel. : 6752 7100 Fax : 6752 7101 E-mail : nvc@nvc.in

ANNEXURE - B TO THE AUDITORS' REPORT

(Referred to in paragraph 2(g) under Report on Other Legal and Regulatory Requirements' section of our report to the Members of Baharampore Farakka Highways Limited of even date)

Report on the Internal Financial Controls with reference to Financial Statements under 143 (3)(i) of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls with reference to Financial Statements of Baharampore Farakka Highways Limited ("the Company") as of March 31, 2024 in conjunction with our audit of the Financial Statement of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control with reference to financial statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India ('ICAI'). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls with reference to Financial Statements based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls with reference to Financial Statements was established and maintained and if such controls operated effectively in all material respects.

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Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system with reference to Financial Statements and their operating effectiveness. Our audit of internal financial controls with reference to Financial Statements included obtaining an understanding of internal financial controls with reference to Financial Statements, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system with reference to Financial Statements.

Meaning of Internal Financial Controls with reference to Financial Statements

A company's internal financial control with reference to Financial Statements is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control with reference to Financial Statements includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Inherent Limitations of Internal Financial Controls with reference to Financial Statements.

Because of the inherent limitations of Financial controls with reference to Financial Statements, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls with reference to Financial Statements to future periods are subject to the risk that the internal financial control with reference to Financial Statements may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

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CHARTERED ACCOUNTANTS
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Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system with reference to Financial Statements and such internal financial controls with reference to financial statements were operating effectively as at March 31, 2024, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

For Natvarlal Vepari & Co.
Chartered Accountants
Firm Registration No- 106971W

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: August 6, 2024
UDIN: 24124960BKCZOW9582

Baharampore-Farakka Highways Limited
CIN No U45200MH2010PLC200748
Balance Sheet as at 31 March 2024
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars	Note	As at March 31, 2024	As at March 31, 2023
ASSETS			
Non-current assets			
Property, Plant and Equipment	3	145.57	55.04
Capital work in progress	4	149.74	-
Investment Property	5	14.47	14.47
Other Intangible	6	1,04,094.78	68,572.36
Intangible assets under development	7	2,637.38	36,586.52
Financial Assets			
Non Current Tax Assets (Net)	8	807.42	654.32
Other non - current assets	9a	80.95	507.89
Current assets			
Financial Assets			
Inventory	10	118.02	-
Trade Receivables	11	154.76	10.92
Cash and cash equivalents	12	7,496.61	3,528.37
Bank balances other than cash and cash equivalents	13	4,643.21	3,605.28
Other financial asset	14	142.32	761.28
Other current assets	9b	2,889.87	1,198.12
Total Assets		**1,23,375.10**	**1,15,494.58**
EQUITY AND LIABILITIES			
EQUITY			
Equity share capital	15	21,725.30	21,725.30
Other equity	16	(10,922.87)	(6,174.73)
Total equity		**10,802.43**	**15,550.57**
LIABILITIES			
Non-current liabilities			
Financial Liabilities			
Borrowings	17	81,560.26	56,103.77
Provisions	20a	13.55	-
Other non-current liabilities	21a	6,250.00	6,250.00
Current liabilities			
Financial Liabilities			
Short Term Borrowings	18	2,389.28	7,371.10
Trade payables	19		
i) total outstanding dues of micro and small enterprises		3.06	-
ii) total outstanding dues other than (i) above		3,858.16	8,148.43
Other financial liabilities	22	3,585.17	2,018.23
Provisions	20b	14,277.29	18,349.88
Other current liabilities	21b	635.90	1,702.60
Total Equity and Liabilities		**1,23,375.10**	**1,15,494.58**

The accompanying notes are an integral part of the financial statements.

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner
Membership No.:124960

Place: Mumbai
Date: 06 August 2024

For and on behalf of the Board of Directors
Baharampore-Farakka Highways Limited

Anshuman Gupta
Director
DIN No. : 09325830

Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

Anuj Maitrey
Director
DIN No. : 10481417

Bikash Gantait
Chief Financial Officer
PAN : BPMPG7739C

Bhumika Chugh
Mem No: A44724

Place: Noida
Date: 05 August 2024

BAHARAMPORE FARAKKA HIGHWAYS LTD.

Baharampore-Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Profit and Loss for year ended 31 March 2024
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars	Note	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Revenue from Operations	25	24,137.37	41,930.69
Other Income	26	1,223.49	795.56
Total Income		**25,360.86**	**42,726.25**
Expenses			
Cost of Construction	27	8,544.55	28,463.85
Employee benefit	28	183.46	-
Finance costs	29	8,871.38	7,563.26
Depreciation and amortization expense	30	6,413.27	5,343.10
Other expenses	31	6,107.98	11,292.88
Total expenses		**30,120.63**	**52,663.10**
Loss before exceptional items and tax		**(4,759.77)**	**(9,936.85)**
Exceptional Items		-	-
Loss before tax		**(4,759.77)**	**(9,936.85)**
Tax expenses			
Current Tax expenses		-	-
Deferred Tax expenses		-	-
(Excess)/Short provision of earlier years	24	(16.16)	16.66
Profit for the year		**(4,743.61)**	**(9,953.51)**
Other Comprehensive Income			
(i) Items that will not be reclassified to profit or loss			
Remeasurements of net defined benefit plans : Gains / (Loss)		(4.53)	-
Total Comprehensive Income for the year		**(4,748.14)**	**(9,953.51)**
Earnings per equity share of Rs. 10 each	32		
Basic (Rs) (not annualised)		(2.19)	(6.25)
Diluted (Rs) (not annualised)		-	-

The accompanying notes are an integral part of these financial statements

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner
Membership No.:124960

Place. Mumbai
Date: 06 August 2024

For and on behalf of the Board of Directors
Baharampore-Farakka Highways Limited

Anshuman Gupta
Director
DIN No. : 09325830

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DIN No. : 10481417

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Chief Financial Officer
PAN : BPMPG7739C

Bhumika Chugh
Mem No: A44724

Place: Noida
Date: 05 August 2024

Baharampore-Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Cash Flow Statement for the year ended 31 March 2024
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars	Note	Year ended March 31, 2024	Year ended March 31, 2023
A Cash Flow from operating activities			
Profit before income tax		(4,759.77)	(9,936.85)
Adjustments for			
Add:			
Depreciation and amortisation expenses		6,413.27	5,343.10
Finance costs		8,454.34	7,480.51
Amortisation of Corporate guarantee		289.75	36.12
Upfront Fees Amortisation		127.29	-
Interest on delayed payment of statutory dues		0.48	7.05
Interest on delayed payment of IE fees		-	39.57
Provision for Major Maintenance Expenditure		-	7,098.57
Other Receivable w/off		11.51	298.80
Less:			
Profit on sale of assets (Net)		-	(58.32)
Interest income on income tax refund		(47.91)	(111.90)
Interest received		(825.38)	(621.12)
Change in operating assets and liabilities			
(Increase)/decrease in inventory		(118.02)	-
(Increase)/decrease in other financial assets		745.35	(747.54)
(Increase)/decrease in other non-current assets		137.19	(174.53)
(Increase)/decrease in other trade receivable		(155.36)	17.24
(Increase)/decrease in other current assets		(1,691.74)	919.59
Increase/(decrease) in trade payables		(4,287.21)	4,616.18
Increase/(decrease) in other financial liabilities		461.81	1,018.78
Increase/(decrease) in provisions		(4,063.57)	(335.28)
Increase/(decrease) in other current liabilities		(1,066.70)	6,886.83
Cash generated from operations		(374.65)	21,776.82
Income taxes (paid) / refund		(89.03)	213.54
Net cash inflow/(outflow) from operating activities		**(463.68)**	**21,990.36**
B Cash flow from investing activities:			
Purchase of property, plant and equipment/ amount spent on Intangible asset including Intangible assets under development.		(8,226.81)	(26,793.00)
Sale proceeds of property, plant and equipment		-	119.75
Investment in fixed deposits		(1,037.93)	12,015.61
Interest received		698.99	675.42
Net cash inflow/(outflow) from investing activities		**(8,566.75)**	**(13,982.22)**
C Cash flow from financing activities			
Proceeds/repayment of Subordinate Debt (Refer Note 15 G)		(568.00)	400.00
Proceeds from non convertible debentures		22,890.00	-
Proceeds of long term borrowings (including processing fees)		63,714.26	(4,360.01)
Repayment of long term borrowings		(66,129.60)	-
Interest/Other Borrowing Cost paid (Refer Note (ii) below)		(6,908.98)	(7,406.48)
Net cash inflow/(outflow) from financing activities		**12,997.68**	**(11,366.49)**
Net increase/(decrease) in cash and cash equivalents		**3,968.25**	**(3,358.35)**
Add: Cash and cash equivalents at the beginning of the financial year	12	3,528.36	6,886.71
Cash and cash equivalents at the end of the year	12	**7,496.61**	**3,528.36**
Component of Cash and Cash Equivalent			
Cash on hand		22.75	30.17
Balances with Banks		1,073.86	998.20
With Collection Agencies		-	-
Term deposits with original maturity of less than three months		6,400.00	2,500.00
		7,496.61	**3,528.36**

Notes:
(i) Figure in brackets denote outflows
(ii) Interest Cost includes Interest capitalised to Intangible Asset under development Rs Nil (PY - Rs Nil)
The accompanying notes are an integral part of these financial statements

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner
Membership No. 124960

Place: Mumbai
Date: 06 August 2024

For and on behalf of the Board of Directors
Baharampore-Farakka Highways Limited

Anshuman Gupta
Director
DIN No. : 09325830

Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

Anuj Mattey
Director
DIN No. : 10481417

Bikash Gantait
Chief Financial Officer
PAN : BPMPG7739C

Bhumika Chugh
Mem No.: A44724

Place: Noida
Date: 05 August 2024

Baharampore-Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Changes in Equity as at 31 March 2024
(All amounts are in Rs. lakh, unless stated otherwise)

Statement of Changes in Equity

A

Equity share capital	Amount
as at 31 March 2022	**4,500.00**
Changes in equity share capital	17,225.30
as at 31 March 2023	**21,725.30**
Changes in equity share capital	-
as at 31 March 2024	**21,725.30**

B Instruments entirely Equity in Nature

Compulsory Convertible Preference Shares	Amount
as at 31 March 2022	**17,225.30**
Changes in capital	(17,225.30)
as at 31 March 2023	**-**
Changes in capital	-
as at 31 March 2024	**-**

C Other Equity

Particulars	Capital Contribution	Reserves and Surplus	Total
	Corporate Guarantee	Retained Earnings	
Balance as at 31 March, 2022	**550.01**	**3,228.77**	**3,778.78**
Profit/(Loss) for the year	-	(9,953.51)	(9,953.51)
Other Comprehensive Income for the period	-	-	-
Total Comprehensive Income for the period	-	**(9,953.51)**	**(9,953.51)**
Balance as at 31 March 2023	**550.01**	**(6,724.74)**	**(6,174.73)**
Profit/(Loss) for the year	-	(4,743.61)	(4,743.61)
Other Comprehensive Income for the period	-	(4.53)	(4.53)
Total Comprehensive Income for the period	-	**(4,748.14)**	**(4,748.14)**
Balance as at 31 March 2024	**550.01**	**(11,472.88)**	**(10,922.87)**

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner
Membership No :124960

Place: Mumbai
Date: 06 August 2024

For and on behalf of the Board of Directors
Baharampore-Farakka Highways Limited

Anshuman Gupta
Director
DIN No. : 09325830

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Director
DIN No. : 10481417

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Chief Executive Officer
PAN : AMTPR7224C

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Chief Financial Officer
PAN : BPMPG7739C

Bhumika Chugh
Mem No:. A44724

Place: Noida
Date: 05 August 2024

BAHARAMPORE FARAKKA HIGHWAYS LTD.

Baharampore-Farakka Highways Limited
Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2024.

(All amounts are in Rs. lakh, unless stated otherwise)

1 **Corporate information**

Baharampore-Farakka Highways Limited was incorporated under the Companies Act, 1956, on 11th March, 2010 as a Special Purpose Vehicle for Design, Build, Finance, Operate & Transfer (DBFOT) Toll basis of 4 lanes from Kms 191.416 to 294.684 between Baharampore and Farakka in the state of West Bengal under NHDP Phase III

NHAI has granted concession period of 25 years to the company for the project. Provisional Certificate under Article 14.3.2 (Schedule - J) of the concession Agreement has been obtained for 75.45 kms for the following stretch - 204.550 to 229.300 KMS - 24.75 KMS / 230.600 to 254.800 KMS - 24.20 KMS / 258.350 to 284.850 KMS - 26.50 KMS. Company has started to collect toll from 14th May, 2014 on receipt of provisional certificate of commencement from Independent consultant appointed by National Highway Authority of India.

Baharampore-Farakka Highways Limited has entered into an Agreement with the Purchaser Cube Highways and Infrastructure V PTE LTD, being a company based in Singapore and incorporated with the objective of acquiring and operating transportation projects to purchase the shares from Baharampore-Farakka Highways Limited (including the purchase of seller nominee shares by the purchaser nominees from the seller nominees) and Baharampore-Farakka Highways Limited has agreed to sell the shares to the Purchaser (including the sale of such portion of the sale shares which are held by the seller nominees to purchaser nominees).

2 **Statement of Compliances**

The Standalone Financial Statements comply in all material aspects with Indian Accounting Standards ("Ind AS") prescribed under Section 133 of the Companies Act, 2013 ("the Act"), the Companies (Indian Accounting Standards) Rules, 2015 as amended and other relevant provisions of the Act.

2 **Basis of Preparation, Accounting judgements, estimates and assumptions and Material Accounting Policy Information:**

2.1 **Basis of preparation**

The Financial Statement of the Company comprises of the Balance Sheet, the Statement of Profit and Loss (including other comprehensive income), the Statement of Changes in Equity, and the Summary Statement of Significant Accounting Policies, and other explanatory information (Collectively, the "Financial Statement").

The financial statements are prepared on an accrual basis of accounting and in accordance with the Indian Accounting Standards (Ind AS) notified under the companies (Indian Accounting standards) Rules, 2015 as amended by the companies (Indian Accounting standard) Rules 2016.

These financial statements are prepared under the historical cost convention on the accrual basis except for certain financial instruments, which are measured at fair values, which are disclosed in the Financial Statements viz;

These financial statements are prepared under the historical cost convention on the accrual basis except for certain financial instruments, which are measured at fair values, which are disclosed in the Financial Statements viz;

- certain financial assets and liabilities (including derivative instruments) and contingent consideration that is measured at fair value

- assets under service concession arrangement

The classification of assets and liabilities of the Company is done into current and non-current based on the operating cycle of the business of the Company. The operating cycle of the business of the Company is less than twelve months and therefore all current and non-current classifications are done based on the status of reliability and expected settlement of the respective asset and liability within a period of twelve months from the reporting date as required by Schedule III to the Companies Act, 2013.

Accounting policies have been consistently applied except whereas newly issued accounting standard is initially adopted or a revision to an existing accounting standard requires a change in the accounting policy hitherto in use.

The financial statements are presented in Indian Rupees ("INR") and all values are rounded to the nearest lakh, except otherwise indicated.

2.2 **Significant accounting judgments, estimates and assumptions**

The preparation of financial statements requires management's judgments, estimates and assumptions that impacts the reported amounts of revenues, expenses, assets and liabilities, and the accompanying notes thereon. Uncertainty about these assumptions and estimates could result in outcomes that might require a material adjustment to the carrying amount of assets or liabilities in future periods.

i) **Estimates:**

The preparation of the financial statements in conformity with IND AS requires management to make estimates, judgments and assumptions. These estimates, judgments and assumptions affect the application of accounting policies and the reported amounts of assets and liabilities, the disclosures of contingent assets and liabilities at the date of financial statements and reported amounts of revenues and expenses during the period. Accounting estimates could change from period to period. Actual results could differ from those estimates. Appropriate changes in estimates are made as management becomes aware of circumstances surrounding the estimates. Changes in estimates are reflected in the financial statement in the period in which changes are made and if material, their effects are disclosed in the notes to the financial statements.

ii) **Judgments:**

The Company's management has made the following judgments, which have the most significant effect on the amounts recognised in the separate financial statements, while formulating the Company's accounting policies.

iii) **Taxes:**

The Company is eligible for 100% tax holiday under section 80-IA of the Income Tax Act, 1961. As a result, timing differences arising and reversing during the tax holiday period are not recognized by the Company.

iv) **Recognition and measurement of other Provisions**

The recognition and measurement of other provisions is based on the assessment of the probability of an outflow of resources, and on past experience and circumstances known at the closing date. The actual outflow of resources at a future date may therefore, vary from the amounts included in other provisions.

v) **Useful lives of property, plant and equipment**

The company reviews the useful life of property, plant and equipment at the end of each reporting period. This reassessment may result in change in depreciation expense in future periods.

vi) **Impairment of property, plant and equipment**

For property, plant and equipment and intangibles an assessment is made at each reporting date to determine whether there is an indication that the carrying amount may not be recoverable or previously recognised impairment losses no longer exist or have decreased. If such indication exists, the Company estimates the asset's or CGU's recoverable amount. A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised.

vii) **Applicability of service concession arrangement accounting to toll roads concessionaire arrangements**
Appendix A "Service concession arrangements" applies to "public- to-private" service concession arrangements, which can be defined as contracts under which the grantor transfers to a concession holder the right to deliver public services that give access to the main public facilities for a specified period of time in return for managing the infrastructure used to deliver those public services.

More specifically, Appendix C applies to public-to-private service concession arrangements if the grantor:
i. Controls or regulates what services the operator must provide with the infrastructure, to whom it must provide them, and at what price; and
ii Controls through ownership or otherwise – any significant residual interest in the infrastructure at the end of the term of the arrangement.
In assessing the applicability the management has exercised significant judgement in relation to the underlying ownership of the assets, the ability to enter into power purchase arrangements with any customer, ability to determine prices etc. in concluding that the arrangements don't meet the criteria for recognition as service concession arrangements.

viii) **Impairment of concession intangible assets:**
The Company tests intangible assets and cash generating units have suffered any impairment, in accordance with the accounting policy. The recoverable amount of each cash generating unit has been determined based on the greater of value-in-use and fair value less costs to sell calculations. Calculations are prepared on the basis of management's assumptions and estimates.

ix) **Fair valuation of other financial instruments:**
The Company records the resurfacing obligation for its present obligation as per the concession arrangement to maintain the toll roads during the concession period. The provision is included in the financial statements at the present value of the expected future payments. The calculations to discount these amounts to their present value are based on the estimated timing of expenditure occurring on the roads.

2.3 **Recent pronouncements**
There has been no recent accounting pronouncements made by Ministry of Corporate Affairs relating to the Companies (Indian Accounting Standards) Rules, 2015.

2.4 **Material Accounting Policy Information**

(a) **Current & Non Current classification**

Current Asset :

An asset shall be classified as current when it satisfies any of the following criteria.
(a) it is expected to be realized in, or is intended for sale or consumption in, the company's normal operating cycle;
(b) it is held primarily for the purpose of being traded
(c) It is expected to be realized within twelve months after the reporting date, or
(d) It is cash or cash equivalent unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

All other assets shall be classified as non-current.

Current Liabilities:
A liability shall be classified as current when it satisfies any of the following criteria.
i (a) it is expected to be settled in the company's normal operating cycle;
ii (b) it is held primarily for the purpose of being traded;
iii (c) it is due to be settled within twelve months after the reporting date ; or
iv (d) the company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could at the option of the counterparty, result in its settlement by the issue of equity instruments do not effect its classification.
All other liabilities shall be classified as non-current

(b) **Accounting of intangible assets under Service Concession arrangement:**

Company has Toll Road Concession rights where it Designs, Build, Finances, Operates and transfer (DBFOT) infrastructure used to provide public service for a specified period of time. These arrangements may include infrastructure used in a public-to-private service concession arrangement for its entire useful life.
These arrangements are accounted for based on the nature of the consideration. The intangible asset model is used to the extent that the Company receives a right (a license) to charge users of the public service. The financial asset model is used when the Company has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services. When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for each component. If the Company performs more than one service (i.e., construction or upgrade services and operation services) under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.

Intangible asset model:
The Company recognises an intangible asset arising from a service concession arrangement when it has a right to charge for usage of the concession infrastructure. An intangible asset received as Consideration for providing construction or upgrade services in a service concession arrangement is measured at fair value on initial recognition by reference to the fair value of the services provided. Subsequent to initial recognition, the intangible asset is measured at cost, which includes capitalised borrowing costs, less accumulated amortisation.

The estimated useful life of an intangible asset in a service concession arrangement is the period from when the Company is able to charge the public for the use of the infrastructure to the end of the concession period.

All items of property, plant and equipment are stated at historical cost less depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items. The Company follow Cost Model for Property Plant and Equipment.
Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. The carrying amount of any component accounted for as a separate asset is derecognised when replaced. All other repairs and maintenance are charged to profit or loss during the reporting period in which they are incurred.
Gains and losses on disposals are determined by comparing proceeds with carrying amount. These are included in profit or loss within other gains/(losses).

Depreciation methods, estimated useful lives and residual value:
Depreciation is provided as per the useful lives of the assets as per schedule II of Companies Act, 2013 using Straight Line Method (SLM).

BAHARAMPORE FARAKKA HIGHWAYS LTD.

(d) **Investment property:**

Property that is held for long-term rental yields or for capital appreciation or both, and that is not occupied by the Company, is classified as investment property. Investment property is measured initially at its cost, including related transaction costs and where applicable borrowing costs. Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Company and the cost of the item can be measured reliably. All other repairs and maintenance costs are expensed when incurred. When part of an investment property is replaced, the carrying amount of the replaced part is derecognised.

(e) **Financial Instruments**

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

a Financial Assets

i) Initial Recognition

In the case of financial assets not recorded at fair value through profit or loss, financial assets are recognised initially at fair value plus transaction costs that are directly attributable to the acquisition of the financial asset. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognised on the trade date, i.e., the date that the Company commits to purchase or sell the asset.

ii) Subsequent Measurement

For purposes of subsequent measurement, financial assets are classified in following categories:

Financial Assets at Amortised Cost

Financial assets are subsequently measured at amortised cost if these financial assets are held within a business model whose objective is to hold these assets in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. Interest income from these financial assets is included in finance income using the effective rate interest ("EIR") method. Impairment gains or losses arising on these assets are recognised in Statement of Profit and Loss.

Financial Assets Measured at Fair Value

Financial assets are measured at fair value through other comprehensive income ("OCI") if these financial assets are held within a business model whose objective is to hold these assets in order to collect contractual cash flows or to sell these financial assets and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. Movements in the carrying amount are taken through OCI, except for the recognition of impairment gains or losses, interest revenue and foreign exchange gains and losses which are recognised in the Statement of Profit and Loss.

In respect of equity investments (other than for investment in subsidiaries and associates) which are not held for trading, the Company has made an irrevocable election to present subsequent changes in the fair value of such instruments in OCI. Such an election is made by the Company on an instrument by instrument basis at the time of transition for existing equity instruments/ initial recognition for new equity instruments.

Financial asset not measured at amortised cost or at fair value through OCI is carried at fair value through profit or loss.

iii) Impairment of Financial Assets

In accordance with Ind AS 109, the Company applies the expected credit loss ("ECL") model for measurement and recognition of impairment loss on financial assets and credit risk exposures.

The Company follows 'simplified approach' for recognition of impairment loss allowance on trade receivables. Simplified approach does not require the Company to track changes in credit risk. Rather, it recognises impairment loss allowance based on lifetime ECL at each reporting date, right from its initial recognition.

For recognition of impairment loss on other financial assets and risk exposure, the Company determines that whether there has been a significant increase in the credit risk since initial recognition. If credit risk has not increased significantly, 12-month ECL is used to provide for impairment loss. However, if credit risk has increased significantly, lifetime ECL is used. If, in a subsequent period, credit quality of the instrument improves such that there is no longer a significant increase in credit risk since initial recognition, then the entity reverts to recognising impairment loss allowance based on 12-month ECL.

iv) De-recognition of Financial Assets

The Company de-recognises a financial asset only when the contractual rights to the cash flows from the asset expire, or it transfers the financial asset and substantially all risks and rewards of ownership of the asset to another entity.

If the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Company recognizes its retained interest in the assets and an associated liability for amounts it may have to pay.

If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

b Equity Instruments and Financial Liabilities

Financial liabilities and equity instruments issued by the Company are classified according to the substance of the contractual arrangements entered into and the definitions of a financial liability and an equity instrument.

i) Equity Instruments

An equity instrument is any contract that evidences a residual interest in the assets of the Company after deducting all of its liabilities. Equity instruments which are issued for cash are recorded at the proceeds received, net of direct issue costs. Equity instruments which are issued for consideration other than cash are recorded at fair value of the equity instrument.

ii) Financial Liabilities

1) Initial Recognition

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings and payables as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

2) **Subsequent Measurement**
The measurement of financial liabilities depends on their classification, as described below

Financial liabilities at fair value through profit or loss
Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Financial liabilities are classified as held for trading if they are incurred for the purpose of repurchasing in the near term. Gains or losses on liabilities held for trading are recognised in the profit or loss.

Financial guarantee contracts issued by the Company are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. Financial guarantee contracts are recognised initially as a liability at fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequently, the liability is measured at the higher of the amount of loss allowance determined as per impairment requirements of Ind AS 109 and the amount recognised less cumulative amortisation. Amortisation is recognised as finance income in the Statement of Profit and Loss

Financial liabilities at amortised cost
After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortised cost using the Effective Interest Rate(EIR) method. Any difference between the proceeds (net of transaction costs) and the settlement or redemption of borrowings is recognised over the term of the borrowings in the Statement of Profit and Loss.

Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included as finance costs in the Statement of Profit and Loss.

Financial Liabilities are classified as current liabilities unless the company has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period. Where there is a breach of a material provision of a long-term loan arrangement on or before the end of the reporting period with the effect that the liability becomes payable on demand on the reporting date, the entity does not classify the liability as current, if the lender agreed, after the reporting period and before the approval of the financial statements for issue, not to demand payment as a consequence of the breach

3) **De-recognition of Financial Liabilities**

Financial liabilities are de-recognised when the obligation specified in the contract is discharged, cancelled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as de-recognition of the original liability and recognition of a new liability. The difference in the respective carrying amounts is recognised in the Statement of Profit and Loss.

c **Offsetting Financial Instruments**
Financial assets and financial liabilities are offset and the net amount is reported in the Balance Sheet if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis to realise the assets and settle the liabilities simultaneously.

(f) **Cash and cash equivalents:**
For the purpose of presentation in the statement of cash flows, cash and cash equivalents includes cash on hand, deposits held at call with financial institutions, other short-term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value, and bank overdrafts. Bank overdrafts are shown within borrowings in current liabilities in the balance sheet

(g) **Income Tax:**
i **Current Income Tax**
Current income tax is recognised based on the estimated tax liability computed after taking credit for allowances and exemptions in accordance with the Income Tax Act, 1961. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, at the reporting date.

Minimum Alternative Tax ("MAT") credit is recognised as an asset only when and to the extent there is convincing evidence that the Company will pay normal income tax during the specified period. In the year in which the MAT credit becomes eligible to be recognised as an asset in accordance with the recommendations contained in Guidance Note issued by the Institute of Chartered Accountants of India, the said asset is created by way of a credit to the Statement of Profit and Loss and shown as MAT Credit Entitlement. The Company reviews the same at each Balance Sheet date and writes down the carrying amount of MAT Credit Entitlement to the extent there is no longer convincing evidence to the effect that the Company will pay normal Income Tax during the specified period.

ii **Deferred Tax**
Deferred Tax Asset shall be recognised for the carryforward of unused tax losses and unused tax credits to the extent that it is probable that future taxable profit will be available against which the unsused tax losses and unused tax credits can be utilised.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

(h) **Impairment of Assets:**
Intangible assets that have an indefinite useful life are not subject to amortisation and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are companyed at the lowest levels for which there are separately identifiable cash inflows which are largely independent of the cash inflows from other assets or companys of assets (cash-generating units). Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

(i) **Segment reporting:**
The Company's operations constitutes a single business segment namely "Infrastructure Development" as per Ind As 108, further the Company's operation are within single geographical segment which is India.

(j) **Borrowings Cost:**
General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale
Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation
Other borrowing costs are expensed in the period in which they are incurred.

(k) **Other Financial Asset - Financial guarantee contract:**
Under Ind AS, the financial guarantee given by a holding company to lender on behalf of the Company for its borrowings are recognised initially at fair value which is subsequently amortised as an interest expense to the Statement of Profit and Loss. This transaction was not recorded under the previous GAAP.
The fair value of financial guarantees is determined as the present value of the difference in net cash flows between the contractual payments under the debt instrument and the payments that would be required without the guarantee.

(l) **Provisions and Contingent Liabilities and Contingent Assets:**

Provisions
Provisions for legal claims are recognised when the Company has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are not recognised for future operating losses.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period. The discount rate used to determine the present value is a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as interest expense.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period. The discount rate used to determine the present value is a discount rate that reflects current market assessments of the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as interest expense.

Contingent liability is disclosed in the case of :
a) a present obligation arising from a past event, when it is not probable that an outflow of resources will happen to settle the obligation
b) a possible obligation, unless the probability of outflow of resources is remote.

Contingent asset are disclosed (if any), where an inflow of economic benefits are probable.

Contingent Assets
A contingent asset is not recognised unless it becomes virtually certain that an inflow of economic benefits will arise. When an inflow of economic benefits is probable, contingent assets are disclosed in the financial statements. Contingent liabilities and contingent assets are reviewed at each balance sheet date.

(m) **Earnings per share:**
Basic Earnings per share is calculated by dividing the net profit / (loss) after tax for the period attributable to equity shareholders of the Company by the weighted average number of equity in issue during the period. Diluted earnings per share is calculated by dividing the net profit after tax for the year attributable to equity shareholders of the company by the weighted average number of equity shares determined by assuming conversion on exercise of conversion rights for all potential dilutive securities.

(n) **Revenue Recognition:**
Revenue is measured at the fair value of the consideration received or receivable. The Company recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Company's activities, as described below

Toll revenue
The income from toll revenue from operations of the facility is accounted on receipt basis.

Contract revenue (construction contracts)
The Company has adopted Ind AS 115 " Revenue from Contracts with Customers " for recognising revenue. The Company derives revenue primarily from construction contracts. To recognize revenue, the Company applies the following five step approach: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligation in the contract, and (5) recognize revenue when a performance obligation is satisfied.

At contract inception, the Company assesses its promise to transfer services to a customer to identify separate performance obligations., The Company applies judgment to determine whether each service promised to a customer are capable of being distinct, and are distinct in the context of the contract, if not, the promised services are combined and accounted as a single performance obligation. For performance obligations where control is transferred over time, revenue are recognized by measuring progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the services to be provided. The method for recognizing revenues and cost depends on the nature of the services rendered.

Other Income
Insurance and other claims are recognized as revenue on certainty of receipt basis.
Dividend income is recognized when the right to receive is established. Other items of income are accounted as and when the right to receive arises and recovery is certain.

(o) **Employee Benefits**

Employee benefits includes provident fund, superannuation fund, employee state insurance scheme, gratuity, compensated absences, long service awards and post-employment medical benefits.

a. Short-term Employee Benefit

All employee benefits falling due wholly within twelve months of rendering the service are classified as short-term employee benefits. The benefits like salaries, wages, short-term compensated absences etc. and the expected cost of bonus, and ex-gratia are recognised in the period the related service is rendered at undiscounted amount of benefits expected to be paid in exchange for that service.

The cost of short-term compensated absences is accounted as under:
- in case of accumulated compensated absences, when employees render the services that increase their entitlement of future compensated absences; and
- in case of non-accumulating compensated absences, when the absences occur.

b. Post-employment benefits

1) Defined contribution plans:

The Company offers its employees State governed provident fund linked with employee pension scheme as defined contribution plans. The contribution paid/ payable under the scheme is recognised during the period in which the employee renders the related service.

2) Defined benefit plans:

For defined benefit retirement benefit plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each annual reporting period. Re- measurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding net interest), is reflected immediately in the balance sheet with a charge or credit recognized in other comprehensive income in the period in which they occur. Remeasurement recognised in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service costs are recognised in profit or loss on the earlier of the date of the plan amendment or curtailment, and the date that the Company recognises related restructuring costs.

Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset.

Defined benefit costs are categorized as follows:
- service cost (including current service cost, past service cost, as well as gains and losses on curtailments and
- net interest expense or income; and
- re-measurement

The Company presents the first two components of defined benefit costs in profit or loss in the line item 'Employee benefits expense'. Curtailment gains and losses are accounted for as past service costs.

The present value of the defined benefit liability is calculated using a discount rate which is determined by reference to market yields at the end of the reporting period on government bonds.

c. Other long-term employee benefit

The obligation for other long-term employee benefits such as long-term compensated absences, are measured at the present value of the estimated future cash outflows expected to be made by the Company in respect of services provided by employees up to the reporting date.

(p) **Inventory**

Inventories are stated at the lower of cost and net realisable value. Cost of inventories include all costs incurred in bringing the inventories to their present location and condition. Costs are assigned to individual items of inventory based on first-in-first-out basis. Cost of purchased inventory are determined after deducting rebates and discounts.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated cost of completion and the estimated costs necessary to make the sales.

BAHARAMPORE FARAKKA HIGHWAYS LTD.

3 Property, Plant and Equipment **(Rs. In Lakh)**

Particulars	Plant & Equipment	Land	Furniture	Computers	Office equipment	Vehicles	Total
Gross Carrying Value							
Balance as at 31 March 2022	**49.93**	**61.43**	**2.04**	**17.30**	**38.01**	**61.27**	**229.98**
Additions	-	-	-	-	-	0.28	**0.28**
Disposals	-	61.43	-	-	-	11.61	**73.04**
Balance as at 31 March 2023	**49.93**	**-**	**2.04**	**17.30**	**38.01**	**49.94**	**157.21**
Additions	28.07	-	-	17.48	53.32	5.83	**104.69**
Disposals	-	-	-	-	-	-	-
Balance as at 31 March 2024	**78.00**	**-**	**2.04**	**34.78**	**91.33**	**55.77**	**261.90**
Accumulated Depreciation							
Balance as at 31 March 2022	**(8.83)**	**-**	**(1.11)**	**(17.30)**	**(35.98)**	**(42.99)**	**(106.21)**
Depreciation for the period	(3.30)		(0.20)	-	(0.69)	(3.39)	**(7.58)**
Disposals	-	-	-	-	-	(11.61)	**(11.61)**
Balance as at 31 March 2023	**(12.13)**	**-**	**(1.31)**	**(17.30)**	**(36.67)**	**(34.77)**	**(102.18)**
Depreciation for the period	(4.25)		(0.18)	(2.45)	(4.75)	(2.52)	**(14.15)**
Disposals	-	-	-	-	-	-	-
Balance as at 31 March 2024	**(16.38)**	**-**	**(1.49)**	**(19.75)**	**(41.42)**	**(37.29)**	**(116.33)**
Net Block							
Balance as at 31 March 2024	**61.62**	-	**0.55**	**15.03**	**49.91**	**18.48**	**145.57**
Balance as at 31 March 2023	**37.80**	**-**	**0.72**	**(0.00)**	**1.35**	**15.17**	**55.04**

4 Capital work-in-progress	**As at March 31, 2024**	**As at March 31, 2023**
Plant and equipment	149.74	-
	149.74	-

(i) Capital work-in-progress (CWIP) ageing schedule

	Amount in CWIP for the period of				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project in progress	149.74	-	-	-	149.74
Project temporarily suspended	-	-	-	-	-
Total	**149.74**	**-**	**-**	**-**	**149.74**

	Amount in CWIP for the period of				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Project in progress	-	-	-	-	-
Project temporarily suspended	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**

BAHARAMPORE FARAKKA HIGHWAYS LTD

5 Investment Property

Particulars	As at March 31, 2024	As at March 31, 2023
Land		
Carrying Value	14.47	14.47
Total	**14.47**	**14.47**

i The Fair Value of the Land as at the Balance Sheet date is Rs. 18.90 Lakh

ii The land is under lien by way of mortgage to SBI Cap Trustee Company Limited by way of charge dated 3rd March,2011 and further modified dated 30th May 2016.

iii The Company has fair valued its Investment Property vide report dated 15th April 2022, however the valuation is not done by the registered valuer as defined under rule 2 of the Companies (Registered Valuers and Valuation) Rules . 2017.

iv Estimation of fair value

The company obtains independent valuations for its investment properties at least annually. The best evidence of fair value is current prices in an active market for similar properties. Where such information is not available, the company consider information from a variety of sources including:

The fair values of investment properties have been determined by an accredited Independent Valuer. The main inputs used are the rental growth rates, expected vacancy rates, terminal yields and discount rates based on comparable transactions and industry data. The resulting fair value estimates for investment property are included in level 3.

a current prices in an active market for properties of different nature or recent prices of similar properties in less active markets, adjusted to reflect those differences.

b discounted cash flow projections based on reliable estimates of future cash flows.

c capitalised income projections based upon a property's estimated net market income, and a capitalisation rate derived from an analysis of market evidence.

6 Other Intangible assets (Toll Rights)

Particulars	Amount
Gross Block	
Balance as at 31 March 2022	**1,01,375.66**
Additions	-
Disposals	-
Balance as at 31 March 2023	**1,01,375.66**
Additions	41,921.53
Disposals	-
Balance as at 31 March 2024	**1,43,297.19**
Accumulated Depreciation	
Balance as at 31 March 2022	**27,467.78**
Amortisation	5,335.52
Disposals	-
Balance as at 31 March 2023	**32,803.29**
Amortisation	6,399.12
Disposals	-
Balance as at 31 March 2024	**39,202.41**
Net Block	
Balance as at 31 March 2024	1,04,094.78
Balance as at 31 March 2023	68,572.36

7 Intangible Assets under Development (Refer Foot Note for details)

Particulars	Amount
Balance as at 01 March 2021	**27,746.15**
Addition : Capitalised to IAUD	12,023.83
Capitalized	(29,976.19)
Balance as at 31 March 2022	**9,793.80**
Addition : Capitalised to IAUD	26,792.72
Capitalized	-
Balance as at 31 March 2023	**36,586.52**
Addition : Capitalised to IAUD	7,972.38
Capitalized	(41,921.52)
Balance as at 31 March 2024	**2,637.38**

(a) Intangible Asset Under Development (IAUD) Ageing

IAUD for a period of	As at March 31, 2024	As at March 31, 2023
Less than 1 year	2,637.38	26,792.72
1-2 years	-	9,793.80
2-3 years	-	-
More than 3 years	-	-
Total	**2,637.38**	**36,586.52**

(b) Intangible Asset Under Development whose completion is overdue or has exceeded its cost compared to its original plan

IAUD for a period of	As at March 31, 2024	As at March 31, 2023
Less than 1 year	2,637.38	-
1-2 years	-	36,586.52
2-3 years	-	-
More than 3 years	-	-
Total	**2,637.38**	**36,586.52**

Baharampore-Farakka Highways Limited

Notes to the financial statements for the year ended March 31, 2024

(All amounts are in Rs. lakh, unless stated otherwise)

Foot Note - Intangible Assets under Development

Particulars	As at 31 March 2023	Addition during the year	Capitalized during the year	As at 31 March 2024
A) EPC Cost				
Subcontracting Expenses	36,523.13	7,935.45	(41,858.13)	2,600.45
Sub-total (A)	**36,523.13**	**7,935.45**	**(41,858.13)**	**2,600.45**
B) Material Cost				
Building Material Consumption	-	-	-	-
Transportations & Others	-	-	-	-
Sub-total (B)	-	-	-	-
C) Finance Cost				
Interest on Term Loans	-	-	-	-
Interest on Sub Debt	-	-	-	-
Sub-total (C)	-	-	-	-
D) Pre-operative Expenses				
Professional Fees	63.39	36.93	(63.39)	36.93
Project Development Fees	-	-	-	-
Sub-total (D)	**63.39**	**36.93**	**(63.39)**	**36.93**
TOTAL (A+B+C+D)	**36,586.52**	**7,972.38**	**(41,921.52)**	**2,637.38**
TOTAL (A+B+C+D)	**36,586.52**	**7,972.38**	**(41,921.52)**	**2,637.38**

BAHARAMPORE FARAKKA HIGHWAYS LTD.

8 Non Current Tax assets

Particulars	As at March 31, 2024	As at March 31, 2023
Prepaid Taxes (Net of Provisions)	807.42	654.32
Total	**807.42**	**654.32**

9 Other Assets

	Particulars	As at March 31, 2024	As at March 31, 2023
9a	**Non current assets**		
	Balance with Government Authorities	49.07	222.46
	Unammortised Guarantee Commission	0.00	253.56
	Tax paid under Protest	31.88	31.88
	Total	**80.95**	**507.89**
9b	**Current assets**		
	Prepaid Expenses	36.17	35.28
	Unammortised Guarantee Commission	-	36.19
	Advances to employees	0.31	-
	Advances to Contractors /Suppliers*	2,853.39	1,126.65
	Total	**2,889.87**	**1,198.12**

* Advances to Related parties

- Hindustan Construction Co.Limited (By-pass Section)	-	*1,101.49*

Since March 28, 2023 , HCC ceases to be a related party.

10 Inventory

Particulars	As at March 31, 2024	As at March 31, 2023
Stores, spares and consumables	118.02	-
Total	**118.02**	**-**

(a) Items of inventories are valued at lower of cost or estimated net realisable value.

(b) The disclosure of inventories recognized as an expense in accordance with paragraph 36 of Ind AS 2 is as follows:

Particulars	As at March 31, 2024	As at March 31, 2023
Amount of inventories recognized as an expense during the period	352.02	-
Amount of write - down of inventories recognized as an expense during the per	-	-

11 Trade receivable

Particulars	As at March 31, 2024	As at March 31, 2023
(Unsecured Considered good)		
-Utility shifting and COS	92.68	10.92
-ETC Receivable	62.08	-
Total	**154.76**	**10.92**

11a Trade Receivable Ageing Schedule

Undisputed Trade Receivable from Bill date

Range of O/s period	As at March 31, 2024	As at March 31, 2023
Unbilled	-	-
Not Due	-	-
less than 6 months	154.76	-
6 months - 1 year	-	-
1-2 year	-	10.92
2-3 year	-	-
> 3 years	-	-
Total	**154.76**	**10.92**

Disputed Receivable
*There are no disputed Trade Receivable

12 Cash and cash equivalents

Particulars	As at March 31, 2024	As at March 31, 2023
Cash on hand	22.75	30.17
Balances with Banks		
In current accounts	1,073.86	998.20
With Collection Agencies	-	-
Term deposits with original maturity of less than three months	6,400.00	2,500.00
Total	**7,496.61**	**3,528.37**

There are no repatriation restrictions with regard to cash and cash equivalents as at the end of the reporting period and prior periods.

13 Other bank balances

Particulars	As at March 31, 2024	As at March 31, 2023
Fixed deposits (maturity of more than three months but less than 12 months)*	4,643.21	3,605.28
Total	**4,643.21**	**3,605.28**
* Fixed deposits kept as DSRA	2,593.00	3,605.28

There are no repatriation restrictions with regard to Other Bank Balance as at the end of the reporting period and prior periods.

14 Other financial assets
(Unsecured unless otherwise stated)

Particulars	As at March 31, 2024	As at March 31, 2023
Current		
Unsecured, considered good		
Interest accrued on Financial Asset and advances	140.13	13.74
Other receivables	1.51	1.85
Unbilled revenue	-	745.69
Security deposit	0.68	-
Total	**142.32**	**761.28**

15 Equity Share capital

Particulars	As at March 31, 2024	As at March 31, 2023
Authorised		
225,000,000 (31 March 2023: 225,000,000) equity shares of Rs 10/- eac	22,500.00	22,500.00
Issued, subscribed and fully paid up		
217,253,000 (31 March 2023: 217,253,000) equity shares of Rs 10/- eac	21,725.30	21,725.30
	21,725.30	**21,725.30**

a Reconciliation of number of shares

No of Equity Shares (in lakh)

Particulars	As at March 31, 2024	As at March 31, 2023
As at the begning of the year	21,72,53,000	4,50,00,000
Add : 9% Compulsorily Convertible Cumulative Preference Shares(CCCPS) converted to Equity	-	17,22,53,000
Add: Issued during the period / year	-	-
As at the end of the period / year	**21,72,53,000**	**21,72,53,000**

b Rights, preferences and restrictions attached to shares

Equity shares:

i) The company has only one class of equity shares having par value of Rs 10 per share. Each holder of equity shares is entitled to one vote per share.

ii) In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.

c Shares held by holding/ ultimate holding company and/ or their subsidiaries/ associates

Out of equity shares issued by the company, shares held by its holding company, ultimate holding company and their subsidiaries/ associates are as below:

Particulars	As at March 31, 2024	As at March 31, 2023
Cube Highways and Infrastructure V Pte. Ltd. and its Nominees, the holding company (w.e.f. 29 March 2023)		
217,253,000 (31 March 2023: 217,253,000) equity shares of Rs 10/- each.	21,725.30	21,725.30

d Details of equity shares held by shareholders holding more than 5% of the aggregate shares in the Company

Particulars	As at March 31, 2024		As at March 31, 2023	
	No of shares	% of Shareholding	No of shares	% of Shareholding
Equity shares of Rs 10/- each fully paid				
Cube Highways and Infrastructure V Pte. Ltd. and its nominees (refer note 15 G)	21,72,53,000	100.00%	21,72,53,000	100.00%

e Shares reserved for issue under options : Nil

f Shareholding of Promoters

Shares held by promoters at 31 March 2024

Name of the Promoter	No of Shares	% of total shares	% change 2023-24
Cube Highways and Infrastructure V Pte. Ltd. and its nominees	21,72,53,000	100%	-
	21,72,53,000		

Shareholding of Promoters

Shares held by promoters at 31 March 2023

Name of the Promoter	No of Shares	% of total shares	% change 2022-23
HCC Concessions Limited	-	-	(100.00)
Cube Highways and Infrastructure V Pte. Ltd. and its nominees	21,72,53,000	100.00	100.00
	21,72,53,000		

BAHARAMPORE FARAKKA HIGHWAYS LTD.

16 Other Equity

Particulars	As at March 31, 2024	As at March 31, 2023
Capital Contribution (Corporate Guarantee) (Refer Note 16A)	550.01	550.01
Reserves and Surplus (Refer Note 16B)	(11,472.88)	(6,724.74)
Total	**(10,922.87)**	**(6,174.73)**

A Capital Contribution (Corporate Guarantee)

Particulars	As at March 31, 2023	As at March 31, 2022
Opening balance	550.01	550.01
Capital Contribution (Corporate Guarantee)	-	-
Closing Balance	**550.01**	**550.01**

B Reserves and surplus

Particulars	As at March 31, 2023	As at March 31, 2022
Retained Earnings	(11,472.88)	(6,724.74)
Total reserves and surplus	**(11,472.88)**	**(6,724.74)**

Surplus in the Statement of Profit and Loss

Particulars	As at March 31, 2023	As at March 31, 2022
Opening balance	(6,724.74)	3,228.77
Add: Profit / (Loss) for the period	(4,748.14)	(9,953.51)
Closing Balance	**(11,472.88)**	**(6,724.74)**

17 Long Term Borrowings

Particulars	As at March 31, 2024	As at March 31, 2023
Secured		
Term loans		
From Banks	61,059.54	55,341.03
From Financial Institution	-	8,133.84
Unsecured		
Non Convertible Debentures	22,890.00	-
Secured - Total	83,949.54	63,474.87
Total non current borrowings	**83,949.54**	**63,474.87**
Less: Current maturity of long term debt (Note 18)	(2,389.28)	(7,371.10)
Non current borrowings	**81,560.26**	**56,103.77**

Foot Note
FY 2023-24

1 **Unsecured, Unlisted, Redeemable, Non-Convertible Debentures**

(i) During the year, the Company has issued non convertible debentures for which the amount has been received from Holding Company, Cube Highways and Infrastructure V Pte Ltd.

Particulars	Issue date	Amount
174,00,000 Debentures @100 per debenture	May, 11, 2023	17,400.00
48,90,000 Debentures @100 per debenture	December 5, 2023	4,890.00
6,00,000 Debentures @100 per debenture	April 17, 2023	600.00
		22,890.00

(ii) **Tenor**
The tenor of the NCDs is 19 calendar years from the date of allotment. The instrument is compulsorily redeemable on February 2, 2041

(iii) **Coupon Rate**
The NCDs shall carry coupon at annual interest rate of 12.46% (payable quarterly). Subject to the Issuer having met all the restricted payment conditions as defined in the senior loan agreements, the coupon shall be paid to the Subscriber on a quarterly basis

(iv) **Redemption/ Maturity at Par**

(v) **Redemption Date**
Final Redemption Date is February 2, 2041. The NCDs along with any accrued but unpaid interest on the NCDs can be redeemed any time prior to the Final Redemption Date

2 **New Rupee Term Loan**

(i) Sanction Rupee Term Loan facility of Rs 75,000 lakhs equally between ICICI Bank and Kotak Bank in th the form of Rupee term Loans i.e.,
RTL 1- Rs 26,880 lakhs
RTL 2 - Rs 16,414 lakhs
RTL 3 - Rs.15,790 lakhs
RTL 4 - Rs15,916 lakhs

(ii)

Particulars	Outstanding Amount	
	ICICI Bank	Kotak Bank
Term Loan 1	12,969.60	12,969.60
Term Loan 2	7,919.76	7,919.75
Term Loan 3	7,612.69	7,612.69
Term Loan 4	2,240.07	2,240.07
Total	**30,742.12**	**30,742.12**

Grand Total	**61,484.24**

The amount is gross of unamortised upfront fees of Rs 424.70 lacs

(iii) **Drawdown during the year**
The Company has drawdown following term loans during the year:
- INR 31,857.13 lacs from ICICI bank
- INR 31,857.13 lacs from Kotak bank

(iv) **Repayment terms and rate of interest:**

The term loan will be repaid till 31 Dec 2033 in quarterly installments since inception of loan and rate of interest applicable is 6 months MCLR for ICICI Bank and 3 months MCLR for Kotak Mahindra Bank plus spread which is 9.05% in Kotak Mahindra Bank and 8.90% in ICICI Bank as at 31 March 2024

(v) **The term loan is secured by -**

(i) all the Borrower's tangible movable assets (current and non-current assets) including movable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles, and all other movable assets, present and future, related to the Project, save and except the Project Assets;

(ii) First charge over all the accounts of the Company , including Escrow Account and Sub Account, that may be opened in accordance with Loan Agreement and the Supplimentary Escrow Agreement or any other Project Documents and all the funds from time to time deposited therein , the Receivable and all authorised investments or other securities

(iii) Rights under substitution Agreement

(iv) a first charge on all intangible assets including but not limited to goodwill, rights, undertakings, revenue, receivables, and uncalled capital, both present and future excluding the Project Assets;

(v) Assignment of
- all the rights , titles, interest , benefits , claims and demands, whatsoeverof the Company in the Project Documents
- the right, title and interest of the Company in, to and under all the Government approvals;
- all the rights , title, interest, benefits, claims , and demand whatsoever of the Company in any letter of credit , Guarantee including contractor, guarantee and liquidated damages, and performance bond provided by any party to the Project document;
- all the rights , title, interest, benefits , claims , and demand whatsoever of the Company under all Insurance Contracts

(vi) Pledge
- pledge of 51% (fifty one percent) of each of the issued and paid up Shares and
- 51% of Compulsarily/ Non Compulsarily / Optionally Convertible Convertible Debentures/ CCD's/ NCD's / OCD's
of the Borrower subject to Banking regulation Act.

Till the time pledge over Shares is not created, a contractual Non-Disposal Undertaking (NDU) shall be provided on 49% of paid up equity shares of the Borrower, which shall be covered in the Sponsor Support Agreement.

The Pledge over 51% shareholding of the Company and 51% on Non-Convertible Debentures is pending as at March 31, 2024. The Company has taken extension for creation of pledge from the lenders which was approved and extended till July 11, 2024. However creation of pledge is pending as at July 11, 2024 and the Company has sought further extension on the matter. Extension from one of the lenders is in place

(vi) **Purpose/ Utilisation of Borrowings taken from Bank**

RTL 1 - Proceeds to be utilised for repayment of existing senior debts on the books of the Company
RTL 2 and 3 - Proceeds to be utilised for repayment of existing additional loan on the books of the Company
RTL 4 - Proceeds to be utilised for funding of or reimbursement of promoter funds infused towards first cycle of Major Maintenance, Capex, cost escalation and other transaction related expenses

The Company has utilised the above loan for the purpose for which it was to be sanctioned

(vii) **Contractual Maturity profile of borrowings is as per the sanction terms without Ind AS effects**

Particulars	As at March 31, 2024	As at March 31, 2023
Installment payable with in 1 year	2,389.28	2,389.28
Installment payable between 1 to 2 year	3,185.71	1,831.78
Installment payable between 2 to 5 year	15,609.99	5,495.35
Installment payable beyond 5 year	40,299.25	74,271.19
Total **	**61,484.23**	**83,987.61**

** The amount is gross of unamortised upfront fees of Rs 424.70 lacs

(viii) **Registration of charges or satisfaction with Registrar of Company**

Registration of charges

As at March 31, 2024, the Company has registered all charges duly with new trustee i.e. Catalyst Trusteeship Limited with Registrar of the Companies in favor of the new lenders

Satisfaction of charges

As per the records of the Registrar of Companies, Maharashtra, available on their website, charges created with erstwhile Trustee i.e.,SBICAP TRUSTEE COMPANY LIMITED are yet to be satisfied as at March 31, 2024. However, as per records of the Company, such loans have been fully repaid and none of the lenders have communicated or demanded any outstanding amount from the Company

3 **Previous Rupee Term Loan**

Prepayment of existing loans

During the year the Company has prepaid the existing loan by acquring new term loan

4 **Delay and Defaults**

There are no delay or default in repayment of installment or payment of interest to the erstwhile and new lenders of the Company

FY 2022-23

1 Rupee term Loan I

i The above Term Loans from Banks are Secured by way of pari-passu first charge on all assets both present and future, excluding the project assets as defined in the Concession Agreement & pledge of 51% shareholding of the prior promoters
The land is under lien by way of mortgage to SBI Cap Trustee Company Limited by way of charge dated 3rd March,2011.

ii Rupee Term Loan I carry Interest ranging 9.75% to 10.75% p.a. (Banks are in process of reset of Interest.)

iii Terms of Repayment : Repayable in 52 unequal consecutive quarterly installments commencing from March 31,2016 to 30 June 2029 ranging from Rs 1,40,29,250/- to Rs 35,07,31,250/- on the repayment dates and in the percentages as mentioned in the amortization schedule as set forth in Schedule V of the Common Loan Agreement executed on 28th September,2010 and amended time to time

2 Rupee Term Loan II

i Above term Loans are Secured by way of pari-passu first charge on all assets both present and future, excluding the project assets as defined in the Concession Agreement & pledge of 51% shareholding of the prior promoters.
The land is under lien by way of mortgage to SBICap Trustee Company Limited by way of charge modified dated 30th May 2016

ii Rupee Term Loan II carry Interest rate ranging 9.75% to 11% p.a. (Banks are in process of reset of Interest.)

iii Terms of Repayment : Repayable in 52 unequal consecutive quarterly installments commencing from June 30,2018 to 30 September 2031 ranging from Rs. 22,98,375/- to Rs. 12,18,13,875/- on the repayment dates and in the percentages as mentioned in the amortization schedule as set forth in Schedule V of the Supplemental Loan Agreement executed on 21st January 2016 and amended time to time

3 Subordinate Loan

Subordinate Loans carry rate of Interest of 9.75% p.a. and repayable after Senior Debt . Post SPA signed between HCC Concessions Limited and Cube Highways and Infrastructure V Pte Ltd (Cube) the said Senior debt is repayable by the Cube and therefore the same is shown as current financial libility as at March 31, 2023.

4 Arbitration Bank Guarantee Security

i Priority Charge over all receivables cash flows of the Company

ii Pledge of unencumbered equity shares of the Company (To the extent of proportionate amount of Bank Guarantee furnished)

iii Pledge of unencumbered equity shares of the Holding Company held by HCC Infrastructure Company Limited. (To the extent of proportionate amount of Bank Guarantee furnished)

5 Details of Maturity profile of the Long term borrowing is given under note no 31

6 Utilisation of Borrowings taken from Bank and Financial Institution

The company has not taken any fresh loan from banks and financial institutions during the period.

7 Delay / Default in Repayment of Principal and Interest

There are no delay and defaults in repayment of principal and interest during the year

8 Share Purchase Agreement

Deed of Amendment cum confirmation is signed between the lenders and the borrower vide agreement dated March 20, 2023. All the Obligations of the erstwhile promoter " HCC Concessions Limited " (HCC) now rest with new promoter i.e., " Cube Highways and Infrastructure V Pte Ltd" (Cube). This is in accordance with Share Purchase Agreement (SPA) signed between HCC and Cube vide agreement dated February 15, 2023. Pursuant to signing of SPA the Equity shares of the Company was acquired by Cube on March 28, 2023 and 51% of shareholding is pledge with the lenders as per the terms of SPA and the agreement with the lenders.

Since there is no changes to the terms and condition with the lenders for the existing borrowing of the Company , the Current Maturities and Repayment schedule is as per the existing Common Loan agreement.

As per the Amendment cum confirmation is signed between the lenders and the borrower vide agreement dated March 20, 2023, the new promoter i.e . Cube will be giving guarantee to the lenders but the same is yet to be executed and the orignal guarantee of the erstwhile promoter i.e . HCC is continuing.

18 Short Term Borrowing

Particulars	As at March 31, 2024	As at March 31, 2023
Secured		
Current Maturities of Long term debt (Refer Note 17)	2,389.28	7,371.10
Total	**2,389.28**	**7,371.10**

19 Trade payables

Particulars	As at March 31, 2024	As at March 31, 2023
Dues payable to		
- Micro and small enterprises	3.06	-
- Others than Micro and small enterprises	3,858.16	8,148.43
Total	**3,861.22**	**8,148.43**

a **Outstanding dues to Micro and Small Enterprises:**
The Company has amount due to suppliers under the Micro, Small and Medium Enterprises Development Act, 2006, (MSMED Act) as at March 31, 2023. The disclosure pursuant to the said Act is as under.

(i) Principal amount remaining unpaid to any supplier as at the end of the accounting year *(Including Retention shown under Note 22)*	7.60	-
(ii) Interest due thereon remaining unpaid to any supplier as at the end of the accounting year	0.31	-
(iii) The amount of interest paid to supplier during the year	0.77	-
(iv) The amount of interest due and payable for the year	0.04	-
(v) The amount of interest accrued and remaining unpaid at the end of the accounting year	0.35	-
(vi) The amount of further interest due and payable even in the succeeding year, until such date when the interest dues as above are actually paid	0.35	-

The figures for the year ended 31 March 2024 have been determined to the extent such parties have been identified on the basis of information collected by the Management. This has been relied upon by the auditors.

b **Trade Payable Ageing Schedule**

Ageing from Bill date

Range of O/s period	As at March 31, 2024	As at March 31, 2023
MSME		
Less than 1 year	3.06	-
Others		
Unbilled	1,773.22	4,658.74
Not Due	-	30.97
Less than 1 year	2,080.58	2,390.00
1-2 years	4.34	979.36
2-3 year	-	73.18
> 3 years	-	16.18
Total	3,861.20	8,148.42

c The balances of trade payable and retentions are unconfirmed and subject to reconciliations.

20 Provisions

	Particulars	As at March 31, 2024	As at March 31, 2023
20a	**Non-current**		
	Provision for gratuity	7.82	
	Provision for leave encashment	5.73	
	Provision for major maintenance	-	-
	Total	**13.55**	**-**
20b	**Current**		
	Provision for gratuity	0.16	
	Provision for leave encashment	0.91	
	Provision for major maintenance	14,276.22	18,349.88
	Total	**14,277.29**	**18,349.88**

Major maintenance

i) Major maintenance is to preserve the structural integrity of the road i.e. to achieve its original expected operational life. The wear and tear for each year is computed based on the technical report. The maintenance cost / bituminous overlay may vary based on the actual usage during maintenance period. Accordingly on the grounds of matching cost concept and based on technical estimates, a provision for major maintenance expenses is reviewed and is provided for in the accounts annually.

As per the concession agreement, Company had contractual obligation to carry out resurfacing operation. Provision of Major maintenance are reviewed on yearly basis and Based on the technical reports taken during the previous year, resurfacing operation has been estimated as at March 31, 2024.

ii) During the previous year the Company has entered in to Major Maintainence Agreement with HCC Concession Limited vide agreement dated March 20, 2023 for Execution Of Rehabilitation And Overlay At Project Highway for Rs 18349.88 lacs. As per the Contract the contractor needs to complete the work of major maintainance within 12 months (excluding 4 months of monsoon). Thus the entire provision amount lying as at March 28, 2023 is shown as current in the financial statements including the provision made during the previous year amounting to Rs 7098.56 lacs.

iii) Movement during the financial period is set out below

Particulars	As at March 31, 2024	As at March 31, 2023
Movements in provisions		
Opening Balance	18,349.88	11,586.59
Charged/ (credited) to profit and loss		
Additional Provision	-	7,098.56
Actual Incurred	(4,073.66)	(335.28)
Closing Balance	**14,276.22**	**18,349.88**

21 Other liabilities

	Particulars	As at March 31, 2024	As at March 31, 2023
21a	**Non-Current**		
	Advance towards Overloading Agreement (Refer note (i) below)	6,250.00	6,250.00
	Total	**6,250.00**	**6,250.00**
21b	**Current**		
	Statutory Dues	335.17	266.35
	Advances from NHAI (Refer Below Foot Note)	291.70	1,037.39
	Payable to NHAI	9.03	398.86
	Total	**635.90**	**1,702.60**

i) The company has entered into the Overloading agreement with its erstwhile holding company " HCC Concessions Limited" for transfer of cash proceeds of overloading revenue with effect from 1st October 2022 for a consideration as per third party Valuation report. The consideration towards the same is an amount of Rs. 6250.00 lacs which is shown as a non-current liability. One of the conditions precedent pertaining to opening Escrow account jointly by both the parties with the approval of NHAI is pending as on date and therefore the company has not given accounting treatment of such transactions in the financial statements and the advance of Rs. 6,250 lacs received against the aforesaid agreement is shown as non-current liabilities.

However the Company has accounted for the receipt of Overloading income from October 1, 2022 to March 31, 2024 to HCC Concession Limited in these financial statements as a liability to be discharged to the erstwhile holding company. The Amount of Overloading for the period April 1, 2023 to March 31, 2024 amounting to Rs 1001.83 lacs is reduced from the Toll Revenue shown under Revenue from Operations and Rs 595.01 lacs pertaing to October 1, 2022 to March 31, 2023 is shown as Overloading charges in Other Expenses.

In terms of the agreement with the erstwhile holding company , Additionally the Company will get reimbursement of 20% of the overloading revenue collected as part of recovery of cost. The said reimbursement is shown as other income during the year as the services of collecting the revenue has been rendered for such overloading transaction amounting to Rs 319.27 lacs.

Foot Note

a Advance from NHAI is against change of scope

22 Other financial liabilities

Particulars	As at March 31, 2024	As at March 31, 2023
Current		
Unsecured		
Subordinate loan (Refer Note 17)	-	568.00
Interest accrued		
- Related Party - HCC Concessions Limited (refer note 17)	-	85.68
- Others	1.26	-
Retention Payable to subcontrator		
- Related Party - Hindustan Construction Co. Ltd	-	1,262.75
- Others (MSME)	4.55	-
- Others (Other Than MSME)	424.21	-
Employee Liability	18.33	-
Interest accrued on borrowings*	1,859.35	101.80
Other payable	1,277.47	-
Total	**3,585.17**	**2,018.23**

(*) **Interest accrued on borrowings**

Interest accrued payable is on Non Convertible Debentures, payable to related party i.e., Cube Highways and Infrastructure V Pte. Ltd. as per the terms of Non Convertible Debenture, Interest needs to be accrued and paid at every quarter end , i. e, June 2023, September 2023, December 31, 2023 and March 31, 2024.

However the above interest will be paid only if there is no restricted payment clause in Common Loan Agreement (CLA).

In view of the CLA, the Company is restricted to pay the interest to its related party on account of interest accrued on Non Convertible Debentures and hence due to this restricted payment clause in CLA , the interest which is accrued throughout the year and not paid as at March 31, 2024 is not considered as default.

23 Deferred tax liabilities (Net)

(a) The Company is eligible for deduction under Section 80- IA of the Income Tax Act, 1961 and the concession period of the Company's project falls within the tax holiday period as defined in Section 80-IA. Since deferred tax on timing differences between Accounting income and Taxable income that arise during the year is reversing during such tax holiday period, no deferred tax asset or liability arises and accordingly no DTA /DTL is created in the accounts.

24 Current Tax Liability (Net)

Particulars	As at March 31, 2024	As at March 31, 2023
Current Tax liability (Net)	-	-
Total	-	-

Disclosure:

i Income tax expense comprises

Particulars	As at March 31, 2024	As at March 31, 2023
Current tax	-	-
Deferred tax expense / (credit)		-
(Excess)/Short provision of earlier years	-	16.66
Tax expenses (net) in Statement of Profit and Loss	-	**16.66**

ii **Reconciliation of the income tax provision to the amount computed by applying the statutory income tax rate to the profit before income tax is as below:**

	Particulars	As at March 31, 2024	As at March 31, 2023
A	**Current Tax**		
	Profit Before tax	(4,759.77)	(9,936.85)
	Enacted tax rates in India (%)	28.60%	28.60%
	Computed expected tax expenses	(1,361.29)	(2,841.94)
	Effect of non- deductible expenses	1,957.16	3,608.83
	Effects of deductible Expenses	(2,034.04)	(1,598.41)
	Long term Capital Tax	-	7.24
	Income tax expenses - Net.....A	**(1,438.18)**	**(824.27)**
	Tax liability as per Minimum Alternate Tax on book profits		
	Minimum Alternate Tax rate	17.472%	17.472%
	Computed tax liability on book profits	(831.63)	(1,736.17)
	Tax effect on adjustments:		
	Effect of non deductible expense	-	-
	Effects of deductible Expenses	-	-
	Income tax expenses - Net.....B	**(831.63)**	**(1,736.17)**
	Higher of A or B	-	-

25 Revenue from Operations

Particulars	Note	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Operating Income			
(i) Toll Income (Refer note (a) and (c) below) *		15,592.82	13,466.84
(ii) Construction Revenue		7,972.38	26,792.72
(iii) Change of Scope & Utility Shifting Works		572.17	1,671.13
Total		**24,137.37**	**41,930.69**

(a) (*) In the previous year , the company has finally agree to pay the Fastag fees to NHAI which earlier the Company was contending was not payable and shown under Contingent liability. The total Fastag fees collected is now paid to NHAI under protest amounting to Rs 374.85 lacs (including interest), Out of total Fastag fees paid to NHAI Rs 265.90 lacs pertain to the period up to March 2022 which is shown as Fastag Fees under Other Expenses and the current year fastag fees amounting to Rs 79.50 lacs for the period April 1, 2022 to March 28, 2023 is reduced from Toll income. The interest on the Fastag amount of Rs 29.45 lacs is shown under Finance Cost. Though the Company has paid the Fastag fees to NHAI , it contest that the same is stands receivable from NHAI and hence shown as contingent asset.

(b) Refer note no 35 for Ind AS 115 disclosures

(c) Refer Note 21(i) for Overloading revenue transferred to HCC Concession Limited.

26 Other income

Particulars	Note	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Interest income on bank deposits		823.70	619.83
Interest income - others		1.67	1.29
Profit on sale of assets (Net)		-	58.32
Scrap Sales		-	4.22
Interest on Income Tax Refund		47.91	111.90
Overloading Cost recovery (Refer Note 21(i))		319.37	-
Other income		30.84	-
Total		**1,223.49**	**795.56**

27 Cost of constructions

Particulars	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Construction Cost - Project	7,972.38	26,792.72
Construction Cost - Change of Scope & Utility Shifting Works	572.17	1,671.13
Total	**8,544.55**	**28,463.85**

28 Employee benefit expense

Particulars	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Salary and wages	167.07	-
Provident and other funds	10.28	-
Gratuity	3.45	-
Staff welfare	2.66	-
Total	**183.46**	**-**

29 Finance costs

Particulars	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Interest expense on Term Loans	6,288.31	7,412.62
Interest expense on NCD	2,157.12	-
Interest on Subordinate Debt	7.65	38.45
Interest on MSME	0.78	-
Interest on delayed payment of statutory dues	0.48	7.05
Interest on delayed payment of IE fees	-	39.57
Interest paid to Others	-	29.45
Other Borrowing Cost		
Upfront Fees Amortisation	127.29	-
Amortisation of Corporate guarantee	289.75	36.12
Total	**8,871.38**	**7,563.26**

30 Depreciation and amortization expense

Particulars	Note	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Depreciation on Property, Plant and Equipment	3	14.15	7.58
Amortization on Intangible assets	6	6,399.12	5,335.52
Total		**6,413.27**	**5,343.10**

31 Other expenses

Particulars	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Power, fuel and Electricity	160.73	103.19
Hire Charges	164.63	-
Major Maintenance Expenditure	-	7,098.57
Operation, Repairs & Maintenance	3,594.82	2,539.82
Building and Other Construction workers (BOCW) Cess	734.36	-
SPV Management fees	310.92	421.37
Insurance	202.59	192.39
Fastag Fees (Refer note 23)	-	265.90
Rates and Taxes	11.52	11.37
Travelling	45.64	0.93
Bank Charges	63.75	79.38
IT maintenance	13.77	-
Director Sitting Fees	-	7.20
Donation	12.41	-
CSR Expenses	-	93.91
Legal, Professional and Consultancy Charges	158.79	177.09
Balances no longer receivable w/off	11.51	298.80
Reimbursement of overloading income (Refer Note 21(i)	595.01	-
Miscellaneous Expenses	27.53	2.96
Total	**6,107.98**	**11,292.88**

(a) Breakup of Auditors' remuneration

Particulars	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Legal, Professional and Consultancy Charges include:		
Auditors' remuneration and expenses (including Tax)		
Statutory Audit fees	3.25	5.61
Others		0.24

(b) Consumption of stores and spares are added to the below mentioned heads of expenses

Particulars	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
Operation, Repairs & Maintenance	(351.43)	-
IT maintenance	(0.34)	-
Miscellaneous Expenses	(0.25)	-

32 Earnings per share (EPS)

Particulars	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
The following reflects the profit and share data used in the basic & diluted computations:		
Net profit/ (loss) for calculation of basic EPS	(4,748.14)	(9,953.51)
Number of share outstanding as on March 31	21,72,53,000	21,72,53,000
Weighted Average number of equity shares for calculating basic EPS	21,72,53,000	15,92,06,099
Basic EPS (not annualised)	(2.19)	(6.25)
Weighted average number of equity shares for diluted EPS (refer note 13(e))	21,72,53,000	15,92,06,099
Diluted EPS (not annualised)	(2.19)	(6.25)
Diluted EPS (not annualised) (antidilutive)	-	-

Reconciliation of Equity Shares		
Number of shares at the beginning	21,72,53,000	4,50,00,000
Issued during the year	-	17,22,53,000
Number of shares at the end	21,72,53,000	21,72,53,000

33 Corporate social responsibility

	April 1, 2023 to March 31, 2024	April 1, 2022 to March 31, 2023
a) Gross amount required to be spent by the Company during the year	-	93.91
b) Amount spent during the year		
i) Construction/acquisition of any asset - In cash	-	-
ii) On purposes other than (i) above	-	201.95
c) Shortfall/(Excess amount spent)		
Opening Balance	-	108.04
Amount required to be spent during the year	-	93.91
Amount spent during the year	-	201.95
Closing Balance*	-	-
Reason for shortfall:	-	-
d) Details of related party transactions, if any	-	-
e) Nature of CSR activities		
Ongoing (Sec 135(6))		
Promotion of Education	-	158.04
Helping blind and handicapped people	-	43.91
Other Than On going (Sec 135(5))		
There are no amount spent in other than ongoing project	-	-

f) The provision of Sec 135 of The Companies Act ,2013 is not applicable to the Company for the current year

BAHARAMPORE FARAKKA HIGHWAYS LTD.

34 Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits

(a) Defined benefit plans (unfunded):

The Company provides for gratuity for employees in India as per Payment of Gratuity Act, 1972. Employees who are in continuous service for 5 years are eligible for gratuity. The amount of gratuity payable on retirement/termination is the employees last drawn basic salary per month completed proportionately for 15 days salary multiplied for number of completed years of service.

The gratuity scheme covers substantially all regular employees. Commitments are actuarially determined at year-end. The actuarial valuation is done based on "Projected Unit Credit" method. Gains and losses of changed actuarial assumptions are charged to Statement of Profit and Loss.

(A) Disclosure of Gratuity

(i) Amount recognised in the Statement of Profit and Loss is as under:

Description	**March 31, 2024**
Current service cost	3.45
Total Service Cost	**3.45**

(ii) Net Interest Cost

Description	**March 31, 2024**
Interest cost on defined benefit obligations	0.00
Net Interest Cost	**0.00**

(iii) Bifurcation of Actuarial Gain/Loss on obligations:

Description	**March 31, 2024**
Actuarial Loss/(Gain) on arising from change in demographic assumption	-
Actuarial Loss/(Gain) on arising from change in financial assumption	0.27
Actuarial Loss/(Gain) on arising from experience adjustment	4.26
Actuarial Loss/(Gain) on for the year on obligations	**4.53**

(iv) Other Comprehensive Income (OCI)

Description	**March 31, 2024**
Actuarial Loss/(Gain) for the year on DBO	4.53
Unrecognized actuarial Loss/(Gain) for the year	**4.53**

(v) Bifurcation of Present Benefit Obligations (PBO) at the end of year in current and non current

Description	**March 31, 2024**
Current liability (Amount due within one year)	0.16
Non-Current liability (Amount due over one year)	7.82
Total PBO at the end of year	**7.98**

(vi) Change in defined benefit obligations

Description	**March 31, 2024**
Defined benefit liability at the start of the year	-
Adjustments related to employees transferred to/from fellow subsidiaries	-
Interest Cost	0.00
Current service cost	3.45
Re-measurements (gain)/loss for the year	4.53
Benefit paid directly by the Company	-
Defined benefit liability at the end of the year	**7.98**

(vii) The amount included in the balance sheet arising in respect of its defined benefit obligations/plans

Description	**March 31, 2024**
Present value of defined benefit obligations/ plans	7.98
Net defined benefit obligations	**7.98**

Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits (Continued.)

(viii) Sensitivity analysis for gratuity liability:

Description	**March 31, 2024**
Impact of change in discount rate	
Present value of obligations at the end of the	**7.98**
- Impact due to decrease of 1%	0.77
- Impact due to increase of 1%	(0.67)
Impact of change in salary increase	
Present value of obligations at the end of the	**7.98**

BAHARAMPORE FARAKKA HIGHWAYS LTD.

- Impact due to decrease of 1%	(0.68)
- Impact due to increase of 1%	0.77

The above sensitivity analysis is based on a change an assumption while holding all other assumptions constant. In practice, this is unlikely to occur and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligations to significant actuarial assumptions the same method (present value of the defined benefit obligations calculated with the projected unit credit method at the end of the reporting period) has been applied which was applied while calculating the defined benefit obligations liability recognised in the Balance Sheet.

Sensitivities due to mortality and withdrawals are not material and hence impact of change due to these not calculated.
Sensitivities as rate of increase of pensions in payment, rate of increase of pensions before retirement and life expectancy are not applicable.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to previous periods.

(ix) **Actuarial assumptions:**

Description	**March 31, 2024**
Discount rate range	7.15%
Rate of increase in compensation levels range	7.5% for the first year and 6.3% thereafter
Retirement age	58 years
Mortality rate	100% of IALM 2012-14
Attrition at age (Withdrawal rate %)	
- Up to 30 Years	9.00%
- From 31 to 44 years	9.00%
- Above 44 years	9.00%

(x) **Maturity profile of defined benefit obligation**

Weighted average duration (based on discounted cashflows)	9 Years

Expected cash flows over the next (valued on undiscounted basis):	**(₹ in Lacs)**
1 year	0.16
2 to 5 years	2.92
6 to 10 years	4.05
More than 10 years	10.12

BAHARAMPORE FARAKKA HIGHWAYS LTD.

35 Fair Value Heirarchy and Financial Risk Management Note

i Financial Instruments

A Financial instruments by category

i) The carrying value and fair value of financial instruments by categories as at 31 March 2024 were as follows: Rs. in lakh

Particulars	Amortised cost	Financial assets/ liabilities at fair value through		Total carrying value
		Profit or Loss	OCI	
Assets:				
Inventory	118.02	-	-	118.02
Trade receivables	154.76	-	-	154.76
Cash and cash equivalents	7,496.61	-	-	7,496.61
Bank balances other than cash and cash equivalents	4,643.21	-	-	4,643.21
Others financial assets	142.32	-	-	142.32
Liabilities:				
Borrowings	83,949.54	-	-	83,949.54
Trade payables	3,861.22	-	-	3,861.22
Other financial liabilities	3,585.17	-	-	3,585.17

ii) The carrying value and fair value of financial instruments by categories as at 31 March 2023 were as follows: Rs. in lakh

Particulars	Amortised cost	Financial assets/ liabilities at fair value through		Total carrying value
		Profit or Loss	OCI	
Assets:				
Trade receivables	10.92	-	-	10.92
Cash and cash equivalents	3,528.37	-	-	3,528.37
Bank balances other than cash and cash equivalents	3,605.28			3,605.28
Others financial assets	761.28	-	-	761.28
Liabilities:				
Borrowings	63,474.87	-	-	63,474.87
Trade payables	8,148.43	-	-	8,148.43
Other financial liabilities	2,018.23	-	-	2,018.23

B Fair value hierarchy

Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities
Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices)

Level 3 - Inputs for the assets or liabilities that are not based on observable market data (unobservable inputs)

The following table presents fair value hierarchy of assets and liabilities measured at fair value on a recurring basis as of :
There are no Financial Asset / Liability which are carried through FVTPL or FVTOCI and therfore the Fair value hirerachy details is not given

ii Financial risk management

The companies activities exposes it to market risk, liquidity risk and credit risk.
This note explains the source of risk which the entity is exposed to and how the entity is manage the risk.

Risk	Exposure arising from	Management
Credit risk	Cash and cash equivalents, financial assets measured at amortised cost.	Diversification of bank deposits and credit limits
Market risk — interest rate	Longterm borrowings at Floating rate	Actively managed
Liquidity risk	Trade Payables,borrowings and other liabilities	Availability of committed credit lines and borrowing facilities

The Company's risk management is carried out by a project finance team and treasury team group under policies approved by board of directors. Company treasury identifies, evaluates and hedges financial risk in close co-operation with the group's operating units. The Management of the Company provides principles for overall risk management, as well as policies covering specific areas, such as . interest rate risk, and credit risk and investments of excess liquidity.

(a) Credit Risk
The company engaged In infrastructure development and construction business under BOT. Credit risk is the risk that counterparty will not meet its obligations leading to a financial loss. Financial assets that are potentially subject to concentrations of credit risk and failures by counter-parties to discharge their obligations in full or in a timely manner consist principally of cash, cash equivalents and trade and other accounts receivable. Credit risk on cash balances with Bank are limited because the counterparties are entities with acceptable credit ratings.

35 Fair Value Heirarchy and Financial Risk Management Note

(b) Market Risk - Interest rate risk

The exposure of the Company's borrowing is linked to Bank base rate plus fixed spread .base rate are subject to change in market condition to interest rate changes at the end of the reporting period are as follows:

Particulars	Year ended March 31, 2024	Year ended March 31, 2023
Floating Rate borrowings	61,059.54	63,474.87
Fixed rate borrowings	22,890.00	-
Total borrowings	**83,949.54**	**63,474.87**

(ii) Sensitivity analysis

Profit or loss is sensitive to higher/lower interest income from borrowings as a result of changes in interest rates.

Impact on Profit after Tax	Year ended March 31, 2024	Year ended March 31, 2023
Interest rates - increase by 50 basis points	(305.30)	(317.37)
Interest rates - decrease by 50 basis points	305.30	317.37

(b) Liquidity Risk

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities and the availability of funding through an adequate amount of committed credit facilities to meet obligations when due and to close out market positions. The Company treasury maintains flexibility in funding by maintaining availability under committed credit lines.

Management monitors rolling forecasts of the company's liquidity position (comprising the undrawn borrowing facilities below) and cash and cash equivalents on the basis of expected cash flows.

(i) Maturities of financial liabilities

The tables below analyse the Company's financial liabilities into relevant maturity groupings based on their contractual maturities for:

As At March-2024

	Less than 1 year	1 to 2 Years	2 to 5 Years	Over 5 Years	Total
Non-derivatives					
Borrowings	2,389.28	3,185.71	15,609.99	62,764.56	83,949.54
Other Financial liabilities	3,585.17	-	-	-	3,585.17
Trade and other payables	3,861.22	-	-	-	3,861.22
Total non-derivatives	**9,835.67**	**3,185.71**	**15,609.99**	**62,764.56**	**91,395.93**
	9,835.67	**3,185.71**	**15,609.99**	**62,764.56**	**91,395.93**

As At March-2023

	Less than 1 year	1 to 2 Years	2 to 5 Years	Over 5 Years	Total
Non-derivatives					
Borrowings	7,371.10	8,398.43	22,889.40	24,815.94	63,474.87
Other Financial liabilities	2,018.23	-	-	-	2,018.23
Trade and other payables	8,148.43	-	-	-	8,148.43
Total non-derivatives	**17,537.76**	**8,398.43**	**22,889.40**	**24,815.94**	**73,641.53**
	17,537.76	**8,398.43**	**22,889.40**	**24,815.94**	**73,641.53**

36 Net Debt Reconciliation

A ***Net Debt Summary***

Particulars	As at March 31, 2024	As at March 31, 2023
Cash and Cash Equivalents	7,496.61	3,528.37
Bank balances other than cash and cash equivalents	4,643.21	3,605.28
Non Current Borrowings (including Current Maturities)	(83,949.54)	(63,474.87)
Interest Payable	(1,859.35)	(187.48)
Net Debt	**(73,669.07)**	**(56,528.71)**

35 Fair Value Heirarchy and Financial Risk Management Note

B ***As per the Amendment to INDAS 7 " Statement of Cash Flow "***

An entity shall provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes.

Particulars	Non Current Borrowing	Current Borrowing	Interest Payable	Total of Borrowings and Interest
As at 01 April 2022	**63,272.03**	**4,712.03**	**132.26**	**68,116.32**
Repayment of Borrowings	(4,360.01)		-	(4,360.01)
Loan taken during the year	400.00			400.00
Interest Expenses		-	7,480.51	7,480.51
Interest Paid		-	(7,406.48)	(7,406.48)
Subordinate Debt Transferred to Current Liabilities	(568.00)			(568.00)
Other Non Cash Movements (Reclassification)	(2,640.25)	2,659.07	(18.81)	0.01
Net Debt as at 31 March 2023	**56,103.77**	**7,371.10**	**187.48**	**63,662.35**
Repayment of Borrowings	(66,129.60)		-	(66,129.60)
Loan taken during the year	86,604.26			86,604.26
Interest Expenses		-	8,582.11	8,582.11
Interest Paid		-	(6,908.98)	(6,908.98)
Transferred to Current Liabilities		-		-
Other Non Cash Movements (Reclassification)	4,981.82	(4,981.82)		-
Net Debt as at 31 March 2024	**81,560.25**	**2,389.28**	**1,860.61**	**85,810.14**

Baharampore-Farakka Highways Limited

37 Notes to the financial statements for the year ended March 31, 2024

Sr. No.	Ratio	Numerator/ Denominator	Ratio (2023-24)	Ratio (2022-23)	% of Variation	Reason for variance
1	Current ratio	Current Asset / Current Liabilities	61.93	24.22	1.56	The variation is due to increase in current assets and decrease in current liability during the year
2	Debt-Equity ratio	Total Debts / Shareholders Equity	777.14	408.18	0.90	The variation is due to increase in total debts during the year
3	Debt Service Coverage ratio	Earnings available for debt service / Debt Service	10.91	24.10	-0.55	The variation is due to increase in earnings and total debts during the year
4	Return on Equity ratio (ROE)	Net Profits after taxes – Preference Dividend / Average Shareholder's Equity	-36.00	-48.49	-0.26	The variation is due to increase in earnings and decrease in shareholders equity during the year
5	Inventory Turnover Ratio	Cost of goods sold OR sales / Average Inventory				Not Applicable
6	Trade Receivables turnover ratio	Net Credit Sales / Average Accounts Receivable				Not Applicable
7	Trade payables turnover ratio	Net Credit Purchases / Average Trade Payables				Not Applicable
8	Net capital turnover ratio	Net Sales	-127.35	-469.69	-0.73	Variation is less than 25%
9	Net profit ratio	Net Profit after Tax / Net Sales	-19.65	-23.74	-0.17	The variation is due to increase in earnings and decrease in net sales during the year
10	Return on Capital employed (ROCE)	Earning before interest and taxes / Capital Employed	4.34	-3.01	-2.44	The variation is due to increase in earnings and capital employed during the year
11	Return on Investment (ROI)	Net Income / Cost of Investment				Not Applicable

* As per amendment to Schedule III reasons for variances to be given only if variance is greater than 25%

BAHARAMPORE FARAKKA HIGHWAYS LTD.

38 Related Party Transactions

A Name of Related Party with which the Company has transactions and Nature of Relationship

Holding Company	Cube Highways and Infrastructure V Pte. Ltd. (w.e.f. 29 March 2023)
Holding Company	HCC Concessions Limited (Till 28 March 2023)
Holding Company's Holding Company	HCC Infrastructure Company Limited (Till 28 March 2023)
Ultimate Holding Company	Hindustan Construction Company Limited (Till 28 March 2023)
Fellow Subsidiary	HCC Operations & Maintenance Limited (Till 28 March 2023)
Fellow Subsidiary	Highbar Technologies Limited (Till 28 March 2023)
Fellow Subsidiary	Highbar Technocrat Limited (Till 28 March 2023)
Other related party	Cube Highways and Transportation Assets Advisors Pvt Ltd
Other related party	Cube Highways Technologies Private Limited
Other related party	Cube Highways Root Foundation

Key Managerial Personnel

Arjun Dhawan (Till 28 March 2023)	Director
Atul Kumar (w.e.f 10 November 2020 till 28 March 2023)	Director
Santosh Kumar Rai (w.e.f 30 August 2021 till 28 March 2023)	Director
Manish Khanna (Till 28 March 2023)	Independent Director
Chandrahas Zaveri (Till 28 March 2023)	Independent Director
Dr Mita Dixit (w.e.f 7 November 2022 till 28 March 2023)	Director
Ankit Jain (w.e.f. 28 March 2023)	Director
Puneet Panchal (w.e.f. 28 March 2023)	Director
Pooja Aggarwal (w.e.f. 28 March 2023)	Director

B Related Party Transactions

Particulars	FY 23-24	FY 22-23
Transactions During the period / year		
SPV Management Fees		
HCC Concessions Limited	-	421.37
Cube Highways and Transportation Assets Advisors Pvt Ltd	310.92	-
Interest on Subordinate Loan		
HCC Concessions Limited	-	37.98
Community Development expenses (Donation)		
Cube Highways Root Foundation	12.41	-
Other Charges & Reimbursement of Expenses		
HCC Concessions Limited	-	63.29
HCC Operations & Maintenance Limited	-	7.28
Cube Highways and Transportation Assets Advisors Pvt Ltd	25.67	-
Operations & Maintenance		
HCC Operations & Maintenance Limited	-	2,377.43
Cube Highways Technologies Private Limited	119.29	-
Professional Fees for IT Services		
Highbar Technologies Limited	-	11.40
Highbar Technocrat Limited	-	2.30
Cube Highways and Transportation Assets Advisors Pvt Ltd	7.58	-

Director sitting Fees (including Tax)		
Manish Khanna	-	3.19
Chandrahas Zaveri	-	3.07
Dr Mita Dixit	-	0.94
Amortisation of Corporate Guarantee		
HCC Concessions Limited	-	35.83
Non- convertible Debentures issued		
Cube Highways and Infrastructure V Pte Ltd	22,890.00	-
Interest Accrued on Non Convertible Debentures		
Cube Highways and Infrastructure V Pte Ltd	2,157.12	-
Subcontracting Expenses Under Intangible Asset Under Development		
Hindustan Construction Company Ltd	-	22,972.17
Overloading		
Advance received against overloading agreement	-	6,250.00
Corporate Guarantee		
HCC Concessions Limited	-	2,959.56

Particulars	As at 31 March 2024	As at 31 March 2023
Balances at the year end		
Other payables		
Cube Highways and Transportation Assets Advisors Pvt Ltd	17.12	-
Cube Highways Technologies Private Limited	1.07	-
Non Convertible Debentures		
Cube Highways and Infrastructure V Pte Ltd - NCD	22,890.00	-
Interest accrued on Non Convertible Debentures		
Cube Highways and Infrastructure V Pte Ltd - Interest accrued	1,859.35	-

BAHARAMPORE FARAKKA HIGHWAYS LTD.

39 Disclosures as required by Appendix D of Ind AS 115 relating to "Service Concession Arrangements: Disclosures"

(a) Description of the Arrangement along with salient features of the project:
NHAI has granted concession period of 25 years to the company for the project. Provisional Certificate under Article 14.3.2 (Schedule - J) of the concession Agreement has been obtained for 75.45 kms for the following stretch - 204.550 to 229.300 KMS - 24.75 KMS / 230.600 to 254.800 KMS - 24.20 KMS / 258.350 to 284.850 KMS - 26.50 KMS. Company has started to collect toll from 14th May, 2014 on receipt of provisional certificate of commencement from Independent consultant appointed by National Highway Authority of India

(b) Obligations of Operations and maintenance
The Company is required to carry out operations and maintenance on the road annually with an obligation to carry out periodic maintenance in terms of the Concession at regular intervals

(c) Changes to the Concession during the period
During the year, there are no changes in the contract alloted to the Company by NHAI.

(d) Classification of the Concession
The Company has applied the principles enumerated in Appendix C of Ind AS – 115 titled "Service Concession Arrangement" and has classified the arrangement as a Intangible Asset resulting in recognition of an Intangible Asset in the Financial Statements, since the Company has a right (a licence) to charge users of the public service.

II INDAS 115 "Revenue from Contracts with Customers"

1 Disaggregation of Revenue

(a) Based on type of Services

Particulars	**2023-24**	**2022-23**
Revenue from Toll collection	15,592.82	13,466.84
Construction Revenue	7,972.38	26,792.72
Change of Scope / Utility Shifting	572.17	1,671.13
Total	**24,137.37**	**41,930.69**

(b) Geographical region
The Company is in the business of construction vide Design, Build, Finance, Operate & Transfer (DBFOT) Toll basis of 4 lanes from Kms 191.416 to 294.684 between Baharampore and Farakka in the state of West Bengal under NHDP Phase III.

(c) Market Type
There is only one Customer / grantor to whom the services is provided - National Highway Authority Limited (NHAI).

(d) Contract Duration
NHAI has granted concession period of 25 years to the company for the project (including construction period).

(e) Timing of transfer of services
Revenue from Construction activity satisfies the test of over the time and therefore the Revenue from Construction Activity will recognise overtime

(f) Pending Performance Obligation
The balance performance obligation outstanding as on March 31, 2024 is Rs NIL lakh (P.Y March 31, 2023 - Rs 7680.40 lakh).

2 Movement of Contract Balances

(i) Advance from Customers

	2023-24	**2022-23**
Opening Balance	1,037.39	656.36
Advance Received during the year	-	745.69
Advance Adjusted / Recovered	(745.69)	(364.66)
Closing Balance	**291.70**	**1,037.39**

40 Segment reporting

The Company being engaged in design, operation development and maintenance of Road on Build, Operate and Transfer (BOT) basis, does not have more than one reportable segments. Further, the Company is carrying its business in only one geographical segment.

41 Contingent liabilities and Commitments

	Particulars	As at March 31, 2024	As at March 31, 2023
		Rs	Rs
a	**Contingent liabilities**		
	Income Tax Demand raised by Income Tax Authority - (FY 2017-18)	0.34	0.34
	Entry Tax Demand raised by Sales Tax Authority - West Bengal (FY 2015-16)	0.97	0.97
	Entry Tax Demand raised by Sales Tax Authority - West Bengal (FY 2016-17)	0.65	0.65
	Mismacth GSTR-3 and GSTR-7	59.49	-
b	**Commitment**		
i	**Capital Commitment**		
	Estimated amount of contracts remaining to be executed on capital account not provided for (Net of Advance)	-	22,500

42 Contingent Asset

i Due to delay in issuance of Completion Certificate for Non-PCOD & Non-Bypass stretches to the Concessionaire it has the resulted in Revenue loss for such use of project highway since 01-Apr-21 to 13-May-21. The Concessionaire has incurred the revenue losses till 13-May-2021 at Rs. 405.79 Lakhs NHAI has requested IE for its comments on this claim letters of BFHL.

ii On account of Force Majeure Event/ Change in Law occurred due to COVID-19 pandemic BFHL has submitted claim to the NHAI for reimbursement of loss incurred from time to time. Numerous letters are issued on this account, recent letter being dated 08.10.2020 vide which it has claimed Rs. 2613 Lakhs + extension of concession period of 71.4 days towards this loss. However, IE or NHAI is yet to reply to these claim letters of BFHL.

iii Company has collected fees for non compliance with FASTag rules and even under the original terms of the Concession Agreement (CA), the Company (Concessionaire) is entitled to retain.However for the purpose of availing NOC for stake sale the company has paid Fastag fees along with interest amounting to Rs 374.85 lakhs to NHAI in the year 22-23 pursuant to compliance against various letters received from NHAI demanding Fastag fees. The Company contests that the said amount stands receivable from NHAI.

43 Company has collected fees for non compliance with FASTag rules and even under the original terms of the Concession Agreement (CA), the Company (Concessionaire) is entitled to retain all Fees collected under the CA, and the said provision remains unchanged even after the fee structure for non compliance with FASTag rules and the fees payable there on. Accordingly, the Concessionaire is legitimately entitled to collect and retain the additional Fee collected from the vehicles not fitted with FASTag or vehicle without valid, functional FASTag entering into FASTag lane of the Fee plazas.
In addition, Sub-rule (1) para 3 of Rule 7 (Remittance and appropriation of fee) of the National Highways Fee (Determination of Rates and collection) Rules, 2008, states that "Provided further that in case of a private investment projects, the fee collected under the provisions of these rules shall be appropriated by the Concessionaire in accordance with the provisions of and for the performance of its obligations under the agreement entered into by such Concessionaire". Thus, any fee, which is collected from the users shall be appropriated by the Concessionaire for fulfilling its obligations.
Accordingly the Company has accounted the entire collection as toll revenue and has responded to NHAI letter.

During the year ended 31 March 2023, the Company has received the letter from NHAI dated 20 September 2022 addressed to Independent Engineer(IE) asking to submit its report upon fast-tag recovery from concessioner Independent Engineer; In its report dated 30 September 2022 IE stated Fasttag recovery of Rs 305.28 Lakhs along with interest of Rs 40.76 Lakhs. Letters for Fasttag recovery where also received by the Company from NHAI in previous year ended 31 March 2022 dated September 7, 2021 and September 22, 2021 for depositing the FASTag and TCS on Fastag with in a week, and interest @ 5% for non-submission of aforesaid amount. In response to the same the Company had written letter clarifying the its position vide Concession Agreement. However during the year ended 31 March 2023, for the purpose of availing NOC for stake sale, the company has paid Fastag fees along with interest amounting to Rs 374.84 lakhs to NHAI under protest as Fasttag fees pursuant to compliance against various letters received from NHAI demanding Fastag fees. However the company still continues to recover the amount paid under protest from NHAI.

44 In previous year, the Company has entered into an Agreement with the Purchaser Cube Highways and Infrastructure V PTE LTD, being a company based in Singapore and incorporated with the objective of acquiring and operating transportation projects to purchase the shares from the Company (including the purchase of seller nominee shares by the purchaser nominees from the seller nominees) and the Company has sell the shares to the Purchaser (including the sale of such portion of the sale shares which are held by the seller nominees to purchaser nominees).

45 Relationship with struck-off companies: The information about transaction with struck off companies (defined under section 248 of the companies Act 2013 or section 560 of the Companies Act 1956) has been determined to the extent such parties have been identified on the basis of information available with the company and the same is relied upon by the auditor.

46 Audit Trail

The Ministry of Corporate Affairs (MCA) by the Companies (Accounts) Amendment Rules 2021 and vide notification dated 24 March 2021 has issued the "Companies (Audit and Auditors) Amendment Rules, 2021 has prescribed a new requirement for companies under the proviso to Rule 3(1) of the Companies (Accounts) Rules, 2014 inserted requiring companies, which uses accounting software for maintaining its books of account, shall use only such accounting software which has a feature of recording audit trail of each and every transaction, creating an edit log of each change made in the books of account along with the date when such changes were made and ensuring that the audit trail cannot be disabled.

The Company uses an Enterprise Resources Planning System – SAP S/4 HANA accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility , however the audit log (edit log) feature has not been enabled in the aforesaid software throughout the year. Further the audit trail feature is not enabled for direct changes to database. Since the software is having preventive controls measures inbuilt , the audit log (edit log) facility is not enabled in the system. Since there is no audit log (edit log) feature enabled at application and at database level for the year under review there is no preservation of audit trail as at March 31, 2024.

47 Previous years figures

Previous years figures have been regrouped/reclassified/recasted wherever necessary including to conform current year classification.

48 The balance sheet, statement of profit and loss, statement of changes in equity, statement of material accounting policy information and the other explanatory notes forms an integral part of the financial statements of the Company for the year ended March 31, 2024.

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner

Membership No.:124960

Place: Mumbai
Date: 06 August 2024

For and on behalf of the Board of Directors
Baharampore-Farakka Highways Limited

Anshuman Gupta
Director
DIN No. : 09325830

Anuj Maitrey
Director
DIN No. : 10481417

Bhumika Chugh
Mem No:. A44724

Place: Noida
Date: 05 August 2024

Sanjay Ray
Chief Executive Officer
PAN : AMTPR7224C

Bikash Gantait
Chief Financial Officer
PAN : BPMPG7739C

BAHARAMPORE FARAKKA HIGHWAYS LTD.

Natvarlal Vepari & Co.
CHARTERED ACCOUNTANTS

903-904, 9th Floor, Raheja Chambers, 213, Nariman Point, Mumbai 400 021. Tel. : 6752 7100 Fax : 6752 7101 E-mail : nvc@nvc.in

INDEPENDENT AUDITOR'S REPORT

To
The Members of
Baharampore Farakka Highways Limited

Report on the Audit of the Financial Statements

Opinion

We have audited the Financial Statements of Baharampore Farakka Highways Limited ("the Company"), which comprise the Balance Sheet as at March 31, 2023, and the Statement of Profit and Loss (including Other Comprehensive Income), Statement of Changes in Equity and Statement of Cash Flows for the year then ended, and notes to the financial statements, including a summary of Significant Accounting Policies and other explanatory information (hereinafter referred to as "the Financial Statements").

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid Financial Statements give the information required by the Companies Act, 2013 ("the Act") in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2023, the loss (including other comprehensive income), changes in equity and its cash flows for the year ended on that date.

Basis for Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India (ICAI) together with the ethical requirements that are relevant to our audit of the Financial Statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ICAI's Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on the Financial Statements.

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Information Other than the Financial Statements and Auditor's Report thereon

The Company's Board of Directors is responsible for the Other Information. The other information comprises the information included in the Board's report including the Directors Report but does not include the Financial Statements and our Independent Auditors' Report thereon. Our opinion on the Financial Statements does not cover the Other Information and we do not and will not express any form of assurance or conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the Other Information identified above and, in doing so, consider whether the Other Information is materially inconsistent with the Financial Statements, or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this Other Information, we are required to report that fact.

With regard to other information that has not been obtained by the us prior to the date of the auditor's report, that management intends to prepare and issue such other information after issuance of our auditor's report. We have nothing to report in this regard.

Responsibilities of Management and those Charged with Governance for the Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Financial Statements that give a true and fair view of the financial position, financial performance, changes in equity and cash flows of the Company in accordance with the accounting principles generally accepted in India, including the accounting Standards specified under section 133 of the Act. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

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The Board of Directors is also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.
3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
5. Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

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Materiality is the magnitude of misstatements in the financial statements that, individually or in aggregate, make it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the financial statements

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the attached Annexure "A" a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.
2. As required by Section 143(3) of the Act, we report that:
    a. We have sought and obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our audit.
    b. In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books.
    c. The Balance Sheet, the Statement of Profit and Loss (including Other Comprehensive Income), the Cash Flow Statement and Statement of Changes in Equity dealt with by this Report are in agreement with the books of account.
    d. In our opinion, the aforesaid Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014.
    e. On the basis of the written representations received from the directors as on March 31, 2023 taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2023 from being appointed as a director in terms of Section 164 (2) of the Act.
    f. With respect to the adequacy of the internal financial controls with reference to financial statements of the Company and the operating effectiveness of such controls, refer to our separate Report in "Annexure B". Our report expresses an unmodified opinion on the adequacy and operating effectiveness of the Company's internal financial controls with reference to

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financial statements.

g. With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended:

In our opinion and to the best of our information and according to the explanations given to us, there is no remuneration paid by the Company to its directors during the year to which the provisions of section 197 of the Act applies.

h. With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

i. The Company has disclosed the impact of pending litigations on its financial position in its financial statements – Refer Note 38 to the Financial Statements,

ii. The Company did not have any long-term contracts including derivative contracts for which there were material foreseeable losses,

iii. There has been no delay in transferring amounts, required to be transferred, to the Investor Education and Protection Fund by the Company.

iv. a) The management has represented that, to the best of their knowledge and belief, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the company to or in any other person or entity, including foreign entities ("intermediaries") with the understanding whether recorded in writing or otherwise, that the intermediary shall, whether directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the company ("Ultimate Beneficiaries") or provide any guarantee, security, or the like on behalf of the Ultimate Beneficiaries.

b) The management has represented that, to the best of its knowledge and belief, no funds have been received by the company from any person or entity including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the company shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries,

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c) Based on such audit procedures considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (iv)(a) and (iv)(b) above contain any material misstatement.

v. The Company has not declared or paid dividend during the year and therefore the compliance with Section 123 of the Companies Act, 2013 is not applicable in respect of dividends declared or paid.

vi. Proviso to Rule 3(1) of the Companies (Accounts) Rules, 2014 for maintaining books of account using accounting software which has a feature of recording audit trail (edit log) facility is applicable to the Company with effect from April 1, 2023, and accordingly, reporting under Rule 11(g) of Companies (Audit and Auditors) Rules, 2014 is not applicable for the financial year ended March 31, 2023.

For Natvarlal Vepari & Co.
Chartered Accountants
Firm Registration No- 106971W

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: September 14, 2023
UDIN: 23124960BGVGFD2130

Natvarlal Vepari & Co.
CHARTERED ACCOUNTANTS
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ANNEXURE A TO THE INDEPENDENT AUDITORS' REPORT

(Referred to in paragraph 1 under Report on Other Legal and Regulatory Requirements' section of our report to the Members of Baharampore Farakka Highways Limited of even date)

(i) a. (A) The Company has maintained proper records showing full particulars including quantitative details and situation of its Property, Plant and Equipment.

(B) The company has maintained proper records showing full particulars of intangible assets.

b. Property, Plant and Equipment have been physically verified by the management at reasonable intervals and no material discrepancies were noticed on such verification.

c. There is no immovable property as at Balance sheet date other than investment property. We were provided with the photo-copies of title deeds for verification w.r.t the immovable property, however we have not verified the original title deeds since the same are lying at different location.

d. The company has not revalued its Property, Plant and Equipment and intangible assets during the year.

e. On the basis of information and explanation given, no proceedings have been initiated or are pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act,1988 (45 of 1988) and rules made thereunder.

(ii) (a) The Company is engaged in the business of Infrastructure development, Operations and its maintenance and there is no inventory in hand at any point of time, hence Clause 3(ii)(a) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(b) In our opinion and on the basis of examination of books and records and on the basis of information and explanation given to us the Company do not have working capital limits and hence Clause 3(ii)(b) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(iii) In our opinion and on the basis of examination of books and records and on the basis of information and explanation given to us the Company has not made investments in, provided any guarantee or security or granted any loans or advances in the nature of loans, secured or unsecured, to companies, firms, Limited Liability Partnerships or any other parties. Hence Clause 3(iii)(a), 3(iii)(b), 3(iii)(c), 3(iii)(d), 3(iii)(e) & 3(iii)(f) of the Companies (Auditor's Report) Order, 2020 are not applicable to the Company.

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(iv) In our opinion and according to the information and explanations given to us, the company has not given any loans, or made any investments, or given any guarantees and security to which section 185 or section 186 of the Companies Act, 2013 applies.

(v) The Company has not accepted deposits from the public or amounts that are deemed to be deposits pursuant to sections 73 to 76 or any other relevant provisions of the Companies Act, 2013 and rules framed thereunder. As informed to us, there is no order that has been passed by Company Law Board or National Company Law Tribunal or Reserve Bank of India or any Court or any other tribunal in respect of the said sections.

(vi) As informed to us, the maintenance of the cost records under the sub-section (1) of section 148 of the Companies Act, 2013 has been prescribed and we are of the opinion that prima facie, the prescribed accounts and records have been made and maintained. We have not, however, carried out a detailed examination of the records to ascertain whether they are accurate or complete.

(vii) (a) The Company is generally regular in depositing undisputed statutory dues including Goods and Services Act, Provident fund, Employees State Insurance, Income Tax, Sales Tax, Service Tax, duty of Customs, duty of Excise, Value Added Tax, Cess and other statutory dues to the appropriate authorities during the year. According to the information and explanations given to us, no undisputed amount payable in respect of the aforesaid dues were outstanding as at March 31, 2023 for a period of more than six months from the date they became payable

(b) According to the information and explanations given to us, there are no statutory dues referred to in sub-clause (a) which have not been deposited on account of any dispute except as given below:

Name of statute	Nature of dues	Disputed Amount (Rs in lacs)	Paid under protest (Rs in lacs)	Period to which the amount relates	Forum where dispute is pending
The West Bengal value Added tax, 2003	Entry tax	0.97	0.42	FY 2015-16	West Bengal Sales Tax Authority
The West Bengal value Added tax, 2003	VAT	0.65	NIL	FY 2016-17	West Bengal Sales Tax Authority
Income Tax demand	Income Tax	0.37	NIL	FY 2017-18	Matter pending with ITO

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(viii) According to the information and explanations given to us and to the best of our knowledge and belief there are no transactions that were not recorded in the books of account, and which has been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961.

(ix) (a) According to the information and explanations given to us and based on the audit procedures performed by us, we are of the opinion that the company has not defaulted in repayment of loans or other borrowings or in the payment of interest thereon to any lender also there is no continuing default as at Balance Sheet Date.

(b) According to the information and explanations given to us and on the basis of our audit procedures, we report that the company has not been declared wilful defaulter by any bank or financial institution or government or any government authority.

(c) In our opinion and according to the information and explanations given to us, the company has not raised any money by way of term loans during the year and hence Clause 3(ix)(c) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(d) According to the information and explanations given to us, and the audit procedures performed by us, and on an overall examination of the financial statements of the company, we report that no funds raised on short-term basis have been used for long-term purposes by the Company.

(e) The Company does not have any subsidiaries, joint ventures or associates and hence clause 3(ix)(e) & 3(ix)(f) of the Companies (Auditor's Report) Order, 2020 are not applicable to the Company.

(x) (a) The company has not raised any money by way of initial public offer / further public offer (including debt instruments) during the year and hence clause 3(x)(a) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(b) During the year, the Company has not made any preferential allotment or private placement of shares or convertible debentures (fully or partly or optionally) and hence reporting under clause 3(x)(b) of the Order is not applicable.

(xi) (a) According to the information and explanations given to us and to the best of our knowledge and belief no fraud by the Company or any fraud on the Company has been noticed or reported during the year.

(b) No report under sub-section (12) of section 143 of the Companies Act has been filed by us in Form ADT-4 as prescribed under rule 13 of

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Companies (Audit and Auditors) Rules, 2014 with the Central Government and hence clause 3(xi)(b) of the Companies (Auditors Report) Order 2020 is not applicable to the Company.

(c) According to the information and explanations given to us and to the best of our knowledge and belief no whistle-blower complaints have been received during the year by the company.

(xii) The Company is not a Nidhi Company and hence clauses 3(xii)(a), 3(xii) (b) and 3(xii)(c) of the Companies (Auditors Report) Order 2020 is not applicable to the Company.

(xiii) All transactions with the related parties are in compliance with sections 177 and 188 of the Companies Act, 2013 in so far as our examination of the proceedings of the meetings of the Audit Committee and Board of Directors are concerned. The details of related party transactions have been disclosed in the Financial Statements as required by the applicable Accounting Standards.

(xiv) (a) In our opinion and based on our examination, the company has an internal audit system commensurate with the size and nature of it business.

(b) We have considered the internal audit reports of the company issued till the date of auditor's report.

(xv) According to the information and explanations given to us, in our opinion during the year the company has not entered into any non-cash transactions with its directors or persons connected with its directors hence clause 3(xv) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

(xvi) The nature of business and the activities of the Company are such that the Company is not required to obtain registration under section 45-IA of the Reserve Bank of India Act 1934 and hence sub-clause 3(xvi)(a), 3(xvi)(b), 3(xvi)(c) and 3(xvi)(d) of the Companies (Auditors Report) Order, 2020 is not applicable to the

(xvii) On an examination of the Statement of Profit and Loss account, we are of the opinion that the Company has incurred cash losses during the current financial year amounting to Rs 4593.71 lacs, however there was no cash loss in the immediate previous financial year.

(xviii) There has been no resignation of the statutory auditors during the year and accordingly clause (3)(xviii) Companies (Auditors Report) Order 2020 is not applicable to the Company.

(xix) According to the information and explanations given to us and on the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the

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evidence supporting the assumptions including the representation from the Board of the Company that the parent i.e., Cube Highways and Infrastructure V PTE LTD has agreed to give support in the form of funding to meets its current obligations , nothing has come to our attention, which causes us to believe that any material uncertainty exists as on the date of the audit report that the company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date unless the plans for funding by the Cube Highways and Infrastructure V PTE LTD as represented by the Board of the Company is not fulfilled. We, however, state that this is not an assurance as to the future viability of the company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the company as and when they fall due

(xx) (a) On the basis of our review of the minutes of the CSR committee and other documents made available to us, there are no unspent amounts towards Corporate Social Responsibility (CSR) on other than ongoing projects requiring a transfer to a Fund specified in Schedule VII to the Companies Act in compliance with second proviso to sub-section (5) of Section 135 of the said Act. Accordingly, reporting under clause 3(xx)(a) of the Order is not applicable for the year.

(b) On the basis of our review of the minutes of the CSR committee and other documents made available to us, in respect of ongoing projects of the current year, there are no unspent amount as March 31, 2023, requiring transfer of such amount to a Special account within a period of 30 days from the end of the current financial year in compliance with the provision of section 135(6) of the Act.

The unspent amount of previous year was transferred to unspent CSR account (on April 28, 2022) within 30 days from the Balance sheet date. i.e., March 31, 2022

For Natvarlal Vepari & Co.
Chartered Accountants
Firm Registration No- 106971W

Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: September 14, 2023
UDIN: 23124960BGVGFD2130

Natvarlal Vepari & Co.
CHARTERED ACCOUNTANTS
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ANNEXURE - B TO THE AUDITORS' REPORT

(Referred to in paragraph 2(f) under Report on Other Legal and Regulatory Requirements' section of our report to the Members of Baharampore Farakka Highways Limited of even date)

Report on the Internal Financial Controls with reference to Financial Statements under 143 (3)(i) of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls with reference to Financial Statements of Baharampore Farakka Highways Limited ("the Company") as of March 31, 2023 in conjunction with our audit of the Financial Statement of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control with reference to financial statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India ('ICAI'). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls with reference to Financial Statements based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls with reference to Financial Statements was established and maintained and if such controls operated effectively in all material respects.

903-904, 9th Floor, Raheja Chambers, 213, Nariman Point, Mumbai 400 021. Tel. : 6752 7100 Fax : 6752 7101 E-mail : nvc@nvc.in

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system with reference to Financial Statements and their operating effectiveness. Our audit of internal financial controls with reference to Financial Statements included obtaining an understanding of internal financial controls with reference to Financial Statements, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system with reference to Financial Statements.

Meaning of Internal Financial Controls with reference to Financial Statements

A company's internal financial control with reference to Financial Statements is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control with reference to Financial Statements includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Inherent Limitations of Internal Financial Controls with reference to Financial Statements.

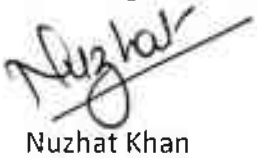
Because of the inherent limitations of Financial controls with reference to Financial Statements, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls with reference to Financial Statements to future periods are subject to the risk that the internal financial control with reference to Financial Statements may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Natvarlal Vepari & Co.
CHARTERED ACCOUNTANTS
903-904, 9th Floor, Raheja Chambers, 213, Nariman Point, Mumbai 400 021. Tel. : 6752 7100 Fax : 6752 7101 E-mail : nvc@nvc.in

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system with reference to Financial Statements and such internal financial controls with reference to financial statements were operating effectively as at March 31, 2023, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

For Natvarlal Vepari & Co.
Chartered Accountants
Firm Registration No- 106971W



Nuzhat Khan
Partner
M. No. 124960
Mumbai, Dated: September 14, 2023
UDIN: 23124960BGVGFD2130

Baharampore Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Balance Sheet as at 31 March 2023
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars	Note	As at March 31, 2023	As at March 31, 2022
ASSETS			
Non-current assets			
Property, Plant and Equipment	3	55.04	123.77
Investment Property	4	14.47	14.47
Other Intangible	5	68,572.36	73,907.88
Intangible assets under development	6	36,586.53	9,793.80
Financial Assets			
Other Financial Assets	7a	-	-
Non Current Tax Assets (Net)	8	654.32	779.66
Other non - current assets	9a	507.89	369.48
Current assets			
Financial Assets			
Trade Receivables	10	10.92	326.96
Cash and cash equivalents	11a	3,528.37	6,886.71
Bank balances other than cash and cash equivalents	11b	3,605.28	15,620.89
Other financial asset	7b	761.28	68.03
Other current assets	9b	1,198.12	2,117.72
Total Assets		**1,15,494.58**	**1,10,009.37**
EQUITY AND LIABILITIES			
EQUITY			
Equity share capital	12	21,725.30	4,500.00
Instruments entirely Equity in Nature	13	-	17,225.30
Other equity	14	(6,174.73)	3,778.78
Total equity		**15,550.57**	**25,504.08**
LIABILITIES			
Non-current liabilities			
Financial Liabilities			
Borrowings	15	56,103.77	63,272.03
Other financial liabilities	18a	-	51.07
Provisions	19a	-	6,793.42
Other non-current liabilities	20a	6,250.00	-
Current liabilities			
Financial Liabilities			
Short Term Borrowings	16	7,371.10	4,712.03
Trade payables	17		
i) total outstanding dues of micro and small enterprises		-	7.39
ii) total outstanding dues other than (i) above		8,148.43	3,524.86
Other financial liabilities	18b	2,018.23	285.56
Provisions	19b	18,349.88	4,793.17
Other current liabilities	20b	1,702.60	1,065.76
Total Equity and Liabilities		**1,15,494.58**	**1,10,009.37**

The accompanying notes are an integral part of the financial statements.

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner
Membership No. 124960

For and on behalf of the Board of Directors

Ankit Jain
Director
DIN No. : 09605599

Puneet Panchal
Director
DIN No. : 10050502

Place: Mumbai
Date: 14 September 2023

Place: Mumbai
Date: 14 September 2023

Baharampore Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Profit and Loss for year ended 31 March 2023
(All amounts are in Rs. lakh, unless stated otherwise)

Particulars	Note	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Revenue from Operations	23	41,930.69	24,911.72
Other Income	24	795.56	1,054.61
Total Income		**42,726.25**	**25,966.33**
Expenses			
Cost of Construction	25	28,463.85	12,039.90
Finance costs	26	7,642.64	7,615.69
Depreciation and amortization expense	27	5,343.10	4,856.27
Other expenses	28	11,213.50	3,793.01
Total expenses		**52,663.11**	**28,304.87**
Loss before exceptional items and tax		**(9,936.85)**	**(2,338.54)**
Exceptional Items		-	-
Loss before tax		**(9,936.85)**	**(2,338.54)**
Tax expenses			
Current Tax expenses		-	-
Deferred Tax expenses		-	-
(Excess)/Short provision of earlier years	22	16.66	1,306.61
Profit for the year		**(9,953.51)**	**(3,645.15)**
Other Comprehensive Income for the year		-	-
Total Comprehensive Income for the year		**(9,953.51)**	**(3,645.15)**
Earnings per equity share of Rs. 10 each	29		
Basic (Rs) (not annualised)		(6.25)	(8.10)
Diluted (Rs) (not annualised)		-	(8.10)

The accompanying notes are an integral part of these financial statements

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner
Membership No.:124960

Place: Mumbai
Date: 14 September 2023

For and on behalf of the Board of Directors

Ankit Jain
Director
DIN No. : 09605599

Puneet Panchal
Director
DIN No. : 10050502

Place: Mumbai
Date: 14 September 2023

Baharampore Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Cash Flow Statement for the year ended 31 March 2023
(All amounts are in Rs lakh, unless stated otherwise)

Particulars	Note	Year ended March 31, 2023	Year ended March 31, 2022
A Cash Flow from operating activities			
Profit before income tax		(9,936.85)	(2,338.54)
Adjustments for			
Add:			
Depreciation and amortisation expenses		5,343.10	4,856.27
Unwinding of Major Maintenance		-	-
Finance costs		7,480.51	7,504.01
Amortisation of Corporate guarantee		36.12	36.05
Interest on delayed payment of statutory dues		7.05	31.33
Interest on delayed payment of IE fees		39.57	-
Provision for Major Maintenance Expenditure		7,098.57	-
Other Receivable w/off		298.80	-
Less:			
Profit on sale of assets (Net)		(58.32)	-
Interest income on income tax refund		(111.90)	-
Interest received		(621.12)	(1,050.28)
Change in operating assets and liabilities			
(Increase)/decrease in other financial assets		(747.54)	31,761.47
(Increase)/decrease in other non-current assets		(174.53)	385.88
(Increase)/decrease in other trade receivable		17.24	-
(Increase)/decrease in other current assets		919.60	4,731.47
Increase/(decrease) in trade payables		4,616.15	2,757.84
Increase/(decrease) in other financial liabilities		1,018.82	(2,220.89)
Increase/(decrease) in provisions		(335.28)	(2,206.83)
Increase/(decrease) in other current liabilities		6,886.84	365.65
Cash generated from operations		21,776.82	44,613.43
Income taxes (paid) / refund		213.54	(4,689.79)
Net cash inflow/(outflow) from operating activities		**21,990.36**	**39,923.64**
B Cash flow from investing activities:			
Purchase of property, plant and equipment/ amount spent on Intangible asset including Intangible assets under development.		(26,793.00)	(11,693.34)
Sale proceeds of property, plant and equipment		119.75	-
Investment in fixed deposits		12,015.61	(15,620.89)
Interest received		675.42	982.25
Net cash inflow/(outflow) from investing activities		**(13,982.22)**	**(26,331.98)**
C Cash flow from financing activities			
Proceeds from Subordinate Debt (Refer Note 15 G)		400.00	-
Repayment of long term borrowings		(4,360.01)	(1,288.28)
Interest/Other Borrowing Cost paid (Refer Note (ii) below)		(7,406.48)	(7,789.83)
Net cash inflow/(outflow) from financing activities		**(11,366.49)**	**(9,078.11)**
Net increase/(decrease) in cash and cash equivalents		**(3,358.35)**	**4,513.55**
Add: Cash and cash equivalents at the beginning of the financial year	11a	6,886.71	2,373.15
Cash and cash equivalents at the end of the year	11a	**3,528.36**	**6,886.71**
Component of Cash and Cash Equivalent			
Cash on hand		30.17	30.80
Balances with Banks		998.20	359.92
With Collection Agencies		-	0.01
Term deposits with original maturity of less than three months		2,500.00	6,495.98
		3,528.36	**6,886.71**

Notes:
(i) Figure in brackets denote outflows
(ii) Interest Cost includes Interest capitalised to Intangible Asset under development Rs Nil (PY - Rs 377.71 Lakhs)
The accompanying notes are an integral part of these financial statements.

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No: 106971W

Nuzhat Khan
Partner
Membership No: 124960

Place: Mumbai
Date: 14 September 2023

For and on behalf of the Board of Directors

Ankit Jain
Director
DIN No.: 09605595

Puneet Panchal
Director
DIN No.: 10050502

Place: Mumbai
Date: 14 September 2023

Baharampore Farakka Highways Limited
CIN No : U45200MH2010PLC200748
Statement of Changes in Equity as at 31 March 2023
(All amounts are in Rs. lakh, unless stated otherwise)

Statement of Changes in Equity

A

Equity share capital	Amount
as at 31 March 2021	**4,500.00**
Changes in equity share capital	-
as at 31 March 2022	**4,500.00**
Changes in equity share capital	17,225.30
as at 31 March 2023	**21,725.30**

B Instruments entirely Equity In Nature

Compulsory Convertible Preference Shares	Amount
as at 31 March 2021	**17,225.30**
Changes in capital	-
as at 31 March 2022	**17,225.30**
Changes in capital	(17,225.30)
as at 31 March 2023	**-**

C Other Equity

Particulars	Capital Contribution	Reserves and Surplus	Total
	Corporate Guarantee	Retained Earnings	
Balance as at 31 March, 2021	**550.01**	**6,873.92**	**7,423.93**
Profit/(Loss) for the year	-	(3,645.15)	(3,645.15)
Other Comprehensive Income for the period	-	-	-
Total Comprehensive Income for the period	-	(3,645.15)	(3,645.15)
Balance as at 31 March, 2022	**550.01**	**3,228.77**	**3,778.78**
Profit/(Loss) for the year		(9,953.51)	(9,953.51)
Other Comprehensive Income for the period			
Total Comprehensive Income for the period	-	**(9,953.51)**	**(9,953.51)**
Balance as at 31 March 2023	**550.01**	**(6,724.74)**	**(6,174.73)**

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan

Partner
Membership No.:124960

Place: Mumbai
Date: 14 September 2023

For and on behalf of the Board of Directors

Ankit Jain
Director
DIN No. : 09605599

Puneet Panchal
Director
DIN No. : 10050502

Place. Mumbai
Date: 14 September 2023

1 **Corporate information**

Baharampore-Farakka Highways Limited was incorporated under the Companies Act, 1956, on 11th March, 2010 as a Special Purpose Vehicle for Design, Build, Finance, Operate & Transfer (DBFOT) Toll basis of 4 lanes from Kms 191.416 to 294.684 between Baharampore and Farakka in the state of West Bengal under NHDP Phase III.

NHAI has granted concession period of 25 years to the company for the project. Provisional Certificate under Article 14.3.2 (Schedule - J) of the concession Agreement has been obtained for 75.45 kms for the following stretch - 204.550 to 229.300 KMS - 24.75 KMS / 230.600 to 254.800 KMS - 24.20 KMS / 258.350 to 284.850 KMS - 26.50 KMS. Company has started to collect toll from 14th May, 2014 on receipt of provisional certificate of commencement from Independent consultant appointed by National Highway Authority of India.

Baharampore-Farakka Highways Limited has entered into an Agreement with the Purchaser Cube Highways and Infrastructure V PTE LTD, being a company based in Singapore and incorporated with the objective of acquiring and operating transportation projects to purchase the shares from Baharampore-Farakka Highways Limited (including the purchase of seller nominee shares by the purchaser nominees from the seller nominees) and Baharampore-Farakka Highways Limited has agreed to sell the shares to the Purchaser (including the sale of such portion of the sale shares which are held by the seller nominees to purchaser nominees).

2 **Basis of Preparation, Accounting judgements, estimates and assumptions and significant Accounting Policies:**

2.1 **Basis of preparation**

The Financial Statement of the Company comprises of the Balance Sheet as at March 31, 2023, the Statement of Profit and Loss (including other comprehensive income), the Statement of Changes in Equity, and the Summary Statement of Significant Accounting Policies, and other explanatory information (Collectively, the "Financial Statement"), as approved by the board of directors of the company at their meeting held on 14 September 2023.

The financial statements are prepared on an accrual basis of accounting and in accordance with the Indian Accounting Standards (Ind AS) notified under the companies (Indian Accounting standards) Rules, 2015 as amended by the companies (Indian Accounting standard) Rules 2016.
These financial statements are prepared under the historical cost convention on the accrual basis except for certain financial instruments, which are measured at fair values, which are disclosed in the Financial Statements viz;

These financial statements are prepared under the historical cost convention on the accrual basis except for certain financial instruments, which are measured at fair values, which are disclosed in the Financial Statements viz;

- certain financial assets and liabilities (including derivative instruments) and contingent consideration that is measured at fair value

- assets under service concession arrangement

The classification of assets and liabilities of the Company is done into current and non-current based on the operating cycle of the business of the Company. The operating cycle of the business of the Company is less than twelve months and therefore all current and non-current classifications are done based on the status of reliability and expected settlement of the respective asset and liability within a period of twelve months from the reporting date as required by Schedule III to the Companies Act, 2013.

Accounting policies have been consistently applied except whereas newly issued accounting standard is initially adopted or a revision to an existing accounting standard requires a change in the accounting policy hitherto in use.

The financial statements are presented in Indian Rupees ('INR') and all values are rounded to the nearest lakh, except otherwise indicated.

2.2 **Significant accounting judgments, estimates and assumptions**

The preparation of financial statements requires management's judgments, estimates and assumptions that impacts the reported amounts of revenues, expenses, assets and liabilities, and the accompanying notes thereon. Uncertainty about these assumptions and estimates could result in outcomes that might require a material adjustment to the carrying amount of assets or liabilities in future periods.

i) **Estimates:**

The preparation of the financial statements in conformity with IND AS requires management to make estimates, judgments and assumptions. These estimates, judgments and assumptions affect the application of accounting policies and the reported amounts of assets and liabilities, the disclosures of contingent assets and liabilities at the date of financial statements and reported amounts of revenues and expenses during the period. Accounting estimates could change from period to period. Actual results could differ from those estimates. Appropriate changes in estimates are made as management becomes aware of circumstances surrounding the estimates. Changes in estimates are reflected in the financial statement in the period in which changes are made and if material, their effects are disclosed in the notes to the financial statements.

ii) **Judgments:**

The Company's management has made the following judgments, which have the most significant effect on the amounts recognised in the separate financial statements, while formulating the Company's accounting policies:

iii) **Taxes:**

The Company is eligible for 100% tax holiday under section 80-IA of the Income Tax Act, 1961. As a result, timing differences arising and reversing during the tax holiday period are not recognized by the Company.

iv) **Recognition and measurement of other Provisions**

The recognition and measurement of other provisions is based on the assessment of the probability of an outflow of resources, and on past experience and circumstances known at the closing date. The actual outflow of resources at a future date may therefore, vary from the amount included in other provisions.

v) **Useful lives of property, plant and equipment**

The company reviews the useful life of property, plant and equipment at the end of each reporting period. This reassessment may result in change in depreciation expense in future periods.

vi) **Impairment of property, plant and equipment**

For property, plant and equipment and intangibles an assessment is made at each reporting date to determine whether there is an indication that the carrying amount may not be recoverable or previously recognised impairment losses no longer exist or have decreased. If such indication exists, the Company estimates the asset's or CGU's recoverable amount. A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised.

2 3 **Summary of significant accounting policies**

(a) **Current & Non Current classification**

Current Asset :

An asset shall be classified as current when it satisfies any of the following criteria:
(a) it is expected to be realized in, or is intended for sale or consumption in, the company's normal operating cycle;
(b) it is held primarily for the purpose of being traded
(c) It is expected to be realized within twelve months after the reporting date, or
(d) It is cash or cash equivalent unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

All other assets shall be classified as non-current.

Current Liabilities:

A liability shall be classified as current when it satisfies any of the following criteria:
i (a) it is expected to be settled in the company's normal operating cycle;
ii (b) it is held primarily for the purpose of being traded;
iii (c) it is due to be settled within twelve months after the reporting date : or
iv (d) the company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could at the option of the counterparty, result in its settlement by the issue of equity instruments do not effect its classification.

All other liabilities shall be classified as non-current.

(b) **Government grant**

Grants from the government are recognised at their fair value where there is a reasonable assurance that the grant will be received and the Company will comply with all attached conditions.
Government grants relating to income are deferred and recognised in the profit or loss over the period necessary to match them with the costs that they are intended to compensate and presented within other income.
Government grants relating to the purchase of property, plant and equipment (if any) are included in non-current liabilities as deferred income and are credited to profit or loss on a straight-line basis over the expected lives of the related assets and presented within other income.

(c) **Accounting of intangible assets under Service Concession arrangement:**

Company has Toll Road Concession rights where it Designs, Build, Finances, Operates and transfer (DBFOT) infrastructure used to provide public service for a specified period of time. These arrangements may include Infrastructure used in a public-to-private service concession arrangement for its entire useful life.
These arrangements are accounted for based on the nature of the consideration. The intangible asset model is used to the extent that the Company receives a right (a license) to charge users of the public service. The financial asset model is used when the Company has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services. When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for each component. If the Company performs more than one service (i.e., construction or upgrade services and operation services) under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable

Intangible asset model:

The Company recognises an intangible asset arising from a service concession arrangement when it has a right to charge for usage of the concession infrastructure. An intangible asset received as Consideration for providing construction or upgrade services in a service concession arrangement is measured at fair value on initial recognition by reference to the fair value of the services provided. Subsequent to initial recognition, the intangible asset is measured at cost, which includes capitalised borrowing costs, less accumulated amortisation.

The estimated useful life of an intangible asset in a service concession arrangement is the period from when the Company is able to charge the public for the use of the infrastructure to the end of the concession period.

Amortization of concession intangible assets:

Amortization is charged on a straight-line basis over the estimated useful lives . The estimated useful life and amortization method are reviewed at the end of each annual reporting period, with the effect of any changes in the estimate being accounted for on a prospective basis.

Finanacial Asset Model:

The Company recognises a financial asset arising from a service concession arrangement when it has an unconditional contractual right to receive cash or another financial asset from grantor for the construction or upgrade services provided. Such financial assets are measured at fair value on initial recognition and classified as loans and receivables.
Subsequent to initial recognition, the financial assets are measured at amortised cost. Under this model financial asset will be reduced as an when grant has received from grantor.

(d) **Property, plant and equipment:**

All items of property, plant and equipment are stated at historical cost less depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items
Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. The carrying amount of any component accounted for as a separate asset is derecognised when replaced. All other repairs and maintenance are charged to profit or loss during the reporting period in which they are incurred.
Gains and losses on disposals are determined by comparing proceeds with carrying amount. These are included in profit or loss within other gains/(losses).

Transition to Ind AS:
On transition to Ind AS, the Company has elected to continue with the carrying value of all of its property, plant and equipment recognised as at 1st April 2015 measured as per the previous GAAP and use that carrying value as the deemed cost of the property, plant and equipment.
Depreciation methods, estimated useful lives and residual value:
Depreciation is provided as per the useful lives of the assets as per schedule II of Companies Act, 2013 using Straight Line Method (SLM).

(e) **Investment property:**

Property that is held for long-term rental yields or for capital appreciation or both, and that is not occupied by the Company, is classified as investment property. Investment property is measured initially at its cost, including related transaction costs and where applicable borrowing costs. Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Company and the cost of the item can be measured reliably. All other repairs and maintenance costs are expensed when incurred. When part of an investment property is replaced, the carrying amount of the replaced part is derecognised.

Transition to Ind AS

Company has classified its freehold land under Investment property which were earlier classified under Fixed Asset under previous GAAP.

(f) **Financial Instruments**

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity

a Financial Assets

i) Initial Recognition

In the case of financial assets not recorded at fair value through profit or loss, financial assets are recognised initially at fair value plus transaction costs that are directly attributable to the acquisition of the financial asset. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognised on the trade date, i.e., the date that the Company commits to purchase or sell the asset.

ii) Subsequent Measurement

For purposes of subsequent measurement, financial assets are classified in following categories:

Financial Assets at Amortised Cost

Financial assets are subsequently measured at amortised cost if these financial assets are held within a business model whose objective is to hold these assets in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. Interest income from these financial assets is included in finance income using the effective rate interest ("EIR") method. Impairment gains or losses arising on these assets are recognised in Statement of Profit and Loss.

Financial Assets Measured at Fair Value

Financial assets are measured at fair value through other comprehensive income ("OCI") if these financial assets are held within a business model whose objective is to hold these assets in order to collect contractual cash flows or to sell these financial assets and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. Movements in the carrying amount are taken through OCI, except for the recognition of impairment gains or losses, interest revenue and foreign exchange gains and losses which are recognised in the Statement of Profit and Loss.

In respect of equity investments (other than for investment in subsidiaries and associates) which are not held for trading, the Company has made an irrevocable election to present subsequent changes in the fair value of such instruments in OCI. Such an election is made by the Company on an instrument by instrument basis at the time of transition for existing equity instruments/ initial recognition for new equity instruments.

Financial asset not measured at amortised cost or at fair value through OCI is carried at fair value through profit or loss.

iii) Impairment of Financial Assets

In accordance with Ind AS 109, the Company applies the expected credit loss ("ECL") model for measurement and recognition of impairment loss on financial assets and credit risk exposures

The Company follows 'simplified approach' for recognition of impairment loss allowance on trade receivables. Simplified approach does not require the Company to track changes in credit risk. Rather, it recognises impairment loss allowance based on lifetime ECL at each reporting date, right from its initial recognition.

For recognition of impairment loss on other financial assets and risk exposure, the Company determines that whether there has been a significant increase in the credit risk since initial recognition. If credit risk has not increased significantly, 12-month ECL is used to provide for impairment loss. However, if credit risk has increased significantly, lifetime ECL is used. If, in a subsequent period, credit quality of the instrument improves such that there is no longer a significant increase in credit risk since initial recognition, then the entity reverts to recognising impairment loss allowance based on 12-month ECL.

iv) De-recognition of Financial Assets

The Company de-recognises a financial asset only when the contractual rights to the cash flows from the asset expire, or it transfers the financial asset and substantially all risks and rewards of ownership of the asset to another entity

If the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Company recognizes its retained interest in the assets and an associated liability for amounts it may have to pay

If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

b Equity Instruments and Financial Liabilities

Financial liabilities and equity instruments issued by the Company are classified according to the substance of the contractual arrangements entered into and the definitions of a financial liability and an equity instrument.

i) Equity Instruments

An equity instrument is any contract that evidences a residual interest in the assets of the Company after deducting all of its liabilities. Equity instruments which are issued for cash are recorded at the proceeds received, net of direct issue costs. Equity instruments which are issued for consideration other than cash are recorded at fair value of the equity instrument.

ii) Financial Liabilities

1) Initial Recognition

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings and payables as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

2) Subsequent Measurement

The measurement of financial liabilities depends on their classification, as described below

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Financial liabilities are classified as held for trading if they are incurred for the purpose of repurchasing in the near term. Gains or losses on liabilities held for trading are recognised in the profit or loss

Financial guarantee contracts issued by the Company are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. Financial guarantee contracts are recognised initially as a liability at fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequently, the liability is measured at the higher of the amount of loss allowance determined as per impairment requirements of Ind AS 109 and the amount recognised less cumulative amortisation. Amortisation is recognised as finance income in the Statement of Profit and Loss.

Financial liabilities at amortised cost

After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortised cost using the Effective Interest Rate(EIR) method. Any difference between the proceeds (net of transaction costs) and the settlement or redemption of borrowings is recognised over the term of the borrowings in the Statement of Profit and Loss.

Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included as finance costs in the Statement of Profit and Loss.

Financial Liabilities are classified as current liabilities unless the company has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period. Where there is a breach of a material provision of a long-term loan arrangement on or before the end of the reporting period with the effect that the liability becomes payable on demand on the reporting date, the entity does not classify the liability as current, if the lender agreed, after the reporting period and before the approval of the financial statements for issue, not to demand payment as a consequence of the breach.

3) De-recognition of Financial Liabilities

Financial liabilities are de-recognised when the obligation specified in the contract is discharged, cancelled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as de-recognition of the original liability and recognition of a new liability. The difference in the respective carrying amounts is recognised in the Statement of Profit and Loss.

c Offsetting Financial Instruments

Financial assets and financial liabilities are offset and the net amount is reported in the Balance Sheet if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis to realise the assets and settle the liabilities simultaneously.

(g) Cash and cash equivalents:

For the purpose of presentation in the statement of cash flows, cash and cash equivalents includes cash on hand, deposits held at call with financial institutions, other short-term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value, and bank overdrafts. Bank overdrafts are shown within borrowings in current liabilities in the balance sheet.

(h) Income Tax:

i Current Income Tax

Current income tax is recognised based on the estimated tax liability computed after taking credit for allowances and exemptions in accordance with the Income Tax Act, 1961. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, at the reporting date.

Minimum Alternative Tax ("MAT") credit is recognised as an asset only when and to the extent there is convincing evidence that the Company will pay normal income tax during the specified period. In the year in which the MAT credit becomes eligible to be recognised as an asset in accordance with the recommendations contained in Guidance Note issued by the Institute of Chartered Accountants of India, the said asset is created by way of a credit to the Statement of Profit and Loss and shown as MAT Credit Entitlement. The Company reviews the same at each Balance Sheet date and writes down the carrying amount of MAT Credit Entitlement to the extent there is no longer convincing evidence to the effect that the Company will pay normal Income Tax during the specified period.

ii **Deferred Tax**

Deferred Tax Asset shall be recognised for the carryforward of unused tax losses and unused tax credits to the extent that it is probable that future taxable profit will be available against which the unsused tax losses and unused tax credits can be utilised.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Current and deferred tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity. In this case, the tax is also recognised in other comprehensive income or directly in equity, respectively.

The Company is eligible for deduction under Section 80- IA of the Income Tax Act, 1961 and the concession period of the Company's project falls within the tax holiday period as defined in Section 80-IA. Since deferred tax on timing differences between Accounting income and Taxable income that arise during the year is reversing during such tax holiday period, no deferred tax asset or liability arises and accordingly no provision is made in the accounts.

(i) **Leases**

The Company assesses whether a contract contains a lease, at inception of a contract. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Company assesses whether

(i) the contract involves the use of an identified asset

(ii) the Company has substantially all of the economic benefits from use of the asset through the period of the lease and
(iii) the Company has the right to direct the use of the asset.

At the date of commencement of the lease, the Company recognizes a right-of-use asset("ROU") and a corresponding lease liability for all lease arrangements in which it is a lessee, except for leases with a term of twelve months or less (short-term leases) and low value leases. For these short term and low value leases, the Company recognizes the lease payments as an operating expense on a straight-line basis over the term of the lease.

Certain lease arrangements includes the options to extend or terminate the lease before the end of the lease term. ROU assets and lease liabilities includes these options when it is reasonably certain that they will be exercised.

The right-of use assets are initially recognized at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or prior to the commencement date of the lease plus any initial direct costs less any lease incentives. They are subsequently measured at cost less accumulated depreciation and impairment losses

Right-of-use assets are depreciated from the commencement date on a straight line basis over the shorter of the lease term and useful life of the underlying asset. Right of use assets are evaluated for recoverability whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. For the purpose of impairment testing, the recoverable amount (i.e.the higher of the fair value less cost to sell and the value-in-use) is determined on an individual asset b.asis unless the asset does not generate cashflows that are largely independent of those from other assets. In such cases, the recoverable amount is determined for the Cash Generating Unit (CGU) to which the asset belongs.

The lease liability is initially measured at amortized cost at the present value of the future lease payments. The lease payments are discounted using the interest rate implicit in the lease or, if not readily determinable, using the incremental borrowing rates in the country of domicile of these leases. Lease liabilities are remeasured with a corresponding adjustment to the related right of use asset if the Company changes its assessment if whether it will exercise an extension or a termination option. Lease liability and ROU asset have been separately presented in the Balance Sheet and lease payments have been classified as financing cash flows.

(j) **Impairment of Assets:**

Intangible assets that have an indefinite useful life are not subject to amortisation and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are companyed at the lowest levels for which there are separately identifiable cash inflows which are largely independent of the cash inflows from other assets or companys of assets (cash-generating units). Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

(k) **Segment reporting:**

The Company's operations constitutes a single business segment namely "Infrastructure Development" as per Ind As 108, further the Company's operation are within single geographical segment which is India.

(l) **Borrowings Cost:**

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale.
Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation.
Other borrowing costs are expensed in the period in which they are incurred

(m) **Other Financial Asset - Financial guarantee contract:**

Under Ind AS, the financial guarantee given by a holding company to lender on behalf of the Company for its borrowings are recognised initially at fair value which is subsequently amortised as an interest expense to the Statement of Profit and Loss. This transaction was not recorded under the previous GAAP.
The fair value of financial guarantees is determined as the present value of the difference in net cash flows between the contractual payments under the debt instrument and the payments that would be required without the guarantee.

(n) **Provisions and Contingent Liabilities and Contingent Assets:**

Provisions

Provisions for legal claims are recognised when the Company has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are not recognised for future operating losses.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period. The discount rate used to determine the present value is a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as interest expense.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period. The discount rate used to determine the present value is a discount rate that reflects current market assessments of the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as interest expense.

Contingent liability is disclosed in the case of :

a) a present obligation arising from a past event, when it is not probable that an outflow of resources will happen to settle the obligation
b) a possible obligation, unless the probability of outflow of resources is remote.

Contingent asset are disclosed (if any), where an inflow of economic benefits are probable.

Contingent Assets

A contingent asset is not recognised unless it becomes virtually certain that an inflow of economic benefits will arise. When an inflow of economic benefits is probable, contingent assets are disclosed in the financial statements. Contingent liabilities and contingent assets are reviewed at each balance sheet date.

(o) **Earnings per share:**

Basic Earnings per share is calculated by dividing the net profit / (loss) after tax for the period attributable to equity shareholders of the Company by the weighted average number of equity in issue during the period. Diluted earnings per share is calculated by dividing the net profit after tax for the year attributable to equity shareholders of the company by the weighted average number of equity shares determined by assuming conversion on exercise of conversion rights for all potential dilutive securities.

(p) **Revenue Recognition:**

Revenue is measured at the fair value of the consideration received or receivable. The Company recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Company's activities, as described below

Toll revenue

The income from toll revenue from operations of the facility is accounted on receipt basis.

Contract revenue (construction contracts)

The Company has adopted Ind AS 115 " Revenue from Contracts with Customers " for recognising revenue. The Company derives revenue primarily from construction contracts. To recognize revenue, the Company applies the following five step approach: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligation in the contract, and (5) recognize revenue when a performance obligation is satisfied.

At contract inception, the Company assesses its promise to transfer services to a customer to identify separate performance obligations.. The Company applies judgment to determine whether each service promised to a customer are capable of being distinct, and are distinct in the context of the contract, if not, the promised services are combined and accounted as a single performance obligation. For performance obligations where control is transferred over time, revenue are recognized by measuring progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the services to be provided. The method for recognizing revenues and cost depends on the nature of the services rendered.

Other Income

Insurance and other claims are recognized as revenue on certainty of receipt basis.
Dividend income is recognized when the right to receive is established. Other items of income are accounted as and when the right to receive arises and recovery is certain.

(q) **Critical accounting estimates and judgements:**

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that may have a financial impact on the entity and that are believed to be reasonable under the circumstances.

The Company makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities are disclosed below

Applicability of service concession arrangement accounting to toll roads concessionaire arrangements

Appendix A "Service concession arrangements" applies to "public- to-private" service concession arrangements, which can be defined as contracts under which the grantor transfers to a concession holder the right to deliver public services that give access to the main public facilities for a specified period of time in return for managing the infrastructure used to deliver those public services.

More specifically, Appendix C applies to public-to-private service concession arrangements if the grantor:
i. Controls or regulates what services the operator must provide with the infrastructure, to whom it must provide them, and at what price; and
ii. Controls through ownership or otherwise – any significant residual interest in the infrastructure at the end of the term of the arrangement.

In assessing the applicability the management has exercised significant judgement in relation to the underlying ownership of the assets, the ability to enter into power purchase arrangements with any customer, ability to determine prices etc. in concluding that the arrangements don't meet the criteria for recognition as service concession arrangements.

(ii) Impairment of concession intangible assets:
The Company tests intangible assets and cash generating units have suffered any impairment, in accordance with the accounting policy. The recoverable amount of each cash generating unit has been determined based on the greater of value-in-use and fair value less costs to sell calculations. Calculations are prepared on the basis of management's assumptions and estimates.

(iii) Fair valuation of other financial instruments:
The Company records the resurfacing obligation for its present obligation as per the concession arrangement to maintain the toll roads during the concession period. The provision is included in the financial statements at the present value of the expected future payments. The calculations to discount these amounts to their present value are based on the estimated timing of expenditure occurring on the roads.

The discount rate used 10.75% to value the resurfacing provision at its present value is determined through reference to the nature of provision and risk associated with the expenditure.

Baharampore Farakka Highways Limited
Notes to the financial statements for the year ended 31 March 2023
(All amounts are in Rs. lakh, unless stated otherwise)

3 Property, Plant and Equipment

(Rs. in Lakh)

Particulars	Plant & Equipment	Land	Furniture	Computers	Office equipment	Vehicles	Total
Gross Carrying Value							
Balance as at 1 April 2021	**22.17**	**61.43**	**2.04**	**17.30**	**36.83**	**42.98**	**182.76**
Additions	27.76	-	-	-	1.17	18.29	47.22
Disposals	-	-	-	-	-		-
Balance as at 31 March 2022	**49.93**	**61.43**	**2.04**	**17.30**	**38.01**	**61.27**	**229.98**
Additions	-	-	-	-	-	0.28	0.28
Disposals	-	61.43	-	-	-	11.61	73.04
Balance as at 31 March 2023	**49.93**	**0.00**	**2.04**	**17.30**	**38.01**	**49.94**	**157.22**
Accumulated Depreciation							
Balance as at 1 April 2021	**(7.17)**	**-**	**(0.91)**	**(17.30)**	**(35.51)**	**(35.85)**	**(96.73)**
Depreciation for the year	(1.67)	-	(0.20)	-	(0.47)	(7.14)	(9.48)
Disposals	-	-	-	-	-	-	-
Balance as at 31 March 2022	**(8.83)**	**-**	**(1.11)**	**(17.30)**	**(35.98)**	**(42.99)**	**(106.21)**
Depreciation for the period	(3.30)		(0.20)	-	(0.69)	(3.39)	(7.58)
Disposals	-	-	-	-	-	(11.61)	(11.61)
Balance as at 31 March 2023	**(12.13)**	**-**	**(1.31)**	**(17.30)**	**(36.67)**	**(34.77)**	**(102.18)**
Net Block							
Balance as at 31 March 2023	**37.80**	**0.00**	**0.72**	**(0.00)**	**1.35**	**15.17**	**55.04**
Balance as at 31 March 2022	**41.10**	**61.43**	**0.93**	**-**	**2.03**	**18.28**	**123.77**

4 Investment Property

Particulars	As at March 31, 2023	As at March 31, 2022
Land		
Carrying Value	14.47	14.47
Total	**14.47**	**14.47**

i The Fair Value of the Land as at the Balance Sheet date is Rs. 18.90 Lakh

ii The land is under lien by way of mortgage to SBI Cap Trustee Company Limited by way of charge dated 3rd March,2011 and further modified dated 30th May 2016.

iii The Company has fair valued its Investment Property vide report dated 15th April 2022, however the valuation is not done by the registered valuer as defined under rule 2 of the Companies (Registered Valuers and Valuation) Rules , 2017.

iv Estimation of fair value

The company obtains independent valuations for its investment properties at least annually. The best evidence of fair value is current prices in an active market for similar properties. Where such information is not available, the company consider information from a variety of sources including:

The fair values of investment properties have been determined by an accredited Independent Valuer. The main inputs used are the rental growth rates, expected vacancy rates, terminal yields and discount rates based on comparable transactions and industry data. The resulting fair value estimates for investment property are included in level 3.

a current prices in an active market for properties of different nature or recent prices of similar properties in less active markets, adjusted to reflect those differences.

b discounted cash flow projections based on reliable estimates of future cash flows.

c capitalised income projections based upon a property's estimated net market income, and a capitalisation rate derived from an analysis of market evidence.

5 Other Intangible assets (Toll Rights)

Particulars	Amount
Gross Block	
Balance as at 01 March 2021	**71,399.17**
Additions	29,976.49
Disposals	-
Balance as at 31 March 2022	**1,01,375.66**
Additions	
Disposals	-
Balance as at 31 March 2023	**1,01,375.66**
Accumulated Depreciation	
Balance as at 01 March 2021	**22,620.98**
Amortisation	4,846.80
Disposals	-
Balance as at 31 March 2022	**27,467.78**
Amortisation	5,335.52
Disposals	-
Balance as at 31 March 2023	**32,803.30**
Net Block	
Balance as at 31 March 2023	68,572.36
Balance as at 31 March 2022	73,907.88

6 Intangible Assets under Development (Refer Foot Note for details)

Particulars	Amount
Balance as at 01 March 2021	**27,746.15**
Addition : Capitalised to IAUD	12,023.84
Capitalized	(29,976.19)
Balance as at 31 March 2022	**9,793.80**
Addition : Capitalised to IAUD	26,792.72
Capitalized	-
Balance as at 31 March 2023	**36,586.52**

(a) Intangible Asset Under Development (IAUD) Ageing

IAUD for a period of	As at March 31, 2023	As at March 31, 2022
Less than 1 year	26,792.72	9,793.80
1-2 years	9,793.80	-
2-3 years	-	-
More than 3 years	-	-
Total	**36,586.52**	**9,793.80**

(b) Intangible Asset Under Development whose completion is overdue or has exceeded its cost compared to its original plan

IAUD for a period of	As at March 31, 2023	As at March 31, 2022
Less than 1 year	36,586.52	-
1-2 years	-	9,793.80
2-3 years	-	-
More than 3 years	-	-
Total	**36,586.52**	**9,793.80**

Baharampore Farakka Highways Limited

Notes to the financial statements for the year ended 31 March 2023

(All amounts are in Rs. lakh, unless stated otherwise)

Foot Note - Intangible Assets under Development

Particulars	April 2021- March 2022	Transferred to Intangible Asset	As at 31st March 2022	April 2022- 31 March 2023	As at 31 March 2023
A) EPC Cost					
Subcontracting Expenses	11,609.43	(5,718.62)	9,760.61	26,762.53	36,523.13
Sub-total (A)	**11,609.43**	**(5,718.62)**	**9,760.61**	**26,762.53**	**36,523.13**
B) Material Cost					
Building Material Consumption	-	-	-	-	-
Transportations & Others	-	-	-	-	-
Sub-total (B)	-	-	-	-	-
C) Finance Cost					
Interest on Term Loans	375.34	-	-	-	-
Interest on Sub Debt	2.36	-	-	-	-
Interest on Others	-	-	-	-	-
Upfront Fees	-	-	-	-	-
Finance Charges	-	-	-	-	-
Income from Investment	-	-	-	-	-
Interest earned on Fixed Deposit	-	-	-	-	-
Sub-total (C)	**377.71**	-	-	-	-
D) Pre-operative Expenses					
Professional Fees	36.70	-	33.20	30.20	63.39
Project Development Fees	-	-	-	-	-
Insurance Charges	-	-	-	-	-
Stamping & Franking	-	-	-	-	-
SPV Management Fees	-	-	-	-	-
Sub-total (D)	**36.70**	-	**33.20**	**30.20**	**63.39**
TOTAL (A+B+C+D)	**12,023.84**	**(5,718.62)**	**9,793.80**	**26,792.72**	**36,586.53**
TOTAL (A+B+C+D)	**12,023.84**	**(5,718.62)**	**9,793.80**	**26,792.72**	**36,586.53**

7 Other financial assets
(Unsecured unless otherwise stated)

	Particulars	As at March 31, 2023	As at March 31, 2022
7a	Non-current		
	Unsecured, considered good	-	-
7b	Current		
	Unsecured, considered good		
	Interest accrued on Financial Asset	13.74	68.03
	Other receivables	1.85	-
	Unbilled revenue	745.69	-
	Total	761.28	68.03

8 Non Current Tax assets

Particulars	As at March 31, 2023	As at March 31, 2022
Prepaid Taxes (Net of Provisions)	654.32	779.66
Total	654.32	779.66

9 Other Assets

	Particulars	As at March 31, 2023	As at March 31, 2022
9a	Non current assets		
	Balance with Government Authorities	254.33	79.73
	Unammortised Guarantee Commission	253.56	289.75
	Total	507.89	369.48
9b	Current assets		
	Prepaid Expenses	35.28	28.17
	Unammortised Guarantee Commission	36.19	36.12
	Advances to Contractors /Suppliers	1,126.65	2,053.43
	- Related Party (refer note 34)		
	- Hindustan Construction Co Limited (By-pass Section)	*1,101.49*	*2,040.31*
	- Others	*25.16*	*13.12*
	Total	1,198.12	2,117.72

10 Trade receivable

Particulars	As at March 31, 2023	As at March 31, 2022
(Unsecured Considered good)		
Utility shifting and COS	10.92	326.96
Total	10.92	326.96

10a Trade Receivable Ageing Schedule

Undisputed Trade Receivable from Bill date

Range of O/s period	As at March 31, 2023	As at March 31, 2022
Unbilled	-	-
Not Due	-	-
less than 6 months	-	9.83
6 months - 1 year	-	8.16
1-2 year	10.92	38.73
2-3 year	-	103.47
> 3 years	-	166.77
Total	10.92	326.96

Disputed Receivable
*There are no disputed Trade Receivable

11a Cash and cash equivalents

Particulars	As at March 31, 2023	As at March 31, 2022
Cash on hand	30.17	30.80
Balances with Banks		
In current accounts	998.20	359.92
With Collection Agencies	-	0.01
Term deposits with original maturity of less than three months	2,500.00	6,495.98
Total	**3,528.37**	**6,886.71**

There are no repatriation restrictions with regard to cash and cash equivalents as at the end of the reporting period and prior periods.

11b Other bank balances

Particulars	As at March 31, 2023	As at March 31, 2022
Fixed deposits kept for DSRA (maturity of more than three months but less than 12 months)	3,605.28	15,620.89
Total	**3,605.28**	**15,620.89**

There are no repatriation restrictions with regard to Other Bank Balance as at the end of the reporting period and prior periods.

12 Equity Share capital

Particulars	As at March 31, 2023	As at March 31, 2022
Authorised		
225,000,000 (31 March 2022: 45,000,000) equity shares of Rs 10/- each	22,500.00	4,500.00
Issued, subscribed and fully paid up		
217,253,000 (31 March 2022:45,000,000) equity shares of Rs 10/- each.	21,725.30	4,500.00
	21,725.30	**4,500.00**

a Reconciliation of number of shares

Particulars	No of Equity Shares (in lakh) As at March 31, 2023	As at March 31, 2022
As at the begning of the year	4,50,00,000	4,50,00,000
Add : 9% Compulsorily Convertible Cumulative Preference Shares(CCCPS) converted to Equity	17,22,53,000	
Add: Issued during the period / year	-	-
As at the end of the period / year	**21,72,53,000**	**4,50,00,000**

b Rights, preferences and restrictions attached to shares

Equity shares:

i) The company has only one class of equity shares having par value of Rs 10 per share. Each holder of equity shares is entitled to one vote per share.

ii) In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.

c Shares held by holding/ ultimate holding company and/ or their subsidiaries/ associates

Out of equity shares issued by the company, shares held by its holding company, ultimate holding company and their subsidiaries/ associates are as below:

Particulars	As at March 31, 2023	As at March 31, 2022
HCC Concessions Limited and its Nominees, the holding company (Till 28 March 2023)		
217,253,000 (31 March 2022: 44,999,900) equity shares of Rs 10/- each	-	4,499.99
Cube Highways and Infrastructure V Pte. Ltd. and its Nominees, the holding company (w.e.f. 29 March 2023)		
217,253,000 (31 March 2022: NIL) equity shares of Rs 10/- each.	21,725.30	-
Hindustan Construction Company Limited, the ultimate holding company		
Nil (31 March 2022: 100) equity shares of Rs 10/- each.	-	0.01

d Details of equity shares held by shareholders holding more than 5% of the aggregate shares in the Company

Particulars	As at March 31, 2023		As at March 31, 2022	
	No of shares	% of Shareholding	No of shares	% of Shareholding
Equity shares of Rs 10/- each fully paid				
HCC Concessions Limited and its nominees	-	100.00%	4,50,00,000	100.00%
Cube Highways and Infrastructure V Pte. Ltd. and its nominees (refer note 15 G)	21,72,53,000	100.00%	-	0.00%

e Shares reserved for issue under options : Nil

f Shareholding of Promoters

Shares held by promoters at 28 March 2023

Name of the Promoter	No of Shares	% of total shares	% change 2021-22
HCC Concessions Limited	-	-	(100.00)
Cube Highways and Infrastructure V Pte. Ltd. and its nominees	21,72,52,994	100.00	100.00
	21,72,52,994		

Shareholding of Promoters

Shares held by promoters at March 31, 2022

Name of the Promoter	No of Shares	% of total shares	% change 2020-21
HCC Concessions Limited	4,50,00,000	100.00	-
	4,50,00,000		

13 Instruments entirely Equity in Nature

Particulars	As at March 31, 2023	As at March 31, 2022
Compulsory Convertible Preference Shares (Refer Note Below)	-	17,225.30
Total	-	17,225.30

Compulsory Convertible Preference Shares

Particulars	As at March 31, 2023	As at March 31, 2022
Authorised		
Nil (31 March 2022:180,000,000) 9% Compulsorily Convertible Cumulative Preference Shares(CCCPS) of Rs 10/- each	-	18,000.00
Issued, subscribed and fully paid up		
Nil (31 March 2022:172,253,000) 9% Compulsorily Convertible Cumulative Preference Shares(CCCPS) of Rs 10/- each Refer note (e) below	-	17,225.30
Total	-	17,225.30

a **Reconciliation of number of shares**

Particulars	Preference Shares	
	No of Shares (Nos. In lakh)	Amount
Balance as at the 1 April 2022	1,722.53	17,225.30
Add: Issued during the period	-	-
Less : Converted to Equity Share Capital	(1,722.53)	-
Balance as at 28 Feb 2023	-	17,225.30

b **Terms/ rights attached to 9% Compulsorily Convertible Cumulative Preference Shares(CCCPS)**

i) The CCCPS shall carry a dividend of 9% per annum. The period for which a dividend will be payable on CCCPS will be calculated from the date of allotment of CCCPS up to the date on which the CCCPS are converted into fully paid-up Equity Shares. The dividend payout/obligation is at the discretion of the issuer of the Instrument.

ii) One CCCPS of face value of Rs 10/- (Rupees Ten only) issued at par will be compulsorily and automatically converted into one fully paid-up Equity Share of Rs 10/- (Rupees Ten only) each on 7th September 2026 or subsequent date as may be mutually agreed from the date of allotment without any application or any further act on the part of the holder of the CCCPS.

iii) The Equity Shares arising out of the conversion of the CCCPS shall rank *pari passu*, in all respects including voting and dividend, with the existing Equity Shares.

iv) The CCCPS shall rank for capital and dividend (including all dividends undeclared up to the commencement of winding up) and for repayment of capital in a winding up, pari passu inter se and in priority to the Equity Shares of the Company but shall not confer any further or other right to participate either in profits or assets and that preferential rights shall automatically cease on conversion of these shares into Equity Shares.

v) The holders of CCCPS (before conversion) shall have the right to receive all notices of general meetings of the Company but shall not confer on the holders thereof the right to vote at any meetings of the Company save to the extent and in the manner provided in the Companies Act, 2013, or any re-enactment thereof. The rights and terms attached to the CCCPS may be modified or dealt with by the Directors in accordance with the provisions of the Articles of Association(AoA) of the Company.

e On 2 August 2022 company has converted 9% Compulsorily Convertible Cumulative Preference Shares(CCCPS) into Equity shares.

14 Other Equity

Particulars	As at March 31, 2023	As at March 31, 2022
Capital Contribution (Corporate Guarantee) (Refer Note 14A)	550.01	550.01
Reserves and Surplus (Refer Note 14B)	(6,724.74)	3,228.77
Total	(6,174.73)	3,778.78

A **Capital Contribution (Corporate Guarantee)**

Particulars	As at March 31, 2023	As at March 31, 2022
Opening balance	550.01	550.01
Capital Contribution (Corporate Guarantee)	-	-
Closing Balance	550.01	550.01

B **Reserves and surplus**

Particulars	As at March 31, 2023	As at March 31, 2022
Retained Earnings	(6,724.74)	3,228.77
Total reserves and surplus	(6,724.74)	3,228.77

Surplus in the Statement of Profit and Loss

Particulars	As at March 31, 2023	As at March 31, 2022
Opening balance	3,228.77	6,873.92
Add: Profit / (Loss) for the period	(9,953.51)	(3,645.15)
Closing Balance	(6,724.74)	3,228.77

15 Long Term Borrowings

Particulars	As at March 31, 2023	As at March 31, 2022
Secured		
Term loans		
From Banks	55,341.03	59,054.98
From Financial Institution	8,133.84	8,761.08
Secured - Total	63,474.87	67,816.06
Unsecured		
Subordinate loan	-	168.00
Unsecured - total	-	168.00
Total non current borrowings	**63,474.87**	**67,984.06**
Less: Current maturity of long term debt (Note 16)	(7,371.10)	(4,712.03)
Non current borrowings	**56,103.77**	**63,272.03**

Foot Note

A **Rupee term Loan I**

i The above Term Loans from Banks are Secured by way of pari-passu first charge on all assets both present and future, excluding the project assets as defined in the Concession Agreement & pledge of 51% shareholding of the prior promoters.
The land is under lien by way of mortgage to SBI Cap Trustee Company Limited by way of charge dated 3rd March,2011.

ii Rupee Term Loan I carry Interest ranging 9.75% to 10.75% p.a. (Banks are in process of reset of interest.)

iii Terms of Repayment : Repayable in 52 unequal consecutive quarterly installments commencing from March 31,2016 to 30 June 2029 ranging from Rs 1,40,29,250/- to Rs 35,07,31,250/- on the repayment dates and in the percentages as mentioned in the amortization schedule as set forth in Schedule V of the Common Loan Agreement executed on 28th September,2010 and amended time to time.

B **Rupee Term Loan II**

i Above term Loans are Secured by way of pari-passu first charge on all assets both present and future, excluding the project assets as defined in the Concession Agreement & pledge of 51% shareholding of the prior promoters.
The land is under lien by way of mortgage to SBICap Trustee Company Limited by way of charge modified dated 30th May 2016.

ii Rupee Term Loan II carry Interest rate ranging 9.75% to 11% p.a. (Banks are in process of reset of Interest.)

iii Terms of Repayment : Repayable in 52 unequal consecutive quarterly installments commencing from June 30,2018 to 30 September 2031 ranging from Rs. 22,98,375/- to Rs. 12,18,13,875/- on the repayment dates and in the percentages as mentioned in the amortization schedule as set forth in Schedule V of the Supplemental Loan Agreement executed on 21st January 2016 and amended time to time.

C **Subordinate Loan**

Subordinate Loans carry rate of Interest of 9.75% p.a. and repayable after Senior Debt . Post SPA signed between HCC Concessions Limited and Cube Highways and Infrastructure V Pte Ltd (Cube) the said Senior debt is repayable by the Cube and therefore the same is shown as current financial libility as at March 31, 2023.

D **Arbitration Bank Guarantee Security**

i Priority Charge over all receivables cash flows of the Company.

ii Pledge of unencumbered equity shares of the Company. (To the extent of proportionate amount of Bank Guarantee furnished)

iii Pledge of unencumbered equity shares of the Holding Company held by HCC Infrastructure Company Limited. (To the extent of proportionate amount of Bank Guarantee furnished)

E Details of Maturity profile of the Long term borrowing is given under note no 31

F **Utilisation of Borrowings taken from Bank and Financial Institution**

The company has not taken any fresh loan from banks and financial institutions during the period.

G **Share Purchase Agreement**

Deed of Amendment cum confirmation is signed between the lenders and the borrower vide agreement dated March 20, 2023. All the Obligations of the erstwhile promoter " HCC Concessions Limited " (HCC) now rest with new promoter i.e., " Cube Highways and Infrastructure V Pte Ltd" (Cube). This is in accordance with Share Purchase Agreement (SPA) signed between HCC and Cube vide agreement dated February 15, 2023. Pursuant to signing of SPA the Equity shares of the Company was acquired by Cube on March 28, 2023 and 51% of shareholding is pledge with the lenders as per the terms of SPA and the agreement with the lenders.

Since there is no changes to the terms and condition with the lenders for the existing borrowing of the Company , the Current Maturities and Repayment schedule is as per the existing Common Loan agreement.

As per the Amendment cum confirmation is signed between the lenders and the borrower vide agreement dated March 20, 2023, the new promoter i.e., Cube will be giving guarantee to the lenders but the same is yet to be executed and the orignal guarantee of the erstwhile promoter i.e., HCC is continuing.

16 Short Term Borrowing

Particulars	As at March 31, 2023	As at March 31, 2022
Secured		
Current Maturities of Long term debt (Refer Note 15)	7,371.10	4,712.03
Total	**7,371.10**	**4,712.03**

17 Trade payables

Particulars	As at March 31, 2023	As at March 31, 2022
Trade Payables (Including Retention)		
- Related Party		
Hindustan Construction Company	4,652.10	1,313.01
HCC Infrastructure Company Limited	791.92	793.98
HCC Concessions Limited	531.38	208.73
HCC Operations & Maintenance Limited	1,428.15	563.16
Highbar Technologies Limited	4.52	7.85
Highbar Technocrat Limited	0.85	2.21
- Others	739.51	635.92
- Micro and small enterprises (Including Interest)	-	7.39
Total	**8,148.43**	**3,532.25**

a **Outstanding dues to Micro and Small Enterprises:**

The Company has amount due to suppliers under the Micro, Small and Medium Enterprises Development Act, 2006, (MSMED Act) as at March 31, 2023. The disclosure pursuant to the said Act is as under:

(i) Principal amount remaining unpaid to any supplier as at the end of the accounting year	-	7.39
(ii) Interest due thereon remaining unpaid to any supplier as at the end of the accounting year	-	-
(iii) The amount of interest paid to supplier during the year	-	2.23
(iv) The amount of interest due and payable for the year	-	-
(v) The amount of interest accrued and remaining unpaid at the end of the accounting year	-	-
(vi) The amount of further interest due and payable even in the succeeding year, until such date when the interest dues as above are actually paid	-	-

The figures for the year ended 31 March 2023 have been determined to the extent such parties have been identified on the basis of information collected by the Management. This has been relied upon by the auditors.

b **Trade Payable Ageing Schedule**

Ageing from Bill date

Range of O/s period	As at March 31, 2023	As at March 31, 2022
MSME		
Less than 1 year	-	7.39
Others		
Unbilled	4,658.74	-
Not Due	30.97	-
Less than 1 year	2,390.00	3,314.7
1-2 years	979.36	164.59
2-3 year	73.18	7.14
> 3 years	16.18	38.43
Total	**8,148.42**	**3,532.25**

18 Other financial liabilities

	Particulars	As at March 31, 2023	As at March 31, 2022
18a	**Non-current**		
	Interest accrued		51.07
	- Related Party - HCC Concessions Limited	-	
	Total	**-**	**51.07**
18b	**Current**		
	Unsecured		
	Subordinate loan (Refer Note 15 C)	568.00	-
	Interest accrued		
	- Related Party - HCC Concessions Limited (refer note 15 C)	85.68	-
	Retention Payable	1,262.75	204.37
	- Related Party - Hindustan Construction Co. Ltd		
	Interest accrued on borrowings	101.80	81.19
	Total	**2,018.23**	**285.56**

19 Provisions

	Particulars	As at March 31, 2023	As at March 31, 2022
19a	**Non-current**		
	Provision for major maintenance	-	6,793.42
	Total	**-**	**6,793.42**
19b	**Current**		
	Provision for major maintenance	18,349.88	4,793.17
	Total	**18,349.88**	**4,793.17**

Major maintenance

i Major maintenance is to preserve the structural integrity of the road i.e. to achieve its original expected operational life. The wear and tear for each year is computed based on the technical report. The maintenance cost / bituminous overlay may vary based on the actual usage during maintenance period. Accordingly on the grounds of matching cost concept and based on technical estimates, a provision for major maintenance expenses is reviewed and is provided for in the accounts annually.

As per the concession agreement, Company had contractual obligation to carry out resurfacing operation. Provision of Major maintenance are reviewed on yearly basis and Based on the technical reports taken during the previous year, resurfacing operation has been estimated as at March 28,2023.

ii) During the current year the Company has entered in to Major Maintainence Agreement with HCC Concession Limited vide agreement dated March 20, 2023 for Execution Of Rehabilitation And Overlay At Project Highway for Rs 18349.88 lacs. As per the Contract the contractor needs to complete the work of major maintainance within 12 months (excluding 4 months of monsoon). Thus the entire provision amount lying as at March 28, 2023 is shown as current in the financial statements including the provision made during the year amounting to Rs 7098.56 lacs.

ii Movement during the financial period is set out below

Particulars	As at March 31, 2023	As at March 31, 2022
Movements in provisions		
Opening Balance	11,586.59	13,793.42
Charged/ (credited) to profit and loss		
Additional Provision	7,098.56	-
Actual Incurred	(335.28)	(2,206.83)
Unwinding of Discount	-	-
Closing Balance	**18,349.87**	**11,586.59**

20 Other liabilities

	Particulars	As at March 31, 2023	As at March 31, 2022
20a	**Non-Current**		
	Advance towards Overloading Agreement (Refer note (i) below)	6,250.00	-
	Total	**6,250.00**	**-**
20b	**Current**		
	Statutory Dues	266.35	11.28
	Advances from NHAI (Refer Below Foot Note)	1,037.39	656.36
	Payable to NHAI	398.86	398.12
	Total	**1,702.60**	**1,065.76**

(i) The company has entered into the Overloading agreement with its holding company " HCC Concessions Limited" for transfer of cash proceeds of overloading revenue with effect from 1st October 2022 for a consideration as per third party Valuation report. However, due to pending conditions precedent of availing approval from lenders of the company for the said transaction, the company has not given any accounting treatment of such transactions in the financial statements and the advance of Rs. 6,250 lacs received against the aforesaid agreement is shown as current liabilities.

Foot Note

a Advance from NHAI is against change of scope

21 Deferred tax liabilities (Net)

(a) The Company is eligible for deduction under Section 80- IA of the Income Tax Act, 1961 and the concession period of the Company's project falls within the tax holiday period as defined in Section 80-IA. Since deferred tax on timing differences between Accounting income and Taxable income that arise during the year is reversing during such tax holiday period, no deferred tax asset or liability arises and accordingly no DTA /DTL is created in the accounts.

22 Current Tax Liability (Net)

Particulars	As at March 31, 2023	As at March 31, 2022
Current Tax liability (Net)	-	-
Total	-	-

Disclosure:

i. Income tax expense comprises:

Particulars	As at March 31, 2023	As at March 31, 2022
Current tax	-	-
Deferred tax expense / (credit)		-
(Excess)/Short provision of earlier years	16.66	1,306.61
Tax expenses (net) in Statement of Profit and Loss	**16.66**	**1,306.61**

ii **Reconciliation of the income tax provision to the amount computed by applying the statutory income tax rate to the profit before income tax is as below:**

	Particulars	As at March 31, 2023	As at March 31, 2022
A	**Current Tax**		
	Profit Before tax	(9,936.85)	(2,338.54)
	Enacted tax rates in India (%)	28.60%	34.944%
	Computed expected tax expenses	(2,841.94)	(817.18)
	Effect of non- deductible expenses	3,608.83	1,765.12
	Effects of deductible Expenses	(1,598.41)	(2,123.24)
	Long term Capital Tax	7.24	-
	Loss Carry forward	824.26	1,175.29
	Income tax expenses - Net.....A	**(0.01)**	-
	Tax liability as per Minimum Alternate Tax on book profits		
	Minimum Alternate Tax rate	17.472%	17.472%
	Computed tax liability on book profits	(1,736.17)	(408.59)
	Tax effect on adjustments:		
	1/5 portion of Opening IND AS Reserve as on March 31, 2017	-	(85.14)
	Effect of non deductible expense	976.48	848.49
	Effects of deductible Expenses	(976.48)	(848.49)
	Others (roundoff)	-	0.73
	Income tax expenses - Net.....B	**(1,736.17)**	**(493.00)**
	Higher of A or B	-	-

23 Revenue from Operations

Particulars	Note	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Operating Income			
(i) Toll Income (Refer note below) *		13,466.84	12,871.82
(ii) Construction Revenue		26,792.72	12,039.90
(iii) Change of Scope & Utility Shifting Works		1,671.13	-
Total		**41,930.69**	**24,911.72**

(*) The company has finally agree to pay the Fastag fees to NHAI which earlier the Company was contending was not payable and shown under Contingent liability. The total Fastag fees collected is now paid to NHAI under protest amounting to Rs 374.85 lacs (including interest), Out of total Fastag fees paid to NHAI Rs 265.90 lacs pertain to the period up to March 2022 which is shown as Fastag Fees under Other Expenses and the current year fastag fees amounting to Rs 79.50 lacs for the period April 1, 2022 to March 28, 2023 is reduced from Toll income. The interest on the Fastag amount of Rs 29.45 lacs is shown under Finance Cost. Though the Company has paid the Fastag fees to NHAI , it contest that the same is stands receivable from NHAI and hence shown as contingent asset.

24 Other income

Particulars	Note	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Interest income		621.12	1,050.28
Profit on sale of assets (Net)		58.32	-
Scrap Sales		4.22	-
Interest on Income Tax Refund		111.90	4.33
Total		**795.56**	**1,054.61**

25 Cost of constructions

Particulars	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Construction Cost - Project	26,792.72	12,023.84
Construction Cost - Change of Scope & Utility Shifting Works	1,671.13	16.06
Total	**28,463.85**	**12,039.90**

26 Finance costs

Particulars	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Interest expense on Term Loans	7,412.62	7,485.98
Interest on Subordinate Debt	38.45	18.02
Interest on delayed payment of statutory dues	7.05	31.33
Interest on delayed payment of IE fees	39.57	-
Interest paid to Others	29.45	-
Other Borrowing Cost		
Bank Guarantee Commission	-	33.19
Amortisation of Corporate guarantee	36.12	36.05
Other Charges	79.38	11.12
Total	**7,642.64**	**7,615.69**

27 Depreciation and amortization expense

Particulars	Note	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Depreciation on Property, Plant and Equipment	3	7.58	9.48
Amortization on Intangible assets	5	5,335.52	4,846.79
Total		**5,343.10**	**4,856.27**

28 Other expenses

Particulars	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Power, fuel and Electricity	103.19	103.03
Major Maintenance Expenditure	7,098.57	-
Operation, Repairs & Maintenance	2,539.82	2,697.80
SPV Management fees	421.37	424.80
Insurance	192.39	202.30
Fastag Fees (Refer note 23)	265.90	-
Rates and Taxes	11.37	1.90
Travelling	0.93	-
Director Sitting Fees	7.20	3.54
CSR Expenses	93.91	108.04
Legal, Professional and Consultancy Charges	177.09	241.79
Receivable w/off	298.80	-
Miscellaneous Expenses	2.96	9.81
Total	**11,213.50**	**3,793.01**

(a) Breakup of Auditors' remuneration

Particulars	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
Legal, Professional and Consultancy Charges include:		
Auditors' remuneration and expenses (including Tax)		
Statutory Audit fees	5.61	3.25
Tax audit fees	-	0.89
Others	0.24	4.36

29 Earnings per share (EPS)

Particulars	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
The following reflects the profit and share data used in the basic & diluted computations:		
Net profit/ (loss) for calculation of basic EPS	(9,953.51)	(3,645.15)
Number of share outstanding as on March 31	21,72,53,000	4,50,00,000
Weighted Average number of equity shares for calculating basic EPS	15,92,06,099	4,50,00,000
Basic EPS (not annualised)	(6.25)	(8.10)
Weighted average number of equity shares for diluted EPS (refer note 13(e))	-	2,172.53
Diluted EPS (not annualised) (antidilutive)	-	(8.10)

Reconciliation of Equity Shares		
Number of shares at the beginning	4,50,00,000	4,50,00,000
Issued during the year	17,22,53,000	-
Number of shares at the end	21,72,53,000	4,50,00,000

30 Corporate social responsibility

	April 1, 2022 to March 31, 2023	April 1, 2021 to March 31, 2022
a) Gross amount required to be spent by the Company during the year	93.91	108.04
b) Amount spent during the year		
i) Construction/acquisition of any asset - In cash	-	-
ii) On purposes other than (i) above	201.95	18.98
c) Shortfall/(Excess amount spent)		
Opening Balance	108.04	18.98
Amount required to be spent during the year	93.91	108.04
Amount spent during the year	201.95	18.98
Closing Balance*	-	108.04
Reason for shortfall:	-	-
d) Details of related party transactions, if any	-	-

e) Nature of CSR activities

Ongoing (Sec 135(6))		
Health infrastructure for Covid care - Oxygen plant		18.98
Promotion of Education	158.04	
Helping blind and handicapped people	43.91	
Other Than On going (Sec 135(5))		
There are no amount spent in other than ongoing project	-	-

f) Unspent for the year 21-22
*The company has transferred unspent amount of Rs 108.04 Lacs to Unspent CSR account on April 28, 2022

31 Fair Value Heirarchy and Financial Risk Management Note

Particulars	Cash and Cash Equivalents &	Non Current Borrowings (including Current Maturities)	Interest Payable	Total of Borrowings and Interest
Net Debt as at 1st April 2021	**2,373.15**	**69,253.36**	**59.36**	**69,312.71**
Cash Flows	4,513.55	(1,288.28)	-	(1,288.28)
Interest Cost on Long Term Loans	-	-	7,881.71	7,881.71
Interest Paid	-	-	(7,789.83)	(7,789.83)
Other Non Cash Movements (Fair Value Adjustments)	-	18.99	(18.99)	-
				-
Net Debt as at 31 March 2022	**6,886.71**	**67,984.06**	**132.26**	**68,116.32**
Cash Flows	(3,358.35)	(3,960.01)	-	(3,960.01)
Interest Cost on Long Term Loans	-	-	7,480.52	7,480.52
Interest Paid	-	-	(7,406.48)	(7,406.48)
Transferred to Current Liabilities		(568.00)		(568.00)
Other Non Cash Movements (Fair Value Adjustments)	-	18.82	(18.82)	-
Net Debt as at 31 March 2023	**3,528.36**	**63,474.87**	**187.48**	**63,662.35**

31 Fair Value Heirarchy and Financial Risk Management Note

i Financial Instruments

A Financial instruments by category

i) The carrying value and fair value of financial instruments by categories as at 31 March 2023 were as follows: Rs. in lakh

Particulars	Amortised cost	Financial assets/ liabilities at fair value through		Total carrying value
		Profit or Loss	OCI	
Assets:				
Trade receivables	10.92	-	-	10.92
Cash and cash equivalents	3,528.37	-	-	3,528.37
Bank balances other than cash and cash equivalents	3,605.28	-	-	3,605.28
Others financial assets	761.28	-	-	761.28
Liabilities:				
Borrowings	63,474.87	-	-	63,474.87
Trade payables	8,148.43	-	-	8,148.43
Other financial liabilities	2,018.23	-	-	2,018.23

ii) The carrying value and fair value of financial instruments by categories as at 31 March 2022 were as follows: Rs. in lakh

Particulars	Amortised cost	Financial assets/ liabilities at fair value through		Total carrying value
		Profit or Loss	OCI	
Assets:				
Trade receivables	326.96	-	-	326.96
Cash and cash equivalents	6,886.71	-	-	6,886.71
Bank balances other than cash and cash equivalents	15,620.89			15,620.89
Others financial assets	68.03	-	-	68.03
Liabilities:				
Borrowings	67,984.06	-	-	67,984.06
Trade payables	3,532.25	-	-	3,532.25
Other financial liabilities	336.64	-	-	336.64

B Fair value hierarchy

Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities
Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices)

Level 3 - Inputs for the assets or liabilities that are not based on observable market data (unobservable inputs)

The following table presents fair value hierarchy of assets and liabilities measured at fair value on a recurring basis as of :
There are no Financial Asset / Liability which are carried through FVTPL or FVTOCI and therfore the Fair value hirerachy details is not given

ii Financial risk management

The companies activities exposes it to market risk, liquidity risk and credit risk.
This note explains the source of risk which the entity is exposed to and how the entity is manage the risk.

Risk	Exposure arising from	Management
Credit risk	Cash and cash equivalents, financial assets measured at amortised cost.	Diversification of bank deposits and credit limits
Market risk — interest rate	Longterm borrowings at Floating rate	Actively managed
Liquidity risk	Trade Payables,borrowings and other liabilities	Availability of committed credit lines and borrowing facilities

The Company's risk management is carried out by a project finance team and treasury team group under policies approved by board of directors. Company treasury identifies, evaluates and hedges financial risk in close co-operation with the group's operating units. The Management of the Company provides principles for overall risk management, as well as policies covering specific areas, such as , interest rate risk, and credit risk and investments of excess liquidity.

(a) Credit Risk
The company engaged In infrastructure development and construction business under BOT Credit risk is the risk that counterparty will not meet its obligations leading to a financial loss. Financial assets that are potentially subject to concentrations of credit risk and failures by counter-parties to discharge their obligations in full or in a timely manner consist principally of cash, cash equivalents and trade and other accounts receivable. Credit risk on cash balances with Bank are limited because the counterparties are entities with acceptable credit ratings.

31 Fair Value Heirarchy and Financial Risk Management Note

(b) Market Risk - Interest rate risk

The exposure of the Company's borrowing is linked to Bank base rate plus fixed spread .base rate are subject to change in market condition to interest rate changes at the end of the reporting period are as follows:

Particulars	Year ended March 31, 2023	Year ended March 31, 2022
Floating Rate borrowings	63,474.87	67,816.06
Total borrowings	**63,474.87**	**67,816.06**

(ii) Sensitivity analysis

Profit or loss is sensitive to higher/lower interest income from borrowings as a result of changes in interest rates.

Impact on Profit after Tax	Year ended March 31, 2023	Year ended March 31, 2022
Interest rates - increase by 50 basis points	(317.37)	(339.08)
Interest rates - decrease by 50 basis points	317.37	339.08

(b) Liquidity Risk

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities and the availability of funding through an adequate amount of committed credit facilities to meet obligations when due and to close out market positions. The Company treasury maintains flexibility in funding by maintaining availability under committed credit lines.

Management monitors rolling forecasts of the company's liquidity position (comprising the undrawn borrowing facilities below) and cash and cash equivalents on the basis of expected cash flows.

(i) Maturities of financial liabilities

The tables below analyse the Company`s financial liabilities into relevant maturity groupings based on their contractual maturities for:

As At March-2023

	Less than 1 year	1 to 2 Years	2 to 5 Years	Over 5 Years	Total
Non-derivatives					
Borrowings	7,371.10	8,398.43	22,889.40	24,815.95	63,474.87
Other Financial liabilities	2,018.23	-	-	-	2,018.23
Trade and other payables	8,148.43	-	-	-	8,148.43
Total non-derivatives	17,537.76	8,398.43	22,889.40	24,815.95	73,641.54
	17,537.76	8,398.43	22,889.40	24,815.95	73,641.54

As At March-2022

	Less than 1 year	1 to 2 Years	2 to 5 Years	Over 5 Years	Total
Non-derivatives					
Borrowings	4,712.03	7,114.01	25,352.59	30,805.43	67,984.06
Other Financial liabilities	336.64	-	-	-	336.64
Trade and other payables	3,532.25	-	-	-	3,532.25
Total non-derivatives	8,580.91	7,114.01	25,352.59	30,805.43	71,852.94
	8,580.91	7,114.01	25,352.59	30,805.43	71,852.94

32 Net Debt Reconciliation

A ***Net Debt Summary***

Particulars	As at March 31, 2023	As at March 31, 2022
Cash and Cash Equivalents	3,528.37	6,886.71
Bank balances other than cash and cash equivalents	3,605.28	15,620.89
Non Current Borrowings (including Current Maturities)	(63,474.87)	(67,984.06)
Interest Payable	(187.48)	(132.26)
Net Debt	**(56,528.70)**	**(45,608.72)**

B ***As per the Amendment to INDAS 7 " Statement of Cash Flow "***

An entity shall provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes.

33 Notes to the financial statements for the year ended 31 March 2023

Sr. No.	Ratio	Numerator/ Denominator	Ratio (2022-23)	Ratio (2021-22)	% of Variation	Reason for variance
1	Current ratio	Current Asset / Current Liabilities	24.22	173.89	-86.07	The decrease in ratio is on account of increase in current liabilities during the year
2	Debt-Equity ratio	Total Debts / Shareholders Equity	408.18	266.56	53.13	The decrease in ratio is on account of increase of losses during the year
3	Debt Service Coverage ratio	Earnings available for debt service / Debt Service	24.10	96.00	-74.89	The decrease in ratio is on account of decrease of earnings during the year
4	Return on Equity ratio (ROE)	Net Profits after taxes – Preference Dividend / Average Shareholder's Equity	-48.49	-13.34	263.51	Due to higher loss in current year
5	Inventory Turnover Ratio	Cost of goods sold OR sales / Average Inventory			Not Applicable	
6	Trade Receivables turnover ratio	Net Credit Sales / Average Accounts Receivable			Not Applicable	
7	Trade payables turnover ratio	Net Credit Purchases / Average Trade Payables			Not Applicable	
8	Net capital turnover ratio	Net Sales	-469.69	135.39	-446.92	Average Working capital in FY 22-23 increased compared to FY 21-22
9	Net profit ratio	Net Profit after Tax / Net Sales	-23.74	-14.63	62.23	Due to higher loss in current year
10	Return on Capital employed (ROCE)	Earning before interest and taxes / Capital Employed	-2.91	5.61	-151.90	Due to higher loss in current year
11	Return on Investment (ROI)	Net Income / Cost of Investment			Not Applicable	

* As per amendment to Schedule III reasons for variances to be given only if variance is greater than 25%

34 Related Party Transactions

A Name of Related Party with which the Company has transactions during the year and Nature of Relationship

Holding Company	Cube Highways and Infrastructure V Pte Ltd (w e f 29 March 2023)
Holding Company	HCC Concessions Limited (Till 28 March 2023)
Holding Company's Holding Company	HCC Infrastructure Company Limited (Till 28 March 2023)
Ultimate Holding Company	Hindustan Construction Company Limited (Till 28 March 2023)
Fellow Subsidiary	HCC Operations & Maintenance Limited (Till 28 March 2023)
Fellow Subsidiary	Highbar Technologies Limited (Till 28 March 2023)
Fellow Subsidiary	Highbar Technocrat Limited (Till 28 March 2023)

Key Managerial Personnel

Arjun Dhawan (Till 28 March 2023)	Director
Sridevi Iyengar (upto 27 August 2021)	Director
Atul Kumar (w.e.f 10 November 2020 till 28 March 2023)	Director
Rolita Dilip Patil (w e f 10 November 2020 till 3 August 2021)	Director
Lipsa Mishra (w.e.f 21 June 2021 till 31 March 2022)	Director
Ashok Gupta (Upto 20 August 2021)	Nominee Director (Xander)
Santosh Kumar Rai (w.e.f 30 August 2021 till 28 March 2023)	Director
Manish Khanna (Till 28 March 2023)	Independent Director
Chandrahas Zaveri (Till 28 March 2023)	Independent Director
Dr Mita Dixit (w.e.f 7 November 2022 till 28 March 2023)	Director
Ankit Jain (w.e.f. 28 March 2023)	Director
Puneet Panchal (w.e.f. 28 March 2023)	Director
Pooja Aggarwal (w.e.f. 28 March 2023)	Director

B Related Party Transactions

Particulars	FY 22-23	FY 21-22
Transactions During the period / year		
SPV Management Fees		
HCC Concessions Limited	421.37	424.80
Interest on Subordinate Loan		
HCC Concessions Limited	37.98	20.38
Other Charges & Reimbursement of Expenses		
HCC Concessions Limited	63.29	18.77
HCC Operations & Maintenance Limited	7.28	5.21
Operations & Maintenance		
HCC Operations & Maintenance Limited	2,377.43	2,654.63
Professional Fees for IT Services		
Highbar Technologies Limited	11.40	10.77
Highbar Technocrat Limited	2.30	1.85
Director sitting Fees (Including Tax)		
Manish Khanna	3.19	2.12
Chandrahas Zaveri	3.07	1.42
Dr Mita Dixit	0.94	-
Amortisation of Corporate Guarantee		
HCC Concessions Limited	35.83	36.05
Subcontracting Expenses Under Intangible Asset Under Development		
Hindustan Construction Company Ltd	22,972.17	11,609.43
Corporate Guarantee		
HCC Concessions Limited	2,959.56	-
Overloading		
Advance received against overloading agreement*(Refer Note 20(a)(i)	6,250.00	-

B **Related Party Transactions**

Particulars	As at 31 March 2023	As at 31 March 2022
Balance Sheet		
Payables		
Hindustan Construction Company	-	1,313.01
HCC Infrastructure Company Limited	-	793.98
HCC Concessions Limited	-	208.73
HCC Operations & Maintenance Limited	-	563.16
Highbar Technologies Limited	-	7.85
Highbar Technocrat Limited	-	2.21
Subordinate Loan Taken	-	
HCC Concessions Limited	-	168.00
Interest Accrued		
HCC Concessions Limited	-	51.07
Other Advances		
Hindustan Construction Company Ltd	-	2,040.31
Retention Payable		
Hindustan Construction Company Ltd	-	204.37
Contribution in Share Capital till date		
HCC Concessions Limited	-	4,499.99
Preference Shares - Other equity		
HCC Concessions Limited	-	17,225.30
Corporate Guarantee Contribution		
HCC Concessions Limited	-	550.01
Corporate Guarantee given on our behalf		
HCC Concessions Limited	-	18,387.00
Corporate Guarantee given against Performance Security		
Hindustan Construction Company Ltd	-	4,345.00
Corporate Guarantee		
HCC Concessions Limited	-	-

35 Disclosures as required by Appendix D of Ind AS 115 relating to "Service Concession Arrangements: Disclosures"

(a) Description of the Arrangement along with salient features of the project:
NHAI has granted concession period of 25 years to the company for the project. Provisional Certificate under Article 14.3.2 (Schedule - J) of the concession Agreement has been obtained for 75.45 kms for the following stretch - 204.550 to 229.300 KMS - 24.75 KMS / 230.600 to 254.800 KMS - 24.20 KMS / 258.350 to 284.850 KMS - 26.50 KMS. Company has started to collect toll from 14th May, 2014 on receipt of provisional certificate of commencement from Independent consultant appointed by National Highway Authority of India.

(b) Obligations of Operations and maintenance
The Company is required to carry out operations and maintenance on the road annually with an obligation to carry out periodic maintenance in terms of the Concession at regular intervals.

(c) Changes to the Concession during the period
During the year, there are no changes in the contract alloted to the Company by NHAI.

(d) Classification of the Concession
The Company has applied the principles enumerated in Appendix C of Ind AS – 115 titled "Service Concession Arrangement" and has classified the arrangement as a Intangible Asset resulting in recognition of an Intangible Asset in the Financial Statements, since the Company has a right (a licence) to charge users of the public service.

II INDAS 115 "Revenue from Contracts with Customers"

1 Disaggregation of Revenue

(a) Based on type of Services

Particulars	**2022-23**	**2021-22**
Revenue from Toll collection	13,466.84	12,871.82
Construction Revenue	26,792.72	12,039.90
Change of Scope / Utility Shifting	1,671.13	
Total	**41,930.69**	**24,911.71**

(b) Geographical region
The Company is in the business of construction vide Design, Build, Finance, Operate & Transfer (DBFOT) Toll basis of 4 lanes from Kms 191.416 to 294.684 between Baharampore and Farakka in the state of West Bengal under NHDP Phase III.

(c) Market Type
There is only one Customer / grantor to whom the services is provided - National Highway Authority Limited (NHAI).

(d) Contract Duration
NHAI has granted concession period of 25 years to the company for the project (including construction period).

(e) Timing of transfer of services
Revenue from Construction activity satisfies the test of over the time and therefore the Revenue from Construction Activity will recognise overtime.

(f) Pending Performance Obligation
The balance performance obligation outstanding as on March 31, 2023 is Rs 22500.00 lakh. Same is expected to be completed in next year.

2 Movement of Contract Balances

(i) Advance from Customers

	2022-23	**2021-22**
Opening Balance	656.36	656.36
Advance Received during the year	745.69	-
Advance Adjusted / Recovered	(166.86)	-
Closing Balance	**1,037.39**	**656.36**

36 Employee benefits

The Company has no employees on its payroll during the period and therefore, there is no reportable information under INDAS-19.

37 Segment reporting

The Company being engaged in design, operation development and maintenance of Road on Build, Operate and Transfer (BOT) basis, does not have more than one reportable segments. Further, the Company is carrying its business in only one geographical segment.

38 Contingent liabilities and Commitments

	Particulars	As at March 31, 2023	As at March 31, 2022
		Rs	Rs
a	**Contingent liabilities**		
	Income Tax Demand raised by Income Tax Authority - (FY 2017-18)	0.37	0.37
	Entry Tax Demand raised by Sales Tax Authority - West Bengal (FY 2015-16)	0.97	0.97
	Entry Tax Demand raised by Sales Tax Authority - West Bengal (FY 2016-17)	0.65	0.65
	Sales Tax (VAT) demand raised by Joint Commissioner of Sales Tax - West Bengal against which Company has filed writ petition (FY 11-12 upto FY 2014-15)	-	1,130.29
	Sales Tax Demand raised by Joint Commissioner of Commercial Taxes - West Bengal, against which the Company has preferred appeal (FY 2016-17)	-	90.36
b	**Claims against the Company not acknowledged as debt :-**		
i	Company has received Claim from HCC Operation and Maintenance Limited (HOML) due to increase in minimum wages under "Change in Law" for FY 18 & FY 19. The same shall be paid upon receipt from the authority	-	320.00
ii	On account of Force Majeure Event/ Change in Law occurred due to COVID-19 pandemic HCC has submitted claim to BFHL for the period till 30.09.2020. The same has send to NHAI for amount of Rs 1,035 lakh upto 30.08.20 vide letter dated 29.09.2020. HCC has claim Rs 168 lakh for Sep-20. Any amount received from NHAI will be paid to HCC on back to back basis.	-	1,203.00
iii	Company has received Claim from HCC Operation and Maintenance Limited (HOML) due to increase in minimum wages under "Change in Law" for FY20 The same shall be paid upon receipt from the Authority	-	152.00
iv	Company has received Claim from Authority for Remittance of additional fee charged from vehicles not fitted with FASTag of Vehicles without valid, functional FASTag entering into the FASTag Lane of the Fee Plaza.	-	361.53
v	Development of Hard Shoulder and other Road Appurtenances on the Existing NH stretch (Baharampore Township Area for a length of 13.573 Kms) at risk and cost of Concessionaire	-	98.89
c	**Commitment**		
i	**Capital Commitment**		
	Estimated amount of contracts remaining to be executed on capital account not provided for (Net of Advance)	22,500.00	27,085.69
d	**Other Commitment**		
	Professional Fee Services	-	125.00

39 Contingent Asset

i Due to delay in issuance of Completion Certificate for Non-PCOD & Non-Bypass stretches to the Concessionaire it has the resulted in Revenue loss for such use of project highway since 01-Apr-21 to 13-May-21. The Concessionaire has incurred the revenue losses till 13-May-2021 at Rs. 405.79 Lakhs NHAI has requested IE for its comments on this claim letters of BFHL.

ii On account of Force Majeure Event/ Change in Law occurred due to COVID-19 pandemic BFHL has submitted claim to the NHAI for reimbursement of loss incurred from time to time. Numerous letters are issued on this account, recent letter being dated 08.10.2020 vide which it has claimed Rs. 2613 Lakhs + extension of concession period of 71.4 days towards this loss. However, IE or NHAI is yet to reply to these claim letters of BFHL.

iii Company has collected fees for non compliance with FASTag rules and even under the original terms of the Concession Agreement (CA), the Company (Concessionaire) is entitled to retain.However for the purpose of availing NOC for stake sale the company has paid Fastag fees along with interest amounting to Rs 374.85 lakhs to NHAI pursuant to compliance against various letters received from NHAI demanding Fastag fees. The Company contests that the said amount stands receivable from NHAI.

iii Company has collected fees for non compliance with FASTag rules and even under the original terms of the Concession Agreement (CA), the Company (Concessionaire) is entitled to retain.However for the purpose of availing NOC for stake sale the company has paid Fastag fees along with interest amounting to Rs 374.85 lakhs to NHAI pursuant to compliance against various letters received from NHAI demanding Fastag fees. The Company contests that the said amount stands receivable from NHAI.

40 Company has collected fees for non compliance with FASTag rules and even under the original terms of the Concession Agreement (CA), the Company (Concessionaire) is entitled to retain all Fees collected under the CA, and the said provision remains unchanged even after the fee structure for non compliance with FASTag rules and the fees payable there on. Accordingly, the Concessionaire is legitimately entitled to collect and retain the additional Fee collected from the vehicles not fitted with FASTag or vehicle without valid, functional FASTag entering into FASTag lane of the Fee plazas.
In addition, Sub-rule (1) para 3 of Rule 7 (Remittance and appropriation of fee) of the National Highways Fee (Determination of Rates and collection) Rules, 2008, states that "Provided further that in case of a private investment projects, the fee collected under the provisions of these rules shall be appropriated by the Concessionaire in accordance with the provisions of and for the performance of its obligations under the agreement entered into by such Concessionaire". Thus, any fee, which is collected from the users shall be appropriated by the Concessionaire for fulfilling its obligations.
Accordingly the Company has accounted the entire collection as toll revenue and has responded to NHAI letter.

During the year ended 31 March 2023, the Company has received the letter from NHAI dated 20 September 2022 addressed to Independent Engineer(IE) asking to submit its report upon fast-tag recovery from concessioner Independent Engineer; In its report dated 30 September 2022 IE stated Fasttag recovery of Rs 305.28 Lakhs along with interest of Rs 40.76 Lakhs. Letters for Fasttag recovery where also received by the Company from NHAI in previous year ended 31 March 2022 dated September 7, 2021 and September 22, 2021 for depositing the FASTag and TCS on Fastag with in a week, and interest @ 5% for non-submission of aforesaid amount. In response to the same the Company had written letter clarifying the its position vide Concession Agreement. However during the year ended 31 March 2023, for the purpose of availing NOC for stake sale, the company has paid Fastag fees along with interest amounting to Rs 374.84 lakhs to NHAI under protest as Fasttag fees pursuant to compliance against various letters received from NHAI demanding Fastag fees. However the company still continues to recover the amount paid under protest from NHAI.

41 The Company has entered into an Agreement with the Purchaser Cube Highways and Infrastructure V PTE LTD, being a company based in Singapore and incorporated with the objective of acquiring and operating transportation projects to purchase the shares from the Company (including the purchase of seller nominee shares by the purchaser nominees from the seller nominees) and the Company has agreed to sell the shares to the Purchaser (including the sale of such portion of the sale shares which are held by the seller nominees to purchaser nominees).

42 **Relationship with struck-off companies:** The information about transaction with struck off companies (defined under section 248 of the companies Act 2013 or section 560 of the Companies Act 1956) has been determined to the extent such parties have been identified on the basis of information available with the company and the same is relied upon by the auditor.

42 **Previous years figures**
Previous years figures have been regrouped/reclassified/recasted wherever necessary including to conform current year classification.

43 The balance sheet, statement of profit and loss, statement of changes in equity, statement of significant accounting policies and the other explanatory notes forms an integral part of the financial statements of the Company for the year ended March 31, 2023.

As per our report of even date attached
For Natvarlal Vepari & Co
Chartered Accountants
Firm Registration No. 106971W

Nuzhat Khan
Partner

Membership No.:124960

Place: Mumbai
Date: 14 September 2023

For and on behalf of the Board of Directors

Ankit Jain
Director
DIN No. : 09805599

Puneet Panchal
Director
DIN No. : 10050502

Place: Mumbai
Date: 14 September 2023

S B A & Company
Chartered Accountants

33 B, Chnadra Nagar,
MR 9, Behind Amarvilas Hotel,
Indore (MP), 452010
Email : vikas_jain_ca@hotmail.com

INDEPENDENT AUDITOR'S REPORT

To
The Members of,
Western MP Infrastructure & Toll Roads Pvt. Ltd.

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of **Western MP Infrastructure & Toll Roads Pvt. Ltd.**("the Company"), which comprise the Balance Sheet as at March 31, 2025, the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Changes in Equity and the Statement of Cash Flows for the year ended on that date, notes to the financial statement and a summary of the significant accounting policies and other explanatory information (hereinafter referred to as "the financial statements").

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements give the information required by the Companies Act, 2013 ("the Act") in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2025, the **Profit** and total comprehensive income, changes in equity and its cash flows for the year ended on that date.

Basis for Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Standalone Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the financial statements under the provisions of the Companies Act, 2013 and the Rules there under, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ICAI's Code of Ethics. We believe that the audit evidence on the Standalone Financial Statement obtained by us is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. The company has made major maintenance work during the current financial year.

Information Other than the Financial Statements and Auditor's Report Thereon

The Company's Board of Directors is responsible for the preparation of the other information. The other information comprises the information included in the Management Discussion and Analysis, Board's Report including Annexures to Board's Report, Corporate Governance and Shareholder's Information, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements, or our knowledge obtained during the course of our audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information; we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Management and those charged with governance for the Standalone Financial Statements

The Company's Management and Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these standalone Ind AS financial statements that give a true and fair view of the financial position, financial performance, including other comprehensive income, changes in equity and cash flows of the Company in accordance with accounting principles generally accepted in India, including Indian Accounting Standards (Ind AS) prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended.

This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate implementation and maintenance of accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the standalone financial statement that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management and Board of Directors either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

The Board of Directors are also responsible for overseeing the company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal financial controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Act, we are also responsible for expressing our opinion on whether the Company has adequate internal financial controls system in place and the operating effectiveness of such controls.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the standalone financial statements, including the disclosures, and whether the standalone financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Materiality is the magnitude of misstatements in the Standalone Financial Statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the standalone financial statements.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Act, we give in the **"Annexure A"** a statement on the matters specified in paragraphs 3 and 4 of the Order to the extent applicable.

2. As required by section 143 (3) of the Act, we report that:
   a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;

   b) In our opinion, proper books of account, as required by law and having regard to the nature of the business of company have been kept by the Company so far as it appears from our examination of those books, as also reported in point no 6 of this report:

   c) The Balance Sheet, the Statement of Profit and Loss including other comprehensive income and the Statement of Cash Flows and the Statement of Changes in Equity dealt with by this Report are in agreement with the books of account:

   d) In our opinion, the aforesaid financial statements comply with the Indian Accounting Standards (IND AS) specified under section 133 of the Act and rules made there under, as applicable;

   e) On the basis of written representations received from management as on March 31, 2025 taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2025 from being appointed as a director in terms of Section 164(2) of the Act.

   f) With respect to the adequacy of the internal financial controls over financial reporting of the Company and the operating effectiveness of such controls, refer to our separate Report in **"Annexure B"**.

g) With respect to the other matters to be included in the Auditor's Report in accordance with Rule11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

1. The Company does not have any pending litigations which would have impact on its financial position.

2. The Company does not have any long-term contracts including derivative contracts against which there are any material foreseeable losses.

3. There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company.

4. (i). Based on the representation received from the Management, other than those disclosed in the notes to the financial statements, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other person(s) or entity(ies), including foreign entities ("Intermediaries")with the understanding that the intermediary shall lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company/ funding party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries;

(ii) Based on the representation received from the Management, that, to the best of it's knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been received by the company from any person(s) or entity(ies), including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the company shall, whether, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries;

(iii) Based on audit procedures we have considered reasonable and appropriate in the circumstances; nothing has come to our notice that has caused us to believe that the representations under sub-clause (i) and (ii) contain any material mis-statement.

5. The Company has neither declared nor paid any dividend during the year.

6. Based on our examination which included test checks, and as per the requirements of Rule 3(1) of the Companies (Accounts) Rules 2014, the Company uses:

a) SAP S/4 HANA as its accounting software operated for recording all the accounting transactions which has a feature of recording audit trail (edit log) facility for all relevant transactions recorded in the software;
b) A third-party software for maintaining revenue records, and in absence of an independent service auditor's report covering the requirement of audit trail, the Company is unable to conclude whether audit trail feature of this software was enabled and operated throughout the year or whether there were any instances of the audit trail feature been tampered with.
c) A third-party software for maintaining payroll records, for which the independent service auditor's report specified that the said software has a feature of recording audit trail (edit log) facility and the same has operated throughout the year.

The audit trail feature in respect of the aforesaid accounting software(s) is not being tampered with for the period for which the audit trail feature was enabled and operating. Additionally, the audit trail that was enabled and operated for the year ended March 31, 2024, has been preserved by the Company as per the statutory requirements for record retention.

The Company has established and maintained an adequate internal control framework and based on its assessment, believes that this was effective as of March 31, 2025.

For S B A & Company
Chartered Accountants
FRN : 004651C

VIKAS JAIN

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DN: c=IN, o=Personal, postalCode=452010, st=Madhya Pradesh, serialNumber=CC1CE97C7C18BD1F9B4AB3FC4CABF553205C3397896501851F4CC3FF0F62DF4A, cn=VIKAS JAIN
Date: 2025.09.02 19:01:23 +05'30'

CA. Vikas Jain
(Partner)
M. No. 078245
UDIN : 25078245BMLDYP7784

Date: 02.09.2025
Place: Indore

ANNEXURE A

To the Independent Auditors' Report on

Financial Statements of Western MP Infrastructure & Toll Roads Pvt. Ltd.

(Referred to our report of even date)

The Annexure referred to in our Independent Auditors' Report to the members of the Company on the financial statements for the year ended March 31, 2025, we report that:

i. In respect of Property, Plant & Equipment

a) The Company has maintained proper records showing full particulars, including quantitative details and situation of Property, Plant & Equipment and Intangible assets.

b) According to information and explanations given to us and on the basis of our examination of the records of the company, the Property, Plant & Equipment have been physically verified during the year by the management under a regular programme of verification by rotation over a period of three years, which, in our opinion, is reasonable having regard to the size of the Company and the nature of its assets. No material discrepancies were noticed.

c) According to information and explanations given to us and on the basis of our examination of the records of the company, the title deeds of immovable properties forming part of the Property, Plant & Equipment are held in the name of the Company.

d) According to information and explanations given to us and on the basis of our examination of the records of the company, the company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets or both during the year.

e) According to information and explanations given to us and on the basis of our examination of the records of the company, there are no proceedings initiated or are pending against the company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (45 of 1988) and rules made thereunder.

ii. In respect of Inventory

The Company holds inventories. In our opinion, physical verification of inventories has been conducted at reasonable intervals by the management. The coverage and procedure of such verification are, in our opinion, appropriate having regard to the size of the Company and the nature of its business. On the basis of our examination of the records of the Company, no discrepancies of 10% or more in the aggregate for each class of inventory were noticed on such verification and the discrepancies, if any, have been properly dealt with in the books of account.

iii. In respect of loan granted:

According to information and explanations given to us and on the basis of our examination of the records of the company, the company has made any investments, provided guarantee or security or granted any advance in nature of loans, secured or unsecured to Companies, Firms, Limited Liability Partnerships or other parties covered in the register maintained under Section 189 of the Companies Act, The Amount taken as unsecured loan is amounting to Rs. Nil (Previous Year Rs. Nil).

iv. In respect of compliance of section 185 and 186 of The Companies Act, 2013

According to information and explanations given to us and on the basis of our examination of the records of the company, in our opinion the company has not advanced any loans, made investments, gave guarantees, and provided security prescribed in provisions of section 185 and 186 of the companies Act, 2013.

v. In respect of public deposits

In our opinion and according to the information and explanations given to us and on the basis of our examination, the Company has not accepted any deposit from the public within the meaning of the provisions of sections 73 to 76 or any relevant provisions of the Companies Act, 2013 and the rules framed there under.

vi. In respect of Cost Records:

According to the information and explanations given to us, the maintenance of cost records has been specified by the central government under the section 148(1) of the Companies Act, 2013 related to road tolling business under BOT basis activities carried out by the company. And are of the opinion that prima facie, the specified accounts and records have been made and maintained.

vii. In respect of statutory dues:

a) According to the records of the Company, the Company is generally regular in depositing with appropriate authorities undisputed statutory dues including provident fund, employees' state insurance, income-tax, duty of custom, goods & service tax, cess and other statutory dues applicable to it. As per the records of the Company, as at March 31, 2025, the Company does not have any undisputed statutory dues which are outstanding for a period of more than six months from the date they became payable.

b) According to the information and explanations given to us and on the basis of examination of records of the company there is no dispute in respect of income tax or sales tax or service tax or value added tax or GST or any other cess.

viii. In respect of undisclosed Income

In our opinion and according to the information and explanations given to us and based on our examination of the records of the company, there were no such unrecorded transaction in the books of account which were surrendered or disclosed as income during the year in tax assessments under Income Tax Act, 1961 (43 of 1961).

ix. In respect of repayment of loan

According to the information and explanations given to us, based on our examination of the records of the company and on the basis of overall examination of the Balance Sheet of the Company,

a) The company has not defaulted in repayment of loans or borrowing to a financial institution or bank.
b) The company has not been declared willful defaulter by any bank or financial institution.
c) In our opinion the term loan were applied for the purpose for which the loan was obtained.
d) No such short term loan funds have been utilized for long term purpose.
e) The company has not raised any fund from any entity or person on account of or to meet the obligations of its subsidiaries, associates or joint ventures.
f) The company has not raised any loan during the year on the pledge of securities held in its subsidiaries, joint ventures or associate companies.

x. In respect of funds raised through IPO/FPO/Debt finance

a) On the basis of overall examination of the Balance Sheet of the Company, according to the information and explanations provided to us and based on our examination of the records of the company we report that monies raised by way of term loans were applied for the purposes for which those were raised. The Company did not raise any money by way of initial public offer or further public offer (including debt instrument).
b) In our opinion and according to the information and explanations given to us as well as based on our examination of the records of the company, the company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year under section 42 and section 62 of the Companies Act, 2013.

xi. In respect of fraud reporting

a) According to the information and explanations given to us and based on our examination of the records of the company, no material fraud by the Company or on the Company by its officers or employees was noticed or reported during the year.
b) According to the information and explanations given to us and based on our examination of the records of the company, no report under sub-section (12) of section 143 of the Companies Act has been filed by the auditors in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government.
c) According to the information and explanations given to us and based on our examination of the records of the company, there are no whistle blower complaints received by the Company during the year.

xii. In respect of Nidhi Company

According to the information and explanations given to us, the Company is not a Nidhi Company. Accordingly, paragraph 3(xii) of the Order is not applicable.

xiii. In Respect of Transactions With Related Parties

According to the information and explanations given to us, transactions with the related parties are in compliance with section 177 and 188 of Companies Act, 2013 where applicable and details of such transactions have been disclosed in the financial statements as required by the applicable accounting standards.

xiv. In Respect of Internal Audit System

According to the information and explanations given to us and based on our examination of the records of the Company, the company has appropriate internal audit system commensurate with the size and nature of its business and the reports of the Internal Auditors for the period under audit were considered by us.

xv. In respect of Non-Cash Transactions

According to the information and explanations given to us and based on our examination of the records of the Company, the Company has not entered into any non-cash transactions with directors or persons connected with him. Accordingly, paragraph 3(xv) of the Order are not applicable.

xvi. In respect of compliance of section 45IA of the RBI Act, 1934

a) The Company is not required to be registered under section 45 IA of the Reserve Bank of India Act, 1934. Accordingly, paragraph 3(xvi)(a)of the Order is not applicable.
b) The Company is not required to be registered under section 45 IA of the Reserve Bank of India Act, 1934. Accordingly, paragraph 3(xvi)(b)of the Order is not applicable.
c) The Company is not a core investment company (CIC) as defined in the regulations made by the reserve Bank of India. Accordingly, clause 3(xvi)(c) of the order is not applicable.
d) According to information and explanations given to us during the course of audit, there is no core investment company within the Group (as defined in the Core Investment Companies (Reserve Bank) Directions, 2016) and accordingly reporting under clause 3(xvi)(d) of the Order is not applicable.

xvii. In respect of Cash losses

The company has not incurred any cash losses in the current financial year and in the immediately preceding financial year.

xviii. In respect of resignation of statutory auditors

There has been no resignation of the statutory auditors during the year.

xix. In respect of any material uncertainty to meet liability

In our opinion and according to the information and explanations given to us and based on our examination of the records of the Company, on the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements ,our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, nothing has come to our attention, which cause us to believe that any material uncertainty exists as on the date of the audit report that the company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date. We, however, state that this is not an assurance as to the future viability of the Company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the Company as and when they fall due.

xx. In Respect of Unspent Amount Under Section 135(5) of The Companies Act, 2013

a. In our opinion and according to the information and explanations given to us and based on our examination of the records of the Company, there was no such unspent amount to be transferred to fund specified in Schedule VII to the Companies Act. Accordingly, paragraphs 3(xx)(a) of the Order are not applicable.

b. The Company have ongoing projects under section 135 of the Companies Act. Accordingly, paragraphs 3(xx)(b) of the Order are applicable.

For S B A & Company
Chartered Accountants
FRN : 004651C

VIKAS JAIN

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Date: 2025.09.02 19:02:04 +05'30'

CA. Vikas Jain
(Partner)
M. No. 078245
UDIN : 25078245BMLDYP7784

Date: 02.09.2025
Place: Indore

ANNEXURE B

To the Independent Auditors' Report on

Financial Statements of Western MP Infrastructure & Toll Roads Pvt. Ltd.

(Referred to our report of even date)

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls over financial reporting of **Western MP Infrastructure & Toll Roads Pvt. Ltd.**("the Company") as of March 31, 2025 in conjunction with our audit of the financial statements of the Company for the year ended on that date.

Opinion

In our opinion, to the best of our information and according to the explanations given to us, the Company has, in all material respects, an adequate internal finance controls system over financial reporting and such internal financial controls over financial reporting with reference to Standalone Financial Statements were operating effectively as at 31st March 2025, based on the Internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control over financial reporting with reference to Standalone Financial Statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note. These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial control over financial reporting based on our audit with reference to Standalone Financial Statements. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the Guidance Note) issued by the Institute of Chartered Accountants of India and the Standards on Auditing prescribed under Section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system over financial reporting.

Meaning of Internal Financial Controls over Financial Reporting

A company's internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control over financial reporting includes those policies and procedures that

(1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;

(2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accoutering principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and

(3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Inherent Limitations of Internal Financial Controls over Financial Reporting

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future period are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

For S B A & Company
Chartered Accountants
FRN : 004651C

VIKAS JAIN

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Date: 2025.09.02 19:02:32 +05'30'

CA. Vikas Jain
(Partner)
M. No. 078245
UDIN : 25078245BMLDYP7784

Date: 02.09.2025
Place: Indore

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Balance Sheet as at March 31, 2025
(All amounts in ₹ lacs unless otherwise stated)

	Notes	As at March 31, 2025	As at March 31, 2024
ASSETS			
Non-current assets			
Property, plant and equipment	3	179.00	95.87
Capital work-in-progress	4	-	22.19
Intangible assets	5	67,637.27	70,348.23
Deferred tax assets (net)	6	551.04	1,067.19
Current tax assets (net)	7	30.69	32.76
Total non-current assets		**68,398.00**	**71,566.24**
Current assets			
Inventory	8	68.66	-
Financial assets			
Investment	9	234.82	5.28
Trade receivables	10	75.62	89.52
Cash and cash equivalents	11	291.98	283.49
Bank balances other than 'cash and cash equivalents'	12	1,400.00	1,300.19
Other financial assets	13	414.55	350.90
Other current assets	14	160.13	102.11
Total current assets		**2,645.77**	**2,131.49**
Total assets		**71,043.77**	**73,697.72**
EQUITY AND LIABILITIES			
EQUITY			
Equity share capital	15	2,913.46	2,913.46
Other equity	16	8,953.43	8,066.08
Total equity		**11,866.89**	**10,979.54**
LIABILITIES			
Non-current liabilities			
Financial liabilities			
Borrowings	17	47,541.83	43,578.77
Provisions	18	11.56	9,910.65
Total non-current liabilities		**47,553.39**	**53,489.42**
Current liabilities			
Financial liabilities			
Borrowings	19	1,554.91	6,070.36
Trade payables	20		
- total outstanding dues of micro enterprises and small enterprises		258.06	8.97
- total outstanding dues of creditors other than micro enterprises and small enterprises		1,902.85	716.90
Other financial liabilities	21	2,908.98	2,400.21
Other current liabilities	22	91.13	32.30
Provisions	23	4,907.56	0.02
Total current liabilities		**11,623.49**	**9,228.76**
Total liabilities		**59,176.88**	**62,718.18**
Total equity and liabilities		**71,043.77**	**73,697.72**

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

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Date: 2025.09.02 18:03:59 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2025

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2025.09.02 15:56:13 +05'30'

Shreedhar Narayan
Director
DIN-08047497
Place: Noida
Date: September 02, 2025

ANUJ MAITREY
Digitally signed by ANUJ MAITREY
Date: 2025.09.02 15:52:11 +05'30'

Anuj Maitrey
Director
DIN: 10481417
Place: Noida
Date: September 02, 2025

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2025.09.02 15:58:45 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2025

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Profit and Loss for the year ended March 31, 2025
(All amounts in ₹ lacs unless otherwise stated)

	Notes	For the Year Ended March 31, 2025	For the Year ended March 31, 2024
Income			
Revenue from operations	24	23,613.54	19,066.90
Other income	25	478.56	315.25
Total income		**24,092.10**	**19,382.15**
Expenses			
Operation and maintenance expenses	26	11,371.68	9,621.59
Employee benefit expenses	27	183.66	214.49
Other expenses	28	1,292.08	1,676.16
Total expenses		**12,847.42**	**11,512.24**
Earnings before interest expenses, tax, depreciation and amortisation (EBITDA)		**11,244.68**	**7,869.91**
Finance costs	29	7,100.67	6,561.28
Depreciation and amortisation expense	30	2,730.32	2,219.77
		-	
Profit/(Loss) before tax		**1,413.69**	**(911.14)**
Less : Tax expense/(Income)			
Current tax		-	-
Deferred tax expense/(income)	32	518.71	2,172.91
		518.71	**2,172.91**
Profit/(Loss) for the year		**894.98**	**(3,084.04)**
Other comprehensive income			
Items that will not be reclassified to profit or loss			
Re-measurement (losses)/gains on defined benefit obligations		(10.20)	(11.17)
Income tax relating to these items		2.57	2.81
Total other comprehensive loss for the year		**(7.63)**	**(8.36)**
Total comprehensive income/(loss) for the year		**887.35**	**(3,092.40)**
Earnings per share (₹) (Face value of ₹ 10 each)	31		
Basic (₹ in absolute amount)		3.07	(10.59)
Diluted (₹ in absolute amount)		3.07	(10.59)

The above Statement of Profit and loss should be read in conjunction with the accompanying notes

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

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Date: 2025.09.02 18:05:04 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2025

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2025.09.02 15:56:36 +05'30'

Shreedhar Narayan
Director
DIN-08047497
Place: Noida
Date: September 02, 2025

ANUJ MAITREY
Digitally signed by ANUJ MAITREY
Date: 2025.09.02 15:52:34 +05'30'

Anuj Maitrey
Director
DIN: 10481417
Place: Noida
Date: September 02, 2025

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2025.09.02 15:59:34 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2025

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Changes in Equity for the year ended March 31, 2025
(All amounts in ₹ lacs unless otherwise stated)

A Equity share capital

i) As at March 31, 2025

Balance as at April 01, 2024	Issue of share capital during the year	Balance as at March 31, 2025
2,913.46	-	**2,913.46**

ii) As at March 31, 2024

Balance as at April 01, 2023	Issue of share capital during the year	Balance as at March 31, 2024
2,913.46	-	**2,913.46**

B Other equity

Particulars	Securities premium	Reserves and surplus	Total
		Retained earnings	
Balance as at April 01, 2023	**22,344.48**	**(11,185.99)**	**11,158.49**
Net loss for the year	-	(3,084.04)	**(3,084.04)**
Other comprehensive income/(loss):			
Re-measurement (losses)/gains on defined benefit obligations(net of tax)	-	(8.36)	**(8.36)**
Total comprehensive loss for the year	-	**(3,092.40)**	**(3,092.40)**
Balance as at March 31, 2024	**22,344.48**	**(14,278.40)**	**8,066.09**
Balance as at April 01, 2024	**22,344.48**	**(14,278.40)**	**8,066.08**
Net profit for the year	-	894.98	**894.98**
Other comprehensive income/(loss):			
Re-measurement (losses)/gains on defined benefit obligations(net of tax)	-	(7.63)	**(7.63)**
Total comprehensive income/(loss) for the year	**-**	**887.35**	**887.35**
Balance as at March 31, 2025	**22,344.48**	**(13,391.05)**	**8,953.43**

The above Statement of Changes in equity should be read in conjunction with the accompanying notes

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

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Vikas Jain
Partner

Place: Indore
Date: September 02, 2025

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

SHREEDHAR NARAYAN Digitally signed by SHREEDHAR NARAYAN Date: 2025.09.02 15:57:01 +05'30'

Shreedhar Narayan
Director
DIN-08047497
Place: Noida
Date: September 02, 2025

ANUJ MAITREY Digitally signed by ANUJ MAITREY Date: 2025.09.02 15:53:53 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2025

SONAL GOYAL Digitally signed by SONAL GOYAL Date: 2025.09.02 16:00:10 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2025

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Cash Flows for the year ended March 31, 2025
(All amounts in ₹ lacs unless otherwise stated)

	For the Year Ended March 31, 2025	For the Year ended March 31, 2024
A. Cash flows from operating activities		
Profit/Loss before tax	**1,413.69**	**(911.14)**
Adjustments for:		
Depreciation and amortisation expense	2,730.32	2,219.77
Loss/ (Gain) on sale of property, plant and equipment (net)	34.59	-
Liabilities no longer required written back	(22.91)	(17.83)
Net Gain on sale of mutual fund	(90.09)	-
Net gain on investments measured at fair value through profit and loss	(1.35)	-
Interest income	(26.90)	(62.38)
Bad Debts written off	7.82	46.52
Provision for doubtful debt	349.93	
Finance cost	5,458.31	6,561.28
Operating Profit before working capital changes and other adjustments	**9,853.43**	**7,836.22**
Working capital changes and other adjustments:		
Decrease/(Increase) in inventories	(68.66)	-
Decrease/(Increase) in trade receivables	13.90	(89.52)
Decrease/(Increase) in other financial assets	(413.58)	(273.00)
Decrease/(Increase) in other assets	(58.08)	275.74
(Decrease)/Increase in trade payables	1,457.67	501.21
(Decrease)/Increase in provisions	(4,991.55)	1,696.07
(Decrease)/Increase in other financial liabilities	174.11	-
(Decrease)/Increase in other liabilities	58.83	8.90
Cash flow from operating activities post working capital changes	**6,026.06**	**9,955.62**
Income tax (paid) / refund	2.07	278.52
Net cash flow from operating activities (A)	**6,028.13**	**10,234.14**
B. Cash flows from investing activities		
Payment for purchase of property, plant and equipment, investment properties and intangible assets	(114.89)	(83.99)
Maturity/ (investment) in bank deposits other than cash and cash equivalents including deposit under lien (net)	(99.81)	207.59
Investment/(net redemption) from mutual funds (net)	(138.11)	(0.27)
Interest received	16.96	61.79
Net cash from in investing activities (B)	**(335.85)**	**185.12**
C. Cash flows from financing activities		
Proceeds from long term borrowings	44,173.44	-
Payment of long term borrowings	(49,004.50)	(6,484.07)
Payment of processing fee	(301.50)	-
Proceeds from non convertible debentures	4,100.00	1,400.00
Interest paid	(4,651.22)	(5,391.32)
Net cash used in financing activities (C)	**(5,683.79)**	**(10,475.39)**
D. Net decrease in Cash and cash equivalents (A+B+C)	**8.49**	**(56.13)**
E. Cash and cash equivalents at the beginning of the year	283.49	339.62
Cash and cash equivalents at the end of the year (D+E) (Refer reconciliation below)	**291.98**	**283.49**
Reconciliation of Cash and cash equivalents as per Statement of cash flow		
Cash and cash equivalents as per above comprise of following:		
Cash and cash equivalents (Refer note 11)	291.98	283.49
Balance as per Statement of cash flow	**291.98**	**283.49**

Note:
The above cash flows has been prepared under the 'Indirect Method' as set out in Ind AS 7, 'Statement of Cash Flows'.

Changes in liabilities arising from financing activities

Particulars	Balance as at April 01, 2024	Cash flows from financing activities		Finance cost (Non-cash adjustment)	Balance as at March 31, 2025
		Inflow	Outflow		
Term loan	48,249.13	44,173.44	(49,004.50)	178.67	43,596.74
Non convertible debentures from related party	1,400.00	4,100.00	-	-	5,500.00
Total liabilities from financing activities	**48,249.13**	**48,273.44**	**(49,004.50)**	**178.67**	**49,096.74**

Particulars	Balance as at April 01, 2023	Cash flows from financing activities		Finance cost (Non-cash adjustment)	Balance as at March 31, 2024
		Inflow	Outflow		
Term loan	54,669.11	-	(6,484.07)	64.08	48,249.13
Non convertible debentures from related party	-	1,400.00	-	-	1,400.00
Total liabilities from financing activities	**54,669.11**	**1,400.00**	**(6,484.07)**	**64.08**	**49,649.13**

The above Statement of Cash flows should be read in conjunction with the accompanying notes

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

Vikas Jain
Partner

Place: Indore
Date: September 02, 2025

VIKAS JAIN
Digitally signed by VIKAS JAIN
DN: c=IN, o=Personal, postalCode=452010, st=Madhya Pradesh, serialNumber=CC1CE97C7C18BD1F9B4AB3FC4CABF553205C3397896501851F4CC3FF0F62DF4A, cn=VIKAS JAIN
Date: 2025.09.02 18:07:08 +05'30'

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2025.09.02 15:57:25 +05'30'

Shreedhar Narayan
Director
DIN-08047497
Place: Noida
Date: September 02, 2025

ANUJ MAITREY
Digitally signed by ANUJ MAITREY
Date: 2025.09.02 15:54:23 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2025

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2025.09.02 16:00:56 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2025

Western M P Infrastructure & Toll Roads Private Limited
Notes to financial statements for the year ended March 31, 2025

1. Corporate Information

The Company Western M P Infrastructure & Toll Roads Private Limited (the 'Company') has been awarded road project in the state of Madhya Pradesh for development of Lebad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on Built Operate Transfer (BOT) basis. The concession period is 30 years (including 5 year extension). The registered office is located at A/15, Mahavir Nagar, CHS Factory Lane, Boriwali West, Mumbai Suburban, Maharashtra-400092, India.

2. Material Accounting Policies

(i) Statement of Compliance

The Financial Statements of the Company have been prepared in accordance with the Indian Accounting Standards (Ind AS) prescribed under section 133 of the Companies Act , 2013 ("the Act") read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, presentation and disclosure requirements of Division II of Schedule III to the Companies Act, 2013, and other accounting principles generally accepted in India.

(ii) Basis of preparation and presentation

The financial statements have been prepared on the historical cost basis except for certain financial instruments which are measured at fair values at the end of each reporting period, as explained in the accounting policies below.

The Company maintains its accounts on accrual basis following the historical cost convention except for the following:

- certain financial assets and liabilities measured at fair value

Accounting policies have been consistently applied except where a newly issued accounting standard is initially adopted or a revision to an existing accounting standard required a change in accounting policy hitherto in use. Amounts in the financial statements are presented in Indian Rupees rounded off to Lacs until unless otherwise stated.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company considers the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these financial statements is determined on such a basis, except for leasing transactions that are within the scope of Ind AS 116, and measurements that have some similarities to fair value but are not fair value, such as net realisable value in Ind AS 2 or value in use in Ind AS 36.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that entity can access at measurement date.

- Level 2 inputs other than quoted prices included in Level 1, that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices); and

- Level 3 inputs for the asset or liability that are not based on observable market data (unobservable inputs).

Impact of the initial application of new and amended IND ASs that are effective for current year:

a. The Ministry of Corporate Affairs (MCA) notified the Ind AS 117, Insurance Contracts, vide notification dated 12 August 2024, under the Companies (Indian Accounting Standards) Amendment Rules, 2024, which is effective from annual reporting periods beginning on or after 1 April 2024. The Company does not have any contracts that meets the definition of an insurance contract under IND AS 117 and hence the amendments do not have any impact on the Company's financial statements

b. The MCA notified the Companies (Indian Accounting Standards) Second Amendment Rules, 2024, which amend Ind AS 116, Leases, with respect to Lease Liability in a Sale and Leaseback. The amendment is effective for annual reporting periods beginning on or after 1 April 2024 and must be applied retrospectively in accordance with IND AS 8 to sale and leaseback transactions entered into after the date of initial application of Ind AS 116. The amendments do not have any impact on the Company's financial statements.

(iii) Current and non-current classification

Based on the time involved between the acquisition of assets for processing and their realisation in cash and cash equivalents, the Company has identified twelve months as its operating cycle for determining current and non-current classification of assets and liabilities in the balance sheet.

(iv) Foreign currency translation

The financial statements are presented in Indian Rupee (INR), which is the company's functional and presentational currency. Foreign currency transactions are recorded at the exchange rate prevailing on the date of the respective transactions between the functional currency and the foreign currency.

Monetary items

Monetary foreign currency assets and liabilities remaining unsettled at the Balance Sheet date are translated at the rates of exchange prevailing on that date. Gains / losses arising on account of realisation / settlement of foreign currency transactions and on translation of foreign currency assets and liabilities are recognized in the Statement of Profit and Loss.

Exchange differences arising on the settlement of monetary items or on reporting date's monetary items at rates different from those at which they were initially recorded during the year, or reported in previous financial statements, are recognized as income or as expenses in the year in which they arise.

(v) Revenue recognition

Revenue from contracts with customers is recognised when control of the goods or services are transferred to the customer at an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. The Company has concluded that it is the principal in its revenue arrangements because it typically controls the services before transferring them to the customer. Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Company and the revenue can be reliably measured, regardless of when the payment is being made. Revenue is measured at the transaction price of the consideration received or receivable, excluding the estimates of variable consideration that is allocated to that performance obligation, taking into account contractually defined terms of payment and excluding taxes or duties collected on behalf of the government. The specific recognition criteria described below must also be met before revenue is recognised.

Revenue is recognised either at a point in time or over time, when (or as) the Company satisfies performance obligations by transferring the promised goods or services to its customers.

The Company's revenue is divided into following categories:

a). Service Concession Arrangements
The Company operate and maintain roads and other infrastructure assets under public-to-private Service Concession Arrangements (SCAs), which is an arrangement between the "grantor" (a public sector entity/authority) and the "operator" (a private sector entity) to provide services that give the public access to major economic and social facilities utilizing private-sector funds and expertise.
With respect to SCA, revenue and costs are allocated between those relating to construction services, if any and those relating to operation and maintenance services and are accounted for separately. Consideration received or receivable is allocated by reference to the relative fair value of services delivered when the amounts are separately identifiable.

Toll collections from the users of the infrastructure facility operated or maintained by the Company under the Service Concession Arrangements are accounted for based on actual collection (net of amount charged over and above the normal user fee payable to MPRDC). Revenue from electronic toll collection is recognized on accrual basis.

b). Revenue from construction contracts

Contract revenue for fixed price contracts is recognized only to the extent of cost incurred that it is probable will be recoverable till such time the outcome of the job cannot be ascertained reliably. When the outcome of the contract is ascertained reliably, contract revenue is recognized at cost of work performed on the contract plus proportionate margin, using the percentage of completion method.

Percentage of completion is determined based on the proportion of actual cost incurred to the total estimated cost of the project. The percentage of completion method is applied on a cumulative basis in each accounting period to the current estimates of contract revenue and contract costs. The effect of a change in the estimate of contract revenue or contract costs, or the effect of a change in the estimate of the outcome of a contract, is accounted for as a change in accounting estimate and the effect of which are recognized in the Statement of Profit and Loss in the period in which the change is made and in subsequent periods.

For the purposes of recognising revenue, contract revenue comprises the initial amount of revenue agreed in the contract, the variations in contract work, claims and incentive payments to the extent that it is probable that they will result in revenue and they are capable of being reliably measured. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense in the Statement of Profit and Loss in the period in which such probability occurs.

c). Interest income from a financial asset is recognized when it is probable that the economic benefits will flow to the company and the amount of income can be measured reliably. Interest is accrued on time proportion basis, by reference to the principle outstanding at the effective interest rate. All other income is recognized on accrual basis when no significant uncertainty exists on their receipt.

(vi) Intangible assets

Intangible assets are recognized when it is probable that future economic benefits that are attributable to the asset will flow to the enterprise and the cost of the asset can be measured reliably. Intangible assets are stated at original cost net of tax/duty credits availed, if any, less accumulated amortization, and cumulative impairment, if any.

Rights under Service Concession Arrangements (SCA)

Toll collection rights are stated at cost, less accumulated amortisation, impairment losses, if any. Cost includes fair value of upfront payments towards acquisition and incidental expenses related thereto, and of corresponding obligations of the Company under the Concession Agreement entered with MPRDC related to construction /improvements of the Project Highway granted to the Company.

Toll collection rights are capitalized as intangible assets on the Appointed Date in terms of the Concession Agreement.

Amortization of Rights under SCA

Toll collection rights in respect of road projects are amortized over the period of concession using the revenue-based amortization method prescribed under Schedule II to the Companies Act, 2013. Under the revenue-based method, amortization is based on proportion of actual revenue earned for the year over the sum of actual revenue for the current year and projected revenue from Toll Road Carriageway expected to be earned over the balance concession period as estimated by the management. Total projected revenue is reviewed at the end of each financial year and is adjusted to reflect the changes in earlier estimate vis-a-vis the actual revenue earned till the end of the year so that the whole of the cost of the intangible asset is amortized over the concession period.

(vii) Cash and cash equivalents

Cash and cash equivalents in the balance sheet and as considered for purpose of the statement of cash flows comprise of cash at banks and on hand, and short-term deposits with an original maturity of three months or less. For purpose of statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

(viii) Statement of Cash Flows

Statement of Cash Flows is prepared segregating the cash flows from operating, investing and financing activities. Cash flow from operating activities is reported using indirect method. Under the indirect method, the net profit/(loss) is adjusted for the effects of:

(a) transactions of a non-cash nature;
(b) any deferrals or accruals of past or future operating cash receipts or payments and,
(c) all other items of income or expense associated with investing or financing cash flows.

The cash flows from operating, investing and financing activities of the Group are segregated based on the available information. Cash and cash equivalents are reflected as such in the Statement of Cash Flows and excludes balances which are not available for general use as on the date of Balance Sheet with a specific disclosure.

(ix) Borrowings

Borrowings are initially recognized at fair value, net of transaction cost incurred. Borrowings are subsequently measured at amortized cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognized in profit or loss over the period of the borrowings using effective interest method.

The fair value of the liability portion of the optionally convertible debentures is determined using a market interest rate for equivalent instrument. The amount is recorded as a liability on an amortized cost basis until extinguished on conversion or redemption of debentures. The reminder of the proceeds is attributable to the equity portion of the compound instrument. This is recognized and included in shareholders' equity, net of income tax effects, and not subsequently remeasured.

Borrowings are removed from the balance sheet when the obligation specified in the contract is discharged, cancelled or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss as other gains/(losses).

Borrowings are classified as current liabilities unless the Company has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period. Where there is breach of a material provision of a long-term loan arrangement on or before the end of the reporting period with the effect that the liability becomes payable on demand on the reporting date, the entity does not classify the liability as current, if lender agreed, after the reporting period and before the approval of the financial statement for issue, not to demand payment as a consequence of the breach.

Classification as debt or equity
Debt and equity instruments issued by Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

(x) Borrowing costs

Borrowing costs include interest calculated using the effective interest method, amortization of ancillary costs and other costs the Company incurs in connection with the borrowing of funds.
Other borrowing costs are expensed in the period in which they are incurred.

(xi) Leases

Leases are recognized as a right-to-use assets and corresponding liability at the date at which the leased asset is available for use by the Company. The Company currently has only short-term leases and leases of low-value assets, which are accounted for as under.

Short-term leases and leases of low-value assets
Short term leases are leases with a term of twelve months or less. For short-term and low value leases, the Company recognises the lease payments as an operating expense on a straight-line basis over the term of the lease.

(xii) Provisions, contingent liabilities, and contingent assets

A provision is recognized when the Company has a present obligation (legal or constructive) as a result of past events and it is probable that the Company will be required to settle the obligation in respect of which a reliable estimate can be made.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that the reimbursement will be received, and the amount of the receivable can be measured reliably.

Contingent liabilities are disclosed in notes in case of a present obligation arising from past events, when it is not probable that an outflow of resources will be required to settle the obligation or a present obligation arising from past events, when no reliable estimate is possible.

A contingent asset is a possible asset that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity. Contingent assets are not recognised but disclosed only when an inflow of economic benefits is probable.

(xiii) Financial Instruments

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instruments. Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. However, transaction costs directly attributable to the

acquisition of financial assets or financial liabilities at fair value through profit or loss ("FVTPL") are recognized immediately in the Statement of Profit and Loss.

If the Company determines that the fair value at initial recognition differs from the transaction price, the Company accounts for that instrument at that date as follows:

- at the measurement basis mentioned above if that fair value is evidenced by a quoted price in an active market for an identical asset or liability (i.e. a Level 1 input) or based on a valuation technique that uses only data from observable markets. Company recognises the difference between the fair value at initial recognition and the transaction price as a gain or loss.
- in all other cases, at the measurement basis mentioned above, adjusted to defer the difference between the fair value at initial recognition and the transaction price. After initial recognition, the Company recognises that deferred difference as a gain or loss only to the extent that it arises from a change in a factor (including time) that market participants would take into account when pricing the asset or liability.

Subsequent measurement of financial assets and financial liabilities is described below.

a) Financial Assets

All recognized financial assets are subsequently measured in their entirety at either amortized cost or fair value, depending on the classification of the financial assets

(i) Classification of Financial Assets

Financial assets that meet the following conditions are subsequently measured at amortised cost (unless the same are designated as fair value through profit or loss (FVTPL)):

- The asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows; and
- The contractual terms of instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at FVTPL is a residual category and all changes are recognized in profit or loss.

(ii) Amortized cost and effective interest method

Income is recognized on an effective interest method as per Ind AS 109 for financial assets other than those financial assets classified as at FVTPL. Interest income is recognized in the Statement of Profit and Loss and is included in the "Other income" line item.

(iii) Impairment of financial assets (Expected credit loss model)

An impairment loss on financial asset is established when there is objective evidence that the Company will not be able to collect all amounts due according to the original terms of the receivables. Impairment loss if any are recognised in Statement of Profit and Loss for the period.

(iv) De-recognition of financial assets

The Company derecognize a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party.

On de-recognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss if such gain or loss would have otherwise been recognized in the Statement of Profit or Loss on disposal of that financial asset.

b) Financial Liabilities

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Loans and borrowings are subsequently measured at amortized costs using Effective Interest Rate method.

Financial liabilities at fair value through profit or loss (FVTPL) are subsequently measured at fair value.

De-recognition of financial liabilities

Financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability substantially modified, such an exchange or modification is treated as the de-recognition of the original liability and the recognition of the new liability. The difference in the respective carried amount is recognized in the Statement of Profit and Loss.

c) Classification as debt or equity

Debt and equity instruments issued by Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

(xiv) Earnings per share

i. *Basic earnings per share* is computed by dividing the profit / (loss) for the year by the weighted average number of equity shares outstanding during the year.

ii. *Diluted earnings per share* is computed by dividing the profit / (loss) for the year as adjusted for dividend, interest and other charges to expense or income (net of any attributable taxes) relating to the dilutive potential equity shares by the weighted average number of equity shares considered for deriving basic earnings per share and also the weighted average number of equity shares that could have been issued upon conversion of all dilutive potential equity shares.

(xv) Income tax

The income tax expense or credit for the year is the tax payable on current year's taxable income based on the applicable income tax rate adjusted by changes in deferred tax assets and liabilities attributable to temporary differences and to unused tax losses. The current income tax charge is calculated based on tax laws enacted or substantively enacted at the end of the reporting period. Management periodically evaluates, positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation and provisions are established where appropriate based on amounts expected to be paid to the tax authorities.

Deferred income tax is provided in full, using the liability method on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. However deferred income tax is not accounted if it arises from the initial recognition of an asset or liability that at the time of the transaction affects neither the accounting profit nor taxable profit (tax loss). Deferred income tax is determined using tax rates and laws that have been enacted or substantively enacted by the end of the reporting period and are expected to apply when the related deferred income tax asset/liability is realized or settled.

Deferred tax assets are recognized for all deductible temporary differences and unused tax losses only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity wherein the related tax is also recognized in other comprehensive income or directly in equity, respectively.

(xvi) Impairment of non-financial assets

The carrying values of assets / cash generating units at each reporting date are reviewed for impairment if any indication of impairment exists. If any indication exists, the Company estimates the asset's recoverable amount.

If the carrying amount of the assets exceed the estimated recoverable amount, an impairment is recognized for such excess amount. The impairment loss is recognized as an expense in the Statement of Profit and Loss.

The recoverable amount is the higher of the fair value less costs of disposal and its value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects the current market assessments of the time value of money and the risks specific to the asset for which the estimated future cash flows have not been adjusted.
When there is indication that an impairment loss recognized for an asset (other than a revalued asset) in earlier accounting periods no longer exists or may have decreased, such reversal of impairment loss is recognized in the Statement of Profit and Loss, to the extent the amount was previously charged to the Statement of Profit and Loss. In case of revalued assets such reversal is not recognized.

(xvii) Employee benefits

Employee benefits includes provident fund, gratuity and compensated absences.

i. Short term Employee Benefit

All employee benefits falling due wholly within twelve months of rendering the service are classified as short-term employee benefits. The benefits like salaries, wages, short term compensated absences etc. and the expected cost of bonus, and ex-gratia are recognized in the period the related service is rendered at undiscounted amount of benefits expected to be paid in exchange for that service.
The cost of short-term compensated absences is accounted as under:
(a) in case of accumulated compensated absences, when employees render the services that increase their entitlement of future compensated absences; and
(b) in case of non-accumulating compensated absences, when the absences occur.

ii. Post-employment benefits

(a) Defined contribution plans:

The Company offers its employees State governed provident fund linked with employee pension scheme as defined contribution plans. The contribution paid/ payable under the scheme is recognized during the period in which the employee renders the related service.

(b) Defined benefit plans:

For defined benefit retirement benefit plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each annual reporting period. Re- measurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding net interest), is reflected immediately in the balance sheet with a charge or credit recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service

costs are recognized in profit or loss on the earlier of the date of the plan amendment or curtailment, and the date that the Company recognizes related restructuring costs.

Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset.
Defined benefit costs are categorized as follows:
• service cost (including current service cost, past service cost, as well as gains and losses on curtailments) and
• net interest expense or income; and
• re-measurement

The Company presents the first two components of defined benefit costs in profit or loss in the line item 'Employee benefits expense'. Curtailment gains and losses are accounted for as past service costs.

The present value of the defined benefit plan liability is calculated using a discount rate which is determined by reference to market yields at the end of the reporting period on government bonds.

(c) Other long-term employee benefits

The obligation for other long-term employee benefits such as long term compensated absences, are measured at the present value of the estimated future cash outflows expected to be made by the Company in respect of services provided by employees up to the reporting date.

(xviii) Segment reporting:

The Company has only one reportable segment, which is operation and maintenance of Toll road projects on a Built Operate Transfer (BOT) basis. The Chief Operational Decision Maker monitors the operating results as one single segment for the purpose of making decisions about resource allocation and performance assessment. Considering the nature of Company's business and operations, there are no separate reportable segments (business and/or geographical) in accordance with the requirements of Indian Accounting Standard 108 'Segment Reporting'.

(xix) Provision for periodic major maintenance

The Company provides for contractual obligations as per Service Concession Arrangement (SCA) with MPRDC to restore the infrastructure to a specified level of serviceability at periodic intervals or restore the infrastructure to a specified condition before it is handed over to MPRDC. Provisions are measured based on management's estimate required to settle the obligation at the balance sheet date and are discounted using a rate that reflects the time value of money. When discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost. The same is reviewed at each balance sheet date and adjustments if any to the carrying amount is provided for accordingly.

(xx) Earnings before Interest, Tax, Depreciation and Amortization

Earnings before Interest, Tax, Depreciation and Amortization disclosed in the Statement of Profit and Loss are computed as under:

Total income less Company's expenses other than finance costs, tax expenses, depreciation and amortization, as appearing in the Statement of Profit and Loss.

(xxi) Inventories

Inventories are stated at the lower of cost and net realisable value. Cost of inventories include all costs incurred in bringing the inventories to their present location and condition. Costs are assigned to individual items of inventory based on first-in-first-out basis. Cost of purchased inventory are determined after deducting rebates and discounts.

(xxii) Insurance claims

Insurance claims are accounted for based on claims admitted/expected to be admitted and to the extent that the amount recoverable can be measured reliably and it is reasonable to expect ultimate collection.

(xxiii) Recent Accounting Pronouncements

Ministry of Corporate Affairs ("MCA") notifies new standards or amendments to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time. There is no such notification which would have been applicable from April 01,2025.

(xxiv) Critical accounting judgements and key sources of estimation uncertainty

The preparation of these financial statements in conformity with Ind AS requires the management to make judgements, estimates and assumptions that affect the reported amounts of assets, liabilities, income and expenses, and the accompanying disclosures, and the disclosure of contingent liabilities.

The Management believes that the estimates used in preparation of the financial statements are prudent and reasonable. Actual results could differ from these estimates and the differences between the actual results and the estimates are recognized in the periods in which the results are known / materialize.

1) Applicability of service concession arrangement accounting to toll roads concessionaire arrangements

The Company has determined that Appendix C of Ind AS 115 'Service concession arrangements' is applicable to the Company which provides on accounting by the operators for public to private service concession arrangements. The Company has entered into concession arrangement with Madhya Pradesh Road Development Corporation Limited (MPRDC) as per which the Company would participate in the built Operate Transfer (BOT) basis the toll roads infrastructure. After the end of the Concession arrangement, the Company has to transfer the infrastructure i.e. toll roads constructed to MPRDC.

2) Useful lives of property, plant and equipment

The charge in respect of periodic depreciation is derived after determining an estimate of an asset's expected useful life and the expected residual value at the end of its life. The useful lives and residual values of Company's assets are determined by management at the time the asset is acquired and reviewed at each financial year end.

3) Obligations relating to employee benefits

The employee benefit obligation depends on several factors that are determined on an actuarial basis using several assumptions. The assumptions used in determining the net cost/ (income) include the discount rate, inflation and mortality assumptions. Any changes in these assumptions will impact upon the carrying amount of employment benefit obligations.

4) Provision for income taxes and deferred tax

Judgements are involved in determining the provision for income taxes including judgement on whether tax positions are probable of being sustained in tax assessments. A tax assessment can involve interpretation issues, which can only be resolved over extended time periods.

Significant management judgement is also required to determine the amount of deferred tax assets that can be recognised, based upon the likely timing and the level of future taxable profits together with future tax planning strategies.

The Company reviews the carrying amount of deferred tax assets at the end of each reporting period.

5) Impairment of intangible assets - Rights under Service Concession Arrangements

Management uses the estimated future cash flows in assessing value in use for intangible assets. Future estimated cash flows are discounted to their present value using a pre-tax discount rate that reflects the current market assessments of the time value of money and the risks specific to the asset for which the estimated future cash flows have not been adjusted.

The inputs to the valuation models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as Traffic growth rates, WACC, Tax rates, Inflation rates etc.

6) Amortisation of intangible assets - Rights under Service Concession Arrangements

The Company amortise the intangible assets - Rights under Service Concession Arrangements over the balance concession period. The concession period as per the Concession Agreement (refer note 1) is subject to the certain extensions dependent on achieving certain revenue targets in future. The Company uses revenue projections for estimating the extensions in concession period in terms of the Concession. The revenue projections are based on assumptions made by the management regarding future traffic growth and inflation factor for assessing user toll fee as supported by the studies from the third-party independent consultant.

7) Provision for periodic major maintenance

The Company estimates and provides for contractual obligations as per Service Concession Arrangement (SCA) with NHAI to restore the infrastructure to a specified level of serviceability at periodic intervals during the SCA period or before it is handed over to NHAI. These estimates are corroborated through purchase orders/ work orders placed or to be placed by the Company as per the road survey reports issued by an independent field expert and major maintenance strategy/ methodology approved by the Independent Consultant appointed by NHAI. As the estimated cost is based on the various assumptions such as current infrastructure (road, pavements, etc.) condition, inflation in material cost, government policies etc., hence the Management is required to apply judgement over these factors for revalidating the provision expenses which is reviewed on annual basis.

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Notes forming part of Financial Statements for the year ended March 31, 2025
(All amounts in ₹ lacs unless otherwise stated)

	As at March 31, 2025	As at March 31, 2024
3. Property, plant and equipment		
Net carrying value of property, plant and equipment	179.00	95.87
	179.00	**95.87**

Description	Office equipment	Computers	Furniture and fixtures	Plant and equipment	Vehicles	Network & Server	Total
Gross block							
As at March 31, 2023	**191.12**	**23.00**	**7.00**	**395.19**	**16.00**	**-**	**632.31**
Additions for the year	1.70	15.00	-	45.11	-	-	**61.81**
As at March 31, 2024	**192.82**	**38.00**	**7.00**	**440.30**	**16.00**	**-**	**694.12**
Additions for the year	15.45	-	4.61	58.91	44.06	14.04	**137.07**
Assets write off	(191.12)	-	(7.00)	(395.19)	(16.00)	-	**(609.31)**
As at March 31, 2025	**17.15**	**38.00**	**4.61**	**104.02**	**44.06**	**14.04**	**221.88**
Accumulated depreciation							
As at March 31, 2023	**191.12**	**23.00**	**7.00**	**356.16**	**16.00**	**-**	**593.28**
Charge for the year	0.06	0.49	-	4.42	-	**-**	**4.97**
As at March 31, 2024	**191.18**	**23.49**	**7.00**	**360.58**	**16.00**	**-**	**598.25**
Charge for the year	2.71	4.75	0.27	6.98	2.97	1.68	**19.36**
Assets write off	(191.12)	-	(7.00)	(360.60)	(16.00)	-	**(574.72)**
As at March 31, 2025	**2.77**	**28.24**	**0.27**	**6.96**	**2.97**	**1.68**	**42.89**
Net carrying value:							
As at March 31, 2025	**14.39**	**9.76**	**4.34**	**97.06**	**41.09**	**12.36**	**179.00**
As at March 31, 2024	**1.64**	**14.51**	**-**	**79.72**	**-**	**-**	**95.87**

For details of property, plant and equipment pledged as security for borrowings refer note 17(ii).

4. Capital work in progress	As at March 31, 2025	As at March 31, 2024
Plant and equipment	-	22.19
	-	**22.19**

Capital work-in-progress (CWIP) ageing schedule

As at March 31, 2025	Amount in CWIP for the period of				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Plant and equipment	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**

As at March 31, 2024	Amount in CWIP for the period of				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Plant and equipment	22.19	-	-	-	22.19
Total	**22.19**	**-**	**-**	**-**	**22.19**

Notes:
(i) For details of capital work-in-progress pledged as security for borrowings refer note 17.
(ii) There is no CWIP, whose completion is overdue or have exceeded its cost compared to the original plan.

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Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Notes forming part of Financial Statements for the year ended March 31, 2025

(All amounts in ₹ lacs unless otherwise stated)

	As at March 31, 2025	As at March 31, 2024
5 Intangible assets		
Net carrying value of intangible assets	67,637.27	70,348.23
	67,637.27	**70,348.23**

Description	Rights under service concession arrangements	Total other intangible assets
Gross block (at Cost)		
As at March 31, 2023	**83,543.14**	**83,543.14**
Additions for the year	**-**	**-**
As at March 31, 2024	**83,543.14**	**83,543.14**
Additions for the year	**-**	**-**
As at March 31, 2025	**83,543.14**	**83,543.14**
Accumulated amortisation		
As at March 31, 2023	**10,980.10**	**10,980.10**
Charge for the year	2,214.81	**2,214.81**
As at March 31, 2024	**13,194.91**	**13,194.91**
Charge for the year	2,710.96	**2,710.96**
As at March 31, 2025	**15,905.87**	**15,905.87**
Net carrying value:		
As at March 31, 2025	**67,637.27**	**67,637.27**
As at March 31, 2024	**70,348.23**	**70,348.23**

Notes:

(i) The Company has contractual agreement with Madhya Pradesh Road Development Corporation Limited ("MPRDC), a Madhya Pradesh Government undertaking, granted rights to collect toll on the road on SH-31 upto April 27, 2038 (Refer Note-43).(Also refer note 2 (xxiv)(6)).

(ii) Remaining amortisation period of Rights under Service Concession Arrangement is 13 years 27 days as on March 31, 2025. (Refer note 43)

(iii) For details of Intangible assets pledged as security for borrowings refer note 17(ii).

(iv) Management has assessed impairment indicators for Intangible Assets- Rights under Service Concession Arrangements as per guidance under Ind-AS 36 and estimates the recoverable amount of asset to be greater than its carrying value as at the balance sheet date (Refer Note 2(xxiv)(5))

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		As at March 31, 2025	As at March 31, 2024
6	**Deferred tax assets (net)**		
	Deferred tax assets arising on account of :		
	Unabsorbed depreciation/business loss carried forward	10,563.81	10,145.63
	Expense allowed in tax on payment basis	1,302.99	2,494.32
	Provision for doubtful debts	88.07	-
	Deferred tax liabilities arising on account of :		
	Difference between carrying value of property, plant and equipment and intangible assets as per books and tax	(11,328.38)	(11,572.76)
	Unrealised gain on mutual fund	(0.34)	-
	Unamortised processing fee on borrowings	(75.10)	-
	Deferred tax liabilities (net)	**551.04**	**1,067.19**

Movement in deferred tax assets (net)

Particulars	As at March 31, 2024	Recognised in Statement of Profit and Loss	Recognised in other comprehensive income/ equity	As at March 31, 2025
Difference between carrying value of property, plant and equipment and intangible assets as per books and tax	(11,572.75)	244.37	-	(11,328.38)
Unrealised gain on mutual fund	-	(0.34)	-	(0.34)
Unamortised processing fee on borrowings	-	(75.10)	-	(75.10)
Expense allowed in tax on payment basis	2,494.32	(1,193.89)	2.57	1,302.99
Unabsorbed depreciation/business loss carried forward	10,145.63	418.18	-	10,563.81
Provision for doubtful debts	-	88.07	-	88.07
Total deferred tax assets/(liabilities)	**1,067.19**	**(518.71)**	**2.57**	**551.04**

Particulars	As at March 31, 2023	Recognised in Statement of Profit and Loss	Recognised in other comprehensive income/ equity	As at March 31, 2024
Difference between carrying value of property, plant and equipment and intangible assets as per books and tax	(11,831.63)	258.88	-	(11,572.75)
Expense allowed in tax on payment basis	2,550.87	(59.36)	2.81	2,494.32
Unabsorbed depreciation/business loss carried forward	12,518.05	(2,372.42)	-	10,145.63
Total deferred tax assets/(liabilities)	**3,237.29**	**(2,172.91)**	**2.81**	**1,067.19**

7	**Current tax assets (net)**		
	Advance income tax (net)	30.69	32.76
		30.69	**32.76**
8	**Inventories**		
	Valued at lower of cost or net realisable value		
	Stores and spares	68.66	-
		68.66	**-**

The cost of inventories recognised as an expense in the Statement of Profit and Loss amounting to ₹ 434.09 lacs (March'24: Nil).

9	**Investments**		
	Current		
	Investment at fair value through profit or loss (FVTPL):		
	60806.585(March 31, 2025: Nil) units in ICICI Prudential Market DIRECT GROWTH	229.04	-
	1379.39 (March 31, 2024: 1379.39) units in ABSL Liquid Fund - Growth DIRECT	5.78	5.28
	Total	**234.82**	**5.28**

Aggregate amount of unquoted investment - Carrying value
Carrying value of unquoted investments is same as the fair value which is based on the net asset value ('NAV')

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10 Trade receivables

Current

	As at March 31, 2025	As at March 31, 2024
Trade receivable		
- Unsecured, considered good	75.62	89.52
	75.62	**89.52**

Trade receivable ageing schedule — **Outstanding for following periods from due date of payment**

	Not due	Less than 6 month	6 month - 1 year	1-2 years	2-3 years	More than 3 years	Total
As at March 31, 2025							
Undisputed trade receivables – considered good	-	75.62	-	-	-	-	75.62
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Undisputed trade receivables – credit impaired	-	-	-	-	-	-	-
Disputed trade receivables - considered good	-	-	-	-	-	-	-
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Disputed trade receivables – credit impaired	-	-	-	-	-	-	-

Trade receivable ageing schedule — **Outstanding for following periods from due date of payment**

	Not due	Less than 6 month	6 month - 1 year	1-2 years	2-3 years	More than 3 years	Total
As at March 31, 2024							
Undisputed trade receivables – considered good	-	89.52	-	-	-	-	89.52
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Undisputed trade receivables – credit impaired	-	-	-	-	-	-	-
Disputed trade receivables - considered good	-	-	-	-	-	-	-
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Disputed trade receivables – credit impaired	-	-	-	-	-	-	-

11 Cash and cash equivalents

	As at March 31, 2025	As at March 31, 2024
Cash on hand	9.59	3.17
Balances with banks:		
- current accounts	282.39	280.32
	291.98	**283.49**

12 Bank balances other than 'cash and cash equivalents' above

	As at March 31, 2025	As at March 31, 2024
Deposits with original maturity more than three months but less than twelve months	1,400.00	1,300.19
	1,400.00	**1,300.19**
Includes deposits towards Debt Service Reserve Account (DSRA) pursuant to loan covenants of loan agreement entered by the Company with its lenders	1,400.00	-

13 Other financial assets

Current - Unsecured, considered good

	As at March 31, 2025	As at March 31, 2024
Interest accrued on fixed deposits with banks	10.32	0.59
Security deposits	1.18	0.38
Receivable from MPRDC*	745.96	349.93
Less: Allowance for doubtful debt	*(349.93)*	-
	396.03	349.93
Receivable from related party	7.03	-
	414.55	**350.90**

*Receivable from MPRDC is in relation to reimbursement for ETC paid to mapper bank and reimbursement is received from MPRDC.

14 Other current assets

Unsecured, considered good

	As at March 31, 2025	As at March 31, 2024
Advance to suppliers	52.90	3.70
Advance to employees	0.56	-
Prepaid expenses	40.60	32.80
Balance with government authorities	58.30	65.61
Interest on term loan paid in advance	7.77	-
	160.13	**102.11**

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	As at March 31, 2025	As at March 31, 2024
15 Equity share capital		
Authorised		
3,00,00,000 (March 31, 2024: 3,00,00,000) equity shares of ₹10 each	3,000.00	3,000.00
Issued, subscribed and fully paid:		
2,91,34,648 (March 31, 2024: 2,91,34,648) equity shares of ₹10 each	2,913.46	2,913.46
	2,913.46	**2,913.46**

(i) Reconciliation of equity shares outstanding at the beginning and at the end of the year:

	As at March 31, 2025		As at March 31, 2024	
	No. of shares	₹ in lacs	No. of shares	₹ in lacs
Equity shares of ₹10 each fully paid up				
Opening Balance	2,91,34,648	2,913	2,91,34,648	2,913
Add: Shares issued during the year	-	-	-	-
Closing Balance	**2,91,34,648**	**2,913**	**2,91,34,648**	**2,913**

(ii) Terms and rights attached to equity shares:

The Company has one class of equity shares having a par value of ₹10 per share. Each shareholder is eligible for one vote per share held. The dividend proposed by the Board of Directors is subject to the approval of the shareholders in the ensuing annual general meeting, except in case of interim dividend. In the event of liquidation, the equity shareholders are eligible to receive the remaining assets of the Company after distribution of all preferential amounts, in proportion to their shareholding.

(iii) Shares in respect of each class in the Company held by its Holding Company or its Ultimate Holding Company including shares held by Subsidiaries or Associates of the Holding Company or the Ultimate Holding Company in aggregate

Name of the shareholder	As at March 31, 2025		As at March 31, 2024	
	No. of shares	Amount	No. of shares	Amount
Cube Highways and Infrastructure V Pte Limited, the Holding Company along with its nominees (w.e.f 14 Feb 2024)	2,76,77,916	2,767.79	2,76,77,916	2,767.79

(iv) Shareholders holding more than 5% shares of the Company

Name of the shareholder	As at March 31, 2025		As at March 31, 2024	
	No. of shares	% holding	No. of shares	% holding
Cube Highways and Infrastructure V Pte Limited, the Holding Company along with its nominees (w.e.f 14 Feb 2024)	2,76,77,916	95.00%	2,76,77,916	95.00%

(v) Aggregate number of bonus shares issued, shares issued for consideration other than cash and shares bought back during the period of five years immediately preceding the balance sheet date:

The Company has not issued any bonus shares nor has there been any buy back of shares during the period of five years immediately preceding the year March 31, 2025.

(vi) Details of shares held by promoters

Promoter name	As at March 31, 2025				
	No. of shares at the beginning of the year	Change during the year	No. of shares at the end of the year	% of Total Shares	% change during the year
Cube Highways and Infrastructure V Pte Limited, the Holding Company along with its nominees (w.e.f 14 Feb 2024)	2,76,77,916	-	2,76,77,916	95.00%	-
Expressway Developers Limited (Till 13 Feb 2024)	14,56,732	-	14,56,732	5.00%	-

Promoter name	As at March 31, 2024				
	No. of shares at the beginning of the year	Change during the year	No. of shares at the end of the year	% of Total Shares	% change during the year
Expressway Developers Limited (Till 13 Feb 2024)	2,91,34,648	(2,76,77,916)	14,56,732	5.00%	-95.00%
Cube Highways and Infrastructure V Pte Limited, the Holding Company along with its nominees (w.e.f 14 Feb 2024)	-	2,76,77,916	2,76,77,916	95.00%	100.00%

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		As at March 31, 2025	As at March 31, 2024
16	**Other equity**		
i)	**Securities premium**		
	Opening Balance	22,344.48	22,344.48
	Addition during the year	-	-
	Closing Balance	**22,344.48**	**22,344.48**
ii)	**Reserves and surplus**		
	Retained earnings		
	Opening Balance profit/loss	**(14,278.40)**	**(11,185.99)**
	Net loss for the year	894.98	(3,084.04)
	Other comprehensive income:		
	Re-measurement (losses)/gains on defined benefit obligations	(7.63)	(8.36)
	Closing Balance	**(13,391.05)**	**(14,278.40)**
		8,953.43	**8,066.08**

Retained earnings
Retained earnings are created from the profit / loss of the Company, as adjusted for distributions to owners, transfers to other reserves, etc. Negative balance represents accumulated losses.

17	**Borrowings - Non-current**	As at March 31, 2025	As at March 31, 2024
	At amortised cost		
	Secured:		
	a) Term loan		
	Banks	33,720.16	38,591.32
	Financial Institution	9,876.58	9,657.81
	Sub-total (A)	**43,596.74**	**48,249.13**
	Unsecured:		
	a) NCD (Non - convertible debentures) [Refer note 17 (ii)]		
	Cube Highways and Infrastructure CH-V Pte Ltd	5,500.00	1,400.00
	Sub-total (B)	**5,500.00**	**1,400.00**
	Less: Current maturities of borrowings (Current borrowings)		
	Secured:		
	a) Term loan		
	- Banks	1,203.12	4,906.19
	- Financial Institution	351.79	1,164.17
	Total current maturities of borrowings (C)	**1,554.91**	**6,070.36**
	Total non-current borrowings (A+B-C)	**47,541.83**	**43,578.77**

17(i) Term loan from Banks and Financial Institution

During the year company has refinance the loans and availed the following term loans:
- INR 34,179.45 lacs from ICICI Bank (as at the date of refinancing, principal amount pending to be paid was INR 35,377.56 lacs)
- INR 9,993.99 lacs from Aditya Birla Finanace Limited(ABFL) ((as at the date of refinancing, principal amount pending to be paid was INR 8,795.88 lacs)

Maturity Date: September 30, 2035

Repayment - 43 structured quarterly instalments starting from March 31, 2025

Banks/Financial Institution	Effective Rate	
	Senior Debt	Sub Debt
ICICI Bank	-10.70% p.a. as on March 31, 2024 -9.15% p.a. as on March 31, 2025	-11.20% p.a. as on March 31, 2024 -9.15% p.a. as on March 31, 2025
Aditya Birla Finanace Limited(ABFL)	-11.60% p.a. as on March 31, 2024 -9.15% p.a. as on March 31, 2025	-11.10% p.a. as on March 31, 2024 -9.15% p.a. as on March 31, 2025

Security:
The term loan is secured by first ranking pari passu charge inter se amongst the Senior Debt Facility Lenders and second ranking pari passu charge inter se amongst the Additional Debt Facility Lenders, over the Hypothecated Property to extend permited under concession agreemnt or as may be permited by MPRDC from time to time (as more particularly stipulated under Deed of Hypothecation):
(i) all rights, title, interest and benefit of the Borrower in present and future tangible/intangible movable assets,
(ii) all the rights, title, interest, benefits, claims and demands of the borrower, inter alia, in the project documents, letter of credits, guarantees the clearances insurance contracts, insurance policies,
(iii) all the bank accounts including but not limited to the escrow accounts and any other reserves or bank accounts (other than the distribution account) of the Company including all monies deposited/ to be deposited in such accounts;
(iv) all present and future receivables in relation to Project,
(v) all the current assets of the Company as per the Deed of Hypothecation,
(vi) all other assets of the borrower, both present and future [other than the property referred to in (i) to (v) above]
(vii) pledge of 51% (fifty one percent) of each of the paid up Shares and 51% (fifty one percent) of each of the other instruments issued or subsisting by the Borrower, including but not limited to any compulsory convertible debentures, compulsory convertible preference shares, optionally convertible debentures and non-convertible debentures issued by the Borrower.

Share pledge mentioned in security note (vii) above has been executed susequent to the year ended March 31, 2025.

Put Option available with the Lenders

At the end of 7th year from the first disbursement date and each year thereafter, Lenders shall have the option to require the Borrower to mandatorily prepay or refinance the Facility in full. The Company shall prepay or refinance the Facility upon exercise of put option by the Lender(s). The Lender(s) shall give a written notice of 30 (thirty) days to the Borrower to give effect to exercising of this option and the Borrower shall be under obligation to prepay mandatorily within 120 days of receipt of such notice from the Lender(s).

17(ii) Terms of Unsecured loans- Non Convertible Debentures (NCD's)

During the year ended March 31, 2024, the Company has issued 14,00,000 Unsecured, Non Convertible Debentures (NCD's) having face value of ₹ 100 each at par, on private placement basis to Cube Highways and Infrastructure V Pte. Ltd. ("Holding Company").

During the year, The Company has additionally issued 41,00,000 Unsecured, Non Convertible Debentures (NCD's) having face value of ₹ 100 each at par, on private placement basis to Cube Highways and Infrastructure V Pte. Ltd. ("Holding Company").

Redemption date: The NCD's shall be compulsorily redeemed on or before March 31, 2038 ("Final Redemption date").
Subject to the Company having met all the restricted payment conditions (as defined under the restricted payments covenants under the applicable financing documents), the Subscriber shall have the right to seek premature redemption of the NCDs at face value with any accrued but unpaid interest on the NCDs, at any time prior to the Final Redemption Date.

Coupon: Annual interest rate of 13.00%
Subject to the Company having met all the restricted payment conditions provided under the applicable financing documents, the Subscriber shall be eligible to receive a coupon on the last Business Day of each calendar quarter, at an annual interest rate of 13% per annum (calculated on annual basis) from the date of issuance of NCD's.

An amendment agreement in relation to NCD's was entered dated March 06, 2025 for 41,00,000 NCD's in relation to which 1st interest accrued will be made on March 31, 2026 for interest from April 01, 2025 to Mar 31, 2026 @ 13.20% per annum (EIR for tranch 1 is 13% and for tranch 2 is 13.17%) and amendment aggrement dated April 01, 2025 for 14,00,000 NCD's was entered as per which no interest will be payable for the period from October 01, 2025 to March 31, 2025 and 1st interest accrued will be made on March 31, 2026 for interest from April 01, 2025 to Mar 31, 2026 @ 13.20% per annum.

18 Provisions - non-current

	As at March 31, 2025	As at March 31, 2024
Provision for employee benefits		
- Gratuity (refer note 33)	8.09	0.30
- Compensated absences	3.47	0.24
- Provision for periodic major maintenance works (refer note 41)	-	9,910.11
	11.56	**9,910.65**

19 Current borrowings

	As at March 31, 2025	As at March 31, 2024
Current maturities of long term borrowings		
- Banks	1,203.12	4,906.19
- Financial Institution	351.79	1,164.17
	1,554.91	**6,070.36**

20 Trade payables

Current		
Total outstanding dues of micro enterprises and small enterprises (Refer note 42)	258.06	8.97
Total outstanding dues to creditors other than micro enterprises and small enterprises	1,902.85	716.90
	2,160.91	**725.87**

Trade payables ageing schedule

As at March 31, 2025		**Outstanding for following period from the invoice date**				
Particulars	**Unbilled**	**Not due**	**Less than 1 year**	**1-2 year**	**More than 2 years**	**Total**
Undisputed outstanding dues of micro enterprises and small enterprises	12.37	9.75	235.54	0.40	-	258.06
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	376.12	-	1,454.79	71.95	-	1,902.85
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-

As at March 31, 2024		**Outstanding for following period from the invoice date**				
Particulars	**Unbilled**	**Not due**	**Less than 1 year**	**1-2 year**	**More than 2 years**	**Total**
Undisputed outstanding dues of micro enterprises and small enterprises	-	-	8.97	-	-	8.97
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	95.00	-	621.90	-	-	716.90
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-

Terms and condition of the above financial liabilities:
Credit period varies as per the contractual terms of various suppliers/vendors. The Company has appropriate policy in place to ensure that all dues are paid within the credit terms agreed with the parties. Also, refer Company's credit risk management policy.

21 Other financial liabilities

	As at March 31, 2025	As at March 31, 2024
Interest accrued but not due on Term Loan	25.54	-
Interest accrued but not due on NCD (Refer note 38)*	311.68	2.54
Payable to employees (Refer note 60)	39.29	4.89
Payable to MPRDC	2,532.48	2,392.78
	2,908.98	**2,400.21**

* Based on the cash flow projections, the management estimates that these liabilities will be paid in next financial year and hence, the same has been classified as current liabilities. Further, interest accrued but not due on NCD includes Rs. 231.57 lacs which has been booked based upon effective interest rate (EIR) as per IND AS 109.

22 Other current liabilities

Statutory dues payable	91.13	32.30
	91.13	**32.30**

23 Provisions

Current

Provision for employee benefits		
- Gratuity (refer note 33)	0.94	0.01
- Compensated absences	0.40	0.01
- Provision for periodic major maintenance works (refer note 41)	4,906.22	-
	4,907.56	**0.02**

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Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Notes forming part of Financial Statements for the year ended March 31, 2025

(All amounts in ₹ lacs unless otherwise stated)

		For the Year Ended March 31, 2025	For the Year ended March 31, 2024
24	**Revenue from operations**		
	Revenue from toll fee collections	23,613.54	19,025.95
	Change of Scope income	-	40.95
		23,613.54	**19,066.90**

The table below represents disaggregated revenues from contracts with customers based on nature, amount and timing for the year ended March 31, 2025 and March 31, 2024.

	Particulars	**For the Year Ended March 31, 2025**	**For the Year ended March 31, 2024**
	Timing of revenue recognition	23,613.54	19,025.95
	Services transferred over time	-	40.95
		23,613.54	**19,066.90**
25	**Other income**		
	Interest on financial assets carried at amortised cost		
	- bank deposits	26.69	54.54
	- income tax refund	0.20	7.84
	Net gain on sale of mutual funds	90.09	-
	Net gain on investments measured at fair value through profit and loss	1.35	-
	Liability/provisions no longer required written back	22.91	17.83
	Reimbursement from MPRDC for ETC charges	337.08	234.70
	Miscellaneous income	0.24	0.34
		478.56	**315.25**
26	**Operation and maintenance expenses**		
	Periodic major maintenance expenses	4,118.62	3,710.47
	Repair and maintenance of carriageway	1,413.07	510.51
	Additional concessioner fee	4,664.86	4,358.27
	Toll operation expenses	633.89	645.97
	Security charges	-	57.24
	AMC Charges	15.01	-
	Vehicle hire charges	205.03	44.97
	Route patrolling expenses	205.58	23.99
	Power and fuel	102.25	155.44
	Professional charges - site	4.26	52.93
	Change of scope expenses	-	4.22
	Miscellaneous expenses-O&M	9.11	57.58
		11,371.68	**9,621.59**
27	**Employee benefit expenses**		
	Salary and wages	165.37	169.92
	Gratuity expenses	2.31	0.31
	Contribution to provident and other funds	6.95	9.85
	Staff welfare expenses	9.03	34.41
		183.66	**214.49**

(All amounts in ₹ lacs unless otherwise stated)

		For the Year Ended March 31, 2025	For the Year ended March 31, 2024
28	**Other expenses**		
	Rent	2.42	0.59
	Management service charges	254.28	1.13
	Rates and taxes	14.03	49.81
	Penalty on account of liquidated damages	-	756.03
	Insurance expense	114.32	84.86
	Legal and professional fees	102.70	275.34
	Payments to auditors (including taxes):		
	- Statutory audit fee	3.54	6.20
	Travelling and conveyance	19.18	28.88
	Printing and stationary	0.62	2.03
	Communication expenses	3.66	45.68
	IT related cost	21.83	25.42
	Loss on write-off of property, plant and equipment	34.59	-
	Bad Debts written off	7.82	46.52
	Provision for doubtful debt	349.93	-
	Advertisement expenses	0.52	-
	Corporate social responsibility expenses	-	12.47
	Donation	23.34	-
	Bank charges	329.27	292.96
	Office Maintenance	6.10	-
	Miscellaneous expenses	3.93	48.24
		1,292.08	**1,676.16**
29	**Finance costs**		
	Interest expense on :		
	- term loans	4,655.31	5,335.54
	- non-convertible debentures (Unsecured)*	322.82	2.99
	- Others	-	55.56
	Interest payable for late payment to MSME vendors	9.75	-
	Unwinding of interest:		
	- on processing fees	480.18	64.08
	- on major maintenance	1,632.61	1,103.11
		7,100.67	**6,561.28**

* Interest on NCD includes Rs. 231.57 lacs which has been booked based upon effective interest rate (EIR) as per IND AS 109.

30	**Depreciation and amortisation expense**		
	Depreciation of property, plant and equipment	19.36	4.96
	Amortisation of intangible assets	2,710.96	2,214.81
		2,730.32	**2,219.77**

31 Earnings per share (EPS)

The following table reflects the income and share data used in the basic and diluted EPS computations:

Profit/ (loss) attributable to equity holders:		
Profit/(loss) for the year attributable to owners of the Company for calculating basic earnings per share	894.98	(3,084.04)
Profit/(loss) for the year attributable to owners of the Company for calculating diluted earnings per share	894.98	(3,084.04)
Weighted average number of equity shares outstanding for calculating basic earnings per share	2,91,34,648	2,91,34,648
Weighted average number of equity shares outstanding for calculating diluted earnings per share	2,91,34,648	2,91,34,648
Earnings per share (Face value of ₹ 10 each)		
Basic earnings per share (₹ in absoulute amount)	3.07	(10.59)
Diluted earnings per share (₹ in absoulute amount)	3.07	(10.59)

There have been no other transactions involving Equity shares or potential Equity shares between the reporting date and the date of authorisation of these financial statements.

(All amounts in ₹ lacs unless otherwise stated)

32 Tax expense	**As at March 31, 2025**	**As at March 31, 2024**
(i) Income tax expense recognised in Statement of Profit and Loss		
Deferred tax expense/(income)	518.71	2,172.91
	518.71	**2,172.91**

The major components of income tax expense and the reconciliation of expense based on the domestic effective tax rate and the reported tax expense in profit or loss are as follows :

Particulars		
Profit/ (Loss) before tax	1,413.69	(911.14)
Income tax using the Company's domestic tax rate	25.17%	25.17%
Expected tax expense [A]	**355.80**	**(229.32)**
Tax effect of adjustment to reconcile expected income tax expense to reported income tax expense:		
Impact due to restatements	-	2,389.76
Effect of transactions that are not considered in determining taxable profit	6.51	12.47
Effects of deferred tax assets/liabilities on deductible temporary differences not recognised in earlier year	120.85	-
Effect due to true up adjustment of timing differences of earlier years	35.55	-
Total adjustments [B]	**162.91**	**2,402.23**
Actual tax expense [C=A+B]	**518.71**	**2,172.91**

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33 Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits

(a) Defined contribution plan

The Company's contribution to Provident Fund amounts to ₹6.95 lacs (March 31, 2024: ₹9.85 lacs) has been recognised in the Statement of Profit and Loss under the head Employee benefit expenses.

(b) Defined benefit plans (unfunded):

The Company provides for gratuity for employees in India as per Payment of Gratuity Act, 1972. Employees who are in continuous service for 5 years are eligible for gratuity. The amount of gratuity payable on retirement/termination is the employees last drawn basic salary per month completed proportionately for 15 days salary multiplied for number of completed years of service.

The gratuity scheme covers substantially all regular employees. Commitments are actuarially determined at year-end. The actuarial valuation is done based on "Projected Unit Credit" method. Gains and losses of changed actuarial assumptions are charged to Statement of Profit and Loss.

Gratuity

(i) **Amount recognised in the Statement of Profit and Loss is as under:**

Description	**March 31, 2025**	**March 31, 2024**
Current service cost	2.29	0.29
Past service cost including curtailment (Gains)/Losses	-	-
Total Service Cost	**2.29**	**0.29**

(ii) **Net Interest Cost**

Description	**March 31, 2025**	**March 31, 2024**
Interest cost on defined benefit obligation	0.02	1.15
Interest income on plan assets	-	-
Net Interest Cost	**0.02**	**1.15**

(iii) **Bifurcation of Actuarial (Gain)/Loss on Obligation:**

Description	**March 31, 2025**	**March 31, 2024**
Actuarial Loss/(Gain) on arising from change in demographic assumption	0.38	-
Actuarial Loss/(Gain) on arising from change in financial assumption	0.41	0.02
Actuarial Loss/(Gain) on arising from experience adjustment	9.41	11.15
Actuarial (Loss)/Gain on for the year on obligation	**10.20**	**11.17**

(iv) **Other Comprehensive Income (OCI)**

Description	**March 31, 2025**	**March 31, 2024**
Actuarial Loss/(Gain) for the year on DBO	10.20	11.17
Actuarial Loss/(Gain) for the year on plan asset	-	-
Unrecognized actuarial Loss/(Gain) for the year	**10.20**	**11.17**

(v) **Bifurcation of PBO at the end of year in current and non current.**

Description	**March 31, 2025**	**March 31, 2024**
Current liability (Amount due within one year)	0.94	0.01
Non-Current liability (Amount due over one year)	8.09	0.30
Total PBO at the end of year	**9.03**	**0.31**

(vi) **Change in defined benefit obligation**

Description	**March 31, 2025**	**March 31, 2024**
Defined benefit liability at the start of the year	0.30	15.35
Interest Cost	0.02	1.15
Current service cost	2.29	0.29
Re-measurements (gain)/loss for the year	10.20	11.17
Benefit paid directly by the Company	(4.05)	(27.66)
Transfer in/out	0.27	-
Defined benefit liability at the end of the year	**9.03**	**0.30**

(vii) **The amount included in the balance sheet arising in respect of its defined benefit obligation/plans**

Description	**March 31, 2025**	**March 31, 2024**
Present value of defined benefit obligations/ plans	9.03	0.30
Fair value of plan assets	-	-
Net defined benefit obligation	**9.03**	**0.30**

(viii) **Sensitivity analysis for gratuity liability:**

Description	**March 31, 2025**	**March 31, 2024**
Impact of change in discount rate		
Present value of obligation at the end of the period/year	**9.03**	**0.30**
- Impact due to decrease of 1%	0.76	0.05
- Impact due to increase of 1%	(0.66)	(0.04)
Impact of change in salary increase		
Present value of obligation at the end of the period/year	**9.03**	**0.30**
- Impact due to decrease of 1%	(0.67)	(0.04)
- Impact due to increase of 1%	0.76	0.05

The above sensitivity analysis is based on a change an assumption while holding all other assumptions constant. In practice, this is unlikely to occur and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions the same method (present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period) has been applied which was applied while calculating the defined benefit obligation liability recognised in the Balance Sheet.

Sensitivities due to mortality and withdrawals are not material and hence impact of change due to these not calculated.

Sensitivities as rate of increase of pensions in payment, rate of increase of pensions before retirement and life expectancy are not applicable.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to previous periods.

(ix) **Actuarial assumptions:**

Description	**March 31, 2025**	**March 31, 2024**
Discount rate range	6.70	7.15
Rate of increase in compensation levels range	7.00% for the first 1 year, and 5.84% thereafter	7.5% for the first year and 6.3% thereafter
Retirement age	60.00	60.00
Mortality rate	100% of IALM 2012-14	100% of IALM 2012-14
Attrition at age (Withdrawal rate %)		
- Up to 30 Years	9%	2%
- From 31 to 44 years	9%	2%
- Above 44 years	9%	2%

(x) **Maturity profile of defined benefit obligation**

Weighted average duration (based on discounted cashflows)	8 Years	17 Years

Expected cash flows over the next (valued on undiscounted basis):	**(₹ in Lacs)**	**(₹ in Lacs)**
1 year	0.94	0.01
2 to 5 years	3.44	0.04
6 to 10 years	3.64	0.06
More than 10 years	8.81	1.07

34 Contingent liabilities and claims

i) Claims against the Company not acknowledged as liability amount to Rs. 25.11 lacs for GST demand, pertaining to excess Input Tax Credit availed and short payment of tax under the Reverse Charge Mechanism. (31 March 2024: Nil)

ii) As per Clause 26 of the Concession Agreement, the Company is required to pay an additional concession fee equivalent to 4.762% of the realisable fees earned during the year following the Scheduled Commercial Operation Date (SCOD), with an incremental increase of 1% annually thereafter.

Madhya Pradesh Road Development Corporation (MPRDC), via its letter dated 16 November 2021, has raised a demand of Rs 2,952 lacs towards additional concession fees.

The Company, based on its interpretation of the Concession Agreement and subsequent developments, has recognized a provision of Rs 810 lakhs as of 31 March 2024 under "Other Financial Liabilities".

The Company had referred the matter to conciliation under Article 44.2 of the Concession Agreement. As per the Conciliation Order dated 10 August 2022, the calculation of realisable fees for additional concession fee purposes should be based on comparing current year actual PCUs with 2% higher PCUs over the immediately preceding year, rather than applying a cumulative 2% increase each year from the peak traffic levels for the entire contract period.

However, this interpretation has been further disputed and the matter remains pending final resolution by the Board of MPRDC.

Accordingly, the remaining amount of Rs 2,142 lacs (i.e. Rs 2,952 lacs less the Rs 810 lacs already recognized) is disclosed as a contingent liability, pending final determination of the methodology for calculation.

On the basis of the current status of the individual case and as per legal advice obtained by the Company, wherever applicable, the Company in confident of winning the above cases and is of view that no further provision is required in this regard.

35 Fair value disclosures

i) Fair values hierarchy

Financial assets and financial liabilities measured at fair value in the Balance Sheet are divided into three levels of a fair value hierarchy. The three levels are defined based on the observability of significant inputs to the measurement, as follows:

Level 1: Quoted prices (unadjusted) in active markets for financial instruments.
Level 2: The fair value of financial instruments that are not traded in an active market is determined using valuation techniques which maximise the use of observable market data rely as little as possible on entity specific estimates.
Level 3: If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3.

Financial assets/(liabilities) are measured at fair value - recurring fair value measurements:

As at March 31, 2025	Level 1	Level 2	Level 3	Total
Assets at fair value				
Investments measured at fair value through profit and loss		234.82	-	**234.82**

As at March 31, 2024	Level 1	Level 2	Level 3	Total
Assets at fair value				
Investments measured at fair value through profit and loss	-	5.28	-	**5.28**

Valuation process and technique used to determine fair value
The fair value of investments in mutual fund units are based on the net asset value ('NAV') as stated by the issuers of these mutual fund units in the published statements as at each reported balance sheet dates. NAV represents the price at which the issuer will issue further units of mutual fund and the price at which issuers will redeem such units from the investors.

(ii) Fair value of instruments measured at amortised cost

Fair value of instruments measured at amortised cost for which fair value is disclosed as follows:

Particulars	As at March 31, 2025		As at March 31, 2024	
	Carrying value	Fair value	Carrying value	Fair value
Financial assets measured at amortised cost:				
Trade receivables	75.62	75.62	89.52	89.52
Cash and cash equivalents	291.98	291.98	283.49	283.49
Bank balance other than cash and cash equivalents	1,400.00	1,400.00	1,300.19	1,300.19
Other financial assets	414.55	414.55	350.52	350.52
Total financial assets	**2,182.16**	**2,182.16**	**2,023.72**	**2,023.72**
Financial liabilities				
Borrowings	49,096.74	49,096.74	49,649.13	49,649.13
Trade payables	2,160.91	2,160.91	725.87	725.87
Other financial liabilities	2,908.98	2,908.98	2,400.21	2,400.21
Total financial liabilities	**54,166.63**	**54,166.63**	**52,775.21**	**52,775.21**

The management assessed that cash and cash equivalents, bank balances other than cash and cash equivalents, trade receivables, other current financial assets, trade payables, current borrowings and other current financial liabilities (except current maturities of long term borrowings, deferred payment liabilities and current portion of annuity receivable) is approximate to their carrying amounts largely due to the short-term maturities of these instruments. The fair value of the financial assets and liabilities is included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

36 Financial risk management

i) Financial instruments by category

Particulars	As at March 31, 2025			As at March 31, 2024		
	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost
Financial assets						
Investments	234.82	-	-	5.28	-	-
Security deposits	-	-	1.18	-	-	0.38
Other financial assets	-	-	414.55	-	-	350.52
Trade receivables	-	-	75.62	-	-	89.52
Cash and cash equivalents	-	-	291.98	-	-	283.49
Other bank balances	-	-	1,400.00	-	-	1,300.19
Total	**234.82**	**-**	**2,183.34**	**5.28**	**-**	**2,024.10**
Financial liabilities						
Borrowings	-	-	49,096.74	-	-	49,649.13
Trade payables	-	-	2,160.91	-	-	725.87
Other financial liabilities	-	-	2,908.98	-	-	2,400.21
Total	**-**	**-**	**54,166.63**	**-**	**-**	**52,775.21**

ii) Risk Management

The Company's activities expose it to variety of financial risks : credit risk, liquidity risk and market risk. Company's focus is to foresee the unpredictability of financial markets and seek to minimize potential adverse effects on its financial performance. The Board of Directors of the Company has overall responsibility for the establishment and oversight of Company's risk management framework. The Board of Directors of the Company have established a risk management policy to identify and analyse the risks faced by the company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management systems are reviewed periodically to reflect changes in market conditions and Company's activities. The Board of Directors of the Company's oversee compliance with Company risk management policies and procedures, and reviews the risk management framework.

A) Credit risk management

Credit risk is the risk of financial loss to Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from Company's receivables from customers; loans and investments in debt securities. Company maximum exposure to credit risk is limited to the carrying amount of following types of financial assets:

- cash and cash equivalents,
- trade receivables,
- other financial assets, and

The Company has credit risk on trade receivables related change of scope and other claims from NHAI and ETC receivable. In case of majority of Trade Receivable, the counter party being the Government Undertaking as such does not have significant credit risk. However, Company estimates the expected credit loss based on specific identified basis.

Reconciliation of loss allowance provision for trade receivable from beginning to end of reporting period:

Particulars	As at March 31, 2025	As at March 31, 2024
Opening Balance	-	-
Movement in expected credit loss allowance on trade receivables calculated at lifetime expected credit losses	349.93	-
Adjustment against bad debts written off	-	-
Closing Balance	**349.93**	**-**

Other financial assets measured at amortised cost

Other financial assets measured at amortised cost includes security deposits, annuity receivable, receivable from related parties and other Credit risk related to these other financial assets is managed by monitoring the recoverability of such amounts continuously, while at the same time internal control system in place ensure the amounts are

B) Liquidity risk

Liquidity risk is the risk that the Company may encounter difficulty in meeting its present and future obligations associated with financial liabilities that are required to be settled by delivering cash or another financial asset. Company is exposed to liquidity risk due to borrowings and trade and other payables. Company measures risk by forecasting cash flows. The Company's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due without incurring unacceptable losses or risking damage to the Company's reputation. The Company ensures that it has sufficient fund to meet expected operational expenses, servicing of financial obligations.

There are no undrawn borrowing facilities at the end of the reporting period.

(a) Maturities of financial liabilities

The tables below analyse the Company's financial liabilities into relevant maturity categories based on their contractual maturities for all non-derivative financial liabilities: The amounts disclosed in the table are the contractual undiscounted cash flows net of processing fees.

As at March 31, 2025	Less than 1 year	1-2 year	2-5 year	More than 5 years	Total
Borrowings	1,554.91	2,442.79	7,999.81	37,397.64	**49,395.15**
Trade payables	2,160.91	-	-	-	**2,160.91**
Other financial liabilities	2,908.98	-	-	-	**2,908.98**
Total	**6,624.80**	**2,442.79**	**7,999.81**	**37,397.64**	**54,465.04**

As at March 31, 2024	Less than 1 year	1-2 year	2-5 year	More than 5 years	Total
Borrowings	6,070.36	6,070.36	22,762.77	15,222.72	**50,126.21**
Trade payables	725.87	-	-	-	**725.87**
Other financial liabilities	2,400.21	-	-	-	**2,400.21**
Total	**9,196.44**	**6,070.36**	**22,762.77**	**15,222.72**	**53,252.29**

C) Market risk

(a) Interest rate risk

i) Liabilities

The Company's policy is to minimise interest rate cash flow risk exposures on long-term financing. At the reporting periods end, the Company is exposed to changes in market interest rates through bank borrowings at variable interest rates. The Company's investments in fixed deposits pay fixed interest rates.

Interest rate risk exposure

Below is the overall exposure of the Company to interest rate risk:

Particulars	As at March 31, 2025	As at March 31, 2024
Variable rate borrowing	43,895.15	48,726.21
Fixed rate borrowing	5,500.00	1,400.00
Total borrowings	**49,395.15**	**50,126.21**

Sensitivity

Below is the sensitivity of profit or loss and equity changes in interest rates.

Particulars	As at March 31, 2025	As at March 31, 2024
Interest sensitivity*		
Interest rates – increase by 50 bps*	(219.48)	(243.63)
Interest rates – decrease by 50 bps*	219.48	243.63

** Holding all other variables constant*

ii) Assets

The Company's fixed deposits are carried at amortised cost and are fixed rate deposits. They are therefore not subject to interest rate risk as defined in Ind AS 107 'Financial Instruments Disclosures', since neither the carrying amount nor the future cash flows will fluctuate because of a change in market interest rates.

(b) Price risk

i) Exposure

The Company requires for implementation (construction, operation and maintenance) of the projects various commodities such as cement, bitumen, steel and other construction materials which are exposed to price risk. The Company are able to manage its exposure to price increases through bulk purchases and better negotiations. Hence, the sensitivity analysis is not required to be provided.

The Company is not exposed to price risk as on March 31, 2025

The Company's exposure to price risk arises from investments held and classified in the Balance Sheet at fair value through profit or loss. To manage the price risk arising from investments, the Company diversifies its portfolio of assets through fixed rate investment like deposit with bank and investment in mutual funds (Growth Scheme).

ii) Sensitivity

The table below summarises the impact of increase/decrease of the NAV of mutual funds on the Company's profit/(loss) for the year :

Impact on profit before tax

Particulars	**As at March 31, 2025**	**As at March 31, 2024**
Mutual Funds		
Net assets value – increase by 100 bps	2.35	0.05
Net assets value – decrease by 100 bps	(2.35)	(0.05)

(c) Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. The Company has no significant exposure to the risk of changes in foreign exchange rates.

37 Capital management

The primary objective of the Company's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business and maximise shareholder value.

The Company monitors capital using a gearing ratio, which is net debt divided by total equity. The Company's policy is to keep the gearing ratio optimum. Net debt includes non-current borrowings (including current maturity of non-current borrowings less cash and cash equivalents and other bank deposits (net of restricted deposits).

Debt equity ratio

Particulars	**As at March 31, 2025**	**As at March 31, 2024**
Debts	49,096.74	49,649.13
Less : Cash & cash equivalents and Bank balances other than cash and cash equivalents (net of restricted deposits)	(291.98)	(283.49)
Net Debt	**48,804.76**	**49,365.64**
Total equity	11,866.89	10,979.54
Net debt to equity ratio (in times)	**4.11**	**4.50**

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Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Notes forming part of Financial Statements for the year ended March 31, 2025
(All amounts in ₹ lacs unless otherwise stated)

38 Related parties

A. List of related parties and nature of relationship

(i) Related parties where control exists

S. No.	Name of the related party	Nature of relationship
1	Cube Highways and Infrastructure V Pte. Ltd	Holding Company (w.e.f. 14 Feb 2024)
2	Essel Infraprojects Limited	Ultimate Holding Company (till 13th Feb'24)
3	Expressway Developers Limited	Holding Company (till 13th Feb'24)
4	Anjani Kumar Das	Director Upto February 15, 2024

(ii) Other related parties

S. No.	Name of the related party	Nature of relationship
1	Cube Highways Technologies Pvt. Ltd.	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*
2	Cube Highways and Transportation Assets	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*
3	Cube Highways Root Foundation	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*
4	Cube Highways Growth Advisory Pvt Ltd	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*
5	DA Tollroad Private Limited	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*

Note :The name of related parties and nature of relationships are identified by the management.

* Other related parties though not 'Related Parties' as per defination under Ind AS- 24, Related party disclosures have been included by way of a voluntary disclosure, following the best corporate governance practices.

B. Transactions with related parties during the year ended March 31, 2025

S. No.	Name of the related party	Nature of transactions	For the year ended March 31, 2025	For the year ended March 31, 2024
1	Cube Highways and Infrastructure V Pte. Ltd.	Non Convertible Debentures issued	4,100.00	1,400.00
		Interest on Non Convertible Debentures	322.82	2.99
2	Cube Highways and Transportation Assets Advisors Private Limited	Management Service charges	230.20	1.13
		Reimbursement Expense	39.61	-
3	Cube Highways Root Foundation	Donation/CSR	17.20	12.47
4	Cube Highways Technologies Pvt. Ltd.	Project manangement fee for major maintenance	337.95	57.60
5	Cube Highways Growth Advisory Pvt Ltd	Management Service charges	24.07	-
6	Mr Anjani Kumar Das	Managerial Remuneration & reimbursement	-	7.56

C. Outstanding balances as on March 31, 2025

S. No.	Name of the related party	Nature of transactions	For the year ended March 31, 2025	For the year ended March 31, 2024
1	Cube Highways and Infrastructure V Pte. Ltd.	Non Convertible Debentures	5,500.00	1,400.00
		Interest Accrued on Non Convertible Debentures	311.68	2.54
2	Cube Highways and Transportation Assets Advisors Private Limited	Management service charges & reimbursement	99.68	1.03
3	Cube Highways Growth Advisory Pvt Ltd	Management service charges	22.03	-
4	Cube Highways Root Foundation	Other Receivable	4.14	-
5	Cube Highways Technologies Pvt. Ltd.	Project manangement fee for major maintenance	161.05	0.16
6	DA Tollways Private Limited	Other receivable - Liability acquired for employees transferred	0.66	-

(This space has been intentionally left blank)

39 Information on segment reporting pursuant to Ind AS 108 - Operating Segments

The Company is engaged in the business of setting up of infrastructure facility by way of development of infrastructure projects, operation and maintenance of Infrastructural facilities. As such, all activities undertaken by the Company are incidental to the main business. The director of the Company, who has been identified as being the chief operating decision maker (CODM), evaluates the Company performance, allocates resources based on the analysis of the previous performance indicators of the Company as a single unit. Therefore, there are no separate reportable business segments as per IND AS 108-"Operating Segment".

40 Corporate social responsibility

		For the Year Ended March 31, 2025	For the Year ended March 31, 2024
a)	Gross amount required to be spent by the Company during the year	-	12.47
b)	Amount spent during the year		
	i) Construction/acquisition of any asset - In cash	-	-
	ii) On purposes other than (i) above	-	12.47
c)	Shortfall/(Excess amount spent)		
	Opening Balance	-	-
	Amount required to be spent during the year	-	-
	Amount spent during the year	-	-
	Closing Balance	-	-
	Reason for shortfall:		-
d)	Details related to spent / unspent obligations:		
	i) Contribution to Public Trust	-	-
	ii) Contribution to Charitable Trust	-	-
	iii) Unspent amount in relation to:		
	- Ongoing project	-	-
	- Other than ongoing project	-	-
e)	Details of related party transactions, if any	-	-
f)	Nature of CSR activities	-	12.47
g)	Details of provision created, if any	-	-

41 Provisions

The Company is required to operate and maintain the project highway during the entire concession period and hand over the project back to the Authority (MPRDC).

For this purpose, a regular maintenance along with periodic maintenances is required to be performed. Normally periodic maintenance includes resurface of pavements, repairs of structures and other equipment's and maintenance of service roads.

The maintenance cost/ bituminous overlay may vary based on the actual usage during maintenance period. Accordingly on the grounds of matching cost concept and based on technical estimates, a provision for major maintenance expenses is reviewed and is provided for in the accounts annually.

The overlay work to be executed by financial year 2025-26 for current periodic maintanance cycle.

Movement in provisions for periodic major maintenance work

Particulars	As at March 31, 2025	As at March 31, 2024
Opening balance	9,910.11	7,026.56
Add : Provision charged to profit and loss	4,118.62	3,710.47
Unwinding of interest on major maintenance	1,632.61	1,103.11
Less : Utilised	(10,755.12)	(1,930.03)
Closing balance	**4,906.22**	**9,910.11**

42 Micro Enterprises and Small Enterprises related disclosure

Particulars	As at March 31, 2025	As at March 31, 2024
(i) Principal amount remaining unpaid to any supplier as at the end of the accounting year	248.31	8.97
(ii) Interest due thereon remaining unpaid to any supplier as at the end of the accounting year	9.75	-
(iii) The amount of interest paid along with the amounts of the payment made to the supplier beyond the appointed day		
- Principal	-	-
- Interest	-	-
(iv) The amount of interest due and payable for the year	9.75	-
(v) The amount of interest accrued and remaining unpaid at the end of the accounting year	-	-
(vi) The amount of further interest due and payable even in the succeeding year, until such date when the interest dues as above are actually paid	-	-

Dues to Micro Enterprises and Small Enterprises have been determined to the extent such parties have been identified on the basis of information collected by the Management. This has been relied upon by the auditors.

43 Service Concession Arrangement

The details of service concession arrangement of the Company are as follows:

Western M P Infrastructure & Toll Roads Private Limited

Description and right to use specified asset:	The Company has been awarded road project in the state of Madhya Pradesh for development of Lebad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on built Operate Transfer (BOT) basis. The concession period is 25 years.
Project	Road project in the state of Madhya Pradesh for development of Lebad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on built Operate Transfer (BOT) basis.
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) for Toll Road Carriageway)
Year when SCA granted	August 30, 2007
Period	25 Years
Extension of Period	1825 Days
End of Concession period	27-Apr-2038 (Including estimated extension period)
Obligation to provide services:	The Company shall conduct normal maintenance activities of road and other assets to maintain uninterrupted service as per the prescribed arrangement.
Major Overlays	In terms of the SCA , the Companies obligation to carry out overlay of the roads has not been defined. However, basis quality parameters to be maintained as per SCA, the management is expecting to carry out the overlay of the roads at interval of six to seven years.
Additional Concession Fee	4.762% (as on COD) of total realisable fee for the year as increased by 1% every year

44 Ratio Analysis and its elements

The following are analytical ratios for the year ended March 31, 2025 and March 31, 2024:

Ratio	Numerator	Denominator	Unit of measurement	March 31, 2025 Ratio	March 31, 2024 Ratio	Variation	Remarks for Variation in the ratio by more than 25% as compared to previous year
Current ratio	Current Assets	Current Liabilities	Times	**0.23**	**0.23**	**-1.45%**	NA
Debt- Equity Ratio	Total Debt	Shareholder's Equity	Times	**4.14**	**4.52**	**-8.51%**	NA
Debt Service Coverage ratio	Earnings for debt service = Net profit after taxes + Non-cash operating expenses (Depreciation & amortisation) + Finance costs	Debt service = Interest + Lease Payments + Principal Repayments	Times	**0.19**	**73.78**	**-99.74%**	Variation is on account of profit during current year
Return on Equity ratio	Net Profits after taxes - Preference Dividend	Average Shareholder's Equity	Percentage	**7.83%**	**-27.86%**	**128.12%**	Variation is on account of profit during current year
Inventory Turnover ratio*	Cost of goods sold or Sales	Average Inventory	Times	**-**	**-**	**-**	-
Trade Receivable Turnover Ratio*	Net credit sales = Gross credit sales - sales return	Average Trade Receivable	Times	**-**	**-**	**-**	-
Trade Payable Turnover Ratio	Net credit purchases = Gross credit purchases - purchase return	Average Trade Payables	Times	**8.77**	**3.92**	**123.79%**	Variation in trade payable turnover ratio is due to increase in net credit purchase due to major maintanance work and improvement of tollways.
Net Capital Turnover Ratio	Net sales = Total sales - sales return	Working capital = Current assets - Current liabilities	Times	**(2.63)**	**(2.69)**	**-2.09%**	NA
Net Profit ratio	Net Profit	Net sales = Total sales - sales return	Times	**3.79%**	**-16.17%**	**-123.43%**	Variation is due to increase in net profit and revenue during the year
Return on Capital Employed	Earnings before interest and taxes	Capital Employed = Tangible Net Worth* + Total Debt + Deferred Tax Liability	Percentage	**13.97%**	**9.32%**	**49.86%**	Variation is due to increase in earnings before interest and tax.
Return on Investment	Income generated from investments	Weighted average value of investments	Percentage	**76.17%**	**0.00%**	**0.00%**	NA

*Since the Company is toll road Company operating under Design, Build, Finance, Operate and Transfer (DBFOT) basis and is not in the nature of manufacturing or a trading concern, accordingly Inventory turnover ratio and debtors turnover ratio are considered as not applicable.

*The amounts capitalised as intangible assets being the right of the Company under the Concession Agreement (to collect toll fees from the users of the Project Highway) is included as part of tangible net worth.

Note: The above Non-GAAP measures presented may not be comparable to similarly titled measures reported by other companies. Further, it should be noted that these are not a measure of operating performance or liquidity defined by generally accepted accounting principles.

(All amounts in ₹ lacs unless otherwise stated)

45 Impairment of assets

Based on a review of the future discounted cash flows of the project facility, the recoverable amount is higher than the carrying amount and hence no provision for impairment is required for the year. The inputs to the valuation models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as Traffic growth rates, WACC, Tax rates and Inflation rates etc.

46 The Code on Social Security,2020 ('Code') relating to employee benefits during employment and post employment benefits received Presidential assent in September 2020. The Code has been published in the Gazette of India. However, the date on which the Code will come into effect has not been notified. Company will assess the impact of the Code when it comes into effect and will record any related impact in the period the Code becomes effective.

47 There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company.

48 The Company does not have any Benami property, where any proceeding has been initiated or pending against the Company for holding any Benami property.

49 The Company does not have any transactions with struck-off companies under section 248 of the Companies Act, 2013..

50 The Company does not have any charges or satisfaction which is yet to be registered with ROC beyond the statutory period.

51 The Company has not traded or invested in Crypto currency or Virtual Currency during the financial year.

52 The Company is not deemed wilfull defaulter by any bank or financial institution or other lender.

53 The Company has not advanced or loaned or invested funds to any other person or entity, including foreign entities (Intermediaries) with the understanding that the Intermediary shall: directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company (Ultimate Beneficiaries); or provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

54 The Company has not received any fund from any person or entity, including foreign entities (Funding Party) with the understanding (whether recorded in writing or otherwise) that the Company shall: directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party (Ultimate Beneficiaries); or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

55 The Company has not any transaction which is not recorded in the books of accounts that has been surrendered or disclosed as income during the year in the tax assessments under the Income tax Act, 1961 (such as, search or survey or any other relevant provisions of the Income tax Act, 1961).

56 The Company has not availed any working capital facilities from banks on the basis of security of current assets.

57 During the previous year, Expressway Developers Limited (erstwhile Holding Company) has entered into an Agreement with Cube Highways and Infrastructure V PTE LTD (Purchaser), being a company based in Singapore and incorporated with the objective of acquiring and operating transportation projects to purchase the shares from the erstwhile Holding Company (including the purchase of seller nominee shares by the purchaser nominees from the seller nominees) and the erstwhile Holding Company has agreed to sell the shares to the Purchaser (including the sale of such portion of the sale shares which are held by the seller nominees to purchaser nominees).

58 As per the requirements of Rule 3(1) of the Companies (Accounts) Rules 2014, the Company uses:

a) SAP S/4 HANA as its accounting software operated for recording all the accounting transactions which has a feature of recording audit trail (edit log) facility for all relevant transactions recorded in the software;

b) A third-party software for maintaining revenue records, and in absence of an independent service auditor's report covering the requirement of audit trail, the Company is unable to conclude whether audit trail feature of this software was enabled and operated throughout the year or whether there were any instances of the audit trail feature been tampered with.

c) A third-party software for maintaining payroll records, for which the independent service auditor's report specified that the said software has a feature of recording audit trail (edit log) facility and the same has operated throughout the year.

The audit trail feature in respect of the aforesaid accounting software(s) is not being tampered with for the period for which the audit trail feature was enabled and operating. Additionally, the audit trail that was enabled and operated for the year ended March 31, 2024, has been preserved by the Company as per the statutory requirements for record retention.

The Company has established and maintained an adequate internal control framework and based on its assessment, believes that this was effective as of March 31, 2025.

59 The company did not have any long term contracts including derivative contracts for which there were any material foreseeable losses.

60 During the year, the Company has reclassified the accruals relating to employees' salaries and wages from "Trade payables" to "Other financial liabilities" in view of the opinion of Expert Advisory Committee of the Institute of Chartered Accountants of India considering the said disclosure could be more relevant to the users of the financial statements. This change doesn't result in any impact on the total current liabilities.

61 The financial statements were approved for issue by the Board of Directors on September 02, 2025.

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

VIKAS JAIN
Digitally signed by VIKAS JAIN
DN: c=IN, o=Personal, postalCode=452010, st=Madhya Pradesh, serialNumber=CC1CE97C7C18BD1F9B4AB3FC4CABF553205C3397896501851F4CC3FF0F62DF4A, cn=VIKAS JAIN
Date: 2025.09.02 18:08:49 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2025

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2025.09.02 15:57:59 +05'30'

Shreedhar Narayan
Director
DIN-08047497
Place: Noida
Date: September 02, 2025

ANUJ MAITREY
Digitally signed by ANUJ MAITREY
Date: 2025.09.02 15:55:35 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2025

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2025.09.02 16:01:48 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2025

S B A & Company
Chartered Accountants

33 B, Chnadra Nagar,
MR 9, Behind Amarvilas Hotel,
Indore (MP), 452010
Email : vikas_jain_ca@hotmail.com

INDEPENDENT AUDITOR'S REPORT

To
The Members of,
Western MP Infrastructure & Toll Roads Pvt. Ltd.
Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of **Western MP Infrastructure & Toll Roads Pvt. Ltd.** ("the Company"), which comprise the Balance Sheet as at March 31, 2024, the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Changes in Equity and the Statement of Cash Flows for the year ended on that date, notes to the financial statement and a summary of the significant accounting policies and other explanatory information (hereinafter referred to as "the financial statements").

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements give the information required by the Companies Act, 2013 ("the Act") in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2024, the Loss and total comprehensive income, changes in equity and its cash flows for the year ended on that date.

Basis for Opinion

We conducted our audit of the financial statements in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Act. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India (ICAI) together with the ethical requirements that are relevant to our audit of the financial statements under the provisions of the Act and the Rules made thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ICAI's Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the financial statements.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. The company has made major maintenance work during the year.

Information Other than the Financial Statements and Auditor's Report Thereon

The Company's Board of Directors is responsible for the preparation of the other information. The other information comprises the information included in the Management Discussion and Analysis, Board's Report including Annexures to Board's Report, Corporate Governance and Shareholder's Information, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements, or our knowledge obtained during the course of our audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information; we are required to report that fact. We have nothing to report in this regard.

Management's Responsibility for the Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Act with respect to the preparation of these financial statements that give a true and fair view of the financial position, financial performance, total comprehensive income, changes in equity and cash flows of the Company in accordance with the Ind AS and other accounting principles generally accepted in India. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

The Board of Directors is responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal financial controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Act, we are also responsible for expressing our opinion on whether the Company has adequate internal financial controls system in place and the operating effectiveness of such controls.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Materiality is the magnitude of misstatements in the financial statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the financial statements.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Act, we give in the **"Annexure A"** a statement on the matters specified in paragraphs 3 and 4 of the Order to the extent applicable.

2. As required by section 143 (3) of the Act, we report that:
   a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;

   b) In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books:

   c) The Balance Sheet, the Statement of Profit and Loss including other comprehensive income and the Statement of Cash Flows and the Statement of Changes in Equity dealt with by this Report are in agreement with the books of account:

   d) In our opinion, the aforesaid financial statements comply with the Indian Accounting Standards (IND AS) specified under section 133 of the Act and rules made there under, as applicable;

   e) On the basis of written representations received from management as on March 31, 2024 taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2024 from being appointed as a director in terms of Section 164(2) of the Act.

   f) With respect to the adequacy of the internal financial controls over financial reporting of the Company and the operating effectiveness of such controls, refer to our separate Report **in "Annexure B"**.

g) With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended: In our opinion and to the best of our information and according to the explanations given to us, the remuneration paid by the Company to its directors during the year is in accordance with the provisions of section 197 of the Act.

h) Based on our examination which included test checks, the company has used an accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility and the same has operated throughout the year for all relevant transactions recorded in the software. Further, during the course of our audit we did not come across any instance of audit trail feature being tampered with.

As the proviso to Rule 3(1) of the Companies (Accounts) Rules 2014 is applicable from 1st April 2023, reporting under Rule 11(g) of the Companies (Audit and Auditors) Rules 2014 on preservation of audit trail as per statutory requirements for record retention is not applicable for the financial year ending 31st March 2023.

i) The financial statements which states that the management has restated the comparative information in accordance with "Indian Accounting Standard 8: Accounting Policies, Change in Accounting Estimates and Error" in relation to non-recognition of periodic major maintenance in earlier years.

j) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

i. The Company does not have any pending litigations which would impact on its financial position in its financial statements;

ii. The company did not have any long term contracts including derivative contracts for which there were any foreseeable losses.

iii. there has been no delay in transferring amounts, required to be transferred, to the Investor Education and Protection Fund by the Company.

iv.iv.

a. The management has represented that, to the best of its knowledge and belief, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other persons or entities, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall:

- directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever ("Ultimate Beneficiaries") by or on behalf of the Company or

- Provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

b. The management has represented, that, to the best of its knowledge and belief, no funds have been received by the Company from any persons or entities, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall:

- directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever ("Ultimate Beneficiaries") by or on behalf of the Funding Party or

- provide any guarantee, security or the like from or on behalf of the Ultimate Beneficiaries; and

c. Based on such audit procedures as considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub clause (iv)(a) and (iv)(b) contain any material mis-statement.

v. No Dividend is declared or paid by the company during the year.

For S B A & Company
Chartered Accountants
FRN : 004651C

VIKAS JAIN

Digitally signed by VIKAS JAIN
DN: c=IN, o=Personal, postalCode=452010, st=Madhya Pradesh, serialNumber=CC1CE97C7C18BD1F9B4AB3FC4CABF553205C3397896501851F4CC3FF0F62DF4A, cn=VIKAS JAIN
Date: 2024.09.02 16:58:16 +05'30'

CA. Vikas Jain
(Partner)
M. No. 078245
UDIN : 24078245BKCAYC2287

Date: 02.09.2024
Place: Indore

ANNEXURE A

To the Independent Auditors' Report on

Financial Statements of Western MP Infrastructure & Toll Roads Pvt. Ltd.

(Referred to our report of even date)

The Annexure referred to in our Independent Auditors' Report to the members of the Company on the financial statements for the year ended March 31, 2024, we report that:

i. In respect of Property, Plant & Equipment

a) The Company has maintained proper records showing full particulars, including quantitative details and situation of Property, Plant & Equipment.

b) According to information and explanations given to us and on the basis of our examination of the records of the company, the Property, Plant & Equipment have been physically verified during the year by the management under a regular programme of verification by rotation over a period of three years, which, in our opinion, is reasonable having regard to the size of the Company and the nature of its assets. No material discrepancies were noticed.

c) According to information and explanations given to us and on the basis of our examination of the records of the company, the title deeds of immovable properties forming part of the Property, Plant & Equipment are held in the name of the Company.

d) According to information and explanations given to us and on the basis of our examination of the records of the company, the company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets or both during the year.

e) According to information and explanations given to us and on the basis of our examination of the records of the company, there are no proceedings initiated or are pending against the company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (45 of 1988) and rules made thereunder.

ii. In respect of Inventory

The Company does not hold any physical inventories. Accordingly, reporting under clause 3(II) of the order not applicable to the company.

iii. In respect of loan granted:

According to information and explanations given to us and on the basis of our examination of the records of the company, the company has made any investments, provided guarantee or security or granted any advance in nature of loans, secured or unsecured to Companies, Firms, Limited Liability Partnerships or other parties covered in the register maintained under Section 189 of the Companies Act, The Amount taken as unsecured loan is amounting to Rs. Nil (Previous Year Rs. Nil).

iv. In respect of compliance of section 185 and 186 of The Companies Act, 2013

According to information and explanations given to us and on the basis of our examination of the records of the company, in our opinion the company has not advanced any loans, made investments, gave guarantees, and provided security prescribed in provisions of section 185 and 186 of the companies Act, 2013.

v. In respect of public deposits

In our opinion and according to the information and explanations given to us and on the basis of our examination, the Company has not accepted any deposit from the public within the meaning of the provisions of sections 73 to 76 or any relevant provisions of the Companies Act, 2013 and the rules framed there under.

vi. In respect of Cost Records:

According to the information and explanations given to us, the maintenance of cost records has been specified by the central government under the section 148(1) of the Companies Act, 2013 related to road tolling business under BOT basis activities carried out by the company. And are of the opinion that prima facie, the specified accounts and records have been made and maintained.

vii. In respect of statutory dues:

a) According to the records of the Company, the Company is generally regular in depositing with appropriate authorities undisputed statutory dues including provident fund, employees' state insurance, income-tax, duty of custom, goods & service tax, cess and other statutory dues applicable to it. As per the records of the Company, as at March 31, 2024, the Company does not have any undisputed statutory dues which are outstanding for a period of more than six months from the date they became payable.

b) According to the information and explanations given to us and on the basis of examination of records of the company there is no dispute in respect of income tax or sales tax or service tax or value added tax or GST or any other cess.

viii. In respect of undisclosed Income

In our opinion and according to the information and explanations given to us and based on our examination of the records of the company, there were no such unrecorded transaction in the books of account which were surrendered or disclosed as income during the year in tax assessments under Income Tax Act, 1961 (43 of 1961).

ix. In respect of repayment of loan

According to the information and explanations given to us, based on our examination of the records of the company and on the basis of overall examination of the Balance Sheet of the Company,

a) The company has not defaulted in repayment of loans or borrowing to a financial institution or bank.
b) The company has not been declared willful defaulter by any bank or financial institution.
c) In our opinion the term loan were applied for the purpose for which the loan was obtained.
d) No such short term loan funds have been utilized for long term purpose.

e) The company has not raised any fund from any entity or person on account of or to meet the obligations of its subsidiaries, associates or joint ventures.
f) The company has not raised any loan during the year on the pledge of securities held in its subsidiaries, joint ventures or associate companies.

x. In respect of funds raised through IPO/FPO/Debt finance

a) On the basis of overall examination of the Balance Sheet of the Company, according to the information and explanations provided to us and based on our examination of the records of the company we report that monies raised by way of term loans were applied for the purposes for which those were raised. The Company did not raise any money by way of initial public offer or further public offer (including debt instrument).
b) In our opinion and according to the information and explanations given to us as well as based on our examination of the records of the company, the company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year under section 42 and section 62 of the Companies Act, 2013.

xi. In respect of fraud reporting

a) According to the information and explanations given to us and based on our examination of the records of the company, no material fraud by the Company or on the Company by its officers or employees was noticed or reported during the year.
b) According to the information and explanations given to us and based on our examination of the records of the company, no report under sub-section (12) of section 143 of the Companies Act has been filed by the auditors in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government.
c) According to the information and explanations given to us and based on our examination of the records of the company, there are no whistle blower complaints received by the Company during the year.

xii. In respect of Nidhi Company

According to the information and explanations given to us, the Company is not a Nidhi Company. Accordingly, paragraph 3(xii) of the Order is not applicable.

xiii. In Respect of Transactions With Related Parties

According to the information and explanations given to us, transactions with the related parties are in compliance with section 177 and 188 of Companies Act, 2013 where applicable and details of such transactions have been disclosed in the financial statements as required by the applicable accounting standards.

xiv. In Respect of Internal Audit System

According to the information and explanations given to us and based on our examination of the records of the Company, the company has appropriate internal audit system commensurate with the size and nature of its business and the reports of the Internal Auditors for the period under audit were considered by us.

xv. In respect of Non-Cash Transactions

According to the information and explanations given to us and based on our examination of the records of the Company, the Company has not entered into any non-cash transactions with directors or persons connected with him. Accordingly, paragraph 3(xv) of the Order are not applicable.

xvi. In respect of compliance of section 45IA of the RBI Act, 1934

a) The Company is not required to be registered under section 45 IA of the Reserve Bank of India Act, 1934. Accordingly, paragraph 3(xvi)(a)of the Order is not applicable.
b) The Company is not required to be registered under section 45 IA of the Reserve Bank of India Act, 1934. Accordingly, paragraph 3(xvi)(b)of the Order is not applicable.
c) The Company is not a core investment company (CIC) as defined in the regulations made by the reserve Bank of India. Accordingly clause 3(xvi)(c) of the order is not applicable.
d) According to information and explanations given to us during the course of audit, there is no core investment company within the Group (as defined in the Core Investment Companies (Reserve Bank) Directions, 2016) and accordingly reporting under clause 3(xvi)(d) of the Order is not applicable.

xvii. In respect of Cash losses

The company has not incurred any cash losses in the current financial year and in the immediately preceding financial year.

xviii. In respect of resignation of statutory auditors

There has been no resignation of the statutory auditors during the year.

xix. In respect of any material uncertainty to meet liability

In our opinion and according to the information and explanations given to us and based on our examination of the records of the Company, on the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements ,our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, nothing has come to our attention, which cause us to believe that any material uncertainty exists as on the date of the audit report that the company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date. We, however, state that this is not an assurance as to the future viability of the Company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the Company as and when they fall due.

xx. In Respect of Unspent Amount Under Section 135(5) of The Companies Act, 2013

a. In our opinion and according to the information and explanations given to us and based on our examination of the records of the Company, there was no such unspent amount to be transferred to fund specified in Schedule VII to the Companies Act. Accordingly, paragraphs 3(xx)(a) of the Order are not applicable.

b. The Company have ongoing projects under section 135 of the Companies Act. Accordingly, paragraphs 3(xx)(b) of the Order are applicable.

For S B A & Company
Chartered Accountants
FRN : 004651C

VIKAS JAIN

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DN: c=IN, o=Personal, postalCode=452010, st=Madhya Pradesh, serialNumber=CC1CE97C7C188D1F9B4AB3FC4CABF553205C3397896501851F4CC3FF0F62DF4A, cn=VIKAS JAIN
Date: 2024.09.02 16:58:39 +05'30'

CA. Vikas Jain
(Partner)
M. No. 078245

Date: 02.09.2024
Place: Indore

ANNEXURE B

To the Independent Auditors' Report on
Financial Statements of Western MP Infrastructure & Toll Roads Pvt. Ltd.
(Referred to our report of even date)

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls over financial reporting of **Western MP Infrastructure & Toll Roads Pvt. Ltd.** ("the Company") as of March 31, 2024 in conjunction with our audit of the financial statements of the Company for the year ended on that date.

MANAGEMENT'S RESPONSIBILITY FOR INTERNAL FINANCIAL CONTROLS

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls over Financial Reporting issued by the Institute of Chartered Accountants of India ('ICAI'). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

AUDITORS' RESPONSIBILITY

Our responsibility is to express an opinion on the Company's internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects. Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system over financial reporting

MEANING OF INTERNAL FINANCIAL CONTROLS OVER FINANCIAL REPORTING

A company's internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control over financial reporting includes those policies and procedures that

1) Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;

2) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and

3) Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

INHERENT LIMITATIONS OF INTERNAL FINANCIAL CONTROLS OVER FINANCIAL REPORTING

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

OPINION

In our opinion, the Company has, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at March 31, 2024, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

For S B A & Company
Chartered Accountants
FRN : 004651C

VIKAS JAIN

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Date: 2024.09.02 16:58:58 +05'30'

CA. Vikas Jain
(Partner)
M. No. 078245

Date: 02.09.2024
Place: Indore

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Balance Sheet as at March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

	Notes	As at March 31, 2024	As at March 31, 2023 Restated*	As at April 01, 2022 Restated*
ASSETS				
Non-current assets				
Property, plant and equipment	3	95.88	39.03	43.59
Capital work-in-progress	4	22.19	-	-
Intangible assets	5	70,348.23	72,563.04	74,037.53
Financial assets:				
Investments	6	5.28	5.01	4.73
Deferred tax assets (net)	7	1,067.19	3,237.29	3,097.11
Current tax assets (net)	8	32.76	311.28	200.05
Total non-current assets		**71,571.52**	**76,155.65**	**77,383.02**
Current assets				
Financial assets				
Trade receivables	9	89.52	-	-
Cash and cash equivalents	10	283.49	339.62	634.33
Bank balances other than 'cash and cash equivalents' above	11	1,300.19	1,507.78	2,070.99
Other financial assets	12	325.92	52.33	91.24
Other current assets	13	127.09	449.35	846.24
Total current assets		**2,126.21**	**2,349.08**	**3,642.80**
Total assets		**73,697.73**	**78,504.73**	**81,025.81**
EQUITY AND LIABILITIES				
EQUITY				
Equity share capital	14	2,913.46	2,913.46	2,913.46
Other equity	15	8,066.08	11,158.49	10,245.27
Total equity		**10,979.54**	**14,071.95**	**13,158.73**
LIABILITIES				
Non-current liabilities				
Financial liabilities				
Borrowings	16	43,578.77	48,669.11	54,569.36
Provisions	17	9,910.65	7,098.65	4,848.41
Total non-current liabilities		**53,489.42**	**55,767.76**	**59,417.77**
Current liabilities				
Financial liabilities				
Borrowings	18	6,070.36	6,000.00	5,455.02
Trade payables	19			
- total outstanding dues of micro enterprises and small enterprises		8.97	-	-
- total outstanding dues of creditors other than micro enterprises and small enterprises		3,114.57	2,639.95	2,915.56
Other financial liabilities	20	2.55	-	-
Other current liabilities	21	32.30	23.40	77.13
Provisions	22	0.02	1.67	1.60
Total current liabilities		**9,228.77**	**8,665.02**	**8,449.31**
Total liabilities		**62,718.19**	**64,432.78**	**67,867.08**
Total equity and liabilities		**73,697.73**	**78,504.73**	**81,025.81**

***** Restated-Refer note 43

The above Balance sheet should be read in conjunction with the accompanying notes

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

VIKAS JAIN
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Date: 2024.09.02 16:34:05 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2024

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

ANSHUM AN GUPTA
Digitally signed by ANSHUMAN GUPTA
Date: 2024.09.02 11:50:19 +05'30'

Anshuman Gupta
Director
DIN-09325830
Place: Noida
Date: September 02, 2024

ANUJ MAITREY
Digitally signed by ANUJ MAITREY
Date: 2024.09.02 11:43:34 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2024

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2024.09.02 11:51:03 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2024

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Profit and Loss for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

	Notes	For the Year ended March 31, 2024	For the Year ended March 31, 2023
Income			
Revenue from operations	23	19,066.90	17,780.62
Other income	24	315.25	224.82
Total income		**19,382.15**	**18,005.44**
Expenses			
Operation and maintenance expenses	25	9,621.59	8,197.43
Employee benefit expenses	26	214.49	296.43
Other expenses	27	1,676.16	759.70
Total expenses		**11,512.24**	**9,253.56**
Earnings before interest expenses, tax, depreciation and amortisation (EBITDA)		**7,869.91**	**8,751.88**
Finance costs	28	6,561.28	6,498.04
Depreciation and amortisation expense	29	2,219.77	1,479.06
Profit/(Loss) before tax		**(911.14)**	**774.78**
Less : Tax expense/(Income)			
Deferred tax expense/(income)		2,170.10	-140.18
		2,170.10	**(140.18)**
Loss for the year		**(3,081.23)**	**914.95**
Other comprehensive income			
Items that will not be reclassified to profit or loss			
Re-measurement (losses)/gains on defined benefit obligations		(11.17)	(1.73)
Total other comprehensive loss for the year		**(11.17)**	**(1.73)**
Total comprehensive loss for the year		**(3,092.41)**	**913.22**
Earnings per share (₹) (Face value of ₹ 10 each)	30		
Basic (₹ in absolute amount)		(1.32)	0.39
Diluted (₹ in absolute amount)		(1.32)	0.39

The above Statement of Profit and loss should be read in conjunction with the accompanying notes

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

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Date: 2024.09.02 16:34:35 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2024

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

ANSHUMAN GUPTA
Digitally signed by ANSHUMAN GUPTA
Date: 2024.09.02 11:49:47 +05'30'

Anshuman Gupta
Director
DIN-09325830
Place: Noida
Date: September 02, 2024

ANUJ MAITREY
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Date: 2024.09.02 11:44:15 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2024

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2024.09.02 11:51:33 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2024

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Changes in Equity for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

A Equity share capital

i) As at March 31, 2024

Balance as at April 01, 2023	Issue of share capital during the year	Balance as at March 31, 2024
2,913.46	-	2,913.46

ii) As at March 31, 2023Restated*

Balance as at April 01, 2022	Issue of share capital during the year	Balance as at March 31, 2023
2,913.46	-	2,913.46

iii) As at April 01, 2022Restated*

Balance as at April 01, 2021	Issue of share capital during the year	Balance as at April 01, 2022
2,913.46	-	2,913.46

B Other equity

Particulars	Securities premium	Reserves and surplus	Total
		Retained earnings	
Balance as at April 01, 2023	**22,344.48**	**(11,185.99)**	**11,158.49**
Net loss for the year	-	(3,081.23)	**(3,081.23)**
Addition during the yar		-	**-**
Transfer during the year		-	**-**
Other comprehensive income/(loss):			
Re-measurement (losses)/gains on defined benefit obligations	-	(11.17)	**(11.17)**
Total comprehensive loss for the year	**-**	**(3,092.41)**	**(3,092.41)**
Balance as at March 31, 2024	**22,344.48**	**(14,278.38)**	**8,066.09**
Balance as at April 01, 2022 - Earlier reported	**22,344.48**	**(6,812.27)**	**15,532.21**
Effect of restatement	-	(5,286.94)	**(5,286.94)**
Balance as at April 01, 2022 - Restated	**22,344.48**	**(12,099.21)**	**10,245.27**
Net loss for the year	-	914.95	**914.95**
Other comprehensive income/(loss):			
Re-measurement (losses)/gains on defined benefit obligations	-	(1.73)	**(1.73)**
Total comprehensive income for the year	**-**	**913.22**	**913.21**
Balance as at March 31, 2023	**22,344.48**	**(11,185.99)**	**11,158.49**

The above Statement of Changes in equity should be read in conjunction with the accompanying notes

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

VIKAS JAIN
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Date: 2024.09.02 16:35:03 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2024

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

ANSHUMAN GUPTA
Digitally signed by ANSHUMAN GUPTA
Date: 2024.09.02 11:49:12 +05'30'

Anshuman Gupta
Director
DIN-09325830
Place: Noida
Date: September 02, 2024

ANUJ MAITREY
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Date: 2024.09.02 11:44:48 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2024

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2024.09.02 11:52:08 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2024

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Cash Flows for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

	For the Year ended March 31, 2024	For the Year ended March 31, 2023
A. Cash flows from operating activities		
Loss before tax	**(911.14)**	**774.78**
Adjustments for:		
Depreciation and amortisation expense	2,219.77	1,479.06
Liabilities no longer required written back	(17.83)	(151.91)
Interest income	-62.38	(32.74)
Impairment loss allowance on trade receivables	46.52	159.46
Finance cost	6,561.28	5,738.13
Operating Profit before working capital changes and other adjustments	**7,836.21**	**7,966.78**
Working capital changes and other adjustments:		
Decrease/(Increase) in trade receivables	(89.52)	-
Decrease/(Increase) in other financial assets	(273.00)	46.48
Decrease/(Increase) in other assets	275.74	381.77
(Decrease)/Increase in trade payables	501.21	(275.63)
(Decrease)/Increase in provisions	1,696.07	2,248.59
(Decrease)/Increase in other liabilities	8.90	(53.72)
Cash flow from operating activities post working capital changes	**9,955.61**	**10,314.27**
Income tax (paid) / refund	278.52	(111.23)
Net cash flow from operating activities (A)	**10,234.13**	**10,203.03**
B. Cash flows from investing activities		
Payment for purchase of property, plant and equipment, investment properties and intangible assets	(83.99)	-
Maturity/ (investment) in bank deposits other than cash and cash equivalents including deposit under lien (net)	207.59	563.21
Investment/(net redemption) from mutual funds (net)	(0.27)	(0.29)
Interest received	61.79	32.74
Net cash from in investing activities (B)	**185.12**	**595.66**
C. Cash flows from financing activities		
Payment of long term borrowings	(6,484.07)	(5,300.25)
Payment of related party borrowings	-	(55.02)
Proceeds from non convertible debentures	1,400.00	-
Interest paid	(5,391.32)	(5,738.13)
Net cash used in financing activities (C)	**(10,475.38)**	**(11,093.41)**
D. Net decrease in Cash and cash equivalents (A+B+C)	**(56.13)**	**(294.72)**
E. Cash and cash equivalents at the beginning of the year	339.62	634.33
Cash and cash equivalents at the end of the year (D+E) (Refer reconciliation below)	**283.49**	**339.62**
Reconciliation of Cash and cash equivalents as per Statement of cash flow		
Cash and cash equivalents as per above comprise of following:		
Cash and cash equivalents (Refer note 10)	283.49	339.62
Balance as per Statement of cash flow	283.49	**339.62**

Note:
The above cash flows has been prepared under the 'Indirect Method' as set out in Ind AS 7, 'Statement of Cash Flows'.

Changes in liabilities arising from financing activities

Particulars	Balance as at April 01, 2023	Cash flows from financing activities		Finance cost (Non-cash adjustment)	Others	Balance as at March 31, 2024
		Inflow	Outflow			
Term loan	54,669.11	-	(6,484.07)	64.08	-	48,249.13
Non convertible debentures from related party	-	1,400.00	-	-	-	1,400.00
Total liabilities from financing activities	**54,669.11**	**1,400.00**	**(6,484.07)**	**64.08**	**-**	**49,649.13**

Particulars	Balance as at April 01, 2022	Cash flows from financing activities		Finance cost (Non-cash adjustment)	Others	Balance as at March 31, 2023
		Inflow	Outflow			
Term loan	59,969.36	-	(5,364.38)	64.13	-	54,669.11
Total liabilities from financing activities	**59,969.36**	**-**	**(5,364.38)**	**64.13**	**-**	**54,669.11**

The above Statement of Cash flows should be read in conjunction with the accompanying notes

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

VIKAS JAIN
Digitally signed by VIKAS JAIN
DN: c=IN, o=Personal, postalCode=452010, st=Madhya Pradesh, serialNumber=CC1CE97C7C18BD1F9B4ABB3FC4CABF332305C3397696D1851F4CC3FF0F62DF4A, cn=VIKAS JAIN
Date: 2024.09.02 16:30:45 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2024

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

ANSHUMAN GUPTA
Digitally signed by ANSHUMAN GUPTA
Date: 2024.09.02 11:48:38 +05'30'

Anshuman Gupta
Director
DIN-09325830
Place: Noida
Date: September 02, 2024

ANUJ MAITREY
Digitally signed by ANUJ MAITREY
Date: 2024.09.02 11:45:26 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2024

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2024.09.02 11:52:40 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2024

Western M P Infrastructure & Toll Roads Private Limited
Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2024
CIN: U45203MH2007PTC173577

1 CORPORATE INFORMATION

The Company Western M P Infrastructure & Toll Roads Private Limited (the 'Company') has been awarded road project in the state of Madhya Pradesh for development of Lebad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on built Operate Transfer (BOT) basis. The concession period is 25 years.
The registered office is located at 513/A, 5th Floor, Kohinoor City, Kirol Road Kurla (West), Mumbai, Mumbai City MH 400070, India.

2 BASIS OF PREPARATION AND PRESENTATION

2.01 Basis of preparation of financial statements

These Financial Statements are prepared on accrual basis of accounting and all principal accounting policies applied in the preparation of these Financial Statements are set out below. These policies have been consistently applied to all the financial years presented.

The financial statements have been prepared in accordance with Indian Accounting Standards (Ind AS) notified under Section 133 of the Companies Act, 2013 read with the Companies (Indian Accounting Standards) Rules, 2015, and relevant amendment rules issued there after.

2.02 Functional and presentation currency

Items included in the financial statements Company are measured using the currency of the primary economic environment in which the Company operates (“the functional currency”). Indian rupee is the functional currency of the Company.
The financial statements are presented in Indian Rupees which is the Company’s presentation in Indian Rupees has been rounded up to the nearest lakhs except where otherwise indicated.

2.03 Use of estimates

The preparation of financial statements in conformity of Ind AS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, the disclosures of contingent assets and contingent liabilities at the date of financial statements, income and expenses during the period. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis.

Revisions to accounting estimates are recognized in the period in which the estimates are revised and in future periods which are affected.
Application of accounting policies that require critical accounting estimates and assumption having the most significant effect on the amounts recognized in the financial statements are:

Valuation of financial instruments
Useful life of property, plant and equipment
Useful life of intangible assets
Provisions

2.04 Current versus non-current classification

The Company presents assets and liabilities in the balance sheet based on current/ non-current classification in accordance with Division II of Scheule III of The Companies Act, 2013.

2.05 Recent pronouncements

There has been no recent accounting pronouncements made by Ministry of Corporate Affairs relating to the Companies (Indian Accounting Standards) Rules, 2015.

3 MATERIAL ACCOUNTING POLICIES

3.01 Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

In the principal market for the asset or liability, or
In the absence of a principal market, in the most advantageous market for the asset or liability
The principal or the most advantageous market must be accessible by the Company.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.
A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.
The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.
All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:
Level 1 - Quoted (unadjusted) market prices in active markets for identical assets or liabilities

Level 2- Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable

Level 3 -Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.
The Company's Management determines the policies and procedures for both recurring fair value measurement, such as derivative instruments and unquoted financial assets measured at fair value, and for non-recurring measurement, such as assets held for distribution in discontinued operations.
At each reporting date, the Management analyses the movements in the values of assets and liabilities which are required to be remeasured or re-assessed as per the Company's accounting policies. For this analysis, the Management verifies the major inputs applied in the latest valuation by agreeing the information in the valuation computation to contracts and other relevant documents.
The Management also compares the change in the fair value of each asset and liability with relevant external sources to determine whether the change is reasonable.
For the purpose of fair value disclosures, the Company has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.
This note summarises accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

3.02 Service concession arrangements:

The Company constructs or upgrades infrastructure (construction or upgrade services) used to provide a public service and operates and maintains that infrastructure (operation services) for a specified period of time.
These arrangements may include infrastructure used in a public-to-private service concession arrangement for its entire useful life.

Under Appendix A to Ind AS 11 - Service Concession Arrangements, these arrangements are accounted for based on the nature of the consideration. The intangible asset model is used to the extent that the Company receives the right (i.e. a franchise) to charge users of the public service. The financial asset model is used when the Company has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services. When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for each component. If the Company performs more than one service (i.e., construction or upgrade services and operation services) under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.

The Company manages concession arrangements which include constructing road projects. The Company maintains and services the infrastructure during the concession period. These concession arrangements set out rights and obligations related to the infrastructure and the service to be provided.

The right to consideration gives rise to an intangible asset and financial receivable and accordingly, both the intangible asset and financial assets models are applied. Income from concession arrangements earned under the intangible asset model consists of the i) fair value of contract revenue, which is deemed to be fair value of consideration transferred to acquire the asset; and ii) payments actually received from the users. The intangible assets is amortized over its expected useful life in a way that reflects the pattern in which the assets economy benefits are consumed by the Company, starting from the date when the right to operate starts to be used. Based on these principles, the intangible assets is amortized in line with the actual usage of the specific public facility, with the maximum of the duration of the concession.

Financial receivable is recorded at the fair value of guaranteed residual value to be received at the end of the concession period. This receivable is subsequently measured at amortized cost.

Any asset carried under concession arrangements is derecognized on disposal or when no future economic benefits are expected from its future use or disposal or when the contractual rights to the financial asset expire.

3.03 Revenue recognition

Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Company and the revenue can be reliably measured, regardless of when the payment is being made. Revenue is measured at the fair value of the consideration received or receivable, taking into account contractually defined terms of payment and excluding taxes or duties collected on behalf of the government.

The specific recognition criteria described below must also be met before revenue is recognised.

Toll collections

Toll collections from users of facility are accounted for as and when the amount is due and recovery is certain.

Interest income

Interest income is recognised on accrual basis.

3.04 Taxes

Income tax expense for the year comprises of current tax and deferred tax. It is recognised in the Statement of Profit and Loss except to the extent it relates to a business combination or to an item which is recognised directly in equity or in other comprehensive income.

Current tax is the expected tax payable/receivable on the taxable income/ loss for the year using applicable tax rates at the Balance Sheet date, and any adjustment to taxes in respect of previous years. Interest income/ expenses and penalties, if any, related to income tax are included in current tax expense.

Deferred tax is recognised in respect of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the corresponding amounts used for taxation purposes.

A deferred tax liability is recognised based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted, or substantively enacted, by the end of the reporting period. Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the asset can be utilised. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

Current tax assets and current tax liabilities are offset when there is a legally enforceable right to set off the recognised amounts and there is an intention to settle the asset and the liability on a net basis. Deferred tax assets and deferred tax liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities; and the deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authority.

3.05 Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation and where applicable accumulated impairment losses. Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of shelf-constructed assets includes the cost of materials, direct labour and any other costs directly attributable to bringing the asset to a working condition for its intended use, and the costs of dismantling and removing the items and restoring the site on which they are located. Purchased software that is integral to the functionality of the related equipment is capitalized as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Gains and losses on disposal with the carrying amount of Property, Plant and Equipment and are determined by comparing the proceeds from disposal with the carrying amount of Property, Plant and Equipment and are recognized net within "other income/other expenses" in the Statement of Profit and Loss.

Subsequent Cost

The cost of replacing part of an item of property, plant and equipment is recognized in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Company and its cost can be measured reliably. The carrying amount of the replaced part is de-recognized. The costs of the day-to-day servicing of property, plant and equipment are recognized in the Statement of Profit and Loss.

Depreciation is calculated on a WDV basis using useful lives of the assets as prescribed under Schedule II to the Companies Act 2013:

Asset class	Useful life
Plant and machinery	15 years
Furniture and fixtures	10 years
Office equipment	5 years
Vehicles	8 years
Computers and printer	3 years

The residual values, useful lives and methods of depreciation of property, plant and equipment are reviewed at each financial year end and adjusted prospectively, if appropriate.

3.06 Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation and accumulated impairment losses. Internally generated intangibles, excluding capitalised development costs, are not capitalised and the related expenditure is reflected in profit or loss in the period in which the expenditure is incurred.

Concessionaire Rights are amortised over the period of concession, using revenue based amortisation in respect of concessionaire rights recognised in the financial statements for the period ending immediately before the beginning of the first Ind AS reporting period. Under this method, the carrying value of the rights is amortised in the proportion of actual toll income for the year to expected revenue for the balance concession period, to reflect the pattern in which the assets economic benefits will be consumed. At each balance sheet date, the projected revenue for the balance concession period is reviewed by the Management. If there is any change in the projected revenue from previous estimates, the amortisation of concessionaire rights is changed prospectively to reflect any changes in the estimates.

Intangible assets are assessed for impairment whenever there is an indication that the intangible asset may be impaired.

3.07 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the asset. All other borrowing costs are expensed in the period in which they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds. Borrowing cost also includes exchange differences to the extent regarded as an adjustment to the borrowing costs.

Government grants

Government grants are recognised where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognised as income on a systematic basis over the periods that the related costs, for which it is itended to compensate, are expensed. When the grant relates to an asset, it is recognised on a systematic basis over the expected useful life of the related asset.

3.08 Contingent liabilities

A contingent liability is a possible obligation that arises from past events whose existence will be confirmed by the occurrence or non-occurrence of one or more uncertain future events beyond the control of the company or a present obligation that is not recognised because it is not probable that an outflow of resources will be required to settle the obligation. A contingent liability also arises in extremely rare cases where there is a liability that cannot be recognised because it cannot be measured reliably. The contingent liability is not recognised in books of account but its existence is disclosed in financial statements.

3.09 Impairment of non-financial assets

The Company assesses, at each reporting date, whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Company estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's or cash-generating unit's (CGU) fair value less costs of disposal and its value in use. Recoverable amount is determined for an individual asset. unless the asset does not generate cash inflows that are largely independent of those from other assets or Companys of assets. When the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

3.10 Provisions

Provisions are recognised when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Company expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit and loss net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost.

3.11 Financial instruments

Financial assets

Financial assets are recognised when the Company becomes a party to the contractual provisions of the instrument.

On initial recognition, a financial asset is recognised at fair value, in case of Financial assets which are recognised at fair value through profit and loss (FVTPL), its transaction cost are recognised in the statement of profit and loss. In other cases, the transaction cost are attributed to the acquisition value of the financial asset.

Financial assets are subsequently classified as measured at

- **amortised cost**: Financial assets that are held within a business model whose objective is to hold financial assets in order to collect contractual cash flows that are solely payments of principal and interest, are subsequently measured at amortised cost using the effective interest rate ('EIR') method less impairment, if any. The amortisation of EIR and loss arising from impairment, if any is recognised in the Statement of Profit and Loss.
- **fair value through profit and loss (FVTPL):** A financial asset not classified as either amortised cost or FVOCI, is classified as FVTPL. Such financial assets are measured at fair value with all changes in fair value, including interest income and dividend income if any, recognised as 'other income' in the Statement of Profit and Loss.
- **fair value through other comprehensive income (FVOCI):** Financial assets that are held within a business model whose objective is achieved by both, selling financial assets and collecting contractual cash flows that are solely payments of principal and interest, are subsequently measured at fair value through other comprehensive income. Fair value movements are recognized in the other comprehensive income (OCI). Interest income measured using the EIR method and impairment losses, if any are recognised in the Statement of Profit and Loss. On derecognition, cumulative gain or loss previously recognised in OCI is reclassified from the equity to 'other income' in the Statement of Profit and Loss.

Financial assets are not reclassified subsequent to their recognition, except if and in the period the Company changes its business model for managing financial assets.

Loans:

Loans are initially recognised at fair value. Subsequently, these assets are held at amortised cost, using the effective interest rate (EIR) method net of any expected credit losses. The EIR is the rate that discounts estimated future cash income through the expected life of financial instrument.

Derecognition

The Company derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the contractual rights to receive the cash flows from the asset.

Impairment of Financial Asset

Expected credit losses are recognized for all financial assets subsequent to initial recognition other than financials assets in FVTPL category.

For financial assets other than trade receivables, as per Ind AS 109, the Company recognises 12 month expected credit losses for all originated or acquired financial assets if at the reporting date the credit risk of the financial asset has not increased significantly since its initial recognition. The expected credit losses are measured as lifetime expected credit losses if the credit risk on financial asset increases significantly since its initial recognition. The Companys trade receivables do not contain significant financing component and loss allowance on trade receivables is measured at an amount equal to life time expected losses i.e. expected cash shortfall.
The impairment losses and reversals are recognised in Statement of Profit and Loss.

Financial Liabilities:
Initial recognition and measurement
Financial liabilities are recognised when the Company becomes a party to the contractual provisions of the instrument. Financial liabilities are initially measured at the amortised cost unless at initial recognition, they are classified as fair value through profit and loss. In case of trade payables, they are initially recognised at fair value and subsequently, these liabilities are held at amortised cost, using the effective interest method.

Subsequent measurement
Financial liabilities are subsequently measured at amortised cost using the EIR method. Financial liabilities carried at fair value through profit or loss are measured at fair value with all changes in fair value recognised in the Statement of Profit and Loss.

Derecognition
A financial liability is derecognised when the obligation specified in the contract is discharged, cancelled or expires.

3.12 Cash and cash equivalents
Cash and cash equivalent in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.
For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

3.13 Employee Benefits

i) Short term benefits
Employee benefits includes provident fund, superannuation fund, employee state insurance scheme, gratuity, compensated absences, long service awards and post-employment medical benefits.

a. Short-term Employee Benefit

All employee benefits falling due wholly within twelve months of rendering the service are classified as short-term employee benefits. The benefits like salaries, wages, short-term compensated absences etc. and the expected cost of bonus, and ex-gratia are recognised in the period the related service is rendered at undiscounted amount of benefits expected to be paid in exchange for that service.

The cost of short-term compensated absences is accounted as under:
- in case of accumulated compensated absences, when employees render the services that increase their entitlement of future compensated absences; and
- in case of non-accumulating compensated absences, when the absences occur.

b. Post-employment benefits

1) Defined contribution plans:
The Company offers its employees State governed provident fund linked with employee pension scheme as defined contribution plans. The contribution paid/ payable under the scheme is recognised during the period in which the employee renders the related service.

2) Defined benefit plans:
For defined benefit retirement benefit plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each annual reporting period. Re- measurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding net interest), is reflected immediately in the balance sheet with a charge or credit recognized in other comprehensive income in the period in which they occur. Remeasurement recognised in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service costs are recognised in profit or loss on the earlier of the date of the plan amendment or curtailment, and the date that the Company recognises related restructuring costs.

Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset.

Defined benefit costs are categorized as follows:
- service cost (including current service cost, past service cost, as well as gains and losses on curtailments and
- net interest expense or income; and
- re-measurement

The Company presents the first two components of defined benefit costs in profit or loss in the line item 'Employee benefits expense'. Curtailment gains and losses are accounted for as past service costs.

The present value of the defined benefit liability is calculated using a discount rate which is determined by reference to market yields at the end of the reporting period on government bonds.

c. Other long-term employee benefit

The obligation for other long-term employee benefits such as long-term compensated absences, are measured at the present value of the estimated future cash outflows expected to be made by the Company in respect of services provided by employees up to the reporting date.

3.14 Lease

Operating lease:

Lease of assets under which all the risk and rewards of ownership are effectively retained by the lessor are classified as operating lease. Lease payments / revenue under operating leases are recognized as an expense / income on accrual basis in accordance with the respective lease agreements.

3.15 Earnings per share
Basic earnings per share is computed by dividing the net profit for the period attributable to the equity shareholders of the Company by the weighted average number of equity shares outstanding during the period. The weighted average number of equity shares outstanding during the period and for all periods presented is adjusted for events, such as bonus shares, other than the conversion of potential equity shares that have changed the number of equity shares outstanding, without a corresponding change in resources.
For the purpose of calculating diluted earnings per share, the net profit for the period attributable to equity shareholders and the weighted average number of shares outstanding during the period is adjusted for the effects of all dilutive potential equity shares.

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
3 Property, plant and equipment			
Net carrying value of property, plant and equipment	95.88	39.03	-
	95.88	**39.03**	**-**

Description	Office equipment	Computers	Furniture and fixtures	Plant and equipment	Vehicles	Total
Gross block						
Balance as at April 01, 2022	**191.12**	**23.00**	**7.00**	**395.19**	**16.00**	**632.31**
Additions for the year					**-**	**-**
Balance as at March 31, 2023	**191.12**	**23.00**	**7.00**	**395.19**	**16.00**	**632.31**
Additions for the year	1.70	15.00	-	45.11	-	**61.80**
Balance as at March 31, 2024	**192.82**	**38.00**	**7.00**	**440.30**	**16.00**	**694.11**
Accumulated depreciation						
Balance as at April 01, 2022	**191.12**	**23.00**	**7.00**	**351.61**	**16.00**	**588.73**
Charge for the year	-	-	-	4.55	-	**4.55**
Balance as at March 31, 2023	**191.12**	**23.00**	**7.00**	**356.16**	**16.00**	**593.28**
Charge for the year	0.06	0.49	-	4.42	-	**4.96**
Balance as at March 31, 2024	**191.18**	**23.49**	**7.00**	**360.57**	**16.00**	**598.24**
Net carrying value:						
As at April 01, 2022	**(0.00)**	**-**	**-**	**43.59**	**-**	**43.59**
As at March 31, 2023	**(0.00)**	**-**	**-**	**39.03**	**-**	**39.03**
As at March 31, 2024	**1.65**	**14.51**	**-**	**79.72**	**-**	**95.88**

4. Capital work in progress	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
Plant and equipment	22.19	-	-
	22.19	**-**	**-**

Capital work-in-progress (CWIP) ageing schedule

As at March 31, 2024	Amount in CWIP for the period of				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Plant and equipment	22.19	-	-	-	22.19
Total	**22.19**	**-**	**-**	**-**	**22.19**

As at March 31, 2023Restated*	Amount in CWIP for the period of				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Plant and equipment	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**

As at April 01, 2022	Amount in CWIP for the period of				
Particulars	**Less than 1 year**	**1-2 year**	**2-3 year**	**More than 3 year**	**Total**
Plant and equipment	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
5 Intangible assets			
Net carrying value of other intangible assets	70,348.23	72,563.04	74,037.53
	70,348.23	**72,563.04**	**74,037.53**

Description	**Rights under service concession arrangements**	**Total other intangible assets**
Gross block		
Balance as at April 01, 2021	**83,543.14**	**83,543.14**
Additions for the year	-	**-**
Balance as at April 01, 2022	**83,543.14**	**83,543.14**
Additions for the year	**-**	**-**
Balance as at March 31, 2023	**83,543.14**	**83,543.14**
Additions for the year	**-**	**-**
Balance as at March 31, 2024	**83,543.14**	**83,543.14**
Accumulated amortisation		
Balance as at April 01, 2021	**8,069.59**	**8,069.59**
Charge for the year	1,436.02	**1,436.02**
Balance as at April 01, 2022	**9,505.61**	**9,505.61**
Charge for the year	1,474.49	**1,474.49**
Balance as at March 31, 2023	**10,980.10**	**10,980.10**
Charge for the year	2,214.81	**2,214.81**
Balance as at March 31, 2024	**13,194.91**	**13,194.91**
Net carrying value:		
As at April 01, 2022	**74,037.53**	**74,037.53**
As at March 31, 2023	**72,563.04**	**72,563.04**
As at March 31, 2024	**70,348.23**	**70,348.23**

		As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
6	**Investments**			
	Non-current			
	Investments in equity instruments (Unquoted)- at cost			
	Aditya Birla Mutual fund	5.28	5.01	4.73
		5.28	**5.01**	**4.73**
7	**Deferred tax assets (net)**			
	Deferred tax assets arising on account of :			
	Unabsorbed depreciation/business loss carried forward	10,145.63	12,518.05	13,073.27
	Expense allowed in tax on payment basis	2,494.32	2,550.87	1,522.27
	Deferred tax liabilities arising on account of :			
	Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	-11,572.76	-11,831.63	(11,498.43)
	Deferred tax liabilities (net)	**1,067.19**	**3,237.29**	**3,097.11**

Movement in deferred tax assets (net)

Particulars	As at March 31, 2023	Recognised in Statement of Profit and Loss	Recognised in other comprehensive income/ equity	As at March 31, 2024
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	(11,831.63)	258.87	-	(11,572.76)
Expense allowed in tax on payment basis	2,550.87	(56.55)	-	2,494.32
Unabsorbed depreciation/business loss carried forward	12,518.05	(2,372.42)	-	10,145.63
Total deferred tax assets/(liabilities)	**3,237.29**	**(2,170.10)**	**-**	**1,067.19**

Particulars	As at March 31, 2022	Recognised in Statement of Profit and Loss	Recognised in other comprehensive income/ equity	As at March 31, 2023
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	(11,498.43)	(333.20)	-	(11,831.63)
Expense allowed in tax on payment basis	1,522.27	1,028.60	-	2,550.87
Unabsorbed depreciation/business loss carried forward	13,073.27	(555.22)	-	12,518.05
Total deferred tax assets/(liabilities)	**3,097.11**	**140.18**	**-**	**3,237.29**

Particulars	As at April 01, 2022	Effect of restatement	As at April 01, 2022
Difference between carrying value of property, plant and equipment, intangible assets and receivable under service concession arrangement as per books and tax	(11,498.43)	-	(11,498.43)
Expense allowed in tax on payment basis	6.40	1,515.87	1,522.27
Unabsorbed depreciation/business loss carried forward	13,073.27	-	13,073.27
Total deferred tax assets/(liabilities)	**1,581.25**	**1,515.87**	**3,097.11**

8	**Current tax assets (net)**			
	Advance income tax (net)	32.76	311.28	200.05
		32.76	**311.28**	**200.05**
9	**Trade receivables**			
	Current			
	Trade receivable			
	- Unsecured, considered good	89.52	-	-
	- Unsecured, which have significant increase in credit risk	-	-	-
	- Unsecured, credit impaired	-	-	-
	Less : Impairment loss allowance	-	-	-
		89.52	**-**	**-**

Trade receivable ageing schedule	Current but not due	Outstanding for following periods from the invoice date					
		Less than 6 month	6 month - 1 year	1-2 years	2-3 years	More than 3 years	Total
As at March 31, 2024							
Undisputed trade receivables – considered good	-	89.52	-	-	-	-	89.52
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Undisputed trade receivables – credit impaired	-	-	-	-	-	-	-
Disputed trade receivables - considered good	-	-	-	-	-	-	-
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Disputed trade receivables – credit impaired	-	-	-	-	-	-	-

Trade receivable ageing schedule	Current but not due	Outstanding for following periods from the invoice date					
		Less than 6 month	6 month - 1 year	1-2 years	2-3 years	More than 3 years	Total
As at March 31, 2023							
Undisputed trade receivables – considered good	-	-	-	-	-	-	-
Undisputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Undisputed trade receivables – credit impaired	-	-	-	-	-	-	-
Disputed trade receivables - considered good	-	-	-	-	-	-	-
Disputed trade receivables – which have significant increase in credit risk	-	-	-	-	-	-	-
Disputed trade receivables – credit impaired	-	-	-	-	-	-	-

		As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
10	**Cash and cash equivalents**			
	Cash on hand	3.17	339.62	52.08
	Balances with banks:			
	- current accounts	280.32	-	582.25
		283.49	**339.62**	**634.33**
11	**Bank balances other than 'cash and cash equivalents' above**			
	Deposits with original maturity more than three months but less than twelve months	1,300.19	1,507.78	2,070.99
		1,300.19	**1,507.78**	**2,070.99**
(i)	Includes deposits towards Debt Service Reserve Account (DSRA) pursuant to loan covenants of loan agreement and/or debenture trust deed entered by the Company with its lenders	-	-	-
(ii)	Includes deposits towards Major Maintenance Reserve Account (MMRA) pursuant to loan covenants of loan agreement and/or debenture trust deed entered by the Company with its lenders	-	-	-

		As at March 31, 2024	As at March 31, 2023	As at March 31, 2022
12	**Other financial assets**			
	Current - Unsecured, considered good			
	Interest accrued on fixed deposits with banks	0.59	-	-
	Security deposits	0.38	-	-
	Other receivable (31 March 2022 - Including receivable from related parties Rs. 45.40 lakhs. Refer note (i) below)	324.95	52.33	91.24
		325.92	**52.33**	**91.24**

(i)

Type of Borrower	Amount of loan or advance in the nature of loan outstanding	Percentage to the total Loans and Advances in the nature of loans
Bina Khimlasa Malthon Toll Roads Limited	1.58	3.49%
Mhow Ghatabillod Toll Roads Limited	6.13	13.49%
Damoh Jabalpur Toll Roads Pvt Limited	6.94	15.30%
Lucknow Raebareli Toll Roads Private Limited	10.02	22.07%
Sagar Damoh Toll Roads Limited	14.46	31.86%
Ludhiana Talwandi Toll Roads Private Limited	1.53	3.37%
Essel Ahmedabad Godhra Toll Roads Limited	0.43	0.95%
Essel Gwalior Shivpuri Toll Roads Private Limited	4.30	9.46%

13	**Other current assets**			
	Unsecured, considered good			
	Advance to suppliers	3.70	68.12	433.76
	Advance to employees	-	19.83	2.24
	Unbilled revenue	24.98	-	-
	Prepaid expenses	32.80	5.01	53.85
	Balance with government authorities	65.61	0.63	0.63
	Interest Paid in Advance	-	355.76	355.76
		127.09	**449.35**	**846.24**

	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
14 Equity share capital			
Authorised			
3,00,00,000 (March 31, 2023) equity shares of ₹10 each	3,000.00	3,000.00	3,000.00
Issued, subscribed and fully paid:			
2,91,34,648 (March 31, 2023) equity shares of ₹10 each	2,913.46	2,913.46	2,913.46
	2,913.46	**2,913.46**	**2,913.46**

(i) Reconciliation of equity shares outstanding at the beginning and at the end of the year:

	As at March 31, 2024		As at March 31, 2023		As at April 01, 2022	
	No. of shares	₹ in lacs	No. of shares	₹ in lacs	No. of shares	₹ in lacs
Equity shares of ₹10 each fully paid up						
Opening Balance	2,91,34,648	2,913	2,91,34,648	2,913	2,91,34,648	2,913
Add: Shares issued during the period/year	-	-	-	-	-	-
Closing Balance	**2,91,34,648**	**2,913**	**2,91,34,648**	**2,913**	**2,91,34,648**	**2,913**

(ii) Terms and rights attached to equity shares:

The Company has one class of equity shares having a par value of ₹10 per share. Each shareholder is eligible for one vote per share held. The dividend proposed by the Board of Directors is subject to the approval of the shareholders in the ensuing annual general meeting, except in case of interim dividend. In the event of liquidation, the equity shareholders are eligible to receive the remaining assets of the Company after distribution of all preferential amounts, in proportion to their shareholding.

(iii) Shares in respect of each class in the Company held by its Holding Company or its Ultimate Holding Company including shares held by Subsidiaries or Associates of the Holding Company or the Ultimate Holding Company in aggregate

Name of the shareholder	As at March 31, 2024		As at March 31, 2023		As at April 01, 2022	
	No. of shares	Amount	No. of shares	Amount	No. of shares	Amount
Expressway Developers Limited (Till 13 Feb 2024)	-	-	2,91,34,648	2,913.46	2,91,34,648	2,913.46
Cube Highways and Infrastructure V Pte Limited, the Holding Company along with its nominees (w.e.f 14 Feb 2024)	2,76,77,916	2,767.79	-	-	-	-

(iv) Shareholders holding more than 5% shares of the Company

Name of the shareholder	As at March 31, 2024		As at March 31, 2023		As at April 01, 2022	
	No. of shares	% holding	No. of shares	% holding	No. of shares	% holding
Expressway Developers Limited (Till 13 Feb 2024)	-	-	2,91,34,648	100.00%	2,91,34,648	100.00%
Cube Highways and Infrastructure V Pte Limited, the Holding Company along with its nominees (w.e.f 14 Feb 2024)	2,76,77,916	95.00%	-	-	-	-

(v) Aggregate number of bonus shares issued, shares issued for consideration other than cash and shares bought back during the period of five years immediately preceding the balance sheet date:

The Company has not issued any bonus shares nor has there been any buy back of shares during the period of five years immediately preceding the year March 31, 2024.

(vi) Details of shares held by promoters

Promoter name	As at March 31, 2024				
	No. of shares at the beginning of the year	Change during the year	No. of shares at the end of the year	% of Total Shares	% change during the year
Expressway Developers Limited (Till 13 Feb 2024)	2,91,34,648	(2,76,77,916)	14,56,732	5.00%	-95.00%
Cube Highways and Infrastructure V Pte Limited, the Holding Company along with its nominees (w.e.f 14 Feb 2024)	-	2,76,77,916	2,76,77,916	95.00%	100.00%

Promoter name	As at March 31, 2023				
	No. of shares at the beginning of the year	Change during the year	No. of shares at the end of the year	% of Total Shares	% change during the year
Expressway Developers Limited	2,91,34,648	-	2,91,34,648	100.00%	-

Promoter name	As at April 01, 2022				
	No. of shares at the beginning of the year	Change during the year	No. of shares at the end of the year	% of Total Shares	% change during the year
Expressway Developers Limited	2,91,34,648	-	2,91,34,648	100.00%	-

		As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
15	**Other equity**			
i)	**Securities premium**			
	Opening Balance	22,344.48	22,344.48	22,344.48
	Addition during the year	-	-	-
	Closing Balance	**22,344.48**	**22,344.48**	**22,344.48**
ii)	**Reserves and surplus**			
a.	**Retained earnings**			
	Opening Balance	**(11,185.99)**	**(12,099.21)**	**(8,070.74)**
	Net loss for the year (Refer note 40)	(3,081.23)	914.95	(4,026.23)
	Other comprehensive income:			
	Re-measurement (losses)/gains on defined benefit obligations	(11.17)	(1.73)	(2.24)
	Closing Balance	**(14,278.40)**	**(11,185.99)**	**(12,099.21)**
		8,066.08	**11,158.49**	**10,245.27**

Retained earnings
Retained earnings are created from the profit / loss of the Company, as adjusted for distributions to owners, transfers to other reserves, etc. Negative balance represents accumulated losses.

16	**Borrowings - Non-current**	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
	At amortised cost			
	Secured:			
	a) Term loan			
	Banks	48,249.13	54,669.11	59,969.36
	Sub-total (A)	**48,249.13**	**54,669.11**	**59,969.36**
	b) NCD (Non - convertible debentures) [Refer note 16 (ii)]			
	Cube Highways and Infrastructure CH-V Pte Ltd	1,400.00	-	-
	Sub-total (B)	**1,400.00**	**-**	**-**
	Less: Current maturities of borrowings (Current borrowings)			
	Secured:			
	a) Term loan			
	- Banks	6,070.36	6,000.00	5,400.00
	Total current maturities of borrowings (C)	**6,070.36**	**6,000.00**	**5,400.00**
	Total non-current borrowings (A+B-C)	**43,578.77**	**48,669.11**	**54,569.36**

16(i) Particulars of the Rupee Facility– I & particulars of lenders

Name of the lender	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
ICICI Bank	485.31	485.31	485.31
Aditya Birla Finance Ltd (ABFL)	50.00	50.00	50.00

Particulars of the Rupee Facility– II & particulars of lenders

Name of the lender	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
ICICI Bank	104.69	104.69	104.69
Aditya Birla Finance Ltd (ABFL)	100.00	100.00	100.00

Terms of Security for loan taken from ICICI Bank & ABFL
The above facility is secured by a negative lien on identified immovable properties, owned or leased by the Borrower, save and except the Project Assets; first ranking hypothecation and charge over all the Borrower's tangible moveable assets, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles and all other moveable assets, both present and future save and except the Project Assets.

The loans under Rupee Facility - I & II would be repaid to the lenders - I & II in proportion to their respective disbursements of the Rupee Facility- I & II under in accordance with the following Amortisation Schedule:

Financial Year	Repayment
2018	-
2019	2,200
2020	3,000
2021	4,000
2022	5,000
2023	5,400
2024	6,000
2025	6,000
2026	6,000
2027	7,000
2028	8,000
2029	8,000
2030	8,000
2031	5,400
Total	**48,400**

17	**Provisions - non-current**	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
	Provision for employee benefits			
	- Gratuity	0.30	48.90	13.42
	- Compensated absences	0.24	23.19	9.61
	Provision for periodic major maintenance works	9,910.11	7,026.56	4,825.39
		9,910.65	**7,098.65**	**4,848.41**

18	**Current borrowings**	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
	Current maturities of long term borrowings	6,070.36	6,000.00	5,400.00
	Unsecured			
	Loan from related party repayable on demand	-	-	39.69
	Loan from Others	-	-	15.33
		6,070.36	**6,000.00**	**5,455.02**

19	**Trade payables**			
	Current			
	Total outstanding dues of micro enterprises and small enterprises	8.97	-	-
	Total outstanding dues to creditors other than micro enterprises and small enterprises	3,114.57	2,639.95	2,915.56
		3,123.54	**2,639.95**	**2,915.56**

Trade payables ageing schedule

As at March 31, 2024 **Outstanding for following period from the invoice date**

Particulars	Unbilled	Not due	Less than 1 year	1-2 year	2-3 year	More than 3 years	Total
Undisputed outstanding dues of micro enterprises and small enterprises	-	95.00	3,019.57	-	-	-	3,114.57
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	-	-	8.97	-	-	-	8.97
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-

As at March 31, 2023 — **Outstanding for following period from the invoice date**

Particulars	Unbilled	Not due	Less than 1 year	1-2 year	2-3 year	More than 3 years	Total
Undisputed outstanding dues of micro enterprises and small enterprises	-	3.45	2,591.93	13.22	12.74	18.60	2,639.94
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-

As at April 01, 2022 — **Outstanding for following period from the invoice date**

Particulars	Unbilled	Not due	Less than 1 year	1-2 year	2-3 year	More than 3 years	Total
Undisputed outstanding dues of micro enterprises and small enterprises	-		2,839.79	22.32	34.82	18.64	2,915.57
Undisputed outstanding dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of micro enterprises and small enterprises	-	-	-	-	-	-	-
Disputed dues of creditors other than micro enterprises and small enterprises	-	-	-	-	-	-	-

Terms and condition of the above financial liabilities:
Credit period varies as per the contractual terms of various suppliers/vendors. The Company has appropriate policy in place to ensure that all dues are paid within the credit terms agreed with the parties. Also, refer Company's credit risk management policy.

		As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
20	**Other financial liabilities**			
	Interest accrued but not due on borrowings	2.54	-	-
		2.55	**-**	**-**
21	**Other current liabilities**			
	Statutory dues payable	32.30	23.40	77.13
		32.30	**23.40**	**77.13**
22	**Provisions**			
	Current			
	Provision for employee benefits			
	- Gratuity	0.01	0.45	0.38
	- Compensated absences	0.01	1.22	1.22
		0.02	**1.67**	**1.60**

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

		For the Year ended March 31, 2024	For the Year ended March 31, 2023
23	**Revenue from operations**		
	Revenue from toll fee collections	19,025.95	17,780.62
	Change of Scope income	40.95	-
		19,066.90	**17,780.62**
24	**Other income**		
	Interest on:		
	- bank deposits	54.54	32.74
	- income tax refund	7.84	0.24
	Net gain on sale of mutual funds	-	0.28
	Miscellaneous income	0.34	0.04
	Liability Written off	17.83	151.91
	Other income	234.70	39.61
		315.25	**224.82**
25	**Operation and maintenance expenses**		
	Periodic major maintenance expenses	3,710.47	3,342.76
	Repair and maintenance of carriageway	510.51	31.58
	Concessioner Fee	4,358.27	3,105.82
	Toll operation expenses	645.97	1,575.24
	Security charges	57.24	-
	Vehicle hire charges	44.97	-
	Route patrolling expenses	23.99	-
	Power and fuel	155.44	142.03
	Professional charges - site	52.93	-
	Change of scope expenses	4.22	-
	Miscellaneous expenses-O&M	57.58	-
		9,621.59	**8,197.43**
26	**Employee benefit expenses**		
	Salary and wages	169.92	252.72
	Gratuity expenses	0.31	-
	Contribution to provident and other funds	9.85	13.43
	Staff welfare expenses	34.41	30.28
		214.49	**296.43**
27	**Other expenses**		
	Rent	0.59	2.58
	Management service charges	1.13	-
	Rates and taxes	49.81	1.25
	Penalty on account of lliquidated damages	756.03	61.84
	Insurance expense	84.86	119.51
	Legal and professional fees	275.34	202.04
	Payments to auditors (including taxes):		
	- Statutory audit fee	6.20	3.54
	- Other services	-	0.39
	Travelling and conveyance	28.88	-
	Printing and stationary	2.03	-
	Communication expenses	45.68	-
	Impairment loss allowance on trade receivables	46.52	159.46
	IT related cost	25.42	-
	Corporate social responsibility expenses	12.47	-
	Bank charges	292.96	73.96

	For the Year ended March 31, 2024	For the Year ended March 31, 2023
Miscellaneous expenses	48.24	135.13
Total	**1,676.16**	**759.70**

28 Finance costs

Interest expense on :		
- term loans	5,335.54	5,674.01
- non-convertible debentures (Unsecured)	2.99	-
- delayed payment of statutory dues	-	0.53
- Others	55.56	96.84
Unwinding of interest:		
- on processing fees	64.08	64.13
- on major maintenance	1,103.11	662.53
	6,561.28	**6,498.04**

29 Depreciation and amortisation expense

Depreciation of property, plant and equipment	4.96	4.55
Amortisation of intangible assets	2,214.81	1,474.50
	2,219.77	**1,479.06**

30 Earnings per share (EPS)

The following table reflects the income and share data used in the basic and diluted EPS computations:

Profit/ (loss) attributable to equity holders:		
Profit/(loss) for the year attributable to owners of the Company for calculating basic earnings per share	(3,081.23)	914.95
Profit/(loss) for the year attributable to owners of the Company for calculating diluted earnings per share	(3,081.23)	914.95
Weighted average number of equity shares outstanding for calculating basic earnings per share	23,35,10,000	23,35,10,000
Weighted average number of equity shares outstanding for calculating diluted earnings per share	23,35,10,000	23,35,10,000
Earnings per share (Face value of ₹ 10 each)		
Basic earnings per share (₹ in absoulute amount)	(1.32)	0.39
Diluted earnings per share (₹ in absoulute amount)	(1.32)	0.39

There have been no other transactions involving Equity shares or potential Equity shares between the reporting date and the date of authorisation of these financial statements.

31 Tax expense	**As at March 31, 2024**	**As at March 31, 2023**
(i) Income tax expense recognised in Statement of Profit and Loss		
Deferred tax expense/(income)	2,170.10	(140.18)
	2,170.10	**(140.18)**

The major components of income tax expense and the reconciliation of expense based on the domestic effective tax rate and the reported tax expense in profit or loss are as follows :

Particulars		
Profit/ (Loss) before tax	(911.14)	774.78
Income tax using the Company's domestic tax rate	25.17%	25.17%
Expected tax expense [A]	**(229.32)**	**195.00**
Tax effect of adjustment to reconcile expected income tax expense to reported income tax expense:		
Impact due to restatements	2,386.95	(335.18)
Disallowance due to CSR expense	12.47	-
Total adjustments [B]	**2,399.42**	**(335.18)**
Actual tax expense [C=A+B]	**2,170.10**	**(140.18)**

32 Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits

(a) Defined contribution plan

The Company's contribution to Provident Fund amounts to ₹9.85 lacs (March 31, 2023: ₹13.43 lacs) has been recognised in the Statement of Profit and Loss under the head Employee benefit expenses.

(b) Defined benefit plans (unfunded):

The Company provides for gratuity for employees in India as per Payment of Gratuity Act, 1972. Employees who are in continuous service for 5 years are eligible for gratuity. The amount of gratuity payable on retirement/termination is the employees last drawn basic salary per month completed proportionately for 15 days salary multiplied for number of completed years of service.

The gratuity scheme covers substantially all regular employees. Commitments are actuarially determined at year-end. The actuarial valuation is done based on "Projected Unit Credit" method. Gains and losses of changed actuarial assumptions are charged to Statement of Profit and Loss.

Gratuity

(i) **Amount recognised in the Statement of Profit and Loss is as under:**

Description	**March 31, 2024**	**March 31, 2023**
Current service cost	0.29	2.77
Past service cost including curtailment (Gains)/Losses	-	-
Total Service Cost	**0.29**	**2.77**

(ii) **Net Interest Cost**

Description	**March 31, 2024**	**March 31, 2023**
Interest cost on defined benefit obligation	1.15	0.99
Interest income on plan assets	-	-
Net Interest Cost	**1.15**	**0.99**

(iii) **Bifurcation of Actuarial Gain/Loss on Obligation:**

Description	**March 31, 2024**	**March 31, 2023**
Actuarial (Loss)/Gain on arising from change in demographic assumption	-	-
Actuarial (Loss)/Gain on arising from change in financial assumption	0.02	(0.49)
Actuarial (Loss)/Gain on arising from experience adjustment	11.16	2.21
Actuarial (Loss)/Gain on for the year on obligation	**11.17**	**1.73**

(iv) **Other Comprehensive Income (OCI)**

Description	**March 31, 2024**	**March 31, 2023**
Actuarial (Loss)/Gain for the year on DBO	11.17	1.73
Actuarial (Loss)/Gain for the year on plan asset	-	-
Unrecognized actuarial (Loss)/Gain for the year	**11.17**	**1.73**

(v) **Bifurcation of PBO at the end of year in current and non current.**

Description	**March 31, 2024**	**March 31, 2023**
Current liability (Amount due within one year)	0.01	0.45
Non-Current liability (Amount due over one year)	0.30	14.90
Total PBO at the end of year	**0.30**	**15.36**

(vi) **Change in defined benefit obligation**

Description	**March 31, 2024**	**March 31, 2023**
Defined benefit liability at the start of the year	15.35	13.80
Adjustments related to employees transferred to/from fellow subsidiaries	-	-
Interest Cost	1.15	0.99
Current service cost	0.29	2.77
Re-measurements (gain)/loss for the year	11.17	1.73
Benefit paid directly by the Company	(27.66)	(3.93)
Transfer in/out	-	
Defined benefit liability at the end of the year	**0.30**	**15.35**

(vii) **The amount included in the balance sheet arising in respect of its defined benefit obligation/plans**

Description	**March 31, 2024**	**March 31, 2023**
Present value of defined benefit obligations/ plans	0.30	15.35
Fair value of plan assets	-	-
Net defined benefit obligation	**0.30**	**15.35**

Disclosure relating to employee benefits pursuant to Ind AS 19 - Employee Benefits (Continued.)

(viii) **Sensitivity analysis for gratuity liability:**

Description	**March 31, 2024**	**March 31, 2023**
Impact of change in discount rate		
Present value of obligation at the end of the period/year	**0.30**	**15.35**
- Impact due to decrease of 1%	0.05	2.07
- Impact due to increase of 1%	(0.04)	(1.76)
Impact of change in salary increase		
Present value of obligation at the end of the period/year	**0.30**	**15.35**
- Impact due to decrease of 1%	(0.04)	(1.53)
- Impact due to increase of 1%	0.05	1.47

The above sensitivity analysis is based on a change an assumption while holding all other assumptions constant. In practice, this is unlikely to occur and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions the same method (present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period) has been applied which was applied while calculating the defined benefit obligation liability recognised in the Balance Sheet.

Sensitivities due to mortality and withdrawals are not material and hence impact of change due to these not calculated.

Sensitivities as rate of increase of pensions in payment, rate of increase of pensions before retirement and life expectancy are not applicable.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to previous periods.

(ix) **Actuarial assumptions:**

Description	**March 31, 2024**	**March 31, 2023**
Discount rate range	7.15	7.50
Rate of increase in compensation levels range	7.5% for the first year and 6.3% thereafter	7.5% for the first year and 6.3% thereafter
Retirement age	60.00	60.00
Mortality rate	100% of IALM 2012-14	100% of IALM 2012-14
Attrition at age (Withdrawal rate %)		
- Up to 30 Years	9%	9%
- From 31 to 44 years	9%	9%
- Above 44 years	9%	9%

(x) **Maturity profile of defined benefit obligation**

Weighted average duration (based on discounted cashflows)	17 Years

Expected cash flows over the next (valued on undiscounted	**(₹ in Lacs)**
1 year	0.01
2 to 5 years	0.04
6 to 10 years	0.06
More than 10 years	1.07

33 Contingent liabilities and claims

i) Claims against the Company not acknowledged as liability is of Nil. (31 March 2023 - Rs. 192.44 Lakhs and 31 March 2022- Rs. 1,283 Lakhs)

On the basis of the current status of the individual case and as per legal advice obtained by the Company, wherever applicable, the Company in confident of winning the above case and is of view that no further provision is required in this regard.

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34 Fair value disclosures

i) Fair values hierarchy

Financial assets and financial liabilities measured at fair value in the Balance Sheet are divided into three levels of a fair value hierarchy. The three levels are defined based on the observability of significant inputs to the measurement, as follows:

Level 1: Quoted prices (unadjusted) in active markets for financial instruments.
Level 2: The fair value of financial instruments that are not traded in an active market is determined using valuation techniques which maximise the use of observable market data rely as little as possible on entity specific estimates.
Level 3: If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3.

Financial assets/(liabilities) measured at fair value - recurring fair value measurements:

As at March 31, 2024	Level 1	Level 2	Level 3	Total
Assets at fair value				
Investments measured at fair value through profit and loss	-	5.28	**-**	**5.28**
Derivative financial assets	**-**	-	**-**	**-**

As at March 31, 2023	Level 1	Level 2	Level 3	Total
Assets at fair value				
Investments measured at fair value through profit and loss	-	5.01	**-**	**5.01**
Derivative financial assets	**-**	-	**-**	**-**

As at April 01, 2022	Level 1	Level 2	Level 3	Total
Assets at fair value				
Investments measured at fair value through profit and loss	**-**	4.73	**-**	**4.73**
Derivative financial assets	**-**	-	**-**	**-**

Valuation process and technique used to determine fair value
The fair value of investments in mutual fund units are based on the net asset value ('NAV') as stated by the issuers of these mutual fund units in the published statements as at each reported balance sheet dates. NAV represents the price at which the issuer will issue further units of mutual fund and the price at which issuers will redeem such units from the investors.

(ii) Fair value of instruments measured at amortised cost

Fair value of instruments measured at amortised cost for which fair value is disclosed as follows:

Particulars	As at March 31, 2024		As at March 31, 2023		As at April 01, 2022	
	Carrying value	Fair value	Carrying value	Fair value	Carrying value	Fair value
Financial assets measured at amortised cost:						
Investments	5.28	5.28	5.01	5.01	4.73	4.73
Security deposits	0.38	0.38	-	-	-	-
Trade receivables	89.52	89.52	-	-	-	-
Cash and cash equivalents	283.49	283.49	339.62	339.62	634.33	634.33
Bank balance other than cash and cash equivalents	1,300.19	1,300.19	1,507.78	1,507.78	2,070.99	2,070.99
Other financial assets	325.54	325.54	52.33	52.33	91.24	91.24
Total financial assets	**2,004.40**	**2,004.40**	**1,904.74**	**1,904.74**	**2,801.29**	**2,801.29**
Financial liabilities						
Borrowings	49,649.13	49,649.13	54,669.11	54,669.11	60,024.38	60,024.38
Trade payables	3,123.54	3,123.54	2,639.95	2,639.95	2,915.56	2,915.56
Other financial liabilities	2.55	2.55	-	-	-	-
Total financial liabilities	**52,775.22**	**52,775.22**	**57,309.06**	**57,309.06**	**62,939.94**	**62,939.94**

The management assessed that cash and cash equivalents, bank balances other than cash and cash equivalents, trade receivables, other current financial assets, trade payables, current borrowings and other current financial liabilities (except current maturities of long term borrowings, deferred payment liabilities and current portion of annuity receivable) is approximate to their carrying amounts largely due to the short-term maturities of these instruments. The fair value of the financial assets and liabilities is included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

35 Financial risk management

i) Financial instruments by category

Particulars	As at March 31, 2024			As at March 31, 2023			As at April 01, 2022		
	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost
Financial assets									
Investments	-	-	5.28	-	-	5.01	-	-	4.73
Security deposits	-	-	0.38	-	-	-	-	-	-
Other financial assets	-	-	325.54	-	-	52.33	-	-	91.24
Trade receivables	-	-	89.52	-	-	-	-	-	414.47
Cash and cash equivalents	-	-	283.49	-	-	339.62	-	-	634.33
Other bank balances	-	-	1,300.19	-	-	1,507.78	-	-	2,070.99
Total	**-**	**-**	**2,004.40**	**-**	**-**	**1,904.74**	**-**	**-**	**3,215.76**
Financial liabilities									
Borrowings	-	-	49,649.13	-	-	54,669.11	-	-	60,024.38
Trade payables	-	-	3,123.54	-	-	2,639.95	-	-	2,915.56
Other financial liabilities	-	-	2.55	-	-	-	-	-	-
Total	**-**	**-**	**52,775.22**	**-**	**-**	**57,309.06**	**-**	**-**	**62,939.94**

ii) Risk Management

The Company's activities expose it to variety of financial risks : credit risk, liquidity risk and market risk. Company's focus is to foresee the unpredictability of financial markets and seek to minimize potential adverse effects on its financial performance. The Board of Directors of the Company has overall responsibility for the establishment and oversight of Company's risk management framework. The Board of Directors of the Company have established a risk management policy to identify and analyse the risks faced by the company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management systems are reviewed periodically to reflect changes in market conditions and Company's activities. The Board of Directors of the Company's oversee compliance with Company risk management policies and procedures, and reviews the risk management framework.

A) Credit risk management

Credit risk is the risk of financial loss to Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from Company's receivables from customers; loans and investments in debt securities. Company maximum exposure to credit risk is limited to the carrying amount of following types of financial assets:
- cash and cash equivalents,
- trade receivables,
- other financial assets, and
- deposits with banks

The Company has credit risk on trade receivables related change of scope and other claims from NHAI and ETC receivable. In case of majority of Trade Receivable, the counter party being the Government Undertaking as such does not have significant credit risk. However, Company estimates the expected credit loss based on specific identified basis.

Reconciliation of loss allowance provision for trade receivable from beginning to end of reporting period:

Particulars	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
Opening Balance	-	-	-
Movement in expected credit loss allowance on trade receivables calculated at lifetime expected credit losses	46.52	159.46	-
Adjustment against bad debts written off	(46.52)	(159.46)	-
Closing Balance	**-**	**-**	**-**

Other financial assets measured at amortised cost

Other financial assets measured at amortised cost includes security deposits, annuity receivable, receivable from related parties and other Credit risk related to these other financial assets is managed by monitoring the recoverability of such amounts continuously, while at the same time internal control system in place ensure the amounts are within defined limits.

B) Liquidity risk

Liquidity risk is the risk that the Company may encounter difficulty in meeting its present and future obligations associated with financial liabilities that are required to be settled by delivering cash or another financial asset. Company is exposed to liquidity risk due to borrowings and trade and other payables. Company measures risk by forecasting cash flows. The Company's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due without incurring unacceptable losses or risking damage to the Company's reputation. The Company ensures that it has sufficient fund to meet expected operational expenses, servicing of financial obligations.

There are no undrawn borrowing facilities at the end of the reporting period.

(a) Maturities of financial liabilities

The tables below analyse the Company's financial liabilities into relevant maturity categories based on their contractual maturities for all non-derivative financial liabilities:
The amounts disclosed in the table are the contractual undiscounted cash flows net of processing fees.

As at March 31, 2024	Less than 1 year	1-2 year	2-5 year	More than 5 years	Total
Borrowings	6,070.36	6,070.36	22,762.77	15,222.72	**50,126.21**
Trade payables	3,123.54	-	-	-	**3,123.54**
Other financial liabilities	2.55	-	-	-	**2.55**
Total	**9,196.45**	**6,070.36**	**22,762.77**	**15,222.72**	**53,252.30**

As at March 31, 2023	Less than 1 year	1-2 year	2-5 year	More than 5 years	Total
Borrowings	6,070.36	6,070.36	22,762.77	20,287.62	**55,191.11**
Trade payables	2,639.95	-	-	-	**2,639.95**
Other financial liabilities	-	-	-	-	**-**
Total	**8,710.31**	**6,070.36**	**22,762.77**	**20,287.62**	**57,831.06**

As at April 01, 2022	Less than 1 year	1-2 year	2-5 year	More than 5 years	Total
Borrowings	5,400.00	6,070.36	16,692.41	32,392.59	**60,555.36**
Trade payables	2,915.56	-	-	-	**2,915.56**
Other financial liabilities	-	-	-	-	**-**
Total	**8,315.56**	**6,070.36**	**16,692.41**	**32,392.59**	**63,470.92**

C) Market risk

(a) Interest rate risk

i) Liabilities

The Company's policy is to minimise interest rate cash flow risk exposures on long-term financing. At the reporting periods end, the Company is exposed to changes in market interest rates through bank borrowings at variable interest rates. The Company's investments in fixed deposits pay fixed interest rates.

Interest rate risk exposure
Below is the overall exposure of the Company to interest rate risk:

Particulars	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
Variable rate borrowing	48,249.13	54,669.11	59,969.36
Fixed rate borrowing	1,400.00	-	-
Total borrowings	**49,649.13**	**54,669.11**	**59,969.36**

Sensitivity
Below is the sensitivity of profit or loss and equity changes in interest rates.

Particulars	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
Interest sensitivity*			
Interest rates – increase by 50 bps*	(26.54)	(30.07)	(32.98)
Interest rates – decrease by 50 bps*	26.54	30.07	32.98

** Holding all other variables constant*

ii) Assets

The Company's fixed deposits are carried at amortised cost and are fixed rate deposits. They are therefore not subject to interest rate risk as defined in Ind AS 107 'Financial Instruments Disclosures', since neither the carrying amount nor the future cash flows will fluctuate because of a change in market interest rates.

(b) Price risk

i) Exposure

The Company requires for implementation (construction, operation and maintenance) of the projects various commodities such as cement, bitumen, steel and other construction materials which are exposed to price risk. The Company are able to manage its exposure to price increases through bulk purchases and better negotiations. Hence, the sensitivity analysis is not required to be provided.

The Company's exposure to price risk arises from investments held and classified in the Balance Sheet at fair value through profit or loss. To manage the price risk arising from investments, the Company diversifies its portfolio of assets through fixed rate investment like deposit with bank and investment in mutual funds (Growth Scheme).

ii) Sensitivity

The table below summarises the impact of increase/decrease of the NAV of mutual funds on the Company's profit/(loss) for the year :

Impact on profit before tax

Particulars	**As at March 31, 2024**	**As at March 31, 2023**	**As at April 01, 2022**
Mutual Funds			
Net assets value – increase by 100 bps	-	-	-
Net assets value – decrease by 100 bps	-	-	-

(c) Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. The Company has no significant exposure to the risk of changes in foreign exchange rates.

36 Capital management

The primary objective of the Company's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business and maximise shareholder value.

The Company monitors capital using a gearing ratio, which is net debt divided by total equity. The Company's policy is to keep the gearing ratio optimum. Net debt includes non-current borrowings (including current maturity of non-current borrowings less cash and cash equivalents and other bank deposits (net of restricted deposits).

Debt equity ratio

Particulars	**As at March 31, 2024**	**As at March 31, 2023**	**As at April 01, 2022**
Debts	49,651.67	54,669.11	60,024.38
Less : Cash & cash equivalents and Bank balances other than cash and cash equivalents (net of restricted deposits)*	1,583.68	(1,847.40)	(2,705.32)
Net Debt	**51,235.35**	**52,821.71**	**57,319.06**
Total equity	10,979.54	14,071.95	13,158.73
Net debt to equity ratio (in times)	**4.67**	**3.75**	**4.36**

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Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

37 Related parties

A. List of related parties and nature of relationship

S. No.	Name of the related party	Nature of relationship
1	Cube Highways and Infrastructure V Pte. Ltd	Holding Company (w.e.f. 14 Feb 2024)
2	Baharampore-Farakka Highways Limited	Fellow subsidiary (w.e.f. 14 Feb 2024)
3	Delhi Hapur Meerut Expressway Private Limited	Fellow subsidiary (w.e.f. 14 Feb 2024)
4	Malayagiri Highways Private Limited	Fellow subsidiary (w.e.f. 14 Feb 2024)
5	Kokhraj Handia Expressway Private Limited	Fellow subsidiary (w.e.f. 14 Feb 2024)
6	Cube Highways Technologies Pvt. Ltd.	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*
7	Cube Highways and Transportation Assets Advisors	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*
8	Cube Highways Root Foundation	Other related party (Cube Group Entity) (w.e.f. 14 Feb 2024)*
9	Essel Highways Limited	Other related parties (till 13th Feb'24)
10	Essel Gas Limited	Other related parties (till 13th Feb'24)
11	Essel Infraprojects Limited	Ultimate Holding Company (till 13th Feb'24)
12	Bina Khimlasa Malthon Toll Roads Limited	Other related parties (till 13th Feb'24)
13	Damoh - Jabalpur Toll Roads Limited	Other related parties (till 13th Feb'24)
14	Essel Ahmedabad Godhra Toll Roads Limited	Other related parties (till 13th Feb'24)
15	Essel Gwalior Shivpuri Toll Roads Private Limited	Other related parties (till 13th Feb'24)
16	Ludhiana Talwandi Toll Roads Private Limited	Other related parties (till 13th Feb'24)
17	Mhow Ghatabillod Toll Roads Limited	Other related parties (till 13th Feb'24)
18	Essel Lucknow Raebareli Toll Roads Limited	Other related parties (till 13th Feb'24)
19	Sagar Damoh Toll Roads Limited	Other related parties (till 13th Feb'24)
20	Essel Green Energy Private Limited	Other related parties (till 13th Feb'24)
21	Essel Utilities Distribution Company Limited	Other related parties (till 13th Feb'24)
22	Kundli Manesar Expressway Limited	Other related parties (till 13th Feb'24)

Note :The name of related parties and nature of relationships are identified by the management.

* Other related parties though not 'Related Parties' as per defination under Ind AS- 24, Related party disclosures have been included by way of a voluntary disclosure, following the best corporate governance practices.

B. Transactions with related parties during the year ended March 31, 2024

S. No.	Name of the related party	Nature of transactions	For the year ended March 31, 2024	For the year ended March 31, 2023
1	Cube Highways and Infrastructure CH-V Pte. Ltd.	Non Convertible Debentures	1,400.00	-
		Interest on Non Convertible Debentures	2.99	-
2	Cube Highways and Transportation Assets Advisors Private Limited	Management Service charges	1.13	-
3	Cube Highways Root Foundation	CSR Expenses	12.47	-
4	Cube Highways Technologies Pvt. Ltd.	Lender Independent Engineer	57.60	-
5	Mr Anjani Das	Director's Remuneration & Imprest	7.56	5.10
6	Essel Highways Limited	Expenses paid by company on behalf of SPV	-	33.52
		Balance Written Off	-	1.34
7	Essel Gas Limited	Expenses paid by company on behalf of SPV	-	0.13
8	Essel Infraprojects Limited	Expenses paid by company on behalf of SPV	-	151.60
		Balance Written Off	-	148.41
9	Bina Khimlasa Malthon Toll Roads Limited	Loan received	-	1.58
10	Damoh - Jabalpur Toll Roads Limited	Loan received	-	6.94
11	Essel Ahmedabad Godhra Toll Roads Limited	Loan received	-	0.43
12	Essel Gwalior Shivpuri Toll Roads Private Limited	Loan received	-	4.30
13	Ludhiana Talwandi Toll Roads Private Limited	Loan received	-	1.53
14	Mhow Ghatabillod Toll Roads Limited	Loan received	-	6.13
15	Essel Lucknow Raebareli Toll Roads Limited	Loan received	-	10.02
16	Sagar Damoh Toll Roads Limited	Loan received	-	14.46
17	Essel Green Energy Private Limited	Loan repaid	-	0.40
18	Essel Utilities Distribution Company Limited	Loan repaid	-	2.95
19	Kundli Manesar Expressway Limited	Loan repaid	-	0.98

C. Outstanding balances as on March 31, 2024

S. No.	Name of the related party	Nature of transactions	As at March 31, 2024	As at March 31, 2023
1	Cube Highways and Infrastructure CH-V Pte. Ltd.	Non Convertible Debentures	1,400.00	-
		Interest Accrued on Non Convertible Debentures	2.54	-
2	Cube Highways and Transportation Assets Advisors Private Limited	Provision for Management fee expense	1.03	-
3	Cube Highways Technologies Pvt. Ltd.	Lender Independent Engineer	0.16	-

38 Information on segment reporting pursuant to Ind AS 108 - Operating Segments

The Company is engaged in the business of setting up of infrastructure facility by way of development of infrastructure projects, operation and maintenance of Infrastructural facilities. As such, all activities undertaken by the Company are incidental to the main business. The director of the Company, who has been identified as being the chief operating decision maker (CODM), evaluates the Company performance, allocates resources based on the analysis of the previous performance indicators of the Company as a single unit. Therefore, there are no separate reportable business segments as per IND AS 108-"Operating Segment".

39 Corporate social responsibility

		For the Year ended March 31, 2024	For the year ended March 31, 2023
a)	Gross amount required to be spent by the Company during the year	12.47	-
b)	Amount spent during the year		
	i) Construction/acquisition of any asset - In cash	-	-
	ii) On purposes other than (i) above	12.47	-
c)	Shortfall/(Excess amount spent)		
	Opening Balance	-	-
	Amount required to be spent during the year	12.47	-
	Amount spent during the year	(12.47)	-
	Closing Balance	-	-
	Reason for shortfall:	-	-
d)	Details related to spent / unspent obligations:		
	i) Contribution to Public Trust	-	-
	ii) Contribution to Charitable Trust	-	-
	iii) Unspent amount in relation to:		
	- Ongoing project	-	-
	- Other than ongoing project	-	-
e)	Details of related party transactions, if any	-	-
f)	Nature of CSR activities	-	-
g)	Details of provision created, if any	-	-

40 Provisions

The Company is required to operate and maintain the project highway during the entire concession period and hand over the project back to the Authority (ARPDC).

For this purpose, a regular maintenance along with periodic maintenances is required to be performed. Normally periodic maintenance includes resurface of pavements, repairs of structures and other equipment's and maintenance of service roads.

The maintenance cost/ bituminous overlay may vary based on the actual usage during maintenance period. Accordingly on the grounds of matching cost concept and based on technical estimates, a provision for major maintenance expenses is reviewed and is provided for in the accounts annually.

The overlay work to be executed in financial year 2025-26 for next cycle.

Movement in provisions for periodic major maintenance work

Particulars	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
Opening balance	7,026.56	4,825.39	-
Add : Additional provision charged to profit and loss	3,710.47	3,342.76	5,724.56
Unwinding of interest on major maintenance	1,103.11	662.53	298.44
Less : Utilised	(1,930.03)	(1,804.12)	(1,197.61)
Closing balance	**9,910.11**	**7,026.56**	**4,825.39**

41 Micro Enterprises and Small Enterprises related disclosure

Particulars	As at March 31, 2024	As at March 31, 2023	As at April 01, 2022
(i) Principal amount remaining unpaid to any supplier as at the end of the accounting year	8.97	-	-
(ii) Interest due thereon remaining unpaid to any supplier as at the end of the accounting year	-	-	-
(iii) The amount of interest paid along with the amounts of the payment made to the supplier beyond the appointed day			
- Principal	-	-	-
- Interest	-	-	-
(iv) The amount of interest due and payable for the year	-	-	-
(v) The amount of interest accrued and remaining unpaid at the end of the accounting year	-	-	-
(vi) The amount of further interest due and payable even in the succeeding year, until such date when the interest dues as above are actually paid	-	-	-

Dues to Micro Enterprises and Small Enterprises have been determined to the extent such parties have been identified on the basis of information collected by the Management. This has been relied upon by the auditors.

42 Service Concession Arrangement

The details of service concession arrangement of the Company are as follows:

Western M P Infrastructure & Toll Roads Private Limited

Description and right to use specified asset:	The Company has been awarded road project in the state of Madhya Pradesh for development of Lebad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on built Operate Transfer (BOT) basis. The concession period is 25 years. As per the terms of the arrangements, the Company had obtained the right to construct road infrastructure project for the period of 25 years to the public at large. The Company shall pay to MPRDC premium obligation and shall operate and maintain the road as per the prescribed arrangement. The Company is a private operator and MPRDC is a government body. The Company undertakes obligation of public service granted by MPRDC. Thus, the arrangement is public-to-private service concession. The road projects totally regulated by the MPRDC. At the end of the concession period, the road infrastructure shall vest with MPRDC.
Project	Road project in the state of Madhya Pradesh for development of Lebad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on built Operate Transfer (BOT) basis.
Nature of Asset	Intangible (Rights under Service Concession Arrangements (SCA) for Toll Road Carriageway)
Year when SCA granted	August 30, 2007
Period	25 Years
Extension of Period	1825 Days
Premature termination	27-Apr-2038 (Including estimated extension period)
Obligation to provide services:	The Company shall conduct normal maintenance activities of road and other assets to maintain uninterrupted service as per the prescribed arrangement.
Major Overlays	In terms of the SCA , the Companies obligation to carry out overlay of the roads has not been defined. However, basis quality parameters to be maintained as per SCA, the management is expecting to carry out the overlay of the roads at interval of six to seven years.

43 Note on restatement

During the year, the Company has identified corrections related to periodic major maintenance expense and cerain other expenses. As a result the Company has restated prior period financial statements as follow:

Impact on Statement of Profit and Loss for the year ended March 31, 2023

Financial statements - line item	Previously reported amount	Prior period impact	Restated amount
Expenses			
Operation and Maintenance expenses			
- Periodic major maintenance expense	1,804.12	1,538.64	3,342.76
Finance cost			
- Unwinding of interest on periodic major maintenance	-	662.53	662.53
- Interest others	-	96.84	96.84
Deferred tax			
- Deferred tax income	867.87	-1,008.05	-140.18
Profit/loss for the year	**2,204.91**	**-1,289.96**	**914.95**
Other comprehensive income			
(i) items that will not be reclassified to profit or loss			
- Re-measurement (losses)/gains on defined benefit obligations	-1.73	-	-1.73
Other comprehensive income for the year	**-1.73**	**-**	**-1.73**
Total comprehensive loss for the year	**2,203.18**	**-1,289.96**	**913.22**
Earnings per share (Face value of ₹ 10 each)			
Basic earnings per share (₹ in absoulute amount)	7.56		0.39
Diluted earnings per share (₹ in absoulute amount)	7.56		0.39

Impact on balance sheet as at March 31, 2023

Financial statements - line item	Previously reported amount (As at 31 March 2023)	Effect of restatement as at 01 April 2022	Previously reported amount after considering restatement (As at 31 March 2023)	Prior period impact	Restated amount
Assets					
Deferred tax asset					
- Deferred tax	713.37	1,515.87	2,229.24	1,008.05	3,237.29
Liabilities					
- Trade payable	565.69	1,977.41	2,543.10	96.85	2,639.95
- Provision for major maintenance	-	4,825.39	4,825.39	2,201.17	7,026.56
Equity					
- Other equity	17,735.39	-5,286.94	12,448.45	-1,289.96	11,158.49

Impact on balance sheet as at March 31, 2022

Financial statements - line item	Previously reported amount	Prior period impact	Restated amount
Assets			
Deferred tax asset			
- Deferred tax	1,581.25	1,515.86	3,097.11
Liabilities			
- Trade payable	938.15	1,977.41	2,915.56
- Provision for major maintenance	-	4,825.39	4,825.39
Equity			
- Other equity	15,532.21	-5,286.94	10,245.27

Impact of Statement of Changes in Equity as at 01 April 2022

Particulars	Other Equity		Total Other Equity
	Securities Premium	Retained earnings	
Balance as at 01 April 2022 - Earlier reported	22,344.48	-6,812.27	15,532.21
Effect of restatement	-	-5,286.94	-5,286.94
Balance as at 01 April 2022 - Restated	**22,344.48**	**-12,099.21**	**10,245.27**

Impact of Cash Flow Statement for the year ended March 31, 2023

Financial Statement - Line item	Previously reported amount (As at 31 March 2023)	Prior period impact	Restated amount
Cash flow from operating activities			
Profit/loss before tax	3,072.79	-2,298.01	774.78
Adjustments for :			
Increase/decrease in trade payables	-372.47	96.84	-275.63
Increase/decrease in current and non current provisions	47.42	2,201.17	2,248.59
Net cash used in/generated from operating activities	**2,747.74**	**-**	**2,747.74**

Western M P Infrastructure & Toll Roads Private Limited
CIN: U45203MH2007PTC173577
Statement of Material Accounting Policy Information and Other Explanatory Notes for financial statements for the year ended March 31, 2024
(All amounts in ₹ lacs unless otherwise stated)

44 Ratio Analysis and its elements

The following are analytical ratios for the year ended March 31, 2024 and March 31, 2023:

Ratio	Numerator	Denominator	Unit of measurement	March 31, 2024			March 31, 2023			Variation	Remarks for Variation in the ratio by more than 25% as compared to previous year
				Numerator's Value	Denominator's Value	Ratio	Numerator's Value	Denominator's Value	Ratio		
Current ratio	Current Assets	Current Liabilities	Times	2,126.21	9,228.77	**0.23**	2,349.08	8,665.02	**0.27**	**-15.02%**	Variation due to decrease in current liabilities and increase in current assets during the year.
Debt- Equity Ratio	Total Debt	Shareholder's Equity	Times	49,649.13	10,979.54	**4.52**	54,669.11	14,071.95	**3.88**	**16.40%**	Variation due to movement of debts and reserve during the year.
Debt Service Coverage ratio	Earnings for debt service = Net profit after taxes + Non-	Debt service = Interest + Lease Payments + Principal Repayments	Times	5,699.82	(10,475.38)	**(0.54)**	8,892.05	(11,093.40)	**(0.80)**	**-32.12%**	Variation due to movement in EBITA and debt payments during the year.
Return on Equity ratio	Net Profits after taxes - Preference	Average Shareholder's Equity	Percentage	(3,081.23)	12,525.75	**(0.25)**	914.95	13,615.34	**0.07**	**-466.06%**	-
Inventory Turnover ratio*	Cost of goods sold or Sales	Average Inventory	Times			**-**	-	-	**-**	**-**	-
Trade Receivable Turnover Ratio*	Net credit sales = Gross credit sales -	Average Trade Receivable	Times	-	-	**-**	-	-	**-**	**-**	-
Trade Payable Turnover Ratio	Net credit purchases = Gross credit purchases -	Average Trade Payables	Times	6,403.08	2,881.75	**2.22**	5,910.80	2,777.76	**2.13**	**4.42%**	Variation is due to movement of purchase and trade payable during the year
Net Capital Turnover Ratio	Net sales = Total sales - sales return	Working capital = Current assets - Current liabilities	Times	19,066.90	(7,102.56)	**(2.68)**	17,780.62	(6,315.94)	**(2.82)**	**-4.64%**	Variation is due to movement of revenue and rworking capital during the year
Net Profit ratio	Net Profit	Net sales = Total sales - sales return	Times	(3,081.23)	19066.9	**(0.16)**	914.95	17,780.62	**0.05**	**-414.05%**	Variation is due to movement of net profit and revenue during the year
Return on Capital Employed	Earnings before interest and taxes	Capital Employed = Tangible Net Worth* +	Percentage	3,480.05	60,628.67	**0.06**	7,272.81	68,741.06	**0.11**	**-45.75%**	-
Return on Investment	Income generated from investments	Weighted average value of investments	Percentage	-	-	**-**	0.28	-	**-**	**0.00%**	Variation is due to movement of investments during the year

*Since the Company is toll road Company operating under Design, Build, Finance, Operate and Transfer (DBFOT) basis and is not in the nature of manufacturing or a trading concern, accordingly Inventory turnover ratio and debtors turnover ratio are considered as not applicable.

*The amounts capitalised as intangible assets being the right of the Company under the Concession Agreement (to collect toll fees from the users of the Project Highway) is included as part of tangible net worth.

Note: The above Non-GAAP measures presented may not be comparable to similarly titled measures reported by other companies. Further, it should be noted that these are not a measure of operating performance or liquidity defined by generally accepted accounting principles.

45 Impairment of assets

Based on a review of the future discounted cash flows of the project facility, the recoverable amount is higher than the carrying amount and hence no provision for impairment is required for the year. The inputs to the valuation models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as Traffic growth rates, WACC, Tax rates and Inflation rates etc.

46 The Code on Social Security,2020 ('Code') relating to employee benefits during employment and post employment benefits received Presidential assent in September 2020. The Code has been published in the Gazette of India. However, the date on which the Code will come into effect has not been notified. Company will assess the impact of the Code when it comes into effect and will record any related impact in the period the Code becomes effective.

47 There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company.

48 The Company does not have any Benami property, where any proceeding has been initiated or pending against the Company for holding any Benami property.

49 The Company does not have any transactions with struck-off companies under section 248 of the Companies Act, 2013..

50 The Company does not have any charges or satisfaction which is yet to be registered with ROC beyond the statutory period.

51 The Company has not traded or invested in Crypto currency or Virtual Currency during the financial year.

52 The Company is not deemed wilfull defaulter by any bank or financial institution or other lender.

53 The Company has not advanced or loaned or invested funds to any other person or entity, including foreign entities (Intermediaries) with the understanding that the Intermediary shall: directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company (Ultimate Beneficiaries); or provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

54 The Company has not received any fund from any person or entity, including foreign entities (Funding Party) with the understanding (whether recorded in writing or otherwise) that the Company shall: directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party (Ultimate Beneficiaries); or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

55 The Company has not any transaction which is not recorded in the books of accounts that has been surrendered or disclosed as income during the year in the tax assessments under the Income tax Act, 1961 (such as, search or survey or any other relevant provisions of the Income tax Act, 1961).

56 The Company has not availed any working capital facilities from banks on the basis of security of current assets.

57 Expressway Developers Limited (erstwhile Holding Company) has entered into an Agreement with Cube Highways and Infrastructure V PTE LTD (Purchaser), being a company based in Singapore and incorporated with the objective of acquiring and operating transportation projects to purchase the shares from the erstwhile Holding Company (including the purchase of seller nominee shares by the purchaser nominees from the seller nominees) and the erstwhile Holding Company has agreed to sell the shares to the Purchaser (including the sale of such portion of the sale shares which are held by the seller nominees to purchaser nominees).

58 Audit Trail

The Ministry of Corporate Affairs (MCA) by the Companies (Accounts) Amendment Rules 2021 and vide notification dated 24 March 2021 has issued the "Companies (Audit and Auditors) Amendment Rules, 2021 has prescribed a new requirement for companies under the proviso to Rule 3(1) of the Companies (Accounts) Rules, 2014 inserted requiring companies, which uses accounting software for maintaining its books of account, shall use only such accounting software which has a feature of recording audit trail of each and every transaction, creating an edit log of each change made in the books of account along with the date when such changes were made and ensuring that the audit trail cannot be disabled.

The Company uses an Enterprise Resources Planning System – SAP S/4 HANA accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility , however the audit log (edit log) feature has not been enabled in the aforesaid software throughout the year. Further the audit trail feature is not enabled for direct changes to database. Since the software is having preventive controls measures inbuilt , the audit log (edit log) facility is not enabled in the system. Since there is no audit log (edit log) feature enabled at application and at database level for the year under review there is no preservation of audit trail as at March 31, 2024.

59 The company did not have any long term contracts including derivative contracts for which there were any material foreseeable losses.

60 Previous period figures have been re-grouped and/ or re-arranged wherever necessary to make their classification comparable with the current period.

61 The financial statements were approved for issue by the Board of Directors on September 02, 2024.

As per our report of even date attached

For SBA and Company
Chartered Accountants
Firm Registration No. 004651C

VIKAS JAIN
Digitally signed by VIKAS JAIN
DN: c=IN, o=Personal, postalCode=452010, st=Madhya Pradesh, serialNumber=CC1CE97C7C18BD1F9B4AB3FC4CABF553205C33978965018 51F4CC3FF0F62DF4A, cn=VIKAS JAIN
Date: 2024.09.02 16:36:29 +05'30'

Vikas Jain
Partner

Place: Indore
Date: September 02, 2024

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

ANSHUMAN GUPTA
Digitally signed by ANSHUMAN GUPTA
Date: 2024.09.02 11:47:02 +05'30'

Anshuman Gupta
Director
DIN-09325830
Place: Noida
Date: September 02, 2024

ANUJ MAITREY
Digitally signed by ANUJ MAITREY
Date: 2024.09.02 11:46:15 +05'30'

Anuj Maitrey
Director
DIN-10481417
Place: Noida
Date: September 02, 2024

SONAL GOYAL
Digitally signed by SONAL GOYAL
Date: 2024.09.02 11:53:27 +05'30'

Sonal Goyal
Company Secretary
Membership No. A72518
Place: Noida
Date: September 02, 2024

CA. VIKAS JAIN
B. Com, F.C.A.

SBA & COMPANY
CHARTERED ACCOUNTANTS

INDEPENDENT AUDITOR'S REPORT

To
The Members of,
Western MP Infrastructure & Toll Roads Pvt. Ltd.
Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of **Western MP Infrastructure & Toll Roads Pvt. Ltd.** ("the Company"), which comprise the Balance Sheet as at March 31, 2023, the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Changes in Equity and the Statement of Cash Flows for the year ended on that date, notes to the financial statement and a summary of the significant accounting policies and other explanatory information (hereinafter referred to as "the financial statements").

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements give the information required by the Companies Act, 2013 ("the Act") in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2023, the profit and total comprehensive income, changes in equity and its cash flows for the year ended on that date.

Basis for Opinion

We conducted our audit of the financial statements in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Act. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India (ICAI) together with the ethical requirements that are relevant to our audit of the financial statements under the provisions of the Act and the Rules made thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ICAI's Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the financial statements.

Office : 33-B, Chandra Nagar, Behind Hotel Amar Vilas, MR-9, Barfani Dham Road, Indore (M.P.) 452 010
: 0731-2558186 : 93000 99960 : vikas_jain_ca@yahoo.com

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. The company has made major maintenance work during the year.

Information Other than the Financial Statements and Auditor's Report Thereon

The Company's Board of Directors is responsible for the preparation of the other information. The other information comprises the information included in the Management Discussion and Analysis, Board's Report including Annexures to Board's Report, Corporate Governance and Shareholder's Information, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained during the course of our audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information; we are required to report that fact. We have nothing to report in this regard.

Management's Responsibility for the Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Act with respect to the preparation of these financial statements that give a true and fair view of the financial position, financial performance, total comprehensive income, changes in equity and cash flows of the Company in accordance with the Ind AS and other accounting principles generally accepted in India. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

The Board of Directors is responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal financial controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Act, we are also responsible for expressing our opinion on whether the Company has adequate internal financial controls system in place and the operating effectiveness of such controls.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Materiality is the magnitude of misstatements in the financial statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the financial statements.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Act, we give in the **"Annexure A"** a statement on the matters specified in paragraphs 3 and 4 of the Order to the extent applicable.

2. As required by section 143 (3) of the Act, we report that:
   a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;

   b) In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books:

   c) The Balance Sheet, the Statement of Profit and Loss including other comprehensive income and the Statement of Cash Flows and the Statement of Changes in Equity dealt with by this Report are in agreement with the books of account:

   d) In our opinion, the aforesaid financial statements comply with the Indian Accounting Standards (IND AS) specified under section 133 of the Act and rules made there under, as applicable;

e) On the basis of written representations received from management as on March 31, 2023 taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2023 from being appointed as a director in terms of Section 164(2) of the Act.

f) With respect to the adequacy of the internal financial controls over financial reporting of the Company and the operating effectiveness of such controls, refer to our separate Report **in "Annexure B"**.

g) With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended: In our opinion and to the best of our information and according to the explanations given to us, the remuneration paid by the Company to its directors during the year is in accordance with the provisions of section 197 of the Act.

h) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

i. The Company does not have any pending litigations which would impact on its financial position in its financial statements;

ii. The company did not have any long term contracts including derivative contracts for which there were any foreseeable losses.

iii. there has been no delay in transferring amounts, required to be transferred, to the Investor Education and Protection Fund by the Company.

iv.

a. The management has represented that, to the best of its knowledge and belief, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other persons or entities, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall:

- directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever ("Ultimate Beneficiaries") by or on behalf of the Company or

- Provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

b. The management has represented, that, to the best of its knowledge and belief, no funds have been received by the Company from any persons or entities, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall:

- directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever ("Ultimate Beneficiaries") by or on behalf of the Funding Party or

- provide any guarantee, security or the like from or on behalf of the Ultimate Beneficiaries; and

c. Based on such audit procedures as considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub clause (iv)(a) and (iv)(b) contain any material mis-statement.

v. No Dividend is declared or paid by the company during the year.

For S B A & Company
Chartered Accountants
FRN : 004651C

CA. Vikas Jain
(Partner)
M. No. 078245
UDIN : 23078245BGQAGH7759

Date: 29.08.2023
Place: Indore

ANNEXURE A

To the Independent Auditors' Report on
Financial Statements of Western MP Infrastructure & Toll Roads Pvt. Ltd.
(Referred to our report of even date)

The Annexure referred to in our Independent Auditors' Report to the members of the Company on the financial statements for the year ended March 31, 2023, we report that:

i. In respect of Property, Plant & Equipment

a) The Company has maintained proper records showing full particulars, including quantitative details and situation of Property, Plant & Equipment.

b) According to information and explanations given to us and on the basis of our examination of the records of the company, the Property, Plant & Equipment have been physically verified during the year by the management under a regular programme of verification by rotation over a period of three years, which, in our opinion, is reasonable having regard to the size of the Company and the nature of its assets. No material discrepancies were noticed.

c) According to information and explanations given to us and on the basis of our examination of the records of the company, the title deeds of immovable properties forming part of the Property, Plant & Equipment are held in the name of the Company.

d) According to information and explanations given to us and on the basis of our examination of the records of the company, the company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets or both during the year.

e) According to information and explanations given to us and on the basis of our examination of the records of the company, there are no proceedings initiated or are pending against the company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (45 of 1988) and rules made thereunder.

ii. In respect of Inventory

The Company does not hold any physical inventories. Accordingly, reporting under clause 3(II) of the order not applicable to the company.

iii. In respect of loan granted:

According to information and explanations given to us and on the basis of our examination of the records of the company, the company has made any investments, provided guarantee or security or granted any advance in nature of loans, secured or unsecured to Companies, Firms, Limited Liability Partnerships or other parties covered in the register maintained under Section 189 of the Companies Act, The Amount taken as unsecured loan is amounting to Rs. Nil (Previous Year Rs. 55.02 Lakh).

iv. **In respect of compliance of section 185 and 186 of The Companies Act, 2013**
According to information and explanations given to us and on the basis of our examination of the records of the company, in our opinion the company has not advanced any loans, made investments, gave guarantees, and provided security prescribed in provisions of section 185 and 186 of the companies Act, 2013.

v. **In respect of public deposits**
In our opinion and according to the information and explanations given to us and on the basis of our examination, the Company has not accepted any deposit from the public within the meaning of the provisions of sections 73 to 76 or any relevant provisions of the Companies Act, 2013 and the rules framed there under.

vi. **In respect of Cost Records:**
According to the information and explanations given to us, the maintenance of cost records has been specified by the central government under the section 148(1) of the Companies Act, 2013 related to road tolling business under BOT basis activities carried out by the company. And are of the opinion that prima facie, the specified accounts and records have been made and maintained.

vii. **In respect of statutory dues:**
a) According to the records of the Company, the Company is generally regular in depositing with appropriate authorities undisputed statutory dues including provident fund, employees' state insurance, income-tax, duty of custom, goods & service tax, cess and other statutory dues applicable to it. As per the records of the Company, as at March 31, 2023, the Company does not have any undisputed statutory dues which are outstanding for a period of more than six months from the date they became payable.

b) According to the information and explanations given to us and on the basis of examination of records of the company there is no dispute in respect of income tax or sales tax or service tax or value added tax or GST or any other cess.

viii. **In respect of undisclosed Income**
In our opinion and according to the information and explanations given to us and based on our examination of the records of the company, there were no such unrecorded transaction in the books of account which were surrendered or disclosed as income during the year in tax assessments under Income Tax Act, 1961 (43 of 1961).

ix. **In respect of repayment of loan**
According to the information and explanations given to us, based on our examination of the records of the company and on the basis of overall examination of the Balance Sheet of the Company,
a) The company has not defaulted in repayment of loans or borrowing to a financial institution or bank.
b) The company has not been declared willful defaulter by any bank or financial institution.
c) In our opinion the term loan were applied for the purpose for which the loan was obtained.
d) No such short term loan funds have been utilized for long term purpose.

e) The company has not raised any fund from any entity or person on account of or to meet the obligations of its subsidiaries, associates or joint ventures.
f) The company has not raised any loan during the year on the pledge of securities held in its subsidiaries, joint ventures or associate companies.

x. In respect of funds raised through IPO/FPO/Debt finance

a) On the basis of overall examination of the Balance Sheet of the Company, according to the information and explanations provided to us and based on our examination of the records of the company we report that monies raised by way of term loans were applied for the purposes for which those were raised. The Company did not raise any money by way of initial public offer or further public offer (including debt instrument).
b) In our opinion and according to the information and explanations given to us as well as based on our examination of the records of the company, the company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year under section 42 and section 62 of the Companies Act, 2013.

xi. In respect of fraud reporting

a) According to the information and explanations given to us and based on our examination of the records of the company, no material fraud by the Company or on the Company by its officers or employees was noticed or reported during the year.
b) According to the information and explanations given to us and based on our examination of the records of the company, no report under sub-section (12) of section 143 of the Companies Act has been filed by the auditors in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government.
c) According to the information and explanations given to us and based on our examination of the records of the company, there are no whistle blower complaints received by the Company during the year.

xii. In respect of Nidhi Company

According to the information and explanations given to us, the Company is not a Nidhi Company. Accordingly, paragraph 3(xii) of the Order is not applicable.

xiii. In Respect of Transactions With Related Parties

According to the information and explanations given to us, transactions with the related parties are in compliance with section 177 and 188 of Companies Act, 2013 where applicable and details of such transactions have been disclosed in the financial statements as required by the applicable accounting standards.

xiv. In Respect of Internal Audit System

According to the information and explanations given to us and based on our examination of the records of the Company, the company has not any internal audit system commensurate with the size and nature of its business and the reports of the Internal Auditors for the period under audit were considered by us.

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xv. **In respect of Non-Cash Transactions**

According to the information and explanations given to us and based on our examination of the records of the Company, the Company has not entered into any non-cash transactions with directors or persons connected with him. Accordingly, paragraph 3(xv) of the Order are not applicable.

xvi. **In respect of compliance of section 45IA of the RBI Act, 1934**

a) The Company is not required to be registered under section 45 IA of the Reserve Bank of India Act, 1934. Accordingly, paragraph 3(xvi)(a)of the Order is not applicable.

b) The Company is not required to be registered under section 45 IA of the Reserve Bank of India Act, 1934. Accordingly, paragraph 3(xvi)(b)of the Order is not applicable.

c) The Company is not a core investment company (CIC) as defined in the regulations made by the reserve Bank of India. Accordingly clause 3(xvi)(c) of the order is not applicable.

d) According to information and explanations given to us during the course of audit, there is no core investment company within the Group (as defined in the Core Investment Companies (Reserve Bank) Directions, 2016) and accordingly reporting under clause 3(xvi)(d) of the Order is not applicable.

xvii. **In respect of Cash losses**

The company has not incurred any cash losses in the current financial year and in the immediately preceding financial year.

xviii. **In respect of resignation of statutory auditors**

There has been no resignation of the statutory auditors during the year.

xix. **In respect of any material uncertainty to meet liability**

In our opinion and according to the information and explanations given to us and based on our examination of the records of the Company, on the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements ,our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, nothing has come to our attention, which cause us to believe that any material uncertainty exists as on the date of the audit report that the company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date. We, however, state that this is not an assurance as to the future viability of the Company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the Company as and when they fall due.

xx. **In Respect of Unspent Amount Under Section 135(5) of The Companies Act, 2013**

a. In our opinion and according to the information and explanations given to us and based on our examination of the records of the Company, there was no such unspent amount to be transferred to fund specified in Schedule VII to the Companies Act. Accordingly, paragraphs 3(xx)(a) of the Order are not applicable.

b. The Company does not have ongoing projects under section 135 of the Companies Act. Accordingly, paragraphs 3(xx)(b) of the Order are not applicable.

For S B A & Company
Chartered Accountants
FRN : 004651C

CA. Vikas Jain
(Partner)
M. No. 078245

Date: 29.08.2023
Place: Indore

ANNEXURE B

To the Independent Auditors' Report on
Financial Statements of Western MP Infrastructure & Toll Roads Pvt. Ltd.
(Referred to our report of even date)

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls over financial reporting of **Western MP Infrastructure & Toll Roads Pvt. Ltd.** ("the Company") as of March 31, 2023 in conjunction with our audit of the financial statements of the Company for the year ended on that date.

MANAGEMENT'S RESPONSIBILITY FOR INTERNAL FINANCIAL CONTROLS

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls over Financial Reporting issued by the Institute of Chartered Accountants of India ('ICAI'). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

AUDITORS' RESPONSIBILITY

Our responsibility is to express an opinion on the Company's internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects. Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system over financial reporting

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MEANING OF INTERNAL FINANCIAL CONTROLS OVER FINANCIAL REPORTING

A company's internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control over financial reporting includes those policies and procedures that

1) Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;

2) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and

3) Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

INHERENT LIMITATIONS OF INTERNAL FINANCIAL CONTROLS OVER FINANCIAL REPORTING

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

OPINION

In our opinion, the Company has, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at March 31, 2023, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

For S B A & Company
Chartered Accountants
FRN : 004651C

CA. Vikas Jain
(Partner)
M. No. 078245

Date: 29.08.2023
Place: Indore

Western M P Infrastructure & Toll Roads Private Limited
Balance Sheet as at 31st March 2023
CIN: U45203MH2007PTC173577

Rs. in lakhs

Particulars	Notes	As at 31st March 2023	As at 31st March 2022
ASSETS			
(1) Non-current assets			
(a) Property, plant and equipment	(4)	39.03	43.59
(b) Intangible Assets	(5)	72,563.04	74,037.53
(c) Financial Assets			
(i) Investments	(6)	5.01	4.73
(d) Deferred tax assets (net)	(8)	713.37	1,581.25
(e) Non-current tax assets (net)		311.28	200.05
Total non-current assets		73,631.72	75,867.14
(2) Current assets			
(a) Financial assets			
(i) Cash and cash equivalents	(10)	339.62	634.33
(ii) Bank balances other than (i) above	(10)	1,507.78	2,070.99
(iii) Others	(7)	-	46.48
(b) Other assets	(9)	501.68	891.00
Total current assets		2,349.09	3,642.80
TOTAL ASSETS		75,980.81	79,509.95
EQUITY AND LIABILITIES			
EQUITY			
(a) Equity share capital	(11)	2,913.46	2,913.46
(b) Other equity		17,735.39	15,532.21
TOTAL EQUITY		20,648.85	18,445.66
LIABILITIES			
(1) Non-current liabilities			
(a) Financial liabilities			
(i) Borrowings	(12)	48,669.11	54,569.36
(b) Provision	(13)	72.10	23.02
Total non-current liabilities		48,741.20	54,592.39
(2) Current liabilities			
(a) Financial liabilities			
(i) Borrowings	(12)	6,000.00	5,455.02
(ii) Trade payables	(14)		
- total outstanding dues of micro and small enterprises		-	-
- total outstanding dues of creditor other than micro and small enterprises		530.78	907.41
(iii) Other financial liabilities	(15)	34.91	30.74
(b) Other liabilities	(16)	23.40	77.13
(c) Provisions	(13)	1.67	1.60
Total current liabilities		6,590.76	6,471.90
TOTAL LIABILITIES		55,331.96	61,064.29
TOTAL EQUITY AND LIABILITIES		75,980.81	79,509.95

Significant accounting policies (4)

The accompanying notes are an integral part of financial statements
As per our report of even date attached

For S B A & Company
Chartered Accountants
FRN : 004651C

CA Vikas Jain
Partner
Membership No. [illegible]

Place: Indore
Dated: 29th August 2023

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

Anjani Das
Whole Time Director
DIN: 09200123

Umesh Jhunjhunwala
Director
DIN: 02428062

Nishikant Upadhyay
Chief Financial Officer
PAN: AADPU5163B

Western M P Infrastructure & Toll Roads Private Limited
Statement of profit and loss for the year ended 31st March 2023
CIN: U45203MH2007PTC173577

Rs. in lakhs

Particulars	Notes	For the year ended 31st March 2023	For the year ended 31st March 2022
INCOME			
Revenue from operations	(17)	17,820.23	14,804.05
Other income	(18)	33.30	173.08
Total Income		17,853.53	14,977.13
EXPENSES			
Operation and maintenance expenses	(19)	6,627.21	6,210.94
Employee benefits expense	(20)	296.43	228.72
Finance cost	(21)	5,812.62	6,091.62
Depreciation and amortisation expenses	(5-6)	1,479.06	1,444.77
Other expense	(22)	557.88	474.73
Total Expenses		14,773.19	14,450.78
Profit / (loss) before exceptional items and tax (III-IV)		3,080.33	526.36
Exceptional Items	(23)	7.55	4.93
Profit / (loss) before tax		3,072.79	521.42
Tax expense:			
Current tax			
Deferred tax		867.87	(739.28)
Profit for the year after tax		2,204.91	1,260.71
Other comprehensive income, net of tax			
Gain/ (loss) on acturial valuation of post employee benefits		(1.73)	(2.24)
Less: Income tax expense on above		-	-
		(1.73)	(2.24)
Other comprehensive income for the year, net of tax [B]		2,203.19	1,258.47
Earning per equity shares of Rs. 10 each	(37)		
Basic		7.56	4.32
Diluted		7.56	4.32

Significant accounting policies (4)

The accompanying notes are an integral part of financial statements

As per our report of even date attached

For S B A & Company
Chartered Accountants
FRN : 004657C

CA Vikas Jain
Partner
Membership No. 078445

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

Anjani Das
Whole Time Director
DIN: 09200123

Umesh Jhunjhunwala
Director
DIN: 02428062

Nishikant Upadhyay
Chief Financial Officer
PAN: AADPU5163B

Place: Indore
Dated: 29th August 2023

Western M P Infrastructure & Toll Roads Private Limited
Statement of Cash Flow for the year ended 31 March 2023
CIN: U45203MH2007PTC173577

Rs. in lakhs

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Cash flow from/(used in) operating activities		
Profit / (loss) before tax	**3,072.79**	**521.42**
Adjustment for:		
Adjustement for exceptional items	7.55	4.93
Depreciation and amortisation expenses	1,479.05	1,444.77
Interest income	(32.74)	(117.96)
Interest expense	5,738.13	5,984.46
Movement in working capital:		
Increase/(decrease) in trade payable and other financial liabilities	(372.47)	510.79
(Increase)/decrease in loans and other financial assets	46.48	(24.99)
(Increase)/decrease in other assets	381.77	7.33
Increase/(decrease) in provision	47.42	(3,471.03)
Increase/(decrease) in other liabilities	(53.72)	(69.16)
Cash generated from/(used in) operations	**10,314.26**	**4,790.56**
Income tax paid	(111.23)	(20.17)
Cash generated from/(used in) operations	**10,203.03**	**4,770.39**
Cash flow from/(used in) investing activities		
Investment in fixed deposits	563.21	5,893.73
Investment in MF	(0.29)	(0.16)
Interest received	32.74	117.96
Cash generated from/(used in) investing activities	**595.66**	**6,011.52**
Cash flow from/(used in) financing activities		
Proceeds from /(repayment of) borrowings (net)	(5,300.25)	(4,808.70)
Proceeds from borrowings from related parties	(55.02)	(36.84)
Interest paid	(5,738.13)	(5,984.46)
Cash generated from/(used in) financing activities	**(11,093.41)**	**(10,830.00)**
Net increase/(decrease) in cash and cash equivalents	**(294.71)**	**(48.09)**
Cash and cash equivalents at the beginning of the year	634.33	682.43
Cash and cash equivalents at the end of the year	**339.62**	**634.33**

Notes
1. The figure in Brackets represent outflows.
2. Cash flow statement has been prepared using indirect method.

Significant accounting policies - note no. 4
The accompanying notes are an integral part of financial statements
As per our report of even date attached

For S B A & Company
Chartered Accountants
FRN : 004651C

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

CA Vikas Jain
Partner
Membership No. 020245

Place: Indore
Dated: 29th August 2023

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

Anjani Das
Whole Time Director
DIN: 09200123

Umesh Jhunjhunwala
Director
DIN: 02428062

Nishikant Upadhyay
Chief Financial Officer
PAN: AADPU5163B

Western M P Infrastructure & Toll Roads Pvt. Ltd. ★

Western M P Infrastructure & Toll Roads Private Limited
Statement of changes in equity for the year ended 31st March 2023
CIN: U45203MH2007PTC173577

Rs. In lakhs

A. Equity Share Capital

(1) Current Reporting Year

Balance at the beginning of the current reporting year 01st April, 2022	Changes in Equity Share capital due to prior period errors	Restated Balance at the beginning of the current reporting year	Changes in Equity Share during the current year	Balance at the end of the current reporting year ended at 31 March 2023
2,913.46				2,913.46

(2) Previous Reporting Year

Balance at the beginning of the previous reporting year 01st April,2021	Changes in Equity Share capital due to prior period errors	Restated Balance at the beginning of the previous reporting year	Changes in Equity Share during the previous year	Balance at the end of the previous reporting year at 31 March 2022
2,913.46				2,913.46

B. Other Equity

(1) Current Reporting Year

Particulars	Reserves and surplus			Items of other comprehensive income	Total
	Capital reserve	Securities premium reserve	Retained earnings	Actuarial gain/ (loss) on defined liabilities/ (assets)	
Balance at the beginning of the current reporting year at 01 April 2022	-	22,344.48	(6,790.81)	(21.47)	15,532.21
Total Comprehensive Income for the current year	-	-	2,204.91	(1.73)	2,203.19
Balance at the end of the current reporting year At 31 March 2023	-	22,344.48	(4,585.89)	(23.19)	17,735.39

(2) Previous Reporting Year

Particulars	Reserves and surplus			Items of other comprehensive income	Total
	Capital reserve	Securities premium reserve	Retained earnings	Actuarial gain/ (loss) on defined liabilities/ (assets)	
Balance at the beginning of the previous year period at 01 April 2021	-	22,344.48	(8,051.51)	(19.23)	14,273.74
Total Comprehensive Income for the previous year	-	-	1,260.71	(2.24)	1,258.47
Balance at the end of the previous reporting year At 31 March 2022	-	22,344.48	(6,790.81)	(21.47)	15,532.21

Significant accounting policies - Note No. 4
The accompanying notes are an integral part of financial statements

As per our review report of even date attached

For S B A & Company
Chartered Accountants
FRN : 004615

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

CA Vikas Jain
Partner
Membership No. 078245

Place: Indore
Dated: 29th August 2023

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

Anjan Das
Whole Time Director
DIN: 09200123

Umesh Jhunjhunwala
Director
DIN: 02428062

Nishikant Upadhyay
Chief Financial Officer
PAN: AADPU5163R

Western M P Infrastructure & Toll Roads Pvt. Ltd.

1 CORPORATE INFORMATION

The Company Western M P Infrastructure & Toll Roads Private Limited (the 'Company') has been awarded road project in the state of Madhya Pradesh for development of Lebad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on built Operate Transfer (BOT) basis. The concession period is 25 years.
The registered office is located at 613/A, 5th Floor, Kohinoor City, Kirol Road Kurla (West), Mumbai, Mumbai City MH 400070, India.

The Company is a subsidiary of Express Way Developers Limited.

2 BASIS OF PREPARATION AND PRESENTATION

2.01 Basis of preparation of financial statements

These Financial Statements are prepared on accrual basis of accounting and all principal accounting policies applied in the preparation of these Financial Statements are set out below. These policies have been consistently applied to all the financial years presented.

The financial statements have been prepared in accordance with Indian Accounting Standards (Ind AS) notified under Section 133 of the Companies Act, 2013 read with the Companies (Indian Accounting Standards) Rules, 2015, and relevant amendment rules issued there after.

2.02 Functional and presentation currency

Items included in the financial statements Company are measured using the currency of the primary economic environment in which the Company operates ("the functional currency"). Indian rupee is the functional currency of the Company.
The financial statements are presented in Indian Rupees which is the Company's presentation in Indian Rupees has been rounded up to the nearest lakhs except where otherwise indicated.

2.03 Use of estimates

The preparation of financial statements in conformity of Ind AS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, the disclosures of contingent assets and contingent liabilities at the date of financial statements, income and expenses during the period. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis.

Revisions to accounting estimates are recognized in the period in which the estimates are revised and in future periods which are affected.
Application of accounting policies that require critical accounting estimates and assumption having the most significant effect on the amounts recognized in the financial statements are:

Valuation of financial instruments
Useful life of property, plant and equipment
Useful life of intangible assets
Provisions

2.04 Current versus non-current classification

The Company presents assets and liabilities in the balance sheet based on current/ non-current classification in accordance with Division II of Schedule III of The Companies Act, 2013.

2.05 Disclosure of Ind AS issued but not effective

Ind AS issued but not effective
Ministry of Corporate Affairs ("MCA") notifies new standard or amendments to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time. On March 31, 2023, MCA amended the Companies (Indian Accounting Standards) Rules, 2015 by issuing the Companies (Indian Accounting Standards) Amendment Rules, 2023, applicable from April 1, 2023, as below:

Ind AS 1 – Presentation of Financial Statements
The amendments require companies to disclose their material accounting policies rather than their significant accounting policies. Accounting policy information, together with other information, is material when it can reasonably be expected to influence decisions of primary users of general purpose financial statements. The Company does not expect this amendment to have any significant impact in its financial statements.

Ind AS 12 – Income Taxes
The amendments clarify how companies account for deferred tax on transactions such as leases and decommissioning obligations. The amendments narrowed the scope of the recognition exemption in paragraphs 15 and 24 of Ind AS 12 (recognition exemption) so that it no longer applies to transactions that, on initial recognition, give rise to equal taxable and deductible temporary differences. The Company is evaluating the impact, if any, in its financial statements.

Ind AS 8 – Accounting Policies, Changes in Accounting Estimates and Errors
The amendments will help entities to distinguish between accounting policies and accounting estimates. The definition of a change in accounting estimates has been replaced with a definition of accounting estimates. Under the new definition, accounting estimates are "monetary amounts in financial statements that are subject to measurement uncertainty". Entities develop accounting estimates if accounting policies require items in financial statements to be measured in a way that involves measurement uncertainty. The Company does not expect this amendment to have any significant impact in its financial statements.

3 SIGNIFICANT ACCOUNTING POLICIES

3.01 Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

In the principal market for the asset or liability, or
In the absence of a principal market, in the most advantageous market for the asset or liability
The principal or the most advantageous market must be accessible by the Company.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.
A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.
The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.
All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:
Level 1 - Quoted (unadjusted) market prices in active markets for identical assets or liabilities

Level 2- Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable

Level 3 -Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

Western M P Infrastructure & Toll Roads PVT. LTD.

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For assets and liabilities that are recognised in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.
The Company's Management determines the policies and procedures for both recurring fair value measurement, such as derivative instruments and unquoted

financial assets measured at fair value, and for non-recurring measurement, such as assets held for distribution in discontinued operations.
At each reporting date, the Management analyses the movements in the values of assets and liabilities which are required to be remeasured or re-assessed as per the Company's accounting policies. For this analysis, the Management verifies the major inputs applied in the latest valuation by agreeing the information in the valuation computation to contracts and other relevant documents.
The Management also compares the change in the fair value of each asset and liability with relevant external sources to determine whether the change is reasonable.
For the purpose of fair value disclosures, the Company has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.
This note summarises accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

3.02 Service concession arrangements:

The Company constructs or upgrades infrastructure (construction or upgrade services) used to provide a public service and operates and maintains that infrastructure (operation services) for a specified period of time.
These arrangements may include infrastructure used in a public-to-private service concession arrangement for its entire useful life.

Under Appendix A to Ind AS 11 - Service Concession Arrangements, these arrangements are accounted for based on the nature of the consideration. The intangible asset model is used to the extent that the Company receives the right (i.e. a franchise) to charge users of the public service. The financial asset model is used when the Company has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services. When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for each component. If the Company performs more than one service (i.e., construction or upgrade services and operation services) under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.
The Company manages concession arrangements which include constructing road projects. The Company maintains and services the infrastructure during the

concession period. These concession arrangements set out rights and obligations related to the infrastructure and the service to be provided.
The right to consideration gives rise to an intangible asset and financial receivable and accordingly, both the intangible asset and financial assets models are applied. Income from concession arrangements earned under the intangible asset model consists of the i) fair value of contract revenue, which is deemed to be fair value of consideration transferred to acquire the asset, and ii) payments actually received from the users. The intangible assets is amortized over its expected useful life in a way that reflects the pattern in which the assets economy benefits are consumed by the Company, starting from the date when the right to operate starts to be used. Based on these principles, the intangible assets is amortized in line with the actual usage of the specific public facility, with the maximum of the duration of the concession.
Financial receivable is recorded at the fair value of guaranteed residual value to be received at the end of the concession period. This receivable is subsequently measured at amortized cost.
Any asset carried under concession arrangements is derecognized on disposal or when no future economic benefits are expected from its future use or disposal or when the contractual rights to the financial asset expire.

3.03 Revenue recognition
Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Company and the revenue can be reliably measured, regardless of when the payment is being made. Revenue is measured at the fair value of the consideration received or receivable, taking into account contractually defined terms of payment and excluding taxes or duties collected on behalf of the government.
The specific recognition criteria described below must also be met before revenue is recognised.

Toll collections
Toll collections from users of facility are accounted for as and when the amount is due and recovery is certain.

Interest income
Interest income is recognised on accrual basis.

3.04 Taxes
Income tax expense for the year comprises of current tax and deferred tax. It is recognised in the Statement of Profit and Loss except to the extent it relates to a business combination or to an item which is recognised directly in equity or in other comprehensive income.
Current tax is the expected tax payable/receivable on the taxable income/ loss for the year using applicable tax rates at the Balance Sheet date, and any adjustment

to taxes in respect of previous years. Interest income/ expenses and penalties, if any, related to income tax are included in current tax expense.
Deferred tax is recognised in respect of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the corresponding amounts used for taxation purposes.
A deferred tax liability is recognised based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted, or substantively enacted, by the end of the reporting period. Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the asset can be utilised. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.
Current tax assets and current tax liabilities are offset when there is a legally enforceable right to set off the recognised amounts and there is an intention to settle the

asset and the liability on a net basis. Deferred tax assets and deferred tax liabilities are offset when there is a legally enforceable right to set off current tax assets

against current tax liabilities; and the deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authority.

3.05 Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation and where applicable accumulated impairment losses. Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials, direct labour and any other costs directly attributable to bringing the asset to a working condition for its intended use and the costs of dismantling and removing the items and restoring the site on which they are located. Purchased software that is integral to the functionality of the related equipment is capitalized as part of that equipment.
When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Gains and losses on disposal with the carrying amount of Property, Plant and Equipment and are determined by comparing the proceeds from disposal with the carrying amount of Property, Plant and Equipment and are recognized net within "other income/other expenses" in the Statement of Profit and Loss.

Subsequent Cost

The cost of replacing part of an item of property, plant and equipment is recognized in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Company and its cost can be measured reliably. The carrying amount of the replaced part is de-recognized. The costs of the day-to-day servicing of property, plant and equipment are recognized in the Statement of Profit and Loss.

Depreciation is calculated on a WDV basis using useful lives of the assets as prescribed under Schedule II to the Companies Act 2013:

Asset class	Useful life
Plant and machinery	15 years
Furniture and fixtures	10 years
Office equipment	5 years
Vehicles	8 years
Computers and printer	3 years

The residual values, useful lives and methods of depreciation of property, plant and equipment are reviewed at each financial year end and adjusted prospectively, if appropriate.

3.06 Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation and accumulated impairment losses. Internally generated intangibles, excluding capitalised development costs, are not capitalised and the related expenditure is reflected in profit or loss in the period in which the expenditure is incurred.

Concessionaire Rights are amortised over the period of concession, using revenue based amortisation in respect of concessionaire rights recognised in the financial statements for the period ending immediately before the beginning of the first Ind AS reporting period. Under this method, the carrying value of the rights is amortised in the proportion of actual toll income for the year to expected revenue for the balance concession period, to reflect the pattern in which the assets economic benefits will be consumed. At each balance sheet date, the projected revenue for the balance concession period is reviewed by the Management. If there is any change in the projected revenue from previous estimates, the amortisation of concessionaire rights is changed prospectively to reflect any changes in the estimates.

Intangible assets are assessed for impairment wherever there is an indication that the intangible asset may be impaired.

3.07 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the asset. All other borrowing costs are expensed in the period in which they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds. Borrowing cost also includes exchange differences to the extent regarded as an adjustment to the borrowing costs.

3.08 Contingent liabilities

A contingent liability is a possible obligation that arises from past events whose existence will be confirmed by the occurrence or non-occurrence of one or more uncertain future events beyond the control of the company or a present obligation that is not recognised because it is not probable that an outflow of resources will be required to settle the obligation. A contingent liability also arises in extremely rare cases where there is a liability that cannot be recognised because it cannot be measured reliably. The contingent liability is not recognised in books of account but its existence is disclosed in financial statements.

3.09 Impairment of non-financial assets

The Company assesses, at each reporting date, whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Company estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's or cash-generating unit's (CGU) fair value less costs of disposal and its value in use. Recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or Company's of assets. When the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

3.10 Provisions

Provisions are recognised when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Company expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit and loss net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost.

3.11 Financial instruments

Financial assets

Financial assets are recognised when the Company becomes a party to the contractual provisions of the instrument.

On initial recognition, a financial asset is recognised at fair value, in case of financial assets which are recognised at fair value through profit and loss (FVTPL), its transaction cost are recognised in the statement of profit and loss. In other cases, the transaction cost are attributed to the acquisition value of the financial asset.

Financial assets are subsequently classified as measured at

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

- **amortised cost:** Financial assets that are held within a business model whose objective is to hold financial assets in order to collect contractual cash flows that are solely payments of principal and interest, are subsequently measured at amortised cost using the effective interest rate ('EIR') method less impairment, if any. The amortisation of EIR and loss arising from impairment, if any is recognised in the Statement of Profit and Loss.
- **fair value through profit and loss (FVTPL):** A financial asset not classified as either amortised cost or FVOCI, is classified as FVTPL. Such financial assets are measured at fair value with all changes in fair value, including interest income and dividend income if any, recognised as 'other income' in the Statement of Profit and Loss.
- **fair value through other comprehensive income (FVOCI):** Financial assets that are held within a business model whose objective is achieved by both, selling financial assets and collecting contractual cash flows that are solely payments of principal and interest, are subsequently measured at fair value through other comprehensive income. Fair value movements are recognized in the other comprehensive income (OCI). Interest income measured using the EIR method and impairment losses, if any are recognised in the Statement of Profit and Loss. On derecognition, cumulative gain or loss previously recognised in OCI is reclassified from the equity to 'other income' in the Statement of Profit and Loss.

Financial assets are not reclassified subsequent to their recognition, except if and in the period the Company changes its business model for managing financial assets.

Loans:

Loans are initially recognised at fair value. Subsequently, these assets are held at amortised cost, using the effective interest rate (EIR) method net of any expected credit losses. The EIR is the rate that discounts estimated future cash income through the expected life of financial instrument.

Derecognition
The Company derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the contractual rights to receive the cash flows from the asset.

Impairment of Financial Asset

Expected credit losses are recognized for all financial assets subsequent to initial recognition other than financials assets in FVTPL category.

For financial assets other than trade receivables, as per Ind AS 109, the Company recognises 12 month expected credit losses for all originated or acquired financial assets if at the reporting date the credit risk of the financial asset has not increased significantly since its initial recognition. The expected credit losses are measured as lifetime expected credit losses if the credit risk on financial asset increases significantly since its initial recognition. The Companys trade receivables do not contain significant financing component and loss allowance on trade receivables is measured at an amount equal to life time expected losses i.e. expected cash shortfall.
The impairment losses and reversals are recognised in Statement of Profit and Loss.

Financial Liabilities:
Initial recognition and measurement
Financial liabilities are recognised when the Company becomes a party to the contractual provisions of the instrument. Financial liabilities are initially measured at the amortised cost unless at initial recognition, they are classified as fair value through profit and loss. In case of trade payables, they are initially recognised at fair value and subsequently, these liabilities are held at amortised cost, using the effective interest method.

Subsequent measurement
Financial liabilities are subsequently measured at amortised cost using the EIR method. Financial liabilities carried at fair value through profit or loss are measured at fair value with all changes in fair value recognised in the Statement of Profit and Loss.

Derecognition
A financial liability is derecognised when the obligation specified in the contract is discharged, cancelled or expires.

3.12 Cash and cash equivalents
Cash and cash equivalent in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.
For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

3.13 Employee Benefits

i) Short term benefits
Short term employee benefit obligations are measured on an undiscounted basis and are expensed as a related service provided. A liability is recognized for the amount expected to be paid under short term cash bonus or profit sharing plans if the Company has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

3.14 Lease

Operating lease:

Lease of assets under which all the risk and rewards of ownership are effectively retained by the lessor are classified as operating leases. Lease payments / revenue under operating leases are recognized as an expense / income on accrual basis in accordance with the respective lease agreements.

3.15 Earnings per share
Basic earnings per share is computed by dividing the net profit for the period attributable to the equity shareholders of the Company by the weighted average number of equity shares outstanding during the period. The weighted average number of equity shares outstanding during the period and for all periods presented is adjusted for events, such as bonus shares, other than the conversion of potential equity shares that have changed the number of equity shares outstanding, without a corresponding change in resources.
For the purpose of calculating diluted earnings per share, the net profit for the period attributable to equity shareholders and the weighted average number of shares outstanding during the period is adjusted for the effects of all dilutive potential equity shares.

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Western M P Infrastructure & Toll Roads Private Limited
Notes to the financial statements as at 31st March 2023
CIN: U45203MH2007PTC173577

Rs. In lakhs

(4) Property, plant and equipment

Particulars	Plant and machinery	Furniture	Vehicles	Office equipment	Computers	Total
Gross Block						
As at 31st March 2021	395.19	7.00	16.00	191.12	23.00	632.31
Additions	-	-	-	-	-	-
As at 31st March 2022	395.19	7.00	16.00	191.12	23.00	632.31
Additions	-	-	-	-	-	-
As at 31st March 2023	395.19	7.00	16.00	191.12	23.00	632.31
Accumulated depreciation						
As at 31st March 2021	344.38	6.44	14.25	191.91	23.00	579.98
Additions	7.22	0.56	1.75	(0.79)	(0.00)	8.75
As at 31st March 2022	351.61	7.00	16.00	191.12	23.00	588.73
Additions	4.55	-	-	-	-	4.55
As at 31st March 2023	356.16	7.00	16.00	191.12	23.00	593.28
Net Block						
As at 31st March 2022	43.59	-	-	-	-	43.59
As at 31st March 2023	39.03	-	-	-	-	39.03

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY
CHARTERED ACCOUNTANTS

Western M P Infrastructure & Toll Roads Private Limited
Notes to the financial statements as at 31st March 2023

(Rs. in lakhs)

(5) Intangible assets:

Particulars	Toll collection rights - I	Toll collection rights - II	Total
Gross Block			
As at 31st March 2021	30,036.00	45,737.00	83,543.14
Additions	-	-	-
As at 31st March 2022	30,036.00	45,737.00	83,543.14
Additions	-	-	-
As at 31st March 2023	30,036.00	45,737.00	83,543.14
Accumulated amortisation			
As at 31st March 2021	3,355.52	4,714.06	8,069.59
Additions	598.86	837.16	1,436.02
As at 31st March 2022	3,954.38	5,551.23	9,505.61
Additions	614.90	859.60	1,474.50
As at 31st March 2023	4,569.28	6,410.82	10,980.10
Net Block			
As at 31st March 2022	26,081.62	40,185.77	74,037.53
As at 31st March 2023	25,466.72	39,326.18	72,563.04

(6) Investments

Particulars	As at 31st March 2023	As at 31st March 2022
Investment in mutual funds at fair value through profit and loss		
Aditya Birla Mutual fund	5.01	4.73
	5.01	4.73

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★★ CHARTERED ACCOUNTANTS ★★

Western M P Infrastructure & Toll Roads Private Limited
Notes to the financial statements as at 31st March 2023
CIN: U45203MH2007PTC173577

Rs. in lakhs

(7) Other financial assets

Current

Particulars	As at 31st March 2023	As at 31st March 2022
Receivable from Related Parties	-	45.40
Receivable from others	-	1.08
	-	**46.48**

(8) Deferred tax assets / Liabilities (net) :

Particulars	As at 31st March 2023	As at 31st March 2022
Opening Balance		
Deferred tax assets		
Arising on account of timing difference in:		
Expense allowable on payment basis	26.95	6.40
Unabsorbed depreciation /business loss	12,518.06	13,073.27
	12,545.01	**13,079.67**
Deferred tax liabilities		
Arising on account of timing difference in depreciation	11,831.63	11,498.43
	11,831.63	**11,498.43**
	713.37	**1,581.25**

(9) Other assets

Current

Particulars	As at 31st March 2023	As at 31st March 2022
Advance to suppliers		
Unsecured, considered good	68.12	433.76
Unsecured, considered doubtful*	919.89	919.89
	988.01	1,353.65
Less: Allowance for doubtful receivables	(919.89)	(919.89)
Total (A)	**68.12**	**433.76**
Prepaid expenses	5.01	53.85
Receivable from Govt. Authorities	0.63	0.63
Other Receivable	52.33	44.76
Advance to employees	19.83	2.24
Interest paid in advance	355.76	355.76
Grand Total	**501.68**	**891.00**

(10) Cash and bank balances

Particulars	As at 31st March 2023	As at 31st March 2022
Cash and cash equivalents		
Cash in hand	40.69	52.08
Balance with banks		
In current accounts	298.93	582.25
	339.62	**634.33**
Other bank balances		
Fixed deposit	1,507.78	2,070.99
	1,507.78	**2,070.99**

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Western M P Infrastructure & Toll Roads Private Limited
Notes to the financial statements as at 31st March 2023
CIN: U45203MH2007PTC173577

Rs. in lakhs

(11) Equity share capital

Particulars	As at 31st March 2023		As at 31st March 2022	
	Numbers of shares	Amount	Numbers of shares	Amount
Authorized:				
Equity shares of Rs.10 each	3,00,00,000	3,000.00	3,00,00,000	3,000.00
		3,000.00		**3,000.00**
Issued, subscribed and paid-up:				
Equity shares of Rs.10 each fully paid-up	2,91,34,648	2,913.46	2,91,34,648	2,913.46
		2,913.46		**2,913.46**

Rights, preferences and restrictions attached to equity shares

The Company has only one class of shares referred to as equity shares having a par value of Rs. 10. In the event of liquidation of the Company, the holders of equity shares will be entitled to receive remaining assets of the Company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.

Details of the shares held by its holding company :

Name of the shareholders	As at 31st March 2023		As at 31st March 2022	
	Numbers of shares	Percentage of shareholding	Numbers of shares	Percentage of shareholding
Expressway Developers Limited	2,91,34,648	100	2,91,34,648	100

Details of shareholders holding more than 5% equity shares in the Company on reporting date

Name of the shareholders	As at 31st March 2023		As at 31st March 2022	
	Numbers of shares	Percentage of shareholding	Numbers of shares	Percentage of shareholding
Expressway Developers Limited	2,91,34,648	100	2,91,34,648	100

Shares held by promoters at the end of the year March 2023

Promoter Name	No. of shares	% of Total shares	% change during the year
Expressway Developers Limited	2,91,34,648	100%	0%

The reconciliation of the number of shares outstanding:

Particulars	As at 31st March 2023	As at 31st March 2022
Shares at the beginning of the year	2,91,34,648	2,91,34,648
Add : Shares issued during the year	-	-
Shares at the end of the year	**2,91,34,648**	**2,91,34,648**

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Rs. In lakhs

(12) Borrowings

Non - current

Particulars	As at 31st March 2023	As at 31st March 2022
Secured		
Term Loan-From banks	54,669.11	59,969.36
Term Loan-Financial institutions	-	-
Total non-current borrowings	**54,669.11**	**59,969.36**
Less: Current portion of non-current borrowings	(6,000.00)	(5,400.00)
Non-current borrowing net of current portion	**48,669.11**	**54,569.36**

PARTICULARS OF THE RUPEE FACILITY– I & PARTICULARS OF LENDERS–I

NAME OF THE LENDER	As at 31st March 2023	As at 31st March 2022
ICICI Bank	485.31	485.31
Aditya Birla Finance Ltd (ABFL)	50.00	50.00

PARTICULARS OF THE RUPEE FACILITY– II & PARTICULARS OF LENDERS– II

NAME OF THE LENDER	As at 31st March 2023	As at 31st March 2022
ICICI Bank	104.69	104.69
Aditya Birla Finance Ltd (ABFL)	100.00	100.00

Terms of Security for loan taken from ICICI Bank & ABFL
The above facility is secured by a negative lien on identified immovable properties, owned or leased by the Borrower, save and except the Project Assets; first ranking hypothecation and charge over all the Borrower's tangible moveable assets, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles and all other moveable assets, both present and future save and except the Project Assets.

The Loans under Rupee Facility- I & Facility II would be repaid to the Lenders- I & Lenders II in proportion to their respective Disbursements of the Rupee Facility- I and Facility II under in accordance with the following Amortisation Schedule:

Financial Year	Repayment
2018	-
2019	2,200
2020	3,000
2021	4,000
2022	5,000
2023	5,400
2024	6,000
2025	6,000
2026	6,000
2027	7,000
2028	8,000
2029	8,000
2030	8,000
2031	5,400
Total	**74,000**

Current:

Particulars	As at 31st March 2023	As at 31st March 2022
Secured		
Current maturities of non-current borrowings		
From banks	6,000.00	5,400.00
Unsecured		
Loan from related party repayable on demand	-	39.69
Loan from Others	-	15.33
	6,000.00	**5,455.02**

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Rs. in lakhs

(13) Provisions

Non Current :

Particulars	As at 31st March 2023	As at 31st March 2022
Provision for employee benefits		
Gratuity- Non Current	48.90	13.42
Leave encashment- Non Current	23.19	9.61
	72.10	23.02

Current :

Particulars	As at 31st March 2023	As at 31st March 2022
Provision for employee benefits		
Gratuity-current	0.45	0.38
Leave encashment- current	1.22	1.22
	1.67	1.60

(14) Trade payables

Particulars	As at 31st March 2023	As at 31st March 2022
Total outstanding dues of micro and small enterprises	-	-
Payable for Concession fees	281.09	180.79
Trade payables-Others	250.69	727.62
	530.78	907.41

Note:
Under the Micro, Small and Medium Enterprises Development Act, 2006 which came into force from 2 October 2006, certain disclosures are required to be made relating to micro, small and medium enterprises. The management has confirmed that none of the suppliers have confirmed that they are registered under the provisions of this Act. In View of this, the liability of the interest and disclosures are not required to be disclosed in the financial statements.

Trade Payable Aging Schedule

Particulars	Outstanding for following periods from due date of payment (FY 2022-23)					
	Not Due	Less than 1 year	1-2 years	2-3 years	More than 3 years	Total
(i) MSME						
(ii) Others	3.45	482.77	13.22	12.74	18.60	530.78
(iii) Disputed dues – MSME						
(iv) Disputed dues – Others						

(15) Other current financial liabilities

Particulars	As at 31st March 2023	As at 31st March 2022
Payable to employees	34.91	30.74
	34.91	30.74

(16) Other current liabilities

Particulars	As at 31st March 2023	As at 31st March 2022
Statutory Dues	23.40	77.13
	23.40	77.13

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Western M P Infrastructure & Toll Roads Private Limited
Notes to the financial statements as at 31st March 2023
CIN: U45203MH2007PTC173577

Rs. in lakhs

(17) Revenue from operations

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Toll collection income	17,780.62	14,764.87
Construction Income	39.61	39.18
	17,820.23	**14,804.05**

(18) Other income

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Interest income on Fixed Deposit	32.74	117.96
Gain on sale of mutual funds	0.28	0.16
Other Income	0.04	23.10
Interest on Refund of income tax	0.24	6.86
Insurance Claim Received	-	25.00
	33.30	**173.08**

(19) Operation and maintenance expenses

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Toll operation and maintenance expenses	1,575.24	2,468.97
Major maintenance expenses	1,804.12	1,197.61
Power and fuel	142.03	101.67
Concession fees MPRDC	3,105.82	2,442.68
	6,627.21	**6,210.94**

(20) Employee benefits expense

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Salaries and incentives	252.72	194.32
Contributions to provident and other funds	13.43	8.75
Staff welfare expenses	30.28	25.65
	296.43	**228.72**

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Western M P Infrastructure & Toll Roads Private Limited
Notes to the financial statements as at 31st March 2023
CIN: U45203MH2007PTC173577

Rs. in lakhs

(21) Finance costs

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Interest on borrowings	5,674.01	5,920.33
Unwinding interest	64.13	64.13
Bank charges	73.96	99.68
Interest paid to statutory authorities	0.53	7.48
	5,812.62	**6,091.62**

(22) Other expenses

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Legal & Professional Charges	200.87	228.37
Rent expenses	2.58	
Payment to auditors :		
Audit Fees	3.54	3.54
Taxation Services	0.34	0.25
Other Services	0.05	3.20
Cost Audit Fees	1.17	0.20
Repair & Maintenance	31.58	9.95
Insurance	119.51	104.62
Rates & Taxes	1.25	0.48
Liquidated Damages by MPRDC	61.84	-
Miscellaneous expenses	135.16	124.12
	557.88	**474.73**

(23) Exceptional Items

Particulars	For the year ended 31st March 2023	For the year ended 31st March 2022
Income		
Liabilities no longer payable written off	151.91	37.56
Total (A)	**151.91**	**37.56**
Expenses		
Sundry Balance Written off	159.46	42.49
Total (B)	**159.46**	**42.49**
Total (B-A)	**7.55**	**4.93**

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Rs. in lakhs

24 Gratuity and other post-employment benefit plans

(a) Defined benefit plan

The Company has a unfunded defined benefit gratuity plan. The gratuity plan is governed by the Payment of Gratuity Act, 1972. Under the act, employee who has completed five years of service is entitled to specific benefit. The level of benefits provided depends on the member's length of service and salary at retirement age. Every employee who has completed five years or more of service gets a gratuity on departure at 15 days salary (last drawn salary) for each completed year of service as per the provision of the Payment of Gratuity Act, 1972 with total ceiling on gratuity of Rs.1,000,000.

The following tables summaries the components of net benefit expense recognised in the Statement of profit and loss and the funded status and amounts recognised in the balance sheet for the gratuity plan:

Particulars	For the year ended 31 March 2023	For the year ended 31 March 2022
Statement of profit and loss		
Net employee benefit expense recognised in the employee cost		
Current service cost	2.77	3.90
Past service cost		
Interest cost on defined benefit obligation	0.99	1.01
(Gain) / losses on settlement	1.73	2.24
Benefits Paid	(3.93)	(8.27)
Total expense charged to profit and loss account	1.55	(1.12)
Amount recorded in Other Comprehensive Income (OCI)		
Opening amount recognised in OCI outside profit and loss account	-	-
Remeasurement during the period due to :		
Actuarial loss / (gain) arising from change in financial assumptions	(0.48)	(0.77)
Actuarial loss / (gain) arising on account of experience changes	2.21	3.00
Amount recognised in OCI outside profit and loss account	1.73	2.24
Closing amount recognised in OCI outside profit and loss account	1.73	2.24
Reconciliation of net liability / asset		
Opening defined benefit liability / (assets)	13.80	14.92
Expense charged to profit & loss account	1.55	(1.12)
Amount recognised in other comprehensive income		
Closing net defined benefit liability / (asset)	15.36	13.80

Movement in benefit obligation and balance sheet

A reconciliation of the benefit obligation during the inter-valuation period:

Particulars	For the year ended 31 March 2023	For the year ended 31 March 2022
Opening defined benefit obligation	13.80	14.92
Current service cost	2.77	3.90
Past service cost	-	-
Interest on defined benefit obligation	0.99	1.01
Remeasurement during the period due to :		
Actuarial loss / (gain) arising from change in financial assumptions	(0.48)	(0.77)
Actuarial loss / (gain) arising on account of experience changes	2.21	3.00
Benefits paid	(3.93)	(8.27)
Closing defined benefit obligation [liability / (asset)] recognised in balance sheet	15.36	13.80
Net liability is bifurcated as follows :		
Current	0.45	0.38
Non-current	14.90	13.42
Net liability	15.36	13.80

The principal assumptions used in determining gratuity benefit obligation for the company's plans are shown below:		
Discount rate	7.50%	7.25%
Salary escalation rate (p.a.)	6.00%	6.00%
Mortality rate	100.00%	100.00%
Attrition rate (p.a.)	2.00%	2.00%
Mortality pre-retirement	Indian Assured Lives Mortality (2006-08)	Indian Assured Lives Mortality (2006-08)

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Rs. In lakhs

A quantitative analysis for significant assumption is as shown below:

Indian gratuity plan:

Particulars	For the year ended 31 March 2023	For the year ended 31 March 2022
Assumptions -Discount rate		
Sensitivity Level (a hypothetical increase / (decrease) by)	1%	1%
Impact on defined benefit obligation -increase of sensitivity level	13.59	12.10
Impact on defined benefit obligation -decrease of sensitivity level	17.42	15.82
Assumptions -Future salary rates		
Sensitivity Level (a hypothetical increase / (decrease) by)	1%	1%
Impact on defined benefit obligation-increase of sensitivity level	17.42	15.19
Impact on defined benefit obligation-decrease of sensitivity level	13.83	12.28
Assumptions -Attrition rate		
Sensitivity Level (a hypothetical increase / (decrease) by)	50%	50%
Impact on defined benefit obligation-increase of sensitivity level	15.76	14.11
Impact on defined benefit obligation-decrease of sensitivity level	14.89	13.41

The following payments are expected contributions to the defined benefit plant in future years.

Particulars	For the year ended 31 March 2023	For the year ended 31 March 2022
Within the next 12 months (next annual reporting period)	0.45	0.38
Between 2 and 5 years	2.02	1.72
Between 6 and 9 years	4.61	3.66
Total expected payments	7.07	5.76

The average duration of the defined benefit plan obligation at the end of the reporting period is 15.74 years.

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Rs. In lakhs

24 (b) Leave Encashment

The following tables summaries the components of net benefit expense incurred and capitalised under intangible assets under development and the funded status and amounts recognised in the balance sheet for the Leave encashment plan:

Particular	For the year ended 31 March 2023	For the year ended 31 March 2022
Expenditure incurred capitalised during construction period		
Net employee benefit expense recognised		
Current service cost	1.82	2.61
Past service cost		
Interest cost on defined benefit obligation	0.74	0.87
Actuarial (gain)/ loss	4.30	(2.17)
Benefits Paid		
Total expense incurred and capitalised	**6.85**	**1.31**
Reconciliation of net liability / asset		
Opening defined benefit liability / (assets)	10.83	13.29
Expense charged to profit & loss account	2.56	3.49
Expense capitalised	(9.27)	(3.77)
Amount recognised in outside profit and loss account	4.30	(2.17)
Closing net defined benefit liability / (asset)	**8.41**	**10.83**

Movement in benefit obligation and balance sheet
A reconciliation of the benefit obligation during the inter-valuation period:

	For the year ended 31 March 2023	For the year ended 31 March 2022
Opening defined benefit obligation	10.83	13.29
Current service cost	1.82	2.61
Past service cost		-
Interest on defined benefit obligation	0.74	0.87
Remeasurement during the period due to :		
Actuarial loss / (gain) arising from change in financial assumptions		
Actuarial loss / (gain) arising on account of experience changes	4.30	(2.17)
Benefits paid	(9.27)	(3.77)
Closing defined benefit obligation [liability / [asset]] recognised in balance sheet	**8.41**	**10.83**
Net liability is bifurcated as follows :		
Current	0.23	1.22
Non-current	8.18	9.61
Net liability	**8.41**	**10.83**

The principal assumptions used in determining gratuity benefit obligation for the company's plans are shown below:		
Discount rate	7.50%	7.25%
Rate of availment	0%	0%
Salary escalation rate (p.a.)	6.00%	6.00%
Mortality rate	100.00%	100.00%
Attrition rate (p.a.)	2.00%	2.00%
Normal Retirement age	60 years	60 years
Rate of Leave Availment encashment during employment (per annum)	5% for next year	5% for next year

A quantitative analysis for significant assumption is as shown below:
Indian Leave plan:

	For the year ended 31 March 2023	For the year ended 31 March 2022
Assumptions -Discount rate		
Sensitivity Level (a hypothetical increase / (decrease) by)	1.00%	1.00%
Impact on defined benefit obligation -increase of sentivity level	7.47	10.83
Impact on defined benefit obligation -decrease of sentivity level	9.53	10.83
Assumptions -Future salary rates		
Sensitivity Level (a hypothetical increase / (decrease) by)	1%	1%
Impact on defined benefit obligation-increase of sentivity level	9.53	10.83
Impact on defined benefit obligation-decrease of sentivity level	7.45	10.83
Assumptions -Attrition rate		
Sensitivity Level (a hypothetical increase / (decrease) by)	50%	50%
Impact on defined benefit obligation-increase of sentivity level	8.56	10.83
Impact on defined benefit obligation-decrease of sentivity level	8.24	10.83

The following payments are expected contributions to the defined benefit plant in future years.

	For the year ended 31 March 2023	For the year ended 31 March 2022
Within the next 12 months (next annual reporting period)	0.23	1.22
Between 2 and 5 years	1.06	1.20
Between 6 and 10 years	3.01	3.29
Total expected payments	**4.30**	**5.71**

The average duration of the defined benefit plan obligation at the end of the reporting period is 13.18 years.

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

25.A Related party relationships and transactions **Rs. In lakhs**

Ind AS 24 defines a related party as a person or entity that is related to the reporting entity and it includes (a) a person or a close member of that person's family if that person: (i) has control or joint control over the reporting entity; (ii) has significant influence over the reporting entity; or (iii) is a member of the key management personnel of the reporting entity or of a parent of the reporting entity. (b) An entity is related to the reporting entity if any of the following conditions apply; (i) The entity and the reporting entity are members of the same group. (ii) One entity is an associate or joint venture of the other entity.(iii) Both entities are joint ventures of the same third party. (iv) One entity is a joint venture of a third entity and the other entity is an associate of the third entity. (v) The entity is a post-employment benefit plan for the benefit of employees of either the reporting entity or an entity related to the reporting entity. If the reporting entity is itself such a plan, the sponsoring employers are also related to the reporting entity.(vi) The entity is controlled or jointly controlled by a person identified in (a).(vii) A person identified in (a) (i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity).

Related companies:

a **Ultimate Holding Company**
Essel Infraprojects Limited

b **Holding Company**
Express Way Developers Limited

c **Other relates parties**
a. Fellow subsidiary
Not Applicable

b. Company under significant influence of Holding Company
Not Applicable

c. Other related parties

1 Essel Ahmedabad Godhra Toll Roads Limited
2 Mhow Ghatabillod Toll Roads Private Limited
3 Essel Walajahpet Poonamallee Toll Roads Private
4 Essel Gwalior Shivpuri Toll Roads Private Limited
5 Mukarba Chowk Panipat Toll Roads Limited
6 Kundli Manesar Expressway Limited
7 Ludhiana Talwandi Toll Roads Private Limited
8 Express Toll Roads Limited
9 Bhind Mihona Gopalpur Toll Roads Limited
10 Bina Khimlasa Malthon Toll Roads Limited
11 Sagar Damoh Toll Roads Limited
12 Damoh - Jabalpur Toll Roads Limited (Under Liquidation)
13 Essel Lucknow Raebareli Toll Roads Private Limited
14 Osmanabad Solar Energy Limited
15 MH Parbhani Solar Energy Private Limited
16 Essel Green Energy Private Limited
17 Vento Power Projects Private Limited
18 Vento Power & Energy Limited
19 Dakshin Odisha Urja Private Limited
20 Up Koraun Urja Private Limited
21 Up Mehrauni -I Urja Private Limited
22 Up Mehrauni -II Urja Private Limited
23 Up Sarila Urja Private Limited
24 Mh Parbhani Power Private Limited
25 Flexirural Urja Jalgaon Limited

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

26 Vento Power Infra Private Limited
27 Vento Power Private Limited
28 Jabalpur Msw Private Limited
29 Pallavapuram Tambaram Msw Private Limited
30 Msw Bhubaneswar Limited
31 Bengaluru Msw Limited
32 RGE Surat Private Limited
33 Ranchi Msw Private Limited
34 Ananthapur Msw Private Limited
35 Kadapa Msw Private Limited
36 Tadepalligudem Msw Private Limited
37 Vizianagram Msw Private Limited
38 AP Msw Private Limited
39 Jabalpur Waste Collection And Transportation Management Private Limited
40 Ahmedabad Msw Private Limited
41 Bhopal MSW Processing Plant Pvt. Ltd.
42 Bhopal Msw Collection Transportation And Processing Management Private Limited
43 Bhopal Municipal Solid Waste Private Limited
44 Nagpur Solid Waste Processing and Management Private Limited
45 Neux Consultancy Management Private Limited
46 Metaspire Realty Private Limited
47 Draconics Management Consultancy Private Limited
48 Essel Msw Energia Limited
49 Smart Power Grid Limited
50 Disruptive Transmission Limited
51 Smart Hydel Power Limited
52 Essel Gas Company Limited
53 RPW Projects Private Limited
54 Wiser Tirupati City Limited
55 Jodiya Water Desalination Limited
56 Varanasi STP Project Private Limited
57 Farrukhabad STP Project Pvt Ltd
58 Smart Personnel Management Services Private Limited
59 Essel Green Mobility Limited
60 Essel Green Assets Private Limited
61 Essel Green Charge Private Limited
62 Essel Green LMC Private Limited
63 Essel (India) Solar Limited
64 Sparkly Water Management Pvt Ltd
65 Essel Power Distribution Company Limited
66 Essel Utilities Distribution Company Limited
67 SND Limited
68 Last Mile VAS Management Limited
69 Maylight Realty Limited
70 Elitecast Media Limited
71 Last Mile online Limited
72 Utilities Grid Solutions Limited
73 Muzaffarpur Vidyut Vitaran Limited
74 Essel Highways Limited

Key Management Personnel

Western M P Infrastructure & Toll Roads Private Limited

S. No.	Name of Related Party	Relationship
1	Nishikant Upadhyay	CFO appointed w.e.f 18/03/2021
2	Umesh Madanmohan Jhunjhunwala	Director w.e.f 25/12/2020
3	Anjani Das	Appointed as WTD w.e.f. 30/07/2021
4	Sandesh Uday Jadhav	Additional Director w.e.f. 30/03/2023
5	Vikas Siyaram Yadav	Director w.e.f 20/02/2020 & Resigned w.e.f. 30/03/2023
6	Deepak Singh Bisht	Manager appointed w.e.f 01/02/2018 & resigned w.e.f. 01/01/2023

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY CHARTERED ACCOUNTANTS

Rs. In lakhs

25. B Related party relationships and transaction (continued)

Related companies transactions:

Particulars	Relationship of related party	Name of related party	For the year ended 31 March 2023	For the year ended 31 March 2022
(1) Transaction during the year				
Remuneration	Key management personnel	Anjani Das	5.10	4.40
Expenses Paid on behalf	Other related parties	Kundli Manesar Expressway Limited	-	0.98
Expenses paid by company on behalf of	Other related parties	Essel Highways Limited	33.52	0.23
	Other related parties	Essel Gas Limited	0.13	
	Ultimate Holding Company	Essel Infraprojects Limited	151.60	37.59
	Other related parties	Sagar Damoh Toll Roads Limited		10.94
	Other related parties	Essel Ahmedabad Godhra Toll Roads Limited	-	0.43
	Other related parties	Ludhiana Talwandi Toll Roads Private Limited	-	1.53
	Other related parties	Mhow Ghatabilod Toll Roads Private Limited	-	6.13
	Other related parties	Bina Khimlasa Malthon Toll Roads Limited		1.23
	Other related parties	Essel Gwalior Shivpuri Toll Roads Private Limited	-	4.30
Balance Written Off	Ultimate Holding Company	Essel Infraprojects Limited	148.41	-
	Other related parties	Essel Highways Limited	1.34	-
Loan Amt Received				
	Other related parties	Bina Khimlasa Malthon Toll Roads Limited	1.58	-
	Other related parties	Damoh - Jabalpur Toll Roads Limited	6.94	-
	Other related parties	Essel Ahmedabad Godhra Toll Roads Limited	0.43	-
	Other related parties	Essel Gwalior Shivpuri Toll Roads Private Limited	4.30	-
	Other related parties	Ludhiana Talwandi Toll Roads Private Limited	1.53	-
	Other related parties	Mhow Ghatabilod Toll Roads Limited	6.13	-
	Other related parties	Essel Lucknow Raebaroli Toll Roads Limited	10.02	-
	Other related parties	Sagar Damoh Toll Roads Limited	14.46	-
Loan Paid	Other related parties	Essel Green Energy Private Limited	0.40	-
	Other related parties	Essel Utilities Distribution Company Limited	2.95	-
	Other related parties	Kundli Manesar Expressway Limited	0.98	-

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

(2) Closing Balances:			As at 31-March-2023	As at 31-March-2022
Share capital	Holding company	Expressway Developers Limited	2,913	2,913
Loan (Receviable)	Other related parties	Sagar Damoh Toll Roads Limited	-	14.46
	Other related parties	Essel Ahmedabad Godhra Toll Roads Limited	-	0.43
	Other related parties	Bina Kalmlasa Malthon Toll Roads Limited	-	1.58
	Other related parties	Essel Gwalior Shivpuri Toll Roads Private Limited	-	4.30
	Other related parties	Ludhiana Talwandi Toll Roads Private Limited	-	1.53
	Other related parties	Mhow Ghatabillod Toll Roads Limited	-	6.13
	Other related parties	Damoh - Jabalpur Toll Roads Limited	-	6.94
	Other related parties	Essel Lucknow Raebareli Toll Roads Limited	-	10.02
Borrowings Payable	Ultimate Holding Company	Essel Infraprojects Limited	-	3.19
	Other related parties	Essel Highways Limited	-	32.18
	Other related parties	Essel Green Energy Private Limited	-	0.40
	Other related parties	Essel Utilities Distribution Company Limited	-	2.95
	Other related parties	Kundli Manesar Expressway Limited	-	0.98

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Rs. in lakhs

(26) Contingent liability

i) Claims against the Company not acknowledged as liability is of Rs. 192.44 Lakhs (previous year Rs. 1,253 Lakhs)

* On the basis of the current status of the individual case and as per legal advice obtained by the Company, wherever applicable, the Company is confident of winning the above case and is of view that no further provision is required in this regard.

(27) Fair values

Fair value measurement include the significant financial instruments stated at amortised cost in the statement of financial position. The carrying values of current financial instruments approximate their fair values due to the short-term maturity of these instruments and the disclosures of fair value are not made when the carrying amount of current financial instruments is a reasonable approximation of the fair value.

(28) Financial Instruments

Rs. in lakhs

The carrying value and fair value of financial instruments by categories as of March 31, 2023 are as follows :

Particulars	At amortised costs	At fair value through profit and loss	At fair value through OCI	Total carrying value	Total fair value
Assets					
Investments	5.01		-	5.01	5.01
Cash and cash equivalents	339.62	-	-	339.62	339.62
Other bank balances	1,507.78	-	-	1,507.78	1,507.78
Short -term loans	-	-	-	-	-
Other financial assets	-	-	-	-	-
	1,852.41	-	-	1,852.41	1,852.41
Liabilities					
Long-term borrowings	48,869.11	-	-	48,869.11	48,869.11
Short term borrowings	6,000.00	-	-	6,000.00	6,000.00
Trade payables	530.78	-	-	530.78	530.78
Other financial liabilities	34.91	-	-	34.91	34.91
	55,234.79	-	-	55,234.79	55,234.79

The carrying value and fair value of financial instruments by categories as of March 31, 2022 are as follows :

Particulars	At amortised costs	At fair value through profit and loss	At fair value through OCI	Total carrying value	Total fair value
Assets					
Investments	4.73	-	-	4.73	4.73
Cash and cash equivalents	634.33	-	-	634.33	634.33
Other bank balances	2,070.99	-	-	2,070.99	2,070.99
Short -term loans	-	-	-	-	-
Other financial assets (current and non current)	46.48	-	-	46.48	46.48
	2,756.54	-	-	2,756.54	2,756.54
Liabilities					
Long-term borrowings	54,569.36	-	-	54,569.36	54,569.36
Short term borrowings	5,455.02	-	-	5,455.02	5,455.02
Trade payables	907.41	-	-	907.41	907.41
Other financial liabilities	30.74	-	-	30.74	30.74
	60,962.53	-	-	60,962.53	60,962.53

(29) Financial risk management objectives and policies

The risk management policies of the Company are established to identify and analyse the risks faced by the Company, to set appropriate risk limits and controls and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company's activities.

The Management has overall responsibility for the establishment and oversight of the Company's risk management framework.

In performing its operating, investing and financing activities, the Company is exposed to the Credit risk, Liquidity risk and Market risk.

(30) Credit risk on financial assets

Credit risk is the risk of financial loss to the company if a customer or counter-party fails to meet its contractual obligations.

Other financial assets
The company maintains exposure to cash equivalents. The company has set counter-parties limits based on multiple factors including financial positions, credit ratings, etc

The company's maximum exposure to credit risk as at 31 March 2023 and 31 March 2022 is the carrying value of each class of financial assets.

(31) Market risk

Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: interest rate risk, currency risk and other price risk, such as equity price risk and commodity risk. Financial instruments affected by market risk include loans and borrowings, deposits and derivative financial instruments.

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

(32) Interest rate risk

The interest rate risk exposure is mainly from changes in fixed and floating interest rates. The interest rate are disclosed in the respective notes to the financial statement of the Company. The following table analyse the breakdown of the financial assets and liabilities by type of interest rate:

(Rs. In lakhs)

Particulars	As at 31-March-2023	As at 31-March-2022
Financial assets		
Interest bearing		
- fixed interest rate		
Other bank balances	1,507.78	2,070.99
Other financial assets	-	-
Non interest bearing		
Loans	-	-
Cash and cash equivalent	338.62	684.33
Other financial assets	-	46.48
Financial Liabilities		
Interest bearing		
-Fixed interest rate	-	-
- floating interest rate		
Borrowings	48 889.11	54,669.36
Other financial liabilities	6,000.00	6,400.00
Non interest bearing		
Borrowings	-	55.02
Trade payables	530.78	807.41
Other financial liabilities	-5,865.09	-5,369.26

(33) Interest rate sensitivity

The following table demonstrates the sensitivity to a reasonably possible change in interest rates on that portion of loans and borrowings affected. With all other variables held constant, the Company's profit before tax is affected through the impact on floating rate borrowings, as follows:

Particulars	As at 31-March-2023	As at 31-March-2022
Increase in basis points	50.00	50.00
Effect on profit before tax	(279.35)	(289.85)
Decrease in basis points	50.00	50.00
Effect on profit before tax	279.35	289.85

(34) Liquidity risk

Liquidity risk is the risk that the Company may not be able to meet its present and future cash and collateral obligations without incurring unacceptable losses. The Company's objective is to, at all times maintain optimum levels of liquidity to meet its cash and collateral requirements. The Company closely monitors its liquidity position and deploys a robust cash management system. It maintains adequate sources of financing including debt and overdraft from banks at an optimised cost.

The Company maximum exposure to credit risk for the components of the balance sheet at 31 March 2023 and 31 March, 2022 is the carrying amounts. The liquidity risk is managed on the basis of expected maturity dates of the financial liabilities. The average credit period taken to settle trade payables is about 30 to 90 days. The other payables are with short-term durations. The carrying amounts are assumed to be a reasonable approximation of fair value. The following table analys financial liabilities by remaining contractual maturities:

Particulars	On demand	Less than 3 months	3 to12 months	1 to 5 years	>5 years	Total
Year ended 31 March 2023						
Borrowings	-	-	-	54,669.11		54,669.11
Other financial liabilities			34.91			34.91
Trade and other payables		3.45	482.77	44.57		530.78
	-	3.45	517.67	54,713.67	-	55,234.78
Year ended 31 March 2022						
Borrowings	-	-	-	59,969.36	-	59 969.36
Other financial liabilities	-	-	30.74	-	-	30.74
Trade and other payables	-	-	907.41	-	-	907.41
	-	-	938.15	59,969.36	-	60,907.51

At present, the Company does expects to repay all liabilities at their contractual maturity. In order to meet such cash commitments, the operating activity is expected to generate sufficient cash inflows.

(35) Capital management

For the purpose of the Company's capital management, capital includes issued equity capital, share premium and all other equity reserves attributable to the equity holders of the parent. The primary objective of the Company's capital management is to maximise the shareholder value.

The Company manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Company may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. The Company monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Company's policy is to keep optimum gearing ratio. The Company includes within net debt, interest bearing loans and borrowings, trade and other payables, less cash and cash equivalents, excluding discontinued operations.

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

Rs. In lakhs

Particulars	As at 31-March-2023	As at 31-March-2022
Borrowings	54,869.11	60,024.38
Trade payables	530.78	907.41
Other financial liabilities	34.91	30.74
Less: cash and cash equivalents	(1,847.40)	(2,705.33)
Net debt	**53,387.39**	**58,257.20**
Total equity	20,648.85	18,445.66
Total member's capital	20,648.85	18,445.66
Capital and net debt	**74,036.24**	**76,702.86**
Gearing ratio (%)	72.11	75.95

In order to achieve this overall objective, the Company's capital management, amongst other things, aims to ensure that it meets financial covenants attached to the interest-bearing loans and borrowings that define capital structure requirements.

No changes were made in the objectives, policies or processes for managing capital during the years ended 31 March 2023 and 31 March 2022.

(36) Income tax

Income tax expense in the statement of profit and loss consists of:

Particulars	For the year ended 31 March 2023	For the year ended 31 March 2022
Current income tax	-	-
Deferred tax	867.87	(739.28)
Income tax expense recognised in the statement of profit or loss	867.87	(739.28)
Remeasurement gain/(loss) on defined benefits plan	-	-
Income tax expense recognised under Other Comprehensive Income	-	-
Total	**867.87**	**(739.28)**

The tax rates under Indian Income Tax Act, for the year ended 31 March 2023 is 26.00% (previous year : 26.00%)

(37) Earning per share

The following reflects the income and share data used in the basic and diluted EPS computations:

Particulars	For the year ended 31-March-2023	For the year ended 31-March-2022
Profit attributable to equity holders of the parent for basic earnings	2,203.19	1,256.47
Weighted average number of equity shares for basic EPS	2,91,34,648	2,91,34,648
Weighted average number of equity shares adjusted for the effect of dilution	2,91,34,648	2,91,34,648
Face value per share	10	10
Basic earning per share	7.56	4.32
Diluted earning per share	7.56	4.32

(38) Disclosure pursuant to Appendix D to Ind AS 11:

The Company has been awarded road project in the state of Madhya Pradesh for development of Lohad-Jaora section from km.0.00 to km.125.00 on SH-31 by Madhya Pradesh Road Development Corporation Limited (MPRDC) on built Operate Transfer (BOT) basis. The concession period is 25 years.

As per the terms of the arrangements, the Company had obtained the right to construct road infrastructure project for the period of 25 years to the public at large.

The Company shall pay to MPRDC premium obligation and shall operate and maintain the road as per the prescribed arrangement.

The Company shall conduct normal maintenance activities of road and other assets to maintain uninterrupted service as per the prescribed arrangement.

The Company is a private operator and MPRDC is a government body. The Company undertakes obligation of public service granted by MPRDC. Thus, the arrangement is public-to-private service concession. The road project is totally regulated by the MPRDC. At the end of the concession period, the road infrastructure shall vest with MPRDC.
Therefore, the arrangement is a service concession arrangements under Appendix A to Ind AS 11. The Company has classified the arrangement as intangible assets.

The revenue and profits/(losses) of the service concession arrangements recognised during the year are as follows:

Particulars	For the year ended 31-March-2023	For the year ended 31-March-2022
CONTINUING OPERATIONS		
INCOME		
Revenue from operations	17,820.23	14,804.05
Other Income	33.30	173.08
Total Income	17,853.53	14,977.12
EXPENSES		
Operation and maintenance expenses	6,627.21	8,210.94
Employee benefits expenses	286.43	226.72
Finance costs	5,812.52	6,091.92
Depreciation and amortization expense	1,476.05	1,444.77
Other expenses	557.88	474.73
Total Expenses	14,773.19	14,450.77
Profit before tax and exceptional items	3,080.33	526.36
Exceptional items	7.55	4.93
Profit before tax	3,072.78	521.42

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

(39) Ratios

Sr. No	Name of Ratio	Numerator	Denominator	For the year ended 31-March-2023	For the year ended 31-March-2022	Change in Ratio	Reason
1	Current Ratio	Current assets	Current liabilities	0.36	0.56	-12%	During the year company's Fixed Deposit has matured of Rs 5,893 Lakh which has decreased Current Assets
2	Debt-Equity Ratio	Debt consists of borrowings and lease liabilities.	Shareholder's equity	-2.85	3.26	-17%	
3	Debt Service Coverage Ratio	Earning for Debt Service = Net Profit after taxes + Non - cash operating expenses + Interest + Other non-cash adjustments	Debt service = Interest and lease payments + Principal repayments	-0.193	0.606	-131%	Due to Increase in Loss of the Company
4	Return on Equity Ratio	Profit for the year less Preference dividend (if any)	Average total equity	0.107	0.068	-54%	Due to Increase in Loss of the Company
5	Inventory turnover ratio	COGS/Sales	Average inventory	NA	NA	NA	
6	Trade Receivables turnover ratio	Credit Sales	Average trade receivables	NA	NA	NA	
7	Trade payables turnover ratio	Net credit purchases	Average trade payables	NA	NA	NA	
8	Net capital turnover ratio,	COGS/Sales	Average working capital (i.e. Total current assets less Total current liabilities	-4.20	-5.23	32%	During the year company's Fixed Deposit has matured of Rs 5,893 Lakh which has decreased Current Assets
9	Net profit ratio	Profit for the year	Revenue from operations	0.124	0.085	-37%	In previous year, due to reversal of Deffered Tax Liability there was decrease in Loss
10	Return on Capital employed	Profit before tax and finance costs	Capital employed = Net worth + Lease liabilities + Deferred tax liabilities	0.430	0.358	23%	In previous year, due to reversal of Deffered Tax Liability there was decrease in Loss
11	Return on investment	Income generated from invested funds	Average invested funds in treasury investments	0.022	0.057	-768%	

(40) **Segment information:**
In accordance with IND AS 108 - Operating Segment used to present the segment information are identified on the basis of informal report used by the Company to allocate resource to the segment and assess their performance. The Board of Directors of the Company is collectively Chief Operating Decision Maker (CODM). The Company is primarily engaged in the business of road infrastructure projects which is considered as one business segment. The segment reporting based on geographical risk factor which may be present in different countries is not applicable as the Company operates only on domestic market. Hence, there is no separate reportable segment as required by the Accounting Standard 17 on 'Segment Reporting'.

(41) There was no impairment loss on the property, plant and equipments on the basis of review carried out by the management in accordance with IND AS-36 'Impairment of Assets'.

(42) The company does not have any Immovable property in its name.

(43) There are no investment properties held by the Company.

(44) The Company has not revalued its Property, Plant and Equipment during the year.

(45) The Company has not revalued its intangible assets during the year.

(46) The Company does not have any capital work in progress as on the Balance Sheet date

(47) The Company does not have any Intangible Assets under Development.

(48) No proceedings have been initiated or pending against Company for holding any Benami Property under Prohibitions of Benami Transactions Act,1988 (Earlier titled as Benami Transactions (Prohibitions) Act,1988.

(49) The Company does not have any borrowings from Banks or Financial Institutions on the basis of Security of Current Assets.

(50) The Company has not been declared as willful defaulter

(51) The Company has no transaction with Companies which are struck off under section 248 of the Companies Act,2013 or under section 530 of Companies Act,1956.

(52) No charges are pending for registration or satisfaction with the Registrar of Companies (ROC).

(53) The Company does not have layers as prescribed under clause (87) of section 2 of The Companies Act, 2013 read with the Companies (Restriction on Number of Layers Rules, 2017. The company does not have any Subsidiary, Associate or Joint Venture.

(54) During the year no Scheme of Arrangement has been formulated by the Company/pending with competent authority.

(55) A) The Management has represented that, to the best of its knowledge and belief, other than as disclosed in the financial statements and notes to the accounts, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other person(s) or entity(ies), including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries;
B) The Management has represented, that, to the best of its knowledge and belief, other than as disclosed in the financial statements and notes to the accounts, no funds have been received by the Company from any person(s) or entity(ies), including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall, whether, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

Western M P Infrastructure & Toll Roads Pvt. Ltd.

SBK & COMPANY ★ CHARTERED ACCOUNTANTS ★

Western M P Infrastructure & Toll Roads Private Limited
Notes to the financial statements as at 31 March 2023
CIN: U45203MH2007PTC173577

(56) The Company does not have transaction not recorded in the books of accounts that has been surrendered or disclosed as income during the year in the Tax Assessments under the Income Tax Act, 1961.

(57) The Company has not traded or invested in Crypto Currency or Virtual Currency during the financial year.

(58) Payment to Statutory Auditors to be shown

Particular	F.Y. 22-23	F.Y. 21-22
Audit fees	3.00	3.00

(59) The Company is not required to incur any expenditure towards Corporate Social Responsibility.

(60) Previous year's figures have been regrouped / reclassified wherever necessary to conform with current year's presentation.

(61) Events after the end of the reporting year

No subsequent event has been observed which may required an adjustment to the statement of financial position.

Signature to Note No. 1 to 61

For S B A & Company
Chartered Accountants
FRN : 004651C

SBA & COMPANY ★ CHARTERED ACCOUNTANTS ★

CA Vikas Jain
Partner
Membership No.

Place: Indore
Dated: 29th August 2023

For and on behalf of the Board of Directors of
Western M P Infrastructure & Toll Roads Private Limited

Anjani Das
Whole Time Director
DIN: 09200123

Umesh Jhunjhunwala
Director
DIN: 02428062

Nishikant Upadhyay
Chief Financial Officer
PAN: AADPU5163B

Western M P Infrastructure & Toll Roads Pvt. Ltd.

INDEPENDENT AUDITOR'S REPORT

To the Members of CHENANI NASHRI TUNNELWAY LIMITED

Report on the audit of the Ind AS Financial Statements

Qualified Opinion

We have audited the Ind AS Financial Statements of **CHENANI NASHRI TUNNELWAY LIMITED** ("the Company"), which comprise the Balance Sheet as at 31st March, 2025 and the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Changes in Equity and the Statement of Cash Flows for the year then ended, and notes to the Ind AS Financial Statements, including a summary of material accounting policy and other explanatory information for the year ended on that date.

In our opinion and to the best of our information and according to the explanations given to us, **except for the possible effects of the matter described in the Basis for Qualified Opinion section of our report,** the aforesaid Ind AS Financial Statements give the information required by the Companies Act, 2013 in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards(Ind AS) prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at 31st March, 2025 and its profit, total comprehensive income, changes in equity and its cash flows for the year ended on that date.

Basis for Qualified Opinion

During the FY 2018-19, the Company had recognized and during the year continues to recognize thereafter impairment loss of Rs. 7,107.98 Mn. by comparing the carrying amount of the receivables under the head 'Receivable under Service Concession Arrangements' that were measured at amortized cost and bid received from third party for acquisition of entire Company. Thus, the Company had in the FY 2018-19 and continues thereafter to measure the receivables at fair value then recognized to arrive at present amortized carrying value as at the end of the year, which is not in accordance with Ind AS 109 'Financial Instruments' & read with accounting policy 3.7.4. The consequential impact of the above on the balance under the head 'Receivable under Service Concession Arrangements' reported in the balance sheet and on the profit for the year are unascertainable.

Consequently, the unreserved and explicit statement of compliance with Indian Accounting Standards as notified in the Companies (Indian Accounting Standards) Rules, 2015 and further amendments thereto in Note 2.1 is not proper.

We conducted our audit in accordance with the Standards on Auditing ("SAs") specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Ind AS Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the Ind AS Financial Statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our

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other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter

We draw your attention to

a) As mentioned in note no. 32 to the accompanying individual Ind AS Financial Statements regarding NCLAT Orders dated 12th March, 2020. In terms of Paragraph 61 (3) on Pg 87 of the orders, the company has not accounted accrued interest, default interest, penal charges or other similar charges after the cut-off date of 15th October,2018.

b) Note no. 34 to accompanying IND AS financial statements which states that the Company does not comply with certain requirements/provisions of the Companies Act 2013. In view of the above, the Company has estimated possible obligation arising out of these non-compliances and recognized the provision in the books of accounts.

c) As mentioned in note no. 39 to the accompanying IND AS financial statements, the Ministry of Corporate Affairs, Government of India, had initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS Ltd and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of its investigation, SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and relevant information is being provided by ITNL to the agency. The company has not received any direct communication from SFIO. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

Our Opinion is not modified in respect of above matters.

Material Uncertainty Related to Going Concern

We draw your attention to Note no. 31 to the accompanying Ind AS financial statements which describes that Entire Group is going through liquidity issue and defaulted in repayment of various loan instruments, Union of India has filed petition against IL&FS Limited & its Group Companies in National Company Law Tribunal and superseded earlier Board of the Holding/Ultimate Holding Company. These conditions indicate the existence of a material uncertainty that may cast significant doubt about the Company's ability to continue as a going concern. As per the management, going concern assumption is appropriate for preparation of financial statements, as the company has received a bid from third party and which has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares has also been received.

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Our Opinion is not modified in respect of above matter.

Information other than the Ind AS Financial Statements and Auditor's Report thereon

The Company's Board of Directors is responsible for the preparation of the other information. The other information comprises the information included in the Board's Report including Annexures to Board's Report, but does not include the Ind AS Financial Statements and our auditor's report thereon.

Our opinion on the Ind AS Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Ind AS Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Ind AS Financial Statements or our knowledge obtained during the course of our audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibility of Management and Those Charged with Governance for the Ind AS Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Ind AS Financial Statements that give a true and fair view of the financial position, financial performance, changes in equity and cash flows of the Company in accordance with the accounting principles generally accepted in India, including the Indian Accounting Standards specified under section 133 of the Act. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the Ind AS Financial Statement that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the Ind AS Financial Statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

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Auditor's Responsibilities for the Audit of the Ind AS Financial Statements

Our objectives are to obtain reasonable assurance about whether the Ind AS Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but it is not a guarantee that an audit conducted in accordance with Standards on Auditing ("SAs") will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Ind AS Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Ind AS Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the Ind AS Financial Statements, including the disclosures, and whether the Ind AS Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

Materiality is the magnitude of misstatements in the Ind AS Financial Statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the Ind AS Financial Statements may be influenced. We consider quantitative materiality and qualitative factors in:

(i) planning the scope of our audit work and in evaluating the results of our work; and
(ii) to evaluate the effect of any identified misstatements in the Ind AS Financial Statements.

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We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the 'Annexure A' a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.

2. As required by Section 143(3) of the Act, we report that:

   a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit.

   b) In our opinion, **except for the effects of the matter described in the Basis for Qualified Opinion paragraph above,** proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books.

   c) The Balance Sheet, the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Changes in Equity and the Cash Flow Statement dealt with by this Report are in agreement with the books of account.

   d) In our opinion, **except for the effects of the matter described in the Basis for Qualified Opinion paragraph above,** the aforesaid Ind AS Financial Statements comply with the Indian Accounting Standards specified under Section 133 of the Act, read with Companies (Indian Accounting Standards) Rules, 2015 as amended.

   e) **Our observations made on the matters stated in Qualified Opinion paragraphs above may have a significant effect so as to adversely affect the functioning of the company.**

   f) On the basis of the written representations received from the directors as on 31st March 2025 taken on record by the Board of Directors, none of the directors is disqualified as on 31st March 2025 from being appointed as a director in terms of Section 164 (2) of the Act.

   g) With respect to the Other Matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

      i. The Company has no pending litigation which would impact its financial position except those disclosed in Ind AS Financial Statements.

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ii. The Company did not have any material foreseeable losses in long-term contracts including derivative contract requiring provision.

iii. There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company

iv. a) The management has represented that, to the best of its knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other persons or entities, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries;

b) The management has represented, that, to the best of its knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been received by the Company from any persons or entities, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall, whether, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries; and

c) Based on such audit procedures that we have considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (i) and (ii) of Rule 11(e), as provided under (a) and (b) above, contain any material misstatement.

v. The Company has not declared or paid any dividend during the year.

vi. Based on our examination which included test checks, the company has used SAP-based application as the accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility and the same has operated throughout the year for all relevant transactions recorded in the software. Further, during the course of our audit we did not come across any instance of audit trail feature being tampered with.

Additionally, audit trail has been preserved by the Company as per the statutory requirements for record retention.

h) With respect to the adequacy of the internal financial controls with reference to Ind AS Financial Statements of the Company and the operating effectiveness of such controls, refer to our separate Report in "Annexure B" which expresses an unmodified opinion.

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3. With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended; In our opinion and to the best of our information and according to the explanations given to us, the Company has not paid the managerial remuneration during the year.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)

G.K. Agrawal
Partner
M No. 081603
Place: New Delhi
Date: 18th August 2025
UDIN:25081603BMJKJS8910

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Annexure 'A' to the Independent Auditor's Report of CHENANI NASHRI TUNNELWAY LIMITED for the Year ended as on 31st March 2025

Annexure referred to in paragraph 1 under the heading "Report on Other Legal and Regulatory Requirements" of our report on even date: -

To the best of our information and according to the explanations provided to us by the Company and the books of account and records examined by us in the normal course of audit, we state that:

i. In respect of the Company's Property, Plant and Equipment, Right-of-use Assets and Intangible Assets:

a A) The Company has maintained proper records showing full particulars, including quantitative details and situation of Property, Plant and Equipment.

B) The Company doesn't have Intangible Assets, hence reporting under paragraph 3(i)(a)(B) of the Order is not applicable to the Company.

b The Property, Plant and Equipment have been physically verified by the Management at regular Intervals and no material discrepancies were noticed on such verification.

c The title deeds of immovable properties (other than properties where the company is the lessee and the lease agreements are duly executed in favour of the lessee) are held in the name of the Company.

d The company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets during the year. Hence, reporting under paragraph 3(i)(d) of the order is not applicable to the Company.

e There are no proceedings which have been initiated or are pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (as amended in 2016) and rules made thereunder. Hence, reporting under paragraph 3(i)(e) of the order is not applicable to the Company.

ii. a The Company is engaged in the business of infrastructure development, operations and its maintenance and there is no inventory in hand at any point in time, hence, reporting under paragraph 3(ii)(a) of the Order is not applicable to the Company.

b The Company has not been sanctioned any working capital limits, from banks or financial institutions on the basis of security of current assets. Hence, reporting under paragraph 3(ii) (b) of the order is not applicable to the Company.

iii. The Company has not made investments in, provided any guarantee or security or granted any loans or advances in the nature of loans, secured or unsecured, to companies, firms, limited liability partnerships or any other parties. Hence, reporting under paragraph 3(iii) of the order is not applicable to the Company.

iv. The Company has not entered into any transaction in respect of loans, investments, guarantee and securities, which attracts compliance to the provisions of the sections 185 and 186 of the Companies Act, 2013. Hence, reporting under paragraph 3(iv) of the Order is not applicable to the Company.

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v. The Company has not accepted deposits or amounts which are deemed to be deposits and the directives issued by the Reserve Bank of India and the provisions of sections 73 to 76 or any other relevant provisions of the Companies Act, and the rules framed there under. Hence, reporting under paragraph 3(v) of the order is not applicable to the Company.

vi. We have broadly reviewed the books of account maintained by the company pursuant to the Rules made by the Central Government for the maintenance of cost records under section 148 of the Act, and are of the opinion that prima facie, the prescribed accounts and records have been made.

vii. In respect of statutory dues:

a The Company has been generally regular in depositing undisputed statutory dues including goods and services tax, provident fund, employee state insurance, income tax, service tax, value added tax, cess and other statutory dues during the year with the appropriate authorities. As on 31st March 2025, there are no undisputed statutory dues payables for a period exceeding for a period more than six months from the date they become payable **except undisputed amounts of INR 54.11 million on account of the tax deducted at source are in arrears since March 31, 2021.**

b Details of statutory dues referred to in sub-clause (a) which have not been deposited on account of disputes are given below:

Name of the Statute	Nature of the dues	Forum where Dispute is Pending	Amount (In million)	Remarks
Goods and Services Act, 2017	GST Demand for the period September 2017 to September 2022	ZD0102250003780 office of Joint Commissioner	15,164.12	Writ petition filed on 07.04.25 having No WP(C)/1389/2025

viii. According to the information and explanations given to us and on the basis of our examination of the books of accounts, there were no transactions relating to previously unrecorded income that have been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961 (43 of 1961).

ix. In respect to the borrowings:

a The Company has defaulted in repayment of loans or other borrowings. Details of the same is as under:

Default in repayment of loan (Principal & Interest) **(In Rs. Mn.)**

Name of the Lender	Nature of Due	Amount	Due since
Aditya Birla Finance Ltd	Principal	550.00	20th September 2018
IL&FS Airport Ltd	Principal	470.00	28th August 2018

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SREI INFRASTRUCTURES	Interest	63.63	30th September 2018
IL&FS Airport Ltd	Interest	31.82	30th September 2018
IL&FS Transportation Networks Limited	Interest	372.51	30th September 2018
IL&FS Ltd	Interest	307.00	30th September 2018

Note: Principal repayment & interest payment due after 15th October, 2018 have not been disclosed as default under this clause in view of the NCLAT Orders dated 12th March, 2020.

b The Company has not been declared wilful defaulter by any bank or financial institution or government or any government authority.

c The Company has not taken any term loan during the year. Hence, reporting under clause 3(ix)(c) of the Companies (Auditor's Report) Order, 2020 is not applicable

d Based on overall examination of the Ind AS Financial Statements of the Company, no short-term funds have been raised during the year.

e The Company does not have any subsidiaries, associates, or joint ventures. Hence, reporting under paragraph 3(ix)(e) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

f. The Company does not have any subsidiaries, joint ventures, or associates. Hence, reporting under paragraph 3(ix)(f) of the Companies (Auditor's Report) Order, 2020 is not applicable to the Company.

x. a The Company has not raised the money by way of initial public offer/ further public offer (including debt instruments) during the year.

b During the year, the Company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year. Hence, reporting under paragraph 3(x)(b) of the order is not applicable to the Company.

xi. a According to the information and explanations given to us by the management which have been relied by us, there were no frauds on or by the Company noticed or reported during the period under audit, subject to the pending final outcome of the various matters described in Emphasis of matter above.

b No report under sub-section (12) of section 143 of the Companies Act has been filed in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government, during the year and up to the date of this report.

c As represented to us by the management, there are no whistle blower complaints received by the Company during the year.

xii. The Company is not a Nidhi Company. Hence, reporting under paragraph 3(xii) of the order is not applicable to the Company.

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xiii. All transactions with the related parties are in compliance with sections 177 and 188 of the Companies Act, 2013 where applicable and the details of such transactions have been disclosed in the Ind AS Financial Statements as required by the applicable accounting standards.

xiv. a In our opinion the company has an adequate internal audit system commensurate with the size and nature of its business.

b We have considered the internal audit reports for the year under audit, issued to the Company during the year and till date, in determining the nature, timing and extent of our audit procedures.

xv. The Company has not entered into any non-cash transactions with its directors or persons connected with its directors and hence provisions of section 192 of the Companies Act, 2013 is not applicable to the Company.

xvi. a The Company is not required to be registered under section 45-IA of the Reserve Bank of India Act, 1934 (2 of 1934). Hence, reporting under paragraph 3(xvi) (a) of the Order is not applicable to the Company.

b The Company has not conducted any Non-Banking Financial or Housing Finance activities. Hence, reporting under paragraph 3(xvi) (b) of the Order is not applicable to the Company.

c. The Company is not a Core Investment Company (CIC) as defined in the regulations made by the Reserve Bank of India. Hence, reporting under paragraph 3(xvi) (c) of the order is not applicable to the Company.

d The Company is not a part of any group which has Core Investment Company. Hence, reporting under paragraph 3(xvi) (d) of the Order is not applicable to the Company.

xvii. The Company has not incurred cash losses in the current financial year and in the immediately preceding financial.

xviii. There has been no resignation of the statutory auditors during the year and accordingly reporting under this clause is not applicable.

xix. On the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, material uncertainty exists as on the date of the audit report that company is capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the Balance sheet date. (Refer "Material Uncertainty Related to Going Concern" paragraph above)

We further state that our reporting is based on the facts up to date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the company as and when they fall due.

xx. a) The company has not transferred the amount remaining unspent in respect of other than ongoing projects, to a Fund specified in Schedule VII to the Companies Act, 2013 till the

Plot No. 6, Site No. 21, Geeta Mandir Marg, New Rajender Nagar, New Delhi – 110060
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date of our report. However, the time period for such transfer i.e. six months of the expiry of the financial year as permitted under the second proviso to sub-section (5) of section 135 of the Act, has not elapsed till the date of our report.

b) The Company is not spending any amount in respect of ongoing projects out of unspent amount. Hence, reporting under paragraph 3(xx) (b) of the order is not applicable to the Company.

xxi. Paragraph 3(xxi) of the Order is not applicable to the Company as the Ind AS Financial Statements under reporting are not consolidated Ind AS Financial Statements.

For Gianender & Associates
Chartered Accountants
(Firm 's Registration No. 004661N)

G.K Agrawal
Partner
M No. 081603
Place: New Delhi
Date: 18 August, 2025
UDIN: 25081603BMJKJS8910

Plot No. 6, Site No. 21, Geeta Mandir Marg, New Rajender Nagar, New Delhi – 110060
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ANNEXURE - B TO THE INDEPENDENT AUDITORS' REPORT
(Referred to in our Report of even date)

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls with reference to Ind AS Financial Statements of **CHENANI NASHRI TUNNELWAY LIMITED** ("the Company") as of 31st March 2025 in conjunction with our audit of the Ind AS Financial Statements of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control with reference to Ind AS Financial Statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls with reference to Ind AS Financial Statements issued by the Institute of Chartered Accountants of India (the "Guidance Note"). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to Company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls with reference to Ind AS Financial Statements based on our audit. We conducted our audit in accordance with the Guidance Note and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls with reference to Ind AS Financial Statements was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system with reference to Ind AS Financial Statements and their operating effectiveness. Our audit of internal financial controls with reference to Ind AS Financial Statements included obtaining an understanding of internal financial controls with reference to Ind AS Financial Statements, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system with reference to Ind AS Financial Statements.

Meaning of Internal Financial Controls with reference to Ind AS Financial Statements

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A Company's internal financial control with reference to Ind AS Financial Statements is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Ind AS Financial Statements for external purposes in accordance with generally accepted accounting principles. A Company's internal financial control with reference to Ind AS Financial Statements includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of Ind AS Financial Statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the Ind AS Financial Statements.

Inherent Limitations of Internal Financial Controls with reference to Ind AS Financial Statements

Because of the inherent limitations of internal financial controls with reference to Ind AS Financial Statements, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls with reference to Ind AS Financial Statements to future periods are subject to the risk that the internal financial control with reference to Ind AS Financial Statements may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system with reference to Ind AS Financial Statements and such internal financial controls with reference to Ind AS Financial Statements were operating effectively as at 31st March 2025, based on the internal control with reference to Ind AS Financial Statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls With reference to Ind AS Financial Statements issued by the Institute of Chartered Accountants of India.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)

G.K Agrawal
Partner
M No. 081603
Place: New Delhi

Date: 18th August, 2025
UDIN: 25081603BMJKJS8910

Plot No. 6, Site No. 21, Geeta Mandir Marg, New Rajender Nagar, New Delhi – 110060
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CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Balance sheet as at March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Notes	As at March 31, 2025		As at March 31, 2024	
ASSETS					
Non-current Assets					
(a) Property, plant and equipment	4		1.46		1.46
(b) Intangible Assets			-		-
(c) Financial assets					
(i) Investments			-		-
(ii) Trade receivables			-		-
(iii) Other financial assets	5		24,322.39		27,410.35
(d) Other non-current assets	6		-		-
Total Non-current Assets			24,323.85		27,411.81
Current Assets					
(a) Inventories			-		-
(b) Financial assets					
(i) Investments	7	0.20		0.18	
(ii) Cash and cash equivalents	8	3,374.84		529.95	
(iii) Other Bank Balance	9	25,597.65		20,990.26	
(iv) Other financial assets	5	4,359.16	33,331.85	3,807.99	25,328.38
(c) Current tax assets (Net)	10		139.98		274.03
(d) Other current assets	6		133.37		133.17
Total Current Assets			33,605.20		25,735.58
Total Assets			57,929.05		53,147.39
EQUITY AND LIABILITIES					
Equity					
(a) Equity share capital	11	3,720.00		3,720.00	
(b) Instruments entirely equity in nature		-		-	
(c) Other Equity	12	10,455.30		6,989.50	
Equity attributable to owners of the Company			14,175.30		10,709.50
Total Equity			14,175.30		10,709.50
LIABILITIES					
Non-current Liabilities					
(a) Financial Liabilities					
(i) Borrowings	13	13,036.14		13,005.21	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise		-		-	
b) total outstanding dues other than micro & small enterprise		-		-	
(iii) Other financial liabilities	14	208.16	13,244.30	207.52	13,212.73
(b) Provisions			-		-
(c) Deferred tax liabilities	10.1		4,375.88		3,172.13
Total Non-current Liabilities			17,620.18		16,384.86
Current liabilities					
(a) Financial liabilities					
(i) Borrowings	13	20,007.77		20,007.77	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise		-		-	
b) total outstanding dues other than micro & small enterprise		4,990.52		4,990.88	
(iii) Other financial liabilities	14	1,080.10	26,078.39	998.91	25,997.56
(c) Provisions			-		-
(d) Other current liabilities	15		55.18		55.47
Total Current Liabilities			26,133.57		26,053.03
Total Liabilities			43,753.75		42,437.89
Total Equity and Liabilities			57,929.05		53,147.39

Note 1 to 42 forms part of the financial statements.

In terms of our report of even date.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

G. K. Agarwal
Partner
Membership Number : 081809

Place : New Delhi
Date: 18 August 2025

For and on behalf of the Board

Non-Executive Director
Ajay Menon
DIN-02457302

Non-Executive Director
Amit Kumar Agarwal
DIN-10503239

Dipang Thakar
CFO
Place : Mumbai
Date: 18 August 2025

Twara Ajmera
Company Secretary

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of Profit & Loss for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

	Particulars	Notes	Year ended March 31, 2025	Year ended March 31, 2024
I.	Revenue from Operations	17	3,389.02	3,642.41
II.	Other income	18	1,874.38	1,259.92
III.	**Total Income (I+II)**		5,263.40	4,902.33
IV.	**Expenses**			
	Operating expenses	19	464.04	455.73
	Finance costs (net)	20	30.94	37.60
	Other expenses	21	98.87	103.16
	Total expenses (IV)		593.85	596.49
V	**Profit before tax**		4,669.55	4,305.84
VI	Less: Tax expense			
	(1) Current tax	22	-	-
	(2) Deferred tax	22.1	1,203.75	1,112.76
	Total Tax expenses		1,203.75	1,112.76
VII	**Profit/(loss) after tax (V-VI)**		3,465.80	3,193.08
VIII	**Other Comprehensive Income / (Loss)**			
	Items that may be reclassified to profit or loss			
	(a) Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge	12	-	-
	(b) Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge		-	-
	Total other comprehensive income / (loss)		-	-
IX	**Total comprehensive income / (loss) for the year (VII+VIII)**		3,465.80	3,193.08
X	Earnings per equity share (face value ` 10 per share):	23		
	(1) Basic (in Rs.)		9.32	8.58
	(2) Diluted (in Rs.)		9.32	8.58

Note 1 to 42 forms part of the financial statements.

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

G. K. Agrawal
Partner
Membership Number : 081603

Place : New Delhi
Date: 18 August 2025

For and on behalf of the Board

Non-Executive Director
Ajay Menon
DIN-02497302

Non-Executive Director
Amit Kumar Agarwal
DIN-10501239

Devang Thakar
CFO
Place : Mumbai
Date: 18 August 2025

Twara Ajmera
Company Secretary

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Cash Flow Statement For year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Cash flows from operating activities		
Profit for the year	3,465.80	3,193.08
Adjustments for:		
Deferred tax liabilities	1,203.75	1,112.76
Finance Income	(2,880.24)	(3,142.75)
Modification Loss / (Gain)	(124.19)	(150.37)
Interest on short term deposit	(1,723.04)	(1,064.11)
Interest and finance cost	30.94	37.60
Periodic Maintenance income	(16.80)	(19.18)
Operation and maintenance Income	(491.98)	(480.48)
Provision no Longer Required	-	(32.63)
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	(0.01)	(0.01)
Sub total	**(535.77)**	**(546.09)**
Movements in working capital:		
(Increase)/decrease in other financial assets & other assets (current and non current)	(0.31)	579.33
Increase/ (Decrease) in financial liabilities & other liabilities (current and non current)	81.17	(139.59)
Sub total	80.86	439.74
Cash generated from operations	**(454.92)**	**(106.35)**
Income taxes paid (net of refunds)	134.05	(34.94)
Net cash generated by operating activities (A)	**(320.86)**	**(141.29)**
Cash flows from investing activities		
(Increase) / Decrease in receivable under service	6,350.40	6,350.40
Interest received	1,422.74	901.47
(Investments)/Redemption of Investment in Mutual funds	-	0.00
Movement in other bank balances	(4,607.39)	(14,719.18)
Net cash used in investing activities (B)	**3,165.75**	**(7,467.31)**
Cash flows from financing activities		
Proceeds / (Repayment) from Non Current borrowings (net)	-	(1,403.18)
Proceeds from Current borrowings (net)	-	-
Finance costs paid	-	(0.00)
Net cash generated in financing activities (C)	**-**	**(1,403.18)**
Net increase/ (decrease) in cash and cash equivalents (A+B+C)	**2,844.89**	**(9,011.78)**
Cash and cash equivalents at the beginning of the year	529.95	9,541.73
Cash and cash equivalents at the end of the year	**3,374.84**	**529.95**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Cash Flow Statement For year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Components of Cash and Cash Equivalents		
Cash on hand	-	-
Balances with Banks in current accounts	3,374.84	63.50
Balances with Banks in deposit accounts	-	466.45
Cash and Cash Equivalents	**3,374.84**	**529.95**
Cash and cash equivalents for statement of cash flows	**3,374.84**	**529.95**

Disclosing change in financial liabilities

Particular	31-Mar-24	Cash flow	Non Cash changes	31-Mar-25
Long Term - Secured Loan	15,954.35	-	30.94	15,985.29
Unsecured Loan	17,058.62	-	-	17,058.62
Total	**33,012.97**	-	30.94	**33,043.91**

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

G. K. Agrawal
Partner
Membership Number : 081601

Place : New Delhi
Date: 18 August 2025

For and on behalf of the Board

Non-Executive Director
Ajay Menon
DIN-02497302

Non-Executive Director
Amit Kumar Agarwal
DIN-10501239

Devang Thakar
CFO
Place : Mumbai
Date: 18 August 2025

Twara Ajmera
Company Secretary

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of changes in equity for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

a. Equity share capital	Year ended March 31, 2025	Year Ended March 31, 2024
Balance as at the beginning of the period/year	3,720.00	3,720.00
Changes in Equity Share Capital due to prior period errors	-	-
Restated balance at the beginning of the current reporting period	3,720.00	3,720.00
Changes in equity share capital during the period/year	-	-
Balance as at end of the period/year	3,720.00	3,720.00

b. Other equity	Reserves and surplus	Items of other comprehensive income
	Retained earnings	Effective portion of cash flow hedge
Balance as at April 1, 2023	3,796.42	-
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	3,796.42	-
Profit/(Loss) for the year	3,193.08	-
Other comprehensive income for the year, net of income tax		-
Total comprehensive income for the year	3,193.08	-
Other adjustments		
Balance as at March 31, 2024	6,989.50	-
Balance as at April 1, 2024	6,989.50	-
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	6,989.50	-
Profit/(Loss) for the year	3,465.80	-
Other comprehensive income for the year, net of income tax	-	-
Total comprehensive income for the year	3,465.80	-
Other adjustments		-
Balance as at March 31, 2025	10,455.30	-

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

G. K. Agrawal
Partner
Membership Number : 081603

Place : New Delhi
Date: 18 August 2025

For and on behalf of the Board

Non-Executive Director
Ajay Menon
DIN-02497302

Non-Executive Director
Amit Kumar Agarwal
DIN-10501239

Devang Thakar
CFO

Twara Ajmera
Company Secretary

Place : Mumbai
Date: 18 August 2025

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number: U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025

General Information & Material Accounting Policies

Note No-1

1. General information

The Company was incorporated under the Companies Act 1956 on June 02, 2010. The Company is a special purpose vehicle (SPV) promoted by IL&FS Transportation Networks Limited (ITNL). The company registered address is "The IL&FS Financial Center, Plot C22, G Block, Bandra Kurla Complex, Mumbai - 400051." The Company has entered into a Concession Agreement (CA) on June 28, 2010 with The National Highways Authority of India (NHAI) for Rehabilitation, Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00(New Alignment) including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT basis) in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from the 23rd May 2011 (the 'Appointed date').

Note No-2

2. Material accounting policies

2.1 Statement of compliance

The financial statements have been prepared in accordance with Indian Accounting Standards ("Ind AS") notified under the Companies (Indian Accounting Standards) Rules, 2015 (as amended from time to time) and other relevant provisions of the Companies Act, 2013("the Act").

The Balance Sheet, the Statement of Profit and Loss and the Statement of Changes in Equity are prepared and presented in the format prescribed in the Division II of Schedule III to the Act. The Statement of Cash Flows has been prepared and presented as per the requirements of Ind AS 7 "Statement of Cash Flows".

2.2 Basis of preparation and presentation

The Financial Statements are presented in INR, which is also the Company's functional currency and all values are rounded to the nearest millions (INR 000,000), except earnings per share and except otherwise indicated.

The financial statements have been prepared on a historical cost basis, except for the following asset and liabilities which have been measured at fair value:

- Derivative financial instruments,
- Certain financial assets and liabilities measured at fair value (refer accounting policy regarding financial instruments),

Historical cost is generally based on the fair value of the consideration given in exchange for goods and services. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these financial statements is determined on this basis.

2.3 Use of estimates

The preparation of financial statements in conformity with IND AS requires the Management to make estimates and assumptions that affect the reported amount of assets, liabilities, revenues and expenses and disclosure of contingent liabilities on the date of financial statements. The recognition, measurement, classification or disclosures of an item or information in the financial statements have been made relying on management estimates to a greater extent.

2.4 Fair value measurement

The Company measures financial instruments, such as, derivatives at fair value at each balance sheet date.
Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Company.
The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs. All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period. External valuers are involved for valuation of significant assets, such as properties and significant liabilities, such as contingent consideration.

For the purpose of fair value disclosures, the Company has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.
This note summarises accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

3. Accounting for rights under service concession arrangements and revenue recognition

i. Recognition and measurement

The Company builds, operates and maintains infrastructure assets under public-to-private Service Concession Arrangements (SCAs), which is an arrangement between the "grantor" (a public sector entity/authority) and the "operator" (a private sector entity) to provide services that give the public access to major economic and social facilities utilizing private-sector funds and expertise. The infrastructures accounted for by the Company as concessions are mainly related to the activities concerning roads

Concession contracts are public-private agreements for periods specified in the SCAs including the construction, up gradation, restoration of infrastructure and future services associated with the operation and maintenance of assets in the concession period. Revenue recognition, as well as, the main characteristics of these contracts are detailed in Note 3.iii.

With respect to service concession arrangements, revenue and costs are allocated between those relating to construction services and those relating to operation & maintenance services, and are accounted for separately. Consideration received or receivable is allocated by reference to the relative fair value of services delivered when the amounts are separately identifiable. The infrastructure used in a concession are classified as an intangible asset or a financial asset, depending on the nature of the payment entitlements established in the concession agreement.

When the amount of the arrangement consideration for the provision of public services is substantially fixed by a contract, the Company recognizes revenues from construction services for public facilities (infrastructures) by the percentage-of-completion method, and recognizes the consideration as a financial asset and the same is classified as "Receivables against Service Concession Arrangements". The Company accounts for such financial assets at amortized cost, calculates interest income based on the effective interest method and recognizes it in revenue as Finance Income.

ii. Contractual obligation to restore the infrastructure to a specified level of serviceability

The Company has contractual obligations to maintain the infrastructure to a specified level of serviceability or restore the infrastructure to a specified condition during the concession period and/or at the time of hand over to the grantor of the SCA. Such obligations are measured at the best estimate of the expenditure that would be required to settle the obligation at the balance sheet date. In case of concession arrangements under financial asset model, such costs are recognized in the period in which such costs are actually incurred.

iii. Revenue recognition

Finance income for concession arrangements under financial asset model is recognized using the effective interest method. Revenues from operations and maintenance services and overlay services are recognized in each period as and when services are rendered in accordance with Ind AS 115 Revenue from contract with customers.

iv. Revenue from construction contracts

The Company recognizes and measures revenue, costs and margin for providing construction services during the period of construction of the infrastructure in accordance with Ind AS 115 'Construction Contracts'.
When the outcome of a construction contract can be estimated reliably and it is probable that it will be profitable, contract revenue and contract costs associated with the construction contract are recognised as revenue and expenses respectively by reference to the percentage of completion of the contract activity at the reporting date. The percentage of completion of a contract is determined considering the proportion that contract costs incurred for work performed upto the reporting date bear to the estimated total contract costs.

For the purposes of recognizing revenue, contract revenue comprises the initial amount of revenue agreed in the contract, the variations in contract work, claims and incentive payments to the extent that it is probable that they will result in revenue and they are capable of being reliably measured.

The percentage of completion method is applied on a cumulative basis in each accounting period to the current estimates of contract revenue and contract costs. The effect of a change in the estimate of contract revenue or contract costs, or the effect of a change in the estimate of the outcome of a contract, is accounted for as a change in accounting estimate and the effect of which are recognized in the Statement of Profit and Loss in the period in which the change is made and in subsequent periods.

When the outcome of a construction contract cannot be estimated reliably, revenue is recognized only to the extent of contract costs incurred of which recovery is probable and the related contract costs are recognized as an expense in the period in which they are incurred.

When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense in the Statement of Profit and Loss in the period in which such probability occurs.

v. Borrowing cost related to SCAs

In case of concession arrangement under financial asset model, borrowing costs attributable to construction of the infrastructure are charged to Statement of Profit and Loss in the period in which such costs are incurred.

In case of concession arrangement under intangible asset model, borrowing costs attributable to the construction of infrastructure assets are capitalised up to the date of the final completion certificate of the asset / facility received from the authority for its intended use specified in the Concession Agreement. All borrowing costs subsequent to the capitalization of the intangible assets are charged to the Statement of Profit and Loss in the period in which such costs are incurred.

vi. Claims

Claims raised with the concession granting authority towards reimbursement for costs incurred due to delay in handing over of unencumbered land to the Company for construction or other delays attributable solely to the concession granting authority are recognised when there are is a reasonable certainty that there will be inflow of economic benefits to the Company. The claims when recognized as such are reduced from the carrying amount of the intangible asset / financial asset under the service concession arrangement, as the case may be, to the extent the claims relate to costs earlier included as a part of the carrying amount of these assets. Further, these claims are credited to profit or loss to the extent it is probable to have economic benefits to the company.

3.1 Borrowing costs

Borrowing costs are recognised in the period to which they relate, regardless of how the funds have been utilised, except where it relates to the financing of construction of development of assets requiring a substantial period of time to prepare for their intended future use. Interest is capitalised up to the date when the asset is ready for its intended use. The amount of interest capitalised (gross of tax) for the period is determined by applying the interest rate applicable to appropriate borrowings outstanding during the period to the average amount of accumulated expenditure for the assets during the period. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds

All other borrowing costs are recognised in profit or loss in the period in which tare incurred.

GIANENDER & ASSOCIATES NEW DELHI Chartered Accountants

Chenani Nashri Tunnelway Limited

3.2 Taxation

3.2.1 Current tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. Taxable profit differs from 'profit before tax' as reported in the statement of profit and loss because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Company's current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Current income tax relating to items recognised outside profit or loss is recognised outside profit or loss (either in other comprehensive income or in equity). Current tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity. Management periodically evaluates positions taken in the tax return with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

3.2.2 Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases values used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets (including unused tax credits such as MAT credit and unused tax losses such as carried forward business loss and unabsorbed depreciation) are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from the initial recognition (other than in a business combination) of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit. In addition, deferred tax liabilities are not recognized if the temporary difference arises from the initial recognition of goodwill.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax relating to items recognised outside profit or loss is recognised outside profit or loss (either in other comprehensive income or in equity). Deferred tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of to recover or settle the carrying amount of its assets and liabilities.

3.3 Property, plant and equipment

Property, plant and equipment acquired by the Company are reported at acquisition cost, with deductions for accumulated depreciation and impairment losses, if any.

The acquisition cost includes the purchase price (excluding refundable taxes) and expenses, such as delivery and handling costs, installation, legal services and consultancy services, directly attributable to bringing the asset to the site and in working condition for its intended use.

Where the construction or development of any asset requiring a substantial period of time to set up for its intended use is funded by borrowings, the corresponding borrowing costs are capitalized up to the date when the asset is ready for its intended use.

All assets are depreciated on a Straight Line Method (SLM) of Depreciation, over the useful life of assets as prescribed under Schedule II of the Companies Act, 2013.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying of the asset and is recognised in profit or loss.

3.4 Impairment of tangible assets / intangible asset

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to

the smallest Company of cash-generating units for which a reasonable and consistent allocation basis can be identified.

In assessing value in use, the estimated future cash flows are discounted to their present value using appropriate discount rate.

Recoverable amount is the higher of fair value less costs of disposal and value in use.
If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognised immediately in profit or loss.

A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in the statement of profit or loss unless the asset is carried at a revalued amount, in which case, the reversal is treated as a revaluation increase.

Foreign Currencies:

The Company's financial statements are presented in INR, which is also the Company's functional currency. In preparing the financial statements of Company, transactions in currencies other than the Company's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. The gain or loss arising on translation of non-monetary items measured at fair value is treated in line with the recognition of the gain or loss on the change in fair value of the item (i.e., translation differences on items whose fair value gain or loss is recognized in OCI or statement of profit or loss are also recognized in OCI or statement of profit or loss, respectively). Exchange differences on monetary items are recognized in profit or loss in the period in which they arise except for exchange differences on transactions entered into in order to hedge certain foreign currency risks.

3.5. Provision

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. When the

Company expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit and loss net of any reimbursement.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (when the effect of the time value of money is material).

3.6 Financial instruments

Financial assets and financial liabilities are recognized when a company becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss ("FVTPL) are recognized immediately in the statement of profit and loss.

3.7 Financial assets

All regular way purchases or sales of financial assets are recognized and derecognized on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognized financial assets are subsequently measured in their entirety at either amortized cost or fair value, depending on the classification of the financial assets.

3.7.1 Classification of financial assets – debt instruments

Debt instruments that meet the following conditions are subsequently measured at amortised cost (except for debt instruments that are designated as at fair value through profit or loss on initial recognition):

- the asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows;
- the contractual terms of the instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

After initial measurement, such financial assets are subsequently measured at amortised cost using the effective interest rate (EIR) method. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance income in the profit or loss. The losses arising from impairment are recognised in the profit or loss.

3.7.2 Amortised cost and Effective interest method

The effective interest method is a method of calculating the amortised cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

Income is recognized on an effective interest basis for debt instruments other than those financial assets classified as at FVTPL. Interest income is recognized in profit or loss and is included in the "Other income" line item.

3.7.3 Financial assets at FVTPL

Debt instruments that do not meet the amortized cost or FVOCI criteria are measured at FVTPL. In addition, debt instruments that meet the amortized cost or FVOCI criteria but are designated as at FVTPL are measured at FVTPL.

A debt instrument that meets the amortized cost or FVTOCI criteria may be designated as at FVTPL upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency that would arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases. The Company has not designated any debt instrument as at FVTPL.

Financial assets at FVTPL are measured at fair value at the end of each reporting period, with any gains or losses arising on re-measurement recognized in profit or loss. The net gain or loss recognized in profit or loss is included in in the "Other income" line item.

3.7.4 Impairment of financial assets

In accordance with Ind AS 109, the Company applies expected credit loss (ECL) model for measurement and recognition of impairment loss on the following financial assets and credit risk exposure:
a) Financial assets that are debt instruments, and are measured at amortised cost e.g., loans, debt securities, deposits, trade receivables and bank balance
b) Trade receivables or any contractual right to receive cash or another financial asset that result from transactions that are within the scope of Ind AS 11 and Ind AS 18 (referred to as 'contractual revenue receivables' in these illustrative financial statements)
c) Loan commitments which are not measured as at FVTPL

The Company measures the loss allowance for a financial instrument at an amount equal to the lifetime expected credit losses if the credit risk on that financial instrument has increased significantly since initial recognition. If the credit risk on a financial instrument has not increased significantly since initial recognition, the Company measures the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. However, for trade receivables, the Company measures the loss allowance at an amount equal to lifetime expected credit losses. In cases where the amounts are expected to be realized upto one year from the due date, loss for the time value of money is not recognized, since the same is not considered to be material.

When making the assessment of whether there has been a significant increase in credit risk since initial recognition, the Company uses the change in the risk of a default occurring over the expected life of the financial instrument instead of the change in the amount of expected credit losses. To make that assessment, the Company compares the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of initial recognition and considers reasonable and supportable information, that is available without undue cost or effort, that is indicative of significant increases in credit risk since initial recognition.

3.8 Reclassification of financial assets

The Company determines classification of financial assets and liabilities on initial recognition. After initial recognition, no reclassification is made for financial assets which are equity instruments and financial liabilities. For financial assets which are debt instruments, a reclassification is made only if there is a change in the business model for managing those assets. Changes to the business model are expected to be infrequent. The Company's senior management determines change in the business model as a result of external or internal changes which are significant to the Company's operations. Such changes are evident to external parties. A change in the business model occurs when the Company either begins or ceases to perform an activity that is significant to its operations. If the Company reclassifies financial assets, it applies the reclassification prospectively from the reclassification date which is the first day of the immediately next

reporting period following the change in business model. The Company does not restate any previously recognised gains, losses (including impairment gains or losses) or interest.

3.8.1 Derecognition of financial assets

The Company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. If [the Company] the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Company recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.
On derecognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss if such gain or loss would have otherwise been recognized in profit or loss on disposal of that financial asset.

On derecognition of a financial asset other than in its entirety (e.g., when the Company retains an option to repurchase part of a transferred asset), [the Company] the Company allocates the previous carrying amount of the financial asset between the part it continues to recognised under continuing involvement, and the part it no longer recognises on the basis of the relative fair values of those parts on the date of the transfer. The difference between the carrying amount allocated to the part that is no longer recognised and the sum of the consideration received for the part no longer recognised and any cumulative gain or loss allocated to it that had been recognised in other comprehensive income is recognised in profit or loss if such gain or loss would have otherwise been recognised in profit or loss on disposal of that financial asset. A cumulative gain or loss that had been recognised in other comprehensive income is allocated between the part that continues to be recognised and the part that is no longer recognised on the basis of the relative fair values of those parts.

3.9 Modification of Cash Flows of financial assets and revision in estimates of Cash flows

The rate considered for recognizing Finance Income (EIR) and fair valuation of the Receivable under SCA finalised on achievement of PCOD / COD for the Project. Thereafter this rate will remain constant during the balance concession period unless there is an impairment / reversal of impairment of asset.

When the contractual cash flows of a financial asset are renegotiated or otherwise modified and the renegotiation or modification does not result in the derecognition of that financial asset in accordance with Ind AS 109, the Company recalculates the gross carrying amount of the financial asset and recognises a modification gain or loss in profit or loss. The gross carrying amount of the financial asset is recalculated as the present value of the renegotiated or modified contractual cash flows that are discounted at the financial asset's original effective interest rate. Any costs or fees incurred are adjusted to the carrying amount of the modified financial asset and are amortised over the remaining term of the modified financial asset.

If the Company revises its estimates of payments or receipts (excluding modifications and changes in estimates of expected credit losses), it adjusts the gross carrying amount of the financial asset or amortised cost of a financial liability to reflect actual and revised estimated contractual cash flows. The Company recalculates the gross carrying amount of the financial asset or amortised cost of the financial liability as the present value of the estimated future contractual cash flows that are discounted at the financial instrument's original effective interest rate. The adjustment is recognised in profit or loss as income or expense.

3.10 Financial liabilities and equity instruments-

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate
The Company's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.

3.10.1 Classification as debt or equity
Debt and equity instruments issued by a Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument

3.10.2 Financial liabilities

All financial liabilities are subsequently measured at amortized cost using the effective interest method

3.10.3 Financial liabilities subsequently measured at amortised cost

Financial liabilities are measured at amortized cost at the end of subsequent accounting periods. The carrying amounts of financial liabilities that are subsequently measured at amortized cost are determined based on the effective interest method. Interest expense

that is not capitalized as part of costs of an asset is included in the 'Finance costs' line item.

The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

3.10.4 Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or have expired. An exchange between with a lender of debt instruments with substantially different terms is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, a substantial modification of the terms of an existing financial liability (whether or not attributable to the financial difficulty of the debtor) is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

3.11 Cash and cash equivalents

Cash and cash equivalent in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

3.12 Cash Flow Statement:

The statement of cash flows shows the changes in cash and cash equivalents arising during the year from operating activities, investing activities and financing activities

The cash flows from operating activities are determined by using the indirect method. Net income is therefore adjusted by non-cash items, such as measurement gains or losses, changes in provisions, impairment of property, plant and equipment and intangible assets, as well as changes from receivables and liabilities. In addition, all income

and expenses from cash transactions that are attributable to investing or financing activities are eliminated. Interest received or paid is classified as operating cash flows

The cash flows from investing and financing activities are determined by using the direct method

3.13 Earnings per Equity Share:

Basic earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares outstanding during the period.

Diluted earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares considered for deriving basic earnings per equity share and also the weighted average number of equity shares that could have been issued upon conversion of all dilutive potential equity shares. The dilutive potential equity shares are adjusted for the proceeds receivable had the equity shares been actually issued at fair value (i.e. the average market value of the outstanding equity shares). Dilutive potential equity shares are deemed converted as of the beginning of the period, unless issued at a later date. Dilutive potential equity shares are determined independently for each period presented.

3.14 Critical accounting judgments:

The preparation of Financial Statements in conformity with the recognition and measurement principles of Ind AS requires management to make estimates and assumptions that affect the reported balances of assets and liabilities, disclosures of contingent liabilities at the date of the Financial Statements and the reported amounts of income and expenses for the periods presented.

Management believes that the estimates used in the preparation of the financial statements are prudent and reasonable. Actual results could differ from these estimates. In case the actual results are different those from estimates, the effect thereof is given in the financial statements of the period in which the events materialize. Any change in such estimates is accounted prospectively.

The matters to be disclosed will be dictated by the circumstances of the individual entity, and by the significance of judgements and estimates made to the performance and financial position of the entity. Instead of disclosing this information in a separate note, it may be more appropriate to include such disclosures in the relevant asset

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised, and future periods are affected.

3.15 Key sources of estimation of uncertainty

Key source of estimation of uncertainty at the date of Financial Statements, which may cause a material adjustment to the carrying amounts of assets and liabilities within the next financial year, is in respect of-

a) Periodical Major Maintenance
The management, estimates expenditure w.r.t periodic major maintenance by using a model that incorporates a number of assumptions, including the life of the concession agreement and the expected cost of the periodic major maintenance which are considered as reasonable by the management.

b) Fair value measurement of financial instruments
When the fair values of financial assets and financial liabilities recorded in the balance sheet cannot be measured based on quoted prices in active markets, their fair value is measured using valuation techniques including the DCF model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments. Refer Note 29 for further disclosures.

3.16 Recent accounting pronouncements:

Ministry of Corporate Affairs ("MCA") notifies new standards or amendments to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time. On May 7, 2025, MCA amended the Companies (Indian Accounting Standards) Amendment Rules, 2025, as below:

Ind AS 21-Effects of Changes in Foreign Exchange Rates

The Ministry of Corporate Affairs has amended Ind AS 21 to clarify how entities should assess and disclose when a currency is not exchangeable. Entities must now estimate spot exchange rates using observable data or alternative methods if direct exchange is not possible. Additional disclosures are required, including estimation techniques, exchange restrictions, and financial impact. These amendments apply to annual reporting periods beginning on or after 1 April 2025.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

4. Property, plant and equipment

Previous Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2023	Additions	Deductions	Balance at March 31, 2024	Balance as at April 1, 2023	Deductions	Depreciation expense	Balance at March 31, 2024	As at March 31, 2024	As at March 31, 2023
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	1.46	-	-	1.46	-	-	-	-	1.46	1.46

Current Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2024	Additions	Deductions	Balance at March 31, 2025	Balance as at April 1, 2024	Deductions	Depreciation expense	Balance at March 31, 2025	As at March 31, 2025	As at March 31, 2024
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	1.46	-	-	1.46	-	-	-	-	1.46	1.46

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

5. Other financial assets (Unsecured, considered good)

Particulars	As at March 31, 2025		As at March 31, 2024	
	Non Current	Current	Non Current	Current
Receivable under service concession arrangements	24,321.77	3,021.93	27,409.83	2,771.06
Security Deposits - Others	0.00	-	0.00	-
Other advances (Receivable from Banks) (Refer note - 32)	-	794.85	-	794.85
Interest receivable on fixed deposit		542.38		242.08
Foreign Currency Forward Contracts	-	-	-	-
Receivable from NHAI - GST witheld on Annuity	-	-	-	-
Receivable from NHAI - Utility Shifting & Change of scope	115.19	-	115.09	-
Less: Provision for doubtful receivable	(114.57)	-	(114.57)	-
Total	**24,322.39**	**4,359.16**	**27,410.35**	**3,807.99**

6. Other assets (Unsecured, considered good unless otherwise mentioned)

Particulars	As at March 31, 2025		As at March 31, 2024	
	Non Current	Current	Non Current	Current
Advance towards Insurance premium		69.06		68.62
Indirect tax balances	-	64.31	-	64.55
Unbilled Revenue	-	-	-	-
Total	**-**	**133.37**	**-**	**133.17**

7. Current Investments

Particulars	As at March 31, 2025		As at March 31, 2024	
	Qty	Amount	Qty	Amount
Unquoted Investments				
(a) Investment in SBI Liquid Fund Regular Growth Mutual fund	48.698	0.20	48.698	0.18
TOTAL INVESTMENTS	48.698	**0.20**	48.698	**0.18**

(Note: Cost of Investment - Rs. 1,36,458.56 & NAV as at March 31, 2025 - Rs. 4,015.73)

8. Cash and cash equivalents

For the purposes of the statement of cash flows, cash and cash equivalents include cash on hand and in banks, net of outstanding bank overdrafts. Cash and cash equivalents at the end of the reporting period as shown in the statement of cash flows can be reconciled to the related items in the balance sheet as follows:

Particulars	As at March 31, 2025	As at March 31, 2024
Balances with Banks		
In current accounts	3,374.84	63.50
In deposit accounts with original maturity less than 3 months	-	466.45
Cheques, drafts on hand	-	-
Cash on hand	-	-
Others	-	-
Cash and cash equivalents	**3,374.84**	**529.95**

9. Other Bank Balances

Particulars	As at March 31, 2025	As at March 31, 2024
Balances with Banks in deposits account having original maturity more than three months and remaining maturity less than twelve months	25,597.65	20,990.26
		-
Total	25,597.65	20,990.26

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

10. Current tax assets and liabilities

Particulars	As at March 31, 2025		As at March 31, 2024	
	Non Current	Current	Non Current	Current
Current tax assets				
Advance payment of taxes	-	408.76	-	542.81
Total	-	408.76	-	542.81
Current tax liabilities				
Provision for tax	-	268.78	-	268.78
Total	-	268.78	-	268.78
Net Tax Assets / (Liabilities)	-	139.98	-	274.03

10.1 Deferred tax balances

Particulars	As at March 31, 2025		As at March 31, 2024	
	Non Current	Current	Non Current	Current
Deferred tax assets	(1,324.60)	-	(2,853.88)	-
Less : Deferred tax liabilities	5,700.48	-	6,026.01	-
Total	4,375.88	-	3,172.13	-

22.3 Deferred tax Disclosures

Deferred tax assets and deferred tax liabilities have been offset wherever the Company has a legally enforceable right to set off current tax assets against current tax liabilities and where the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority

Deferred Tax Asset in respect of Unabsorbed Business Loss/ depreciation has been recognized to the extent reversals of Deferred Tax Liability and Taxable Profits are available before end of concession period.

Significant management judgement is considered in determining provision for income tax, deferred tax assets and liabilities and recoverability of deferred tax assets. The recoverability of deferred tax assets is based on estimate of the taxable income for the period over which deferred tax assets will be recovered. The Company has unabsorbed business losses/depreciation which according to the management will be used to set off taxable profit arising in subsequent years from operation of the Company.

The profitability projections used for determining the recoverability of deferred tax asset has number of variables viz. Revenue projections, restructuring of debt, incurrence of overlay etc which are subject to change.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

11. Equity Share Capital

Particulars	As at March 31, 2025		As at March 31, 2024	
	Number of shares in Mn	Amount in (Rs. Mn)	Number of shares in Mn	Amount in (Rs. Mn)
Authorised				
Equity Shares of ₹ 10/- each	372.00	3,720.00	372.00	3,720.00
Issued, Subscribed and Paid up				
Equity Shares of ₹ 10/- each fully paid	372.00	3,720.00	372.00	3,720.00
Total	372.00	3,720.00	372.00	3,720.00

11.1 Reconciliation of the number of equity shares outstanding at the beginning and at the end of the year :

Particulars	As at March 31, 2025		As at March 31, 2024	
	Number of shares in Mn	Amount in (Rs. Mn)	Number of shares in Mn	Amount in (Rs. Mn)
Shares outstanding at the beginning of the period/year	372.00	3,720.00	372.00	3,720.00
Shares issued during the period/year	-	-	-	-
Shares outstanding at the end of the period/year	372.00	3,720.00	372.00	3,720.00

11.2 Details of shares held by the holding company, the ultimate controlling party, their subsidiaries and associates

Number in Mn

Particulars	As at March 31, 2025	As at March 31, 2024
Holding Company - IL&FS Transportation Networks Limited & its Nominees	372.00	372.00

11.3 Details of shares held by each shareholder holding more than 5% shares

Equity Shareholder	As at March 31, 2025		As at March 31, 2024	
	Number of shares held in Mn	% holding in the class of shares	Number of shares held in Mn	% holding in the class of shares
IL&FS Transportation Networks Limited & its Nominees, the holding company	372.00	100%	372.00	100%
Total	372.00	100%	372.00	100%

11.4 Terms of Equity :

The Company has one class of equity shares with face value of ₹ 10 each fully paid-up. Each shareholder has a voting right in proportion to his holding in the paid-up equity share capital of the Company.
In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.
Where final dividend is proposed by the Board of Directors, it is subject to the approval of the shareholders in the Annual General Meeting.
During the year, no dividend has been proposed or paid.
The Company has not issued any securities during the period/year with the right / option to convert the same into equity shares at a later date.
The Company has not reserved any shares for issue under options and contracts / commitments for the sale of shares/ other investment
The shares issued carry equal rights to dividend declared by the company and no restrictions are attached to any specific shareholder.

11.5 Shareholding of promoter

The details of promoter shareholding are given below :

Name of the Promotor	As at March 31, 2025			As at March 31, 2024		
	Number of shares held in Mn	% of total shares	% of change during the period/year	Number of shares held in Mn	% of total shares	% of change during the year
IL&FS Transportation Networks Limited & it's nominees	372.00	100%	-	372.00	100%	-
Total	372.00	100%	-	372.00	100%	-

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

12. Other Equity

Particulars	As at March 31, 2025	As at March 31, 2024
Retained earnings		
Balance at beginning of period/year	6,989.50	3,796.42
Profit / (Loss) during the period/year	3,465.80	3,193 08
Balance at end of the year	**10,455.30**	**6,989.50**
Cash flow hedging reserve		
Balance at beginning of period/year	-	-
Gain/(loss) arising on changes in fair value of designated portion of hedging instruments entered into for cash flow hedges	-	-
Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge	-	-
Balance at end of the period /year	-	-
Total	**10,455.30**	**6,989.50**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

13.Borrowings at amortised cost

Particulars	As at March 31, 2025			As at March 31, 2024		
	Non-Current Borrowings	Current portion	Current Borrowings	Non-Current Borrowings	Current portion	Current Borrowings
Secured – at amortised cost						
(i) Term loans						
- from banks	12,924.18	3,090.45	-	12,924.18	3,090.45	-
- from financial institutions	-	-	-	-	-	-
Unsecured – at amortised cost						
(i) Term loans						
- from banks	-	7,500.00	-	-	7,500.00	-
- from financial institutions *	-	2,550.00	-	-	2,550.00	-
- from related parties (Refer Note 27)	141.30	4,306.48	2,560.84	141.30	4,306.48	2,560.84
Unamortised borrowing cost	(29.34)	-	-	(60.27)	-	-
Total	13,036.14	17,446.93	2,560.84	13,005.21	17,446.93	2,560.84
Less: Current maturities of long term debt clubbed under "Short Term Borrowing"		17,446.93	-		17,446.93	-
Add: Current maturities of long term debt clubbed under "Short Term Borrowing"		-	17,446.93		-	17,446.93
Total	13,036.14	-	20,007.77	13,005.21	-	20,007.77

Terms of Repayment of Term Loans and Other Loans

1) Security for Senior & Sub Debt Facility:
(A) The Senior Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by:
a) a first mortgage and charge on all the Company's immoveable properties, both present and future, save and except the project assets;

b) a first charge on all the Company's tangible moveable assets, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles, all other moveable assets and current assets, both present and future, save and except the project assets;
c) a charge on the Company's accounts including, but not limited to the escrow account where all revenues, disbursements, receivables shall be deposited and in all funds from time to time deposited therein and in all authorised investments or other securities representing all amounts credited to the escrow account;

d) a charge on all intangibles of the Company including but not limited to goodwill, rights, and undertakings, present and future provided any realisation there of shall be credited to the escrow account and the charge as aforesaid shall be limited to the extent permissible under the waterfall of the priorities as per article 31 of the concession agreement and article 4 of escrow agreement
e) a charge on the uncalled capital of the Company;
Provided that charge at (e) above, shall be limited for ensuring that the Company calls the balance uncalled capital and makes the shares fully paid up.

f) an assignment by way of security:
(i) of the right, title and interest of the Company in, to and under the project documents including the concession agreement, duly acknowledged and consented to by NHAI and by the relevant counter-parties to such project documents to the extent not expressly provided in the concession agreement or each such project document, all as amended, varied or supplemented from time to time;
(ii) of the right, title and interest of Company in, to and under all the government approvals and insurance contracts; and
(iii) of the right, title interest of the Company in, to and under any letter of credit, guarantee, including contractor guarantees and liquidated damages and performance bond provided by any party to the project documents.

(B) The Subordinate Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by a second charge on the above mentioned in para (A) above.

2) Terms of Payments:
(a) As per the existing common loan agreement with lenders, the Company has undertaken to repay the senior and sub debt loan to each senior and sub debt lender in accordance with the following repayment schedule. Please note that this schedule is subject to adjustment due to the repayment of Rs. 7,796.82 mn made during the year 2023:

Repayment Schedule:

Year	Senior Debts	Sub Debts	Total
October 2018 to March 2019	862.77	114.52	977.29
June 2019 to March 2020	1,806.43	239.77	2,046.20
June 2020 to March 2021	1,970.90	261.60	2,232.50
June 2021 to March 2022	2,121.88	281.64	2,403.53
June 2022 to March 2023	2,278.26	302.40	2,580.66
June 2023 to March 2024	2,494.16	331.06	2,825.22
June 2024 to March 2025	2,552.65	338.82	2,891.47
June 2025 to March 2026	2,552.65	338.82	2,891.47
June 2026 to September 2026	8,556.80	1,135.77	9,692.57
Total	25,196.49	3,344.41	28,540.90
Repayment made as per interim distribution during the year 2023	(7,796.82)		(7,796.82)
Direct Debit by SBI adjusted during the year 2023	(5,929.42)		(5,929.42)
Adjustment as per IndAS	(34.96)		(34.96)
Borrowing Outstanding as the end of the year	11,435.29	3,344.41	14,779.69

b) Standard Chartered Bank had granted a long-term loan in form of External Commercial Borrowing ("ECB") of USD 43,000,000 to the Company. As per the facility agreement dated December 2, 2015 and amended on January 21, 2016, till the long term loan remains outstanding in books, the lender was required to accrue interest on the aforesaid loan at an interest rate of LIBOR plus Margin (as defined in the facility agreement). The final maturity date of the loan is February 28, 2026.
During the previous financial year, Standard Chartered bank assigned its rights under the Facility Agreement to Deutsche Bank AG, London branch. Further, the Cross Currency interest rate SWAP contract executed by the Company with Standard Chartered Bank, Mumbai Branch, was cancelled during prewous the year. As a part of Claim Management process (as per the direction of NCLAT), the claim for Deutsche Bank AG, London has been admitted for Rs.2803.05 Mn (consisting of loan amount of Rs 2,782.95 Mn and interest of Rs 20.10 Mn). Accordingly, the liability of the Company towards ECB has been crystalized for Rs 2,782.95 Mn. Since the claim for this financial liability has been admitted in INR, no further hedge is required for this loan.

Repayment Schedule:
Total ECB Loans repayment on quarterly basis installments commencing from February 28, 2017 and terminating on February 28, 2026 :

Year	Amount in INR
Financial Year 2018-2019	92.45
Financial Year 2019-2020	195.26
Financial Year 2020-2021	213.19
Financial Year 2021-2022	228.31
Financial Year 2022-2023	247.00
Financial Year 2023-2024	265.23
Financial Year 2024-2025	265.23
Financial Year 2025-2026	1,021.61
Cashflow Hedge Reserve Adjustment	200.41
Repayment made as per interim distribution during the year 2024	(1,403.18)
Direct Debit by SBI adjusted during the year 2024	(119.90)
Grand Total	1,205.59

Unsecured Loan from Related Parties & Others

Lender's Name	Loan Amount Rs Mn	Tenor	Interest Rate Type	Interest Rate	Repayment Term
Indusind Bank	7,500.00	21 Months	Fixed	8.80%	Bullet Repayment at the end of tenure i.e.31.12.2019
SREI Infrasturcture Finance Limited	2,000.00	37 Months	Floating	12.75% /13.75%	3 equal installments at the end of 35th, 36th & 37th month from date of disbursement
Aditya Birla Finance Limited	550.00	18 Months	Floating	11.10%	3 equal installments at the end of 12th, 15th & 18th month from date of disbursement
IL&FS Transportation Networks Limited	141.30		Fixed	11.26%	Alongwith maturity of Sub Debt from banks
Infrastructure Leasing & Financial Services Limited	3,927.50	53 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.27.09.2019
Infrastructure Leasing & Financial Services Limited	324.73	57 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.09.11.2019
IL&FS Airport Limited	470.00	12 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.28.08.2018
IL&FS Transportation Networks Limited	2,090.84	12 Months	Fixed	12.80%	Bullet Repayment at the end of tenure i.e.31.03.2019

CHENANI NASHRI TUNNELWAY LIMITED

CIN Number : U45400MH2010PLC203614

Notes forming part of the Financial Statements for year ended March 31, 2025

IV Note : Default in repayment of loan (Principal & Interest)

Rs in Mn

Lender Name	Nature of due (Principal/ Interest)	Amount in Mn	Dues since
Principal Payable			
Aditya Birla Finance Ltd	Principal	550.00	20-09-2018
IL&FS Airport Ltd	Principal	470.00	28-08-2018
Total Principal Payable (A)		1,020.00	
Interest Payable			
SREI Infrastructures	Interest	63.63	30-09-2018
IL&FS Airport Ltd	Interest	31.82	30-09-2018
IL&FS Transportation Networks Limited	Interest	372.51	30-09-2018
IL&FS Ltd	Interest	307.00	30-09-2018
Total Interest Payable (B)		774.96	

In view of NCLAT order, amount due after 15th Oct 2018 are not considered as default (Refer Note 32)

GIANENDER & ASSOCIATES NEW DELHI Chartered Accountants

Chenani Nashri Tunnelway Limited

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

14. Other financial liabilities

Particulars	As at March 31, 2025		As at March 31, 2024	
	Non Current	Current	Non Current	Current
Interest accrued - Others (refer note 34)		208.39		208.39
Interest accrued - Related Parties		750.33		750.33
Retention Money Payable - Related Parties	207.52		207.52	
Related parties - Others	0.64		-	
Unsecured deposits		1.05		-
Provision for expenses		119.81		39.28
Audit fees - Provision		0.52		0.91
Total	208.16	1,080.10	207.52	998.91

15. Other liabilities

Particulars	As at March 31, 2025		As at March 31, 2024	
	Non Current	Current	Non Current	Current
Statutory dues				
-Tax deducted at source	-	55.18	-	55.47
-Goods & service tax	-	-	-	-
Total	-	55.18	-	55.47

16. Trade payables

Particulars	As at March 31, 2025		As at March 31, 2024	
	Non Current	Current	Non Current	Current
Due to Micro and small enterprises				
- Related Parties		22.19		
- Other payables		0.09		
Due to other than Micro and small enterprises				
- Related Parties		4,966.09		4,988.50
- Other payables		2.15		2.38
Total	-	4,990.52	-	4,990.88

16.2 Ageing of Trade Payables as on March 31, 2025

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	22.28	-	-	-	22.28
Others	1.91	1.06	0.05	4,965.22	4,968.24
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
Total	24.19	1.06	0.05	4,965.22	4,990.52

16.3 Ageing of Trade Payables as on March 31, 2024

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	-	-	-	-	-
Others	24.41	1.25	0.09	4,965.13	4,990.88
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
Total	24.41	1.25	0.09	4,965.13	4,990.88

17. Revenue from operations

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
(a) Operation and maintenance income	491.98	480.48
(b) Periodic maintenance income	16.80	19.18
(c) Finance income	2,880.24	3,142.75
Total	3,389.02	3,642.41

18. Other Income

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Interest on short term deposit	1,723.04	1,064.11
Interest on Income tax refund	26.21	11.89
Construction Income towards Change of Scope	0.93	0.91
Modification Gain	124.19	150.37
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	0.01	0.01
Provision no Longer Required *	-	32.63
Total	1,874.38	1,259.92

*** While finalizing the financial statements for the Year Ended March 31, 2021, the company erroneously recorded corporate social responsibility (CSR) expenses as Rs. 36.26 million instead of the correct amount of Rs. 3.63 million. Consequently, the company has written back the differential amount of Rs. 32.63 million during the previous financial year.**

19. Operating Expenses

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Operation and maintenance expenses	448.72	438.23
Periodic maintenance expenses	15.32	17.50
Construction Cost towards Change of Scope	-	-
Total	464.04	455.73

20. Finance costs

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Interest on loans for fixed period (Refer note below 32 & 33)		
Interest on term loan	-	-
Finance charges *	30.94	37.60
Total (a+b)	30.94	37.60

* Represents unammortised borrowing cost expensed out during the year

21. Other expenses

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Legal and consultation fees	14.48	21.79
Deputation Cost	1.19	1.27
Insurance	-	-
Rates and taxes	0.02	0.38
Bank commission	0.42	0.04
Advertising expenses	0.04	-
Concession fees	0.00	0.00
Corporate Social Responsibility Exp. (refer note 21.2)	79.96	78.68
Directors' fees	0.46	0.42
Payment to auditors	1.11	0.49
Miscellaneous expenses	1.19	0.09
Total	98.87	103.16

21.1 Payments to auditors

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
a) For audit	0.41	0.35
b) For Tax audit	0.32	0.13
c) For other services	0.38	0.01
Total	1.11	0.49

21.2 Expenditure incurred for corporate social responsibility

In terms of Section 135 of the Companies Act, 2013, a Corporate Social Responsibility (CSR) Committee has been formed by the Company. The areas for CSR activities as per the CSR policy are (i) Promotion of education, (ii) promoting gender equality and empowering women, (iii) reducing child mortality and improving maternal health, (iv) ensuring environmental sustainability, (v) employment enhancing vocational skills, (vi) social business projects, (vii) contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socioeconomic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women and (viii) such other matters as may be prescribed.

In line with Guidance Note on Accounting for Expenditure on Corporate Social Responsibility Activities, issued by the Institute of Chartered Accountants of India, the disclosure of the CSR expenditure during the period/year, is as under:

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
(i) Gross Amount required to be spent by the Company during the period/year	79.96	78.68
Add: Shortfall for the previous period/year	-	127.76
(ii) Amount spent during the period/year		
(a) Construction/acquisition of any asset	-	-
(b) On purpose other than above (ii) (a) - In cash	-	206.44
(c) On purposes other than above (ii) (a) - Yet to be paid in cash	-	-
(d) Amount unspent during the period/year	79.96	-

In accordance with Section 135(6) of the Companies Act, 2013, the Company is required to deposit the unspent amount allocated for Corporate Social Responsibility (CSR) in a designated bank account within 6 months from the end of the financial year (FY). However, due to the moratorium granted by NCLAT and the need to prioritize expenses essential for maintaining the going concern status, the Company was unable to release funds towards CSR activities till the year 2023.

During the previous year 2024, the Company decided to undertake Research Projects on Pavements with Indian Institute of Technology, Bombay. The Company has spent Rs. 78.68 Mn during the previous financial year 2024 for the said Project. The Company also donated Rs. 63.88 Mn of previous years shortfall to Prime Minister's National Relief Fund, Rs. 31.94 Mn of previous years shortfall to Prime Minister Cares & Rs. 31.94 Mn of previous years shortfall to Clean Ganga Fund.

During the current financial year, the ultimate holding company, IL&FS, has applied to NCLAT for CSR exemption, resulting in no recommended CSR expenditure for the year ending March 31, 2025.

Following is the schedule of Movement in CSR provision during the period/year:

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Opening Balance	-	127.76
Add: CSR Expense to be incurred	79.96	78.68
Less: Amount Spent during the period/year	-	206.44
Closing Balance of provision	79.96	-

22. Income taxes

22.1 Income tax recognised in profit or loss

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Current tax		
In respect of the current period (refer note below)	-	-
In respect of prior period	-	-
Deferred tax		
In respect of the current period	1,203.75	1,112.76
MAT credit entitlement	-	-
	1,203.75	1,112.76
Total income tax expense recognised in the current period relating to continuing operations	1,203.75	1,112.76

Note: In light of the Company's decision to adopt the new tax regime, the tax liability for the current year is nil. This is due to the utilization of carry-forward tax losses, which have offset the taxable income for the year.

22.2 The Income Tax Expense/(Income) can be reconciled to the accounting profit as follows:

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Profit before tax from continuing operations	4,669.55	4,305.84
Normal tax rate	25.17%	25.17%
Income tax expense	1,175.23	1,083.69
Effect of expenses that are not deductible in determining taxable profit	20.12	11.59
Deferred Tax effect on Unrealised Fair Value Gain	(0.00)	(0.00)
Deferred tax not created on IndAS adjustment	-	5.93
Effect of different tax rates	-	1.05
Deferred tax created	8.40	10.50
Tax Expense/(Income)	1,203.76	1,112.76
Adjustments recognised in the current year in relation to the current tax of prior years		
Income Tax Expense/(Income) recognized in profit or loss (relating to continuing operations)	1,203.76	**1,112.76**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025
(All amounts in INR Mn, unless otherwise stated)

23. Earnings per share

Particulars	Unit	Year ended March 31, 2025	Year ended March 31, 2024
Profit for the period/year attributable to owners of the Company	₹ Mn	3,465.80	3,193.08
Weighted average number of equity shares	Number	37,20,00,000	37,20,00,000
Nominal value per equity share	₹	10.00	10.00
Basic / Diluted earnings per share	₹	**9.32**	**8.58**

There are no potential dilutents therefore Diluted EPS is considered as Equal to Basic EPS.

24. Commitments for expenditure

Particulars		Year ended March 31, 2025	Year ended March 31, 2024
(a) Capital Expenditure		-	-
(b) Operation & Maintenance expenses		4,485.90	4,926.27
(c) Overlay Expenses		1,295.78	1,306.43
Total		**5,781.68**	**6,232.70**

25. Contingent liabilities

Particulars		Year ended March 31, 2025	Year ended March 31, 2024
(a) Claims against the Company not acknowledged as debt			
-Claims filed by Operational Creditors		0.04	0.04
-Claims filed by Financial Creditors		27.02	27.02
(b) Other money for which the company is contingently liable			
- Income tax demands contested by the Company		16.86	16.86
- Goods and service tax demands contested by the Company		9,144.58	-
(c) Claim By bank for cancellation of Hedge contract		126.58	126.58

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025

26. Related Party Disclosures

(a) Name of the Related Parties and Description of Relationship:

Nature of Relationship	Name of Entity	Abbreviation used	As at March 31, 2025	As at March 31, 2024
Ultimate holding company	Infrastructure Leasing & Financial Services Limited (IL&FS)	IL&FS	√	√
Holding Company	IL&FS Transportation Networks Limited	ITNL	√	√
Fellow Subsidiaries of Holding Company & Ultimate Holding Company (Only with whom there have been transaction during the period/ there was balance outstanding at the period/year end)	IL&FS Rail Limited	IRL	√	√
	IL&FS Airport Limited	IAPL	√	√
	Nana Layja Power Company Limited	NLPCL	√	√
	Rohtas Bio Energy Limited	RBEL	√	√
	Livia India Limited	LIVIA	√	√
	Gujarat Integrated Maritime Complex Private Limited	GIMCO	√	√
	IL&FS Financial Services Limited	IFIN	√	√
	Elsamex Maintenance Services Limited	EMSL	√	√
	IL&FS Securities Services Limited	ISSL	√	√
	Tierra Enviro Limited	TEL	√	√
Key Management Personnel ("KMP") & Other Director's	Mr. Krishna Dhondu Ghag	Nominee Director	√	√
	Mr. Ajay Menon (from 20/05/2021)	Nominee Director	√	√
	Mr. Sachin Joshi (from 11/10/2022 to 29/02/2024)	Nominee Director	X	√
	Mr. Amit Kumar Agarwal (from 13/03/2024)	Nominee Director	√	√
	Mr. Jatender Sharma (from 13/01/2023)	Manager	√	√
	Mr. Devang Thakar (from 17/04/2025)	CFO	x	x
	Ms. Twara Ajmera (from 17/04/2025)	Company Secretary	x	x

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025

Related Party Disclosures (contd.)

year ended March 31, 2025

(b) transactions/ balances with above mentioned related parties (mentioned in note 26 above)

Amount in (Mn's

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Key Management Personnel ("KMP") & Other Director's	Total
Balance	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL		
Cost of investment in equity shares		3,720.00	-	-	-					3,720.00
Interest Accrued and not due LT		103.70		-						103.70
Interest Accrued and not due ST	337.41	279.90	-	34.60	-					646.92
Long-term Borrowings	4,306.48	141.30								4,447.78
Retention Money Payable		207.52								207.52
Short-term Borrowings		2,090.84	-	470.00						2,560.84
Trade Payables		4,966.09		-				22.19		4,988.28
Interest Accrued and not due ST (Recovery)			-	-	0.08		0.21			0.29

Transactions	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	Key Management Personnel ("KMP") & Other Director's	Total
Deputation Cost	-	1.01	-	-	-	-				1.01
Operation and maintenance- (Project)	-	-	-	-	-	-		229.60		229.60
Amit Kumar Agarwal	-	-	-	-		-			0.13	0.13
Ajay Menon	-	-	-	-	-	-			0.13	0.13
Krishna Ghag	-	-	-	-					0.13	0.13

Year Ended March 31, 2024

(b) balances with above mentioned related parties (mentioned in note 26 above)

Amount in (Mn's)

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Associates	Key Management Personnel ("KMP") & Other Director's	Total
Balance	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL		
Cost of investment in equity shares		3,720.00	-	-						3,720.00
Interest Accrued and not due LT		103.70	-		-					103.70
Interest Accrued and not due ST	332.41	279.90	-	34.60	-					646.92
Long-term Borrowings	4,306.48	141.30	-		-					4,447.78
Retention Money Payable		207.52	-		-					207.52
Short-term Borrowings		2,090.84	-	470.00	-					2,560.84
Trade Payables	-	4,967.36	-	-	-			21.14		4,988.50
Interest Accrued and not due ST (Recovery)			-	-	0.08		0.21			0.29

Transactions	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	Key Management Personnel ("KMP") & Other Director's	Total
Deputation Cost	-	1.08	-	-	-	-				1.08
Operation and maintenance (Project)			-	-		-		218.70		218.70
Amit Kumar Agarwal			-	-	-	-			0.03	0.03
Ajay Menon		-	-	-	-	-		-	0.12	0.12
Sachin Joshi		-	-	-		-	-		0.09	0.09
Krishna Ghag			-	-	-	-			0.12	0.12

Chenani Nashri Tunnelway Private Limited

GIANENDER & ASSOCIATES
NEW DELHI
Chartered Accountants

27. Significant terms of Service Concession Arrangements (SCA)

Particulars	Project
Brief description of Concession	Service Concession Arrangement (SCA) dated June 28, 2010 entered into with National Highways Authority of India (NHAI), envisages Rehabilitation Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00 including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT) basis in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from 23rd May 2011 (the 'Appointed date'). Premature termination is permitted only upon happening of a force majeure event or upon the parties defaulting on their obligation. the company is entitled to earn Semi-annuity of Rs. 317.52 Crores each on the dates specified in the SCA. NHAI will retain the right to levy and collect fees from the users of the Road and to permit advertisements, hoardings and other commercial activities at the Road site.
	At the end of the concession period, the company will hand over the Road to NHAI without additional consideration.
Nature of Assets	Financial Asset
Year when SCA granted	28-Jun-10
Period	20 years (Including 5 year of Construction Period)
Extension of period	NIL
Construction	Construction Completed
Premature Termination	NIL
Frequency of Annuity	Semi-Annually
Special Term	NIL

28. Segment Reporting

The company operates in a single business segment viz. Surface Transportation Business. Also it operates in a single geographic segment. In the absence of separate reportable business or geographic segments the disclosures required under the Indian Accounting Standard (INDAS) 108 on Operating Segments are not applicable.

29. Financial Instruments

1 Capital management

The Company endeavours to maintain sufficient levels of working capital, current assets, and current liabilities which helps the company to meet its expense obligations while also maintaining sufficient cash flow

The capital structure of the Company consists of net debt (borrowings as detailed in notes 13 offset by cash and bank balances) and equity of the Company (comprising issued capital, reserves, retained earnings as detailed in notes 11 to 12). The capital structure of the Company is reviewed by the management on a periodic basis.

1.1 Gearing ratio

The gearing ratio at end of the reporting period was as follows.

Amount In (Mn's)

Particulars	As at March 31, 2025	As at March 31, 2024
Debt (i)	34,122.44	34,010.97
Cash and bank balances (including cash and bank balances in a disposal company held for sale)	28,972.49	21,520.21
Net debt	5,149.95	12,490.76
Total Equity (ii)	14,175.30	10,709.50
Net debt to total equity ratio	0.36	1.17

Footnotes:
(i) Debt is defined as long- and short-term borrowings including interest accrued (excluding derivative), as described in notes 13
(ii) Equity includes all capital and reserves of the Company that are managed as capital.

2 Categories of financial instruments

Amount In (Mn's)

Particulars	As at March 31, 2025	As at March 31, 2024
Financial assets		
Fair value through profit and loss (FVTPL)		
Investment in Mutual Fund	0.20	0.18
At amortised cost		
Cash & cash equivalents; and bank balances (including Balances with Banks in deposit accounts under lien)	28,972.49	21,520.21
SCA receivable	27,343.70	30,180.89
Other financial assets (excluding Balances with Banks in deposit accounts under lien)	1,337.84	1,037.45
Financial liabilities		
At amortised cost		
Borrowings (including interest accrued)	34,122.44	34,010.97
Trade payables	4,990.52	4,990.88
Other financial liabilities (excluding interest accrued)	209.73	208.43

29. Financial Instruments

3 Financial risk management objectives

The Company 's Corporate Treasury function monitors and manages the financial risks relating to the operations of the Company . These risks include market risk (including currency risk, interest rate risk and other price risk), credit risk and liquidity risk. Refer Note 33 which states about moratorium of debt service obligations. The new board of IL&FS has undertaken certain steps for resolution of existing obligations. Accordingly, the Company is in the process of setting up mechanism to address the risks including market risk, currency risk, interest risk and liquidity risk

4 Market risk

The Company is exposed to the financial risk of changes in foreign currency exchange rates and interest rates

4.1 Foreign Currency Sensitivity Analysis

The Company was mainly exposed to the currency of United States. The contract for cross currency swap interest rate cancelled during the financial Year Ended March 31, 2022.

4.2 Interest rate swap contracts

Under interest rate swap contracts, the company agrees to exchange the difference between fixed and floating rate interest amounts calculated on agreed notional principal amounts. Such contracts enable the company to mitigate the risk of changing interest rates on the fair value of issued fixed rate debt and the cash flow exposures on the issued variable rate debt. The fair value of interest rate swaps at the end of the reporting period is determined by discounting the future cash flows using the curves at the end of the reporting period and the credit risk inherent in the contract, and is disclosed below. The average interest rate is based on the outstanding balances at the end of the reporting period. The contract for cross currency swap interest rate cancelled during the financial Year Ended March 31, 2022.

5 Interest rate risk management

The company is exposed to interest rate risk because it borrows funds at both fixed and floating interest rates

The company's exposures to interest rates on financial assets and financial liabilities are detailed in the liquidity risk management section of this note.

5.1 Interest rate sensitivity analysis

The sensitivity analyses below have been determined based on the exposure to interest rates for both derivatives and non-derivative instruments at the end of the reporting period. For floating rate liabilities, the analysis is prepared assuming the amount of the liability outstanding at the end of the reporting period was outstanding for the whole year. A 50 basis point increase or decrease represents management's assessment of the reasonably possible change in interest rates.

If interest rates had been 50 basis points higher/lower and all other variables were held constant, the company's:

i) profit for the Year would decrease/increase by ₹ 80.22 Mn (previous year ₹ 80.67 Mn.). This is mainly attributable to the company's exposure to interest rates on its variable rate borrowings; and

6 Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to The Company .The Management of The Company believes that the credit risk is negligible since its main receivable is from the grantors of the concession which is a government authority.

7 Liquidity risk management

The Company manages liquidity risk by maintaining adequate reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities. However, the Company has not been servicing any debt effetive Oct 15, 2018 in view of moratorium granted by NCLAT

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025

29. Financial Instruments

7.1 Liquidity and interest risk tables

The following tables detail the company's remaining contractual maturity for its non-derivative financial liabilities with agreed repayment periods as per the existing loan agreement. The tables have been drawn up based on the undiscounted cash flows of financial liabilities. The tables include both interest (upto scheduled repayment date) and principal cash flows. To the extent that interest flows are floating rate, the undiscounted amount is derived from interest rate curves at the end of the reporting period.

Amount In (Mn's)

Particulars	As at March 31, 2025			As at March 31, 2024		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	208.16	44,884.88	20,059.88	207.52	38,987.30	20,059.88
1-3 years	2.15	11,901.59	31.78	41.66	17,799.17	31.78
3-5 years	-	-	23.84	-	-	23.84
More than 5 years	4,966.09	-	141.30	4,988.50	-	141.30
Total	**5,176.40**	**56,786.47**	**20,256.80**	**5,237.68**	**56,786.47**	**20,256.80**

Note: - This schedule is subject to adjustment due to the repayment of Rs. 1403.18 Mn made during the year 2024 & Rs. 7796.82 Mn made during the year 2023.

The following table details the company's expected maturity for its non-derivative financial assets. The table has been drawn up based on the undiscounted contractual maturities of the financial assets including interest that will be earned on those assets. The inclusion of information on non-derivative financial assets is necessary in order to understand the company's liquidity risk management as the liquidity is managed on a net asset and liability basis.

Amount In (Mn's)

Particulars	As at March 31, 2025			As at March 31, 2024		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	4,169.69	8,749.12	26,140.03	858.35	5,719.30	21,698.79
1-3 years	-	11,241.70	-	-	11,299.65	-
3-5 years	-	11,297.61	-	-	11,360.28	-
More than 5 years	0.00	10,557.89	-	0.00	16,191.28	-
Total	**4,169.69**	**41,846.32**	**26,140.03**	**858.35**	**44,570.51**	**21,698.79**

The amounts included above for variable interest rate instruments for both non-derivative financial assets and liabilities is subject to change if changes in variable interest rates differ to those estimates of interest rates determined at the end of the reporting period.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2025

29. Financial Instruments

8 Fair value of the Company's material financial assets and financial liabilities that are measured at fair value on a recurring basis

Some of the company's financial assets and financial liabilities are measured at fair value at the end of each reporting period. The following table gives information about how the fair values of these financial assets and financial liabilities are determined (in particular, the valuation technique(s) and inputs used).

Amount in (Mn's)

Financial assets/ (financial liabilities)	Fair value		Fair value hierarchy	Valuation technique(s) and key input(s)	Significant unobservable input(s)	Relationship of unobservable inputs to fair value
	As at March 31, 2025	As at March 31, 2024				
1) Investment in Mutual Fund	0.20	0.18	Level 1	Net assets value taken as per Mutual Fund Statement	None	None

Amount in (Mn's)

	As at March 31, 2025		As at March 31, 2024	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
At amortised cost				
Cash & cash equivalents; and bank balances	28,972.49	28,972.49	21,520.21	21,520.21
SCA receivable	27,343.70	27,343.70	30,180.89	30,180.89
Other financial assets	1,337.84	1,337.84	1,037.45	1,037.45
Financial liabilities				
At amortised cost				
Borrowings	34,122.44	34,151.77	34,010.97	34,071.25
Trade payables	4,990.52	4,990.52	4,990.88	4,990.88
Other financial liabilities	209.73	209.73	208.43	208.43

Amount in (Mn's)

Fair value hierarchy	As at March 31, 2025			As at March 31, 2024		
Particulars	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Financial assets						
Fair value through profit and loss (FVTPL)						
Investment in Mutual Fund	0.20	-		0.18	-	
Financial Assets measured at amortised cost						
Cash & cash equivalents; and bank balances	-	-	28,972.49	-	-	21,520.21
SCA receivable	-	-	27,343.70	-	-	30,180.89
Other financial assets	-	-	1,337.84	-	-	1,037.45
Financial liabilities						
At amortised cost						
Borrowings	-	-	34,151.77	-	-	34,031.97
Trade payables	-	-	4,990.52	-	-	5,030.16
Other financial liabilities	-	-	209.73	-	-	207.52

The fair values of the financial assets and financial liabilities above have been determined in accordance with generally accepted pricing models based on a discounted cash flow analysis, with the most significant inputs being the discount rate that reflects the credit risk of counterparties.

30 **Impairment:**

During financial year 2019-20, as part of the divestment process, the IL&FS Board received a single bid from an external party for the Company. The bid was subsequently accepted by the Board of Directors of ITNL and IL&FS, subject to necessary approvals from various regulators, Committee of Creditors, NCLAT, and other relevant entities. The final price is subject to adjustment.

Based on the bid received, the Company recognized impairment of Receivable under Service Concession Arrangements in the financial statements during the earlier year. In light of the bid being continued and also received NCLT approval for the same, it is the view of the Company's management that no further impairment is required for the year ended March 31, 2025.

31 **Going Concern :**

Union of India has superseded the earlier board of Holding/Ultimate Holding Company and appointed new Board from October 01, 2018. Entire Group is going through severe financial stress. National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 has also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, which means that the Company is able to meet only financial obligation towards Senior Lenders and operational creditors. In view of this classification and the moratorium order, the Company has stopped servicing financial obligations towards all its financial creditors. The Company has received a bid from third party and the same has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares has also been received. Hence on the basis of above, these accounts are prepared on the basis of going concern.

32 **Debt servicing:**

National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 had also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, indicating that it is not able to meet all obligations (financial and operational) including the payment obligations to senior secured financial creditors. Accordingly, the Company is permitted to make only those payments necessary to maintain and preserve the going concern status. NCLAT wide its order dated March 12, 2020, had upheld its interim order of October 15, 2018. The said order specifies October 15, 2018 as the date of initiation of the Resolution Process of the Company. Accordingly the Company has not accrued any interest , default interest, penal interest and any other similar charges after the said cut off date of October 15,2018 untill March 31, 2025.

Considering the delay in the resolution process of the Company, and the significant cash lying with the Company, basis the constant demand from the lenders, during the financial year ended March 31, 2023, the Company approved an Interim Distribution to the Senior Secured Lenders of the Company be undertaken, for an amount of Rs 9,200.00 Mn which is equivalent to the principal amount that would have been paid to them under the debt restructuring plan that has been in-principle approved by the CNTL CoC. Out of Rs 9,200 Mn, Company paid Rs 7,796.82 Mn to the senior lenders during the year March 31, 2023 and Rs 1,403.18 Mn is being paid to one of the secured senior lenders, during the year March 31, 2024.

The banks have debited an amount of Rs 6,844.17 Mn for Interest & Principal (Interest & Principal for the period of October 18 - March 20) from the Escrow accounts of the Company maintained with them. The Company has written to the banks for reversal of same in view of October 15, 2018 Order of NCLT giving moratorium. The banks have not reversed the same till date. The same amount (after reducing interest upto Oct 15, 2018) was shown as recoverable in the financial statements. These amounts have not been handed back to the Company till date. As part of the interim distribution, the company adjusted Rs 119.90 Mn during the financial year March 31, 2024 and Rs 5,929.42 Mn during the financial year March 31, 2023 out of Rs 6,844.17 Mn against the loan, which was repaid during the financial year March 31, 2024, and the financial year March 31, 2023.

33 **Interest Expense Recognition :**

Pursuant to its order dated 14th February 2025, the Hon'ble National Company Law Tribunal (NCLT) approved the sale of the Company's shareholding to Cube Highways and Infrastructure II Pte Ltd. ("Cube") (the "Proposed Sale"), in accordance with Cube's binding offer dated 16th February 2024 (the "Binding Offer").

One of the key terms of the Binding Offer includes Cube's proposal to pay specific amounts towards the settlement of interest liabilities payable to the Company's external lenders. The relevant terms regarding such payments are as follows:

a) Interest for Prior Periods: ₹4,000 million for the period from June 2022 to March 2024.

b) Interest for Current Period: ₹5.25 million per day, effective from 1st April 2024 until the completion of the transaction.

As of the Year Ended 31st March 2025, the total interest expense that would have been recognized under this arrangement amounts to ₹5,916.25 million, subject to the successful execution of the transaction.

34 **Non-compliance of applicable laws and regulations :**

The Company is not in compliance with the Companies Act 2013, as applicable to the Company. These non compliances pertain to appointment of Directors, filings with Regulators, appointment of Key Management personnel and such other regulations. The Company has estimated possible obligations arising out of these non-compliances and recognised the provision in the books of account.

35 In accordance with the Company's adoption of the new tax regime, the tax liability for the current period/year is determined to be nil. This favorable outcome is attributed to the utilization of carry-forward tax losses, which have effectively offset the taxable income for the year. Consequently, the Company will not be eligible to avail the tax holiday period of 10 years as stipulated under section 80IA.

As a result of these circumstances, the Company has recognized net deferred tax liabilities in its financial statements. These deferred tax liabilities are expected to be reversed over the duration of the concession period.

36 Micro and small enterprises

Under the Micro, Small and Medium Enterprises Development Act, 2006 ('MSMED') which came into force from 2 October 2006, certain disclosures are required to be made relating to micro and small enterprises. On the basis or the information and records available with the management, there are no outstanding dues to the Micro and Small enterprises as defined in the Micro, Small mid Medium Enterprises Development Act, 2006 as set out in the following disclosures·

Amount In (Mn's)

Particulars	As at March 31, 2025	As at March 31, 2024
(a) the Principal amount and the interest due thereon (to be shown separately) remaining unpaid to any supplier at the end of each accounting period/year;	22.28	-
(b) the amount interest paid by the buyer in terms of section 16 of the Micro, Small and Medium Enterprises development Act, 2006 (27 of 2006), along with the amount of the payment made to the supplier beyond the appointed day during each accounting period/year;	-	-
(c) Amount of interest due and payable for the period of delay in making payment (which have been paid but beyond the appointed day during the period) but without adding the interest specified under the Micro, Small and Medium Enterprises Development Act, 2006;	-	-
(d) Amount of interest accrued and remaining unpaid at the end of each accounting period/year; and	-	-
(e) The amount of further interest remaining due and payable even in the succeeding years, until such date when the interest dues above are actually paid to the small enterprise, for the purpose of disallowance of a deductible expenditure under section 23 of the Micro, Small and Medium Enterprises Development Act, 2006.	-	-

37 Disclosure as Per Ind AS 115 Revenue from Contracts with Customers

A. Applicability of Ind AS 115

Ind AS 115 was issued on 28 March 2018 and supersedes Ind AS 11 Construction Contracts and Ind AS 18 Revenue and it applies, with limited exceptions, to all revenue arising from contracts with its customers. Ind AS 115 establishes a five-step model to account for revenue arising from contracts with customers and requires that revenue be recognised at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer.

The Ministry of Corporate Affairs(MCA), on March 28, 2018, notified Ind AS 115 "Revenue from Contracts with Customers" as a part of the Companies (Indian Accounting Standards) Amendment Rules, 2018. The Company has followed the IND AS 115 accordingly.

Service contracts relating to Change of Scope have an original duration of one year or less and therefore the company uses practical expedient to not disclose unsatisfied performance obligations

37 **Disclosure as Per Ind AS 115 Revenue from Contracts with Customers (Continue)**

B. Disaggregation of revenue

Set out below is the disaggregation of the Company's revenue from contracts with customers:

Amount In (Mn's)

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Type of Services		
(a) Operation and maintenance income	491.98	480.48
(b) Periodic maintenance income	16.80	19.18
(c) Finance income	2,880.24	3,142.75
Total Revenue from contracts with customers	**3,389.02**	**3,642.41**

Geographical markets

Amount In (Mn's)

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
India	3,389.02	3,642.41
Outside India	-	-
Total Revenue from contracts with customers	**3,389.02**	**3,642.41**

Timing of Revenue recognition

Amount In (Mn's)

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Services transferred at a point in time	-	-
Services transferred over time	3,389.02	3,642.41
Total Revenue from contracts with customers	**3,389.02**	**3,642.41**

Contract Balances

Amount In (Mn's)

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Receivable under Service Concession		
Trade Receivable	27,343.70	30,180.89
Less: Expected Credit Loss	-	-
Total Receivable	**27,343.70**	**30,180.89**
Contract Liabilities	-	-

Reconciling the amount of revenue recognised in the statement of profit and loss with the contracted price

Amount In (Mn's)

Particulars	Year ended March 31, 2025	Year ended March 31, 2024
Revenue as per contracted price	3,389.02	3,642.41
Adjustments - Rebate/Cash Discount	-	-
Revenue from contracts with customers	**3,389.02**	**3,642.41**

Performance obligation

Information about the Company's performance obligations are summarised below:

Revenue from Finance income

The performance obligation in service of Finance Income for concession arrangements under financial asset model is recorded using the effecive interest method.

Revenue from Operation and maintenance income and Periodic maintenance income

The performance obligation in service of Operation and maintenance income and Periodic maintenance income for concession arrangements under financial asset model is recorded in each period as and when services are rendered in accordance with Ind AS 115 Revenue from contracts with customers

38 Ratios

The following are analytical ratios for the period ended March 31, 2025 and March 31, 2024

Amount in (Mn's)

Particulars	Numerator	Denominator	As at March 31, 2025	As at March 31, 2024	Variance	Remarks
Current Ratio	Total Current assets	Total Current liabilities	1.29	0.99	30%	(a)
Debt – Equity Ratio	Total Debt (1)	Total Equity	2.33	3.08	-24%	(b)
Debt Service Coverage Ratio #	Earnings available for debt service(2)	Debt Service(3)	#	#		
Return on Equity (ROE)	Net Profits after taxes	Average Total Equity	28%	35%	21%	(c)
Trade receivables turnover ratio	Revenue	Average Trade Receivable	$	$		
Trade payables turnover ratio	Purchases of services and other expenses	Average Trade Payables	0.11	0.11	3%	(d)
Net capital turnover ratio	Revenue from operations	Working Capital	0.45	(11.47)	104%	(e)
Net profit ratio	Net Profit for the year	Revenue from operations	102%	88%	17%	(f)
Return on capital employed (ROCE)	Earning before interest and taxes	Capital Employed(4)	10%	10%	0%	
Return on Investment(ROI)	Income generated from investments	Average investments	NA	NA	NA	

(1) Debt represents total debt value as per financial statements.

(2) Net Profit after taxes + Non-cash operating expenses + Interest + other adjustments like loss on sale of Fixed assets etc.

(3) Project debt payments (Interest payments + Principal repayments) for the current year.

(4) Tangible net worth + deferred tax liabilities + project debt.

In view of the moratorium granted by NCLAT, no debt serviced since October 15, 2018, hence the said ratio is not applicable / relevant.

$ Not applicable under IND-AS, being annuity project and revenue is recognised as per IND-AS 115.

(a) Current ratio increase is due to increase in cash balance & other bank balance due to non payment of interest due to moratorium granted by NCLAT, no debt serviced since October 15, 2018.

(b) Increase in profit during FY 2024-25.

(c) Return on equity has improved on account of increase in profit during FY 2024-25 as compare to FY 2023-24.

(d) Marginal increased in Trade payables during the year.

(e) Net capital turnover ratio has improved on account of increase in profit during FY 2024-25 as compare to FY 2023-24 & increased in current ratio - refer (a)

(f) Net profit ratio has increased due to increase in interest on fixed deposit.

39 Investigations by Serious Fraud Investigation Office ("SFIO") and other regulatory agencies:

The Ministry of Corporate Affairs (MCA), Government of India, has vide its letter dated October 1, 2018 initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS (ultimate holding company) and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of investigation of affairs of ITNL (the Holding Company), SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and it is understood that the relevant information is being provided by ITNL to the agency. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

40 Additional Regulatory Information required as per Schedule III:

a) The Company does not have any investment property, hence the requirement regarding disclosure and valuation by a registered valuer as defined under rule 2 of Companies (Registered Valuers and Valuation) Rules, 2017 is not applicable.

b) The Company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets or both during the period/year.

c) The Company has not given any loans or advances in the nature of loans to specified persons.

d) Benami property : There are no proceedings being initiated or are pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988(45 of 1988) and rules made thereunder.

e) The Company had not borrowed secured loan from Financial institution against current assets during the current period.

f) Wilful Defaulter : The Company has not been declared as wilful defaulter by any bank or financial institution or other lender.

g) The Company does not have any transactions or relationship with Struck Off Companies.

h) The Company has Registered all the charges against its assets with Registrar of Companies (ROC). There were no satisfaction of charge with ROC is pending as on March 31, 2025.

i) The Company does not have any subsidiary company or step down companies.

j) A statement of ratio analysis has been provided, refer note 38.

k) There are no Scheme of Arrangements during the period.

l) The Company has not advanced or loaned or invested funds to any other person(s) or entity(ties), including foreign entities (Intermediaries) from borrowed funds or share premium or any other source or kind of funds.

m) Additional information to be disclosed by way of Notes to Statement of Profit and Loss.

i) The Company does not have any undisclosed income as on March 31, 2025.

ii) The Company has not traded or invested in any kind of Crypto Currency or Virtual Currency.

41 Previous year figures have been re-grouped, re-worked and re-classified wherever necessary, to make them comparable with current year/period figures.

Particulars	Earlier classification	Reclassification	Current Classification	Remarks
Other financial liabilities		(39.28)	39.28	Provision for expenses reclassified from Trade payables to Other financial liabilities
Trade payables	39.28	39.28	-	Provision for expenses reclassified from Trade payables to Other financial liabilities
Current tax assets (Net)		(268.78)	268.78	Current tax liabilitiess reclassified from Current tax liabilities to Current tax assets (Net)
Current tax liabilities	268.78	268.78	-	Current tax liabilitiess reclassified from Current tax liabilities to Current tax assets (Net)

42 Approval of financial statements

The Financial statements were approved for issue by the Board of Directors on August 18, 2025

In terms of our report attached
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004663N

G. K. Agrawal
Partner
Membership Number : 081603

Place : New Delhi
Date: 18 August 2025

For and on behalf of the Board

Non-Executive Director
Ajay Menon
DIN-02497302

Devang Thakar
CFO
Place : Mumbai
Date: 18 August 2025

Non-Executive Director
Amit Kumar Agarwal
DIN-10501239

Twara Ajmera
Company Secretary

INDEPENDENT AUDITOR'S REPORT

To the Members of Chenani Nashri Tunnelway Limited

Report on Audit of Special Purpose Financial Statements

Qualified Opinion

We have audited the accompanying Special Purpose Financial Statements of **Chenani Nashri Tunnelway Limited ("the Company")** which comprises the:

a. Special Purpose Balance Sheets as at 31st July 2025;
b. Statement of Profit and Loss (including Other comprehensive income) for the period from 01st April 2025 to 31st July 2025;
c. Statement of Cash Flows for the period from 01st April 2025 to 31st July 2025;
d. Statement of Changes in Equity for the period ended 31st July 2025;
e. Material accounting policy information and other explanatory information (together hereinafter referred to as 'Special Purpose Financial Statements').

These special purpose financial statements have been prepared in accordance with basis of preparation as specified in note no 2.1 read with note no 2.2 to the special purpose financial statements.

In our opinion and to the best of our information and according to the explanations given to us **except for the possible effects of the matter described in the Basis for Qualified Opinion section of our report**, the aforesaid special purpose financial statements give a true and fair view in case of:

a. the balance sheet, of the state of affairs of the company as at 31st July 2025;
b. the statement of profit and loss (including other comprehensive income) of the company's loss for the period from 01st April 2025 to 31st July 2025;
c. the cash flow statement, of the cash movements of the company for the period from 01st April 2025 to 31st July 2025;
d. the statement of changes in equity for the period ended 31st July 2025;

Basis for Qualified Opinion

During the FY 2018-19, the Company had recognized and during the year continues to recognize thereafter impairment loss of Rs. 7,107.98 Million by comparing the carrying amount of the receivables under the head 'Receivable under Service Concession Arrangements' that were measured at amortized cost and bid received from third party for acquisition of entire Company. Thus, the Company had in the FY 2018-19 and continues thereafter to measure the receivables at fair value then recognized to arrive at present amortized carrying value as at the end of the year, which is not in accordance with Ind AS 109 'Financial Instruments' & read with accounting policy 3.7.4. The consequential impact of the above on the balance under the head 'Receivable under Service Concession Arrangements' reported in the balance sheet and on the profit for the year are unascertainable.

Consequently, the unreserved and explicit statement of compliance with Indian Accounting Standards as notified in the Companies (Indian Accounting Standards) Rules, 2015 and further amendments thereto in Note 2.1 is not proper.

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We conducted our audit of the special purpose financial statements in accordance with the Standards on Auditing (SAs), as specified under section 143(10) of the Companies Act, 2013 ("the Act"). Our responsibilities under those Standards are further described in the 'Auditor's Responsibilities for the Audit of the Special Purpose Financial Statements' section of our report. We are independent of the Company in accordance with the 'Code of Ethics' issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the financial statements under the provisions of the Act and rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We have also complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements, issued by the ICAI. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the special purpose financial statements.

Emphasis of matter – Basis of Accounting

We draw attention to:

1. **Note no. 32 regarding Interest Expense Recognition:**
   In terms of Paragraph 61 (3) on Pg 87 of Hon'ble NCLAT Orders dated 12th March, 2020, the company has not accounted accrued interest, default interest, penal charges or other similar charges after the cut-off date of 15th October,2018 till 31st March, 2025.
   Further In pursuance of Hon'ble NCLT Orders dated 14th February 2025, the Hon'ble National Company Law Tribunal (NCLT) approved the sale of the Company's shareholding to Cube Highways and Infrastructure II Pte Ltd. ("Cube") (the "Proposed Sale"), in accordance with Cube's binding offer dated 16th February 2024 (the "Binding Offer").
   One of the key terms of the Binding Offer includes Cube's proposal to pay specific amounts towards the settlement of interest liabilities payable by the Company to external lenders. The relevant terms regarding such payments are as follows:

   a) Interest for Prior Periods: ₹4,000 million for the period from June 2022 to March 2024.
   b) Interest for Current Period: ₹5.25 million per day, effective from 1st April 2024 until the completion of the transaction.

   As of the period ended 31st July 2025, the total interest expense have been recognized under this arrangement amounts to ₹6,556.75 million, subject to the successful execution of the transaction.

2. **Note no. 33 regarding Debt Servicing:**
   In view of the delay in the resolution process of the Company and the significant cash balances available, and considering the constant demand from lenders, the Board approved an Interim Distribution to the Senior Secured Lenders amounting to ₹7,796.82 million and ₹1,403.18 million during FY 2022-23 and FY 2023-24 respectively.

   Further, the banks debited an aggregate of ₹6,844.17 million (towards interest and principal for the period October 2018 to March 2020) from the Company's escrow accounts. The Company has formally requested the reversal of these debits, citing the Hon'ble NCLAT's Orders dated October 15, 2018, which imposed a moratorium. However, the banks have not reversed the same. Accordingly, after adjusting for interest up to October 15, 2018, this balance was reflected as recoverable in the financial statements. As part of the interim distribution, the Company adjusted ₹5,929.42 million in FY 2022-23 and re₹119.90 million in FY 2023-24 against this amount, corresponding to loan repayments in the respective years.

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Additionally, as part of the resolution process, and pursuant to the approvals obtained from the lenders, NHAI "the Authority" and the Hon'ble NCLT, the Company's shareholding is to be transferred to a new investor. In accordance with the proposed transfer of equity and the admitted claims, the lenders had agreed to a revised debt amount as of October 15, 2018, under the approved debt restructuring plan. Consequently, the outstanding debt was required to be adjusted by the lenders to reflect the revised amount. However, based on the statements of account received from the lenders, it appears that the lenders have neither implemented the debt restructuring nor accounted for the interim distribution, and have continued to levy interest with effect from October 15, 2018, notwithstanding the moratorium granted by the Hon'ble NCLAT. This has resulted in a net variance of ₹ 22,495.67 million between the debt balances as per the lenders' statements of account and those reflected in the Company's records.

3. **Note no. 38 Investigations by Serious Fraud Investigation Office ("SFIO") and other regulatory agencies:**
   The Ministry of Corporate Affairs, Government of India, had initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS Ltd and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of its investigation, SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and relevant information is being provided by ITNL to the agency. The company has not received any direct communication from SFIO. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

Our opinion is not modified in respect of above matters.

Material Uncertainty Related to Going Concern

We draw your attention to Note no. 31 to the accompanying Ind AS financial statements which describes that Entire Group is going through severe financial stress and liquidity issue in repayment of various loan instruments. Hon'ble NCLAT had granted moratorium towards repayment obligation vide Orders dated 15th October,2018. Union of India had also filed petition against IL&FS Limited & its Group Companies in National Company Law Tribunal and superseded earlier Board of the Holding/Ultimate Holding Company. These conditions indicate the existence of a material uncertainty that may cast significant doubt about the Company's ability to continue as a going concern. As per the management, going concern assumption is appropriate for preparation of financial statements, as the company has received a bid from third party and which has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares has also been received.

Our Opinion is not modified in respect of above matter.

Responsibility of Management and Those Charged with Governance for the Special Purpose Financial Statements

The Company's Management and Board of Directors is responsible for preparation and presentation of these special purpose financial statements that give a true and fair view of the company's financial position and financial performance including other Comprehensive Income, the Cash Flow Statement and the Statement of Changes in Equity, and notes to the financial statements, including a summary of material accounting policies and other explanatory information, prepared in accordance with the basis of preparation described in note no 2.1 read with note no 2.2 of the special purpose financial statements. This responsibility also includes maintenance of adequate accounting records for

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safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and the design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the special purpose financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the special purpose financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.
Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Special Purpose Financial Statements

Our objectives are to obtain reasonable assurance about whether the special purpose financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these special purpose financial statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the special purpose financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve Collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the special purpose financial statements, including the disclosures, and whether the special purpose

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financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Restriction on Distribution and Use

Our auditor's report on Special Purpose Financial Statements is intended and has been prepared solely in order to comply with the holding company's requirements for their proposed deal of divestment of equity investment in the Company as mentioned in note 2.2 to the financial statements and it should not be used by any other person or for any other purpose, or referred to in any other document, or distributed to any other person without our prior written consent. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this report is shown or into whose hands it may come without our prior consent in writing.

For Gianender & Associates
Chartered Accountants
FRN: 004661N

MANJU AGRAWAL
Digitally signed by MANJU AGRAWAL
Date: 2025.09.11 19:27:11 +05'30'

Manju Agrawal
(Partner)
Membership No. 083878

UDIN: 25083878BMOKVZ6016
Date: 11th September 2025
Place: New Delhi

Plot No. 6, Site No. 21, Geeta Mandir Marg, New Rajender Nagar, New Delhi – 110060
Ph: 011- 42412008, 43038497, Email: gka_ma@yahoo.com; info.gianender@gmail.com

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Balance sheet as at July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Notes	As at July 31, 2025		As at March 31, 2025	
ASSETS					
Non-current Assets					
(a) Property, plant and equipment	4		1.46		1.46
(b) Intangible Assets			-		-
(c) Financial assets					
(i) Investments			-		-
(ii) Trade receivables			-		-
(iii) Other financial assets	5		25,408.14		24,322.39
(d) Other non-current assets	6		-		-
Total Non-current Assets			**25,409.60**		**24,323.85**
Current Assets					
(a) Inventories			-		-
(b) Financial assets					
(i) Investments	7	0.20		0.20	
(ii) Cash and cash equivalents	8	3,826.68		3,374.84	
(iii) Other Bank Balance	9	25,143.77		25,597.65	
(iv) Other financial assets	5	4,044.30	33,014.95	4,359.16	33,331.85
(c) Current tax assets (Net)	10		149.70		139.98
(d) Other current assets	6		107.44		133.37
Total Current Assets			**33,272.09**		**33,605.20**
Total Assets			**58,681.69**		**57,929.05**
EQUITY AND LIABILITIES					
Equity					
(a) Equity share capital	11	3,720.00		3,720.00	
(b) Instruments entirely equity in nature		-		-	
(c) Other Equity	12	9,260.39		10,455.30	
Equity attributable to owners of the Company			**12,980.39**		**14,175.30**
Total Equity			**12,980.39**		**14,175.30**
LIABILITIES					
Non-current Liabilities					
(a) Financial Liabilities					
(i) Borrowings	13	14,819.31		13,036.14	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise		-		-	
b) total outstanding dues other than micro & small enterprise		-		-	
(iii) Other financial liabilities	14	3.22	14,822.53	208.16	13,244.30
(b) Provisions			-		-
(c) Deferred tax liabilities	10.1		3,026.01		4,375.88
Total Non-current Liabilities			**17,848.54**		**17,620.18**
Current liabilities					
(a) Financial liabilities					
(i) Borrowings	13	21,006.29		20,007.77	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise		-		-	
b) total outstanding dues other than micro & small enterprise		117.25		4,990.52	
(iii) Other financial liabilities	14	6,640.47	27,764.01	1,080.10	26,078.39
(c) Provisions			-		-
(d) Other current liabilities	15		88.75		55.18
Total Current Liabilities			**27,852.76**		**26,133.57**
Total Liabilities			**45,701.30**		**43,753.75**
Total Equity and Liabilities			**58,681.69**		**57,929.05**

Note 1 to 40 forms part of the financial statements.

In terms of our report of even date.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

MANJU AGRAWAL
Digitally signed by MANJU AGRAWAL
Date: 2025.09.11 19:22:14 +05'30'

Manju Agrawal
Partner
Membership Number : 083878

Place : New Delhi
Date : 11 September 2025

For and on behalf of the Board

KRISHNA DHONDU GHAG
Digitally signed by KRISHNA DHONDU GHAG
Date: 2025.09.11 14:58:34 +05'30'

Non-Executive Director
Krishna Ghag
DIN-02491661

AJAY GOPALKRISHNAN MENON
Digitally signed by AJAY GOPALKRISHNAN MENON
Date: 2025.09.11 14:54:53 +05'30'

Non-Executive Director
Ajay Menon
DIN-02497302

DEVANG BHANUPRASAD THAKAR
Digitally signed by DEVANG BHANUPRASAD THAKAR
Date: 2025.09.11 14:44:21 +05'30'

Devang Thakar
CFO

TWARA J AJMERA
Digitally signed by TWARA J AJMERA
Date: 2025.09.11 18:15:17 +05'30'

Twara Ajmera
Company Secretary

Place : Mumbai
Date : 11 September 2025

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of Profit & Loss for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

	Particulars	Notes	Period ended July 31, 2025	Year ended March 31, 2025
I.	Revenue from Operations	17	1,091.61	3,389.02
II.	Other income	18	688.29	1,874.38
III.	**Total Income (I+II)**		**1,779.90**	**5,263.40**
IV.	**Expenses**			
	Operating expenses	19	186.14	464.04
	Finance costs (net)	20	6,887.83	30.94
	Modification Loss	30	2.79	-
	Other expenses	21	180.89	98.87
	Total expenses (IV)		**7,257.65**	**593.84**
V	**Profit before tax**		**(5,477.75)**	**4,669.55**
VI	Less: Tax expense			
	(1) Current tax	22	-	-
	(2) Deferred tax	22.1	(1,349.87)	1,203.75
	Total Tax expenses		**(1,349.87)**	**1,203.75**
VII	**Profit/(loss) after tax (V-VI)**		**(4,127.88)**	**3,465.80**
VIII	**Other Comprehensive Income / (Loss)**			
	Items that may be reclassified to profit or loss			
	(a) Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge	12	-	-
	(b) Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge		-	-
	Total other comprehensive income / (loss)		**-**	**-**
IX	**Total comprehensive income / (loss) for the year (VII+VIII)**		**(4,127.88)**	**3,465.80**
X	Earnings per equity share (face value ` 10 per share):	23		
	(1) Basic (in Rs.)		(11.10)	9.32
	(2) Diluted (in Rs.)		(11.10)	9.32

Note 1 to 40 forms part of the financial statements.

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N
MANJU AGRAWAL Digitally signed by MANJU AGRAWAL Date: 2025.09.11 19:23:21 +05'30'
Manju Agrawal
Partner
Membership Number : 083878

Place : New Delhi
Date : 11 September 2025

For and on behalf of the Board

KRISHNA DHONDU GHAG Digitally signed by KRISHNA DHONDU GHAG Date: 2025.09.11 14:59:15 +05'30'
Non-Executive Director
Krishna Ghag
DIN-02491661

AJAY GOPALKRISHNAN MENON Digitally signed by AJAY GOPALKRISHNAN MENON Date: 2025.09.11 14:54:14 +05'30'
Non-Executive Director
Ajay Menon
DIN-02497302

DEVANG BHANUPRASAD THAKAR Digitally signed by DEVANG BHANUPRASAD THAKAR Date: 2025.09.11 14:45:09 +05'30'
Devang Thakar
CFO
Place : Mumbai
Date : 11 September 2025

TWARA J AJMERA Digitally signed by TWARA J AJMERA Date: 2025.09.11 18:16:18 +05'30'
Twara Ajmera
Company Secretary

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Cash Flow Statement for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Cash flows from operating activities		
Profit for the year	(4,127.88)	3,465.80
Adjustments for:		
Deferred tax liabilities	(1,349.87)	1,203.75
Finance Income	(887.52)	(2,880.24)
Modification Loss / (Gain)	2.79	(124.19)
Interest on short term deposit	(661.32)	(1,723.04)
Interest and finance cost	6,887.83	30.94
Periodic Maintenance income	(32.58)	(16.80)
Operation and maintenance Income	(171.51)	(491.98)
Balances written off	-	-
Provision no Longer Required	(26.53)	-
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	(0.00)	(0.01)
Sub total	**(366.59)**	**(535.77)**
Movements in working capital:		
(Increase)/decrease in other financial assets & other assets (current and non current)	25.85	(0.31)
Increase/ (Decrease) in financial liabilities & other liabilities (current and non current)	163.94	81.17
Sub total	189.79	80.86
Cash generated from operations	**(176.80)**	**(454.91)**
Income taxes paid (net of refunds)	(9.72)	134.05
Net cash generated by operating activities (A)	**(186.52)**	**(320.86)**
Cash flows from investing activities		
(Increase) / Decrease in receivable under service concession arrangements (net)	(0.00)	6,350.40
Interest received	184.48	1,422.74
(Investments)/Redemption of Investment in Mutual funds	-	-
Movement in other bank balances	453.88	(4,607.39)
Net cash used in investing activities (B)	**638.36**	**3,165.75**
Cash flows from financing activities		
Proceeds / (Repayment) from Non Current borrowings (net)	-	-
Proceeds from Current borrowings (net)	-	-
Finance costs paid	-	-
Net cash generated in financing activities (C)	**-**	**-**
Net increase/ (decrease) in cash and cash equivalents (A+B+C)	**451.84**	**2,844.89**
Cash and cash equivalents at the beginning of the year	3,374.84	529.95
Cash and cash equivalents at the end of the year	**3,826.68**	**3,374.84**

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Cash Flow Statement for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Components of Cash and Cash Equivalents		
Cash on hand	-	-
Balances with Banks in current accounts	23.71	3,374.84
Balances with Banks in deposit accounts	3,802.97	-
Cash and Cash Equivalents	**3,826.68**	**3,374.84**
Cash and cash equivalents for statement of cash flows	**3,826.68**	**3,374.84**

Disclosing change in financial liabilities

Particular	31-Mar-25	Cash flow	Non Cash changes	31-Jul-25
Long Term - Secured Loan	15,985.29	-	(629.09)	15,356.20
Unsecured Loan	17,058.62	-	(6,935.41)	10,123.21
Unsecured Bonds/debentures	-	-	10,346.19	10,346.19
Total	**33,043.91**	**-**	**2,781.69**	**35,825.60**

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

MANJU AGRAWAL
Digitally signed by MANJU AGRAWAL
Date: 2025.09.11 19:24:11 +05'30'

Manju Agrawal
Partner
Membership Number : 083878

Place : New Delhi
Date : 11 September 2025

For and on behalf of the Board

KRISHNA DHONDU GHAG
Digitally signed by KRISHNA DHONDU GHAG
Date: 2025.09.11 14:59:52 +05'30'

Non-Executive Director
Krishna Ghag
DIN-02491661

AJAY GOPALKRISHNAN MENON
Digitally signed by AJAY GOPALKRISHNAN MENON
Date: 2025.09.11 14:53:27 +05'30'

Non-Executive Director
Ajay Menon
DIN-02497302

DEVANG BHANUPRASAD THAKAR
Digitally signed by DEVANG BHANUPRASAD THAKAR
Date: 2025.09.11 14:46:09 +05'30'

Devang Thakar
CFO

TWARA J AJMERA
Digitally signed by TWARA J AJMERA
Date: 2025.09.11 18:17:16 +05'30'

Twara Ajmera
Company Secretary

Place : Mumbai
Date : 11 September 2025

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of changes in equity for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

a. Equity share capital	Period ended July 31, 2025	Year ended March 31, 2025
Balance as at the beginning of the period/year	3,720.00	3,720.00
Changes in Equity Share Capital due to prior period errors	-	-
Restated balance at the beginning of the current reporting period	**3,720.00**	**3,720.00**
Changes in equity share capital during the period/year	-	-
Balance as at end of the period/year	3,720.00	3,720.00

-

b. Other equity	Reserves and surplus	
	Retained earnings	Deemed Equity
Balance as at April 1, 2024	6,989.50	-
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	**6,989.50**	**-**
Profit/(Loss) for the year	3,465.80	-
Other comprehensive income for the year, net of income tax		-
Total comprehensive income for the year	**3,465.80**	**-**
Other adjustments		-
Balance as at March 31, 2025	**10,455.30**	**-**
Balance as at April 1, 2025	10,455.30	-
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	**10,455.30**	**-**
Profit/(Loss) for the year/period	(4,127.88)	-
Other comprehensive income for the year, net of income tax	-	-
Total comprehensive income for the year/period	**(4,127.88)**	**-**
Addition during the year	-	2,932.97
Other adjustments	-	-
Balance as at July 31, 2025	**6,327.42**	**2,932.97**

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

MANJU AGRAWAL
Digitally signed by MANJU AGRAWAL
Date: 2025.09.11 19:24:48 +05'30'

Manju Agrawal
Partner
Membership Number : 083878

Place : New Delhi
Date : 11 September 2025

For and on behalf of the Board

KRISHNA DHONDU GHAG
Digitally signed by KRISHNA DHONDU GHAG
Date: 2025.09.11 15:00:35 +05'30'

Non-Executive Director
Krishna Ghag
DIN-02491661

AJAY GOPALKRISHNAN MENON
Digitally signed by AJAY GOPALKRISHNAN MENON
Date: 2025.09.11 14:52:43 +05'30'

Non-Executive Director
Ajay Menon
DIN-02497302

DEVANG BHANUPRASAD THAKAR
Digitally signed by DEVANG BHANUPRASAD THAKAR
Date: 2025.09.11 14:47:10 +05'30'

Devang Thakar
CFO

TWARA J AJMERA
Digitally signed by TWARA J AJMERA
Date: 2025.09.11 18:18:17 +05'30'

Twara Ajmera
Company Secretary

Place : Mumbai
Date : 11 September 2025

General Information & Material Accounting Policies

Note No-1

1. General information

The Company was incorporated under the Companies Act 1956 on June 02, 2010. The Company is a special purpose vehicle (SPV) promoted by IL&FS Transportation Networks Limited (ITNL). The company registered address is "The IL&FS Financial Center, Plot C22, G Block, Bandra Kurla Complex, Mumbai - 400051." The Company has entered into a Concession Agreement (CA) on June 28, 2010 with The National Highways Authority of India (NHAI) for Rehabilitation, Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00(New Alignment) including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT basis) in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from the 23rd May 2011 (the 'Appointed date').

Note No-2

2. Material accounting policies

2.1 Statement of compliance

The special purpose financial statements have been prepared in accordance with Indian Accounting Standards ("Ind AS") notified under the Companies (Indian Accounting Standards) Rules, 2015 (as amended from time to time) and other relevant provisions of the Companies Act, 2013("the Act").

The Balance Sheet, the Statement of Profit and Loss and the Statement of Changes in Equity are prepared and presented in the format prescribed in the Division II of Schedule III to the Act. The Statement of Cash Flows has been prepared and presented as per the requirements of Ind AS 7 "Statement of Cash Flows".

2.2 Basis of preparation and presentation

This special purpose financial statement is required to be prepared in order comply with the holding company's requirements for their proposed deal of divestment of equity investment in the Company.

The Special purpose financial statements are presented in INR, which is also the Company's functional currency and all values are rounded to the nearest millions (INR 000,000), except earnings per share and except otherwise indicated.

The special purpose financial statements have been prepared on a historical cost basis, except for the following asset and liabilities which have been measured at fair value:

- Derivative financial instruments,
- Certain financial assets and liabilities measured at fair value (refer accounting policy regarding financial instruments),

Historical cost is generally based on the fair value of the consideration given in exchange for goods and services. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these special purpose financial statements is determined on this basis.

2.3 Use of estimates

The preparation of special purpose financial statements in conformity with IND AS requires the Management to make estimates and assumptions that affect the reported amount of assets, liabilities, revenues and expenses and disclosure of contingent liabilities on the date of special purpose financial statements. The recognition, measurement, classification or disclosures of an item or information in the special purpose financial statements have been made relying on management estimates to a greater extent.

2.4 Fair value measurement

The Company measures financial instruments, such as, derivatives at fair value at each balance sheet date.
Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Company.
The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs. All assets and liabilities for which fair value is measured or disclosed in the special purpose financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the special purpose financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period. External valuers are involved for valuation of significant assets, such as properties and significant liabilities, such as contingent consideration.

For the purpose of fair value disclosures, the Company has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.
This note summarises accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

3. Accounting for rights under service concession arrangements and revenue recognition

i. Recognition and measurement

The Company builds, operates and maintains infrastructure assets under public-to-

private Service Concession Arrangements (SCAs), which is an arrangement between the "grantor" (a public sector entity/authority) and the "operator" (a private sector entity) to provide services that give the public access to major economic and social facilities utilizing private-sector funds and expertise. The infrastructures accounted for by the Company as concessions are mainly related to the activities concerning roads.

Concession contracts are public-private agreements for periods specified in the SCAs including the construction, up gradation, restoration of infrastructure and future services associated with the operation and maintenance of assets in the concession period. Revenue recognition, as well as, the main characteristics of these contracts are detailed in Note 3.iii.

With respect to service concession arrangements, revenue and costs are allocated between those relating to construction services and those relating to operation & maintenance services, and are accounted for separately. Consideration received or receivable is allocated by reference to the relative fair value of services delivered when the amounts are separately identifiable. The infrastructure used in a concession are classified as an intangible asset or a financial asset, depending on the nature of the payment entitlements established in the concession agreement.

When the amount of the arrangement consideration for the provision of public services is substantially fixed by a contract, the Company recognizes revenues from construction services for public facilities (infrastructures) by the percentage-of-completion method, and recognizes the consideration as a financial asset and the same is classified as “Receivables against Service Concession Arrangements”. The Company accounts for such financial assets at amortized cost, calculates interest income based on the effective interest method and recognizes it in revenue as Finance Income.

ii. Contractual obligation to restore the infrastructure to a specified level of serviceability

The Company has contractual obligations to maintain the infrastructure to a specified level of serviceability or restore the infrastructure to a specified condition during the concession period and/or at the time of hand over to the grantor of the SCA. Such obligations are measured at the best estimate of the expenditure that would be required to settle the obligation at the balance sheet date. In case of concession arrangements under financial asset model, such costs are recognized in the period in which such costs are actually incurred.

iii. Revenue recognition

Finance income for concession arrangements under financial asset model is recognized using the effective interest method. Revenues from operations and maintenance services and overlay services are recognized in each period as and when services are rendered in accordance with Ind AS 115 Revenue from contract with customers.

iv. Revenue from construction contracts

The Company recognizes and measures revenue, costs and margin for providing construction services during the period of construction of the infrastructure in accordance with Ind AS 115 'Construction Contracts'.
When the outcome of a construction contract can be estimated reliably and it is probable that it will be profitable, contract revenue and contract costs associated with the construction contract are recognised as revenue and expenses respectively by reference to the percentage of completion of the contract activity at the reporting date. The percentage of completion of a contract is determined considering the proportion that contract costs incurred for work performed upto the reporting date bear to the estimated total contract costs.

For the purposes of recognizing revenue, contract revenue comprises the initial amount of revenue agreed in the contract, the variations in contract work, claims and incentive payments to the extent that it is probable that they will result in revenue and they are capable of being reliably measured.

The percentage of completion method is applied on a cumulative basis in each accounting period to the current estimates of contract revenue and contract costs. The effect of a change in the estimate of contract revenue or contract costs, or the effect of a change in the estimate of the outcome of a contract, is accounted for as a change in accounting estimate and the effect of which are recognized in the Statement of Profit and Loss in the period in which the change is made and in subsequent periods.

When the outcome of a construction contract cannot be estimated reliably, revenue is recognized only to the extent of contract costs incurred of which recovery is probable and the related contract costs are recognized as an expense in the period in which they are incurred.

When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense in the Statement of Profit and Loss in the period in which such probability occurs.

v. Borrowing cost related to SCAs

In case of concession arrangement under financial asset model, borrowing costs attributable to construction of the infrastructure are charged to Statement of Profit and Loss in the period in which such costs are incurred.

In case of concession arrangement under intangible asset model, borrowing costs attributable to the construction of infrastructure assets are capitalised up to the date of the final completion certificate of the asset / facility received from the authority for its intended use specified in the Concession Agreement. All borrowing costs subsequent to the capitalization of the intangible assets are charged to the Statement of Profit and Loss in the period in which such costs are incurred.

vi. Claims

Claims raised with the concession granting authority towards reimbursement for costs incurred due to delay in handing over of unencumbered land to the Company for construction or other delays attributable solely to the concession granting authority are recognised when there are is a reasonable certainty that there will be inflow of economic benefits to the Company. The claims when recognized as such are reduced from the carrying amount of the intangible asset / financial asset under the service concession arrangement, as the case may be, to the extent the claims relate to costs earlier included as a part of the carrying amount of these assets. Further, these claims are credited to profit or loss to the extent it is probable to have economic benefits to the company.

3.1 Borrowing costs

Borrowing costs are recognised in the period to which they relate, regardless of how the funds have been utilised, except where it relates to the financing of construction of development of assets requiring a substantial period of time to prepare for their intended future use. Interest is capitalised up to the date when the asset is ready for its intended use. The amount of interest capitalised (gross of tax) for the period is determined by applying the interest rate applicable to appropriate borrowings outstanding during the period to the average amount of accumulated expenditure for the assets during the period. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds

All other borrowing costs are recognised in profit or loss in the period in which tare incurred.

3.2 Taxation

3.2.1 Current tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. Taxable profit differs from 'profit before tax' as reported in the statement of profit and loss because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Company's current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Current income tax relating to items recognised outside profit or loss is recognised outside profit or loss (either in other comprehensive income or in equity). Current tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity. Management periodically evaluates positions taken in the tax return with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

3.2.2 Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the special purpose financial statements and the corresponding tax bases values used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets (including unused tax credits such as MAT credit and unused tax losses such as carried forward business loss and unabsorbed depreciation) are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from the initial recognition (other than in a business combination) of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit. In addition, deferred tax liabilities are not recognized if the temporary difference arises from the initial recognition of goodwill.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax relating to items recognised outside profit or loss is recognised outside profit or loss (either in other comprehensive income or in equity). Deferred tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity.
The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of to recover or settle the carrying amount of its assets and liabilities.

3.3 Property, plant and equipment

Property, plant and equipment acquired by the Company are reported at acquisition cost, with deductions for accumulated depreciation and impairment losses, if any.

The acquisition cost includes the purchase price (excluding refundable taxes) and expenses, such as delivery and handling costs, installation, legal services and consultancy services, directly attributable to bringing the asset to the site and in working condition for its intended use.

Where the construction or development of any asset requiring a substantial period of time to set up for its intended use is funded by borrowings, the corresponding borrowing costs are capitalized up to the date when the asset is ready for its intended use.

All assets are depreciated on a Straight Line Method (SLM) of Depreciation, over the useful life of assets as prescribed under Schedule II of the Companies Act, 2013.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying of the asset and is recognised in profit or loss.

3.4 Impairment of tangible assets / intangible asset

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to

the smallest Company of cash-generating units for which a reasonable and consistent allocation basis can be identified.

In assessing value in use, the estimated future cash flows are discounted to their present value using appropriate discount rate.

Recoverable amount is the higher of fair value less costs of disposal and value in use.
If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognised immediately in profit or loss.

A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in the statement of profit or loss unless the asset is carried at a revalued amount, in which case, the reversal is treated as a revaluation increase.

Foreign Currencies:

The Company's special purpose financial statements are presented in INR, which is also the Company's functional currency. In preparing the special purpose financial statements of Company, transactions in currencies other than the Company's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. The gain or loss arising on translation of non-monetary items measured at fair value is treated in line with the recognition of the gain or loss on the change in fair value of the item (i.e., translation differences on items whose fair value gain or loss is recognized in OCI or statement of profit or loss are also recognized in OCI or statement of profit or loss, respectively). Exchange differences on monetary items are recognized in profit or loss in the period in which they arise except for exchange differences on transactions entered into in order to hedge certain foreign currency risks.

3.5. Provision

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. When the

Company expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit and loss net of any reimbursement.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (when the effect of the time value of money is material).

3.6 Financial instruments

Financial assets and financial liabilities are recognized when a company becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss ("FVTPL) are recognized immediately in the statement of profit and loss.

3.7 Financial assets

All regular way purchases or sales of financial assets are recognized and derecognized on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognized financial assets are subsequently measured in their entirety at either amortized cost or fair value, depending on the classification of the financial assets.

3.7.1 Classification of financial assets – debt instruments

Debt instruments that meet the following conditions are subsequently measured at amortised cost (except for debt instruments that are designated as at fair value through profit or loss on initial recognition):

- the asset is held within a business model whose objective is to hold assets in order

to collect contractual cash flows;

- the contractual terms of the instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

After initial measurement, such financial assets are subsequently measured at amortised cost using the effective interest rate (EIR) method. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance income in the profit or loss. The losses arising from impairment are recognised in the profit or loss.

3.7.2 Amortised cost and Effective interest method

The effective interest method is a method of calculating the amortised cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

Income is recognized on an effective interest basis for debt instruments other than those financial assets classified as at FVTPL. Interest income is recognized in profit or loss and is included in the "Other income" line item.

3.7.3 Financial assets at FVTPL

Debt instruments that do not meet the amortized cost or FVOCI criteria are measured at FVTPL. In addition, debt instruments that meet the amortized cost or FVOCI criteria but are designated as at FVTPL are measured at FVTPL.

A debt instrument that meets the amortized cost or FVTOCI criteria may be designated as at FVTPL upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency that would arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases. The Company has not designated any debt instrument as at FVTPL.
Financial assets at FVTPL are measured at fair value at the end of each reporting period, with any gains or losses arising on re-measurement recognized in profit or loss. The net gain or loss recognized in profit or loss is included in in the "Other income" line item.

3.7.4 Impairment of financial assets

In accordance with Ind AS 109, the Company applies expected credit loss (ECL) model for measurement and recognition of impairment loss on the following financial assets and credit risk exposure:
a) Financial assets that are debt instruments, and are measured at amortised cost e.g., loans, debt securities, deposits, trade receivables and bank balance
b) Trade receivables or any contractual right to receive cash or another financial asset that result from transactions that are within the scope of Ind AS 11 and Ind AS 18 (referred to as 'contractual revenue receivables' in these illustrative special purpose financial statements)
c) Loan commitments which are not measured as at FVTPL

The Company measures the loss allowance for a financial instrument at an amount equal to the lifetime expected credit losses if the credit risk on that financial instrument has increased significantly since initial recognition. If the credit risk on a financial instrument has not increased significantly since initial recognition, the Company measures the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. However, for trade receivables, the Company measures the loss allowance at an amount equal to lifetime expected credit losses. In cases where the amounts are expected to be realized upto one year from the due date, loss for the time value of money is not recognized, since the same is not considered to be material.

When making the assessment of whether there has been a significant increase in credit risk since initial recognition, the Company uses the change in the risk of a default occurring over the expected life of the financial instrument instead of the change in the amount of expected credit losses. To make that assessment, the Company compares the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of initial recognition and considers reasonable and supportable information, that is available without undue cost or effort, that is indicative of significant increases in credit risk since initial recognition.

3.8 Reclassification of financial assets

The Company determines classification of financial assets and liabilities on initial recognition. After initial recognition, no reclassification is made for financial assets which are equity instruments and financial liabilities. For financial assets which are debt instruments, a reclassification is made only if there is a change in the business model for managing those assets. Changes to the business model are expected to be infrequent. The Company's senior management determines change in the business model as a result of external or internal changes which are significant to the Company's operations. Such changes are evident to external parties. A change in the business model occurs when the Company either begins or ceases to perform an activity that is significant to its operations. If the Company reclassifies financial assets, it applies the reclassification prospectively from the reclassification date which is the first day of the immediately next

reporting period following the change in business model. The Company does not restate any previously recognised gains, losses (including impairment gains or losses) or interest.

3.8.1 Derecognition of financial assets

The Company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. If [the Company] the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Company recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.
On derecognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss if such gain or loss would have otherwise been recognized in profit or loss on disposal of that financial asset.

On derecognition of a financial asset other than in its entirety (e.g., when the Company retains an option to repurchase part of a transferred asset), [the Company] the Company allocates the previous carrying amount of the financial asset between the part it continues to recognised under continuing involvement, and the part it no longer recognises on the basis of the relative fair values of those parts on the date of the transfer. The difference between the carrying amount allocated to the part that is no longer recognised and the sum of the consideration received for the part no longer recognised and any cumulative gain or loss allocated to it that had been recognised in other comprehensive income is recognised in profit or loss if such gain or loss would have otherwise been recognised in profit or loss on disposal of that financial asset. A cumulative gain or loss that had been recognised in other comprehensive income is allocated between the part that continues to be recognised and the part that is no longer recognised on the basis of the relative fair values of those parts.

3.9 Modification of Cash Flows of financial assets and revision in estimates of Cash flows

The rate considered for recognizing Finance Income (EIR) and fair valuation of the Receivable under SCA finalised on achievement of PCOD / COD for the Project. Thereafter this rate will remain constant during the balance concession period unless there is an impairment / reversal of impairment of asset.

When the contractual cash flows of a financial asset are renegotiated or otherwise modified and the renegotiation or modification does not result in the derecognition of that financial asset in accordance with Ind AS 109, the Company recalculates the gross carrying amount of the financial asset and recognises a modification gain or loss in profit or loss. The gross carrying amount of the financial asset is recalculated as the present value of the renegotiated or modified contractual cash flows that are discounted at the financial asset's original effective interest rate. Any costs or fees incurred are adjusted to the carrying amount of the modified financial asset and are amortised over the remaining term of the modified financial asset.

If the Company revises its estimates of payments or receipts (excluding modifications and changes in estimates of expected credit losses), it adjusts the gross carrying amount of the financial asset or amortised cost of a financial liability to reflect actual and revised estimated contractual cash flows. The Company recalculates the gross carrying amount of the financial asset or amortised cost of the financial liability as the present value of the estimated future contractual cash flows that are discounted at the financial instrument's original effective interest rate. The adjustment is recognised in profit or loss as income or expense.

3.10 Financial liabilities and equity instruments-

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate
The Company's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.

3.10.1 Classification as debt or equity

Debt and equity instruments issued by a Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument

3.10.2 Financial liabilities

All financial liabilities are subsequently measured at amortized cost using the effective interest method

3.10.3 Financial liabilities subsequently measured at amortised cost

Financial liabilities are measured at amortized cost at the end of subsequent accounting periods. The carrying amounts of financial liabilities that are subsequently measured at

amortized cost are determined based on the effective interest method. Interest expense

that is not capitalized as part of costs of an asset is included in the 'Finance costs' line item.

The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

3.10.4 Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or have expired. An exchange between with a lender of debt instruments with substantially different terms is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, a substantial modification of the terms of an existing financial liability (whether or not attributable to the financial difficulty of the debtor) is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

3.11 Cash and cash equivalents

Cash and cash equivalent in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company’s cash management.

3.12 Cash Flow Statement:

The statement of cash flows shows the changes in cash and cash equivalents arising during the year from operating activities, investing activities and financing activities

The cash flows from operating activities are determined by using the indirect method. Net income is therefore adjusted by non-cash items, such as measurement gains

or losses, changes in provisions, impairment of property, plant and equipment and intangible assets, as well as changes from receivables and liabilities. In addition, all income

and expenses from cash transactions that are attributable to investing or financing activities are eliminated. Interest received or paid is classified as operating cash flows

The cash flows from investing and financing activities are determined by using the direct method

3.13 Earnings per Equity Share:

Basic earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares outstanding during the period.

Diluted earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares considered for deriving basic earnings per equity share and also the weighted average number of equity shares that could have been issued upon conversion of all dilutive potential equity shares. The dilutive potential equity shares are adjusted for the proceeds receivable had the equity shares been actually issued at fair value (i.e. the average market value of the outstanding equity shares). Dilutive potential equity shares are deemed converted as of the beginning of the period, unless issued at a later date. Dilutive potential equity shares are determined independently for each period presented.

3.14 Critical accounting judgments:

The preparation of Special purpose financial statements in conformity with the recognition and measurement principles of Ind AS requires management to make estimates and assumptions that affect the reported balances of assets and liabilities, disclosures of contingent liabilities at the date of the Special purpose financial statements and the reported amounts of income and expenses for the periods presented.

Management believes that the estimates used in the preparation of the special purpose financial statements are prudent and reasonable. Actual results could differ from these estimates. In case the actual results are different those from estimates, the effect thereof is given in the special purpose financial statements of the period in which the events materialize. Any change in such estimates is accounted prospectively.

The matters to be disclosed will be dictated by the circumstances of the individual entity, and by the significance of judgements and estimates made to the performance and financial position of the entity. Instead of disclosing this information in a separate note, it may be more appropriate to include such disclosures in the relevant asset

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised, and future periods are affected.

3.15 Key sources of estimation of uncertainty

Key source of estimation of uncertainty at the date of Special purpose financial statements, which may cause a material adjustment to the carrying amounts of assets and liabilities within the next financial year, is in respect of-

a) Periodical Major Maintenance
   The management, estimates expenditure w.r.t periodic major maintenance by using a model that incorporates a number of assumptions, including the life of the concession agreement and the expected cost of the periodic major maintenance which are considered as reasonable by the management.
b) Fair value measurement of financial instruments
   When the fair values of financial assets and financial liabilities recorded in the balance sheet cannot be measured based on quoted prices in active markets, their fair value is measured using valuation techniques including the DCF model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments. Refer Note 29 for further disclosures.

3.16 Recent accounting pronouncements:

Ministry of Corporate Affairs ("MCA") notifies new standards or amendments to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time. On May 7, 2025, MCA amended the Companies (Indian Accounting Standards) Amendment Rules, 2025, as below:

Ind AS 21-Effects of Changes in Foreign Exchange Rates

The Ministry of Corporate Affairs has amended Ind AS 21 to clarify how entities should assess and disclose when a currency is not exchangeable. Entities must now estimate spot exchange rates using observable data or alternative methods if direct exchange is not possible. Additional disclosures are required, including estimation techniques, exchange restrictions, and financial impact. These amendments apply to annual reporting periods beginning on or after 1 April 2025.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

4. Property, plant and equipment

Previous Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2024	Additions	Deductions	Balance at March 31, 2025	Balance as at April 1, 2024	Deductions	Depreciation expense	Balance at March 31, 2025	As at March 31, 2025	As at March 31, 2024
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	**1.46**	**-**	**-**	**1.46**	**-**	**-**	**-**	**-**	**1.46**	**1.46**

Current Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2025	Additions	Deductions	Balance at July 31, 2025	Balance as at April 1, 2025	Deductions	Depreciation expense	Balance at July 31, 2025	As at July 31, 2025	As at March 31, 2025
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	**1.46**	**-**	**-**	**1.46**	**-**	**-**	**-**	**-**	**1.46**	**1.46**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

5. Other financial assets (Unsecured, considered good)

Particulars	As at July 31, 2025		As at March 31, 2025	
	Non Current	Current	Non Current	Current
Receivable under service concession arrangements	25,407.44	3,025.08	24,321.77	3,021.93
Security Deposits - Others	0.00	-	0.00	-
Other advances (Receivable from Banks) (Refer note - 32)	-	-	-	794.85
Interest receivable on fixed deposit		1,019.22		542.38
Foreign Currency Forward Contracts	-	-	-	-
Receivable from NHAI - GST witheld on Annuity	-	-	-	-
Receivable from NHAI - Utility Shifting & Change of scope	115.27	-	115.19	-
Less: Provision for doubtful receivable	(114.57)	-	(114.57)	-
Total	**25,408.14**	**4,044.30**	**24,322.39**	**4,359.16**

6. Other assets (Unsecured, considered good unless otherwise mentioned)

Particulars	As at July 31, 2025		As at March 31, 2025	
	Non Current	Current	Non Current	Current
Advance towards Insurance premium		46.04		69.06
Indirect tax balances	-	61.40	-	64.31
Unbilled Revenue	-	-	-	-
Total	**-**	**107.44**	**-**	**133.37**

7. Current Investments

Particulars	As at July 31, 2025		As at March 31, 2025	
	Qty	Amount	Qty	Amount
Unquoted Investments				
(a) Investment in SBI Liquid Fund Regular Growth Mutual fund	48.698	0.20	48.698	0.20
TOTAL INVESTMENTS	**48.698**	**0.20**	**48.698**	**0.20**

(Note: Cost of Investment - Rs. 1,36,458.56 & NAV as at July 31, 2025 - Rs. 4,101.20)

8. Cash and cash equivalents

For the purposes of the statement of cash flows, cash and cash equivalents include cash on hand and in banks, net of outstanding bank overdrafts. Cash and cash

equivalents at the end of the reporting period as shown in the statement of cash flows can be reconciled to the related items in the balance sheet as follows:

Particulars	As at July 31, 2025	As at March 31, 2025
Balances with Banks		
In current accounts	23.71	3,374.84
In deposit accounts with original maturity less than 3 months	3,802.97	-
Cheques, drafts on hand	-	-
Cash on hand	-	-
Others	-	-
Cash and cash equivalents	**3,826.68**	**3,374.84**

9. Other Bank Balances

Particulars	As at July 31, 2025	As at March 31, 2025
Balances with Banks in deposits account having original maturity more than three months and remaining maturity less than twelve months	25,143.77	25,597.65
		-
Total	**25,143.77**	**25,597.65**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

10. Current tax assets and liabilities

Particulars	As at July 31, 2025		As at March 31, 2025	
	Non Current	Current	Non Current	Current
Current tax assets				
Advance payment of taxes	-	418.48	-	408.76
Total	**-**	**418.48**	**-**	**408.76**
Current tax liabilities				
Provision for tax	-	268.78	-	268.78
Total	**-**	**268.78**	**-**	**268.78**
Net Tax Assets / (Liabilities)	**-**	**149.70**	**-**	**139.98**

10.1 Deferred tax balances

Particulars	As at July 31, 2025		As at March 31, 2025	
	Non Current	Current	Non Current	Current
Deferred tax assets	(2,508.39)	-	(1,324.60)	-
Less :- Deferred tax liabilities	5,534.40	-	5,700.48	-
Total	**3,026.01**	**-**	**4,375.88**	**-**

22.3 Deferred tax Disclosures

Deferred tax assets and deferred tax liabilities have been offset wherever the Company has a legally enforceable right to set off current tax assets against current tax liabilities and where the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority

Deferred Tax Asset in respect of Unabsorbed Business Loss/ depreciation has been recognized to the extent reversals of Deferred Tax Liability and Taxable Profits are available before end of concession period.

Significant management judgement is considered in determining provision for income tax, deferred tax assets and liabilities and recoverability of deferred tax assets. The recoverability of deferred tax assets is based on estimate of the taxable income for the period over which deferred tax assets will be recovered. The Company has unabsorbed business losses/depreciation which according to the management will be used to set off taxable profit arising in subsequent years from operation of the Company

The profitability projections used for determining the recoverability of deferred tax asset has number of variables viz. Revenue projections, restructuring of debt, incurrence of overlay etc which are subject to change.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

11. Equity Share Capital

Particulars	As at July 31, 2025		As at March 31, 2025	
	Number of shares in Mn	Amount In (Rs. Mn)	Number of shares in Mn	Amount In (Rs. Mn)
Authorised				
Equity Shares of ₹ 10/- each	372.00	3,720.00	372.00	3,720.00
Issued, Subscribed and Paid up				
Equity Shares of ₹ 10/- each fully paid	372.00	3,720.00	372.00	3,720.00
Total	**372.00**	**3,720.00**	**372.00**	**3,720.00**

11.1 Reconciliation of the number of equity shares outstanding at the beginning and at the end of the period/year:

	As at July 31, 2025		As at March 31, 2025	
Particulars	Number of shares in Mn	Amount In (Rs. Mn)	Number of shares in Mn	Amount In (Rs. Mn)
Shares outstanding at the beginning of the period/year	372.00	3,720.00	372.00	3,720.00
Shares issued during the period/year	-	-	-	-
Shares outstanding at the end of the period/year	**372.00**	**3,720.00**	**372.00**	**3,720.00**

11.2 Details of shares held by the holding company, the ultimate controlling party, their subsidiaries and associates

Number in Mn

Particulars	As at July 31, 2025	As at March 31, 2025
Holding Company - IL&FS Transportation Networks Limited & its Nominees	372.00	372.00

11.3 Details of shares held by each shareholder holding more than 5% shares

Equity Shareholder	As at July 31, 2025		As at March 31, 2025	
	Number of shares held in Mn	% holding in the class of shares	Number of shares held in Mn	% holding in the class of shares
IL&FS Transportation Networks Limited & its Nominees, the holding company	372.00	100%	372.00	100%
Total	**372.00**	**100%**	**372.00**	**100%**

11.4 Terms of Equity :
The Company has one class of equity shares with face value of ₹ 10 each fully paid-up. Each shareholder has a voting right in proportion to his holding in the paid-up equity share capital of the Company.
In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.
Where final dividend is proposed by the Board of Directors, it is subject to the approval of the shareholders in the Annual General Meeting.
During the year, no dividend has been proposed or paid.
The Company has not issued any securities during the period/year with the right / option to convert the same into equity shares at a later date.
The Company has not reserved any shares for issue under options and contracts / commitments for the sale of shares/disinvestment.
The shares issued carry equal rights to dividend declared by the company and no restrictions are attached to any specific shareholder.

11.5 Shareholding of promoter
The details of promoter shareholding are given below :

Name of the Promotor	As at July 31, 2025			As at March 31, 2025		
	Number of shares held in Mn	% of total shares	% of change during the period/year	Number of shares held in Mn	% of total shares	% of change during the year
IL&FS Transportation Networks Limited & it's nominees	372.00	100%	-	372.00	100%	-
Total	**372.00**	**100%**	**-**	**372.00**	**100%**	**-**

12. Other Equity

Particulars	As at July 31, 2025	As at March 31, 2025
Retained earnings		
Balance at beginning of period/year	10,455.30	6,989.50
Profit / (Loss) during the period/year	(4,127.88)	3,465.80
Balance at end of the year	**6,327.42**	**10,455.30**
Deemed Equity		
Balance at beginning of period/year	-	-
Adjustments during the period/year	2,932.97	-
Other adjustments the period/year	-	-
Balance at end of the period /year	**2,932.97**	**-**
Total	**9,260.39**	**10,455.30**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

13.Borrowings at amortised cost

Particulars	As at July 31, 2025			As at March 31, 2025		
	Non-Current Borrowings	Current portion	Current Borrowings	Non-Current Borrowings	Current portion	Current Borrowings
Secured – at amortised cost						
(i) Term loans						
- from banks	4,214.74	10,191.02	-	12,924.18	3,090.45	-
- from financial institutions	278.83	692.06	-	-	-	-
Unsecured – at amortised cost						
(i) Bonds / debentures						
- from related parties (Refer Note 26)						
- Series-A to H	10,346.19					
(ii) Term loans						
- from banks	-	-	-	-	7,500.00	-
- from financial institutions *	-	10,123.21	-	-	2,550.00	-
- from related parties (Refer Note 26)	-	-	-	141.30	4,306.48	2,560.84
Unamortised borrowing cost	(20.45)	-	-	(29.34)	-	-
Total	**14,819.31**	**21,006.29**	**-**	**13,036.14**	**17,446.93**	**2,560.84**
Less: Current maturities of long term debt clubbed under "Short Term Borrowing"		21,006.29	-		17,446.93	-
Add: Current maturities of long term debt clubbed under "Short Term Borrowing"		-	21,006.29			17,446.93
Total	**14,819.31**	**-**	**21,006.29**	**13,036.14**	**-**	**20,007.77**

Terms of Repayment of Term Loans and Other Loans

1) Security for Senior & Sub Debt Facility:

(A) The Senior Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by:

a) a first mortgage and charge on all the Company's immoveable properties, both present and future, save and except the project assets;

b) a first charge on all the Company's tangible moveable assets, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles, all other moveable assets and current assets, both present and future, save and except the project assets;

c) a charge on the Company's accounts including, but not limited to the escrow account where all revenues, disbursements, receivables shall be deposited and in all funds from time to time deposited therein and in all authorised investments or other securities representing all amounts credited to the escrow account;

d) a charge on all intangibles of the Company including but not limited to goodwill, rights, and undertakings, present and future provided any realisation there of shall be credited to the escrow account and the charge as aforesaid shall be limited to the extent permissible under the waterfall of the priorities as per article 31 of the concession agreement and article 4 of escrow agreement.

e) a charge on the uncalled capital of the Company;
Provided that charge at (e) above, shall be limited for ensuring that the Company calls the balance uncalled capital and makes the shares fully paid up.

f) an assignment by way of security:
(i) of the right, title and interest of the Company in, to and under the project documents including the concession agreement, duly acknowledged and consented to by NHAI and by the relevant counter-parties to such project documents to the extent not expressly provided in the concession agreement or each such project document, all as amended, varied or supplemented from time to time;
(ii) of the right, title and interest of Company in, to and under all the government approvals and insurance contracts; and
(iii) of the right, title interest of the Company in, to and under any letter of credit, guarantee, including contractor guarantees and liquidated damages and performance bond provided by any party to the project documents.

(B) The Subordinate Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by a second charge on the above mentioned in para (A) above.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

2) Terms of Payments:

(a) As per the existing common loan agreement with lenders, the Company has undertaken to repay the senior and sub debt loan to each senior and sub debt lender in accordance with the following repayment schedule. Please note that this schedule is subject to adjustment due to the repayment of Rs. 7,796.82 mn made during the year 2023:

Repayment Schedule:

Year	Senior Debts	Sub Debts	Total
October 2018 to March 2019	862.77	114.52	977.29
June 2019 to March 2020	1,806.43	239.77	2,046.20
June 2020 to March 2021	1,970.90	261.60	2,232.50
June 2021 to March 2022	2,121.88	281.64	2,403.53
June 2022 to March 2023	2,278.26	302.40	2,580.66
June 2023 to March 2024	2,494.16	331.06	2,825.22
June 2024 to March 2025	2,552.65	338.82	2,891.47
June 2025 to March 2026	2,552.65	338.82	2,891.47
June 2026 to September 2026	8,556.80	1,135.77	9,692.57
Total	**25,196.49**	**3,344.41**	**28,540.90**
Repayment made as per interim distribution during the year 2023	(7,796.82)	-	(7,796.82)
Direct Debit by SBI adjusted during the year 2023	(5,929.42)	-	(5,929.42)
Adjustment as per IndAS	(26.08)	-	(26.08)
Direct Debit by SBI adjusted during the current financial year	(794.85)		(794.85)
Adjustment as per restructuring	865.58	(783.09)	82.49
Borrowing Outstanding as the end of the period/year	**11,514.90**	**2,561.31**	**14,076.22**

b) Standard Chartered Bank had granted a long-term loan in form of External Commercial Borrowing ("ECB") of USD 43,000,000 to the Company. As per the facility agreement dated December 2, 2015 and amended on January 21, 2016, till the long term loan remains outstanding in books, the lender was required to accrue interest on the aforesaid loan at an interest rate of LIBOR plus Margin (as defined in the facility agreement). The final maturity date of the loan is February 28, 2026.

During the financial year 2022, Standard Chartered bank assigned its rights under the Facility Agreement to Deutsche Bank AG, London branch. Further, the Cross Currency interest rate SWAP contract executed by the Company with Standard Chartered Bank, Mumbai Branch, was cancelled during previous the year. As a part of Claim Management process (as per the direction of NCLAT), the claim for Deutsche Bank AG, London has been admitted for Rs 2803.05 Mn (consisting of loan amount of Rs 2,782.95 Mn and interest of Rs 20.10 Mn). Accordingly, the liability of the Company towards ECB has been crystalized for Rs 2,782.95 Mn. Since the claim for this financial liability has been admitted in INR, no further hedge is required for this

Repayment Schedule:

Total ECB Loans repayment on quarterly basis installments commencing from February 28, 2017 and terminating on February 28, 2026 :

Year	Amount in INR
Financial Year 2018-2019	92.45
Financial Year 2019-2020	195.26
Financial Year 2020-2021	213.19
Financial Year 2021-2022	228.31
Financial Year 2022-2023	247.00
Financial Year 2023-2024	265.23
Financial Year 2024-2025	265.23
Financial Year 2025-2026	1,021.61
Cashflow Hedge Reserve Adjustment	200.41
Repayment made as per interim distribution during the year 2024	(1,403.18)
Direct Debit by SBI adjusted during the year 2024	(119.90)
Adjustment as per restructuring	74.38
Grand Total	**1,279.97**

Issue of Optionally Convertible Debentures (OCDs)

Pursuant to the Hon'ble NCLT order dated February 14, 2025, approving the consummation of the sale transaction of the Company with Cube, a Restated Share Purchase Agreement (SPA) was executed on March 21, 2025, among IL&FS, ITNL, CNTL, and Cube.

One of the conditions precedent under the Restated SPA requires the conversion of Crystallized Outstanding Liabilities ("COL"), being the claims admitted by Grant Thornton as on October 15, 2018, and payable by the Company to IL&FS Group companies, into suitable debt securities. Accordingly, the COL, aggregating Rs. 13,000.28 million (comprising unsecured loans and operational debt payable to IL&FS, IL&FS Airports Limited, and ITNL), has been converted into Optionally Convertible Debentures ("OCDs") of face value of Rs. 100 each.

The OCDs has been issued in different series, with each series carrying a coupon rate linked to the original interest rate applicable on the respective loans. A Debt Securities Agreement among IL&FS, ITNL, IL&FS Airports Limited, CNTL, and Cube has been executed in this regard. Details of each series is provided below:

Series	Amount	Coupon Rate	Redemption
A	5,187.05	0.001%	March 08, 2032
B	160.20	11.260%	March 08, 2032
C	217.22	13.200%	March 08, 2032
D	81.62	13.050%	March 08, 2032
E	11.69	12.900%	March 08, 2032
F	161.48	12.700%	March 08, 2032
G	1,984.18	12.800%	March 08, 2032
H	5,196.83	16.000%	March 08, 2032

Depending on the cash position of the Company at the Closing Date, Cube has proposed that each series of OCDs shall be partially redeemed out of free cash available, with the balance OCDs to be acquired by Cube through a secondary purchase from the IL&FS Group companies, at consideration determined in accordance with the IL&FS Distribution Framework.

The Board of Directors and Shareholders of the Company, at their meeting held on April 2, 2025, have approved the conversion of COL and issuance of relevant series of OCDs in terms of the above structure.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

14. Other financial liabilities

Particulars	As at July 31, 2025		As at March 31, 2025	
	Non Current	Current	Non Current	Current
Interest accrued - Others (refer note 33)		6,471.51		208.39
Interest accrued - Related Parties		18.61		750.33
Retention Money Payable - Related Parties	-		207.52	
Related parties - Others	3.22		0.64	
Unsecured deposits		0.70		1.05
Provision for expenses		148.70		119.81
Audit fees - Provision		0.95		0.52
Total	**3.22**	**6,640.47**	**208.16**	**1,080.10**

15. Other liabilities

Particulars	As at July 31, 2025		As at March 31, 2025	
	Non Current	Current	Non Current	Current
Statutory dues				
-Tax deducted at source	-	88.75	-	55.18
-Goods & service tax	-	-	-	-
Total	**-**	**88.75**	**-**	**55.18**

16. Trade payables

Particulars	As at July 31, 2025		As at March 31, 2025	
	Non Current	Current	Non Current	Current
Due to Micro and small enterprises				
- Related Parties		-		22.19
- Other payables		0.09		0.09
Due to other than Micro and small enterprises:				
- Related Parties		112.96		4,966.09
- Other payables		4.20		2.15
Total	**-**	**117.25**	**-**	**4,990.52**

16.2 Ageing of Trade Payables as on July 31, 2025

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	0.09	-	-	-	0.09
Others	116.46	0.32	-	0.38	117.16
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
					-
Total	**116.55**	**0.32**	**-**	**0.38**	**117.25**

16.3 Ageing of Trade Payables as on March 31, 2025

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	22.28	-	-	-	22.28
Others	1.91	1.06	0.05	4,965.22	4,968.24
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
					-
Total	**24.19**	**1.06**	**0.05**	**4,965.22**	**4,990.52**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

17. Revenue from operations

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
(a) Operation and maintenance income	171.51	491.98
(b) Periodic maintenance income	32.58	16.80
(c) Finance income	887.52	2,880.24
Total	**1,091.61**	**3,389.02**

18. Other Income **Provision no Longer Required**

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Interest on short term deposit	661.32	1,723.04
Interest on Income tax refund	-	26.21
Construction Income towards Change of Scope	0.44	0.93
Modification Gain	-	124.19
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	0.00	0.01
Provision no Longer Required	26.53	-
Total	**688.29**	**1,874.38**

19. Operating Expenses

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Operation and maintenance expenses	156.43	448.72
Periodic maintenance expenses	29.71	15.32
Construction Cost towards Change of Scope	-	-
Total	**186.14**	**464.04**

20. Finance costs

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Interest on loans for fixed period (Refer note below 32 & 33)		
Interest on term loan	6,556.75	-
Interest on debentures	300.35	-
Finance charges *	8.88	30.94
Other finance cost #	21.85	-
Total (a+b)	**6,887.83**	**30.94**

* Represents unammortised borrowing cost expensed out during the year

21. Other expenses

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Legal and consultation fees	23.27	14.48
Deputation Cost	1.27	1.19
Insurance	-	-
Rates and taxes	0.74	0.02
Bank commission	0.00	0.42
Advertising expenses	-	0.04
Concession fees	0.00	0.00
Corporate Social Responsibility Exp. (refer note 21.2)	28.62	79.96
Directors' fees	0.14	0.46
Payment to auditors	0.43	1.11
Balances written off	-	-
RPC Cost	126.38	-
Miscellaneous expenses	0.04	1.19
Total	**180.89**	**98.87**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

21.1 Payments to auditors

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
a) For audit	0.14	0.41
b) For Tax audit	0.05	0.32
c) For other services	0.24	0.38
Total	**0.43**	**1.11**

21.2 Expenditure incurred for corporate social responsibility

In terms of Section 135 of the Companies Act, 2013, a Corporate Social Responsibility (CSR) Committee has been formed by the Company. The areas for CSR activities as per the CSR policy are (i) Promotion of education, (ii) promoting gender equality and empowering women, (iii) reducing child mortality and improving maternal health, (iv) ensuring environmental sustainability, (v) employment enhancing vocational skills, (vi) social business projects, (vii) contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socioeconomic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women and (viii) such other matters as may be prescribed.

In line with Guidance Note on Accounting for Expenditure on Corporate Social Responsibility Activities, issued by the Institute of Chartered Accountants of India, the disclosure of the CSR expenditure during the period/year, is as under:

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
(i) Gross Amount required to be spent by the Company during the period/year	28.62	79.96
Add: Shortfall for the previous period/year	79.96	-
(ii) Amount spent during the period/year	-	-
(a) Construction/acquisition of any asset	-	-
(b) On purpose other than above (ii) (a) - In cash	-	-
(c) On purposes other than above (ii) (a) - Yet to be paid in cash	-	-
(d) Amount unspent during the period/year	**108.58**	**79.96**

In accordance with Section 135(6) of the Companies Act, 2013, the Company is required to deposit the unspent amount allocated for Corporate Social Responsibility (CSR) in a designated bank account within 6 months from the end of the financial year (FY). However, due to the moratorium granted by NCLAT and the need to prioritize expenses essential for maintaining the going concern status, the Company was unable to release funds towards CSR activities till the year 2023.
During the previous year 2024, the Company decided to undertake Research Projects on Pavements with Indian Institute of Technology, Bombay. The Company has spent Rs. 78.68 Mn during the previous financial year 2024 for the said Project. The Company also donated Rs. 63.88 Mn of previous years shortfall to Prime Minister's National Relief Fund, Rs. 31.94 Mn of previous years shortfall to Prime Minister Cares & Rs. 31.94 Mn of previous years shortfall to Clean Ganga Fund.
During the previous financial year, the ultimate holding company, IL&FS, has applied to NCLAT for CSR exemption, resulting in no recommended CSR expenditure for the year/period ending March 31, 2025 and July 31, 2025.

Following is the schedule of Movement in CSR provision during the period/year:

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Opening Balance	79.96	-
Add: CSR Expense to be incurred	28.62	79.96
Less: Amount Spent during the period/year	-	-
Closing Balance of provision	**108.58**	**79.96**

22. Income taxes

22.1 Income tax recognised in profit or loss

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Current tax		
In respect of the current period (refer note below)	-	-
In respect of prior period	-	-
	-	-
Deferred tax		
In respect of the current period	(1,349.87)	1,203.75
MAT credit entitlement	-	-
	(1,349.87)	1,203.75
Total income tax expense recognised in the current period relating to continuing operations	**(1,349.87)**	**1,203.75**

Note: In light of the Company's decision to adopt the new tax regime, the tax liability for the current year is nil. This is due to the utilization of carry-forward tax losses, which have offset the taxable income for the year.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

22.2 The Income Tax Expense/(Income) can be reconciled to the accounting profit as follows:

Particulars	**Period ended July 31, 2025**	**Year ended March 31, 2025**
Profit before tax from continuing operations	(5,477.75)	4,669.55
Normal tax rate	25.17%	25.17%
Income tax expense	(1,378.64)	1,175.23
Effect of expenses that are not deductible in determining taxable profit	28.77	20.12
Deferred Tax effect on Unrealised Fair Value Gain	(0.00)	(0.00)
Deferred tax not created on IndAS adjustment	-	-
Effect of different tax rates	-	-
Deferred tax created	-	8.40
Tax Expense/(Income)	**(1,349.87)**	**1,203.76**
Adjustments recognised in the current year in relation to the current tax of prior years		
Income Tax Expense/(Income) recognized in profit or loss (relating to continuing operations)	**(1,349.87)**	**1,203.76**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025
(All amounts in INR Mn, unless otherwise stated)

23. Earnings per share

Particulars	Unit	Period ended July 31, 2025	Year ended March 31, 2025
Profit for the period/year attributable to owners of the Company	₹ Mn	(4,127.88)	3,465.80
Weighted average number of equity shares	Number	37,20,00,000	37,20,00,000
Nominal value per equity share	₹	10.00	10.00
Basic / Diluted earnings per share	₹	**(11.10)**	**9.32**

There are no potential dilutents therefore Diluted EPS is considered as Equal to Basic EPS.

24. Commitments for expenditure

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
(a) Capital Expenditure	-	-
(b) Operation & Maintenance expenses	4,486.09	4,485.90
(c) Overlay Expenses	1,261.40	1,295.78
Total	**5,747.50**	**5,781.68**

25. Contingent liabilities

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
(a) Claims against the Company not acknowledged as debt		
-Claims filed by Operational Creditors	-	0.04
-Claims filed by Financial Creditors	-	27.02
(b) Other money for which the company is contingently liable		
- Income tax demands contested by the Company	16.86	16.86
- Goods and service tax demands contested by the Company	9,144.58	9,144.58
(c) Claim By bank for cancellation of Hedge contract	-	126.58

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

26. Related Party Disclosures

(a) Name of the Related Parties and Description of Relationship:

Nature of Relationship	Name of Entity	Abbreviation used	As at July 31, 2025	As at March 31, 2025
Ultimate holding company	Infrastructure Leasing & Financial Services Limited (IL&FS)	IL&FS	√	√
Holding Company	IL&FS Transportation Networks Limited	ITNL	√	√
Fellow Subsidiaries of Holding Company & Ultimate Holding Company (Only with whom there have been transaction during the period/ there was balance outstanding at the period/year end)	IL&FS Rail Limited	IRL	√	√
	IL&FS Airport Limited	IAPL	√	√
	Nana Layja Power Company Limited	NLPCL	√	√
	Rohtas Bio Energy Limited	RBEL	√	√
	Livia India Limited	LIVIA	√	√
	Gujarat Integrated Maritime Complex Private Limited	GIMCO	√	√
	IL&FS Financial Services Limited	IFIN	√	√
	Elsamex Maintenance Services Limited	EMSL	√	√
	IL&FS Securities Services Limited	ISSL	√	√
	Tierra Enviro Limited	TEL	√	√
Key Management Personnel ("KMP") & Other Director's	Mr. Krishna Dhondu Ghag	Nominee Director	√	√
	Mr. Ajay Menon (from 20/05/2021)	Nominee Director	√	√
	Mr. Amit Kumar Agarwal (from 13/03/2024)	Nominee Director	√	√
	Mr. Jatender Sharma (from 13/01/2023)	Manager	√	√
	Mr. Devang Thakar (from 17/04/2025)	CFO	√	x
	Ms. Twara Ajmera (from 17/04/2025)	Company Secretary	√	x

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

Related Party Disclosures (contd.)

year ended July 31, 2025

(b) transactions/ balances with above mentioned related parties (mentioned in note 26 above)

Amount In (Mn's)

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Key Management Personnel ("KMP") & Other Director's	Total
Balance	**IL&FS**	**ITNL**	**IRL**	**IAPL**	**IFIN**	**RBEL**	**LIVIA**	**TEL**	**EMSL**		
Cost of Investment in equity shares	-	3,720.00	-	-	-	-	-	-	-	-	3,720.00
Interest Accrued and not due LT	-	-	-	-	-	-	-	-	-	-	-
Interest Accrued and not due ST	-	-	-	-	-	-	-	-	-	-	-
Long-term Borrowings	-	-	-	-	-	-	-	-	-	-	-
Retention Money Payable	-	-	-	-	-	-	-	-	-	-	-
Short-term Borrowings	-	-	-	-	-	-	-	-	-	-	-
Optionally Convertible Debentures	4,806.21	5,016.09	-	523.89	-	-	-	-	-	-	10,346.19
Trade Payables	-	112.94	-	-	0.02	-	-	-	-	-	112.96
Interest Accrued and not due ST - (Recovery)	-	-	-	-	-	-	-	-	-	-	-
											-

Transactions	IL&FS	ITNL	IRL	IAPL	IFIN	RBEL	LIVIA	TEL	EMSL	Key Management Personnel ("KMP") & Other Director's	Total
Deputation Cost	-	1.08	-	-	-	-	-	-	-	-	1.08
RPC Cost	-	107.10	-	-	-	-	-	-	-	-	107.10
Conversion of Crystallized Outstanding Liabilities to OCD	4,686.04	7,803.45	-	510.79	-	-	-	-	-	-	13,000.28
Interest on OCD	133.52	152.27	-	14.55	-	-	-	-	-	-	300.35
Deemed Equity on OCD	-	2,932.97	-	-	-	-	-	-	-	-	2,932.97
Operation and maintenance- (Project)	-	-	-	-	-	-	-	-	80.37	-	80.37
Amit Kumar Agarwal	-	-	-	-	-	-	-	-	-	0.04	0.04
Ajay Menon	-	-	-	-	-	-	-	-	-	0.04	0.04
Krishna Ghag	-	-	-	-	-	-	-	-	-	0.04	0.04

Year ended March 31, 2025

(b) balances with above mentioned related parties (mentioned in note 26 above)

Amount In (Mn's)

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Associates	Key Management Personnel ("KMP") & Other Director's	Total
Balance	**IL&FS**	**ITNL**	**IRL**	**IAPL**	**IFIN**	**RBEL**	**LIVIA**	**TEL**	**EMSL**		
Cost of Investment in equity shares	-	3,720.00	-	-	-	-	-	-	-	-	3,720.00
Interest Accrued and not due LT	-	103.70	-	-	-	-	-	-	-	-	103.70
Interest Accrued and not due ST	332.41	279.90	-	34.60	-	-	-	-	-	-	646.91
Long-term Borrowings	4,306.48	141.30	-	-	-	-	-	-	-	-	4,447.78
Retention Money Payable	-	207.52	-	-	-	-	-	-	-	-	207.52
Short-term Borrowings	-	2,090.84	-	470.00	-	-	-	-	-	-	2,560.84
Trade Payables	-	4,966.09	-	-	-	-	-	-	22.19	-	4,988.28
Interest Accrued and not due ST - (Recovery)	-	-	-	-	-	0.08	-	0.21	-	-	0.29

Transactions	IL&FS	ITNL	IRL	IAPL	IFIN	RBEL	LIVIA	TEL	EMSL	Key Management Personnel ("KMP") & Other Director's	Total
Deputation Cost	-	1.01	-	-	-	-	-	-	-	-	1.01
Operation and maintenance- (Project)	-	-	-	-	-	-	-	-	229.60	-	229.60
Amit Kumar Agarwal	-	-	-	-	-	-	-	-	-	0.13	0.13
Ajay Menon	-	-	-	-	-	-	-	-	-	0.13	0.13
Krishna Ghag	-	-	-	-	-	-	-	-	-	0.13	0.13

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

27. Significant terms of Service Concession Arrangements (SCA)

Particulars	**Project**
Brief description of Concession	Service Concession Arrangement (SCA) dated June 28, 2010 entered into with National Highways Authority of India (NHAI), envisages Rehabilitation Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00 including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT) basis in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from 23rd May 2011 (the 'Appointed date'). Premature termination is permitted only upon happening of a force majeure event or upon the parties defaulting on their obligation. the company is entitled to earn Semi-annuity of Rs. 317.52 Crores each on the dates specified in the SCA. NHAI will retain the right to levy and collect fees from the users of the Road and to permit advertisements, hoardings and other commercial activities at the Road site.
	At the end of the concession period, the company will hand over the Road to NHAI without additional consideration.
Nature of Assets	Financial Asset
Year when SCA granted	28-Jun-10
Period	20 years (Including 5 year of Construction Period)
Extension of period	NIL
Construction	Construction Completed
Premature Termination	NIL
Frequency of Annuity	Semi-Annually
Special Term	NIL

28. Segment Reporting

The company operates in a single business segment viz. Surface Transportation Business. Also it operates in a single geographic segment. In the absence of separate reportable business or geographic segments the disclosures required under the Indian Accounting Standard (INDAS) 108 on Operating Segments are not applicable.

29. Financial Instruments

1 Capital management

The Company endeavours to maintain sufficient levels of working capital, current assets, and current liabilities which helps the company to meet its expense obligations while also maintaining sufficient cash flow.

The capital structure of the Company consists of net debt (borrowings as detailed in notes 13 offset by cash and bank balances) and equity of the Company (comprising issued capital, reserves, retained earnings as detailed in notes 11 to 12). The capital structure of the Company is reviewed by the management on a periodic basis.

1.1 Gearing ratio

The gearing ratio at end of the reporting period was as follows.

Amount In (Mn's)

Particulars	As at July 31, 2025	As at March 31, 2025
Debt (i)	42,464.42	34,122.44
Cash and bank balances (including cash and bank balances in a disposal company held for sale)	28,970.46	28,972.49
Net debt	13,493.97	5,149.95
Total Equity (ii)	12,980.39	14,175.30
Net debt to total equity ratio	1.04	0.36

Footnotes:
(i) Debt is defined as long- and short-term borrowings including interest accrued (excluding derivative), as described in notes 13
(ii) Equity includes all capital and reserves of the Company that are managed as capital.

2 Categories of financial instruments

Amount In (Mn's)

Particulars	As at July 31, 2025	As at March 31, 2025
Financial assets		
Fair value through profit and loss (FVTPL)		
Investment in Mutual Fund	0.20	0.20
At amortised cost		
Cash & cash equivalents; and bank balances (including Balances with Banks in deposit accounts under lien)	28,970.46	28,972.49
SCA receivable	28,432.52	27,343.70
Other financial assets (excluding Balances with Banks in deposit accounts under lien)	1,019.91	1,337.84
Financial liabilities		
At amortised cost		
Borrowings (including interest accrued)	42,464.42	34,122.44
Trade payables	117.25	4,990.52
Other financial liabilities (excluding interest accrued)	4.87	209.73

29. Financial Instruments

3 Financial risk management objectives

The Company 's Corporate Treasury function monitors and manages the financial risks relating to the operations of the Company . These risks include market risk (including currency risk, interest rate risk and other price risk), credit risk and liquidity risk. Refer Note 33 which states about moratorium of debt service obligations. The new board of IL&FS has undertaken certain steps for resolution of existing obligations. Accordingly, the Company is in the process of setting up mechanism to address the risks including market risk, currency risk, interest risk and liquidity risk.

4 Market risk

The Company is exposed to the financial risk of changes in foreign currency exchange rates and interest rates.

4.1 Foreign Currency Sensitivity Analysis

The Company was mainly exposed to the currency of United States. The contract for cross currency swap interest rate cancelled during the financial Year ended March 31, 2022.

4.2 Interest rate swap contracts

Under interest rate swap contracts, the company agrees to exchange the difference between fixed and floating rate interest amounts calculated on agreed notional principal amounts. Such contracts enable the company to mitigate the risk of changing interest rates on the fair value of issued fixed rate debt and the cash flow exposures on the issued variable rate debt. The fair value of interest rate swaps at the end of the reporting period is determined by discounting the future cash flows using the curves at the end of the reporting period and the credit risk inherent in the contract, and is disclosed below. The average interest rate is based on the outstanding balances at the end of the reporting period. The contract for cross currency swap interest rate cancelled during the financial Year ended March 31, 2022.

5 Interest rate risk management

The company is exposed to interest rate risk because it borrows funds at both fixed and floating interest rates.

The company's exposures to interest rates on financial assets and financial liabilities are detailed in the liquidity risk management section of this note.

5.1 Interest rate sensitivity analysis

The sensitivity analyses below have been determined based on the exposure to interest rates for both derivatives and non-derivative instruments at the end of the reporting period. For floating rate liabilities, the analysis is prepared assuming the amount of the liability outstanding at the end of the reporting period was outstanding for the whole year. A 50 basis point increase or decrease represents management's assessment of the reasonably possible change in interest rates.

If interest rates had been 50 basis points higher/lower and all other variables were held constant, the company's:

i) profit for the Year would decrease/increase by ₹ 80.18 Mn (previous year ₹ 80.22 Mn.). This is mainly attributable to the company’s exposure to interest rates on its variable rate borrowings; and

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

29. Financial Instruments

6 Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to The Company .The Management of The Company believes that the credit risk is negligible since its main receivable is from the grantors of the concession which is a government authority.

7 Liquidity risk management

The Company manages liquidity risk by maintaining adequate reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities. However, the Company has not been servicing any debt effetive Oct 15, 2018 in view of moratorium granted by NCLAT.

7.1 Liquidity and interest risk tables

The following tables detail the company's remaining contractual maturity for its non-derivative financial liabilities with agreed repayment periods as per the existing loan agreement. The tables have been drawn up based on the undiscounted cash flows of financial liabilities. The tables include both interest (upto scheduled repayment date) and principal cash flows. To the extent that interest flows are floating rate, the undiscounted amount is derived from interest rate curves at the end of the reporting period.

Amount In (Mn's)

Particulars	As at July 31, 2025			As at March 31, 2025		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	3.22	44,884.88	20,059.88	208.16	44,884.88	20,059.88
1-3 years	4.20	11,901.59	31.78	2.15	11,901.59	31.78
3-5 years	-	-	23.84	-	-	23.84
More than 5 years	112.96	-	141.30	4,966.09	-	141.30
Total	**120.39**	**56,786.47**	**20,256.80**	**5,176.40**	**56,786.47**	**20,256.80**

Note: - This schedule is subject to adjustment due to the repayment of Rs. 1403.18 Mn made during the year 2024 & Rs. 7796.82 Mn made during the year 2023.

The following table details the company's expected maturity for its non-derivative financial assets. The table has been drawn up based on the undiscounted contractual maturities of the financial assets including interest that will be earned on those assets. The inclusion of information on non-derivative financial assets is necessary in order to understand the company's liquidity risk management as the liquidity is managed on a net asset and liability basis.

Amount In (Mn's)

Particulars	As at July 31, 2025			As at March 31, 2025		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	23.71	5,606.20	29,965.96	4,169.69	8,749.12	26,140.03
1-3 years	-	11,442.69	-	-	11,241.70	-
3-5 years	-	11,297.55	-	-	11,297.61	-
More than 5 years	0.00	10,557.83	-	0.00	10,557.89	-
Total	**23.71**	**38,904.27**	**29,965.96**	**4,169.69**	**41,846.32**	**26,140.03**

The amounts included above for variable interest rate instruments for both non-derivative financial assets and liabilities is subject to change if changes in variable interest rates differ to those estimates of interest rates determined at the end of the reporting period.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

29. Financial Instruments

8 Fair value of the Company's material financial assets and financial liabilities that are measured at fair value on a recurring basis

Some of the company's financial assets and financial liabilities are measured at fair value at the end of each reporting period. The following table gives information about how the fair values of these financial assets and financial liabilities are determined (in particular, the valuation technique(s) and inputs used).

Amount In (Mn's)

Financial assets/ (financial liabilities)	Fair value		Fair value hierarchy	Valuation technique(s) and key input(s)	Significant unobservable input(s)	Relationship of unobservable inputs to fair value
	As at July 31, 2025	As at March 31, 2025				
1) Investment in Mutual Fund	0.20	0.20	Level 1	Net assets value taken as per Mutual Fund Statement	None	None

Amount In (Mn's)

	As at July 31, 2025		As at March 31, 2025	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
At amortised cost				
Cash & cash equivalents; and bank balances	28,970.46	28,970.46	28,972.49	28,972.49
SCA receivable	28,432.52	28,432.52	27,343.70	27,343.70
Other financial assets	1,019.91	1,019.91	1,337.84	1,337.84
Financial liabilities				
At amortised cost				
Borrowings	42,464.42	42,484.88	34,122.44	34,151.78
Trade payables	117.25	117.25	4,990.52	4,990.52
Other financial liabilities	4.87	4.87	209.73	209.73

Amount In (Mn's)

Fair value hierarchy	As at July 31, 2025			As at March 31, 2025		
Particulars	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Financial assets						
Fair value through profit and loss (FVTPL)						
Investment in Mutual Fund	0.20	-		0.18	-	
Financial Assets measured at amortised cost						
Cash & cash equivalents; and bank balances	-	-	28,970.46	-	-	21,520.21
SCA receivable	-	-	28,432.52	-	-	30,180.89
Other financial assets	-	-	1,019.91	-	-	1,037.45
Financial liabilities						
At amortised cost						
Borrowings	-	-	42,484.88	-	-	34,031.97
Trade payables	-	-	117.25	-	-	5,030.16
Other financial liabilities	-	-	4.87	-	-	207.52

The fair values of the financial assets and financial liabilities above have been determined in accordance with generally accepted pricing models based on a discounted cash flow analysis, with the most significant inputs being the discount rate that reflects the credit risk of counterparties.

30 Impairment:

During financial year 2019-20, as part of the divestment process, the IL&FS Board received a single bid from an external party for the Company. The bid was subsequently accepted by the Board of Directors of ITNL and IL&FS, subject to necessary approvals from various regulators, Committee of Creditors, NCLAT, and other relevant entities. The final price is subject to adjustment.

Based on the bid received, the Company recognized impairment of Receivable under Service Concession Arrangements in the financial statements during the earlier year. In light of the bid being continued and also received NCLT approval for the same, it is the view of the Company's management that no further impairment is required for the year/period ended July 31, 2025.

31 Going Concern :

Union of India has superseded the earlier board of Holding/Ultimate Holding Company and appointed new Board from October 01, 2018. Entire Group is going through severe financial stress. National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 has also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, which means that the Company is able to meet only financial obligation towards Senior Lenders and operational creditors. In view of this classification and the moratorium order, the Company has stopped servicing financial obligations towards all its financial creditors. The Company has received a bid from third party and the same has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares has also been received. Hence on the basis of above, these accounts are prepared on the basis of going concern.

32 Interest Expense Recognition :

The Hon'ble National Company Law Appellate Tribunal ("NCLAT"), vide its order dated October 15, 2018 ("Interim Order") in Company Appeal (AT) No. 346 of 2018, imposed a moratorium on the creditors of IL&FS and its 348 group companies, including the Company. Subsequently, vide order dated February 11, 2019, the Company was classified under the "Amber Category" based on a 12-month cash flow solvency test, indicating its inability to meet all obligations (financial and operational), including those towards senior secured financial creditors. Accordingly, the Company was permitted to make only such payments as were necessary to maintain and preserve its going concern status. Further, vide its order dated March 12, 2020, NCLAT upheld the aforesaid Interim Order, confirming October 15, 2018 as the commencement date of the resolution process of the Company. Consequently, the Company did not accrue any interest, default interest, penal interest, or similar charges after the said cut-off date of October 15, 2018, up to March 31, 2025.

However, pursuant to the order dated February 14, 2025 of the Hon'ble National Company Law Tribunal ("NCLT") and the approval dated August 25, 2025 from the National Highways Authority of India ("NHAI") for the proposed sale of the Company's shareholding to Cube Highways and Infrastructure II Pte. Ltd. ("Cube"), in accordance with Cube's binding offer dated February 16, 2024 (the "Binding Offer"), specific provisions were made in respect of settlement of interest liabilities payable to the Company's external lenders. The key terms are as follows:

a) Interest for Prior Periods – ₹4,000 million for the period from June 2022 to March 2024.

b) Interest for Current Period – ₹5.25 million per day, effective from April 1, 2024 until the completion of the transaction.

Accordingly, up to the period ended July 31, 2025, the Company has recognized a total interest expense of ₹6,556.75 million, which remains subject to the successful completion of the transaction.

33 Debt Servicing

In view of the delay in the resolution process of the Company and the significant cash balances available, and considering the constant demand from lenders, the Board approved an Interim Distribution to the Senior Secured Lenders during the financial year ended March 31, 2023, amounting to ₹9,200.00 million. This was equivalent to the principal amount payable to them under the debt restructuring plan that had been approved in principle by the CoC of CNTL. Out of this amount, ₹7,796.82 million was distributed during FY 2022-23, and the balance ₹1,403.18 million was paid during FY 2023-24.

Separately, the banks debited an aggregate of ₹6,844.17 million (towards interest and principal for the period October 2018 to March 2020) from the Company's escrow accounts. The Company has formally requested the reversal of these debits, citing the Hon'ble NCLAT's order dated October 15, 2018, which imposed a moratorium. However, the banks have not reversed the same to date. Accordingly, after adjusting for interest up to October 15, 2018, this balance was reflected as recoverable in the financial statements. As part of the interim distribution, the Company adjusted ₹5,929.42 million in FY 2022-23 and ₹119.90 million in FY 2023-24 against this amount, corresponding to loan repayments in the respective years.

Pursuant to the ongoing resolution process, and with due approvals from the Hon'ble NCLT, lenders, and NHAI, the Company's shareholding is being transferred to a new investor. Based on admitted claims, the lenders had agreed on a revised debt amount as of October 15, 2018 under the debt restructuring plan. Accordingly, the outstanding debt was required to be aligned with this revised amount. However, as per the statements of account received, the lenders have neither given effect to the restructuring nor adjusted for the interim distribution, and have continued to charge interest with effect from October 15, 2018, despite the moratorium.

This has resulted in a net variance of ₹22,495.67 million between the debt balances as per the lenders' statements of account and the Company's records.

34 In accordance with the Company's adoption of the new tax regime, the tax liability for the current period/year is determined to be nil. This favorable outcome is attributed to the utilization of carry-forward tax losses, which have effectively offset the taxable income for the year. Consequently, the Company will not be eligible to avail the tax holiday period of 10 years as stipulated under section 80IA.

As a result of these circumstances, the Company has recognized net deferred tax liabilities in its financial statements. These deferred tax liabilities are expected to be reversed over the duration of the concession period.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

35 Micro and small enterprises

Under the Micro, Small and Medium Enterprises Development Act, 2006 ('MSMED') which came into force from 2 October 2006, certain disclosures are required to be made relating to micro and small enterprises. On the basis or the information and records available with the management, there are no outstanding dues to the Micro and Small enterprises as defined in the Micro, Small mid Medium Enterprises Development Act, 2006 as set out in the following disclosures·

Amount In (Mn's)

Particulars	**As at July 31, 2025**	**As at March 31, 2025**
(a) the Principal amount and the interest due thereon (to be shown separately) remaining unpaid to any supplier at the end of each accounting period/year;	0.09	22.28
(b) the amount interest paid by the buyer in terms of section 16 of the Micro, Small and Medium Enterprises development Act, 2006 (27 of 2006), along with the amount of the payment made to the supplier beyond the appointed day during each accounting period/year;	-	-
(c) Amount of interest due and payable for the period of delay in making payment (which have been paid but beyond the appointed day during the period) but without adding the interest specified under the Micro, Small and Medium Enterprises Development Act, 2006;	-	-
(d) Amount of interest accrued and remaining unpaid at the end of each accounting period/year; and	-	-
(e) The amount of further interest remaining due and payable even in the succeeding years, until such date when the interest dues above are actually paid to the small enterprise, for the purpose of disallowance of a deductible expenditure under section 23 of the Micro, Small and Medium Enterprises Development Act, 2006.	-	-

36 Disclosure as Per Ind AS 115 Revenue from Contracts with Customers

A. Applicability of Ind AS 115

Ind AS 115 was issued on 28 March 2018 and supersedes Ind AS 11 Construction Contracts and Ind AS 18 Revenue and it applies, with limited exceptions, to all revenue arising from contracts with its customers. Ind AS 115 establishes a five-step model to account for revenue arising from contracts with customers and requires that revenue be recognised at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer.

The Ministry of Corporate Affairs(MCA), on March 28, 2018, notified Ind AS 115 "Revenue from Contracts with Customers" as a part of the Companies (Indian Accounting Standards) Amendment Rules, 2018. The Company has followed the IND AS 115 accordingly.

Service contracts relating to Change of Scope have an original duration of one year or less and therefore the company uses practical expedient to not disclose unsatisfied performance obligations.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

36 Disclosure as Per Ind AS 115 Revenue from Contracts with Customers (Continue)

B. Disaggregation of revenue

Set out below is the disaggregation of the Company's revenue from contracts with customers:

Amount In (Mn's)

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Type of Services		
(a) Operation and maintenance income	171.51	491.98
(b) Periodic maintenance income	32.58	16.80
(c) Finance income	887.52	2,880.24
Total Revenue from contracts with customers	**1,091.61**	**3,389.01**

Geographical markets **Amount In (Mn's)**

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
India	1,091.61	3,389.01
Outside India	-	-
Total Revenue from contracts with customers	**1,091.61**	**3,389.01**

Timing of Revenue recognition **Amount In (Mn's)**

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Services transferred at a point in time	-	-
Services transferred over time	1,091.61	3,389.01
Total Revenue from contracts with customers	**1,091.61**	**3,389.01**

Contract Balances **Amount In (Mn's)**

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Receivable under Service Concession		
Trade Receivable	28,432.52	27,343.70
Less: Expected Credit Loss	-	-
Total Receivable	**28,432.52**	**27,343.70**
Contract Liabilities	**-**	**-**

Reconciling the amount of revenue recognised in the statement of profit and loss with the contracted price

Amount In (Mn's)

Particulars	Period ended July 31, 2025	Year ended March 31, 2025
Revenue as per contracted price	1,091.61	3,389.01
Adjustments - Rebate/Cash Discount	-	-
Revenue from contracts with customers	**1,091.61**	**3,389.01**

Performance obligation

Information about the Company's performance obligations are summarised below:

Revenue from Finance income

The performance obligation in service of Finance Income for concession arrangements under financial asset model is recorded using the effecive interest method.

Revenue from Operation and maintenance income and Periodic maintenance income

The performance obligation in service of Operation and maintenance income and Periodic maintenance income for concession arrangements under financial asset model is recorded in each period as and when services are rendered in accordance with Ind AS 115 Revenue from contracts with customers.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended July 31, 2025

37 Ratios

As this special purpose financial statement pertains to a partial fiscal year, a statement of ratio analysis has not been provided.

38 Investigations by Serious Fraud Investigation Office ("SFIO") and other regulatory agencies:

The Ministry of Corporate Affairs (MCA), Government of India, has vide its letter dated October 1, 2018 initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS (ultimate holding company) and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of investigation of affairs of ITNL (the Holding Company), SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and it is understood that the relevant information is being provided by ITNL to the agency. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

39 Additional Regulatory Information required as per Schedule III:

a) The Company does not have any investment property, hence the requirement regarding disclosure and valuation by a registered valuer as defined under rule 2 of Companies (Registered Valuers and Valuation) Rules, 2017 is not applicable.
b) The Company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets or both during the period/year.
c) The Company has not given any Loans or advances in the nature of loans to specified persons.
d) Benami property : There are no proceedings being initiated or are pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988(45 of 1988) and rules made thereunder.
e) The Company had not borrowed secured loan from Financial institution against current assets during the current period.
f) Wilful Defaulter : The Company has not been declared as wilful defaulter by any bank or financial institution or other lender.
g) The Company does not have any transactions or relationship with Struck Off Companies.
h) The Company has Registered all the charges against its assets with Registrar of Companies (ROC). There were no satisfaction of charge with ROC is pending as on July 31, 2025.
i) The Company does not have any subsidiary company or step down companies.
j) A statement of ratio analysis has not been provided, refer note 38.
k) There are no Scheme of Arrangements during the period.
l) The Company has not advanced or loaned or invested funds to any other person(s) or entity(ties), including foreign entities (Intermediaries) from borrowed funds or share premium or any other source or kind of funds.
m) Additional information to be disclosed by way of Notes to Statement of Profit and Loss.
i) The Company does not have any undisclosed income as on July 31, 2025.
ii) The Company has not traded or invested in any kind of Crypto Currency or Virtual Currency.

40 Approval of financial statements

The Financial statements were approved for issue by the Board of Directors on September 11, 2025.

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

MANJU AGRAWAL
Digitally signed by MANJU AGRAWAL
Date: 2025.09.11 19:26:12 +05'30'

Manju Agrawal
Partner
Membership Number : 083878

Place : New Delhi
Date : 11 September 2025

For and on behalf of the Board

KRISHNA DHONDU GHAG
Digitally signed by KRISHNA DHONDU GHAG
Date: 2025.09.11 15:01:53 +05'30'

Non-Executive Director
Krishna Ghag
DIN-02491661

AJAY GOPALKRISHNAN MENON
Digitally signed by AJAY GOPALKRISHNAN MENON
Date: 2025.09.11 14:51:29 +05'30'

Non-Executive Director
Ajay Menon
DIN-02497302

DEVANG BHANUPRASAD THAKAR
Digitally signed by DEVANG BHANUPRASAD THAKAR
Date: 2025.09.11 14:48:32 +05'30'

Devang Thakar
CFO

TWARA J AJMERA
Digitally signed by TWARA J AJMERA
Date: 2025.09.11 18:19:22 +05'30'

Twara Ajmera
Company Secretary

Place : Mumbai
Date : 11 September 2025

INDEPENDENT AUDITOR'S REPORT
To the Members of CHENANI NASHRI TUNNELWAY LIMITED

Report on Audit of Special Purpose Financial Statements

Opinion

We have audited the accompanying Special Purpose Financial Statements of **CHENANI NASHRI TUNNELWAY LIMITED ("the Company")** which comprise the:

a. Special Purpose Balance Sheet as at 20th November 2025;

b. Special Purpose Statements of Profit and Loss (including Other comprehensive income) for the period ended 20th November 2025;

c. Special Purpose Statement of Cash Flows for the period ended 20th November 2025;

d. Special Purpose Statement of Changes in Equity for the period ended 20th November 2025;

e. Special purpose Notes to the financial statements and

f. Material accounting policy information and other explanatory information (together hereinafter referred to as 'Special Purpose Financial Statements').

These special purpose financial statements have been prepared in accordance with basis of preparation as specified in note 2.2 to the special purpose financial statements.

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid special purpose financial statements give a true and fair view in accordance with the basis of preparation as specified in the special purpose financial statements in case of:

a. the balance sheet, of the state of affairs of the company as at 20th November 2025;

b. the statement of profit and loss (including other comprehensive income) of the company's profit for the period ended 20th November 2025;

c. the cash flow statement, of the cash flows of the company for the period ended 20th November 2025;

d. the statement of changes in equity for the period ended 20th November 2025;

Basis for Opinion

We conducted our audit of the special purpose financial statements in accordance with the Standards on Auditing (SAs), as specified under section 143(10) of the Companies Act, 2013 ("the Act"). Our responsibilities under those Standards are further described in the 'Auditor's Responsibilities for the Audit of the Special Purpose Financial Statements' section of our report. We are independent of the Company in accordance with the 'Code of Ethics' issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the financial statements under the provisions of the Act and rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the special purpose financial statements.

Plot No. 6, Site No. 21, Geeta Mandir Marg, New Rajender Nagar, New Delhi – 110060
Ph: 011- 42412008, 43038497, Email: gka_ma@yahoo.com; info.gianender@gmail.com

Emphasis of matter – Basis of Accounting

We draw attention to Note 2.2 to the special purpose financial statements, which describes the basis of accounting. The special purpose financial statements are prepared solely for the purpose to facilitate the transfer of the Company to Cube Highways Infrastructure II Pte Ltd as of the cut-off date 20th November 2025, in accordance with the Indian Accounting Standards (Ind AS) notified under the Companies (Indian Accounting Standards) Rules, 2015, as amended

Our opinion is not modified in respect of this matter.

Responsibility of Management and Those Charged with Governance for the Special Purpose Financial Statements

The Company's Management and Board of Directors is responsible for preparation and presentation of these special purpose financial statements that give a true and fair view of the company's financial position and financial performance including other Comprehensive Income, the Cash Flow Statement and the Statement of Changes in Equity, and limited notes to the financial statements, including a summary of material accounting policies and other explanatory information, prepared in accordance with the basis of accounting described in Note 1.B.I of the special purpose financial statements. This responsibility also includes maintenance of adequate accounting records for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and the design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the special purpose financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the special purpose financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.
Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Special Purpose Financial Statements

Our objectives are to obtain reasonable assurance about whether the special purpose financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these special purpose financial statements.

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As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the special purpose financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the special purpose financial statements, including the disclosures, and whether the special purpose financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Plot No. 6, Site No. 21, Geeta Mandir Marg, New Rajender Nagar, New Delhi – 110060
Ph: 011- 42412008, 43038497, Email: gka_ma@yahoo.com; info.gianender@gmail.com

Restriction on Distribution and Use

Our report on Special Purpose Financial Statements has been prepared, to enable Cube Highways Infrastructure II Pte Ltd prepare cut-off date 20th November 2025, in accordance with the Indian Accounting Standards (Ind AS) notified under the Companies (Indian Accounting Standards) Rules, 2015, as amended as described in **Emphasis of matter** paragraph above and it should not be used by any other person or for any other purpose, or referred to in any other document, or distributed to any other person without our prior written consent. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this report is shown or into whose hands it may come without our prior consent in writing.

For Gianender & Associates
Chartered Accountants
FRN: 004661N

GIANENDER KISHORE AGRAWAL
Digitally signed by GIANENDER KISHORE AGRAWAL
Date: 2026.03.05 20:51:47 +05'30'

G.K. Agrawal
(Partner)
Membership No. 081603

UDIN: 26081603UJOIJT2272
Date: 5th March 2026
Place: New Delhi

Plot No. 6, Site No. 21, Geeta Mandir Marg, New Rajender Nagar, New Delhi – 110060
Ph: 011- 42412008, 43038497, Email: gka_ma@yahoo.com; info.gianender@gmail.com

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Balance sheet as at November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Notes	As at November 20, 2025	
ASSETS			
Non-current Assets			
(a) Property, plant and equipment			-
(b) Investment property	4		0.80
(c) Intangible Assets			-
(d) Financial assets			
(i) Investments			-
(ii) Trade receivables			-
(iii) Other financial assets	5		20,315.15
(e) Other non-current assets	6		-
Total Non-current Assets			**20,315.96**
Current Assets			
(a) Inventories			-
(b) Financial assets			
(i) Investments	7	-	
(ii) Cash and cash equivalents	8	31,012.68	
(iii) Other Bank Balance	9	2,133.39	
(iv) Other financial assets	5	7,166.23	40,312.30
(c) Current tax assets (Net)	10		573.33
(d) Other current assets	6		88.38
Total Current Assets			**40,974.01**
Total Assets			**61,289.97**
EQUITY AND LIABILITIES			
Equity			
(a) Equity share capital	11	3,720.00	
(b) Instruments entirely equity in nature		-	
(c) Other Equity	12	(22,125.25)	
Equity attributable to owners of the Company			**(18,405.25)**
Total Equity			**(18,405.25)**
LIABILITIES			
Non-current Liabilities			
(a) Financial Liabilities			
(i) Borrowings	13	-	
(ii) Other financial liabilities	14	-	-
(b) Provisions			-
(c) Deferred tax liabilities	10.1		4,916.29
Total Non-current Liabilities			**4,916.29**
Current liabilities			
(a) Financial liabilities			
(i) Borrowings	13	38,247.28	
(ii) Trade payables	16		
a) total outstanding dues of micro & small enterprise		-	
b) total outstanding dues other than micro & small enterprise		251.09	
(iii) Other financial liabilities	14	36,159.81	74,658.18
(c) Provisions			-
(d) Other current liabilities	15		120.74
Total Current Liabilities			**74,778.92**
Total Liabilities			**79,695.22**
Total Equity and Liabilities			**61,289.97**

In terms of our report of even date.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

GIANENDER KISHORE AGRAWAL
Digitally signed by GIANENDER KISHORE AGRAWAL
Date: 2026.03.05 21:36:38 +05'30'

Gianender Kishore Agrawal
Partner
Membership Number : 081603

Place : New Delhi
Date : 05 March 2026

For and on behalf of the Board

Manmohan Ojtuwala
Digitally signed by Manmohan Ojtuwala
Date: 2026.03.05 21:28:11 +05'30'

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2026.03.05 21:25:41 +05'30'

Manmohan Shivkumar Ojtuwala	**Shreedhar Narayan**
Additional Director	**Additional Director**
Place: Noida	**Place: Noida**
DIN-08089647	**DIN-08047497**

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of Profit & Loss for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

	Particulars	Notes	Period ended November 20, 2025
I.	Revenue from Operations	17	1,856.39
II.	Other income	18	994.31
III.	**Total Income (I+II)**		**2,850.70**
IV.	**Expenses**		
	Operating expenses	19	355.85
	Finance costs (net)	20	2,477.09
	Other expenses	21	157.41
	Total expenses (IV)		**2,990.34**
V	**Profit before tax**		**(139.64)**
VI	Less: Tax expense		
	(1) Current tax	22	-
	(2) Deferred tax	22.1	380.32
	(3) (excess)/short provision of earlier years		(0.71)
	Total Tax expenses		**379.61**
VII	**Profit/(loss) after tax (V-VI)**		**(519.25)**
VIII	**Profit/(loss) for the year (VIII)**		**(519.25)**
	Other Comprehensive Income / (Loss)		
VIII	Items that may be reclassified to profit or loss		
	(a) Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge		-
	(b) Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge		-
	Total other comprehensive income / (loss)		-
IX	**Total comprehensive income / (loss) for the year (VII+VIII)**		**(519.25)**
	Profit for the year attributable to:		
	- Owners of the Company		(519.25)
	- Non-controlling interests		-
			(519.25)
	Other comprehensive income for the year attributable to:		
	- Owners of the Company		-
	- Non-controlling interests		-
			-
	Total comprehensive income for the year attributable to:		
	- Owners of the Company		(519.25)
	- Non-controlling interests		-
			(519.25)
X	Earnings per equity share (face value ` 10 per share):		
	(1) Basic (in Rs.)		(1.40)
	(2) Diluted (in Rs.)		(1.40)

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

GIANENDER KISHORE AGRAWAL
Digitally signed by GIANENDER KISHORE AGRAWAL
Date: 2026.03.05 21:37:01 +05'30'

Gianender Kishore Agrawal
Partner
Membership Number : 081603

For and on behalf of the Board

Manmohan Ojtuwala
Digitally signed by Manmohan Ojtuwala
Date: 2026.03.05 21:28:45 +05'30'

Manmohan Shivkumar Ojtuwala
Additional Director
Place: Noida
DIN-08089647

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2026.03.05 21:26:36 +05'30'

Shreedhar Narayan
Additional Director
Place: Noida
DIN-08047497

Place : New Delhi
Date : 05 March 2026

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Cash Flow Statement for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

Particulars	Period ended November 20, 2025
Cash flows from operating activities	
Profit for the year	(519.25)
Adjustments for:	
Deferred tax liabilities	380.32
Interest on short term deposit	(966.92)
Interest and finance cost	2,477.09
Provision no Longer Required	(26.53)
Impairment Loss on Investment Properties	0.66
Sub total	**1,345.37**
Movements in working capital:	
Decrease in Investment	0.20
(Increase)/decrease in other financial assets & other assets (current and non current)	
Decrease in Other current assets	44.99
Decrease in Other financial assets	1,314.83
Increase/ (Decrease) in financial liabilities & other liabilities (current and non current)	(0.69)
Increase in Trade payables	145.85
Sub total	1,505.18
Cash generated from operations	**2,850.55**
Income taxes paid (net of refunds)	(165.29)
Net cash generated by operating activities (A)	**2,685.26**
Cash flows from investing activities	
Interest received	1,488.32
Movement in other bank balances	23,464.26
Net cash used in investing activities (B)	**24,952.58**
Cash flows from financing activities	
Net cash generated in financing activities (C)	-
Net increase/ (decrease) in cash and cash equivalents (A+B+C)	**27,637.84**
Cash and cash equivalents at the beginning of the year	3,374.84
Cash and cash equivalents at the end of the year	**31,012.68**

Particulars	Period ended November 20, 2025
Components of Cash and Cash Equivalents	
Cash on hand	-
Balances with Banks in current accounts	31,012.68
Balances with Banks in deposit accounts	-
Cash and Cash Equivalents	**31,012.68**
Cash and cash equivalents for statement of cash flows	**31,012.68**

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

GIANENDER KISHORE AGRAWAL
Digitally signed by GIANENDER KISHORE AGRAWAL
Date: 2026.03.05 21:37:24 +05'30'

Gianender Kishore Agrawal
Partner
Membership Number : 081603

Place : New Delhi
Date : 05 March 2026

For and on behalf of the Board

Manmohan Ojtuwala
Digitally signed by Manmohan Ojtuwala
Date: 2026.03.05 21:29:09 +05'30'

Manmohan Shivkumar Ojtuwala
Additional Director
Place: Noida
DIN-08089647

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2026.03.05 21:27:03 +05'30'

Shreedhar Narayan
Additional Director
Place: Noida
DIN-08047497

Special Purpose Financial Statement
CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of changes in equity for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

a. Equity share capital		**Period ended November 20, 2025**
Balance as at the beginning of the period/year		3,720.00
Changes in Equity Share Capital due to prior period errors		-
Restated balance at the beginning of the current reporting period		**3,720.00**
Changes in equity share capital during the period/year		-
Balance as at end of the period/year		3,720.00

b. Other equity		**Reserves and surplus**
		Retained earnings
Balance as at April 1, 2025		(21,606.00)
Changes in accounting policy or prior period errors		-
Restated balance at the beginning of the current reporting period		**(21,606.00)**
Profit/(Loss) for the year/period		(519.25)
Other comprehensive income for the year, net of income tax		-
Total comprehensive income for the year/period		**(519.25)**
Addition during the year		-
Other adjustments		-
Balance as at November 20, 2025		**(22,125.25)**

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

GIANENDER KISHORE AGRAWAL
Digitally signed by GIANENDER KISHORE AGRAWAL
Date: 2026.03.05 21:37:47 +05'30'

Gianender Kishore Agrawal
Partner
Membership Number : 081603

For and on behalf of the Board

Manmohan Ojtuwala
Digitally signed by Manmohan Ojtuwala
Date: 2026.03.05 21:29:42 +05'30'

SHREEDHAR NARAYAN
Digitally signed by SHREEDHAR NARAYAN
Date: 2026.03.05 21:27:29 +05'30'

Manmohan Shivkumar Ojtuwala	**Shreedhar Narayan**
Additional Director	**Additional Director**
Place: Noida	**Place: Noida**
DIN-08089647	**DIN-08047497**

Place : New Delhi
Date : 05 March 2026

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

4. Investment Property

Particulars	**As at November 20, 2025**
Land	1.46
Opening balance	1.46
Additions for the Year	-
Closing Balance	1.46
Impairment Charges:	
Opening Balance	1.46
Impairment Charge during the year	(0.66)
Closing balance	0.80
Net Carrying amount	**0.80**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

5. Other financial assets (Unsecured, considered good)

Particulars	**As at November 20, 2025**	
	Non Current	**Current**
Receivable under service concession arrangements	20,310.57	6,350.40
Security Deposits - Others	0.00	-
Other advances (Receivable from Banks) (Refer note - 32)	-	794.85
Interest receivable on fixed deposit		20.98
Loan others	-	
Foreign Currency Forward Contracts	-	-
Receivable from NHAI - GST witheld on Annuity	-	-
Receivable from NHAI - Utility Shifting & Change of scope	119.16	-
Less: Provision for doubtful receivable	(114.57)	-
Total	**20,315.15**	**7,166.23**

6. Other assets (Unsecured, considered good unless otherwise mentioned)

Particulars	**As at November 20, 2025**	
	Non Current	**Current**
Advance towards Insurance premium		0.00
Indirect tax balances	-	63.44
Unbilled Revenue	-	-
Prepaid expenses		24.94
Total	**-**	**88.38**

7. Current Investments

Particulars	**As at November 20, 2025**	
	Qty	**Amount**
Unquoted Investments		
(a) Investment in SBI Liquid Fund Regular Growth Mutual fund	-	-
TOTAL INVESTMENTS	**-**	**-**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

8. Cash and cash equivalents

For the purposes of the statement of cash flows, cash and cash equivalents include cash on hand and in banks, net of outstanding bank overdrafts. Cash and cash equivalents at the end of the reporting period as shown in the statement of cash flows can be reconciled to the related items in the balance sheet as follows:

Particulars	**As at November 20, 2025**
Balances with Banks	
In current accounts	31,012.68
In deposit accounts with original maturity less than 3 months	
Cheques, drafts on hand	-
Cash on hand	-
Others	-
Cash and cash equivalents	**31,012.68**

9. Other Bank Balances

Particulars	**As at November 20, 2025**
Balances with Banks in deposits account having original maturity more than three months and remaining maturity less than twelve months	2,133.39
Total	**2,133.39**

10. Current tax assets and liabilities

Particulars	**As at November 20, 2025**	
	Non Current	**Current**
Current tax assets		
Advance payment of taxes	-	573.33
Total	**-**	**573.33**
Current tax liabilities		
Provision for tax	-	-
Total	**-**	**-**
Net Tax Assets / (Liabilities)	**-**	**573.33**

10.1 Deferred tax balances

Particulars	**As at November 20, 2025**	
	Non Current	**Current**
Deferred tax assets	(802.18)	-
Less :- Deferred tax liabilities	5,718.47	-
Total	**4,916.29**	**-**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

11. Equity Share Capital

Particulars	**As at November 20, 2025**	
	Number of shares in Mn	**Amount In (Rs. Mn)**
Authorised		
Equity Shares of ₹ 10/- each	372.00	3,720.00
Issued, Subscribed and Paid up		
Equity Shares of ₹ 10/- each fully paid	372.00	3,720.00
Total	**372.00**	**3,720.00**

11.1 Reconciliation of the number of equity shares outstanding at the beginning and at the end of the period/year:

	As at November 20, 2025	
Particulars	**Number of shares in Mn**	**Amount In (Rs. Mn)**
Shares outstanding at the beginning of the period/year	372.00	3,720.00
Shares issued during the period/year	-	-
Shares outstanding at the end of the period/year	**372.00**	**3,720.00**

11.2 Details of shares held by the holding company, the ultimate controlling party, their subsidiaries and associates

Number in Mn

Particulars	**As at November 20, 2025**
Cube Highways Infrastructure II Pte Ltd & its Nominees, the holding company	372.00
Holding Company - IL&FS Transportation Networks Limited & its Nominees	-

11.3 Details of shares held by each shareholder holding more than 5% shares

Equity Shareholder	**As at November 20, 2025**	
	Number of shares held in Mn	**% holding in the class of shares**
Cube Highways Infrastructure II Pte Ltd & its Nominees, the holding company	372.00	100%
IL&FS Transportation Networks Limited & its Nominees, the holding company	-	-
Total	**372.00**	**100%**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

11.4 Terms of Equity :

The Company has one class of equity shares with face value of ₹ 10 each fully paid-up. Each shareholder has a voting right in proportion to his holding in the paid-up equity share capital of the Company.

In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.

Where final dividend is proposed by the Board of Directors, it is subject to the approval of the shareholders in the Annual General Meeting.

During the year, no dividend has been proposed or paid.

The Company has not issued any securities during the period/year with the right / option to convert the same into equity

11.5 Shareholding of promoter

The details of promoter shareholding are given below :

Name of the Promotor	**As at November 20, 2025**		
	Number of shares held in Mn	**% of total shares**	**% of change during the period/year**
Cube Highways Infrastructure II Pte Ltd & its Nominees	372.00	100%	100%
Total	**372.00**	**100%**	**100%**

12. Other Equity

Particulars	**As at November 20, 2025**
Retained earnings	
Balance at beginning of period/year	(21,606.00)
Profit / (Loss) during the period/year	(519.25)
Balance at end of the year	**(22,125.25)**
Deemed Equity	
Balance at beginning of period/year	-
Adjustments during the period/year	-
Other adjustments the period/year	-
Balance at end of the period /year	-
Total	**(22,125.25)**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

13.Borrowings at amortised cost

Particulars	As at November 20, 2025		
	Non-Current Borrowings	Current portion	Current Borrowings
Secured – at amortised cost			
(i) Term loans			
- from banks			14,165.92
- from financial institutions			970.88
Unsecured – at amortised cost			
(i) Bonds / debentures			
- from related parties (Refer Note 26)			
- Series-A to H			13,000.28
(ii) Term loans			
- from banks	-	-	-
- from financial institutions *	-		10,123.21
- from related parties (Refer Note 26)	-		-
Unamortised borrowing cost			(13.01)
Total	**-**	**-**	**38,247.28**
Less: Current maturities of long term debt clubbed under "Short Term Borrowing"		-	-
Add: Current maturities of long term debt clubbed under "Short Term Borrowing"		-	-
Total	**-**	**-**	**38,247.28**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

14. Other financial liabilities

Particulars	As at November 20, 2025	
	Non Current	Current
Interest accrued - Others (refer note 33)		35,411.24
Interest accrued - Related Parties		-
- Unsecured Loan		178.75
-OCDs		568.93
Retention Money Payable - Related Parties	-	
Related parties - Others		
Unsecured deposits		0.70
Provision for expenses		
Audit fees - Provision		0.19
Total	**-**	**36,159.81**

15. Other liabilities

Particulars	As at November 20, 2025	
	Non Current	Current
Statutory dues		
-Tax deducted at source	-	120.74
-Goods & service tax	-	-
Total	**-**	**120.74**

16. Trade payables

Particulars	As at November 20, 2025	
	Non Current	Current
Due to Micro and small enterprises		
- Related Parties		-
- Other payables		-
Due to other than Micro and small enterprises:		
- Related Parties		-
- Other payables		104.55
Retention Money Payable		
- Other payables	3.33	
Provision for expenses		143.22
Total	**3.33**	**247.76**

16.2 Ageing of Trade Payables as on November 20, 2025

Particulars	Outstanding for following periods from due date of payment		
	Less than 1 year	1-2 years	2-3 years
MSME	-	-	-
Others	106.63	0.81	0.43
Disputed dues - MSME	-	-	-
Disputed dues - Others	-	-	-
Total	**106.64**	**0.81**	**0.43**

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025
(All amounts in INR Mn, unless otherwise stated)

17. Revenue from operations

Particulars	**Period ended November 20, 2025**
(a) Operation and maintenance income	407.53
(b) Periodic maintenance income	-
(c) Finance income	1,448.87
Total	**1,856.39**

18. Other Income

Particulars	**Period ended November 20, 2025**
Interest on short term deposit	966.92
Interest on Income tax refund	-
Construction Income towards Change of Scope	0.86
Modification Gain	-
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	-
Provision no Longer Required	26.53
Total	**994.31**

19. Operating Expenses

Particulars	**Period ended November 20, 2025**
Operation and maintenance expenses	298.30
Periodic maintenance expenses	57.55
Construction Cost towards Change of Scope	-
Total	**355.85**

20. Finance costs

Particulars	**Period ended November 20, 2025**
Interest on loans for fixed period (Refer note below 32 & 33)	
Interest on term loan	1,891.83
Interest on debentures	568.93
Finance charges *	16.32
Total (a+b)	**2,477.09**

* Represents unammortised borrowing cost expensed out during the year

CHENANI NASHRI TUNNELWAY LIMITED

CIN Number : U45400MH2010PLC203614

Notes forming part of the Special Purpose Financial Statements for period ended November 20, 2025

(All amounts in INR Mn, unless otherwise stated)

21. Other expenses

Particulars	**Period ended November 20, 2025**
Legal and consultation fees	26.19
Deputation Cost	1.56
Insurance	-
Rates and taxes	2.44
Bank commission	0.42
Advertising expenses	-
Concession fees	0.00
Directors' fees	0.35
Payment to auditors	0.92
Balances written off	-
RPC Cost	124.85
Miscellaneous expenses	0.68
Total	**157.41**

INDEPENDENT AUDITOR'S REPORT

To the Members of CHENANI NASHRI TUNNELWAY LIMITED

Report on the audit of the Ind AS Financial Statements

Qualified Opinion

We have audited the Ind AS Financial Statements of **CHENANI NASHRI TUNNELWAY LIMITED** ("the Company"), which comprise the Balance Sheet as at 31st March, 2024 and the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Changes in Equity and the Statement of Cash Flows for the year then ended, and notes to the Ind AS Financial Statements, including a summary of significant accounting policies and other explanatory information for the year ended on that date.

In our opinion and to the best of our information and according to the explanations given to us, **except for the possible effects of the matter described in the Basis for Qualified Opinion section of our report,** the aforesaid Ind AS Financial Statements give the information required by the Companies Act, 2013 in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards(Ind AS) prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at 31st March, 2024 and its profit, total comprehensive income, changes in equity and its cash flows for the year ended on that date.

Basis for Qualified Opinion

During the FY 2018-19, the Company had recognized and during the year continues to recognize thereafter impairment loss of Rs. 7,107.98 Mn. by comparing the carrying amount of the receivables under the head 'Receivable under Service Concession Arrangements' that were measured at amortized cost and bid received from third party for acquisition of entire Company. Thus, the Company had in the FY 2018-19 and continues thereafter to measure the receivables at fair value then recognized to arrive at present amortized carrying value as at the end of the year, which is not in accordance with Ind AS 109 'Financial Instruments' & read with accounting policy 3.7.4. The consequential impact of the above on the balance under the head 'Receivable under Service Concession Arrangements' reported in the balance sheet and on the profit for the year are unascertainable.

Consequently, the unreserved and explicit statement of compliance with Indian Accounting Standards as notified in the Companies (Indian Accounting Standards) Rules, 2015 and further amendments thereto in Note 2.1 is not proper.

We conducted our audit in accordance with the Standards on Auditing ("SAs") specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Ind AS Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the

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ethical requirements that are relevant to our audit of the Ind AS Financial Statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter

We draw your attention to

a) As mentioned in note no. 32 to the accompanying individual Ind AS Financial Statements regarding NCLAT Orders dated 12th March, 2020. In terms of Para 61 (3) on Pg 87 of the orders, the company has not accounted accrued interest, default interest, penal charges or other similar charges after the cut-off date of 15th October,2018.

b) Note no. 33 to accompanying IND AS financial statements which states that the Company does not comply with certain requirements/provisions of the Companies Act 2013. In view of the above, the Company has estimated possible obligation arising out of these non-compliances and recognized the provision in the books of accounts.

c) As mentioned in note no. 39 to the accompanying IND AS financial statements, the Ministry of Corporate Affairs, Government of India, had initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS Ltd and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of its investigation, SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and relevant information is being provided by ITNL to the agency. The company has not received any direct communication from SFIO. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

Our Opinion is not modified in respect of above matters.

Material Uncertainty Related to Going Concern

We draw your attention to Note no. 31 to the accompanying Ind AS financial statements which describes that Entire Group is going through liquidity issue and defaulted in repayment of various loan instruments, Union of India has filed petition against IL&FS Limited & its Group Companies in National Company Law Tribunal and superseded earlier Board of the Holding/Ultimate Holding Company. These conditions indicate the existence of a material

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uncertainty that may cast significant doubt about the Company's ability to continue as a going concern. As per the management, going concern assumption is appropriate for preparation of financial statements, as the company has received a bid from third party and which has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval is awaited for transfer of equity shares to the bidder.

Our Opinion is not modified in respect of above matter.

Information other than the Ind AS Financial Statements and Auditor's Report thereon

The Company's Board of Directors is responsible for the preparation of the other information. The other information comprises the information included in the Board's Report including Annexures to Board's Report, but does not include the Ind AS Financial Statements and our auditor's report thereon.

Our opinion on the Ind AS Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Ind AS Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Ind AS Financial Statements or our knowledge obtained during the course of our audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

Responsibility of Management and Those Charged with Governance for the Ind AS Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Ind AS Financial Statements that give a true and fair view of the financial position, financial performance, changes in equity and cash flows of the Company in accordance with the accounting principles generally accepted in India, including the Indian Accounting Standards specified under section 133 of the Act. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the Ind AS Financial Statement that give a true and fair view and are free from material misstatement, whether due to fraud or error.

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In preparing the Ind AS Financial Statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Ind AS Financial Statements

Our objectives are to obtain reasonable assurance about whether the Ind AS Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but it is not a guarantee that an audit conducted in accordance with Standards on Auditing ("SAs") will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Ind AS Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Ind AS Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the Ind AS Financial Statements, including the disclosures, and whether the Ind AS Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

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Materiality is the magnitude of misstatements in the Ind AS Financial Statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the Ind AS Financial Statements may be influenced. We consider quantitative materiality and qualitative factors in:

(i) planning the scope of our audit work and in evaluating the results of our work; and
(ii) to evaluate the effect of any identified misstatements in the Ind AS Financial Statements.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the 'Annexure A' a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.

2. As required by Section 143(3) of the Act, we report that:

   a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit.

   b) In our opinion, **except for the effects of the matter described in the Basis for Qualified Opinion paragraph above,** proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books.

   c) The Balance Sheet, the Statement of Profit and Loss, the Statement of Changes in Equity and the Cash Flow Statement dealt with by this Report are in agreement with the books of account.

   d) In our opinion, **except for the effects of the matter described in the Basis for Qualified Opinion paragraph above,** the aforesaid Ind AS Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014.

   e) **Our observations made on the matters stated in Qualified Opinion paragraphs above may have a significant effect so as to adversely affect the functioning of the company.**

   f) On the basis of the written representations received from the directors as on 31st March, 2024 taken on record by the Board of Directors, none of the directors is disqualified as on 31st March, 2024 from being appointed as a director in terms of Section 164 (2) of the Act.

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g) With respect to the Other Matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

i. The Company has no pending litigation which would impact its financial position except those disclosed in Ind AS Financial Statements;

ii. The Company does not envisage any material foreseeable losses in long-term contracts including derivative contract requiring provision;

iii. There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company

iv. a) The management has represented that, to the best of its knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other persons or entities, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries

b) The management has represented, that, to the best of its knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been received by the Company from any persons or entities, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall, whether, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries; and

c) Based on such audit procedures that we have considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (i) and (ii) of Rule 11(e), as provided under (a) and (b) above, contain any material misstatement.

v. The Company has not declared or paid any dividend during the year.

vi. Based on our examination which included test checks, the company has used SAP based application as the accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility and the same has operated throughout the year for all relevant transactions recorded in the software. Further, during the course of our audit we did not come across any instance of audit trail feature being tampered with.

Further, as proviso to Rule 3(1) of the Companies (Accounts) Rules, 2014 is applicable from 1st April 2023, reporting under Rule 11(g) of the Companies (Audit and Auditors) Rules, 2014 on preservation of audit trail as per the statutory requirements for record retention is not applicable for the financial year ended 31st March, 2024.

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h) With respect to the adequacy of the internal financial controls with reference to Ind AS Financial Statements of the Company and the operating effectiveness of such controls, refer to our separate Report in "Annexure B" which expresses an unmodified opinion.

3. With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended; In our opinion and to the best of our information and according to the explanations given to us, the Company has not paid the managerial remuneration during the year.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)

G.K. Agrawal
Partner
M No. 081603
Place: New Delhi
Date: 24th July, 2024
UDIN: 24081603BKAIOQ2180

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Annexure 'A' to the Independent Auditor's Report of CHENANI NASHRI TUNNELWAY LIMITED for the Year ended as on 31st March, 2024

Annexure referred to in paragraph 1 under the heading "Report on Other Legal and Regulatory Requirements" of our report on even date: -

To the best of our information and according to the explanations provided to us by the Company and the books of account and records examined by us in the normal course of audit, we state that:

i. In respect of the Company's Property, Plant and Equipment, Right-of-use Assets and Intangible Assets:

a) A) The Company has maintained proper records showing full particulars, including quantitative details and situation of Property, Plant and Equipment;

B) The Company doesn't have Intangible Assets, therefore paragraph 3(i)(b) of the Order is not applicable to the Company.

b) The Property, Plant and Equipment have been physically verified by the Management at regular Intervals and no material discrepancies were noticed on such verification.

c) The title deeds of immovable properties (other than properties where the company is the lessee and the lease agreements are duly executed in favour of the lessee) are held in the name of the Company.

d) The company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets during the year. Hence, reporting under Para 3(i)(d) is not applicable.

e) There are no proceedings which have been initiated or are pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (as amended in 2016) and rules made thereunder. Hence, reporting under Para 3(i)(e) is not applicable.

ii. a) The Company is engaged in the business of infrastructure development, operations and its maintenance and there is no inventory in hand at any point in time, hence, paragraph 3(ii)(a) of the Order is not applicable to the Company.

b) The Company has not been sanctioned any working capital limits, from banks or financial institutions on the basis of security of current assets. Hence, reporting under Para 3(ii) (b) is not applicable.

iii. The Company has not made investments in, provided any guarantee or security or granted any loans or advances in the nature of loans, secured or unsecured, to companies, firms, limited liability partnerships or any other parties. Hence, reporting under Para 3(iii) is not applicable.

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iv. The Company has not entered into any transaction in respect of loans, investments, guarantee and securities, which attracts compliance to the provisions of the sections 185 and 186 of the Companies Act, 2013. Therefore, the paragraph 3(iv) of the Order is not applicable to the Company.

v. The Company has not accepted deposits or amounts which are deemed to be deposits and the directives issued by the Reserve Bank of India and the provisions of sections 73 to 76 or any other relevant provisions of the Companies Act and the rules framed there under. Hence, reporting under Para 3(v) is not applicable.

vi. We have broadly reviewed the books of account maintained by the company pursuant to the Rules made by the Central Government for the maintenance of cost records under section 148 of the Act, and are of the opinion that prima facie, the prescribed accounts and records have been made.

vii. In respect of statutory dues:

a) The Company is not regular in depositing undisputed statutory dues including goods and services tax, provident fund, employee state insurance, income tax, service tax, value added tax, cess and other statutory dues during the year with the appropriate authorities. As on 31st March 2024, there are no undisputed statutory dues payables for period exceeding for a period more than six month from the date they become payable **except undisputed amounts of INR 54.11 million on account of the tax deducted at source are in arrears since March 31, 2021.**

b) There are no statutory dues referred to in sub-clause (a) which have not been deposited on account of any dispute except;

Name of the Statute	Nature of the Dues	Amount (₹ In Million)	Period to which the amount relates	Forum where dispute is pending
Income Tax Act, 1961	Income tax	1.87	AY 2014-2015	CIT(A)
		3.31	AY 2013-2014	CIT(A)
		11.68	AY 2012-2013	CIT(A)
Income Tax Act, 1961	Traces Demand	0.096	AY 2017-2018	Traces Demand

viii. There were no transactions relating to previously unrecorded income that have been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961 (43 of 1961).

ix. In respect to the borrowings:

a) The Company has defaulted in repayment of loans or other borrowings. Details of the same is as under:

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Default in repayment of loan (Principal & Interest) **(In Rs. Mn.)**

Name of the Lender	Nature of Due	Amount	Due since
Aditya Birla Finance Ltd	Principal	550.00	20th September 2018
IL&FS Airport Ltd	Principal	470.00	28th August 2018
SREI INFRASTRUCTURES	Interest	63.63	30th September 2018
IL&FS Airport Ltd	Interest	31.82	30th September 2018
IL&FS Transportation Networks Limited	Interest	372.51	30th September 2018
IL&FS Ltd	Interest	307.00	30th September 2018

Note: Principal repayment & interest payment due after 15th October, 2018 have not been disclosed as default under this clause in view the NCLAT Orders dated 12th March, 2020

b) The Company has not been declared wilful defaulter by any bank or financial institution or government or any government authority.

c) The Company has utilized the money obtained by way of term loans during the year for the purposes for which they were obtained.

d) On an overall examination of the Ind AS Financial Statements of the Company, funds raised on short term basis have, prima facie, not been used during the year for long-term purposes by the Company.

e) On an overall examination of the Ind AS Financial Statements of the Company, the Company has not taken any funds from any entity or person on account of or to meet the obligations of its subsidiaries, associates or joint ventures.

f) The Company has not raised loans during the year on the pledge of securities held in its subsidiaries, joint ventures or associate companies.

x a) The Company has not raised the money by way of initial public offer/ further public offer (including debt instruments) during the year.

b) During the year, the Company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year. Hence, reporting under Para 3(x)(b) is not applicable.

xi a) According to the information and explanations given to us by the management which have been relied by us, there were no frauds on or by the Company noticed or reported during the period under audit, subject to the pending final outcome of the various matters described in Emphasis of matter above.

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b) No report under sub-section (12) of section 143 of the Companies Act has been filed in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government, during the year and up to the date of this report.

c) As represented to us by the management, there are no whistle blower complaints received by the Company during the year.

xii. The Company is not a Nidhi Company. Hence, reporting under Para 3(xii) is not applicable.

xiii. All transactions with the related parties are in compliance with sections 177 and 188 of the Companies Act, 2013 where applicable and the details of such transactions have been disclosed in the Ind AS Financial Statements as required by the applicable accounting standards.

xiv. a) In our opinion the company has an adequate internal audit system commensurate with the size and nature of its business.

b) We have considered, the internal audit reports for the year under audit, issued to the Company during the year and till date, in determining the nature, timing and extent of our audit procedures.

xv. The Company has not entered into any non-cash transactions with its directors or persons connected with its directors and hence provisions of section 192 of the Companies Act, 2013 is not applicable to the Company.

xvi. a) The Company is not required to be registered under section 45-IA of the Reserve Bank of India Act, 1934 (2 of 1934). Therefore, paragraph 3(xvi) (a) of the Order is not applicable to the Company.

b) The Company has not conducted any Non-Banking Financial or Housing Finance activities. Therefore, paragraph 3(xvi) (b) of the Order is not applicable to the Company.

c) The Company is not a Core Investment Company (CIC) as defined in the regulations made by the Reserve Bank of India. Hence, reporting under Para 3(xvi) (c) & (d) is not applicable.

xvii. The Company has not incurred cash losses in the current financial year and in the immediately preceding financial.

xviii. There has been no resignation of the statutory auditors during the year and accordingly reporting under this clause is not applicable.

xix. On the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, material uncertainty exists as on the date of the audit report that company is capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date.(refer "Material Uncertainty Related to Going Concern" para above)

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We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the company as and when they fall due.

xx a) During the year, the Company has no unspent amount that is required to be transferred to Fund specified in Schedule VII to the Companies Act in respect to both ongoing and other than ongoing projects. Hence, reporting under the paras' 3 (xx) (a) & (b) are not applicable.

xxi Paragraph 3(xxi) of the Order is not applicable to the Company as the Ind AS Financial Statements under reporting are not consolidated Ind AS Financial Statements.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)

G.K Agrawal
Partner
M No. 081603
Place: New Delhi
Date: 24th July, 2024
UDIN: 24081603BKAID8120

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ANNEXURE - B TO THE INDEPENDENT AUDITORS' REPORT
(Referred to in our Report of even date)

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls with reference to Ind AS Financial Statements of **CHENANI NASHRI TUNNELWAY LIMITED** ("the Company") as of 31st March, 2024 in conjunction with our audit of the Ind AS Financial Statements of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control with reference to Ind AS Financial Statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls with reference to Ind AS Financial Statements issued by the Institute of Chartered Accountants of India (the "Guidance Note"). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to Company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls with reference to Ind AS Financial Statements based on our audit. We conducted our audit in accordance with the Guidance Note and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls with reference to Ind AS Financial Statements was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system with reference to Ind AS Financial Statements and their operating effectiveness. Our audit of internal financial controls with reference to Ind AS Financial Statements included obtaining an understanding of internal financial controls with reference to Ind AS Financial Statements, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system with reference to Ind AS Financial Statements.

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Meaning of Internal Financial Controls with reference to Ind AS Financial Statements

A Company's internal financial control with reference to Ind AS Financial Statements is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Ind AS Financial Statements for external purposes in accordance with generally accepted accounting principles. A Company's internal financial control with reference to Ind AS Financial Statements includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of Ind AS Financial Statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the Ind AS Financial Statements.

Inherent Limitations of Internal Financial Controls with reference to Ind AS Financial Statements

Because of the inherent limitations of internal financial controls with reference to Ind AS Financial Statements, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls with reference to Ind AS Financial Statements to future periods are subject to the risk that the internal financial control with reference to Ind AS Financial Statements may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system with reference to Ind AS Financial Statements and such internal financial controls with reference to Ind AS Financial Statements were operating effectively as at 31st March 2024, based on the internal control with reference to Ind AS Financial Statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls With reference to Ind AS Financial Statements issued by the Institute of Chartered Accountants of India.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)

G.K Agrawal
Partner
M No. 081603
Place: New Delhi
Date: 24th July, 2024
UDIN: 24081603BKAI0Q8130

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CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Balance sheet as at March 31, 2024
(All amounts in INR Mn. unless otherwise stated)

Particulars	Notes	As at March 31, 2024		As at March 31, 2023	
ASSETS					
Non-current Assets					
(a) Property, plant and equipment	4		1.46		1.46
(b) Intangible Assets					
(c) Financial assets					
(i) Investments					
(ii) Trade receivables					
(iii) Other financial assets	5		27,410.35		30,301.43
(d) Other non-current assets	6				
Total Non-current Assets			**27,411.81**		**30,302.89**
Current Assets					
(a) Inventories					
(b) Financial assets					
(i) Investments	7	0.18		0.17	
(ii) Cash and cash equivalents	8	529.95		9,541.73	
(iii) Other Bank Balance	9	20,990.26		6,271.08	
(iv) Other financial assets	5	3,807.99	25,328.38	4,003.17	19,816.15
(c) Current tax assets (Net)	10		542.81		507.87
(d) Other current assets	6		133.17		141.12
Total Current Assets			**26,004.36**		**20,465.14**
Total Assets			**53,416.17**		**50,768.04**
EQUITY AND LIABILITIES					
Equity					
(a) Equity share capital	11	3,720.00		3,720.00	
(b) Instruments entirely equity in nature					
(c) Other Equity	12	6,989.50		3,796.42	
Equity attributable to owners of the Company			**10,709.50**		**7,516.42**
Total Equity			**10,709.50**		**7,516.42**
LIABILITIES					
Non-current Liabilities					
(a) Financial Liabilities					
(i) Borrowings	13	13,005.21		14,490.68	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise					
b) total outstanding dues other than micro & small enterprise					
(iii) Other financial liabilities	14	207.52	13,212.73	209.34	14,700.03
(b) Provisions					
(c) Deferred tax liabilities	10.1		3,172.13		2,059.37
Total Non-current Liabilities			**16,384.86**		**16,759.40**
Current liabilities					
(a) Financial liabilities					
(i) Borrowings	13	20,007.77		20,007.76	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise					
b) total outstanding dues other than micro & small enterprise		5,030.16		5,201.49	
(iii) Other financial liabilities	14	959.63	25,997.56	959.18	26,168.43
(c) Current Tax liabilities			268.78		268.78
(d) Provisions					
(e) Other current liabilities	15		55.47		55.01
Total Current Liabilities			**26,321.81**		**26,492.22**
Total Liabilities			**42,706.67**		**43,251.62**
Total Equity and Liabilities			**53,416.17**		**50,768.04**

Note 1 to 41 forms part of the financial statements.

In terms of our report of even date.
For Glanender & Associates
Chartered Accountants
Firm Registration No. - [illegible]

G. K. Agarwal
Partner
Membership Number : [illegible]

Place : New Delhi
Date : 24 July 2024

For and on behalf of the Board

Non-Executive Director
Krishna Ghag
DIN-02401661

Non-Executive Director
Ajay Munde
DIN-02497302

Place : Mumbai
Date : 24 July 2024

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of Profit & Loss for Year Ended March 31, 2024
(All amounts in INR Mn, unless otherwise stated)

	Particulars	Notes	Year Ended March 31, 2024	Year Ended March 31, 2023
I.	Revenue from Operations	17	3,642.41	3,931.30
II.	Other income	18	1,259.92	801.28
III.	**Total Income (I+II)**		**4,902.33**	**4,732.58**
IV.	**Expenses**			
	Operating expenses	19	455.73	487.10
	Finance costs (net)	20	37.60	43.72
	Modification Loss	30	-	192.24
	Other expenses	21	103.16	106.68
	Total expenses (IV)		**596.49**	**829.73**
V	**Profit before tax**		**4,305.84**	**3,902.85**
VI	Less: Tax expense			
	(1) Current tax	22	-	-
	(2) Deferred tax	22.1	1,112.76	2,059.37
	Total Tax expenses		**1,112.76**	**2,059.37**
VII	**Profit/(loss) after tax (V-VI)**		**3,193.08**	1,843.48
VIII	**Other Comprehensive Income / (Loss)**			
	Items that may be reclassified to profit or loss			
	(a) Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge	12	-	-
	(b) Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge		-	-
	Total other comprehensive income / (loss)		-	-
IX	**Total comprehensive income / (loss) for the year (VII+VIII)**		**3,193.08**	1,843.48
X	Earnings per equity share (face value ` 10 per share):	22		
	(1) Basic (in Rs.)		8.58	4.96
	(2) Diluted (in Rs.)		8.58	4.96

Note 1 to 41 forms part of the financial statements.

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

G. K. Agarwal
Partner
Membership Number : 081603

Place : New Delhi
Date : 24 July 2024

For and on behalf of the Board

Non-Executive Director
Krishna Ghag
DIN-02491661

Non-Executive Director
Ajay Menon
DIN-02497302

Place : Mumbai
Date : 24 July 2024

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Cash Flow Statement For year ended March 31, 2024
(All amounts in INR Mn, unless otherwise stated)

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Cash flows from operating activities		
Profit for the year	3,193.08	1,843.48
Adjustments for:		
Deferred tax liabilities	1,112.76	2,059.37
Finance Income	(3,142.75)	(3,397.24)
Exchange fluctuation loss		
Modification Loss / (Gain)	(150.37)	192.24
Restatement of Cashflow hedge Reserve		
Interest on short term deposit	(1,064.11)	
Interest and finance cost	37.60	43.72
Periodic Maintenance income	(19.18)	(8.94)
Operation and maintenance income	(480.48)	(525.12)
Provision no Longer Required	(32.63)	
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	(0.01)	(0.01)
Sub total	**(546.09)**	**207.50**
Movements in working capital:		
(Increase)/decrease in other financial assets & other assets (current and non current)	579.33	(585.77)
Increase/ (Decrease) in financial liabilities & other liabilities (current and non current)	(139.59)	94.99
Sub total	439.74	(490.79)
Cash generated from operations	**(106.35)**	**(283.29)**
Income taxes paid (net of refunds)	(34.94)	(211.15)
Net cash generated by operating activities (A)	**(141.28)**	**(494.44)**
Cash flows from investing activities		
(Increase) / Decrease in receivable under service concession arrangements (net)	6,350.40	6,350.40
Interest received	901.47	
(Investments)/Redemption of Investment in Mutual funds	0.00	0.00
Movement in other bank balances	(14,719.18)	7,874.01
Net cash used in investing activities (B)	**(7,467.31)**	**14,224.41**
Cash flows from financing activities		
Proceeds / (Repayment) from Non Current borrowings (net)	(1,403.18)	(7,796.82)
Proceeds from Current borrowings (net)		
Finance costs paid	(0.00)	(0.00)
Net cash generated in financing activities (C)	**(1,403.18)**	**(7,796.82)**
Net increase/ (decrease) in cash and cash equivalents (A+B+C)	**(9,011.78)**	**5,933.16**
Cash and cash equivalents at the beginning of the year	9,541.73	3,608.58
Cash and cash equivalents at the end of the year	**529.95**	**9,541.73**

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Components of Cash and Cash Equivalents		
Cash on hand		
Balances with Banks in current accounts	63.50	81.39
Balances with Banks in deposit accounts	466.45	9,460.35
Cash and Cash Equivalents	**529.95**	**9,541.73**
Cash and cash equivalents for statement of cash flows	**529.95**	**9,541.73**

Disclosing change in financial liabilities

Particular	31-Mar-23	Cash flow	Non Cash changes	31-Mar-24
Long Term - Secured Loan	17,439.83	(1,403.18)	(82.30)	15,954.35
Unsecured Loan	17,058.62			17,058.62
Total	**34,498.45**	**(1,403.18)**	**(82.30)**	**33,012.97**

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. : 000661N

G. K. Agarwal
Partner
Membership Number : 081003

Place : New Delhi
Date : 24 July 2024

For and on behalf of the Board

Non-Executive Director
Krishna Garg
DIN-02491043

Non-Executive Director
Ajay Merlin
DIN-02497302

Place : Mumbai
Date : 24 July 2024

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of changes in equity for year ended March 31, 2024
(All amounts in INR Mn, unless otherwise stated)

a. Equity share capital	Year Ended March 31, 2024	Year Ended March 31, 2023
Balance as at the beginning of the year	3,720.00	3,720.00
Changes in Equity Share Capital due to prior period errors	-	-
Restated balance at the beginning of the current reporting period	**3,720.00**	**3,720.00**
Changes in equity share capital during the year	-	-
Balance as at end of the year	3,720.00	3,720.00

b. Other equity	Reserves and surplus	Items of other comprehensive income
	Retained earnings	Effective portion of cash flow hedge
Balance as at April 1, 2022	1,952.94	-
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	**1,952.94**	-
Profit/(Loss) for the year	1,843.48	-
Other comprehensive income for the year, net of income tax	-	-
Total comprehensive income for the year	**1,843.48**	-
Other adjustments	-	-
Balance as at March 31, 2023	**3,796.42**	-
Balance as at April 1, 2023	3,796.42	-
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	**3,796.42**	-
Profit/(Loss) for the year	3,193.08	-
Other comprehensive income for the year, net of income tax	-	-
Total comprehensive income for the year	**3,193.08**	-
Other adjustments	-	-
Balance as at March 31, 2024	**6,989.50**	-

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

G. K. Agarwal
Partner
Membership Number : 081603

Place : New Delhi
Date : 24 July 2024

For and on behalf of the Board

Non-Executive Director	Non-Executive Director
Krishna Ghag	Ajay Menon
DIN-02491661	DIN-02497302

Place : Mumbai
Date : 24 July 2024

General Information & Material Accounting Policies

Note No-1

1. General information

The Company was incorporated under the Companies Act 1956 on June 02, 2010. The Company is a special purpose vehicle (SPV) promoted by IL&FS Transportation Networks Limited (ITNL). The company registered address is "The IL&FS Financial Center, Plot C22, G Block, Bandra Kurla Complex, Mumbai - 400051." The Company has entered into a Concession Agreement (CA) on June 28, 2010 with The National Highways Authority of India (NHAI) for Rehabilitation, Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00(New Alignment) including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT basis) in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from the 23rd May 2011 (the 'Appointed date').

Note No-2

2. Material accounting policies

2.1 Statement of compliance

The financial statements have been prepared in accordance with Indian Accounting Standards ("Ind AS") notified under the Companies (Indian Accounting Standards) Rules, 2015 (as amended from time to time) and other relevant provisions of the Companies Act, 2013("the Act").

The Balance Sheet, the Statement of Profit and Loss and the Statement of Changes in Equity are prepared and presented in the format prescribed in the Division II of Schedule III to the Act. The Statement of Cash Flows has been prepared and presented as per the requirements of Ind AS 7 "Statement of Cash Flows".

2.2 Basis of preparation and presentation

The Financial Statements are presented in INR, which is also the Company's functional currency and all values are rounded to the nearest millions (INR 000,000), except earnings per share and except otherwise indicated.

The financial statements have been prepared on a historical cost basis, except for the following asset and liabilities which have been measured at fair value:

- Derivative financial instruments,
- Certain financial assets and liabilities measured at fair value (refer accounting policy regarding financial instruments),

Historical cost is generally based on the fair value of the consideration given in exchange for goods and services. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these financial statements is determined on this basis.

2.3 Use of estimates

The preparation of financial statements in conformity with IND AS requires the Management to make estimates and assumptions that affect the reported amount of assets, liabilities, revenues and expenses and disclosure of contingent liabilities on the date of financial statements. The recognition, measurement, classification or disclosures of an item or information in the financial statements have been made relying on management estimates to a greater extent.

2.4 Fair value measurement

The Company measures financial instruments, such as, derivatives at fair value at each balance sheet date.
Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Company.
The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs. All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period. External valuers are involved for valuation of significant assets, such as properties and significant liabilities, such as contingent consideration.

For the purpose of fair value disclosures, the Company has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.
This note summarises accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

3. Accounting for rights under service concession arrangements and revenue recognition

i. Recognition and measurement

The Company builds, operates and maintains infrastructure assets under public-to-private Service Concession Arrangements (SCAs), which is an arrangement between the "grantor" (a public sector entity/authority) and the "operator" (a private sector entity) to provide services that give the public access to major economic and social facilities utilizing private-sector funds and expertise. The infrastructures accounted for by the Company

as concessions are mainly related to the activities concerning roads.

Concession contracts are public-private agreements for periods specified in the SCAs including the construction, up gradation, restoration of infrastructure and future services associated with the operation and maintenance of assets in the concession period. Revenue recognition, as well as, the main characteristics of these contracts are detailed in Note 3.iii.

With respect to service concession arrangements, revenue and costs are allocated between those relating to construction services and those relating to operation & maintenance services, and are accounted for separately. Consideration received or receivable is allocated by reference to the relative fair value of services delivered when the amounts are separately identifiable. The infrastructure used in a concession are classified as an intangible asset or a financial asset, depending on the nature of the payment entitlements established in the concession agreement.

When the amount of the arrangement consideration for the provision of public services is substantially fixed by a contract, the Company recognizes revenues from construction services for public facilities (infrastructures) by the percentage-of-completion method, and recognizes the consideration as a financial asset and the same is classified as "Receivables against Service Concession Arrangements". The Company accounts for such financial assets at amortized cost, calculates interest income based on the effective interest method and recognizes it in revenue as Finance Income.

ii. Contractual obligation to restore the infrastructure to a specified level of serviceability

The Company has contractual obligations to maintain the infrastructure to a specified level of serviceability or restore the infrastructure to a specified condition during the concession period and/or at the time of hand over to the grantor of the SCA. Such obligations are measured at the best estimate of the expenditure that would be required to settle the obligation at the balance sheet date. In case of concession arrangements under financial asset model, such costs are recognized in the period in which such costs are actually incurred.

iii. Revenue recognition

Finance income for concession arrangements under financial asset model is recognized using the effective interest method. Revenues from operations and maintenance services and overlay services are recognized in each period as and when services are rendered in

accordance with Ind AS 115 Revenue from contract with customers.

iv. Revenue from construction contracts

The Company recognizes and measures revenue, costs and margin for providing construction services during the period of construction of the infrastructure in accordance with Ind AS 115 'Construction Contracts'.
When the outcome of a construction contract can be estimated reliably and it is probable that it will be profitable, contract revenue and contract costs associated with the construction contract are recognised as revenue and expenses respectively by reference to the percentage of completion of the contract activity at the reporting date. The percentage of completion of a contract is determined considering the proportion that contract costs incurred for work performed upto the reporting date bear to the estimated total contract costs.

For the purposes of recognizing revenue, contract revenue comprises the initial amount of revenue agreed in the contract, the variations in contract work, claims and incentive payments to the extent that it is probable that they will result in revenue and they are capable of being reliably measured.

The percentage of completion method is applied on a cumulative basis in each accounting period to the current estimates of contract revenue and contract costs. The effect of a change in the estimate of contract revenue or contract costs, or the effect of a change in the estimate of the outcome of a contract, is accounted for as a change in accounting estimate and the effect of which are recognized in the Statement of Profit and Loss in the period in which the change is made and in subsequent periods.

When the outcome of a construction contract cannot be estimated reliably, revenue is recognized only to the extent of contract costs incurred of which recovery is probable and the related contract costs are recognized as an expense in the period in which they are incurred.

When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense in the Statement of Profit and Loss in the period in which such probability occurs.

v. Borrowing cost related to SCAs

In case of concession arrangement under financial asset model, borrowing costs attributable to construction of the infrastructure are charged to Statement of Profit and

Loss in the period in which such costs are incurred.

In case of concession arrangement under intangible asset model, borrowing costs attributable to the construction of infrastructure assets are capitalised up to the date of the final completion certificate of the asset / facility received from the authority for its intended use specified in the Concession Agreement. All borrowing costs subsequent to the capitalization of the intangible assets are charged to the Statement of Profit and Loss in the period in which such costs are incurred.

vi. Claims

Claims raised with the concession granting authority towards reimbursement for costs incurred due to delay in handing over of unencumbered land to the Company for construction or other delays attributable solely to the concession granting authority are recognised when there are is a reasonable certainty that there will be inflow of economic benefits to the Company. The claims when recognized as such are reduced from the carrying amount of the intangible asset / financial asset under the service concession arrangement, as the case may be, to the extent the claims relate to costs earlier included as a part of the carrying amount of these assets. Further, these claims are credited to profit or loss to the extent it is probable to have economic benefits to the company.

3.1 Borrowing costs

Borrowing costs are recognised in the period to which they relate, regardless of how the funds have been utilised, except where it relates to the financing of construction of development of assets requiring a substantial period of time to prepare for their intended future use. Interest is capitalised up to the date when the asset is ready for its intended use. The amount of interest capitalised (gross of tax) for the period is determined by applying the interest rate applicable to appropriate borrowings outstanding during the period to the average amount of accumulated expenditure for the assets during the period. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds

All other borrowing costs are recognised in profit or loss in the period in which tare incurred.

3.2 Taxation

3.2.1 Current tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. Taxable profit differs from 'profit before tax' as reported in the statement of profit and loss because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Company's current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Current income tax relating to items recognised outside profit or loss is recognised outside profit or loss (either in other comprehensive income or in equity). Current tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity. Management periodically evaluates positions taken in the tax return with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

3.2.2 Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases values used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets (including unused tax credits such as MAT credit and unused tax losses such as carried forward business loss and unabsorbed depreciation) are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from the initial recognition (other than in a business combination) of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit. In addition, deferred tax liabilities are not recognized if the temporary difference arises from the initial recognition of goodwill.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax relating to items recognised outside profit or loss is recognised outside profit

or loss (either in other comprehensive income or in equity). Deferred tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of to recover or settle the carrying amount of its assets and liabilities.

3.3 Property, plant and equipment

Property, plant and equipment acquired by the Company are reported at acquisition cost, with deductions for accumulated depreciation and impairment losses, if any.

The acquisition cost includes the purchase price (excluding refundable taxes) and expenses, such as delivery and handling costs, installation, legal services and consultancy services, directly attributable to bringing the asset to the site and in working condition for its intended use.

Where the construction or development of any asset requiring a substantial period of time to set up for its intended use is funded by borrowings, the corresponding borrowing costs are capitalized up to the date when the asset is ready for its intended use.

All assets are depreciated on a Straight Line Method (SLM) of Depreciation, over the useful life of assets as prescribed under Schedule II of the Companies Act, 2013.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying of the asset and is recognised in profit or loss.

3.4 Impairment of tangible assets / intangible asset

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to

the smallest Company of cash-generating units for which a reasonable and consistent allocation basis can be identified.

In assessing value in use, the estimated future cash flows are discounted to their present value using appropriate discount rate.

Recoverable amount is the higher of fair value less costs of disposal and value in use.
If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognised immediately in profit or loss.

A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in the statement of profit or loss unless the asset is carried at a revalued amount, in which case, the reversal is treated as a revaluation increase.

Foreign Currencies:

The Company's financial statements are presented in INR, which is also the Company's functional currency. In preparing the financial statements of Company, transactions in currencies other than the Company's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. The gain or loss arising on translation of non-monetary items measured at fair value is treated in line with the recognition of the gain or loss on the change in fair value of the item (i.e., translation differences on items whose fair value gain or loss is recognized in OCI or statement of profit or loss are also recognized in OCI or statement of profit or loss, respectively). Exchange differences on monetary items are recognized in profit or loss in the period in which they arise except for exchange differences on transactions entered into in order to hedge certain foreign currency risks.

3.5. Provision

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. When the

Company expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit and loss net of any reimbursement.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (when the effect of the time value of money is material).

3.6 Financial instruments

Financial assets and financial liabilities are recognized when a company becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss ("FVTPL) are recognized immediately in the statement of profit and loss.

3.7 Financial assets

All regular way purchases or sales of financial assets are recognized and derecognized on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognized financial assets are subsequently measured in their entirety at either amortized cost or fair value, depending on the classification of the financial assets.

3.7.1 Classification of financial assets – debt instruments

Debt instruments that meet the following conditions are subsequently measured at amortised cost (except for debt instruments that are designated as at fair value through profit or loss on initial recognition):

- the asset is held within a business model whose objective is to hold assets in order

to collect contractual cash flows;

- the contractual terms of the instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

After initial measurement, such financial assets are subsequently measured at amortised cost using the effective interest rate (EIR) method. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance income in the profit or loss. The losses arising from impairment are recognised in the profit or loss.

3.7.2 Amortised cost and Effective interest method

The effective interest method is a method of calculating the amortised cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

Income is recognized on an effective interest basis for debt instruments other than those financial assets classified as at FVTPL. Interest income is recognized in profit or loss and is included in the "Other income" line item.

3.7.3 Financial assets at FVTPL

Debt instruments that do not meet the amortized cost or FVOCI criteria are measured at FVTPL. In addition, debt instruments that meet the amortized cost or FVOCI criteria but are designated as at FVTPL are measured at FVTPL.

A debt instrument that meets the amortized cost or FVTOCI criteria may be designated as at FVTPL upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency that would arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases. The Company has not designated any debt instrument as at FVTPL.

Financial assets at FVTPL are measured at fair value at the end of each reporting period, with any gains or losses arising on re-measurement recognized in profit or loss. The net gain or loss recognized in profit or loss is included in in the "Other income" line item.

3.7.4 Impairment of financial assets

In accordance with Ind AS 109, the Company applies expected credit loss (ECL) model for measurement and recognition of impairment loss on the following financial assets and credit risk exposure:
a) Financial assets that are debt instruments, and are measured at amortised cost e.g., loans, debt securities, deposits, trade receivables and bank balance
b) Trade receivables or any contractual right to receive cash or another financial asset that result from transactions that are within the scope of Ind AS 11 and Ind AS 18 (referred to as 'contractual revenue receivables' in these illustrative financial statements)
c) Loan commitments which are not measured as at FVTPL

The Company measures the loss allowance for a financial instrument at an amount equal to the lifetime expected credit losses if the credit risk on that financial instrument has increased significantly since initial recognition. If the credit risk on a financial instrument has not increased significantly since initial recognition, the Company measures the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. However, for trade receivables, the Company measures the loss allowance at an amount equal to lifetime expected credit losses. In cases where the amounts are expected to be realized upto one year from the due date, loss for the time value of money is not recognized, since the same is not considered to be material.

When making the assessment of whether there has been a significant increase in credit risk since initial recognition, the Company uses the change in the risk of a default occurring over the expected life of the financial instrument instead of the change in the amount of expected credit losses. To make that assessment, the Company compares the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of initial recognition and considers reasonable and supportable information, that is available without undue cost or effort, that is indicative of significant increases in credit risk since initial recognition.

3.8 Reclassification of financial assets

The Company determines classification of financial assets and liabilities on initial recognition. After initial recognition, no reclassification is made for financial assets which are equity instruments and financial liabilities. For financial assets which are debt instruments, a reclassification is made only if there is a change in the business model for managing those assets. Changes to the business model are expected to be infrequent. The Company's senior management determines change in the business model as a result of external or internal changes which are significant to the Company's operations. Such changes are evident to external parties. A change in the business model occurs when the Company either begins or ceases to perform an activity that is significant to its operations. If the Company reclassifies financial assets, it applies the reclassification prospectively from the reclassification date which is the first day of the immediately next

reporting period following the change in business model. The Company does not restate any previously recognised gains, losses (including impairment gains or losses) or interest.

3.8.1 Derecognition of financial assets

The Company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. If [the Company] the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Company recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.
On derecognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss if such gain or loss would have otherwise been recognized in profit or loss on disposal of that financial asset.

On derecognition of a financial asset other than in its entirety (e.g., when the Company retains an option to repurchase part of a transferred asset), [the Company] the Company allocates the previous carrying amount of the financial asset between the part it continues to recognised under continuing involvement, and the part it no longer recognises on the basis of the relative fair values of those parts on the date of the transfer. The difference between the carrying amount allocated to the part that is no longer recognised and the sum of the consideration received for the part no longer recognised and any cumulative gain or loss allocated to it that had been recognised in other comprehensive income is recognised in profit or loss if such gain or loss would have otherwise been recognised in profit or loss on disposal of that financial asset. A cumulative gain or loss that had been recognised in other comprehensive income is allocated between the part that continues to be recognised and the part that is no longer recognised on the basis of the relative fair values of those parts.

3.9 Modification of Cash Flows of financial assets and revision in estimates of Cash flows

The rate considered for recognizing Finance Income (EIR) and fair valuation of the Receivable under SCA finalised on achievement of PCOD / COD for the Project. Thereafter this rate will remain constant during the balance concession period unless there is an impairment / reversal of impairment of asset.

When the contractual cash flows of a financial asset are renegotiated or otherwise modified and the renegotiation or modification does not result in the derecognition of that financial asset in accordance with Ind AS 109, the Company recalculates the gross carrying amount of the financial asset and recognises a modification gain or loss in profit or loss. The gross carrying amount of the financial asset is recalculated as the present value of the renegotiated or modified contractual cash flows that are discounted at the financial asset's original effective interest rate. Any costs or fees incurred are adjusted to the carrying amount of the modified financial asset and are amortised over the remaining term of the modified financial asset.

If the Company revises its estimates of payments or receipts (excluding modifications and changes in estimates of expected credit losses), it adjusts the gross carrying amount of the financial asset or amortised cost of a financial liability to reflect actual and revised estimated contractual cash flows. The Company recalculates the gross carrying amount of the financial asset or amortised cost of the financial liability as the present value of the estimated future contractual cash flows that are discounted at the financial instrument's original effective interest rate. The adjustment is recognised in profit or loss as income or expense.

3.10 Financial liabilities and equity instruments-

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate
The Company's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.

3.10.1 Classification as debt or equity
Debt and equity instruments issued by a Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument

3.10.2 Financial liabilities

All financial liabilities are subsequently measured at amortized cost using the effective interest method

3.10.3 Financial liabilities subsequently measured at amortised cost

Financial liabilities are measured at amortized cost at the end of subsequent accounting periods. The carrying amounts of financial liabilities that are subsequently measured at

amortized cost are determined based on the effective interest method. Interest expense that is not capitalized as part of costs of an asset is included in the 'Finance costs' line item.

The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

3.10.4 Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or have expired. An exchange between with a lender of debt instruments with substantially different terms is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, a substantial modification of the terms of an existing financial liability (whether or not attributable to the financial difficulty of the debtor) is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

3.11 Cash and cash equivalents

Cash and cash equivalent in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

3.12 Cash Flow Statement:

The statement of cash flows shows the changes in cash and cash equivalents arising during the year from operating activities, investing activities and financing activities

The cash flows from operating activities are determined by using the indirect method. Net income is therefore adjusted by non-cash items, such as measurement gains or losses, changes in provisions, impairment of property, plant and equipment and

intangible assets, as well as changes from receivables and liabilities. In addition, all income and expenses from cash transactions that are attributable to investing or financing activities are eliminated. Interest received or paid is classified as operating cash flows

The cash flows from investing and financing activities are determined by using the direct method

3.13 Earnings per Equity Share:

Basic earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares outstanding during the period.

Diluted earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares considered for deriving basic earnings per equity share and also the weighted average number of equity shares that could have been issued upon conversion of all dilutive potential equity shares. The dilutive potential equity shares are adjusted for the proceeds receivable had the equity shares been actually issued at fair value (i.e. the average market value of the outstanding equity shares). Dilutive potential equity shares are deemed converted as of the beginning of the period, unless issued at a later date. Dilutive potential equity shares are determined independently for each period presented.

3.14 Critical accounting judgments:

The preparation of Financial Statements in conformity with the recognition and measurement principles of Ind AS requires management to make estimates and assumptions that affect the reported balances of assets and liabilities, disclosures of contingent liabilities at the date of the Financial Statements and the reported amounts of income and expenses for the periods presented.

Management believes that the estimates used in the preparation of the financial statements are prudent and reasonable. Actual results could differ from these estimates. In case the actual results are different those from estimates, the effect thereof is given in the financial statements of the period in which the events materialize. Any change in such estimates is accounted prospectively.

The matters to be disclosed will be dictated by the circumstances of the individual entity, and by the significance of judgements and estimates made to the performance and financial position of the entity. Instead of disclosing this information in a separate note, it may be more appropriate to include such disclosures in the relevant asset

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to

accounting estimates are recognized in the period in which the estimates are revised and future periods are affected.

3.15 Key sources of estimation of uncertainty

Key source of estimation of uncertainty at the date of Financial Statements, which may cause a material adjustment to the carrying amounts of assets and liabilities within the next financial year, is in respect of-

a) Periodical Major Maintenance
The management, estimates expenditure w.r.t periodic major maintenance by using a model that incorporates a number of assumptions, including the life of the concession agreement and the expected cost of the periodic major maintenance which are considered as reasonable by the management.

b) Fair value measurement of financial instruments
When the fair values of financial assets and financial liabilities recorded in the balance sheet cannot be measured based on quoted prices in active markets, their fair value is measured using valuation techniques including the DCF model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments. Refer Note 29 for further disclosures.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2024
(All amounts in INR Mn, unless otherwise stated)

4. Property, plant and equipment

Previous Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2022	Additions	Deductions	Balance at March 31, 2023	Balance as at April 1, 2022	Deductions	Depreciation expense	Balance at March 31, 2023	As at March 31, 2023	As at March 31, 2022
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	**1.46**	-	-	**1.46**	-	-	-	-	**1.46**	**1.46**

Current Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2023	Additions	Deductions	Balance at March 31, 2024	Balance as at April 1, 2023	Deductions	Depreciation expense	Balance at March 31, 2024	As at March 31, 2024	As at March 31, 2023
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	**1.46**	-	-	**1.46**	-	-	-	-	**1.46**	**1.46**

5. Other financial assets (Unsecured, considered good)

Particulars	As at March 31, 2024		As at March 31, 2023	
	Non Current	Current	Non Current	Current
Receivable under service concession arrangements	27,409.83	2,771.06	30,301.07	2,437.44
Security Deposits - Others	0.00	-	0.00	-
Other advances (Receivable from Banks) (Refer note - 32)	-	794.85	-	914.75
Interest receivable on fixed deposit		242.08		79.45
Foreign Currency Forward Contracts	-		-	
Receivable from NHAI - GST witheld on Annuity	-		-	571.54
Receivable from NHAI - Utility Shifting & Change of scope	115.09	-	114.94	-
Less Provision for doubtful receivable	(114.57)	-	(114.57)	-
Total	**27,410.35**	**3,807.99**	**30,301.43**	**4,003.17**

6. Other assets (Unsecured, considered good unless otherwise mentioned)

Particulars	As at March 31, 2024		As at March 31, 2023	
	Non Current	Current	Non Current	Current
Advance towards Insurance premium		68.62		76.00
Indirect tax balances	-	64.55	-	65.12
Unbilled Revenue	-		-	
Total	**-**	**133.17**	**-**	**141.12**

7. Current Investments

Particulars	As at March 31, 2024		As at March 31, 2023	
	Qty	Amount	Qty	Amount
Unquoted Investments				
(a) Investment in SBI Liquid Fund Regular Growth Mutual fund	48.698	0.18	48.698	0.17
TOTAL INVESTMENTS	**48.698**	**0.18**	**48.698**	**0.17**

(Note: Cost of Investment - Rs. 1,36,458.56 & NAV as at March 31, 2024 - Rs. 3,745.6791)

8. Cash and cash equivalents

For the purposes of the statement of cash flows, cash and cash equivalents include cash on hand and in banks, net of outstanding bank overdrafts. Cash and cash equivalents at the end of the reporting period as shown in the statement of cash flows can be reconciled to the related items in the balance sheet as follows:

Particulars	As at March 31, 2024	As at March 31, 2023
Balances with Banks		
In current accounts	63.50	81.39
In deposit accounts with original maturity less than 3 months	466.45	9,460.35
Cheques, drafts on hand	-	-
Cash on hand	-	-
Others	-	-
Cash and cash equivalents	**529.95**	**9,541.73**

9. Other Bank Balances

Particulars	As at March 31, 2024	As at March 31, 2023
Balances with Banks in deposits account having original maturity more than three months and remaining maturity less than twelve months	20,990.26	6,271.08
Total	**20,990.26**	**6,271.08**

10. Current tax assets and liabilities

Particulars	As at March 31, 2024		As at March 31, 2023	
	Non Current	Current	Non Current	Current
Current tax assets				
Advance payment of taxes	-	542.81	-	507.87
Total	-	**542.81**	-	**507.87**
Current tax liabilities				
Provision for tax	-	268.78	-	268.78
Total	-	**268.78**	-	**268.78**

10.1 Deferred tax balances

Particulars	As at March 31, 2024		As at March 31, 2023	
	Non Current	Current	Non Current	Current
Deferred tax assets	(2,853.88)	-	(4,158.88)	-
Less : Deferred tax liabilities	6,026.01	-	6,218.26	-
Total	**3,172.13**	-	**2,059.37**	-

22.3 Deferred tax Disclosures

Deferred tax assets and deferred tax liabilities have been offset wherever the Company has a legally enforceable right to set off current tax assets against current tax liabilities and where the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority

Deferred Tax Asset in respect of Unabsorbed Business Loss/ depreciation has been recognized to the extent reversals of Deferred Tax Liability and Taxable Profits are available before end of concession period.

Significant management judgement is considered in determining provision for income tax, deferred tax assets and liabilities and recoverability of deferred tax assets. The recoverability of deferred tax assets is based on estimate of the taxable income for the period over which deferred tax assets will be recovered. The Company has unabsorbed business losses/depreciation which according to the management will be used to set off taxable profit arising in subsequent years from operation of the Company

The profitability projections used for determining the recoverability of deferred tax asset has number of variables viz. Revenue projections, restructuring of debt, incurrence of overlay etc which are subject to change

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2024
(All amounts in INR Mn, unless otherwise stated)

11. Equity Share Capital

Particulars	As at March 31, 2024		As at March 31, 2023	
	Number of shares in Mn	Amount in (Rs. Mn)	Number of shares in Mn	Amount in (Rs. Mn)
Authorised				
Equity Shares of ₹ 10/- each	372.00	3,720.00	372.00	3,720.00
Issued, Subscribed and Paid up				
Equity Shares of ₹ 10/- each fully paid	372.00	3,720.00	372.00	3,720.00
Total	**372.00**	**3,720.00**	**372.00**	**3,720.00**

11.1 Reconciliation of the number of equity shares outstanding at the beginning and at the end of the year :

	As at March 31, 2024		As at March 31, 2023	
Particulars	Number of shares in Mn	Amount in (Rs. Mn)	Number of shares in Mn	Amount in (Rs. Mn)
Shares outstanding at the beginning of the year	372.00	3,720.00	372.00	3,720.00
Shares issued during the year	-	-	-	-
Shares outstanding at the end of the year	**372.00**	**3,720.00**	**372.00**	**3,720.00**

11.2 Details of shares held by the holding company, the ultimate controlling party, their subsidiaries and associates

Number in Mn

Particulars	As at March 31, 2024	As at March 31, 2023
Holding Company - IL&FS Transportation Networks Limited & its Nominees	372.00	372.00

11.3 Details of shares held by each shareholder holding more than 5% shares

Equity Shareholder	As at March 31, 2024		As at March 31, 2023	
	Number of shares held in Mn	% holding in the class of shares	Number of shares held in Mn	% holding in the class of shares
IL&FS Transportation Networks Limited & its Nominees, the holding company	372.00	100%	372.00	100%
Total	**372.00**	**100%**	**372.00**	**100%**

11.4 Terms of Equity .
The Company has one class of equity shares with face value of ₹ 10 each fully paid up. Each shareholder has a voting right in proportion to his holding in the paid-up equity share capital of the Company
In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders
Where final dividend is proposed by the Board of Directors, it is subject to the approval of the shareholders in the Annual General Meeting.
During the year no dividend has been proposed or paid.
The Company has not issued any securities during the year with the right / option to convert the same into equity shares at a later date
The Company has not reserved any shares for issue under options and contracts / commitments for the sale of shares/disinvestment
The shares issued carry equal rights to dividend declared by the company and no restrictions are attached to any specific shareholder

11.5 Shareholding of promoter
The details of promoter shareholding are given below :

Name of the Promotor	As at March 31, 2024			As at March 31, 2023		
	Number of shares held in Mn	% of total shares	% of change during the year	Number of shares held in Mn	% of total shares	% of change during the year
IL&FS Transportation Networks Limited & it's nominees	372.00	100%	-	372.00	100%	-
Total	**372.00**	**100%**	-	**372.00**	**100%**	-

12. Other Equity

Particulars	As at March 31, 2024	As at March 31, 2023
Retained earnings		
Balance at beginning of year	3,796.42	1,952.94
Profit / (Loss) during the year	3,193.08	1,843.48
Balance at end of the year	**6,989.50**	**3,796.42**
Cash flow hedging reserve		
Balance at beginning of year		
Gain/(loss) arising on changes in fair value of designated portion of hedging instruments entered into for cash flow hedges		
Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge		
Balance at end of the year		
Total	**6,989.50**	**3,796.42**

NEW DELHI

13.Borrowings at amortised cost

Particulars	As at March 31, 2024			As at March 31, 2023		
	Non-Current Borrowings	Current portion	Current Borrowings	Non-Current Borrowings	Current portion	Current Borrowings
Secured – at amortised cost						
(i) Term loans						
- from banks	12,863.91	3,090.45	-	14,349.38	3,090.45	-
- from financial institutions	-	-	-	-	-	-
Unsecured – at amortised cost						
(i) Term loans						
- from banks	-	7,500.00	-	-	7,500.00	-
- from financial institutions *	-	2,550.00	-	-	2,550.00	-
- from related parties (Refer Note 27)	141.30	4,306.48	2,560.84	141.30	4,306.48	2,560.84
Total	**13,005.21**	**17,446.93**	**2,560.84**	**14,490.68**	**17,446.92**	**2,560.84**
Less: Current maturities of long term debt clubbed under "Short Term Borrowing"		17,446.93	-		17,446.92	-
Add: Current maturities of long term debt clubbed under "Short Term Borrowing"		-	17,446.93		-	17,446.92
Total	**13,005.21**	-	**20,007.77**	**14,490.68**	-	20,007.76

Terms of Repayment of Term Loans and Other Loans

1) Security for Senior & Sub Debt Facility:

(A) The Senior Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by:

a) a first mortgage and charge on all the Company's immoveable properties, both present and future, save and except the project assets;

b) a first charge on all the Company's tangible moveable assets, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles, all other moveable assets and current assets, both present and future, save and except the project assets;

c) a charge on the Company's accounts including, but not limited to the escrow account where all revenues, disbursements, receivables shall be deposited and in all funds from time to time deposited therein and in all authorised investments or other securities representing all amounts credited to the escrow account;

d) a charge on all intangibles of the Company including but not limited to goodwill, rights, and undertakings, present and future provided any realisation there of shall be credited to the escrow account and the charge as aforesaid shall be limited to the extent permissible under the waterfall of the priorities as per article 31 of the concession agreement and article 4 of escrow agreement.

e) a charge on the uncalled capital of the Company:

Provided that charge at (e) above, shall be limited for ensuring that the Company calls the balance uncalled capital and makes the shares fully paid up.

f) an assignment by way of security:

(i) of the right, title and interest of the Company in, to and under the project documents including the concession agreement, duly acknowledged and consented to by NHAI and by the relevant counter-parties to such project documents to the extent not expressly provided in the concession agreement or each such project document, all as amended, varied or supplemented from time to time;

(ii) of the right, title and interest of Company in, to and under all the government approvals and insurance contracts; and

(iii) of the right, title interest of the Company in, to and under any letter of credit, guarantee, including contractor guarantees and liquidated damages and performance bond provided by any party to the project documents.

(B) The Subordinate Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by a second charge on the above mentioned in para (A) above.

2) Terms of Payments:

(a) As per the existing common loan agreement with lenders, the Company has undertaken to repay the senior and sub debt loan to each senior and sub debt lender in accordance with the following repayment schedule. Please note that this schedule is subject to adjustment due to the repayment of Rs. 7,796.82 mn made during the current year:

Repayment Schedule

Year	Senior Debts	Sub Debts	Total
October 2018 to March 2019	862.77	114.52	977.29
June 2019 to March 2020	1,806.43	239.77	2,046.20
June 2020 to March 2021	1,970.90	261.60	2,232.50
June 2021 to March 2022	2,121.88	281.64	2,403.53
June 2022 to March 2023	2,278.26	302.40	2,580.66
June 2023 to March 2024	2,494.16	331.06	2,825.22
June 2024 to March 2025	2,552.65	338.82	2,891.47
June 2025 to March 2026	2,552.65	338.82	2,891.47
June 2026 to September 2026	8,556.80	1,135.77	9,692.57
Total	**25,196.49**	**3,344.41**	**28,540.90**
Repayment made as per interim distribution during the year 2023	(7,796.82)	-	(7,796.82)
Direct Debit by SBI adjusted during the year 2023	(5,809.52)	-	(5,809.52)
Adjustment as per IndAS	(65.90)	-	(65.90)
Borrowing Outstanding as the end of the year	**11,524.25**	**3,344.41**	**14,868.65**

b) Standard Chartered Bank had granted a long-term loan in form of External Commercial Borrowing ("ECB") of USD 43,000,000 to the Company. As per the facility agreement dated December 2, 2015 and amended on January 21, 2016, till the long term loan remains outstanding in books, the lender was required to accrue interest on the aforesaid loan at an interest rate of LIBOR plus Margin (as defined in the facility agreement). The final maturity date of the loan is February 28, 2026.
During the previous financial year, Standard Chartered bank assigned its rights under the Facility Agreement to Deutsche Bank AG, London branch. Further, the Cross Currency interest rate SWAP contract executed by the Company with Standard Chartered Bank, Mumbai Branch, was cancelled during previous the year. As a part of Claim Management process (as per the direction of NCLAT), the claim for Deutsche Bank AG, London has been admitted for Rs 2803.05 Mn (consisting of loan amount of Rs 2,782.95 Mn and interest of Rs 20.10 Mn). Accordingly, the liability of the Company towards ECB has been crystalized for Rs 2,782.95 Mn. Since the claim for this financial liability has been admitted in INR, no further hedge is required for this loan.

Repayment Schedule:
Total ECB Loans repayment on quarterly basis installments commencing from February 28, 2017 and terminating on February 28, 2026 :

Year	Amount in INR
Financial Year 2018-2019	92.45
Financial Year 2019-2020	195.26
Financial Year 2020-2021	213.19
Financial Year 2021-2022	228.31
Financial Year 2022-2023	247.00
Financial Year 2023-2024	265.23
Financial Year 2024-2025	265.23
Financial Year 2025-2026	1,021.61
Cashflow Hedge Reserve Adjustment	200.41
Repayment made as per interim distribution during the year 2024	(1,403.18)
Direct Debit by SBI adjusted during the year 2024	(119.90)
Grand Total	**1,205.59**

Unsecured Loan from Related Parties & Others

Lender's Name	Loan Amount Rs Mn	Tenor	Interest Rate Type	Interest Rate	Repayment Term
Indusind Bank	7,500.00	21 Months	Fixed	8.80%	Bullet Repayment at the end of tenure i.e.31.12.2019
SREI Infrasturcture Finance Limited	2,000.00	37 Months	Floating	12.75% /13.75%	3 equal installments at the end of 35th, 36th & 37th month from date of disbursement
Aditya Birla Finance Limited	550.00	18 Months	Floating	11.10%	3 equal installments at the end of 12th, 15th & 18th month from date of disbursement
IL&FS Transportation Networks Limited	141.30	-	Fixed	11.26%	Alongwith maturity of Sub Debt from banks
Infrastructure Leasing & Financial Services Limited	3,927.50	53 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.27.09.2019
Infrastructure Leasing & Financial Services Limited	324.73	57 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.09.11.2019
IL&FS Airport Limited	470.00	12 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.28.08.2018
IL&FS Transportation Networks Limited	2,090.84	12 Months	Fixed	12.80%	Bullet Repayment at the end of tenure i.e.31.03.2019

CHENANI NASHRI TUNNELWAY LIMITED

CIN Number : U45400MH2010PLC203614

Notes forming part of the Financial Statements for year ended March 31, 2024

IV Note : Default in repayment of loan (Principal & Interest)

Rs in Mn

Lender Name	Nature of due (Principal/ Interest)	Amount in Mn	Dues since
Principal Payable			
Aditya Birla Finance Ltd	Principal	550.00	20-09-2018
IL&FS Airport Ltd	Principal	470.00	28-08-2018
Total Principal Payable (A)		1,020.00	
Interest Payable			
SREI Infrastructures	Interest	63.63	30-09-2018
IL&FS Airport Ltd	Interest	31.82	30-09-2018
IL&FS Transportation Networks Limited	Interest	372.51	30-09-2018
IL&FS Ltd	Interest	307.00	30-09-2018
Total Interest Payable (B)		774.96	

In view of NCLAT order, amount due after 15th Oct 2018 are not considered as default (Refer Note 32)

14. Other financial liabilities

Particulars	As at March 31, 2024		As at March 31, 2023	
	Non Current	Current	Non Current	Current
Interest accrued - Others (refer note 34)		208.39		208.39
Interest accrued - Related Parties		750.33		750.33
Retention Money Payable - Related Parties	207.52		207.65	
Related parties - Others	-		1.69	
Audit fees - Provision		0.91		0.46
Total	**207.52**	**959.63**	**209.34**	**959.18**

15. Other liabilities

Particulars	As at March 31, 2024		As at March 31, 2023	
	Non Current	Current	Non Current	Current
Statutory dues	-	55.47	-	55.01
Total	**-**	**55.47**	**-**	**55.01**

16. Trade payables

Particulars	As at March 31, 2024		As at March 31, 2023	
	Non Current	Current	Non Current	Current
Due to Micro and small enterprises	-	-	-	-
Due to other than Micro and small enterprises:				
- Related Parties	-	4,988.50	-	4,986.00
Other payables	-	41.66	-	215.49
Total	**-**	**5,030.16**	**-**	**5,201.49**

16.2 Ageing of Trade Payables as on March 31, 2024

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	-	-	-	-	-
Others	34.06	1.28	0.09	4,994.73	5,030.16
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
Total	34.06	1.28	0.09	4,994.73	5,030.16

16.3 Ageing of Trade Payables as on March 31, 2023

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	-	-	-	-	-
Others	112.34	85.07	168.64	4,835.44	5,201.49
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
Total	112.34	85.07	168.64	4,835.44	5,201.49

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2024
(All amounts in INR Mn, unless otherwise stated)

17. Revenue from operations

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
(a) Operation and maintenance income	480.48	525.12
(b) Periodic maintenance income	19.18	8.94
(c) Finance income	3,142.75	3,397.24
Total	3,642.41	3,931.30

18. Other Income

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Interest on short term deposit	1,064.11	765.07
Interest on Income tax refund	11.89	6.27
Construction Income towards Change of Scope	0.91	1.38
Modification Gain	150.37	-
Insurance claim received	-	28.55
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	0.01	0.01
Provision no Longer Required *	32.63	-
Total	1,259.92	801.28

* While finalizing the financial statements for the year ended March 31, 2021, the company erroneously recorded corporate social responsibility (CSR) expenses as Rs. 36.26 million instead of the correct amount of Rs. 3.63 million. Consequently, the company has written back the differential amount of Rs. 32.63 million during the current financial year.

19. Operating Expenses

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Operation and maintenance expenses	438.23	478.95
Periodic maintenance expenses	17.50	8.15
Construction Cost towards Change of Scope	-	-
Total	455.73	487.10

20. Finance costs

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Interest on loans for fixed period (Refer note below 34)	-	-
Finance charges *	37.60	43.72
Total (a+b)	37.60	43.72

* Represents unammortised borrowing cost expensed out during the year

21. Other expenses

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Legal and consultation fees	21.79	12.47
Deputation Cost	1.27	1.31
Insurance	-	12.91
Rates and taxes	0.38	0.10
Bank commission	0.04	0.01
Foreign exchange fluctuation Loss (refer note 21.2)	-	-
Restatement of Cashflow hedge Reserve	-	-
Corporate Social Responsibility Exp. (refer note 21.3)	78.68	79.13
Directors' fees	0.42	0.21
Payment to auditors	0.49	0.53
Miscellaneous expenses	0.09	0.01
Total	103.16	106.68

21.1 Payments to auditors

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
a) For audit	0.35	0.36
a) For Tax audit	0.13	0.15
b) For other services	0.01	0.02
Total	**0.49**	**0.53**

21.2 Expenditure incurred for corporate social responsibility

In terms of Section 135 of the Companies Act, 2013, a Corporate Social Responsibility (CSR) Committee has been formed by the Company. The areas for CSR activities as per the CSR policy are (i) Promotion of education, (ii) promoting gender equality and empowering women, (iii) reducing child mortality and improving maternal health, (iv) ensuring environmental sustainability, (v) employment enhancing vocational skills, (vi) social business projects, (vii) contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socioeconomic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women and (viii) such other matters as may be prescribed.

In line with Guidance Note on Accounting for Expenditure on Corporate Social Responsibility Activities, issued by the Institute of Chartered Accountants of India, the disclosure of the CSR expenditure during the year, is as under

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
(i) Gross Amount required to be spent by the Company during the year	78.68	79.13
Add: Shortfall for the previous year	127.76	48.64
(ii) Amount spent during the year	-	-
(a) Construction/acquisition of any asset	-	-
(b) On purpose other than above (ii) (a) - In cash	206.44	-
(c) On purposes other than above (ii) (a) - Yet to be paid in cash	-	-
(d) Amount unspent during the year	-	127.76

In accordance with Section 135(6) of the Companies Act, 2013, the Company is required to deposit the unspent amount allocated for Corporate Social Responsibility (CSR) in a designated bank account within 6 months from the end of the financial year (FY). However, due to the moratorium granted by NCLAT and the need to prioritize expenses essential for maintaining the going concern status, the Company was unable to release funds towards CSR activities till the previous year.

During the previous year, the Company decided to undertake Research Projects on Pavements with Indian Institute of Technology, Bombay. The Company has spent Rs. 78.68 Mn during the current financial year for the said Project. The Company also donated Rs. 63.88 Mn to Prime Minister's National Relief Fund & Rs. 31.94 Mn each to Prime Minister Cares & Clean Ganga Fund respectively.

Following is the schedule of Movement in CSR provision during the year:

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Opening Balance	127.76	48.64
Add: CSR Expense to be incurred	78.68	79.13
Less: Amount Spent during the year	206.44	-
Closing Balance of provision	-	127.76

22. Income taxes

22.1 Income tax recognised in profit or loss

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Current tax		
In respect of the current period (refer note below)	-	-
In respect of prior period	-	-
	-	-
Deferred tax		
In respect of the current period	1,112.76	2,059.37
MAT credit entitlement	-	-
	1,112.76	2,059.37
Total income tax expense recognised in the current period relating to continuing operations	**1,112.76**	**2,059.37**

Note: In light of the Company's decision to adopt the new tax regime, the tax liability for the current year is nil. This is due to the utilization of carry-forward tax losses, which have offset the taxable income for the year.

22.2 The Income Tax Expense/(Income) can be reconciled to the accounting profit as follows:

Amount In (Rs.)

Particulars	Year Ended March 31, 2024	Year Ended March 31, 2023
Profit before tax from continuing operations	4,305.84	3,902.85
Normal tax rate	25.17%	25.63%
Income tax expense	1,083.69	1,000.13
Effect of expenses that are not deductible in determining taxable profit	11.59	20.26
Deferred Tax effect on Unrealised Fair Value Gain	(0.00)	(0.00)
Deferred tax not created on IndAS adjustment	5.93	7.77
Effect of different tax rates	1.05	
Deferred tax created	10.50	1,031.21
Tax Expense/(Income)	**1,112.76**	2,059.37
Adjustments recognised in the current year in relation to the current tax of prior years		
Income Tax Expense/(Income) recognized in profit or loss (relating to continuing operations)	**1,112.76**	2,059.37

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23. Earnings per share

Particulars	Unit	Year Ended March 31, 2024	Year Ended March 31, 2023
Profit for the year attributable to owners of the Company	₹ Mn	3,193.08	1,843.48
Weighted average number of equity shares	Number	37,20,00,000	37,20,00,000
Nominal value per equity share	₹	10.00	10.00
Basic / Diluted earnings per share	₹	**8.58**	**4.96**

There are no potential dilutents therefore Diluted EPS is considered as Equal to Basic EPS.

24. Commitments for expenditure

Particulars		Year Ended March 31, 2024	Year Ended March 31, 2023
(a) Capital Expenditure		-	-
(b) Operation & Maintenance expenses		4,926.27	5,465.14
(c) Overlay Expenses		1,306.43	1,323.93
Total		**6,232.70**	**6,789.07**

25. Contingent liabilities

Particulars		Year Ended March 31, 2024	Year Ended March 31, 2023
(a) Claims against the Company not acknowledged as debt			
-Claims filed by Operational Creditors		0.04	0.04
-Claims filed by Financial Creditors		27.02	27.02
(b) Other money for which the company is contingently liable			
- Income tax demands contested by the Company		16.86	16.86
(c) Claim By bank for cancellation of Hedge contract		126.58	126.58

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CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2024

26. Related Party Disclosures

(a) Name of the Related Parties and Description of Relationship:

Nature of Relationship	Name of Entity	Abbreviation used	As at March 31, 2024	As at March 31, 2023
Ultimate holding company	Infrastructure Leasing & Financial Services Limited (IL&FS)	IL&FS	√	√
Holding Company	IL&FS Transportation Networks Limited	ITNL	√	√
Fellow Subsidiaries of Holding Company & Ultimate Holding Company (Only with whom there have been transaction during the period/ there was balance outstanding at the year end)	IL&FS Rail Limited	IRL	√	√
	IL&FS Airport Limited	IAPL	√	√
	Nana Layja Power Company Limited	NLPCL	√	√
	Rohtas Bio Energy Limited	RBEL	√	√
	Livia India Limited	LIVIA	√	√
	Gujarat Integrated Maritime Complex Private Limited	GIMCO	√	√
	IL&FS Financial Services Limited	IFIN	√	√
	Elsamex Maintenance Services Limited	EMSL	√	√
	IL&FS Securities Services Limited	ISSL	√	√
	Tierra Enviro Limited	TEL	√	√
Key Management Personnel ("KMP") & Other Director's	Mr. Krishna Dhondu Ghag	Nominee Director	√	√
	Mr. Mohit Bhasin (from 16/02/2021. Resigned w.e.f 01/10/2022)	Nominee Director	X	√
	Mr. Ajay Menon (from 20/05/2021)	Nominee Director	√	√
	Mr. Sachin Joshi (from 11/10/2022 to 29/02/2024)	Nominee Director	√	√
	Mr. Amit Kumar Agarwal (from 13/03/2024)	Nominee Director	√	X
	Mr. Jatender Sharma (from 13/01/2023)	Manager	√	√

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2024

Related Party Disclosures (contd.)

Year ended March 31, 2024

(b) transactions/ balances with above mentioned related parties (mentioned in note 26 above)

Amount in (Mn's)

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Key Management Personnel ("KMP") & Other Director's	Total
Balance	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	-	
Cost of investment in equity shares		3,720.00	-					-	-	3,720.00
Interest Accrued and not due LT		103.70	-					-	-	103.70
Interest Accrued and not due ST	332.41	279.90	-	34.60			-	-	-	646.92
Long term Borrowings	4,306.48	141.30	-				-	-		4,447.78
Retention Money Payable	-	207.52	-				-		-	207.52
Short-term Borrowings		2,090.84	-	470.00			-		-	2,560.84
Trade Payables	-	4,967.36	-	-			-	21.14	-	4,988.50
Interest Accrued and not due ST - (Recovery)	-	-	-	-	0.08	-	0.21	-	-	0.29

Transactions	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	Key Management Personnel ("KMP") & Other Director's	Total
Deputation Cost	-	1.08	-	-	-	-	-			1.08
Operation and maintenance- (Project)	-		-	-	-	-	-	218.70		218.70
Amit Kumar Agarwal	-		-	-	-	-	-	-	0.03	0.03
Ajay Menon	-		-	-	-	-	-	-	0.12	0.12
Sachin Joshi	-	-	-	-	-	-	-	-	0.09	0.09
Krishna Ghag	-		-	-	-				0.12	0.12

Year ended March 31, 2023

(b) balances with above mentioned related parties (mentioned in note 26 above)

Amount in (Mn's)

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Associates	Key Management personnel and relatives	Total
Balance	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL		Total
Cost of investment in equity shares		3,720.00					-			3,720.00
Interest Accrued and not due LT		103.70					-			103.70
Interest Accrued and not due ST	332.41	279.90		34.60			-	-		646.92
Long-term Borrowings	4,306.48	141.30					-			4,447.78
Retention Money Payable		207.52					-			207.52
Short-term Borrowings		2,090.84		470.00			-			2,560.84
Trade Payables		4,965.87					-	20.13		4,986.00
Interest Accrued and not due ST - (Recovery)					0.08		0.21			0.29

Transactions	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Associates	Key Management personnel and relatives	Total
	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	-	Total
Deputation Cost	-	1.31								1.31
Operation and maintenance- (Project)	-	-				-		242.63		242.63
Mohit Bhasin	-	-			-		-	-	0.05	0.05
Ajay Menon	-	-			-		-	-	0.07	0.07
Sachin Joshi	-	-			-		-	-	0.02	0.02
Krishna Ghag	-	-			-		-	-	0.05	0.05

27. Significant terms of Service Concession Arrangements (SCA)

Particulars	Project
Brief description of Concession	Service Concession Arrangement (SCA) dated June 28, 2010 entered into with National Highways Authority of India (NHAI), envisages Rehabilitation Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00 including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT) basis in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from 23rd May 2011 (the 'Appointed date'). Premature termination is permitted only upon happening of a force majeure event or upon the parties defaulting on their obligation. the company is entitled to earn Semi-annuity of Rs. 317.52 Crores each on the dates specified in the SCA. NHAI will retain the right to levy and collect fees from the users of the Road and to permit advertisements, hoardings and other commercial activities at the Road site. At the end of the concession period, the company will hand over the Road to NHAI without additional consideration.
Nature of Assets	Financial Asset
Year when SCA granted	28-Jun-10
Period	20 years (Including 5 year of Construction Period)
Extension of period	NIL
Construction	Construction Completed
Premature Termination	NIL
Frequency of Annuity	Semi-Annually
Special Term	NIL

28. Segment Reporting

The company operates in a single business segment viz. Surface Transportation Business. Also it operates in a single geographic segment. In the absence of separate reportable business or geographic segments the disclosures required under the Indian Accounting Standard (INDAS) 108 on Operating Segments are not applicable.

29. Financial Instruments

1 Capital management

The Company endeavours to maintain sufficient levels of working capital, current assets, and current liabilities which helps the company to meet its expense obligations while also maintaining sufficient cash flow

The capital structure of the Company consists of net debt (borrowings as detailed in notes 13 offset by cash and bank balances) and equity of the Company (comprising issued capital, reserves, retained earnings as detailed in notes 11 to 12). The capital structure of the Company is reviewed by the management on a periodic basis.

1.1 Gearing ratio

The gearing ratio at end of the reporting period was as follows.

Amount In (Mn's)

Particulars	As at March 31, 2024	As at March 31, 2023
Debt (i)	33,971.70	35,457.62
Cash and bank balances (including cash and bank balances in a disposal company held for sale)	21,520.21	15,812.81
Net debt	12,451.49	19,644.81
Total Equity (ii)	10,709.50	7,516.42
Net debt to total equity ratio	1.16	2.61

Footnotes:
(i) Debt is defined as long- and short-term borrowings including interest accrued (excluding derivative), as described in notes 13
(ii) Equity includes all capital and reserves of the Company that are managed as capital.

2 Categories of financial instruments

Amount In (Mn's)

Particulars	As at March 31, 2024	As at March 31, 2023
Financial assets		
Fair value through profit and loss (FVTPL)		
Investment in Mutual Fund	0.18	0.17
At amortised cost		
Cash & cash equivalents; and bank balances (including Balances with Banks in deposit accounts under lien)	21,520.21	15,812.81
SCA receivable	30,180.89	32,738.50
Other financial assets (excluding Balances with Banks in deposit accounts under lien)	1,037.45	1,566.10
Financial liabilities		
At amortised cost		
Borrowings (including interest accrued)	33,971.70	35,457.62
Trade payables	5,030.16	5,201.49
Other financial liabilities (excluding interest accrued)	207.52	209.34

29. Financial Instruments

3 Financial risk management objectives

The Company 's Corporate Treasury function monitors and manages the financial risks relating to the operations of the Company . These risks include market risk (including currency risk, interest rate risk and other price risk), credit risk and liquidity risk. Refer Note 33 which states about moratorium of debt service obligations. The new board of IL&FS has undertaken certain steps for resolution of existing obligations. Accordingly, the Company is in the process of setting up mechanism to address the risks including market risk, currency risk, interest risk and liquidity risk

4 Market risk

The Company is exposed to the financial risk of changes in foreign currency exchange rates and interest rates

4.1 Foreign Currency Sensitivity Analysis

The Company was mainly exposed to the currency of United States. The contract for cross currency swap interest rate cancelled during the financial year ended March 31, 2022.

4.2 Interest rate swap contracts

Under interest rate swap contracts, the company agrees to exchange the difference between fixed and floating rate interest amounts calculated on agreed notional principal amounts. Such contracts enable the company to mitigate the risk of changing interest rates on the fair value of issued fixed rate debt and the cash flow exposures on the issued variable rate debt. The fair value of interest rate swaps at the end of the reporting period is determined by discounting the future cash flows using the curves at the end of the reporting period and the credit risk inherent in the contract, and is disclosed below. The average interest rate is based on the outstanding balances at the end of the reporting period. The contract for cross currency swap interest rate cancelled during the financial year ended March 31, 2022.

5 Interest rate risk management

The company is exposed to interest rate risk because it borrows funds at both fixed and floating interest rates.

The company's exposures to interest rates on financial assets and financial liabilities are detailed in the liquidity risk management section of this note

5.1 Interest rate sensitivity analysis

The sensitivity analyses below have been determined based on the exposure to interest rates for both derivatives and non-derivative instruments at the end of the reporting period. For floating rate liabilities, the analysis is prepared assuming the amount of the liability outstanding at the end of the reporting period was outstanding for the whole year. A 50 basis point increase or decrease represents management's assessment of the reasonably possible change in interest rates.

If interest rates had been 50 basis points higher/lower and all other variables were held constant, the company's:

i) profit for the Year would decrease/increase by ₹ 80.67 Mn (previous year ₹ 87.69 Mn.). This is mainly attributable to the company's exposure to interest rates on its variable rate borrowings; and

29. Financial Instruments

6 Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to The Company .The Management of The Company believes that the credit risk is negligible since its main receivable is from the grantors of the concession which is a government authority.

7 Liquidity risk management

The Company manages liquidity risk by maintaining adequate reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities. However, the Company has not been servicing any debt effetive Oct 15, 2018 in view of moratorium granted by NCLAT

7.1 Liquidity and interest risk tables

The following tables detail the company's remaining contractual maturity for its non-derivative financial liabilities with agreed repayment periods as per the existing loan agreement. The tables have been drawn up based on the undiscounted cash flows of financial liabilities. The tables include both interest (upto scheduled repayment date) and principal cash flows. To the extent that interest flows are floating rate, the undiscounted amount is derived from interest rate curves at the end of the reporting period.

Amount In (Mn's)

Particulars	As at March 31, 2024			As at March 31, 2023		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	207.52	38,987.30	20,059.88	207.65	27,250.62	20,059.88
1-3 years	41.66	17,799.17	31.78	215.94	11,736.67	31.78
3-5 years	-	-	23.84	-	17,799.17	23.84
More than 5 years	4,988.50	-	141.30	4,986.00	-	141.30
Total	**5,237.67**	**56,786.47**	**20,256.80**	**5,409.59**	**56,786.47**	**20,256.80**

Note: - This schedule is subject to adjustment due to the repayment of Rs. 1403.18 Mn made during the current year & Rs. 7796.82 Mn made during the previous year.

The following table details the company's expected maturity for its non-derivative financial assets. The table has been drawn up based on the undiscounted contractual maturities of the financial assets including interest that will be earned on those assets. The inclusion of information on non-derivative financial assets is necessary in order to understand the company's liquidity risk management as the liquidity is managed on a net asset and liability basis.

Amount In (Mn's)

Particulars	As at March 31, 2024			As at March 31, 2023		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	858.35	5,719.30	21,698.79	996.13	5,658.16	15,810.88
1-3 years	-	11,299.65	-	-	11,556.39	-
3-5 years	-	11,360.28	-	-	11,257.97	-
More than 5 years	0.00	16,191.28	-	0.00	21,892.01	-
Total	**858.35**	**44,570.50**	**21,698.79**	**996.13**	**50,364.53**	**15,810.88**

The amounts included above for variable interest rate instruments for both non-derivative financial assets and liabilities is subject to change if changes in variable interest rates differ to those estimates of interest rates determined at the end of the reporting period.

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number . U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2024

29. Financial Instruments

8 Fair value of the Company's material financial assets and financial liabilities that are measured at fair value on a recurring basis

Some of the company's financial assets and financial liabilities are measured at fair value at the end of each reporting period The following table gives information about how the fair values of these financial assets and financial liabilities are determined (in particular, the valuation technique(s) and inputs used).

Amount In (Mn's)

Financial assets/ (financial liabilities)	Fair value		Fair value hierarchy	Valuation technique(s) and key input(s)	Significant unobservable input(s)	Relationship of unobservable inputs to fair value
	As at March 31, 2024	As at March 31, 2023				
1) Investment in Mutual Fund	0.18	0.17	Level 1	Net assets value taken as per Mutual Fund Statement	None	None

Amount In (Mn's)

	As at March 31, 2024		As at March 31, 2023	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
At amortised cost				
Cash & cash equivalents; and bank balances	21,520.21	21,520.21	15,812.81	15,812.81
SCA receivable	30,180.89	30,180.89	32,738.50	32,738.50
Other financial assets	1,037.45	1,037.45	1,566.10	1,566.10
Financial liabilities				
At amortised cost				
Borrowings	33,971.70	34,031.97	35,457.17	35,555.04
Trade payables	5,030.16	5,030.16	5,201.94	5,201.94
Other financial liabilities	207.52	207.52	209.34	209.34

Amount In (Mn's)

Fair value hierarchy	As at March 31, 2024			As at March 31, 2023		
Particulars	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Financial assets						
Fair value through profit and loss (FVTPL)						
Investment in Mutual Fund	0.18	-		0.17	-	-
Financial Assets measured at amortised cost						
Cash & cash equivalents; and bank balances	-	-	21,520.21	-	-	15,812.81
SCA receivable	-	-	30,180.89	-	-	32,738.50
Other financial assets	-	-	1,037.45	-	-	1,566.10
Financial liabilities						
At amortised cost						
Borrowings	-	-	34,031.97	-	-	35,555.04
Trade payables	-	-	5,030.16	-	-	5,201.94
Other financial liabilities	-	-	207.52	-	-	209.34

The fair values of the financial assets and financial liabilities above have been determined in accordance with generally accepted pricing models based on a discounted cash flow analysis, with the most significant inputs being the discount rate that reflects the credit risk of counterparties.

30 Impairment:

During financial year 2019-20, as part of the divestment process, the IL&FS Board received a single bid from an external party for the Company. The bid was subsequently accepted by the Board of Directors of ITNL and IL&FS, subject to necessary approvals from various regulators, Committee of Creditors, NCLAT, and other relevant entities. The final price is subject to adjustment.

Based on the bid received, the Company recognized impairment of Receivable under Service Concession Arrangements in the financial statements during the earlier year. In light of the bid being continued and ongoing management evaluations, it is the view of the Company's management that no further impairment is required for the financial year 2023-24.

31 Going Concern :

Union of India has superseded the earlier board of Holding/Ultimate Holding Company and appointed new Board from October 01, 2018. Entire Group is going through severe financial stress. National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 has also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, which means that the Company is able to meet only financial obligation towards Senior Lenders and operational creditors. In view of this classification and the moratorium order, the Company has stopped servicing financial obligations towards all its financial creditors. The Company has received a bid from third party and the same has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares is awaited. Hence on the basis of above, these accounts are prepared on the basis of going concern.

32 Debt servicing:

National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 had also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, indicating that it is not able to meet all obligations (financial and operational) including the payment obligations to senior secured financial creditors. Accordingly, the Company is permitted to make only those payments necessary to maintain and preserve the going concern status. NCLAT wide its order dated March 12, 2020, had upheld its interim order of October 15, 2018. The said order specifies October 15, 2018 as the date of initiation of the Resolution Process of the Company. Accordingly the Company has not accrued any interest , default interest, penal interest and any other similar charges after the said cut off date of October 15,2018

Considering the delay in the resolution process of the Company, and the significant cash lying with the Company, basis the constant demand from the lenders, during the previous year the Company approved an Interim Distribution to the Senior Secured Lenders of the Company be undertaken, for an amount of Rs 9,200.00 Mn which is equivalent to the principal amount that would have been paid to them under the debt restructuring plan that has been in-principle approved by the CNTL CoC. Out of Rs 9,200 Mn, Company paid Rs 7,796.82 Mn to the senior lenders during the previous year. Rs 1,403.18 Mn is being paid to one of the secured senior lenders, during the year March 31, 2024.

The banks have debited an amount of Rs 6,844.17 Mn for Interest & Principal (Interest & Principal for the period of October 18 - March 20) from the Escrow accounts of the Company maintained with them. The Company has written to the banks for reversal of same in view of October 15, 2018 Order of NCLT giving moratorium. The banks have not reversed the same till date. The same amount (after reducing interest upto Oct 15, 2018) was shown as recoverable in the financial statements. These amounts have not been handed back to the Company till date. As part of the interim distribution, the company adjusted Rs 119.90 Mn during the current financial year and Rs 5,929.42 Mn during the previous financial year out of Rs 6,844.17 Mn against the loan, which was repaid during the current financial year ended March 31, 2024, and the previous financial year ended March 31, 2023.

33 Non-compliance of applicable laws and regulations :

The Company is not in compliance with the Companies Act 2013, as applicable to the Company. These non compliances pertain to appointment of Directors, filings with Regulators, appointment of Key Management personnel and such other regulations. The Company has estimated possible obligations arising out of these non comliances and recognsed the provision in the books of account

34 In accordance with the Company's adoption of the new tax regime, the tax liability for the current year is determined to be nil. This favorable outcome is attributed to the utilization of carry-forward tax losses, which have effectively offset the taxable income for the year. Consequently, the Company will not be eligible to avail the tax holiday period of 10 years as stipulated under section 80IA.

As a result of these circumstances, the Company has recognized net deferred tax liabilities in its financial statements. These deferred tax liabilities are expected to be reversed over the duration of the concession period.

35 ABFL has filed petitions under Section 9 of Arbitration & Conciliation Act, 1996 seeking securing of amounts due to ABFL from the Company on account of defaults and non-payments of dues under Rupee Term Loan Facility extended by ABFL. In its order dated 18.09.2018, the High Court has directed Company to file affidavit containing the details of unencumbered assets including bank accounts and balance available. The matter was listed on January 09, 2020 for hearing. Given that the Moratorium is still continuing, the court was reluctant to vacate the stay. The matter was listed for hearing on May 12, 2023 and the Ld. Bench passed an order adjourning the petitions and to re-list on July 20, 2023 on the ground that proceedings are still pending before the Hon'ble NCLAT for moratorium of loan. In December 2023, the ABFL withdrew the petition.

36 **Micro and small enterprises**

Under the Micro, Small and Medium Enterprises Development Act, 2006 ('MSMED') which came into force from 2 October 2006, certain disclosures are required to be made relating to micro and small enterprises. On the basis or the information and records available with the management, there are no outstanding dues to the Micro and Small enterprises as defined in the Micro, Small mid Medium Enterprises Development Act, 2006 as set out in the following disclosures·

Amount In (Mn's)

Particulars	As at March 31, 2024	As at March 31, 2023
(a) the Principal amount and the interest due thereon (to be shown separately) remaining unpaid to any supplier at the end of each accounting year;	-	-
(b) the amount interest paid by the buyer in terms of section 16 of the Micro, Small and Medium Enterprises development Act, 2006 (27 of 2006), along with the amount of the payment made to the supplier beyond the appointed day during each accounting year;	-	-
(c) Amount of interest due and payable for the period of delay in making payment (which have been paid but beyond the appointed day during the period) but without adding the interest specified under the Micro, Small and Medium Enterprises Development Act, 2006;	-	-
(d) Amount of interest accrued and remaining unpaid at the end of each accounting year; and	-	-
(e) The amount of further interest remaining due and payable even in the succeeding years, until such date when the interest dues above are actually paid to the small enterprise, for the purpose of disallowance of a deductible expenditure under section 23 of the Micro, Small and Medium Enterprises Development Act, 2006.	-	-

37 **Disclosure as Per Ind AS 115 Revenue from Contracts with Customers**

A. Applicability of Ind AS 115

Ind AS 115 was issued on 28 March 2018 and supersedes Ind AS 11 Construction Contracts and Ind AS 18 Revenue and it applies, with limited exceptions, to all revenue arising from contracts with its customers. Ind AS 115 establishes a five-step model to account for revenue arising from contracts with customers and requires that revenue be recognised at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer.

The Ministry of Corporate Affairs(MCA), on March 28, 2018, notified Ind AS 115 "Revenue from Contracts with Customers" as a part of the Companies (Indian Accounting Standards) Amendment Rules, 2018. The Company has followed the IND AS 115 accordingly.

Service contracts relating to Change of Scope have an original duration of one year or less and therefore the company uses practical expedient to not disclose unsatisfied performance obligations.

37 Disclosure as Per Ind AS 115 Revenue from Contracts with Customers (Continue)

B. Disaggregation of revenue

Set out below is the disaggregation of the Company's revenue from contracts with customers:

Amount In (Mn's)

Particulars	Year ended March 31, 2024	Year ended March 31, 2023
Type of Services		
(a) Operation and maintenance income	480.48	525.12
(b) Periodic maintenance income	19.18	8.94
(c) Finance income	3,142.75	3,397.24
Total Revenue from contracts with customers	**3,642.42**	**3,931.30**

Geographical markets

Amount In (Mn's)

Particulars	Year ended March 31, 2024	Year ended March 31, 2023
India	3,642.42	3,931.30
Outside India	-	-
Total Revenue from contracts with customers	**3,642.42**	**3,931.30**

Timing of Revenue recognition

Amount In (Mn's)

Particulars	Year ended March 31, 2024	Year ended March 31, 2023
Services transferred at a point in time	-	-
Services transferred over time	3,642.42	3,931.30
Total Revenue from contracts with customers	**3,642.42**	**3,931.30**

Contract Balances

Amount In (Mn's)

Particulars	Year ended March 31, 2024	Year ended March 31, 2023
Receivable under Service Concession		
Trade Receivable	30,180.89	32,738.50
Less: Expected Credit Loss	-	-
Total Receivable	**30,180.89**	**32,738.50**
Contract Liabilities	-	-

Reconciling the amount of revenue recognised in the statement of profit and loss with the contracted price

Amount In (Mn's)

Particulars	Year ended March 31, 2024	Year ended March 31, 2023
Revenue as per contracted price	3,642.42	3,931.30
Adjustments - Rebate/Cash Discount	-	-
Revenue from contracts with customers	**3,642.42**	**3,931.30**

Performance obligation

Information about the Company's performance obligations are summarised below:

Revenue from Finance income

The performance obligation in service of Finance Income for concession arrangements under financial asset model is recorded using the effecive interest method.

Revenue from Operation and maintenance income and Periodic maintenance income

The performance obligation in service of Operation and maintenance income and Periodic maintenance income for concession arrangements under financial asset model is recorded in each period as and when services are rendered in accordance with Ind AS 115 Revenue from contracts with customers.

GIANENDER & ASSOCIATES NEW DELHI

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Notes forming part of the Financial Statements for year ended March 31, 2024

38 Ratios

The following are analytical ratios for the year ended March 31, 2024 and March 31, 2023

Amount in (Mn's)

Particulars	Numerator	Denominator	As at March 31, 2024	As at March 31, 2023	Variance	Remarks
Current Ratio	Total Current assets	Total Current liabilities	0.99	0.77	28%	(a)
Debt – Equity Ratio	Total Debt (1)	Total Equity	3.08	4.59	33%	(b)
Debt Service Coverage Ratio #	Earnings available for debt service(2)	Debt Service(3)	#	#		
Return on Equity (ROE)	Net Profits after taxes	Average Total Equity	35%	28%	25%	(c)
Trade receivables turnover ratio	Revenue	Average Trade Receivable	$	$		
Trade payables turnover ratio	Purchases of services and other expenses	Average Trade Payables	0.11	0.12	-5%	(d)
Net capital turnover ratio	Revenue from operations	Working Capital	(11.47)	(0.65)	1659%	(e)
Net profit ratio	Net Profit for the year	Revenue from operations	88%	47%	87%	(f)
Return on capital employed (ROCE)	Earning before interest and taxes	Capital Employed(4)	10%	9%	6%	
Return on Investment(ROI)	Income generated from investments	Average investments	NA	NA	NA	

(1) Debt represents total debt value as per financial statements.

(2) Net Profit after taxes + Non-cash operating expenses + Interest + other adjustments like loss on sale of Fixed assets etc.

(3) Project debt payments (Interest payments + Principal repayments) for the current year.

(4) Tangible net worth + deferred tax liabilities + project debt.

In view of the moratorium granted by NCLAT, no debt serviced since October 15, 2018, hence the said ratio is not applicable / relevant

$ Not applicable under IND-AS, being annuity project and revenue is recognised as per IND-AS 115.

(a) Current ratio increase is due to increase in cash balance & other bank balance due to non payment of interest due to moratorium granted by NCLAT, no debt serviced since October 15, 2018.

(b) Repayment of loan & increase in profit during FY 2023-24.

(c) Return on equity has improved on account of increase in profit during FY 2023-24 as compare to FY 2022-23.

(d) Marginal increased in Trade payables during the year

(e) Net capital turnover ratio has improved on account of increase in profit during FY 2023-24 as compare to FY 2022-23 & increased in current ratio - refer (a).

(f) Net profit ratio has increased due to decrease in Operation and maintenance expenses & Modification loss .

39 Investigations by Serious Fraud Investigation Office ("SFIO") and other regulatory agencies:

The Ministry of Corporate Affairs (MCA), Government of India, has vide its letter dated October 1, 2018 initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS (ultimate holding company) and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of investigation of affairs of ITNL (the Holding Company), SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and it is understood that the relevant information is being provided by ITNL to the agency. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

40 Additional Regulatory Information required as per Schedule III:

a) The Company does not have any investment property, hence the requirement regarding disclosure and valuation by a registered valuer as defined under rule 2 of Companies (Registered Valuers and Valuation) Rules, 2017 is not applicable.

b) The Company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets or both during the year.

c) The Company has not given any Loans or advances in the nature of loans to specified persons.

d) Benami property : There are no proceedings being initiated or are pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988(45 of 1988) and rules made thereunder.

e) The Company had not borrowed secured loan from Financial institution against current assets during the current period.

f) Wilful Defaulter . The Company has not been declared as wilful defaulter by any bank or financial institution or other lender.

g) The Company does not have any transactions or relationship with Struck Off Companies.

h) The Company has Registered all the charges against its assets with Registrar of Companies (ROC). There were no satisfaction of charge with ROC is pending as on March 31, 2024.

i) The Company does not have any subsidiary company or step down companies.

j) Detailed Ratio analysis given in note number 38.

k) There are no Scheme of Arrangements during the period.

l) The Company has not advanced or loaned or invested funds to any other person(s) or entity(ties), including foreign entities (Intermediaries) from borrowed funds or share premium or any other source or kind of funds.

m) Additional Information to be disclosed by way of Notes to Statement of Profit and Loss.

i) The Company does not have any undisclosed income as on March 31, 2024.

ii) The Company has not traded or invested in any kind of Crypto Currency or Virtual Currency.

41 Approval of financial statements

The Financial statements were approved for issue by the Board of Directors on July 24, 2024

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

G. K. Agarwal
Partner
Membership Number : 081603

Place : New Delhi
Date : 24 July 2024

For and on behalf of the Board

Non-Executive Director
Krishna Ghag
DIN-02491661

Non-Executive Director
Ajay Menon
DIN-02497302

Place : Mumbai
Date : 24 July 2024

INDEPENDENT AUDITOR'S REPORT

To the Members of CHENANI NASHRI TUNNELWAY LIMITED

Report on the audit of the Ind AS Financial Statements

Qualified Opinion

We have audited the Ind AS Financial Statements of **CHENANI NASHRI TUNNELWAY LIMITED** ("the Company"), which comprise the Balance Sheet as at 31st March, 2023 and the Statement of Profit and Loss (including Other Comprehensive Income), the Statement of Changes in Equity and the Statement of Cash Flows for the year then ended, and notes to the Ind AS Financial Statements, including a summary of significant accounting policies and other explanatory information for the year ended on that date.

In our opinion and to the best of our information and according to the explanations given to us, **except for the possible effects of the matter described in the Basis for Qualified Opinion section of our report,** the aforesaid Ind AS Financial Statements give the information required by the Companies Act, 2013 in the manner so required and give a true and fair view in conformity with the Indian Accounting Standards(Ind AS) prescribed under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules, 2015, as amended, ("Ind AS") and other accounting principles generally accepted in India, of the state of affairs of the Company as at 31st March, 2023 and its profit, total comprehensive income, changes in equity and its cash flows for the year ended on that date.

Basis for Qualified Opinion

During the FY 2018-19, the Company had recognized and during the year continues to recognize thereafter impairment loss of Rs. 7,107.98 Mn. by comparing the carrying amount of the receivables under the head 'Receivable under Service Concession Arrangements' that were measured at amortized cost and bid received from third party for acquisition of entire Company. Thus, the Company had in the FY 2018-19 and continues thereafter to measure the receivables at fair value then recognized to arrive at present amortized carrying value as at the end of the year, which is not in accordance with Ind AS 109 'Financial Instruments' & read with accounting policy 3.7.4. The consequential impact of the above on the balance under the head 'Receivable under Service Concession Arrangements' reported in the balance sheet and on the profit for the year are unascertainable.

Consequently, the unreserved and explicit statement of compliance with Indian Accounting Standards as notified in the Companies (Indian Accounting Standards) Rules, 2015 and further amendments thereto in Note 2.1 is not proper.

We conducted our audit in accordance with the Standards on Auditing ("SAs") specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Ind AS Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the Ind AS Financial Statements under

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the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter

We draw your attention to

a) Note no. 35 to accompanying IND AS financial statements which states that the Company does not comply with certain requirements/provisions of the Companies Act 2013. The Company has recognized possible penalties in the books of accounts.

b) As mentioned in note no. 38 to the accompanying IND AS financial statements, wherein it is mentioned that the reopening and recasting of financial statements under the provisions of Section 130 of the Companies Act, 2013 for the financial years from 2012-13 to 2017-18 is applicable to IL&FS and its subsidiaries namely IFIN and ITNL only and management is of the view that it is not applicable to the Company. In view of the above, Company is not envisaging any adjustment in financial statement in this regard.

c) As mentioned in note no. 40 to the accompanying IND AS financial statements, the Ministry of Corporate Affairs, Government of India, had initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS Ltd and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of its investigation, SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and relevant information is being provided by ITNL to the agency. The company has not received any direct communication from SFIO. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

Our Opinion is not modified in respect of above matters.

Material Uncertainty Related to Going Concern

We draw your attention to Note no. 33 to the accompanying Ind AS financial statements which describes that Entire Group is going through liquidity issue and defaulted in repayment of various loan instruments, Union of India has filed petition against IL&FS Limited & its Group Companies in National Company Law Tribunal and superseded earlier Board of the Holding/Ultimate Holding Company. These conditions indicate the existence of a material uncertainty that may cast significant doubt about the Company's ability to continue as a going concern. As per the management, going concern assumption is appropriate for preparation of financial statements, as the company has received a bid from third party and which has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval is awaited for transfer of equity shares to the bidder.

Our Opinion is not modified in respect of above matter.

Information other than the Ind AS Financial Statements and Auditor's Report thereon

The Company's Board of Directors is responsible for the preparation of the other information. The other information comprises the information included in the Board's Report including Annexures to Board's Report, but does not include the Ind AS Financial Statements and our auditor's report thereon.

Our opinion on the Ind AS Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Ind AS Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Ind AS Financial Statements or our knowledge obtained during the course of our audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

Responsibility of Management and Those Charged with Governance for the Ind AS Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Ind AS Financial Statements that give a true and fair view of the financial position, financial performance, changes in equity and cash flows of the Company in accordance with the accounting principles generally accepted in India, including the Indian Accounting Standards specified under section 133 of the Act. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the Ind AS Financial Statement that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the Ind AS Financial Statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Ind AS Financial Statements

Our objectives are to obtain reasonable assurance about whether the Ind AS Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but it is not a guarantee that an audit conducted in accordance with Standards on Auditing ("SAs") will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Ind AS Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Ind AS Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the Ind AS Financial Statements, including the disclosures, and whether the Ind AS Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

Materiality is the magnitude of misstatements in the Ind AS Financial Statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the Ind AS Financial Statements may be influenced. We consider quantitative materiality and qualitative factors in:

(i) planning the scope of our audit work and in evaluating the results of our work; and
(ii) to evaluate the effect of any identified misstatements in the Ind AS Financial Statements.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the 'Annexure A' a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.

2. As required by Section 143(3) of the Act, we report that:

   a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit.

   b) In our opinion, **except for the effects of the matter described in the Basis for Qualified Opinion paragraph above,** proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books.

   c) The Balance Sheet, the Statement of Profit and Loss, the Statement of Changes in Equity and the Cash Flow Statement dealt with by this Report are in agreement with the books of account.

   d) In our opinion, **except for the effects of the matter described in the Basis for Qualified Opinion paragraph above,** the aforesaid Ind AS Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Rule 7 of the Companies (Accounts) Rules, 2014.

   e) **Our observations made on the matters stated in Qualified Opinion paragraphs above may have a significant effect so as to adversely affect the functioning of the company.**

   f) On the basis of the written representations received from the directors as on 31st March, 2023 taken on record by the Board of Directors, none of the directors is disqualified as on 31st March, 2023 from being appointed as a director in terms of Section 164 (2) of the Act.

   g) With respect to the Other Matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

      i. The Company has no pending litigation which would impact its financial position except those disclosed in Ind AS Financial Statements;

      ii. The Company does not envisage any material foreseeable losses in long-term contracts including derivative contract requiring provision;

      iii. There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company

      iv. a) The management has represented that, to the best of its knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other persons or entities, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner

whatsoever by or on behalf of the Company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries

b) The management has represented, that, to the best of its knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been received by the Company from any persons or entities, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall, whether, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries; and

c) Based on such audit procedures that we have considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (i) and (ii) of Rule 11(e), as provided under (a) and (b) above, contain any material misstatement.

v. The Company has not declared or paid any dividend during the year.

vi. Proviso to Rule 3(1) of the Companies (Accounts) Rules, 2014 for maintaining books of account using accounting software which has a feature of recording audit trail (edit log) facility is applicable to the Company with effect from April 1, 2023, and accordingly, reporting under Rule 11(g) of Companies (Audit and Auditors) Rules, 2014 is not applicable for the financial year ended 31st March, 2023.

h) With respect to the adequacy of the internal financial controls with reference to Ind AS Financial Statements of the Company and the operating effectiveness of such controls, refer to our separate Report in "Annexure B" which expresses an unmodified opinion.

3. With respect to the other matters to be included in the Auditor's Report in accordance with the requirements of section 197(16) of the Act, as amended; In our opinion and to the best of our information and according to the explanations given to us, the Company has not paid the managerial remuneration during the year.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)

Ayush Goswami
Partner
M No. 545800
Place: New Delhi
Date: 18th August 2023
UDIN: 23545800BGVTZY4581

Annexure 'A' to the Independent Auditor's Report of CHENANI NASHRI TUNNELWAY LIMITED for the Year ended as on 31st March, 2023

Annexure referred to in paragraph 1 under the heading "Report on Other Legal and Regulatory Requirements" of our report on even date: -

To the best of our information and according to the explanations provided to us by the Company and the books of account and records examined by us in the normal course of audit, we state that:

i. In respect of the Company's Property, Plant and Equipment, Right-of-use Assets and Intangible Assets:

a) The Company does not have any fixed asset (other than Land) or Intangible Asset at 31st March, 2023, therefore paragraph 3(i)(a) of the Order is not applicable to the Company.

b) The Property, Plant and Equipment have been physically verified by the Management at regular Intervals and no material discrepancies were noticed on such verification.

c) The title deeds of immovable properties (other than properties where the company is the lessee and the lease agreements are duly executed in favour of the lessee) are held in the name of the Company.

d) The company has not revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets during the year. Hence, reporting under Para 3(i)(d) is not applicable.

e) There are no proceedings which have been initiated or are pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (as amended in 2016) and rules made thereunder. Hence, reporting under Para 3(i)(e) is not applicable.

ii. a) The Company is engaged in the business of infrastructure development, operations and its maintenance and there is no inventory in hand at any point in time, hence, paragraph 3(ii)(a) of the Order is not applicable to the Company.

b) The Company has not been sanctioned any working capital limits, from banks or financial institutions on the basis of security of current assets. Hence, reporting under Para 3(ii) (b) is not applicable.

iii. The Company has not made investments in, provided any guarantee or security or granted any loans or advances in the nature of loans, secured or unsecured, to companies, firms, limited liability partnerships or any other parties. Hence, reporting under Para 3(iii) is not applicable.

iv. The Company has not entered into any transaction in respect of loans, Investments, guarantee and securities, which attracts compliance to the provisions of the sections 185 and 186 of the Companies Act, 2013. Therefore, the paragraph 3(iv) of the Order is not applicable to the Company.

v. The Company has not accepted deposits or amounts which are deemed to be deposits and the directives issued by the Reserve Bank of India and the provisions of sections 73 to 76 or any other relevant provisions of the Companies Act and the rules framed there under. Hence, reporting under Para 3(v) is not applicable.

vi. We have broadly reviewed the books of account maintained by the company pursuant to the Rules made by the Central Government for the maintenance of cost records under section 148 of the Act, and are of the opinion that prima facie, the prescribed accounts and records have been made.

vii. In respect of statutory dues:

a) The Company is not regular in depositing undisputed statutory dues including goods and services tax, provident fund, employee state insurance, income tax, service tax, value added tax, cess and other statutory dues during the year with the appropriate authorities. As on 31st March 2023, there are no undisputed statutory dues payables for period exceeding for a period more than six month from the date they become payable **except undisputed amounts of INR 54.11 million on account of the tax deducted at source are in arrears since March 31, 2021.**

b) There are no statutory dues referred to in sub-clause (a) which have not been deposited on account of any dispute except;

Name of the Statute	Nature of the Dues	Amount (₹ In Million)	Period to which the amount relates	Forum where dispute is pending
Income Tax Act, 1961	Income tax	1.87	AY 2014-2015	CIT(A)
		3.31	AY 2013-2014	CIT(A)
		11.68	AY 2012-2013	CIT(A)

viii. There were no transactions relating to previously unrecorded income that have been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961 (43 of 1961).

ix. In respect to the borrowings:

a) The Company has defaulted in repayment of loans or other borrowings. Details of the same is as under:

Default in repayment of loan (Principal & Interest) **(In Rs. Mn.)**

Name of the Lender	Nature of Due	Amount	Due since
Aditya Birla Finance Ltd	Principal	550.00	20th September 2018
IL&FS Airport Ltd	Principal	470.00	28th August 2018
SREI INFRASTRUCTURES	Interest	63.63	30th September 2018
IL&FS Airport Ltd	Interest	31.82	30th September 2018
IL&FS Transportation Networks Limited	Interest	372.51	30th September 2018
IL&FS Ltd	Interest	307.00	30th September 2018

Note: Principal repayment & interest payment due after 15th October, 2018 have not been disclosed as default under this clause in view the NCLAT Orders dated 12th March, 2020

b) The Company has not been declared wilful defaulter by any bank or financial institution or government or any government authority.

c) The Company has utilized the money obtained by way of term loans during the year for the purposes for which they were obtained.

d) On an overall examination of the Ind AS Financial Statements of the Company, funds raised on short term basis have, prima facie, not been used during the year for long-term purposes by the Company.

e) On an overall examination of the Ind AS Financial Statements of the Company, the Company has not taken any funds from any entity or person on account of or to meet the obligations of its subsidiaries, associates or joint ventures.

f) The Company has not raised loans during the year on the pledge of securities held in its subsidiaries, joint ventures or associate companies.

x. a) The Company has not raised the money by way of initial public offer/ further public offer (including debt instruments) during the year.

b) During the year, the Company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year. Hence, reporting under Para 3(x)(b) is not applicable.

xi. a) According to the information and explanations given to us by the management which have been relied by us, there were no frauds on or by the Company noticed or reported during the period under audit, subject to the pending final outcome of the various matters described in Emphasis of matter above.

b) No report under sub-section (12) of section 143 of the Companies Act has been filed in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government, during the year and up to the date of this report.

c) As represented to us by the management, there are no whistle blower complaints received by the Company during the year.

xii. The Company is not a Nidhi Company. Hence, reporting under Para 3(xii) is not applicable.

xiii. All transactions with the related parties are in compliance with sections 177 and 188 of the Companies Act, 2013 where applicable and the details of such transactions have been disclosed in the Ind AS Financial Statements as required by the applicable accounting standards.

xiv. a) In our opinion the company has an adequate internal audit system commensurate with the size and nature of its business.

b) We have considered, the internal audit reports for the year under audit, issued to the Company during the year and till date, in determining the nature, timing and extent of our audit procedures.

xv. The Company has not entered into any non-cash transactions with its directors or persons connected with its directors and hence provisions of section 192 of the Companies Act, 2013 is not applicable to the Company.

xvi. a) The Company is not required to be registered under section 45-IA of the Reserve Bank of India Act, 1934 (2 of 1934). Therefore, paragraph 3(xvi) (a) of the Order is not applicable to the Company.

b) The Company has not conducted any Non-Banking Financial or Housing Finance activities. Therefore, paragraph 3(xvi) (b) of the Order is not applicable to the Company.

c) The Company is not a Core Investment Company (CIC) as defined in the regulations made by the Reserve Bank of India. Hence, reporting under Para 3(xvi) (c) & (d) is not applicable.

xvii. The Company has not incurred cash losses in the current financial year and in the immediately preceding financial.

xviii. There has been no resignation of the statutory auditors during the year and accordingly reporting under this clause is not applicable.

xix. On the basis of the financial ratios, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, material uncertainty exists as on the date of the audit report that company is capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date.(refer "Material Uncertainty Related to Going Concern" para above)

We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the company as and when they fall due.

xx. a) In respect of other than ongoing projects, the company has not transferred unspent amount to a Fund specified in Schedule VII to the Companies Act, 2013 within a period of six months of the expiry of the financial year in compliance with second proviso to sub-section (5) of section 135 of the said Act, except in respect of the following:

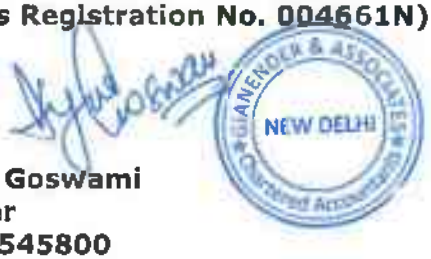
Amount in Rs. Mn.

Financial Year	Amount unspent on Corporate Social Responsibility activities "other than Ongoing Projects"	Amount Transferred to Fund specified in Schedule VII within 6 months from the end of the Financial Year	Amount Transferred after the due date
2021-22	45.01	-	NA
2022-23	79.13	-	NA

b) Company is not spending any amount in respect of ongoing projects out of unspent amount. Hence, reporting under para 3 (xx) (a) is not applicable.

xxi. Paragraph 3(xxi) of the Order is not applicable to the Company as the Ind AS Financial Statements under reporting are not consolidated Ind AS Financial Statements.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)



Ayush Goswami
Partner
M No. 545800
Place: New Delhi
Date: 18th August 2023
UDIN: 23545800BGVTZY4581

ANNEXURE - B TO THE INDEPENDENT AUDITORS' REPORT
(Referred to in our Report of even date)

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls with reference to Ind AS Financial Statements of **CHENANI NASHRI TUNNELWAY LIMITED** ("the Company") as of 31st March, 2023 in conjunction with our audit of the Ind AS Financial Statements of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on the internal control with reference to Ind AS Financial Statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls with reference to Ind AS Financial Statements issued by the Institute of Chartered Accountants of India (the "Guidance Note"). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to Company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls with reference to Ind AS Financial Statements based on our audit. We conducted our audit in accordance with the Guidance Note and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls with reference to Ind AS Financial Statements was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system with reference to Ind AS Financial Statements and their operating effectiveness. Our audit of internal financial controls with reference to Ind AS Financial Statements included obtaining an understanding of internal financial controls with reference to Ind AS Financial Statements, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system with reference to Ind AS Financial Statements.

Meaning of Internal Financial Controls with reference to Ind AS Financial Statements

A Company's internal financial control with reference to Ind AS Financial Statements is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Ind AS Financial Statements for external purposes in accordance with generally accepted accounting principles. A Company's internal financial control with reference to Ind AS Financial Statements includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of Ind AS Financial Statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the Ind AS Financial Statements.

Inherent Limitations of Internal Financial Controls with reference to Ind AS Financial Statements

Because of the inherent limitations of internal financial controls with reference to Ind AS Financial Statements, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls with reference to Ind AS Financial Statements to future periods are subject to the risk that the internal financial control with reference to Ind AS Financial Statements may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system with reference to Ind AS Financial Statements and such internal financial controls with reference to Ind AS Financial Statements were operating effectively as at 31st March 2023, based on the internal control with reference to Ind AS Financial Statements criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls With reference to Ind AS Financial Statements issued by the Institute of Chartered Accountants of India.

For Gianender & Associates
Chartered Accountants
(Firm's Registration No. 004661N)

Ayush Goswami
Partner
M No. 545800
Place: New Delhi
Date: 18th August 2023
UDIN: 23545800BGVTZY4581

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Balance sheet as at March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

Particulars	Notes	As at March 31, 2023		As at March 31, 2022	
ASSETS					
Non-current Assets					
(a) Property, plant and equipment	4		1.46		1.46
(b) Intangible Assets					
(c) Financial assets					
(i) Investments					
(ii) Trade receivables					
(iii) Other financial assets	5		30,301.43		33,080.03
(d) Other non-current assets	6				
Total Non-current Assets			**30,302.89**		**33,081.49**
Current Assets					
(a) Inventories					
(b) Financial assets					
(i) Investments	7	0.17		0.16	
(ii) Cash and cash equivalents	8	9,541.73		3,608.58	
(iii) Other Bank Balance	9	6,271.08		14,145.09	
(iv) Other financial assets	5	4,003.17	19,816.15	9,174.85	26,928.68
(c) Current tax assets (Net)	10		507.87		296.72
(d) Other current assets	6		141.12		145.83
Total Current Assets			**20,465.14**		**27,371.24**
Total Assets			**50,768.04**		**60,452.73**
EQUITY AND LIABILITIES					
Equity					
(a) Equity share capital	11	3,720.00		3,720.00	
(b) Instruments entirely equity in nature					
(c) Other Equity	12	3,796.42		1,952.94	
Equity attributable to owners of the Company			7,516.42		5,672.94
Total Equity			**7,516.42**		**5,672.94**
LIABILITIES					
Non-current Liabilities					
(a) Financial Liabilities					
(i) Borrowings	13	14,490.68		20,047.27	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise					
b) total outstanding dues other than micro & small enterprise					
(iii) Other financial liabilities	14	209.34	14,700.03	209.21	20,256.48
(b) Provisions					
(c) Other non-current liabilities	10.1		2,059.37		
Total Non-current Liabilities			**16,759.40**		**20,256.48**
Current liabilities					
(a) Financial liabilities					
(i) Borrowings	13	20,007.76		28,133.70	
(ii) Trade payables	16				
a) total outstanding dues of micro & small enterprise					
b) total outstanding dues other than micro & small enterprise		5,201.94		5,107.06	
(iii) Other financial liabilities	14	958.72	26,168.43	958.72	34,199.48
(c) Current Tax liabilities			268.78		268.78
(d) Provisions					
(e) Other current liabilities	15		55.01		55.04
Total Current Liabilities			**26,492.22**		**34,523.30**
Total Liabilities			**43,251.62**		**54,779.78**
Total Equity and Liabilities			**50,768.04**		**60,452.73**

Note 1 to 43 forms part of the financial statements.

In terms of our report of even date
For Gleiander & Associates
Chartered Accountants
Firm Registration No. : 0046614

Ayush Goswami
Partner
Membership Number : 545800

Place : New Delhi
Date :

For and on behalf of the Board

Non-Executive Director
Krishna Ghag
DIN-01491551

Non-Executive Director
Ajay Menon
DIN-02497302

Place : Mumbai
Date : 18.08.2023

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of Profit & Loss for Year Ended March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

	Particulars	Notes	Year Ended March 31, 2023	Year Ended March 31, 2022
I.	Revenue from Operations	17	3,931.30	4,163.88
II.	Other income	18	801.28	410.43
III.	**Total Income (I+II)**		**4,732.58**	**4,574.31**
IV.	**Expenses**			
	Operating expenses	19	487.10	507.11
	Finance costs (net)	20	43.72	69.82
	Modification Loss	30	192.24	-
	Other expenses	21	106.68	212.15
	Total expenses (IV)		**829.73**	**789.08**
V	**Profit before tax**		**3,902.85**	**3,785.23**
VI	Less: Tax expense			
	(1) Current tax	22	-	250.97
	(2) Deferred tax	22.1	2,059.37	-
	Total Tax expenses		**2,059.37**	**250.97**
VII	**Profit/(loss) after tax (V-VI)**		**1,843.48**	**3,534.26**
VIII	**Other Comprehensive Income / (Loss)**			
	Items that may be reclassified to profit or loss			
	(a) Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge	12	-	-
	(b) Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge		-	-
	Total **other comprehensive income / (loss)**		-	-
IX	**Total comprehensive income / (loss) for the year (VII+VIII)**		**1,843.48**	**3,534.26**
X	Earnings per equity share (face value ` 10 per share):	22		
	(1) Basic (in Rs.)		4.96	9.50
	(2) Diluted (in Rs.)		4.96	9.50

Note 1 to 43 forms part of the financial statements.

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

Ayush Goswami
Partner
Membership Number : 545800

Place : New Delhi
Date :

For and on behalf of the Board

Non-Executive Director
Krishna Ghag
DIN-02491661

Non-Executive Director
Ajay Menon
DIN-02497302

Place : Mumbai
Date : 18.08.2023

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Cash Flow Statement For year ended March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Cash flows from operating activities		
Profit for the year	1,843.48	3,534.26
Adjustments for:		
Deferred tax liabilities	2,059.37	-
Finance Income	(3,397.24)	(3,616.92)
Exchange fluctuation loss	-	56.34
Modification Loss / (Gain)	192.24	(2.47)
Restatement of Cashflow Hedge Reserve	-	97.09
Interest and finance cost	43.72	69.82
Periodic Maintenance income	(8.94)	(45.73)
Operation and maintenance Income	(525.12)	(501.23)
Sub total	207.51	(408.84)
Movements in working capital :		
(Increase)/decrease in other financial assets & other assets (current and non current)	(585.77)	(0.00)
Increase/ (Decrease) in financial liabilities & other liabilities (current and non current)	94.99	63.79
Sub total	(490.79)	63.79
Cash generated from operations	**(283.28)**	**(345.05)**
Income taxes paid (net of refunds)	(211.15)	295.00
Net cash generated by operating activities (A)	(494.43)	(50.05)
Cash flows from investing activities		
(Increase) / Decrease in receivable under service concession arrangements (net)	6,350.40	6,350.40
(Investments)/Redemption of Investment in Mutual funds	(0.01)	(0.01)
Movement in other bank balances	7,874.01	(6,507.44)
Net cash used in investing activities (B)	14,224.40	(157.05)
Cash flows from financing activities		
Proceeds / (Repayment) from Non Current borrowings (net)	(7,796.82)	-
Proceeds from Current borrowings (net)		-
Finance costs paid	(0.00)	-
Net cash generated in financing activities (C)	(7,796.82)	-
Net increase/ (decrease) in cash and cash equivalents (A+B+C)	5,933.16	(207.09)
Cash and cash equivalents at the beginning of the year	3,608.58	3,815.67
Cash and cash equivalents at the end of the year	9,541.73	3,608.58

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Components of Cash and Cash Equivalents		
Cash on hand	-	-
Balances with Banks in current accounts	81.39	49.72
Balances with Banks in deposit accounts	9,460.35	3,558.85
Cash and Cash Equivalents	9,541.73	3,608.58
Cash and cash equivalents for statement of cash flows	9,541.73	3,608.58

Disclosing change in financial laibilites

Particular	31-Mar-22	Cash flow	Non Cash changes	31-Mar-23
Long Term - Secured Loan	31,122.35	(7,796.82)	(5,885.70)	17,439.83
Unsecured Loan	17,058.62	-	-	17,058.62
	48,180.97	(7,796.82)	(5,885.70)	34,498.45

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. : 004661N

Ayush Gianender
Partner
Membership Number : 545800

Place : New Delhi
Date :

For and on behalf of the Board

Non Executive Director
Krishna Ghag
DIN-02491651

Non Executive Director
Ajay Shenoy
DIN-02457202

Place : Mumbai
Date : 18.08.2023

CHENANI NASHRI TUNNELWAY LIMITED
CIN Number : U45400MH2010PLC203614
Statement of changes in equity for year ended March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

a. Equity share capital	Year Ended March 31, 2023	Year ended March 31, 2022
Balance as at the beginning of the year	3,720.00	3,720.00
Changes in Equity Share Capital due to prior period errors	-	-
Restated balance at the beginning of the current reporting period	**3,720.00**	**3,720.00**
Changes in equity share capital during the year	-	-
Balance as at end of the year	3,720.00	3,720.00

b. Other equity	Reserves and surplus	Items of other comprehensive income
	Retained earnings	Effective portion of cash flow hedge
Balance as at April 1, 2021	(1,581.32)	(97.09)
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	**(1,581.32)**	**(97.09)**
Profit/(Loss) for the year	3,534.26	-
Other comprehensive income for the year, net of income tax	-	-
Total comprehensive income for the year	**3,534.26**	-
Other adjustments	-	-
Balance as at March 31, 2022	**1,952.94**	**(97.09)**
Balance as at April 1, 2022	1,952.94	-
Changes in accounting policy or prior period errors	-	-
Restated balance at the beginning of the current reporting period	1,952.94	-
Profit/(Loss) for the year	1,843.48	-
Other comprehensive income for the year, net of income tax	-	-
Total comprehensive income for the year	**1,843.48**	-
Other adjustments	-	-
Balance as at March 31, 2023	**3,796.42**	-

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

Ayush Goswami
Partner
Membership Number : 545800

Place : New Delhi
Date :

For and on behalf of the Board

Non-Executive Director
Krishna Ghag
DIN-02491661

Non-Executive Director
Ajay Menon
DIN-02497302

Place : Mumbai
Date : 18.08.2023

General Information & Significant Accounting Policies

Note No-1

1. General information

The Company was incorporated under the Companies Act 1956 on June 02, 2010. The Company is a special purpose vehicle (SPV) promoted by IL&FS Transportation Networks Limited (ITNL). The company registered address is "The IL&FS Financial Center, Plot C22, G Block, Bandra Kurla Complex, Mumbai - 400051." The Company has entered into a Concession Agreement (CA) on June 28, 2010 with The National Highways Authority of India (NHAI) for Rehabilitation, Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00(New Alignment) including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT basis) in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from the 23rd May 2011 (the 'Appointed date').

Note No-2

2. Significant accounting policies

2.1 Statement of compliance

The financial statements have been prepared in accordance with Indian Accounting Standards ("Ind AS") notified under the Companies (Indian Accounting Standards) Rules, 2015 (as amended from time to time) and other relevant provisions of the Companies Act, 2013("the Act").

The Balance Sheet, the Statement of Profit and Loss and the Statement of Changes in Equity are prepared and presented in the format prescribed in the Division II of Schedule III to the Act. The Statement of Cash Flows has been prepared and presented as per the requirements of Ind AS 7 "Statement of Cash Flows".

2.2 Basis of preparation and presentation

The Financial Statements are presented in INR, which is also the Company's functional currency and all values are rounded to the nearest millions (INR 000,000), except earnings per share and except otherwise indicated.

The financial statements have been prepared on a historical cost basis, except for the following asset and liabilities which have been measured at fair value:

NEW DELHI

- Derivative financial instruments,
- Certain financial assets and liabilities measured at fair value (refer accounting policy regarding financial instruments),

Historical cost is generally based on the fair value of the consideration given in exchange for goods and services. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these financial statements is determined on this basis.

2.3 Use of estimates

The preparation of financial statements in conformity with IND AS requires the Management to make estimates and assumptions that affect the reported amount of assets, liabilities, revenues and expenses and disclosure of contingent liabilities on the date of financial statements. The recognition, measurement, classification or disclosures of an item or information in the financial statements have been made relying on management estimates to a greater extent.

2.4 Fair value measurement

The Company measures financial instruments, such as, derivatives at fair value at each balance sheet date.
Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Company.
The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

GIANENDER & ASSOCIATES NEW DELHI Chartered Accountants

Chenani Nashri Tunnelway Limited

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs. All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period. External valuers are involved for valuation of significant assets, such as properties and significant liabilities, such as contingent consideration.

For the purpose of fair value disclosures, the Company has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.
This note summarises accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

3. Accounting for rights under service concession arrangements and revenue recognition

i. Recognition and measurement

The Company builds, operates and maintains infrastructure assets under public-to-private Service Concession Arrangements (SCAs), which is an arrangement between the "grantor" (a public sector entity/authority) and the "operator" (a private sector entity) to provide services that give the public access to major economic and social facilities utilizing private-sector funds and expertise. The infrastructures accounted for by the Company

as concessions are mainly related to the activities concerning roads.

Concession contracts are public-private agreements for periods specified in the SCAs including the construction, up gradation, restoration of infrastructure and future services associated with the operation and maintenance of assets in the concession period. Revenue recognition, as well as, the main characteristics of these contracts are detailed in Note 3.iii.

With respect to service concession arrangements, revenue and costs are allocated between those relating to construction services and those relating to operation & maintenance services, and are accounted for separately. Consideration received or receivable is allocated by reference to the relative fair value of services delivered when the amounts are separately identifiable. The infrastructure used in a concession are classified as an intangible asset or a financial asset, depending on the nature of the payment entitlements established in the concession agreement.

When the amount of the arrangement consideration for the provision of public services is substantially fixed by a contract, the Company recognizes revenues from construction services for public facilities (infrastructures) by the percentage-of completion method, and recognizes the consideration as a financial asset and the same is classified as "Receivables against Service Concession Arrangements". The Company accounts for such financial assets at amortized cost, calculates interest income based on the effective interest method and recognizes it in revenue as Finance Income.

ii. Contractual obligation to restore the infrastructure to a specified level of serviceability

The Company has contractual obligations to maintain the infrastructure to a specified level of serviceability or restore the infrastructure to a specified condition during the concession period and/or at the time of hand over to the grantor of the SCA. Such obligations are measured at the best estimate of the expenditure that would be required to settle the obligation at the balance sheet date. In case of concession arrangements under financial asset model, such costs are recognized in the period in which such costs are actually incurred.

iii. Revenue recognition

Finance income for concession arrangements under financial asset model is recognized using the effective interest method. Revenues from operations and maintenance services and overlay services are recognized in each period as and when services are rendered in

accordance with Ind AS 115 Revenue from contract with customers.

iv. Revenue from construction contracts

The Company recognizes and measures revenue, costs and margin for providing construction services during the period of construction of the infrastructure in accordance with Ind AS 115 'Construction Contracts'.
When the outcome of a construction contract can be estimated reliably and it is probable that it will be profitable, contract revenue and contract costs associated with the construction contract are recognised as revenue and expenses respectively by reference to the percentage of completion of the contract activity at the reporting date. The percentage of completion of a contract is determined considering the proportion that contract costs incurred for work performed upto the reporting date bear to the estimated total contract costs.

For the purposes of recognizing revenue, contract revenue comprises the initial amount of revenue agreed in the contract, the variations in contract work, claims and incentive payments to the extent that it is probable that they will result in revenue and they are capable of being reliably measured.

The percentage of completion method is applied on a cumulative basis in each accounting period to the current estimates of contract revenue and contract costs. The effect of a change in the estimate of contract revenue or contract costs, or the effect of a change in the estimate of the outcome of a contract, is accounted for as a change in accounting estimate and the effect of which are recognized in the Statement of Profit and Loss in the period in which the change is made and in subsequent periods.

When the outcome of a construction contract cannot be estimated reliably, revenue is recognized only to the extent of contract costs incurred of which recovery is probable and the related contract costs are recognized as an expense in the period in which they are incurred.

When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense in the Statement of Profit and Loss in the period in which such probability occurs.

v. Borrowing cost related to SCAs

In case of concession arrangement under financial asset model, borrowing costs attributable to construction of the infrastructure are charged to Statement of Profit and

Loss in the period in which such costs are incurred.

In case of concession arrangement under intangible asset model, borrowing costs attributable to the construction of infrastructure assets are capitalised up to the date of the final completion certificate of the asset / facility received from the authority for its intended use specified in the Concession Agreement. All borrowing costs subsequent to the capitalization of the intangible assets are charged to the Statement of Profit and Loss in the period in which such costs are incurred.

vi. Claims

Claims raised with the concession granting authority towards reimbursement for costs incurred due to delay in handing over of unencumbered land to the Company for construction or other delays attributable solely to the concession granting authority are recognised when there are is a reasonable certainty that there will be inflow of economic benefits to the Company. The claims when recognized as such are reduced from the carrying amount of the intangible asset / financial asset under the service concession arrangement, as the case may be, to the extent the claims relate to costs earlier included as a part of the carrying amount of these assets. Further, these claims are credited to profit or loss to the extent it is probable to have economic benefits to the company.

3.1 Borrowing costs

Borrowing costs are recognised in the period to which they relate, regardless of how the funds have been utilised, except where it relates to the financing of construction of development of assets requiring a substantial period of time to prepare for their intended future use. Interest is capitalised up to the date when the asset is ready for its intended use. The amount of interest capitalised (gross of tax) for the period is determined by applying the interest rate applicable to appropriate borrowings outstanding during the period to the average amount of accumulated expenditure for the assets during the period. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds

All other borrowing costs are recognised in profit or loss in the period in which tare incurred.

3.2 Taxation

3.2.1 Current tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. Taxable profit differs from 'profit before tax' as reported in the statement of profit and loss because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Company's current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Current income tax relating to items recognised outside profit or loss is recognised outside profit or loss (either in other comprehensive income or in equity). Current tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity. Management periodically evaluates positions taken in the tax return with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

3.2.2 Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases values used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets (including unused tax credits such as MAT credit and unused tax losses such as carried forward business loss and unabsorbed depreciation) are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from the initial recognition (other than in a business combination) of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit. In addition, deferred tax liabilities are not recognized if the temporary difference arises from the initial recognition of goodwill.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax relating to items recognised outside profit or loss is recognised outside profit

or loss (either in other comprehensive income or in equity). Deferred tax items are recognised in correlation to the underlying transaction either in OCI or directly in equity. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of to recover or settle the carrying amount of its assets and liabilities.

3.3 Property, plant and equipment

Property, plant and equipment acquired by the Company are reported at acquisition cost, with deductions for accumulated depreciation and impairment losses, if any.

The acquisition cost includes the purchase price (excluding refundable taxes) and expenses, such as delivery and handling costs, installation, legal services and consultancy services, directly attributable to bringing the asset to the site and in working condition for its intended use.

Where the construction or development of any asset requiring a substantial period of time to set up for its intended use is funded by borrowings, the corresponding borrowing costs are capitalized up to the date when the asset is ready for its intended use.

All assets are depreciated on a Straight Line Method (SLM) of Depreciation, over the useful life of assets as prescribed under Schedule II of the Companies Act, 2013.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying of the asset and is recognised in profit or loss.

3.4 Impairment of tangible assets / intangible asset

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to

the smallest Company of cash-generating units for which a reasonable and consistent allocation basis can be identified.

In assessing value in use, the estimated future cash flows are discounted to their present value using appropriate discount rate.

Recoverable amount is the higher of fair value less costs of disposal and value in use.
If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognised immediately in profit or loss.

A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in the statement of profit or loss unless the asset is carried at a revalued amount, in which case, the reversal is treated as a revaluation increase.

Foreign Currencies:

The Company's financial statements are presented in INR, which is also the Company's functional currency. In preparing the financial statements of Company, transactions in currencies other than the Company's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. The gain or loss arising on translation of non-monetary items measured at fair value is treated in line with the recognition of the gain or loss on the change in fair value of the item (i.e., translation differences on items whose fair value gain or loss is recognized in OCI or statement of profit or loss are also recognized in OCI or statement of profit or loss, respectively). Exchange differences on monetary items are recognized in profit or loss in the period in which they arise except for exchange differences on transactions entered into in order to hedge certain foreign currency risks (see note 21.3 below for hedging accounting policies).

3.5. Provision

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the

GLAMINDER & ASSOCIATES NEW DELHI Chartered Accountants

obligation, and a reliable estimate can be made of the amount of the obligation. When the Company expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit and loss net of any reimbursement.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (when the effect of the time value of money is material).

3.6 Financial instruments

Financial assets and financial liabilities are recognized when a company becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss ("FVTPL) are recognized immediately in the statement of profit and loss.

3.7 Financial assets

All regular way purchases or sales of financial assets are recognized and derecognized on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognized financial assets are subsequently measured in their entirety at either amortized cost or fair value, depending on the classification of the financial assets.

3.7.1 Classification of financial assets – debt instruments

Debt instruments that meet the following conditions are subsequently measured at amortised cost (except for debt instruments that are designated as at fair value through profit or loss on initial recognition):

- the asset is held within a business model whose objective is to hold assets in order

to collect contractual cash flows;

- the contractual terms of the instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

After initial measurement, such financial assets are subsequently measured at amortised cost using the effective interest rate (EIR) method. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance income in the profit or loss. The losses arising from impairment are recognised in the profit or loss.

3.7.2 Amortised cost and Effective interest method

The effective interest method is a method of calculating the amortised cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

Income is recognized on an effective interest basis for debt instruments other than those financial assets classified as at FVTPL. Interest income is recognized in profit or loss and is included in the "Other income" line item.

3.7.3 Financial assets at FVTPL

Debt instruments that do not meet the amortized cost or FVOCI criteria are measured at FVTPL. In addition, debt instruments that meet the amortized cost or FVOCI criteria but are designated as at FVTPL are measured at FVTPL.

A debt instrument that meets the amortized cost or FVTOCI criteria may be designated as at FVTPL upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency that would arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases. The Company has not designated any debt instrument as at FVTPL.

Financial assets at FVTPL are measured at fair value at the end of each reporting period, with any gains or losses arising on re-measurement recognized in profit or loss. The net gain or loss recognized in profit or loss is included in in the "Other income" line item.

3.7.4 Impairment of financial assets

In accordance with Ind AS 109, the Company applies expected credit loss (ECL) model for measurement and recognition of impairment loss on the following financial assets and credit risk exposure:
a) Financial assets that are debt instruments, and are measured at amortised cost e.g., loans, debt securities, deposits, trade receivables and bank balance
b) Trade receivables or any contractual right to receive cash or another financial asset that result from transactions that are within the scope of Ind AS 11 and Ind AS 18 (referred to as 'contractual revenue receivables' in these illustrative financial statements)
c) Loan commitments which are not measured as at FVTPL

The Company measures the loss allowance for a financial instrument at an amount equal to the lifetime expected credit losses if the credit risk on that financial instrument has increased significantly since initial recognition. If the credit risk on a financial instrument has not increased significantly since initial recognition, the Company measures the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. However, for trade receivables, the Company measures the loss allowance at an amount equal to lifetime expected credit losses. In cases where the amounts are expected to be realized upto one year from the due date, loss for the time value of money is not recognized, since the same is not considered to be material.

When making the assessment of whether there has been a significant increase in credit risk since initial recognition, the Company uses the change in the risk of a default occurring over the expected life of the financial instrument instead of the change in the amount of expected credit losses. To make that assessment, the Company compares the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of initial recognition and considers reasonable and supportable information, that is available without undue cost or effort, that is indicative of significant increases in credit risk since initial recognition.

3.8 Reclassification of financial assets

The Company determines classification of financial assets and liabilities on initial recognition. After initial recognition, no reclassification is made for financial assets which are equity instruments and financial liabilities. For financial assets which are debt instruments, a reclassification is made only if there is a change in the business model for managing those assets. Changes to the business model are expected to be infrequent. The Company's senior management determines change in the business model as a result of external or internal changes which are significant to the Company's operations. Such changes are evident to external parties. A change in the business model occurs when the Company either begins or ceases to perform an activity that is significant to its operations. If the Company reclassifies financial assets, it applies the reclassification prospectively from the reclassification date which is the first day of the immediately next

GLANCE & ASSOCIATES NEW DELHI

reporting period following the change in business model. The Company does not restate any previously recognised gains, losses (including impairment gains or losses) or interest.

3.8.1 Derecognition of financial assets

The Company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. If [the Company] the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Company recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.
On derecognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss if such gain or loss would have otherwise been recognized in profit or loss on disposal of that financial asset.

On derecognition of a financial asset other than in its entirety (e.g., when the Company retains an option to repurchase part of a transferred asset), [the Company] the Company allocates the previous carrying amount of the financial asset between the part it continues to recognised under continuing involvement, and the part it no longer recognises on the basis of the relative fair values of those parts on the date of the transfer. The difference between the carrying amount allocated to the part that is no longer recognised and the sum of the consideration received for the part no longer recognised and any cumulative gain or loss allocated to it that had been recognised in other comprehensive income is recognised in profit or loss if such gain or loss would have otherwise been recognised in profit or loss on disposal of that financial asset. A cumulative gain or loss that had been recognised in other comprehensive income is allocated between the part that continues to be recognised and the part that is no longer recognised on the basis of the relative fair values of those parts.

3.9 Modification of Cash Flows of financial assets and revision in estimates of Cash flows

The rate considered for recognizing Finance Income (EIR) and fair valuation of the Receivable under SCA finalised on achievement of PCOD / COD for the Project. Thereafter this rate will remain constant during the balance concession period unless there is an impairment / reversal of impairment of asset.

When the contractual cash flows of a financial asset are renegotiated or otherwise modified and the renegotiation or modification does not result in the derecognition of that financial asset in accordance with Ind AS 109, the Company recalculates the gross carrying amount of the financial asset and recognises a modification gain or loss in profit or loss. The gross carrying amount of the financial asset is recalculated as the present value of the renegotiated or modified contractual cash flows that are discounted at the financial asset's original effective interest rate. Any costs or fees incurred are adjusted to the carrying amount of the modified financial asset and are amortised over the remaining term of the modified financial asset.

If the Company revises its estimates of payments or receipts (excluding modifications and changes in estimates of expected credit losses), it adjusts the gross carrying amount of the financial asset or amortised cost of a financial liability to reflect actual and revised estimated contractual cash flows. The Company recalculates the gross carrying amount of the financial asset or amortised cost of the financial liability as the present value of the estimated future contractual cash flows that are discounted at the financial instrument's original effective interest rate. The adjustment is recognised in profit or loss as income or expense.

3.10 Financial liabilities and equity instruments-

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate
The Company's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.

3.10.1 Classification as debt or equity

Debt and equity instruments issued by a Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument

3.10.2 Financial liabilities

All financial liabilities are subsequently measured at amortized cost using the effective interest method

3.10.3 Financial liabilities subsequently measured at amortised cost

Financial liabilities are measured at amortized cost at the end of subsequent accounting periods. The carrying amounts of financial liabilities that are subsequently measured at

amortized cost are determined based on the effective interest method. Interest expense that is not capitalized as part of costs of an asset is included in the 'Finance costs' line item.

The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

3.10.4 Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or have expired. An exchange between with a lender of debt instruments with substantially different terms is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, a substantial modification of the terms of an existing financial liability (whether or not attributable to the financial difficulty of the debtor) is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

3.11 Cash and cash equivalents

Cash and cash equivalent in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

3.12 Cash Flow Statement:

The statement of cash flows shows the changes in cash and cash equivalents arising during the year from operating activities, investing activities and financing activities

The cash flows from operating activities are determined by using the indirect method. Net income is therefore adjusted by non-cash items, such as measurement gains or losses, changes in provisions, impairment of property, plant and equipment and

intangible assets, as well as changes from receivables and liabilities. In addition, all income and expenses from cash transactions that are attributable to investing or financing activities are eliminated. Interest received or paid is classified as operating cash flows

The cash flows from investing and financing activities are determined by using the direct method

3.13 Earnings per Equity Share:

Basic earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares outstanding during the period.

Diluted earnings per equity share is computed by dividing the net profit attributable to the equity holders of the company by the weighted average number of equity shares considered for deriving basic earnings per equity share and also the weighted average number of equity shares that could have been issued upon conversion of all dilutive potential equity shares. The dilutive potential equity shares are adjusted for the proceeds receivable had the equity shares been actually issued at fair value (i.e. the average market value of the outstanding equity shares). Dilutive potential equity shares are deemed converted as of the beginning of the period, unless issued at a later date. Dilutive potential equity shares are determined independently for each period presented.

3.14 Critical accounting judgments:

The preparation of Financial Statements in conformity with the recognition and measurement principles of Ind AS requires management to make estimates and assumptions that affect the reported balances of assets and liabilities, disclosures of contingent liabilities at the date of the Financial Statements and the reported amounts of income and expenses for the periods presented.

Management believes that the estimates used in the preparation of the financial statements are prudent and reasonable. Actual results could differ from these estimates. In case the actual results are different those from estimates, the effect thereof is given in the financial statements of the period in which the events materialize. Any change in such estimates is accounted prospectively.

The matters to be disclosed will be dictated by the circumstances of the individual entity, and by the significance of judgements and estimates made to the performance and financial position of the entity. Instead of disclosing this information in a separate note, it may be more appropriate to include such disclosures in the relevant asset

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to

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accounting estimates are recognized in the period in which the estimates are revised and future periods are affected.

3.15 Key sources of estimation of uncertainty

Key source of estimation of uncertainty at the date of Financial Statements, which may cause a material adjustment to the carrying amounts of assets and liabilities within the next financial year, is in respect of-

a) Periodical Major Maintenance
The management, estimates expenditure w.r.t periodic major maintenance by using a model that incorporates a number of assumptions, including the life of the concession agreement and the expected cost of the periodic major maintenance which are considered as reasonable by the management.

b) Fair value measurement of financial instruments
When the fair values of financial assets and financial liabilities recorded in the balance sheet cannot be measured based on quoted prices in active markets, their fair value is measured using valuation techniques including the DCF model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments. Refer Note 30 for further disclosures.

CHENANI NASHRI TUNNELWAY LIMITED
Notes forming part of the Financial Statements for year ended March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

4. Property, plant and equipment

Previous Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2021	Additions	Deductions	Balance at March 31, 2022	Balance as at April 1, 2021	Deductions	Depreciation expense	Balance at March 31, 2022	As at March 31, 2022	As at March 31, 2021
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	**1.46**	-	-	**1.46**	-	-	-	-	**1.46**	1.46

Current Year

Particulars	Deemed cost				Accumulated Depreciation				Carrying Amount	
	Balance as at April 1, 2022	Additions	Deductions	Balance at March 31, 2023	Balance as at April 1, 2022	Deductions	Depreciation expense	Balance at March 31, 2023	As at March 31, 2023	As at March 31, 2022
Land	1.46	-	-	1.46	-	-	-	-	1.46	1.46
Total	**1.46**	-	-	**1.46**	-	-	-	-	**1.46**	1.46

5. Other financial assets (Unsecured, considered good)

Particulars	As at March 31, 2023		As at March 31, 2022	
	Non Current	Current	Non Current	Current
Receivable under service concession arrangements	30,301.07	2,437.44	33,079.41	2,270.44
Security Deposits - Others	0.00	-	0.00	-
Other advances (Receivable from Banks) (Refer note - 34)	-	914.75	-	6,844.17
Interest receivable on fixed deposit	-	79.45	-	60.24
Foreign Currency Forward Contracts	-	-	-	-
Receivable from NHAI - GST witheld on Annuity	-	571.54	-	-
Receivable from NHAI - Utility Shifting & Change of scope	114.94	-	115.19	-
Less: Provision for doubtful receivable	(114.57)	-	(114.57)	-
Total	30,301.43	4,003.17	33,080.03	9,174.85

6. Other assets (Unsecured, considered good unless otherwise mentioned)

Particulars	As at March 31, 2023		As at March 31, 2022	
	Non Current	Current	Non Current	Current
Advance towards Insurance premium	-	76.00	-	143.84
Indirect tax balances	-	65.12	-	1.84
Unbilled Revenue	-	-	-	0.15
Total	-	141.12	-	145.83

7. Current Investments

Particulars	As at March 31, 2023		As at March 31, 2022	
	Qty	Amount	Qty	Amount
Unquoted Investments				
(a) Investment in SBI Liquid Fund Regular Growth Mutual fund	48.698	0.17	48.698	0.16
TOTAL INVESTMENTS	48.698	0.17	48.698	0.16

8. Cash and cash equivalents

For the purposes of the statement of cash flows, cash and cash equivalents include cash on hand and in banks, net of outstanding bank overdrafts. Cash and cash equivalents at the end of the reporting period as shown in the statement of cash flows can be reconciled to the related items in the balance sheet as follows:

Particulars	As at March 31, 2023	As at March 31, 2022
Balances with Banks		
In current accounts	81.39	49.72
In deposit accounts with original maturity less than 3 months	9,460.35	3,558.85
Cheques, drafts on hand	-	-
Cash on hand	-	-
Others	-	-
Cash and cash equivalents	9,541.73	3,608.58

9. Other Bank Balances

Particulars	As at March 31, 2023	As at March 31, 2022
Balances with Banks in deposits account having original maturity more than three months and remaining maturity less than twelve months	6,271.08	14,145.09
Total	6,271.08	14,145.09

10. Current tax assets and liabilities

Particulars	As at March 31, 2023		As at March 31, 2022	
	Non Current	Current	Non Current	Current
Current tax assets				
Advance payment of taxes	-	507.87	-	296.72
Total	-	507.87	-	296.72
Current tax liabilities				
Provision for tax	-	268.78	-	268.78
Total	-	268.78	-	268.78

10.1 Deferred tax balances

Particulars				
	Non Current	Current	Non Current	Current
Deferred tax assets	(4,158.88)	-	-	-
Less : Deferred tax liabilities	6,218.26	-	-	-
Total	2,059.37	-	-	-

10.2 Deferred tax Disclosures

Deferred tax assets and deferred tax liabilities have been offset wherever the Company has a legally enforceable right to set off current tax assets against current tax liabilities and where the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority

Deferred Tax Asset in respect of Unabsorbed Business Loss/ depreciation has been recognized to the extent reversals of Deferred Tax Liability and Taxable Profits are available before end of concession period

Significant management judgement is considered in determining provision for income tax, deferred tax assets and liabilities and recoverability of deferred tax assets. The recoverability of deferred tax assets is based on estimate of the taxable income for the period over which deferred tax assets will be recovered. The Company has unabsorbed business losses/depreciation which according to the management will be used to set off taxable profit arising in subsequent years from operation of the Company

The profitability projections used for determining the recoverability of deferred tax asset has number of variables viz. Revenue projections, restructuring of debt, incurrence of overlay etc which are subject to change

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered

CHENANI NASHRI TUNNELWAY LIMITED
Notes forming part of the Financial Statements for year ended March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

11. Equity Share Capital

Particulars	As at March 31, 2023		As at March 31, 2022	
	Number of shares in Mn	Amount in (Rs. Mn)	Number of shares in Mn	Amount in (Rs. Mn)
Authorised				
Equity Shares of ₹ 10/- each	372.00	3,720.00	372.00	3,720.00
Issued, Subscribed and Paid up				
Equity Shares of ₹ 10/- each fully paid	372.00	3,720.00	372.00	3,720.00
Total	372.00	3,720.00	372.00	3,720.00

11.1 Reconciliation of the number of equity shares outstanding at the beginning and at the end of the year :

Particulars	Year ended March 31, 2021		Year ended March 31, 2020	
	Number of shares in Mn	Amount in (Rs. Mn)	Number of shares in Mn	Amount in (Rs. Mn)
Shares outstanding at the beginning of the year	372.00	3,720.00	372.00	3,720.00
Shares issued during the year	-	-	-	-
Shares outstanding at the end of the year	372.00	3,720.00	372.00	3,720.00

11.2 Details of shares held by the holding company, the ultimate controlling party, their subsidiaries and associates

Number in Mn

Particulars	As at March 31, 2023	As at March 31, 2022
Holding Company - IL&FS Transportation Networks Limited & its Nominees	372.00	372.00

11.3 Details of shares held by each shareholder holding more than 5% shares

Equity Shareholder	As at March 31, 2023		As at March 31, 2022	
	Number of shares held in Mn	% holding in the class of shares	Number of shares held in Mn	% holding in the class of shares
IL&FS Transportation Networks Limited & its Nominees, the holding company	372.00	100%	372.00	100%
Total	372.00	100%	372.00	100%

11.4 Terms of Equity :
The Company has one class of equity shares with face value of ₹ 10 each fully paid-up. Each shareholder has a voting right in proportion to his holding in the paid-up equity share capital of the Company.
In the event of liquidation of the company, the holders of equity shares will be entitled to receive remaining assets of the company, after distribution of all preferential amounts. The distribution will be in proportion to the number of equity shares held by the shareholders.
Where final dividend is proposed by the Board of Directors, it is subject to the approval of the shareholders in the Annual General Meeting.
During the year, no dividend has been proposed or paid.
The Company has not issued any securities during the year with the right / option to convert the same into equity shares at a later date.
The Company has not reserved any shares for issue under options and contracts / commitments for the sale of shares/disinvestment.
The shares issued carry equal rights to dividend declared by the company and no restrictions are attached to any specific shareholder.

11.5 Shareholding of promoter
The details of promoter shareholding are given below :

Name of the Promotor	As at March 31, 2023			As at March 31, 2022		
	Number of shares held in Mn	% of total shares	% of change during the year	Number of shares held in Mn	% of total shares	% of change during the year
IL&FS Transportation Networks Limited & it's nominees	372.00	100%	-	372.00	100%	-
Total	372.00	100%	-	372.00	100%	-

Name of the Promotor	As at March 31, 2022			As at March 31, 2021		
		% of total shares	% of change during the year		% of total shares	% of change during the year
IL&FS Transportation Networks Limited & it's nominees	372.00	100%	-	372.00	100%	-
Total	372.00	100%	-	372.00	100%	-

12. Other Equity

Particulars	As at March 31, 2023	As at March 31, 2022
Retained earnings		
Balance at beginning of year	1,952.94	(1,581.32)
Profit / (Loss) during the year	1,843.48	3,534.26
Balance at end of the year	3,796.42	1,952.94
Cash flow hedging reserve		
Balance at beginning of year	-	(97.09)
Gain/(loss) arising on changes in fair value of designated portion of hedging instruments entered into for cash flow hedges	-	
Restatement of Effective portion of gains and losses on designated portion of hedging instruments in a cash flow hedge	-	97.09
Balance at end of the year	-	-
Total	3,796.42	1,952.94

CHENANI NASHRI TUNNELWAY LIMITED
Notes forming part of the Financial Statements for year ended March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

13.Borrowings at amortised cost

Particulars	As at March 31, 2023			As at March 31, 2022		
	Non-Current Borrowings	Current portion	Current Borrowings	Non-Current Borrowings	Current portion	Current Borrowings
Secured – at amortised cost						
(i) Term loans						
- from banks	14,349.38	3,090.45	-	19,905.97	11,216.38	-
- from financial institutions	-	-	-	-	-	-
Unsecured – at amortised cost						
(i) Term loans						
- from banks		7,500.00	-		7,500.00	-
- from financial institutions *		2,550.00	-		2,550.00	-
- from related parties (Refer Note 27)	141.30	4,306.48	2,560.84	141.30	4,306.48	2,560.84
Total	14,490.68	17,446.92	2,560.84	20,047.27	25,572.86	2,560.84
Less: Current maturities of long term debt clubbed under "Short Term Borrowing"		17,446.92	-		25,572.86	-
Add: Current maturities of long term debt clubbed under "Short Term Borrowing"		-	17,446.92		-	25,572.86
Total	14,490.68	-	20,007.76	20,047.27	-	28,133.70

Terms of Repayment of Term Loans and Other Loans

1) Security for Senior & Sub Debt Facility:

(A) The Senior Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by:

a) a first mortgage and charge on all the Company's immoveable properties, both present and future, save and except the project assets;

b) a first charge on all the Company's tangible moveable assets, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles, all other moveable assets and current assets, both present and future, save and except the project assets;

c) a charge on the Company's accounts including, but not limited to the escrow account where all revenues, disbursements, receivables shall be deposited and in all funds from time to time deposited therein and in all authorised investments or other securities representing all amounts credited to the escrow account;

d) a charge on all intangibles of the Company including but not limited to goodwill, rights, and undertakings, present and future provided any realisation there of shall be credited to the escrow account and the charge as aforesaid shall be limited to the extent permissible under the waterfall of the priorities as per article 31 of the concession agreement and article 4 of escrow agreement.

e) a charge on the uncalled capital of the Company;

Provided that charge at (e) above, shall be limited for ensuring that the Company calls the balance uncalled capital and makes the shares fully paid up.

f) an assignment by way of security:

(i) of the right, title and interest of the Company in, to and under the project documents including the concession agreement, duly acknowledged and consented to by NHAI and by the relevant counter-parties to such project documents to the extent not expressly provided in the concession agreement or each such project document, all as amended, varied or supplemented from time to time;

(ii) of the right, title and interest of Company in, to and under all the government approvals and insurance contracts; and

(iii) of the right, title interest of the Company in, to and under any letter of credit, guarantee, including contractor guarantees and liquidated damages and performance bond provided by any party to the project documents.

(B) The Subordinate Facility together with all interests, default interest, additional interest, fees, commission, remuneration payable to the security trustee, costs, charges, expenses and all other amounts whatsoever stipulated in, or payable by the Company in terms of, the finance documents shall to the satisfaction of the senior lenders/ security trustee, be secured to the extent permitted under the concession agreement by a second charge on the above mentioned in para (A) above.

2) Terms of Payments:

(a) As per the existing common loan agreement with lenders, the Company has undertaken to repay the senior and sub debt loan to each senior and sub debt lender in accordance with the following repayment schedule. Please note that this schedule is subject to adjustment due to the repayment of Rs 7,796.82 mn made during the current year:

Repayment Schedule:

Year	Senior Debts	Sub Debts	Total
October 2018 to March 2019	862.77	114.52	977.29
June 2019 to March 2020	1,806.43	239.77	2,046.20
June 2020 to March 2021	1,970.90	261.60	2,232.50
June 2021 to March 2022	2,121.88	281.64	2,403.53
June 2022 to March 2023	2,278.26	302.40	2,580.66
June 2023 to March 2024	2,494.16	331.06	2,825.22
June 2024 to March 2025	2,552.65	338.82	2,891.47
June 2025 to March 2026	2,552.65	338.82	2,891.47
June 2026 to September 2026	8,556.80	1,135.77	9,692.57
Total	25,196.49	3,344.41	28,540.90
Repayment made as per interim distribution during the year	(7,796.82)		(7,796.82)
Direct Debit by SBI adjusted during the year	(5,809.52)		(5,809.52)
Adjustment as per IndAS	(103.50)		(103.50)
Borrowing Outstanding as the end of the year	11,486.65	3,344.41	14,831.05

b) Standard Chartered Bank had granted a long-term loan in form of External Commercial Borrowing ("ECB") of USD 43,000,000 to the Company. As per the facility agreement dated December 2, 2015 and amended on January 21, 2016, till the long term loan remains outstanding in books, the lender was required to accrue interest on the aforesaid loan at an interest rate of LIBOR plus Margin (as defined in the facility agreement). The final maturity date of the loan is February 28, 2026.
During the previous financial year, Standard Chartered bank assigned its rights under the Facility Agreement to Deutsche Bank AG, London branch. Further, the Cross Currency interest rate SWAP contract executed by the Company with Standard Chartered Bank, Mumbai Branch, was cancelled during previous the year. As a part of Claim Management process (as per the direction of NCLAT), the claim for Deutsche Bank AG, London has been admitted for Rs 2803.05 Mn (consisting of loan amount of Rs 2,782.95 Mn and interest of Rs 20.10 Mn). Accordingly, the liability of the Company towards ECB has been crystalized for Rs 2,782.95 mn. Since the claim for this financial liability has been admitted in INR, no further hedge is required for this loan

Repayment Schedule:
Total ECB Loans repayment on quarterly basis installments commencing from February 28, 2017 and terminating on February 28, 2026 :

Year	Amount in INR
Financial Year 2018-2019	92.45
Financial Year 2019-2020	195.76
Financial Year 2020-2021	213.19
Financial Year 2021-2022	228.31
Financial Year 2022-2023	247.00
Financial Year 2023-2024	265.23
Financial Year 2024-2025	265.23
Financial Year 2025-2026	1,021.61
Cashflow Hedge Reserve Adjustment	200.41
Direct Debit by SBI adjusted during the year	(119.90)
Grand Total	2,608.77

Unsecured Loan from Related Parties & Others

Lender's Name	Loan Amount Rs Mn	Tenor	Interest Rate Type	Interest Rate	Repayment Term
Indusind Bank	7,500.00	21 Months	Fixed	8.80%	Bullet Repayment at the end of tenure i.e.31.12.2019
SREI Infrasturcture Finance Limited	2,000.00	37 Months	Floating	12.75% /13.75%	3 equal Installments at the end of 35th, 36th & 37th month from date of disbursement
Aditya Birla Finance Limited	550.00	18 Months	Floating	11.10%	3 equal installments at the end of 12th, 15th & 18th month from date of disbursement
IL&FS Transportation Networks Limited	141.30		Fixed	11.26%	Alongwith maturity of Sub Debt from banks
Infrastructure Leasing & Financial Services Limited	3,927.50	53 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.27.09.2019
Infrastructure Leasing & Financial Services Limited	324.73	57 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e.09.11.2019
IL&FS Airport Limited	470.00	12 Months	Fixed	16.00%	Bullet Repayment at the end of tenure i.e 28.08.2018
IL&FS Transportation Networks Limited	2,090.84	12 Months	Fixed	12.80%	Bullet Repayment at the end of tenure i.e.31.03.2019

CHENANI NASHRI TUNNELWAY LIMITED

Notes forming part of the Financial Statements for year ended March 31, 2023

IV Note : Default in repayment of loan (Principal & Interest) Rs in Mn

Lender Name	Nature of due (Principal/ Interest)	Amount in Mn	Dues since
Principal Payable			
Aditya Birla Finance Ltd	Principal	550.00	20-09-2018
IL&FS Airport Ltd	Principal	470.00	28-08-2018
Total Principal Payable (A)		**1,020.00**	
Interest Payable			
SREI INFRASTRUCTURES	Interest	63.63	30-09-2018
IL&FS Airport Ltd	Interest	31.82	30-09-2018
IL&FS Transportation Networks Limited	Interest	372.51	30-09-2018
IL&FS Ltd	Interest	307.00	30-09-2018
Total Interest Payable (B)		**774.96**	

In view of NCLAT order, amount due after 15th Oct 2018 are not considered as default (Refer Note 34)

NEW DELHI

14. Other financial liabilities

Particulars	As at March 31, 2023		As at March 31, 2022	
	Non Current	Current	Non Current	Current
Interest accrued - Others (refer note 34)		208.39		208.39
Interest accrued - Related Parties		750.33		750.33
Retention Money Payable - Related Parties	207.65		207.52	
Related parties - Others	1.69		1.69	
Total	209.34	958.72	209.21	958.72

15. Other liabilities

Particulars	As at March 31, 2023		As at March 31, 2022	
	Non Current	Current	Non Current	Current
Statutory dues	-	55.01	-	55.04
Total	-	55.01	-	55.04

16. Trade payables

Particulars	As at March 31, 2023		As at March 31, 2022	
	Non Current	Current	Non Current	Current
Due to Micro and small enterprises	-	-	-	-
Due to other than Micro and small enterprises:				
- Related Parties	-	4,986.00	-	4,984.80
Other payables	-	215.94	-	122.26
Total	-	5,201.94	-	5,107.06

16.1 The disclosure relating to Micro, Small and Medium Enterprises as at March 31, 2023 are as under:

The amount due to Micro & Small Enterprises as defined in the "The Micro, Small and Medium Enterprises Development Act, 2006" has been determined to the extent such parties have been identified on the basis of information available with the company.

Particulars	As at March 31, 2023	As at March 31, 2022
a) Principal amount remaining unpaid	-	-
b) Interest due on above and the unpaid interest	-	-
c) Interest paid	-	-
d) Payment made beyond the appointed day during the year	-	-
e) Interest due and payable for the period of delay	-	-
f) Interest accrued and remaining unpaid	-	-
g) Amount of further interest remaining due and payable in succeeding years	-	-

16.2 Ageing of Trade Payables as on March 31, 2023

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	-	-	-	-	-
Others	112.80	85.07	168.64	4,835.43	5,201.94
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
Total	112.80	85.07	168.64	4,835.43	5,201.94

16.3 Ageing of Trade Payables as on March 31, 2022

Particulars	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3	
MSME	-	-	-	-	-
Others	75.29	46.21	20.62	4,964.94	5,107.06
Disputed dues - MSME	-	-	-	-	-
Disputed dues - Others	-	-	-	-	-
Total	75.29	46.21	20.62	4,964.94	5,107.06

17. Revenue from operations

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
(a) Operation and maintenance income	525.12	501.23
(b) Periodic maintenance income	8.94	45.73
(c) Finance income	3,397.24	3,616.92
Total	3,931.30	4,163.88

18. Other Income

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Interest on short term deposit	765.07	392.58
Interest on Income tax refund	6.27	5.49
Construction Income towards Change of Scope	1.38	9.88
Modification Gain	-	2.47
Insurance claim received	28.55	-
Net gain/(loss) arising on financial assets designated as at FVTPL (Mutual Fund)	0.01	0.01
Total	801.28	410.43

19. Operating Expenses

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Operation and maintenance expenses	478.95	457.16
Periodic maintenance expenses	8.15	41.71
Construction Cost towards Change of Scope	-	8.24
Total	487.10	507.11

20. Finance costs

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Interest on loans for fixed period (Refer note below 34)	-	20.38
Finance charges *	43.72	49.44
Total (a+b)	43.72	69.82

* Represents unammortised borrowing cost expensed out during the year

21. Other expenses

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Legal and consultation fees	12.47	11.05
Depuatation Cost	1.31	1.62
Insurance	12.91	-
Rates and taxes	0.10	0.20
Bank commission	0.01	0.01
Foreign exchange fluctuation Loss (refer note 21.2)	-	56.34
Restatement of Cashflow hedge Reserve	-	97.09
Corporate Social Responsibility Exp. (refer note 21.3)	79.13	45.01
Directors' fees	0.21	-
Payment to auditors	0.53	0.81
Miscellaneous expenses	0.01	0.03
Total	106.68	212.15

21.1 Payments to auditors

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
a) For audit	0.36	0.67
a) For Tax audit	0.15	0.13
b) For other services	0.02	0.01
Total	0.53	0.81

21.2 - The company has taken foreign currency hedge for entire ECB loan upto the previous year. Due to non repayment of ECB loan certain portion got unhedged during the year and foreign exchange fluctuation loss on such unhedged portion has been recognised. During the year due to cancellation of hedge contract, entire ECB loan has been recognised at FVTPL

21.3 Expenditure incurred for corporate social responsibility

In terms of Section 135 of the Companies Act, 2013, a Corporate Social Responsibility (CSR) Committee has been formed by the Company. The areas for CSR activities as per the CSR policy are (i) Promotion of education, (ii) promoting gender equality and empowering women, (iii) reducing child mortality and improving maternal health, (iv) ensuring environmental sustainability, (v) employment enhancing vocational skills, (vi) social business projects, (vii) contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socioeconomic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women and (viii) such other matters as may be prescribed.

In line with Guidance Note on Accounting for Expenditure on Corporate Social Responsibility Activities, issued by the Institute of Chartered Accountants of India, the disclosure of the CSR expenditure during the year, is as under:

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
(i) Gross Amount required to be spent by the Company during the year	79.13	45.01
Add: Shortfall for the previous year	45.01	
(ii) Amount spent during the year	-	-
(a) Construction/acquistion of any asset	-	-
(b) On purpose other than above (ii) (a) - In cash	-	-
(c) On purposes other than above (ii) (a) - Yet to be paid in cash	-	-
(d) Amount unspent during the year	124.14	45.01

In accordance with Section 135(6) of the Companies Act, 2013, the Company is required to deposit the unspent amount allocated for Corporate Social Responsibility (CSR) in a designated bank account within 6 months from the end of the financial year (FY). However, due to the moratorium granted by NCLAT and the need to prioritize expenses essential for maintaining the going concern status, the Company was unable to release funds towards CSR activities during the specified period

Following is the schedule of Movement in CSR provision during the year:

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Opening Balance	45.01	-
Add: CSR Expense to be incurred	79.13	45.01
Less: Amount Spent during the year	-	-
Closing Balance of provision	124.14	45.01

22. Income taxes

22.1 Income tax recognised in profit or loss

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Current tax		
In respect of the current period (refer note below)	-	250.97
In respect of prior period	-	-
	-	250.97
Deferred tax		
In respect of the current period	2,059.37	-
MAT credit entitlement	-	-
	2,059.37	-
Total income tax expense recognised in the current period relating to continuing operations	2,059.37	250.97

Note: In light of the Company's decision to adopt the new tax regime, the tax liability for the current year is nil. This is due to the utilization of carry-forward tax losses, which have offset the taxable income for the year

CHENANI NASHRI TUNNELWAY LIMITED
Notes forming part of the Financial Statements for year ended March 31, 2023
(All amounts in INR Mn, unless otherwise stated)

23. Earnings per share

Particulars	Unit	Year Ended March 31, 2023	Year Ended March 31, 2022
Profit for the year attributable to owners of the Company	₹ Mn	1,843.48	3,534.26
Weighted average number of equity shares	Number	37,20,00,000	37,20,00,000
Nominal value per equity share	₹	10.00	10.00
Basic / Diluted earnings per share	₹	4.96	9.50

There are no potential dilutents therefore Diluted EPS is considered as Equal to Basic EPS.

24. Ratios

The following are analytical ratios for the year ended March 31, 2023 and March 31, 2022

Particulars	Numerator	Denominator	31st March 2023	31st March 2022	Variance	Remarks
Current Ratio	Total Current assets	Total Current liabilities	0.77	0.79	-3%	(a)
Debt – Equity Ratio	Total Debt	Total Equity	4.59	8.49	-46%	(b)
Debt Service Coverage Ratio #	Earnings available for debt service(1)	Debt Service(2)	#	#	#	
Return on Equity (ROE)	Net Profits after taxes	Average Total Equity	0.28	0.92	-69%	(c)
Inventory Turnover Ratio	Cost of goods sold OR sales	Average Inventory	NA	NA	NA	NA
Trade receivables turnover ratio	Revenue	Average Trade Receivable	NA	NA	NA	-
Trade payables turnover ratio	Purchases of services and other expenses	Average Trade Payables	0.12	0.13	-12%	(d)
Net capital turnover ratio	Revenue from operations	Working Capital	(0.65)	(0.58)	12%	(e)
Net profit ratio	Net Profit for the year	Revenue from operations	0.47	0.85	-45%	(f)
Return on capital employed (ROCE)	Earning before interest and taxes	Capital Employed(4)	0.09	0.07	31%	(g)
Return on Investment(ROI)	Income generated from investments	Average investments	0.05	0.03	62%	(h)

(1) Net Profit after taxes + Non-cash operating expenses + Interest + other adjustments like loss on sale of Fixed assets etc.

(2)Project debt payments (Interest payments + Principal repayments) for the current year

(3) Tangible net worth + deferred tax liabilities + project debt

(4) Total Debt + Total Equity

In view of the moratorium granted by NCLAT, no debt serviced since October 15, 2018

(a) Increase in current ratio is on account of FD created and interest accrued thereon and utilisation of FD for repayment of loans as per interim distribution .

(b) Repayment of debt during the year (Refer note 34) resulted in major variation in ratio.

(c) In view of the moratorium granted by NCLAT no Debt service since October 15,2018 and interest on borrowings has not been accrued resulting to profit. This has resulted to positive Other Equity and major variation in ratio.

(d) Decrease in Operating expenses has resulted in decrease in trade payable turnover ratio .

(e) Decrease in revenue from operations and decrease in working capital (refer note 34) has resulted in such variance in net turnover capital ratio.

(f) Increase in net profits due to increase in other income and reduction in other expenses ahs resulted in increase of net profit ratio.

(g) Repayment of Debt as per interim distribution has resulted to increase in return on capital employed ratio.

(h) The change of 62% is on account of increase in NAV of Mutual funds.

GIANENDER & ASSOCIATES NEW DELHI Chartered Accountants

25. Disclosure pursuant to Ind AS 115 - "Revenue from Contract with Customer"

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
Cumulative Construction revenue recognised	3,487.75	3,441.58
Advances received	-	-
Retention Money receivable	-	-

Note:

1. Method used to recognise the constructions revenue - Proportionate to work executed during the year on the basis of Cost plus margin.

2. The services are provided over the period of time and not at the point in time.

26. Commitments for expenditure

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
(a) Capital Expenditure	-	-
(b) Operation & Maintenance expenses	5,465.14	5,715.52
(c) Overlay Expenses	1,323.93	1,265.74
Total	6,789.07	6,981.26

27. Contingent liabilities

Particulars	Year Ended March 31, 2023	Year Ended March 31, 2022
(a) Claims against the Company not acknowledged as debt		
-Claims filed by Operational Creditors	0.04	0.04
-Claims filed by Financial Creditors	27.02	27.02
(b) Other money for which the company is contingently liable		
- Income tax demands contested by the Company	16.86	17.04
(c) Claim By bank for cancellation of Hedge contract	126.58	126.58

CHENANI NASHRI TUNNELWAY LIMITED
Notes forming part of the Financial Statements for year ended March 31, 2023

28. Related Party Disclosures

(a) Name of the Related Parties and Description of Relationship:

Nature of Relationship	Name of Entity	Abbreviation used	March 2023	March 2022
Ultimate holding company	Infrastructure Leasing & Financial Services Limited (IL&FS)	IL&FS	√	√
Holding Company	IL&FS Transportation Networks Limited	ITNL	√	√
Fellow Subsidiaries of Holding Company & Ultimate Holding Company (Only with whom there have been transaction during the period/ there was balance outstanding at the year end)	IL&FS Rail Limited	IRL	√	√
	IL&FS Airport Limited	IAPL	√	√
	Nana Layja Power Company Limited	NLPCL	√	√
	Rohtas Bio Energy Limited	RBEL	√	√
	Livia India Limited	LIVIA	√	√
	Gujarat Integrated Maritime Complex Private Limited	GIMCO	√	√
	IL&FS Financial Services Limited	IFIN	√	√
	Elsamex Maintenance Services Limited	EMSL	√	√
	IL&FS Securities Services Limited	ISSL	√	√
	Tierra Enviro Limited	TEL	√	√
Key Management Personnel ("KMP") & Other Director's	Mr. Krishna Dhondu Ghag	Nominee Director	√	√
	Mr Mohit Bhasin (from 16/02/2021. Resigned w.e.f 01/10/2022)	Nominee Director	√	√
	Mr. Ajay Menon (from 20/05/2021)	Nominee Director	√	√
	Mr. Sachin Joshi (from 11/10/2022)	Nominee Director	√	X
	Mr. Rajiv Dubey (Upto 30/04/2021)	Nominee Director	X	√

CHENANI NASHRI TUNNELWAY LIMITED
Notes forming part of the Financial Statements for year ended March 31, 2023

Related Party Disclosures (contd.)

Year ended March 31, 2023

(b) transactions/ balances with above mentioned related parties (mentioned in note 27 above)

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Key Management Personnel ("KMP") & Other Director's	Total
Balance	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	-	-
Cost of investment in equity shares		3,720.00								3,720.00
Interest Accrued and not due LT		103.70								103.70
Interest Accrued and not due ST	332.41	279.90		34.60						646.92
Long-term Borrowings	4,306.48	141.30								4,447.78
Retention Money Payable		207.52								207.52
Short-term Borrowings		2,090.84		470.00						2,560.84
Trade Payables		4,965.87						20.13		4,986.00
Interest Accrued and not due ST - (Recovery)					0.08		0.21			0.29

Transactions	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	Key Management Personnel ("KMP") & Other Director's	Total
Deputation Cost		1.31								1.31
Operation and maintenance- (Project)								242.63		242.63
Mohit Bhasin									0.05	0.05
Ajay Menon									0.07	0.07
Sachin Joshi									0.02	0.02
Krishna Ghag									0.05	0.05

Year ended March 31, 2022

(b) balances with above mentioned related parties (mentioned in note 27 above)

Rs.

Particulars	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Associates	Key Management personnel and relatives	Total
Balance	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL		Total
Cost of investment in equity shares		3,720.00								3,720.00
Interest Accrued and not due LT		103.70								103.70
Interest Accrued and not due ST	332.16	279.90		34.60						646.67
Long-term Borrowings	4,306.48	141.30								4,447.78
Retention Money Payable		207.52								207.52
Short-term Borrowings		2,090.84		470.00						2,560.84
Trade Payables		4,966.15						18.65		4,984.80
Interest Accrued and not due ST - (Recovery)					0.08		0.21			0.29

Transactions	Ultimate Holding Company	Holding Company	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Fellow Subsidiaries	Associates	Key Management personnel and relatives	Total
	IL&FS	ITNL	IRL	IAPL	RBEL	LIVIA	TEL	EMSL	-	Total
Deputation Cost		1.62	-							1.62
Reimbursement of Insurance claim		2.64								2.64
Operation and maintenance- (Project)		-	-					222.15		222.15

29. Significant terms of Service Concession Arrangements (SCA)

Particulars	Project
Brief description of Concession	Service Concession Arrangement (SCA) dated June 28, 2010 entered into with National Highways Authority of India (NHAI), envisages Rehabilitation Strengthening and four laning of Chenani to Nashri Section of NH-1A, from km 89.00 to km 130.00 including 9km long tunnel (2 lane) with parallel escape tunnel on Design, Build, Finance, Operate and Transfer (DBFOT) basis in the state of Jammu & Kashmir. The Concession Agreement envisages concession for a period of 20 years including construction period of 1825 days commencing from 23rd May 2011 (the 'Appointed date'). Premature termination is permitted only upon happening of a force majeure event or upon the parties defaulting on their obligation. the company is entitled to earn Semi-annuity of Rs. 317.52 Crores each on the dates specified in the SCA. NHAI will retain the right to levy and collect fees from the users of the Road and to permit advertisements, hoardings and other commercial activities at the Road site.
	At the end of the concession period, the company will hand over the Road to NHAI without additional consideration.
Nature of Assets	Financial Asset
Year when SCA granted	28-Jun-10
Period	20 years (Including 5 year of Construction Period)
Extension of period	NIL
Construction	Construction Completed
Premature Termination	NIL
Frequency of Annuity	Semi-Annually
Special Term	NIL

30. Segment Reporting

The company operates in a single business segment viz. Surface Transportation Business. Also it operates in a single geographic segment. In the absence of separate reportable business or geographic segments the disclosures required under the Indian Accounting Standard (INDAS) 108 on Operating Segments are not applicable.

GIANENDER & ASSOCIATES NEW DELHI Chartered Accountants

Chenani Nashri Tunnelway Limited

31. Financial Instruments

1 Capital management

The Company endeavours to maintain sufficient levels of working capital, current assets, and current liabilities which helps the company to meet its expense obligations while also maintaining sufficient cash flow

The capital structure of the Company consists of net debt (borrowings as detailed in notes 13 offset by cash and bank balances) and equity of the Company (comprising issued capital, reserves, retained earnings as detailed in notes 11 to 12). The capital structure of the Company is reviewed by the management on a periodic basis.

1.1 Gearing ratio

The gearing ratio at end of the reporting period was as follows.

Amount In (Mn's)

Particulars	As at March 31, 2023	As at March 31, 2022
Debt (i)	35,457.17	49,139.69
Cash and bank balances (including cash and bank balances in a disposal company held for sale)	15,812.81	17,753.67
Net debt	19,644.35	31,386.02
Total Equity (ii)	7,516.42	5,672.94
Net debt to total equity ratio	2.61	5.53

Footnotes:
(i) Debt is defined as long- and short-term borrowings including interest accrued (excluding derivative), as described in notes 13
(ii) Equity includes all capital and reserves of the Company that are managed as capital.

2 Categories of financial instruments

Amount In (Mn's)

Particulars	As at March 31, 2023	As at March 31, 2022
Financial assets		
Fair value through profit and loss (FVTPL)		
Investment in Mutual Fund	0.17	0.16
Derivative instruments designated as cash flow hedge	-	-
At amortised cost		
Cash & cash equivalents; and bank balances (including Balances with Banks in deposit accounts under lien)	15,812.81	17,753.67
SCA receivable	32,738.50	35,349.84
Other financial assets (excluding Balances with Banks in deposit accounts under lien)	1,566.10	6,905.03
Financial liabilities		
Derivative instruments designated as cash flow hedge	-	-
At amortised cost		
Borrowings (including interest accrued)	35,457.17	49,139.69
Trade payables	5,201.94	5,107.06
Other financial liabilities (excluding interest accrued)	209.34	209.21

31. Financial Instruments

3 Financial risk management objectives

The Company 's Corporate Treasury function monitors and manages the financial risks relating to the operations of the Company . These risks include market risk (including currency risk, interest rate risk and other price risk), credit risk and liquidity risk. Refer Note 33 which states about moratorium of debt service obligations. The new board of IL&FS has undertaken certain steps for resolution of existing obligations. Accordingly, the Company is in the process of setting up mechanism to address the risks including market risk, currency risk, interest risk and liquidity risk

4 Market risk

The Company is exposed to the financial risk of changes in foreign currency exchange rates and interest rates

4.1 Foreign currency risk management

The carrying amounts of the Company's unhedged foreign currency denominated monetary assets and monetary liabilities at the end of the reporting period are as follows

Particulars	Liabilities as at (INR in Mns)		Assets as at (INR in Mns)	
	As at March 31, 2023	As at March 31, 2022	As at March 31, 2023	As at March 31, 2022
ECB - USD	-	-	-	-
-	-	-	-	-

4.2 Foreign Currency Sensitivity Analysis

The Company was mainly exposed to the currency of United States. The contract for cross currency swap interest rate cancelled during the previous financial year ended March 31, 2022.

4.3 Interest rate swap contracts

Under interest rate swap contracts, the company agrees to exchange the difference between fixed and floating rate interest amounts calculated on agreed notional principal amounts. Such contracts enable the company to mitigate the risk of changing interest rates on the fair value of issued fixed rate debt and the cash flow exposures on the issued variable rate debt. The fair value of interest rate swaps at the end of the reporting period is determined by discounting the future cash flows using the curves at the end of the reporting period and the credit risk inherent in the contract, and is disclosed below. The average interest rate is based on the outstanding balances at the end of the reporting period. The contract for cross currency swap interest rate cancelled during the previous financial year ended March 31, 2022.

5 Interest rate risk management

The company is exposed to interest rate risk because it borrows funds at both fixed and floating interest rates.

The company's exposures to interest rates on financial assets and financial liabilities are detailed in the liquidity risk management section of this note.

5.1 Interest rate sensitivity analysis

The sensitivity analyses below have been determined based on the exposure to interest rates for both derivatives and non-derivative instruments at the end of the reporting period. For floating rate liabilities, the analysis is prepared assuming the amount of the liability outstanding at the end of the reporting period was outstanding for the whole year. A 50 basis point increase or decrease represents management's assessment of the reasonably possible change in interest rates.

If interest rates had been 50 basis points higher/lower and all other variables were held constant, the company's:

i) profit for the Year would decrease/increase by ₹ 87.09 Mn (previous year ₹ 156.50 Mn.). This is mainly attributable to the company's exposure to interest rates on its variable rate borrowings; and

31. Financial Instruments

6 Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to The Company .The Management of The Company believes that the credit risk is negligible since its main receivable is from the grantors of the concession which is a government authority.

7 Liquidity risk management

The Company manages liquidity risk by maintaining adequate reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities. However, the Company has not been servicing any debt effetive Oct 15, 2018 in view of moratorium granted by NCLAT

7.1 Liquidity and interest risk tables

The following tables detail the company's remaining contractual maturity for its non-derivative financial liabilities with agreed repayment periods as per the existing loan agreement. The tables have been drawn up based on the undiscounted cash flows of financial liabilities. The tables include both interest (upto scheduled repayment date) and principal cash flows. To the extent that interest flows are floating rate, the undiscounted amount is derived from interest rate curves at the end of the reporting period.

Amount In (Mn's)

Particulars	March 31, 2023			March 31, 2022		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	207.65	27,250.62	20,059.88	207.52	27,250.62	20,059.88
1-3 years	215.94	11,736.67	31.78	122.26	11,736.67	31.78
3-5 years	-	17,799.17	23.84	-	17,799.17	23.84
More than 5 years	4,986.00	-	141.30	4,984.80	-	141.30
Total	**5,409.59**	**56,786.47**	**20,256.80**	**5,314.58**	**56,786.47**	**20,256.80**

Note: - This schedule is subject to adjustment due to the repayment of Rs 7796.82 mn made during the current year

The following table details the company's expected maturity for its non-derivative financial assets. The table has been drawn up based on the undiscounted contractual maturities of the financial assets including interest that will be earned on those assets. The inclusion of information on non-derivative financial assets is necessary in order to understand the company's liquidity risk management as the liquidity is managed on a net asset and liability basis.

Amount In (Mn's)

Particulars	March 31, 2023			March 31, 2022		
	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments	Non-interest bearing	Variable interest rate instruments	Fixed interest rate instruments
Upto 1 year	996.13	5,658.16	15,810.88	6,893.89	5,733.36	17,764.19
1-3 years	-	11,556.39	-	-	12,034.70	-
3-5 years	-	11,257.97	-	-	11,373.90	-
More than 5 years	0.00	21,892.01	-	0.00	27,776.21	-
Total	**996.13**	**50,364.53**	**15,810.88**	**6,893.89**	**56,918.17**	**17,764.19**

The amounts included above for variable interest rate instruments for both non-derivative financial assets and liabilities is subject to change if changes in variable interest rates differ to those estimates of interest rates determined at the end of the reporting period.

The following table details the company's liquidity analysis for its derivative financial instruments. The table has been drawn up based on the undiscounted contractual net cash inflows and outflows on derivative instruments that settle on a net basis, and the undiscounted gross inflows and outflows on those derivatives that require gross settlement. When the amount payable or receivable is not fixed, the amount disclosed has been determined by reference to the projected interest rates as illustrated by the yield curves at the end of the reporting period. The contract for cross currency swap interest rate has been cancelled during the current financial year.

Amount In (Mn's)

Particulars	March 31, 2023		March 31, 2022	
	Interest rate swaps	Cross Currency Swaps	Interest rate swaps	Cross Currency Swaps
Upto 1 year	-	-	-	-
1-3 years	-	-	-	-
3-5 years	-	-	-	-
More than 5 years	-	-	-	-
Total	-	-	-	-

Chenani Nashri Tunnelway Limited
Notes forming part of the Financial Statements for year ended March 31, 2023

31. Financial Instruments

8 Fair value of the Company's material financial assets and financial liabilities that are measured at fair value on a recurring basis

Some of the company's financial assets and financial liabilities are measured at fair value at the end of each reporting period. The following table gives information about how the fair values of these financial assets and financial liabilities are determined (in particular, the valuation technique(s) and inputs used).

Amount in (Mn's)

Financial assets/ (financial liabilities)	Fair value		Fair value hierarchy	Valuation technique(s) and key input(s)	Significant unobservable input(s)	Relationship of unobservable inputs to fair value
	As at March 31, 2023	As at March 31, 2022				
1) Interest rate cross currency swaps			Level 2	Valued at re-stated as per exchange gain loss/MTM Margin	None	None
2) Investment in Mutual Fund	0.17	0.16	Level 1	Net assets value taken as per Mutual Fund Statement	None	None

Amount in (Mn's)

	As at March 31, 2023		As at March 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
At amortised cost				
Cash & cash equivalents; and bank balances	15,812.81	15,812.81	17,753.67	17,753.67
SCA receivable	32,738.50	32,738.50	35,349.84	35,349.84
Other financial assets	1,566.10	1,566.10	6,905.03	6,905.03
Financial liabilities				
At amortised cost				
Borrowings	35,457.17	35,555.04	49,139.69	49,139.69
Trade payables	5,201.94	5,201.94	5,107.06	5,107.06
Other financial liabilities	209.34	209.34	209.21	209.21

Amount in (Mn's)

Fair value hierarchy	As at March 31, 2023			As at March 31, 2022		
Particulars	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Financial assets						
Fair value through profit and loss (FVTPL)						
Investment in Mutual Fund	0.17	-		0.16	-	-
Derivative instruments designated as cash flow hedge	-	-	-	-	-	-
Financial Assets measured at amortised cost						
Cash & cash equivalents; and bank balances	-	-	15,812.81	-	-	17,753.67
SCA receivable	-	-	32,738.50	-	-	35,349.84
Other financial assets	-	-	1,566.10	-	-	6,905.03
Financial liabilities						
Derivative instruments designated as cash flow hedge	-	-	-	-	-	-
At amortised cost						
Borrowings	-	-	35,555.04	-	-	49,139.69
Trade payables	-	-	5,201.94	-	-	5,107.06
Other financial liabilities	-	-	209.34	-	-	209.21

The fair values of the financial assets and financial liabilities above have been determined in accordance with generally accepted pricing models based on a discounted cash flow analysis, with the most significant inputs being the discount rate that reflects the credit risk of counterparties

9 Disclosure of Derivative Instruments :

Cash flow hedge

Amount in (Mn's)

Particulars	As at March 31, 2023			As at March 31, 2022		
	Contracts (Nos.)	Notional Amount of contracts	Fair Value	Contracts (Nos.)	Notional Amount of contracts	Fair Value
USD*						
Swaps	-	-	-	-	-	-

* The contract for cross currency swap interest rate has been cancelled during the current financial year

32 **Impairment:**

During financial year 2019-20, as part of the divestment process, the IL&FS Board received a single bid from an external party for the Company. The bid was subsequently accepted by the Board of Directors of ITNL and IL&FS, subject to necessary approvals from various regulators, Committee of Creditors, NCLAT, and other relevant entities The final price is subject to adjustment.

Based on the bid received, the Company recognized impairment of Receivable under Service Concession Arrangements in the financial statements during the earlier year. In light of the bid being continued and ongoing management evaluations, it is the view of the Company's management that no further impairment is required for the financial year 2022-23.

33 **Going Concern :**

Union of India has superseded the earlier board of Holding/Ultimate Holding Company and appointed new Board from October 01, 2018 Entire Group is going through severe financial stress. National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 has also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, which means that the Company is able to meet only financial obligation towards Senior Lenders and operational creditors. In view of this classification and the moratorium order, the Company has stopped servicing financial obligations towards all its financial creditors The Company has received a bid from third party and the same has been accepted by the Board of ITNL & IL&FS (the ultimate Holding Company). NCLT approval for said transfer of equity shares is awaited. Hence on the basis of above, these accounts are prepared on the basis of going concern.

34 **Debt servicing:**

National Company Law Appellate Tribunal ("NCLAT") had passed an order on October 15, 2018 ("Interim Order") in Company Appeal (AT) 346 of 2018, imposing moratorium on the creditors of IL&FS and its 348 group companies, which includes the Company. Further, NCLAT vide its order dated February 11, 2019 had also classified the Company under the "Amber Category" based on a 12 month cash flow solvency test, indicating that it is not able to meet all obligations (financial and operational) including the payment obligations to senior secured financial creditors. Accordingly, the Company is permitted to make only those payments necessary to maintain and preserve the going concern status. NCLAT wide its order dated March 12, 2020, had upheld its interim order of October 15, 2018. The said order specifies October 15, 2018 as the date of initiation of the Resolution Process of the Company. Accordingly the Company has not accrued any interest , default interest, penal interest and any other similar charges after the said cut off date of October 15,2018

Considering the delay in the resolution process of the Company, and the significant cash lying with the Company, basis the constant demand from the lenders, during the year the Company approved an Interim Distribution to the Senior Secured Lenders of the Company be undertaken, for an amount of Rs 9,200.00 mn which is equivalent to the principal amount that would have been paid to them under the debt restructuring plan that has been in-principle approved by the CNTL CoC. Out of Rs 9,200 mn, Company paid Rs 7,796.82 Mn to the senior lenders during the year. Rs 1,403.18 mn is being paid to one of the secured senior lenders, post March 31, 2023

The banks have debited an amount of Rs 6,844.17 Million for Interest & Principal (Interest & Principal for the period of October 18 - March 20) from the Escrow accounts of the Company maintained with them. The Company has written to the banks for reversal of same in view of October 15, 2018 Order of NCLT giving moratorium. The banks have not reversed the same till date. The same amount (after reducing interest upto Oct 15, 2018) was shown as recoverable in the financial statements. These amounts have not been handed back to the Company till date. As a part of interim distribution, Company adjusted Rs 5,929.42 Mn out of Rs 6,844.17 mn against the loan which was repaid during the current financial year ended March 31, 2023

35 **Non-compliance of applicable laws and regulations :**

The Company is not in compliance with the Companies Act 2013, as applicable to the Company These non compliances pertain to appointment of Directors, filings with Regulators, appointment of Key Management personnel and such other regulations. The Company has estimated possible obligations arising out of these non-comliances and recognsed the provision in the books of account.

36 In accordance with the Company's adoption of the new tax regime, the tax liability for the current year is determined to be nil. This favorable outcome is attributed to the utilization of carry-forward tax losses, which have effectively offset the taxable income for the year. Consequently, the Company will not be eligible to avail the tax holiday period of 10 years as stipulated under section 80IA.

As a result of these circumstances, the Company has recognized net deferred tax liabilities in its financial statements. These deferred tax liabilities are expected to be reversed over the duration of the concession period.

37 ABFL has filed petitions under Section 9 of Arbitration & Conciliation Act, 1996 seeking securing of amounts due to ABFL from the Company on account of defaults and non-payments of dues under Rupee Term Loan Facility extended by ABFL. In its order dated 18.09.2018, the High Court has directed Company to file affidavit containing the details of unencumbered assets including bank accounts and balance available. The matter was listed on January 09, 2020 for hearing.Given that the Moratorium is still continuing, the court was reluctant to vacate the stay. The last date of hearing was scheduled for April 16, 2020. The matter was listed for hearing on May 12, 2023 and the Ld. Bench passed an order adjourning the petitions and to re-list on July 20, 2023 on the ground that proceedings are still pending before the Hon'ble NCLAT for moratorim of loan.

38 **Order of NCLT for re-opening and re-casting of financial statements:**

The National Company Law Tribunal ("NCLT"), vide order dated January 1, 2019, had allowed a petition filed by the Union of India, for re-opening of the books of accounts and re-casting the financial statements under the provisions of Section 130 of the Companies Act, 2013 for the financial years from 2012-13 to 2017-18, of Infrastructure Leasing & Financial Services Limited ("IL&FS"), and its subsidiaries namely IL&FS Financial Services Limited ("IFIN") and IL&FS Transportation Network Limited ("ITNL"), the holding Company

During the year the Board of Directors of ITNL has taken on records restatement of its accounts for financial years 2014 to 2018 and approved the submission of the same to the MCA. This restatement does not affect the financial statements of the Company for the current year

39 **Forensic Examination :**

A) An independent third party appointed by IL&FS Board conducted and submitted forensic audit report to ITNL during previous year ended March 31, 2022. Since the audit is primarily relating to operations of ITNL, Company is not envisaging any adjustment in financial statement in this regard

B) During previous year, senior lenders had initiated forensic audit of the Company through independent third party. The Forensic Audit has been closed by lenders without any adverse comments

40 **Investigations by Serious Fraud Investigation Office ("SFIO") and other regulatory agencies:**

The Ministry of Corporate Affairs (MCA), Government of India, has vide its letter dated October 1, 2018 initiated investigation by Serious Fraud Investigation Office (SFIO) against IL&FS (ultimate holding company) and its group companies under Section 212 (1) of the Companies Act, 2013. As a part of investigation of affairs of ITNL (the Holding Company), SFIO has also been seeking from ITNL various information including relating to project undertaken by the Company (for which ITNL acted as Development Contractor and promoter). The investigation is in progress and it is understood that the relevant information is being provided by ITNL to the agency. At this stage, no material impact/ implications had arisen from the aforesaid developments. However, an uncertainty relating to the future outcome of the regulatory actions is not determinable at this stage.

41 **Creditors Claim Process :**

Pursuant to the "Third Progress Report – Proposed Resolution Framework for the IL&FS Group" dated 17 December, 2018 and the "Addendum to the Third Progress Report – Proposed Resolution Framework for IL&FS Group" dated January 15, 2019 ("Resolution Framework Report") submitted by the Company to the Ministry of Corporate Affairs, Government of India which, in turn, was filed with the Hon'ble National Company Law Appellate Tribunal ("NCLAT"), the creditors of the Company were invited (via advertisement(s) dated May 22, 2019) to submit their claims as at October 15, 2018 with proof, on or before 5 June, 2019 (later extended till February 05, 2020) to a Claims Management Advisor ("CMA") appointed by the IL&FS Group. The amounts claimed by the financial and operational creditors are assessed for admission by the CMA.

The CMA, vide their various communications to the management of the Company, have submitted their report on the status of the claims received and its admission status. The report is subject to updation based on additional information / clarification that may be received from the creditors in due course.

Management of the Company has reviewed the claims made by third parties with the CMA, and reconciled them with the books of accounts. Such claims have either been provided for, or shown as contingent liabilities if there is a possible obligation on the company. No action is taken if the possibility/probability of outflow is remote (refer Note 26)

42 In September 2018 Indusind bank has adjusted, against the various loans which Indusind bank advanced to various ITNL's subsidiaries, fixed deposit of IL&FS Ltd maintained with Indusind Bank without the permission of IL&FS Ltd. For the Company, Indusind bank adjusted interes amount of Rs 54 mn against the fixed deposit. IL&FS Ltd has accepted such adjustment in previous financial year ended March 31, 2022 and hence accordingly adjustment was made in the books of accounts of the Company during the last year.

43 **Approval of financial statements**

The Financial statements were approved for issue by the Board of Directors on August 18, 2023

In terms of our report attached.
For Gianender & Associates
Chartered Accountants
Firm Registration No. - 004661N

Ajush Goswami
Partner
Membership Number : 545800

Place : New Delhi
Date :

For and on behalf of the Board

Non-Executive Director
Krishna Ghag
DIN-02491661

Non-Executive Director
Ajay Manoo
DIN-02497302

Place : Mumbai
Date : 18.08.2023

INDEPENDENT AUDITOR'S REPORT

To the Members of **ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED**

Report on the Audit of Financial Statements

Opinion

We have audited the Financial Statements of Athaang Devanahalli Tollway Private Limited ("the Company"), which comprise the Balance Sheet as at March 31, 2025, and the Statement of Profit and Loss, including the Statement of Other Comprehensive Income, the Statement of Cash Flows and the Statement of Changes in Equity for the year then ended, and notes to the Financial Statements, including a summary of material accounting policies and other explanatory information for the year ended on that date.

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid Financial Statements give the information required by the Companies Act, 2013, as amended ("the Act") in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2025, and its profit including Other Comprehensive Income, its Cash Flows and the Changes in Equity for the year ended on that date.

Basis for Opinion

We conducted our audit of the Financial Statements in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the Financial Statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Financial Statements.

Other Information

The Company's Board of Directors is responsible for the other information. The other information comprises the Board's Report ("other information"),but does not include the Financial Statements and our auditor's report thereon.

Our opinion on the Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Financial Statements, or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Management's Responsibility for the Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Financial Statements that give a true and fair view of the financial position, financial performance including Other Comprehensive Income, Cash Flows and Changes in Equity of the Company in accordance with the accounting principles generally accepted in India, including the accounting Standards (Ind AS) specified under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules 2015, as amended. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate implementation and maintenance of accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the Financial Statement that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with Standard on Auditing (SA's) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.

Auditor's Responsibilities for the Audit of the Financial Statements *(Continued)*

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure, and content of the Financial Statements, including the disclosures and whether the Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the "Annexure 1" a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.

2. As required by Section 143(3) of the Act, we report that:

   (a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit;

   (b) In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books; except for the matters stated in the paragraph 2(i)(vi) below on reporting under Rule 11(g) of the Companies (Audit and Auditors) Rules, 2014

   (c) The Balance Sheet, the Statement of Profit and Loss including the Statement of Other Comprehensive Income, and the Statement of Cash Flow and Statement of Changes in Equity dealt with by this Report are in agreement with the books of account;

   (d) In our opinion, the aforesaid Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Companies (Indian Accounting Standards) Rules,2015, as amended;

Report on Other Legal and Regulatory Requirements *(Continued)*

(e) On the basis of the written representations received from the directors as on March 31, 2025, taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2025, from being appointed as a director in terms of Section 164(2) of the Act;

(f) With respect to the adequacy of the internal financial controls over financial reporting of the Company with reference to these Financial Statements and the operating effectiveness of such controls, refer to our separate Report in "Annexure 2".

(g) The modifications relating to the maintenance of accounts and other matters connected therewith are as stated in the paragraph 2(b) above on reporting under Section 143(3)(b) of the Act and paragraph 2(i)(vi) below on reporting under Rule 11(g) of the Companies (Audit and Auditors) Rules, 2014;

(h) In Our opinion and to the best of our information and according to explanations given to us, the provisions of Section 197 of the Act are not applicable to the company for the year ended March 31, 2025.

(i) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

i. The Company has disclosed the impact of pending litigations on its financial position in its financial statements – Refer Note 30.2 to the financial statements;

ii. The Company has made provision, as required under the applicable law or accounting standards for material foreseeable losses;

iii. There were no amounts which were required to be transferred, to the Investor Education and Protection Fund by the Company.

iv. (a) The Management has represented that, to the best of it's knowledge and belief, as disclosed in the Note 33(vii)to the financial statements, during the year no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other person or entity, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(b) The Management has represented, that, to the best of it's knowledge and belief, as disclosed in the Note 33(viii) to the financial statements, during the year no funds have been received by the Company from any person or entity, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(c) Based on the audit procedures performed that have been considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (a) and (b) contain any material misstatement.

v. As stated in Note 15 to Financial Statements the final dividend for the financial year 2023-24 is proposed and paid by the Company during the year is in accordance with Section 123 of the Act, as applicable.

vi. *Based on our examination which included test checks, except for the instances mentioned below, the Company, has used accounting softwares such as Tally prime, Efkon and Symphony P2P for maintaining its books of account which has a feature of recording audit trail (edit log) facility. Further, the audit trail facility has been operating throughout the year for all relevant transactions recorded in the respective softwares.*

The feature of recording audit trail (edit log) facility was not enabled in respect of Symphony P2P from April 01, 2024, to June 02, 2024.

Further, during the course of our audit we did not come across any instance of audit trail feature being tampered with and the audit trail has been preserved by the company as per the statutory requirements for record retention.

For **Nangia & Co. LLP**
Chartered Accountants
ICAI Firm Registration Number. 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 25601788BMKRKD9568

Place: Mumbai
Date: April 30, 2025

"ANNEXURE 1" REFERRED TO THE INDEPENDENT AUDITOR'S REPORT OF EVEN DATE ON THE FINANCIAL STATEMENTS OF ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

[Referred to in paragraph 1 under 'Report on Other Legal and Regulatory Requirements' in the Independent Auditor's Report.]

(i) (a) (A) The Company has maintained proper records showing full particulars, including quantitative details and the situation of Property, Plant and Equipment.

(i) (B) The Company has maintained proper records showing full particulars of intangible assets.

(b) All Property, Plant and Equipment were physically verified by the management in the year in accordance with a planned programme of verifying them every year which, in our opinion, is reasonable having regard to the size of the Company and the nature of its assets. Pursuant to this programme all property, plant and equipment were physically verified during the year and no material discrepancies were noticed on such verification.

(c) According to information and explanations given to us and on the basis of our examination of the records of the Company, the title deeds of all the immovable properties are held in the name of the Company.

(d) The Company has not revalued its Property, Plant and Equipment or intangible assets during the year ended March 31, 2025.

(e) According to information and explanations given to us, there are no proceedings initiated or are pending against the Company for holding any benami property under the Prohibition of Benami Property Transactions Act, 1988 and rules made thereunder.

(ii) (a) The Company's business does not require maintenance of inventories and, accordingly, the requirement to report on clause 3(ii)(a) of the Order is not applicable to the Company.

(b) The Company has not been sanctioned any working capital limits in excess of five crore rupees in aggregate from banks and financial institutions during any point of time of the year on the basis of security of current assets. Accordingly, the requirement to report on clause 3(ii)(b) of the Order is not applicable to the Company.

(iii) (a) During the year the Company has not provided loans, advances in the nature of loans, stood guarantee or provided security to the companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(a) of the Order is not applicable to the Company.

(b) During the year the Company has not made investments, provided guarantees, provided security and granted loans and advances in the nature of loans to companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(b) of the Order is not applicable to the Company.

(c) ***In respect of a loan granted to the group company the schedule of repayment of principal and payment of interest has not been stipulated in the agreement. Hence, we are unable to make a specific comment on the regularity of repayment of principal and payment of interest in respect of such loan.***

(d) There are no amounts of loans and advances in the nature of loans granted to companies, firms, limited liability partnerships or any other parties which are overdue for more than ninety days.

(e) There were no loans or advance in the nature of loan granted to companies which was fallen due during the year, that have been renewed or extended or fresh loans granted to settle the overdues of existing loans given to the same parties.

(f) The Company has not granted any loans or advances in the nature of loans, either repayable on demand or without specifying any terms or period of repayment to [companies, firms, Limited Liability Partnerships or any other parties]. Accordingly, the requirement to report on clause 3(iii)(f) of the Order is not applicable to the Company.

(iv) According to the information and explanations given to us and on the basis of our examination of records, The Company has given loans to a Company in which the Director is interested and which is in compliance with section 185 of the Companies Act. Further, according to the information and explanations given to us There are no loans, investments, guarantees, or security in respect of which provisions of sections 186 of the Companies Act, 2013 are applicable

(v) The Company has neither accepted any deposits from the public nor accepted any amounts which are deemed to be deposits within the meaning of sections 73 to 76 of the Companies Act and the rules made thereunder, to the extent applicable. Accordingly, the requirement to report on clause 3(v) of the Order is not applicable to the Company.

(vi) We have broadly reviewed the books of account maintained by the Company pursuant to the rules made by the Central Government for the maintenance of cost records under section 148(1) of the Companies Act, 2013, and are of the opinion that prima facie, the specified accounts and records have been made and maintained. We have not, however, made a detailed examination of the same.

(vii) (a) According to the information and explanations given to us, the Company have been generally regular in depositing with appropriate authorities undisputed statutory dues including goods and services tax, provident fund, employee's state insurance, duty of customs, income-tax and other statutory dues applicable to it. The provisions relating to sales-tax, duty of excise and value added tax are currently not applicable to Company. According to the information and explanations given to us and based on audit procedures performed by us, no undisputed amounts payable in respect of these statutory dues were outstanding, at the year end, for a period of more than six months from the date they became payable.

(b) According to records of the Company, the dues of income-tax, sales-tax, duty of custom, duty of excise, value added tax, cess and other statutory dues on account of dispute, are as follow

Name of the statute	Nature of the dues	Amount (Rs.in lakhs)	Amount paid under protest (Rs.in lakhs)	Period to which the amount relates	Forum where the dispute is pending
Income Tax Act, 1961	Income Tax	16.57	-	FY - 2011-12 AY - 2012- 13	Commissioner of Income Tax Appeals (CIT A)
Income Tax Act, 1961	Income Tax	402.15	86.06	FY - 2012-13 AY - 2013- 14	Commissioner of Income Tax Appeals (CIT A)
Income Tax Act, 1961	Income Tax	1,034.35	-	FY- 2013-14 AY - 2014- 15	Commissioner of Income Tax Appeals (CIT A)

(viii) According to the information and explanations given to us, the Company has not surrendered or disclosed any transaction, previously unrecorded in the books of account, in the tax assessments under the Income Tax Act, 1961 as income during the year.

(ix) (a) According to the information and explanations given to us, the Company has not defaulted in repayment of loans or other borrowings or in the payment of interest thereon to any lender.

(b) The Company has not been declared willful defaulter by any bank or financial institution or government or any government authority.

(c) According to the information and explanations given to us, term loans were applied for the purpose for which the loans were obtained.

(d) The Company did not raise any funds on short term basis during the year hence, the requirement to report on clause 3(ix)(d) of the Order is not applicable to the Company.

(e) The Company does not have any subsidiary, associate or joint venture. Accordingly, the requirement to report on clause 3(ix)(e) of the Order is not applicable to the Company.

(f) The Company does not have any subsidiary, associate or joint venture. Accordingly, the requirement to report on clause 3(ix)(f) of the Order is not applicable to the Company.

(x) (a) According to the information and explanations are given to us, the Company has not raised any money by way of initial public offer or further public offer and hence, the requirement to report on clause 3(x)(a) of the Order is not applicable to the Company.

(b) According to the information and explanations given to us, the Company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year and hence, the requirement to report on clause 3(x)(b) of the Order is not applicable to the Company.

(xi) (a) According to the information and explanations given to us, no fraud by the Company or on the Company has been noticed or reported during the year.

(b) During the year, no report under sub-section (12) of section 143 of the Companies Act, 2013 has been filed by the secretarial auditor or by us in Form ADT – 4 as prescribed under Rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government.

(c) As represented to us by the management, there are no whistleblower complaints received by the company during the year.

(xii) The Company is not a Nidhi Company as per the provisions of the Companies Act, 2013. Therefore, the requirement to report on clause 3(xii)(a), (b) and (c) of the Order is not applicable to the Company.

(xiii) According to the information and explanations given to us, transactions with the related parties are in compliance with section 177 and section 188 of the Companies Act, 2013 where applicable and the details have been disclosed in the notes to the financial statements, as required by the applicable accounting standards.

(xiv) (a) According to the information and explanations given to us. The Company has an internal audit system commensurate with the size and nature of its business.

(b) According to the information and explanations given to us, the internal audit reports of the Company issued till the date of the audit report, for the period under audit have been considered by us.

(xv) According to the information and explanations given to us, the Company has not entered into any non-cash transactions with its directors or persons connected with its directors and hence requirement to report on clause 3(xv) of the Order is not applicable to the Company.

(xvi) (a) The provisions of section 45-IA of the Reserve Bank of India Act, 1934 (2 of 1934) are not applicable to the Company. Accordingly, the requirement to report on clause 3(xvi)(a) of the Order is not applicable to the Company.

(b) The Company has not conducted any Non-Banking Financial activities or Housing Finance activities without obtaining a valid Certificate of Registration (CoR) from the Reserve Bank of India as per the Reserve Bank of India Act, 1934.

(c) The Company is not a Core Investment Company as defined in the regulations made by Reserve Bank of India. Accordingly, the requirement to report on clause 3(xvi)(c) of the Order is not applicable to the Company.

(d) There is no Core Investment Company as a part of the Group, hence, the requirement to report on clause 3(xvi)(d) of the Order is not applicable to the Company.

(xvii) According to information and explanation provided to us the Company has not incurred any cash losses in the current and immediately preceding financial year.

(xviii) There has been no resignation of the statutory auditors during the year and accordingly, requirement to report on Clause 3(xviii) of the Order is not applicable to the Company.

(xix) On the basis of the financial ratios disclosed in note 32 to the financial statements, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, nothing has come to our attention, which causes us to believe that any material uncertainty exists as on the date of the audit report that Company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date. We, however, state that this is not an assurance as to the future viability of the Company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the Company as and when they fall due.

(xx) (a) In respect of other than ongoing projects, there are no unspent amounts that are required to be transferred to a fund specified in Schedule VII of the Companies Act (the Act), in compliance with second proviso to sub section 5 of section 135 of the Act. This matter has been disclosed in note 30.11 to the financial statements.

(b) All amounts that are unspent under section (5) of section 135 of Companies Act, pursuant to any ongoing project, has been transferred to special account in compliance of with provisions of sub section (6) of section 135 of the said Act. This matter has been disclosed in note 30.11 to the financial statements.

(xxi) The Company does not prepare consolidated financial statements, hence the requirement to report on clause 3(xxi) of the Order is not applicable to the Company.

For **Nangia & Co. LLP**
Chartered Accountants
ICAI Firm Registration Number002391C/N500069

Jaspreet Singh Bedi
Partner
Membership Number: 601788
UDIN: 25601788BMKRKD9568

Place: Mumbai
Date: April 30, 2025

"ANNEXURE 2" TO THE INDEPENDENT AUDITOR'S REPORT OF EVEN DATE ON THE FINANCIAL STATEMENTS OF ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

To the Members of Athaang Devanahalli Tollway Private Limited

We have audited the internal financial controls over the financial reporting of Athaang Devanahalli Tollway Private Limited ("the Company") as of March 31, 2025 in conjunction with our audit of the Financial Statements of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India ("ICAI"). These responsibilities include the design, implementation, and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to the company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by the Institute of Chartered Accountants of India and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the ICAI. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the Financial Statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system over financial reporting.

Meaning of Internal Financial Controls Over Financial Reporting

A company's internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Financial Statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of Financial Statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the Financial Statements.

Inherent Limitations of Internal Financial Controls Over Financial Reporting

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at March 31, 2025 based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the ICAI.

For **Nangia & Co. LLP**
Chartered Accountants
ICAI Firm Registration Number: 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 25601788BMKRKD9568

Place: Mumbai
Date: April 30, 2025

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164

BALANCE SHEET AS AT 31 MARCH 2025

CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	Note No.	As at 31 March 2025	As at 31 March 2024
ASSETS			
Non-Current Assets			
a) Property, plant and equipment	5	113.02	152.59
b) Intangible assets	6	34,656.44	40,039.94
c) Financial Assets			
(i) Investments	7	715.07	13.08
(ii) Other Financial Asset	8	18,700.00	18,733.55
d) Other non-current assets	9	6,340.32	4,108.08
		60,524.86	**63,047.23**
Current Assets			
a) Financial Assets			
(i) Trade receivables	10	128.63	219.22
(ii) Cash and cash equivalents	11(a)	317.64	550.61
(iii) Bank balances other than above	11(b)	18,499.50	15,235.50
(iv) Other Financial Asset	12	2,883.80	1,391.39
b) Other current assets	13	115.22	58.29
		21,944.79	**17,455.02**
TOTAL		**82,469.65**	**80,502.25**
EQUITY AND LIABILITIES			
Equity			
a) Equity share capital	14	429.57	429.57
b) Other Equity	15	33,433.91	23,670.82
		33,863.48	**24,100.39**
Non-Current Liabilities			
a) Financial Liabilities			
(i) Borrowings & Debt Securities	16	34,493.36	44,354.83
(ii) Other Financial Liabilities	17	142.32	35.73
b) Provisions	18	3,445.37	2,468.54
		38,081.05	**46,859.10**
Current Liabilities			
a) Financial Liabilities			
(i) Borrowings & Debt Securities	19	9,857.68	8,220.82
(ii) Trade payables			
- total outstanding dues of micro and small enterprises		24.22	183.66
- total outstanding dues of creditor other than micro and small enterprises	20	70.50	212.59
(iii) Other Financial Liabilities	21	28.22	11.97
b) Other current liabilities	22	115.07	486.33
c) Provisions	23	429.44	427.38
		10,525.13	**9,542.75**
TOTAL		**82,469.65**	**80,502.25**

The accompanying notes form an integral part of the financial statements

Note No. 1-34

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date : 30.04.2025

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Director
DIN: 06560170

Karthikeyan Muthukumaraswamy
Director
DIN: 08609724

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164

STATEMENT OF PROFIT AND LOSS FOR THE YEAR ENDED 31 MARCH 2025

CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	Notes	For the Year ended 31 March 2025	For the Year ended 31 March 2024
Revenue from Operations	24	32,377.72	30,105.39
Other Income	25	3,379.90	2,299.49
Total Income		**35,757.62**	**32,404.88**
Expenses			
Operating and Maintenance Expenses	26	8,382.22	2,868.58
Employee Benefit Expenses	27	313.18	223.55
Finance Costs	28	4,055.13	4,497.28
Depreciation and Amortization Expenses	5&6	5,443.15	5,741.07
Other Expenses	29	976.24	1,060.79
Total Expenses		**19,169.92**	**14,391.27**
Profit / (loss) before exceptional items and tax		16,587.70	18,013.61
Exceptional Items		-	-
Profit / (loss) before tax		16,587.70	18,013.61
Tax expense:			
(1) Current tax		2,897.56	3,181.91
(2) MAT credit		(2,074.79)	(2,549.10)
(3) Deferred tax			
Profit / (loss) for the Year		**15,764.92**	**17,380.79**
Other Comprehensive Income (Net of Taxes)			
A (i) Items that will not be reclassified to profit or loss:			
Re-measurements of defined benefit plans		(1.84)	1.29
B (i) Items that will be reclassified to profit or loss			-
Total Comprehensive Income for the Year		**(1.84)**	**1.29**
Profit (Loss) and other comprehensive for the Year		**15,763.09**	**17,382.09**
Earnings per equity share of Rs. 10 Each			
(1) Basic		**367.00**	**404.61**
(2) Diluted		**367.00**	**404.61**

The accompanying notes form an integral part of the financial statements — Note No. **1-34**

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date : 30.04.2025

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Director
DIN: 06560170

Kuribikyan Muthukumaraswamy
Director
DIN: 08509724

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NH44@KM 349.950 Opposite Sai Baba Temple. Indalwai Village Nizamabad. Telangana- 503164
Cash Flow for the Year ended 31 March 2025
CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	For the Year ended 31 March 2025	For the Year ended 31 March 2024
A.Cash flow from Operating Activities:		
Net profit for the year After tax	15,764.92	17,380.81
Income From Mutual Funds	(410.37)	(0.08)
Interest Income on Fixed Deposit	(919.86)	(663.30)
Interest Incomce on IT refund	(3.33)	-
Gain On Sale of PPE	(0.14)	-
Interest on ICD	(1,496.00)	-
Depreciation& Amortisation	5,443.15	5,741.07
EIR Impact	44.96	-
Finance Costs	4,010.17	4,445.43
Operating Profit before working capital changes	**22,433.49**	**26,903.93**
Changes in other accounts affecting operations:		
(Increase)/decrease in Other Non-Current assets	(736.25)	(2,442.93)
(Increase)/decrease in Trade Receivables	90.59	-
(Increase)/decrease in Other Current Financial assets	(1,492.41)	(1,302.15)
(Increase)/decrease in Other Current Assets	(56.92)	(7.97)
Increase/(decrease) in other financial Liabilities	106.58	(20.94)
Increase/(decrease) in Provisions	977.05	(80.54)
Increase / (Decrease) in trade payables	(301.53)	257.07
Increase / (Decrease) in other (current) Financial Liabilities	16.25	(37.26)
Increase / (Decrease) in other current Liabilities	(371.26)	23.26
Cash generated from /(used for) Operating Activities	**20,665.58**	**23,292.48**
Net cash generated/(used) from Operating Activities	**20,665.58**	**23,292.48**
B.Cash flow from Investing Activities:		
Purchase of Fixed Assets / Intangible Assets	(20.29)	(101.54)
Sale of Fixed Assets	0.34	-
Interest Incomce on IT refund	3.33	-
Investment of Mutual Fund	(21,492.16)	(2,001.60)
Redemption of Mutual Fund	21,200.55	12,732.08
Invested in Fixed Deposit(net)	(3,230.45)	(4,212.98)
ICD to telated party	-	(18,700.00)
Income From Mutual Funds	-	0.08
Interest Income on Fixed Deposit	919.86	663.30
Net Cash used in Investing Activities	**(2,618.82)**	**(11,620.66)**
C.Cash flow from Financing Activities:		
(Repayment) to long term borrowings	(8,269.58)	(6,920.29)
Payment of Dividend	(6,000.00)	-
Interest Paid	(4,010.17)	(4,445.43)
Net Cash from Financing Activities	**(18,279.75)**	**(11,365.72)**
Increase/(Decrease) in cash and cash equivalents(A+B+C)	(232.96)	306.10
Add: Cash and cash equivalents at the beginning of the year	550.61	244.51
Cash and cash equivalents at the end of the Year	**317.64**	**550.61**

1.Cash Flow Statement has been prepared under the Indirect Method as set out in the Ind AS 7 "Cash Flow Statements"
2 Cash and Cash Equivalents represent cash and bank balances.

Particulars	For the Year ended 31 March 2025	For the Year ended 31 March 2024
Cash on hand	10.55	12.47
Balances with Banks in Current Accounts	306.87	538.14
Prepaid Card	0.22	0.00
TOTAL	**317.64**	**550.61**

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date : 30.04.2025

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Director
DIN: 06560170

Karthikeyan Muthukumaraswamy
Director
DIN: 08609723

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164
STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDING 31 MARCH 2025
CIN No. U45203TG2010PTC067113

(A) Equity Share Capital **(Amount in lakhs)**

Particulars	Amount
Balance at the beginning of April 1, 2023	429.57
Changes in equity share capital during the year	-
Balance at the end of 31 March 2024	**429.57**
Balance at the beginning of April 1, 2024	429.57
Changes in equity share capital during the year	-
Balance at the end of 31 March 2025	**429.57**

(B) Other Equity

(Amount in lakhs)

Particulars	Securities Premium Reserve	Retained Earnings	Debenture Redemption Reserve	Total
Balance as at March 31, 2023	**12,428.43**	(7,342.50)	**1,202.81**	**6,288.73**
Profit/Loss for the year		17,380.81		17,380.81
Total Comprehensive Income for the year		1.29		1.29
Transfer (from)/to DRR		(1,065.63)	1,065.63	-
Balance as at 31 March 2024	**12,428.43**	**8,973.97**	**2,268.44**	**23,670.83**
Profit/Loss for the year		15,764.92		15,764.92
Total Comprehensive Income for the year		(1.84)		(1.84)
Transfer (from)/to DRR		(905.47)	905.47	-
Dividend Payment		(6,000.00)		(6,000.00)
Balance as at 31 March 2025	**12,428.43**	**17,831.57**	**3,173.91**	**33,433.91**

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number.: 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date . 30.04.2025

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Director
DIN: 06560170

Karthikeyan Muthukumaraswamy
Director
DIN: 08609724

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
CIN No. U45203TG2010PTC067113
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2025

1. Background and Corporate Information

The Company had been granted the Concession by National Highway Authority of India (Under the Ministry of Road Transport & Highways of Government of India) for "Design, Engineering, Finance, Construction, Operation and Maintenance of operation and maintenance of 6 lane – 22.12 km stretch from km 534.720 (near Hebbal) to km 556.840 (near Bengaluru International Airport) of Hyderabad-Bengaluru section on NH-7 in the state of Karnataka, on Design, Build, Finance, Operate and Transfer ("DBFOT") basis. The construction of Project Road was completed and company got right to commence Commercial operation on May 01, 2014. During FY 2021, 100% ownership of the company was acquired by National Investment & Infrastructure Fund on 29th Sep 2020. Subsequently, name of company was changed from Essel Devanahalli Tollway Private Limited to Athaang Devanahalli Tollway Private Limited. With effect from 3rd October 2022, the Registered office of company has been shifted to NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164, India.

The Ind AS financial statements were authorised and approved for issue by Board of Directors on 30th April 2025.

2. Basis of preparation of Financial Statements

The Ind AS financial statements of the Company have been prepared in accordance with Indian Accounting Standards (Ind AS) as notified under the Companies (Indian Accounting Standards) Rules, 2015 (as amended) and presentation requirements of Division II of Schedule III to the Companies Act, 2013. The financial statements have been prepared under the historical cost convention, as modified by the application of fair value measurements required or allowed by relevant Accounting Standards. Accounting policies have been consistently applied to all periods presented, unless otherwise stated.

The financial statements are presented in Indian Rupees (INR) and all values are converted to the nearest lakhs, except when otherwise indicated.

a. Statement of compliance

These financial statements of the Company have been prepared in accordance with Indian Accounting Standards as per the Companies (Indian Accounting Standards) Rules, 2015 as amended and notified under Section 133 of the Companies Act, 2013 and the other relevant provisions of the Act.

b. Use of judgements and estimates

The preparation of the Ind AS financial statements in conformity with Ind AS requires management to make judgements, estimates and assumptions that affect the reported amounts of Income, expenses, assets and liabilities and the disclosure of contingent liabilities. However, Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

Estimates and underlying assumptions are reviewed at each reporting date. Any revision to accounting estimates and assumptions are recognized prospectively i.e. recognized in the period in which the estimate is revised, and future periods affected.

(i) Property Plant and Equipment/ Intangible Assets

Estimates are involved in determining the cost attributable to bringing the assets to the location and condition necessary for it to be capable of operating in the manner intended by the management. Property, Plant and Equipment/Intangible Assets are depreciated/ amortised over their estimated useful life, after taking into account estimated residual value. Management reviews the estimated useful life and residual values of the assets annually in order to determine the amount of depreciation/ amortisation to be recorded during any reporting period. The useful life and residual values are based on the Company's historical experience with similar assets and take into account anticipated technological and future risks. The depreciation/ amortisation for future periods is revised if there are significant changes from previous estimates.

(ii) Provisions

The timing of recognition and quantification of the liability (including litigations) requires the application of judgement to existing facts and circumstances, which can be subject to change. The carrying amounts of provisions and liabilities are reviewed regularly and revised to take account of changing facts and circumstances.

3. New and Amended Standards:

Ministry of Corporate Affairs ("MCA") notifies new standards or amendments to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time. For the year ended March 31, 2025, MCA has notified Ind AS – 117 Insurance Contracts and amendments to Ind AS 116 – Leases, relating to sale and leaseback transactions, applicable to the Company w.e.f. April 1, 2024. The Company has reviewed the new pronouncements and based on its evaluation has determined that it does not have any significant impact in its financial statements.

4. Material Accounting Policies

a. Current /non-current classification

All assets and liabilities are presented in the balance sheet based on current or non-current classification as per the company's normal operating cycle criteria set out in Schedule III of the Companies Act, 2013. Based on the nature of products and the time between the acquisition of assets for processing and their realization into cash and cash equivalent, the Company has ascertained its operating cycle as twelve months for the purpose of current/non-current classification of assets and liabilities. An asset is treated as current when it is:

a) Expected to be realized or intended to be sold or consumed in normal operating cycle
b) Held primarily for the purpose of trading
c) Expected to be realized within twelve months after the reporting period
d) Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period

All other assets are classified as non-current.

A liability is current when:
a) It is expected to be settled in normal operating cycle
b) It is held primarily for the purpose of trading
c) Due to be settled within twelve months after the reporting period
d) There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

b. Functional and presentation currency

Items included in the financial statements of the company are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). The functional statements are presented in Indian Rupees, which is the company's functional and presentation currency.

c. Cash and cash equivalents

Cash and cash equivalents in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the Statement of Cash Flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

d. Property, Plant and Equipment(PPE)

Property, Plant and Equipment is recognised when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can measured reliably. PPE is stated at original cost net of tax/duty credits availed, if any, less accumulated depreciation For qualifying assets, borrowing costs capitalised in accordance with the IND AS 23.

Administrative and other general overhead expenses that are specifically attributable to construction or acquisition of PPE or bringing the PPE to working condition are allocated and capitalised as a part of the cost of the PPE.

Property, Plant and Equipment not ready for the intended use on the date of the Balance Sheet are disclosed as "Capital work-in-progress".

Depreciation on assets have been provided on WDV basis as per useful lives specified in the Schedule II of the Companies Act, 2013. Depreciation on additions / deductions is calculated pro-rata from / to the month of additions / deductions.

Assets individually costing less than Rs.5,000/- are fully depreciated in the year of purchase.

The estimated useful lives are as follows :

Particulars	Useful life as prescribed by Schedule II of the Companies Act, 2013	Useful life estimated by Company
Toll Equipment	5 years	5 years
Computers	3 years	3 years
Office Equipment	5 years	5 years
Furniture & Fixtures	10 years	10 years
Motor Cycle	10 years	10 years

e. Intangible Assets

Right of Carriageway - Toll Projects

Intangible assets are recognised net of government grants when it is probable that future economic benefits that are attributable to the asset will flow to the enterprise and the cost of the asset can be measured reliably. Intangible assets are stated at original cost net of tax/duty credits availed, if any, less accumulated amortisation and cumulative impairment.

Toll collection rights obtained in consideration for rendering construction services, represent the right to collect toll revenue during the concession period in respect of Build-Operate-Transfer ("BOT") project undertaken by the Company. The intangible asset model is used to the extent that the Company receives a right to charge users of the public service.

The intangible assets is measured at the fair value of consideration transferred to acquire asset, which is the fair value of consideration received or receivable for the construction services delivered

Amortization of Right of Carriageway - Toll Projects

The assets would be amortized under straight line method over the life of the asset till the end of the concession period.

Amortization of Computer Software

The assets would be amortized under straight line method over useful life of 5 yrs.

f. Impairment of Non-Financial Assets

Non-financial assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash inflows which are largely independent of the cash inflows from other assets or groups of assets (cash-generating units). Nonfinancial assets that suffered impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

g. Financial Instruments

The Company classifies its financial assets into the following measurement categories:
i. Financial assets to be measured at amortised cost
ii. Financial assets to be measured at fair value through other comprehensive income
iii. Financial assets to be measured at fair value through profit or loss account

The classification depends on the contractual terms of the financial assets' cash flows and the Company's business model for managing financial assets

Fair value measurements are categorised as below based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirely:

• Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that entity can access at measurement date
• Level 2 inputs are inputs, other than quoted prices included in Level 1, that are observable for the asset or liability, either directly or indirectly, and
• Level 3 inputs are unobservable inputs for the asset or liability.

i) Financial Assets

All recognised financial assets are measured in their entirety at either amortised cost or fair value, depending on the classification of the financial assets

Investments in debt instruments that meet the following conditions are subsequently measured at amortised cost (unless the same are designated as fair value through profit or loss (FVTPL):
• The asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows; and
• The contractual terms of instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.
A financial asset is primarily derecognised when:
i. the rights to receive cash flows from the asset have expired, or
ii. the company has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a pass-through arrangement: and where
a) the company has transferred substantially all the risks and rewards of the asset, or
b) the company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

Impairment of financial assets: The Company applies the expected credit loss model for recognising impairment loss on financial assets measured at amortised cost, debt instruments, trade receivables and other contractual rights to receive cash or other financial asset and financial guarantees not designated as at FVTPL. For the purpose of measuring expected credit loss allowance for businesses other than financial services for trade receivables, the Company has used a provision matrix which takes into account historical credit loss experience and adjusted for forward looking information as permitted under Ind AS 109.

ii) Financial Liabilities

Financial liabilities are classified at initial recognition, as financial liabilities as fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Loans and borrowings are subsequently measured at amortised costs using Effective Interest Rate method.
Financial liabilities at fair value through profit or loss (FVTPL) are subsequently measured at fair value.
Financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires

h. Revenue Recognition

i) Revenue is measured at the fair value of the consideration received or receivable, Amounts disclosed as revenue are exclusive of duties and taxes.

ii) The Company recognizes revenue when the amount of revenue can be reliably measured, it is probable that the future economic benefits would flow to the entity and specific criteria have been met for each of the activities described below. The company bases its estimates on historical results, taking into consideration the type of customer, type of transaction and specific of the arrangement.

iii) Toll collections from the users of the infrastructure facility constructed by the Company under the Service Concession Arrangement is accounted for based on actual collection, net of revenue share payable under the Concession agreement wherever applicable.

iv) Interest Income is recognized on time proportion basis taking into account the amount outstanding and applicable interest rate.

v) Dividend Income is recognized when the right to receive is established.

vi) Profit/loss on sale of investment is recognised at the time of actual sale/redemption and for mutual funds at fair value through profit or loss.

vii) Insurance claims are accounted for on the basis of claims admitted / expected to be admitted and to the extent that the amount recoverable can be measured reliably and it is reasonable to expect ultimate collection.

viii) Other items of income are accounted as and when the right to receive arises.

i. Government Grants

Government grants are recognised where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognised as income on a systematic basis over the periods that the related costs, for which it is intended to compensate, are expensed. When the grant relates to an asset, it is recognised on a systematic basis over the expected useful life of the related asset.

j. Foreign currencies transactions and translation

Transactions in foreign currencies are recorded at the exchange rate prevailing on the date of transaction. Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency closing rates of exchange at the reporting date.

k. Employee Benefits

Employee benefits include provident fund, employee state insurance scheme, gratuity & compensated absences.

(i). Short term employee benefits

All employee benefits falling due wholly within twelve months of rendering the service are classified as short term employee benefits. The benefits like salaries, wages, short term compensated absences etc and the expected cost of bonus, ex-gratia are recognised in the period in which the employee renders the related service.

(ii).Post-employment benefits

(a) Defined contribution plans:

Defined Contribution Plans: The Company's obligation to employee's provident fund is a defined contribution plan. The contribution paid/payable is recognized in the period in which the employee renders the related service.

(b) Defined benefit plans:

The Company's obligation towards gratuity is a defined benefit plan.

The present value of the obligation under such Defined Benefit Plans is determined based on actuarial valuation using the Projected Unit Credit Method, which recognizes each period of service as giving rise to additional unit of employee benefit entitlement and measures each unit separately to build up the final obligation.

The obligation is measured at the present value of the estimated future cash flows. The discount rates used for determining the present value of the obligation under defined benefit plans, is based on the market yields on Government securities as at the Balance sheet date, having maturity periods approximating to the terms of related obligations.

The interest element in the actuarial valuation of defined benefit plans, which comprises the implicit interest cost and the impact of changes in discount rate, is classified under finance cost. The balance charge is recognised as employee benefit expenses in the Statement of Profit and Loss.

In case of funded plans, the fair value of the plan assets is reduced from the gross obligation under the defined benefit plans to recognise the obligation on a net basis.

Gains or losses on the curtailment or settlement of any defined benefit plan are recognised when the curtailment or settlement occurs. Past service cost is recognised as expense at the earlier of the plan amendment or curtailment and when the Company recognises related restructuring costs or termination benefits.

l. Borrowing Cost

Borrowing costs include interest calculated using the effective interest rate method, amortisation of ancillary costs incurred and exchange differences arising from foreign currency borrowings to the extent they are regarded as an adjustment to the interest cost. Costs in connection with the borrowing of funds to the extent not directly related to the acquisition of qualifying assets are charged to the Statement of Profit and Loss over the tenure of the loan. Borrowing costs, allocated to and utilized for acquisition, construction or production of qualifying assets, pertaining to the period from commencement of activities relating to construction / development of the qualifying asset up to the date of capitalization of such asset are added to the cost of the assets. Capitalization of borrowing costs is suspended and charged to the Statement of Profit and Loss during extended periods when active development activity on the qualifying assets is interrupted.

m. Leases

Operating lease payments are recognized as an operating expense in the income statement on a straight line basis over the lease term.

n. Earnings per share

Basic earnings per share is calculated by dividing the net profit or loss attributable to equity holder of the company (after deducting preference dividends and attributable taxes) by the weighted average number of equities shares outstanding during the period.

For the purpose of calculating diluted earnings per share, the net profit/(loss) for the period attributable to equity shareholders of the parent company and the weighted average number of shares outstanding during the period are adjusted for the effects of all dilutive potential equity shares.

o. Tax Expenses

The tax expenses for the period comprises of current tax and deferred income tax. Tax is recognised in Statement of Profit and Loss, except to the extent that it relates to items recognised in the Other Comprehensive Income. In which case, the tax is also recognised in Other Comprehensive Income.

i. Current Tax

Current tax assets and liabilities are measured at the amount expected to be recovered from or paid to the Income Tax authorities, based on tax rates and laws that are enacted at the Balance sheet date.

ii. Minimum Alternate Tax

Minimum Alternate Tax (MAT) paid in accordance with the tax laws, which gives future economic benefits in the form of adjustment to future income tax liability, is considered as an asset if there is convincing evidence that the company will pay normal income tax. Accordingly, the MAT is recognised as an asset in the balance sheet when it is highly probable that future economic benefit associated with it will flow to the Company.

iii. Deferred Tax

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities in the Financial Statements and the corresponding tax bases used in the computation of taxable profit.

Deferred tax assets are recognised to the extent it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax losses can be utilised. Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realised, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The carrying amount of Deferred tax liabilities and assets are reviewed at the end of each reporting period.

p. Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Company expects some or all of a provision to be reimbursed the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the Statement of Profit and Loss net of any reimbursement

q. Contingent Liabilities and Contingent Asset

Disclosure of contingent liability is made when there is a possible obligation arising from past events, the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Company or a present obligation that arises from past events where it is either not probable that an outflow of resources embodying economic benefits will be required to settle or a reliable estimate of amount cannot be made. A Contingent asset is not recognized in financial statements, however, the same are disclosed where an inflow of economic benefit is probable

r. Commitments

Commitments are future liabilities for contractual expenditure. Commitments are classified and disclosed as follows:
(i) Estimated amount of contracts remaining to be executed on capital account and not provided for
(ii) Uncalled liability on shares and other investments partly paid
(iii) Funding related commitment to subsidiary, associate and joint venture companies and
(iv) Other non-cancellable commitments, if any, to the extent they are considered material and relevant in the opinion of management.

Other commitments related to sales/procurements made in the normal course of business are not disclosed to avoid excessive details.

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
CIN No. U45203TG2010PTC067113
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2025
Note 5- Property Plant & equipments

(Amount in Lakhs)

Particulars	Land	Toll Equipment	Computers	Office Equipment	Furniture & Fixtures	Motor Cycle	Vehicle	Total
Gross carrying value as of 31 March, 2023	**17.48**	**416.32**	**42.55**	**17.53**	**8.02**	**2.67**	**-**	**504.58**
Additions	-	61.00	17.41	3.51	1.03	-	18.58	**101.54**
Deletions								-
Gross carrying value as of 31 March 2024	**17.48**	**477.32**	**59.96**	**21.04**	**9.05**	**2.67**	**18.58**	**606.10**
Additions	-	12.28	5.24	2.77	-	-	-	**20.29**
Deletions			3.98					**3.98**
Gross carrying value as of 31 March 2025	**17.48**	**489.60**	**61.22**	**23.81**	**9.05**	**2.67**	**18.58**	**622.41**
Accumulated depreciation as of 31 March, 2023	-	**326.49**	**40.13**	**15.89**	**7.47**	**2.44**	-	**392.43**
Depreciation	-	52.03	4.11	1.12	0.57	-	3.26	**61.08**
Accumulated depreciation as of 31 March 2024	-	**378.52**	**44.24**	**17.02**	**8.03**	**2.44**	**3.26**	**453.51**
Depreciation	-	42.08	11.48	2.08	0.25	0.04	3.73	**59.66**
Disposal	-	-	3.78	-	-	-	-	**3.78**
Accumulated depreciation as of 31 March 2025	-	**420.60**	**51.94**	**19.10**	**8.28**	**2.48**	**6.99**	**509.39**
Carrying value as of 31 March 2025	**17.48**	**69.00**	**9.28**	**4.71**	**0.77**	**0.19**	**11.59**	**113.02**
Carrying value as of 31 March 2024	**17.48**	**98.80**	**15.72**	**4.03**	**1.01**	**0.23**	**15.32**	**152.59**

NANGIA & CO. LLP CHARTERED ACCOUNTANTS

Athaang Devanahalli Tollway Private Limited

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
CIN No. U45203TG2010PTC067113
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2025

Note 6 - Intangible Assets

(Amount in Lakhs)

Particulars	Right of Carriageway	Computer Software	Total
Gross carrying value as of 31 March, 2023	91,281.39	1.26	91,282.65
Additions	-	-	-
Deletions	-	-	-
Gross carrying value as of 31 March 2024	91,281.39	1.26	91,282.65
Additions			
Deletions			
Gross carrying value as of 31 March 2025	91,281.39	1.26	91,282.65
Accumulated amortization as of 31 March, 2023	45,562.13	0.59	45,562.73
Amortization expense for April-23 to March'24	5,679.99	-	5,679.99
Accumulated depreciation as of 31 March 2024	51,242.12	0.59	51,242.72
Amortization expense till 31 March 25*	5,383.49		5,383.49
Accumulated depreciation as of 31 March 2025	56,625.62	0.59	56,626.21
Carrying value as of 31 March 2025	**34,655.77**	**0.67**	**34,656.44**
Carrying value as of 31 March 2024	**40,039.27**	**0.67**	**40,039.94**

*The concession period is extended by 267 days as per the settlement agreement with NHAI (Refer Note No. 30.2). This extension resulted in an increase in the period of amortization in the current year.

(Amount in Lakhs)

Note No	Particulars	As at 31 March 2025	As at 31 March 2024
7	**Non Current Investments**		
	Investment in Mutual Funds (69,215 units @ Rs 367.67 NAV = Rs 254.48 lakhs) (32,328 units @ Rs 1415.96 NAV = Rs 460 59 lakhs)	715 07	13.08
	Total	**715.07**	**13.08**
8	**Other Non Current Financial Assets**		
	Bank deposits with more than 12 months maturity (Fixed Deposit includes interest accrued on fixed deposit)	-	33.55
	Inter Company Deposit issued to Athaang Infrastructure Private Limited	18,700.00	18,700.00
	Total	**18,700.00**	**18,733.55**
9	**Other Non Current Assets**		
	Retention Money - Change of Scope	173.83	72.19
	TDS Receivable	98.78	42.96
	MAT Credit	5,969.28	3,894.49
	Taxes paid under Protest	86.06	86.06
	VAT Credit Receivable*	12.38	12.38
	Total	**6,340.32**	**4,108.08**
	*VAT Credit received on 4th April 2025.		
10	**Trade Receivables**		
	Trade Receivables considered good - Unsecured National Highway Authority of India	128 63	219.22
	Total	**128.63**	**219.22**

Trade receivables ageing schedule

As at March 31, 2025	Outstanding for following periods from due date of payment					
	Less than 6 months	6 months - 1 year	1-2 years	2-3 years	More than 3 years	Total
Considered Good - Secured	-	-	-	-	-	-
Considered Good - Unsecured	11 42		117.21	-	-	128.63
Gross carrying amount (A)	11.42	-	117.21	-	-	128.63
Less: Allowance for Expected Credit Losses (B)	-	-	-	-	-	-
Net carrying amount (A-B)	11.42	-	117.21	-	-	128.63

As at March 31, 2024	Outstanding for following periods from due date of payment					
	Less than 6 months	6 months - 1 year	1-2 years	2-3 years	More than 3 years	Total
Considered Good - Secured	-	-	-	-	-	-
Considered Good - Unsecured	-		119.41	91.96	7.84	219.22
Gross carrying amount (A)	-	-	119.41	91.96	7.84	219.22
Less: Allowance for Expected Credit Losses (B)	-	-	-	-	-	-
Net carrying amount (A-B)	-	-	119.41	91.96	7.84	219.22

11(a)	**Cash and Cash Equivalents**		
	-Cash- on- Hand	10.55	12.47
	Balances with Banks		
	-In Current Account	306.87	538.14
	Prepaid Card		
	-HDFC	0.22	0.00
	Total	**317.64**	**550.61**
11(b)	**Bank balances other than above**		
	-Fixed deposits	18,499.50	15,235.50
	Total	**18,499.50**	**15,235.50**
12	**Other Current Financial Asset**		
	Other Receivable	96.26	99.85
	Interest Receivable on ICD	2,787.54	1,291.54
	Total	**2,883.80**	**1,391.39**
13	**Other Current Assets**		
	Prepaid Expenses	21.71	35.31
	Deposits	0.05	0.05
	Advance to Vendor	38 46	22.93
	Balances with Government Authorities-GST Input	55.00	-
	Total	**115.22**	**58.29**

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
CIN No. U45203TG2010PTC067113
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2025
Note 14 - Equity Share Capital

(Amount in Lakhs)

Particulars	As at 31 March 2025	As at 31 March 2024
(a) Authorised		
50,00,000 Equity shares of Rs.10/- each	500.00	500.00
	500.00	**500.00**
(b) Issued, Subscribed & Fully Paid Up		
42,95,666 Equity shares of Rs 10/- each	429.57	429.57
Total	**429.57**	**429.57**

(i) Reconcilhation of the number of shares and amount outstanding at the beginning and at the end of the reporting period:

Particulars	As at 31 March 2025	As at 31 March 2024
Equity shares with voting rights at the beginning of the year	42,95,666	42,95,666
Add: Shares issued during the year	-	-
Less: Shares Cancelled on Buy back of Equity Shares	-	-
Equity shares with voting rights at the end of the year	**42,95,666**	**42,95,666**

(ii) Terms/rights attached to shares:

The Company has only one class of equity shares having a par value of Rs.10/- per share. Each holder of equity share is entitled to one vote per share
In the event of liquidation of the Company, the holders of equity shares will be entitled to receive remaining assets of the Company, after distribution of all preferential amounts. The distribution will be in proportion to the no of equity shares held by the shareholder.

(iii) Details of shares held by the holding company, the ultimate holding company, their subsidiaries and associates:

Particulars	As at 31 March 2025	As at 31 March 2024
Equity shares with voting rights held by:		
National Investment & Infrastructure Fund	42,95,666	42,95,666
Equity shares with voting rights at the end of the year	**42,95,666**	**42,95,666**

(iv) Details of equity shares held by the shareholder and promoters holding more than 5% shares of total equity shares

Class of shares / Name of shareholder	As at 31 March 2025		As at 31 March 2024	
	Number of shares held	% holding in that class of shares	Number of shares held	% holding in that class of shares
Equity shares with voting rights				
National Investment & Infrastructure Fund	42,95,665	99.99%	42,95,665	99.99%
Total	42,95,665		42,95,665	

ATHVANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
CIN No. U45203TG2010PTC067113
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2025

Note 15 Other Equity

(Amount in Lakhs)

Particulars	As at 31 March 2025	As at 31 March 2024
a) Securities Premium Account	12,428.43	12,428.43
b) General Reserve	-	-
c) Other comprehensive income	-	-
d) Retained earnings	17,831.57	8,973.95
e) Debenture Redemption Reserve	3,173.91	2,268.44
Total	**33,433.91**	**23,670.82**
a) Securities Premium Account		
Opening balance	**12,428.43**	**12,428.43**
Additions during the Year	-	-
Adjustments during the Year	-	-
Closing balance	**12,428.43**	**12,428.43**
b) Retained earnings		
Opening balance	**8,973.95**	**(7,342.51)**
Net profit for the year	15,763.09	17,382.09
Less: Transfer to Debenture Redemption Reserve	(905.47)	(1,065.63)
Less. Payment of Dividend*	(6,000.00)	
Closing balance	**17,831.57**	**8,973.95**
c) Debenture Redemption Reserve		
Opening balance	**2,268.44**	**1,202.81**
Add: Transferred from Statement of Profit and Loss	905.47	1,065.63
Closing balance	**3,173.91**	**2,268.44**

*Final dividend aggregating to Rs. 6,000 lakhs (PY: Nil) on 42,95,666 Equity Shares i.e. Rs 139.68 per share for the financial year 2023-24, has been paid on 28 June 2024.

Note 16 Long-term borrowings & debt securities

(Amount in Lakhs)

Particulars	As at 31 March 2025	As at 31st March 2024
(a) Term loans		
From banks -Secured	27,318.77	35,387.85
From others - Secured		
(a) Term loans Total	**27,318.77**	**35,387.85**
(b) Non Convertible Debenture (NCD)	7,225.49	9,054 73
(c) Less : Unamortized Upfront fee	(50.90)	(87.75)
Total	**34,493.36**	**44,354.83**

Note 16.1 Long-term borrowings & debt securities

Particulars	Non Current Portion		Current Portion	
	As at 31 March 2025	As at 31 March 2024	As at 31 March 2025	As at 31 March 2024
Term loans from banks:				
Federal Bank Ltd	5,087.00	6,590.56	1,502.31	1,240.86
Axis Bank	22,231.77	28,797.29	6,562.98	5,424.34
Total borrowings	**27,318.77**	**35,387.85**	**8,065.29**	**6,665.20**
Non Convertible Debenture (NCD)				
India Infradebt Limited (NCD)	7,225.49	9,054.73	1,829.24	1,600.58
Total debt securities	**7,225.49**	**9,054.73**	**1,829.24**	**1,600.58**
Less : Unamortized Upfront fee	(50.90)	(87.75)	(36.85)	(44.96)
Total Borrowings & Debt Securities	**34,493.36**	**44,354.83**	**9,857.68**	**8,220.82**

Name of The Financial Institutions:	India Infra Debt Limited
Type of Loan & Amount Sanctioned:	NCD's Rs.150.00 Crores
Loan Availed as on 31.03.2019:	Rs.150.00 Crores
Face Value	Rs.10,000/-
Rate of Interest:	10% p.a upto 31 December 2021 and 8.25 % p.a w.e.f . 01 January 2022
Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 31.03.2016
Security:	A first charge on Company's all immovable assets other than the project assets and first charge by way of hypothecation on all movable assets both present and future, a first charge on all intangible assets, bank accounts, a right over insurance proceeds. Pledge 51% of equity shares of Athaang Devanahalli Tollway Pvt Ltd held by National Infrastructure Investment Fund (NIIF)

Name of The Financial Institutions:	Axis Bank Limited
Type of Loan & Amount Sanctioned:	RTL Rs.337.00 Crores & RTL Rs.197.83 Crores
Loan Availed as on 31.03.2022:	Rs.332.35 Crores & Rs.192.55 Crores
Rate of Interest:	8.46% p.a. (Weighted Average)
Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 30.09.2021
	The Loan has been downsold partially to the extent of Rs. 92.25 Crores to Federal Bank Limited
Security:	A first charge on Company's all immovable assets other than the project assets and excluding plot no 6, Bhoomapan Karamank Palghar, Thane admeasuring 226 sq mt
	hypothecation on all movable prosperities and assets both present and future including movable plant and machinery, machinery spares, tools and accessories, furniture and vehicles
	charge on company's operating cash flows, book debts and all the receivables and revenues from the project, all current, commissions, and any other revenues of whatsoever nature and wherever arising present and future
	charge on Intangible asset including but not limited to goodwill, undertaking intellectual property rights and uncalled capital of the company, present and future
	charge on the Retention Account, DSRA and other reserves and any other bank account of the company whenever maintained.
	Pledge 51% of equity shares of Athaang Devanhalli Tollway Private Limited held by National Investment Infrastructure Fund
Name of The Financial Institutions:	The Federal Bank Limited
Type of Loan & Amount Sanctioned:	RTL Rs.100.00 Crores
Loan Availed as on 15.09.2022:	Loan is a down sell from Axis for previous loan taken; further disbursed amount is Rs.92.25 crores
Rate of Interest:	7.5% p.a
Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w e.f 30.09.2021
Security:	A first charge on Company's all immovable assets other than the project assets and excluding plot no 6, Bhoomapan Karamank Palghar, Thane admeasuring 226 sq mt.
	hypothecation on all movable prosperities and assets both present and future including movable plant and machinery, machinery spares, tools and accessories, furniture and vehicles
	charge on company's operating cash flows, book debts and all the receivables and revenues from the project, all current, commissions, and any other revenues of whatsoever nature and wherever arising present and future
	charge on Intangible asset including but not limited to goodwill, undertaking intellectual property rights and uncalled capital of the company, present and future
	charge on the Retention Account, DSRA and other reserves and any other bank account of the company whenever maintained.
	Pledge 51% of equity shares of Athaang Devanhalli Tollway Private Limited held by National Investment Infrastructure Fund

(Amount in Lakhs)

Note No	Particulars	As at 31 March 2025	As at 31 March 2024
17	**Other Non Current Financial Liabilities**		
	Retention Money	142.32	35.73
	Total	**142.32**	**35.73**
18	**Non Current Provisions**		
	Provision for Major Maintenance	3,099.03	2,449.51
	Provision for Gratuity	18.82	11.48
	Provision for compensated absences	14.01	7.55
	Provision for Income Tax*	313.51	-
	Total	**3,445.37**	**2,468.54**
	*The provision for income tax includes INR 86.06 lakhs towards taxes paid under protest (Refer Note 9)		
19	**Short Term Borrowings & Debt Securities**		
	Current Maturity of Long-Term Borrowing & Debt Securities (Refer Note 16.1)	9,857.68	8,220.82
		9,857.68	**8,220.82**
20	**Trade Payables**		
	Dues of Micro and Small Enterprises	24.22	183.66
	Dues of enterprises other than Micro and Small Enterprises	70.50	212.59
	Total	**94.72**	**396.25**

Trade Payables ageing schedule

As at March 31, 2025	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME*	24.22		-	-	24.22
Others	68.61	0.41	-	1.48	70.50
	92.83	0.41	-	1.48	94.72

As at March 31, 2024	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	165.43		18.23	0.01	183.66
Others	136.32	0.10	0.11	76.06	212.59
	301.75	0.10	18.33	76.07	396.25

*Disclosure for Micro and Small Enterprise

The amount due to Micro & Small Enterprise as defined in the "Micro, Small and Medium Enterprises Development Act, 2006" has been determined to the extent such parties have been identified on the basis of information available with the company.

The Disclosure relating to Micro, Small and Medium Enterprises are as under

(Amount in Lakhs)

Particulars	As at March 31, 2025	As at March 31, 2024
a) Principal amount remaining unpaid	24.22	183.66
b) Interest due on above and the unpaid interest	-	3.79
c) Interest Paid	-	-
d) Payment made beyond the appointed day during the year	-	-
e) Interest due and payable for the period of delay	-	-
f) Interest accured and remaining unpaid	-	3.79
g) Amount of further interest remaining due and payable in succeeding year	-	3.79

21	**Other Current Financial Liabilities**		
	Payable to related party (Refer Note No- 30.8)	28.22	11.97
	Total	**28.22**	**11.97**
22	**Other Current Liabilities**		
	Advance Received from NHAI	95.48	431.32
	Statutory Liabilities	18.58	53.58
	Salaries payable	1.01	1.43
	Total	**115.07**	**486.33**
23	**Provisions**		
	Provision for Expenses	428.32	427.08
	Provision for Gratuity	0.53	0.03
	Provision for compensated absences	0.59	0.27
	Total	**429.44**	**427.38**

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

CIN No. U45203TG2010PTC067113

NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2025

(Amount in Lakhs)

Note No	Particulars	For the Year ended 31 March 2025	For the Year ended 31 March 2024
24	**Revenue from Operations**		
	Toll Revenue	32,996.12	30,750.24
	Net off Revenue Sharing With NHAI	(618.4)	(644.85)
	Total	**32,377.72**	**30,105.39**
25	**Other Income**		
	Income From Mutual Funds	406.25	87.86
	Net Gain on Fair Value Change - Unrealised	4.12	0.08
	Interest Income on Fixed Deposit	919.86	663.30
	Interest on ICD	1,496.00	1,435.05
	Change of Scope Revenue	387.72	-
	Other Income	165.95	69.40
	Vat Refund	-	43.80
	Total	**3,379.90**	**2,299.49**
26	**Operating and Maintenance Expenses**		
	Reimbursement of Independent Engineer's Consultancy fee to NHAI	4.11	90.73
	Insurance Expenses	76.70	105.99
	Periodic Major Maintenance	649.51	649.51
	Toll Operation & Maintenance Expenses	1,625.40	2,018.44
	Settlement with NHAI (Refer Note No- 30.2)	5,723.00	
	Change of Scope Expenses	303.50	3.91
	Total	**8,382.22**	**2,868.58**
27	**Employee Benefit Expenses**		
	Salary and Wages	274.79	194.04
	Contribution to provident fund, gratuity and others	23.09	14.46
	Staff Welfare Expenses	15.30	15.05
	Total	**313.18**	**223.55**
28	**Finance Costs**		
	Interest Expenses	4,010.17	4,445.43
	Amortized Upfront Fee Expenses	44.96	51.85
	Total	**4,055.13**	**4,497.28**
29	**Other Expenses**		
	Audit Fee (Refer note no 30.10)	20.65	11.80
	Arbitration Fees	155.90	170.26
	Bank Charges	3.65	3.41
	Rates & Taxes	4.20	0.49
	Legal & Professional Fees	72.36	68.17
	Other Expenses	30.05	53.75
	Management Fees	524.75	725.71
	Interest on MSME Vendors	-	3.79
	Interest in TDS	-	0.24
	CSR Expenses	164.68	23.17
	Total	**976.24**	**1,060.79**

30. Notes forming part of the Accounts

30.1 Details of Expenditure in Foreign Currency:

The Company has not incurred any expenditure in foreign currency during the current year and previous year.

30.2 Disclosure pursuant to Ind AS 37

"Provisions, Contingent Liabilities and Contingent Assets":

Provisions:

As per the Concession Agreement with NHAI the Periodic Maintenance is expected to be incurred periodically. On the Grounds of Prudence, based on estimates, the company has decided to Provide for Major Maintenance Expense in the Books of Accounts annually.

During the current year the company has incurred Major Maintenance expenses of Rs. NIL- and net provision for MMR created of Rs. 6,49,51,372/- for year ended 31st March, 2025.

During the previous year the company has incurred Major Maintenance expenses of Rs. NIL- and net provision for MMR created of Rs. 6,49,51,372/- for year ended 31st March, 2024.

Contingent Liabilities:

Where it is not probable that an outflow of economic benefits will be required, or the amount can not be estimated reliably, the obligation is not recognized in the statements of financial position and is disclosed as a contingent liability.

(Amount in Lakhs)

Particulars	As at 31 March 2025	As at 31 March 2024
Claims against the company not acknowledged as debt		
- on Income Tax	1,367.01	1,367.01
- on liquidated damages imposed by NHAI*	-	4,441.00
- on descope of Punch list items**	-	8,162.91

March-25

Settlement terms with National Highway Authority of India (NHAI)

On 24th March 2025, the Company entered into a Settlement Agreement with the National Highways Authority of India (NHAI) pursuant to the provisions of Section 73 of the Arbitration and Conciliation Act, 1996. This settlement relates to the Concession Agreement dated 30th April 2010, for the development and operation of the Hyderabad–Bengaluru Section of NH-7.

Accounting Impact

•The total settlement liability of ₹57.23 crore has been recognised in profit and loss as of 31st March 2025.
•The payment was contractually due within 30 days from the date of agreement and was fully discharged on 27th March 2025.
•The 267-day extension of the Concession and shall be accounted for prospectively in future periods.

A. Background

During the course of the business, the Company had raised various claims against NHAI pertaining to:
• Extension of the Concession Period due to Force Majeure conditions caused by the COVID-19 pandemic;
•Compensation for revenue loss and cost impacts arising during the pandemic;
•Revenue leakage due to toll inefficiencies.

In response, NHAI submitted counterclaims primarily relating to:
•Damages for non-compliance with maintenance obligations.
•Recovery of amounts due to project de-scoping;
•Penalties and interest on delayed remittances and statutory obligations.

Parties have appeared before the Conciliation Committee of Independent Experts (CCIE) and after four conciliation meetings, have amicably resolved all the claims and counterclaims. Further, the Parties and have entered into a Settlement Agreement on 24th March 2025 and have subsequently fulfilled their respective obligations.

B. Key Terms of the Settlement

The following terms were mutually agreed upon:
•Extension of Concession Period by 267 days (171 days pertaining to FY 2020 and 96 days pertaining to FY 2021).
•Final settlement payment of ₹31.52 crore by the Company to NHAI.
•Full and final waiver and discharge of all past, present, and future claims by both parties under the Concession Agreement.

C. Summary of Claims and Settlement

Sr. No.	Description	Amount
A. Concessionaire's Claims		
1	Extension of Concession Period (COVID-19 Force Majeure)	267 days
2	Cost Compensation for COVID-19 Impact	Nil
3	Revenue Leakage	Nil
	Total – Concessionaire	**267 days extension**
B. NHAI's Counterclaims		
1	Damages for Delay in Maintenance (incl. interest up to 28.02.2025)	₹24.70 crore
2	Recovery for De-scoping of Punch List Items	₹5.29 crore*
3	Interest on Delayed Remittance (FASTag penalties)	₹1.53 crore
4	Damages for Maintenance (December 2023)	Nil
	Total – NHAI	**₹31.52 crore**

** Note: ₹25.71 crore had already been recovered by NHAI in compliance with the Delhi High Court's order in OMP (Comm.) No. 370/2024. The net recovery agreed in the settlement is ₹5.29 crore. (Total ₹ 57.23 Crore)*

D. Legal Closure

•The Settlement Agreement has been duly authenticated by the CCIE.

•Delhi High Court while disposing a writ petition made by the Company challenging NHAI's notices relating to the recovery of descoped punch list items has passed an order on 2nd April 2025 binding the Parties to the terms of the of Settlement Agreement of 24th March 2025.

•Arbitral Tribunal of Justice (Rtd) Badar Ahmed appointed by the Delhi High Court to settle the claims and counter claims of NHAI and the Company. relating to damages for delay in Maintenance, Covid relief, revenue leakage etc. during the hearing of 4th April 2025 has taken cognizance of the Settlement Agreement of 24th March 2025 between the Parties. In response to a Joint request seeking disposal of the matter filed by the Parties, the Arbitral Tribunal is expected to pass an order soon.

March-24

*During the current reporting period the company has not provided an amount of Rs. 4,441 lakhs (PY 4.441 lakhs) recommended by the Independent Engineer towards liquidated damages imposed with respect to Operations & maintenance (O&M) requirements & its rectification of deficiencies within the stipulated time. However, the Company made representation with the Independent Engineer vide letter dated May, 8th 2023 for reviewing its decision to levy liquidated damages and withdraw the claim for damages. Further to that NHAI letter dated June 16, 2023, reference No. NHAI /PIU BNG/KNT- 2/Escrow/2023-24/661, the NHAI has asked the Axis Bank to remit damages amounting to Rs 4,441 lakhs. The company moved to the Delhi High Court ("the Hon'ble High Court") challenging the NHAI letter dated June 16. 2023. The Hon'ble High Court disposed of the petition of the Company by appointing an Arbitrator for adjudication of disputes between the parties in its order dated July 05,2023. As of March 31, 2024 the ongoing arbitration proceedings have not resulted in any orders or interim orders against the company. As per the legal opinion and on the grounds of merits, the likelihood of damages (penalty) may not be payable entirely or could be substantially low so the same has been disclosed as Contingent Liabilities.

** During the current reporting period company has not provided amount of Rs 8311.62 Lakhs on account of descoping of punch list as recommended by Indendent Engineer.As per Settlement Agreement entered with NHAI (Authority), Company is committed to undertake certain capex works (Punch list A & B works) as and when the land is made available by the Authority. In case, NHAI confirms non availability of land, Company is obligated to pass on estimated capex on such items. In its letter dated 10th October 2023 IE recommended to NHAI to issue a negative COS order for a sum of Rs 8311.62 lakhs (punch list A and B amount 2694.45 lakhs ,interest component Rs 5365.50 lakhs and maintainance 251.66 lakhs) towards the above items of work. However, subsequently NHAI has made available land to take-up construction of service road from km 551+ 950 to km 552+ 970 estimated capex for the same is Rs 148.70 lakhs In absence of firm and final communication on land availability for the balance works and mutually agreed quantity and rates for the work to be executed, there is no surety of crystallisation of associated payments to NHAI. However, as a measure of prudence, the above is treated as contingent liability.

30.3 Disclosure pursuant to Ind AS 19 "Employee benefits":

Defined Benefit Plan: Gratuity:

Employee benefit plans

Defined contribution plans

The Company's superannuation scheme and State governed provident fund linked with employee pension scheme are defined contribution plans. The contribution paid/ payable under the scheme is recognised during the period in which the employee renders the related service.

Defined Benefit plans

The Company has an unfunded defined benefit gratuity plan The gratuity plan is governed by the Payment of Gratuity Act, 1972. Under the act, employee who has completed five years of service is entitled to specific benefit. The level of benefits provided depends on the member's length of service and salary at retirement age Every employee who has completed five years or more of service gets a gratuity on departure at 15 days salary (last drawn salary) for each completed year of service as per the provision of the Payment of Gratuity Act, 1972 with total ceiling on gratuity of Rs.2,000,000.

The following table sets out the funded status of the defined benefit schemes and the amount recognised in the financial statements:

(Amount in Lakhs)

1	**Table showing changes in present value of Obligation as on 31/03/2025**	**For the Year ended 31 March 2025**	**For the Year ended 31 March 2024**
	Present value of obligations at beginning of the year	11.50	7.92
	Interest Cost	0.82	0.60
	Current Service Cost	5.19	4.28
	Benefits paid		
	Past Service Cost		
	Actuarial (gain) / loss on obligation	1.84	(1.29)
	Present value of the obligation as at end of the year	19.35	11.50
2	**Table showing changes in the fair value of plan assets as on 31/03/2025**		
	Fair value of plan assets at beginning of year	-	-
	Expected return on plan assets	-	-
	Contributions	-	-
	Benefits Paid	-	-
	Actuarial (gain) / loss on Plan Assets	-	-
	Fair value of plan assets at the end of year	-	-
3	**Table showing fair value of Plan assets**		
	Fair value of plan assets at beginning of year	-	-
	Actual return on plan assets	-	-
	Contributions	-	-
	Benefits paid	-	-
	Fair value of plan assets at the end of year	-	-
	Funded status	-	-
	Excess of Actual over estimated return on plan assets	-	-
	(Actual rate of return = Estimated rate of return as ARD falls on 31st March)		
4	**Actuarial Gain/Loss recognised as on 31/03/2025**	**For the Year ended 31 March 2025**	**For the Year ended 31 March 2024**
	Actuarial (gain) / loss for the current period on obligations	-	-
	Actuarial (gain) / loss for the current period - plan assets	-	-
	Total Actuarial (gain) / loss for the current period	1.84	(1.29)
	Total Actuarial (gain) / loss recognized in the year	1.84	(1.29)

(Amount in Lakhs)

5	**The amounts to be recognized in the balance sheet and statements of profit and loss**		
	Present value of obligations as at the end of year	19.35	11.50
	Fair value of plan assets as at the end of the year	-	-
	Unfunded Status	19.35	11.50
	Net asset / (liability) recognized in balance sheet	19.35	11.50
6	**Expenses Recognised in statement of Profit and loss**		
	Current service cost	5.19	4.28
	Past Service Cost	-	-
	Interest Cost	0.82	0.60
	Expected return on plan assets		
	Opening Present Value Obligation	11.50	7.92
	Net Actuarial (gain) / loss recognized in the year	1.84	(1.29)
	Expenses Recognised in statement of Profit and loss	6.01	4.87
	Actuarial assumptions		
	Discount rate	6.80%	7.15%
	Expected return on plan assets		
	Salary escalation	10% p.a.	10% p.a.
	Mortality Rate	100% of IALM 2012-14	100% of IALM 2012-14
	Normal retirement age	60 yrs	60 yrs
	Withdrawal Rate	5%	5%

A quantitative analysis for significant assumption is as shown below:

Indian gratuity plan:

1	Particulars	31-Mar-25	31-Mar-24
	Assumptions -Discount rate		
	Sensitivity Level (a hypothetical increase / (decrease) by)	1.00%	1.00%
	Impact on defined benefit obligation -increase of sensitivity level	-11.40%	-11.80%
	Impact on defined benefit obligation -decrease of sensitivity level	13.60%	14.00%
	Assumptions -Future salary rates		
	Sensitivity Level (a hypothetical increase / (decrease) by)	1.00%	1.00%
	Impact on defined benefit obligation-increase of sensitivity level	13.10%	13.50%
	Impact on defined benefit obligation-decrease of sensitivity level	-11.20%	-11.60%
	Assumptions -Attrition rate		
	Sensitivity Level (a hypothetical increase / (decrease) by)	0.50%	0.50%
	Impact on defined benefit obligation-increase of sensitivity level	-7.00%	-8.40%
	Impact on defined benefit obligation-decrease of sensitivity level	9.50%	10.80%

Expected payment for future years (Amount in Lakhs)

2	Particulars	31-Mar-25	31-Mar-24
	Within the next 12 months (next annual reporting period)	0.53	0.03
	Between 2 and 5 years	3.43	2.05
	Between 6 and 10 years	10.86	7.70
	Beyond 10 years	38.02	24.39
	Total expected payments	**52.84**	**34.16**

30.4 Disclosure pursuant to Ind AS 36 "Impairment of Assets"

Based on review of the future discounted cash flows of the project facility, the recoverable amount is higher than the carrying amount and hence no provision for impairment is considered.

30.5 Major Components of Deferred Tax Liabilities and Deferred Tax Assets

The company is eligible for deduction under Section 80IA of the Income Tax Act, 1961 and the concession period of the Company's project falls within the tax holiday period as defined in Section 80IA. Since deferred tax on temporary difference between Accounting Income and Taxable Income that arise during the year is reversing during such tax holiday period and hence no Deferred Tax Assets/Liabilities is being created in the accounts

30.6 Disclosure of segment information pursuant to Ind AS 108 "Operating Segments"

The Company is engaged in the business of construction, operation and maintenance of road projects on a Build Operate Transfer basis in a single business segment. Hence reporting of operating segments does not arise. The Company does not have operations outside India. Hence, disclosure of geographical segment information does not arise.

30.7 Earning Per Share

The following reflects the income and share data used in the basic and diluted EPS computations:

Particulars	For the Year ended 31 March 2025	For the Year ended 31 March 2024
Profit attributable to equity holders of the parent for basic earnings	15,764.92	17,380.79
Weighted average number of equity shares for basic EPS	42,95,666	42,95,666
Weighted average number of equity shares adjusted for the effect of dilution	42,95,666	42,95,666
Face value per share	10	10
Basic earning per share	367.00	404.61
Diluted earning per share	367.00	404.61

30.8 Disclosure of related parties / related party transactions pursuant to Ind AS 24 "Related Party Disclosures"

a) List of related parties

Holding Entity: : National Investments & Infrastructure Fund

Companies under common control of the Holding Entity:
- : Athaang Infrastructure Private Limited
- : Athaang Infrastructure Investment Manager Private Limited
- : Athaang Dichpally Tollway Private Limited
- : Athaang Jammu Udhampur Highway Limited
- : Quazigund Expressway Private Limited
- : Kadu Tollway Private Limited

b) Key Management Personnel

Particulars	Designation	Transactions during the Year Y/N
Karthikeyan M	Director	No
Saurabh Jain	Director	No
Gopalakrishnan Krishnamurthy w e f 24 February 2024	Director	No

c) Related party transactions:

(Amount in Lakhs)

Nature of transaction	Particulars	As at 31 March 2025	As at 31 March 2024
Management Fees	Athaang Infrastructure Private Limited	524.75	725.71
Reimbursement of Expenditure	Athaang Infrastructure Private Limited	30.70	19.78
Reimbursement of Expenditure	Kashi Tollway Private Limited	-	3.43
Reimbursement of Expenditure	Athaang Dichpally Tollway Private Limited	7.38	-
Issue of ICD	Athaang Infrastructure Private Limited	-	18,700.00
Interest income on ICD	Athaang Infrastructure Private Limited	1,496.00	1,435.05
Payment of Dividend	National Investments & Infrastructure Fund	6,000.00	-

d) Amount Payable/(Receivable) related parties (net):

(Amount in Lakhs)

Particulars	As at 31 March 2025	As at 31 March 2024
Athaang Infrastructure Private Limited	21,508.39	20,003.52
Athaang Dichpally Tollway Private Limited	7.38	-

e) Terms and conditions of transactions with related parties

The sales to and purchases from related parties are made on terms equivalent to those that prevail in arm's length transactions. Outstanding balances at the year-end are unsecured and interest free for the year ended 31 March 2025. This assessment is undertaken each financial year through examining the financial position of the related party and the market in which the related party operates.

There is no provision for bad and doubtful debts to related parties with regard to outstanding expenses and there is no expense recognized in respect of bad and doubtful debts due from related parties.

30.9 Disclosure pursuant to Ind AS 116 "Leases"

The Company has not acquired any assets either under Finance lease or under Operating lease. Hence disclosures pertaining to Ind AS 116 - "Leases" are not applicable

30.10 Details of Auditors Remuneration:

(Amount in Lakhs)

Particulars	For the Year ended 31 March 2025	For the Year ended 31 March 2024
As Auditor		
- Statutory Audit Fees	20.65	11.80
TOTAL	20.65	11.80

30.11 Corporate Social Responsibility (CSR) :

During the Current year, the Company was required to spend an amount towards corporate social responsibility activities in accordance with Section 135 of the Companies Act, 2013

Gross Amount to be spent on CSR

Particulars	As at 31 March 2025	As at 31 March 2024
Average Net Profit of the Company for Last 3 preceding financial years	8,233.93	1,158.74
Amount to be spent as CSR during the year	164.68	23.17
Amount carried forward from previous years	23.17	-
Amount spent during the year	93.72	-
Amount yet to be spent during the year	94.13	23.17

30.12 Disclosure Under Appendix D to Ind AS 115

Description of the arrangement	Significant terms of the arrangement	
Design, Engineering, Finance, Construction, Operation and Maintenance of Access Controlled Highway Project of Hyderabad -Bangalore from Km 534.720 to Km 556.840of NH-7,in the state of Karnataka on "Design, Build, Operate and Transfer (DBOT)" Toll basis	Period of the Concession	A period of 20 years from Appointed Date- 25 April 2011
	Remuneration	Toll Collection
	Conditions of Pricing	As per Bid document
	Infrastructure return at the end of the concession period	Being BOT project , the project assets have to be transferred at the end of concession period
	Changes in the arrangement occurring during the period	Any changes in the arrangement like change in the Shareholding etc need approval from the NHAI.
	Classification of Service Arrangement	The service arrangement has been classified as a Service Concession Arrangement for a PPP project as per Appendix D to Ind AS 115.
	Renewal and termination points	End Date of Concession Period- 16 Jan 2032
	Other Rights and Obligations	Major Maintainance to be done over Concession Period

30.13 Fair Values

Fair value measurement include both the significant financial instruments stated at amortised cost and at fair value in the statement of financial position The carrying values of current financial instruments approximate their fair values due to the short-term maturity of these instruments and the disclosures of fair value are not made when the carrying amount of current financial instruments is a reasonable approximation of the fair value

30.14 Financial Instruments

The carrying value and fair value of financial instruments by categories as of March 31, 2025 are as follows :

(Amount in Lakhs)

Particulars	At amortised costs	At fair value through profit and loss	At fair value through OCI	Total carrying value	Total fair value
Assets					
Investment		715.07			715.07
Trade Receivable	128.63			128.63	
Cash and cash equivalents	317.64			317.64	
Other financial assets	21,583.80			21,583.80	
Total	**22,030.07**	**715.07**	**-**	**22,030.07**	**715.07**
Liabilities					
Borrowings	44,351.04			44,351.04	
Trade payables	94.72			94.72	
Other financial liabilities	170.54			170.54	
Total	**44,616.29**	**-**	**-**	**44,616.29**	**-**

The carrying value and fair value of financial instruments by categories as of March 31, 2024 are as follows :

(Amount in Lakhs)

Particulars	At amortised costs	At fair value through profit and loss	At fair value through OCI	Total carrying value	Total fair value
Assets					
Investment		13.08			13.08
Trade Receivable	219.22			219.22	
Cash and cash equivalents	550.61	-	-	550.61	
Other financial assets	20,124.94	-	-	20,124.94	
Total	20,894.77	13.08	-	20,894.77	13.08
Liabilities					
Borrowings	52,575.65	-	-	52,575.65	
Trade payables	212.59	-	-	212.59	
Other financial liabilities	47.71	-	-	47.71	
Total	52,835.94	-	-	52,835.94	-

30.15 Financials risk management objectives & policies

The risk management policies of the Company are established to identify and analyse the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company's activities.

The Management has overall responsibility for the establishment and oversight of the Company's risk management framework

In performing its operating, investing and financing activities, the Company is exposed to the Credit risk, Liquidity risk and Market risk

30.16 'Credit risk on financial assets

Credit risk is the risk of financial loss to the company if a customer or counter-party fails to meet its contractual obligations.

The Company is exposed to credit risk from its Financing activities, primarily Inter Company receivables from Related Parties, and fixed deposits with banks. The company generally does not have trade receivables as collection of toll income coincide as and when the traffic passes through toll - plazas except for Trade Receivables primarily from government authority i.e. NHAI.

'Other financial assets

The Company maintains exposure to cash equivalents. The company has set counter-parties limits based on multiple factors including financial positions, credit ratings, etc.

The company's maximum exposure to credit risk as at 31 March 2025 & 31 March 2024 is the carrying value of each class of financial assets.

30.17 Market Risk

The Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: Currency risk, Interest risk and price risk.

i) Foreign Currency Risk

Foreign currency risk is the risk that fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rate

The company is not exposed to foreign currency risk as it has no borrowing in foreign currency

ii) Interest rate risk

Interest rate risk is the risk that fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates

The interest risk arises to the company mainly from long term borrowings with variable rates. The company measures risk through sensitivity analysis

The company's exposure to interest rate risk due to variable interest rate borrowings is a below:

Particulars	As at 31st March 2025	As at 31st March 2024
	Amount in Lakhs	Amount in Lakhs
Senior Debt from Banks - Variable rate borrowings	35,384.05	42,053.05

Sensitivity analysis based on average senior Debt

Particulars	Impact on profit /loss after tax	
	For the Year ended 31 March 2025	For the Year ended 31 March 2024
	Amount in Lakhs	Amount in Lakhs
Increase or decrease in interest rate by 25 base points	88.46	105.13

Note: Profit will increase in case of decrease in interest rate and vice versa

iii) Price risk

Price risk is the risk that the fair value or future cash flows of a financials instrument will fluctuate because or changes in market prices (other than those arising from interest rate risk or currency risk) The company is not exposed to Price risk in current year is 715.07 lakhs (PY INR 13 08 Lakh)

iv) Liquidity risk

Liquidity risk is the risk that the Company may not be able to meet its present and future cash and collateral obligations without incurring unacceptable losses. The Company's objective is to, at all times maintain optimum levels of liquidity to meet its cash and collateral requirements. The Company closely monitors its liquidity position and deploys a robust cash management system. It maintains adequate sources of financing including debt from banks at an optimised cost.

The Company maximum exposure to credit risk for the components of the balance sheet at 31st March, 2025 & 31st March 2024 is the carrying amounts. The liquidity risk is managed on the basis of expected maturity dates of the financial liabilities. The average credit period taken to settle trade payables is about 30 to 90 days. The other payables are with short-term durations The carrying amounts are assumed to be a reasonable approximation of fair value. The following table analysis financial liabilities by remaining contractual maturities:

Particulars	On demand	Less than 3 months	3 to12 months	2 to 5 years	>5 years	Total
	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs
Year ended 31 March 2025						
Borrowings		2,473.63	25,908.19	15,969.22	-	44,351.04
Trade and other payables			94.72			94.72
Other financial liabilities			28.22	142.32		170 54
Total	-	**2,473.63**	**26,031.13**	**16,111.53**	-	**44,616.29**

Particulars	On demand	Less than 3 months	3 to12 months	2 to 5 years	>5 years	Total
	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs
Year ended 31st March 2024						
Borrowings	-	2,066.45	33,331.93	17,177.26	-	52,575.65
Trade and other payables	-		396.25	-	-	396.25
Other financial liabilities	-	-	11.97	35.73	-	47.71
Total	-	**2,066.45**	**33,740.15**	**17,212.99**	-	**53,019.61**

31. Capital Management

For the purpose of the Company's capital management, capital includes issued equity capital, share premium and all other equity reserves attributable to the equity holders of the Company The primary objective of the Company's capital management is to maximise the shareholder value.

The Company manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Company may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. The Company monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Company's policy is to keep optimum gearing ratio. The Company includes within net debt, interest bearing loans and borrowings, trade and other payables, less cash and cash equivalents, excluding discontinued Operations.

Particulars	As at 31 March 2025	As at 31 March 2024
Borrowings	44,351.04	52,575.65
Trade payables	94.72	212.59
Other financial liabilities	170.54	47.71
Less: Cash & Cash Equivalents	317.64	550.61
Net debt	**44,298.65**	**52,285.32**
Total equity	33,863.48	24,100.39
Total member's capital	**33,863.48**	**24,100.39**
Capital and net debt	**78,162.13**	**76,385.71**
Gearing ratio (%)	**56.68%**	**68.45%**

32. Ratios

Sr. No.	Ratio	Numerator	Denominator	As at March 31, 2025	As at March 31, 2024	% change	Reason for variance/ non applicability
a	Current ratio (in times)	Current Assets	Current Liabilities	2.08	1.83	13.99%	N/A
b	Debt-Equity Ratio (in times)	Total Debt	Shareholder's Equity	1.31	2.18	-39.96%	Decrease is due to repayment of Term loan and Debt
c	Debt Service Coverage Ratio (in times)	Earnings available for debt service	Debt Service	2.06	2.42	-15.00%	N/A
d	Return on Equity Ratio (in %)	Net Profits after taxes	Average Shareholder's Equity	54.40%	112.79%	-51.77%	Decrease in Net profit for current year as compared to profit in previous year
e	Net Capital Turnover Ratio (in times)	Net Sales	Average Working Capital	3.35	5.61	40.26%	Increase in other financial assets during the current year
f	Net Profit Ratio (in %)	Net Profit	Net Sales	48.68%	57.74%	15.68%	N/A
g	Return on Capital Employed (in %)	Earning before interest and taxes	Capital Employed*	26.39%	29.36%	-10.10%	N/A

* Capital Employed = Tangible Net Worth + Total Debt + Deferred Tax Liability

33. Additional disclosures pursuant to amendments made in Companies Act, 2013.

i) The Company has no immovable property whose title deeds are not held in the name of the Company and it also has no such immovable property jointly held with others.

ii) The Company has not revalued its property, plant and equipment.

iii) No proceedings have been initiated or pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (45 of 1988) and the rules made thereunder, for the financial year 2024-25

iv) The Company is not declared as wilful defaulter by any bank or financial Institution or other lender

v) The Company has not entered into any transactions with companies which are struck off under section 248 of the Companies Act, 2013 or section 560 of Companies Act, 1956 during the financial year ended on 31 March 2025.

vi) During the year Company has not advanced or loaned or invested funds (either borrowed funds or share premium or any other sources or kind of funds) to any other person(s) or entity(ies) , including foreign entities (Intermediaries) with the understanding (whether recorded in writing or otherwise) that the Intermediary shall :

vii) (a) directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company (Ultimate Beneficiaries) or

(b) provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries

During the year Company has not received any fund from any person(s) or entity(ies) , including foreign entities (Funding Party) with the understanding (whether recorded in writing or otherwise) that the company shall

viii) (a) directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party (Ultimate Beneficiaries) or

(b) provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

ix) The Company has no such transaction which are not recorded in the books of accounts during the year and also there are not such unrecorded income and related assets related to earlier years which have been recorded in the books of account during the year

x) The Company has not traded or invested in Crypto currency or Virtual Currency during the financial year.

xi) The Company does not have any charges or satisfaction which are yet to be registered with ROC beyond the statutory period.

34. Previous year figures have been regrouped/ rearranged wherever necessary

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jagroop Singh Bedi
Partner
Membership No. 601789

Place: Mumbai
Date : 30.04.2025

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Director
DIN: 06560170

Karthikeyan Muthukumaravelu
Director
DIN: 08609724

INDEPENDENT AUDITOR'S REPORT

To the Members of **ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED**

Report on the Audit of Ind AS Financial Statements

Opinion

We have audited the Ind AS Financial Statements of Athaang Devanahalli Tollway Private Limited ("the Company"), which comprise the Balance Sheet as at March 31, 2024, and the Statement of Profit and Loss, including the Statement of Other Comprehensive Income, the Statement of Cash Flows and the Statement of Changes in Equity for the year then ended, and notes to the Financial Statements, including a summary of material accounting policies and other explanatory information for the year ended on that date.

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid Ind AS Financial Statements give the information required by the Companies Act, 2013, as amended ("the Act") in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India, of the state of affairs of the Company as at March 31, 2024, and its profit including Other Comprehensive Income, its Cash Flows and the Changes in Equity for the year ended on that date.

Basis for Opinion

We conducted our audit of the Ind AS Financial Statements in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in Auditor's Responsibilities for the Audit of the Ind AS Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the Ind AS financial statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Ind AS Financial Statements.

Other Information

The Company's Board of Directors is responsible for the other information. The other information comprises the Board's Report ("other information"), but does not include the Ind AS Financial Statements and our auditor's report thereon.

Our opinion on the Ind AS Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Ind AS Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Ind AS Financial Statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Management's Responsibility for the Ind AS Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Ind AS Financial Statements that give a true and fair view of the financial position, financial performance including Other Comprehensive Income, Cash Flows and Changes in Equity of the Company in accordance with the accounting principles generally accepted in India, including the accounting Standards (Ind AS) specified under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules 2015, as amended. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate implementation and maintenance of accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the Ind AS Financial Statement that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the Ind AS Financial Statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Ind AS Financial Statements

Our objectives are to obtain reasonable assurance about whether the Ind AS Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with Standard on Auditing (SA's) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Ind AS Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.

Auditor's Responsibilities for the Audit of the Ind AS Financial Statements *(Continued)*

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Ind AS Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure, and content of the Ind AS Financial Statements, including the disclosures and whether the Ind AS Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the "Annexure 1" a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.

2. As required by Section 143(3) of the Act, we report that:

   (a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit;

   (b) In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books;

   (c) The Balance Sheet, the Statement of Profit and Loss including the Statement of Other Comprehensive Income, and the Statement of Cash Flow and Statement of Changes in Equity dealt with by this Report are in agreement with the books of account;

   (d) In our opinion, the aforesaid Ind AS Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Companies (Indian Accounting Standards) Rules,2015, as amended;

Report on Other Legal and Regulatory Requirements (*Continued*)

(e) On the basis of the written representations received from the directors as on March 31, 2024, taken on record by the Board of Directors, none of the directors is disqualified as on March 31, 2024 from being appointed as a director in terms of Section 164(2) of the Act;

(f) With respect to the adequacy of the internal financial controls over financial reporting of the Company with reference to these Ind AS Financial Statements and the operating effectiveness of such controls, refer to our separate Report in "Annexure 2";

(g) In Our opinion and to the best of our information and according to explanations given to us, the provisions of Section 197 of the Act are not applicable to the company for the year ended March 31, 2024.

(h) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

i. The Company has disclosed the impact of pending litigations on its financial position in its financial statements – Refer Note 30.2 to the financial statements.

ii. The Company has made provision, as required under the applicable law or accounting standards for material foreseeable losses

iii. There were no amounts which were required to be transferred, to the Investor Education and Protection Fund by the Company.

iv. (a) The Management has represented that, to the best of it's knowledge and belief, as disclosed in the note 33 (vii) to the financial statements, during the year no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other person or entity, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(b) The Management has represented, that, to the best of it's knowledge and belief, as disclosed in the note 33 (viii) to the financial statements, during the year no funds have been received by the Company from any person or entity, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(c) Based on the audit procedures performed that have been considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (i) and (ii) of Rule 11(e) contain any material misstatement.

Report on Other Legal and Regulatory Requirements (*Continued*)

v. The Company has not declared or paid any equity dividend during the year

vi. Based on our examination which included test checks, the company has used an accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility and the same has operated throughout the year for all relevant transactions recorded in the software. Further, during the course of our audit we did not come across any instance of audit trail feature being tampered with.

As proviso to Rule 3(1) of the Companies (Accounts) Rules, 2014 is applicable from April 1, 2023, reporting under Rule 11(g) of the Companies (Audit and Auditors) Rules, 2014 on preservation of audit trail as per the statutory requirements for record retention is not applicable for the financial year ended March 31, 2024.

For **Nangia & Co. LLP**
Chartered Accountants
FRN No. 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 24601788BKFMWP7737
Place: Mumbai
Date: 27 June 2024

Annexure 1 referred to in paragraph 1 under the heading 'Report on other legal and regulatory requirements' of our report of even date.

Re: Athaang Devanahalli Tollways Private Limited ("the Company")

(i) (a) (A) The Company has maintained proper records showing full particulars, including quantitative details and the situation of Property, Plant and Equipment.

(i) (B) The Company has maintained proper records showing full particulars of intangible assets.

(b) All Property, Plant and Equipment were physically verified by the management in the year in accordance with a planned programme of verifying them every year which, in our opinion, is reasonable having regard to the size of the Company and the nature of its assets. Pursuant to this programme all property, plant and equipment were physically verified during the year and no material discrepancies were noticed on such verification.

(c) According to information and explanations given to us and on the basis of our examination of the records of the Company, the title deeds of all the immovable properties (other than properties where the company is the lessee and the lease agreements are duly executed in favour of the lessee) are held in the name of the Company.

(d) The Company has not revalued its Property, Plant and Equipment (or Intangible assets) during the year ended March 31, 2024.

(e) According to information and explanations given to us, there are no proceedings initiated or are pending against the Company for holding any benami property under the Prohibition of Benami Property Transactions Act, 1988 and rules made thereunder.

(ii) (a) The Company's business does not require maintenance of inventories and, accordingly, the requirement to report on clause 3(ii)(a) of the Order is not applicable to the Company.

(b) The Company has not been sanctioned any working capital limits in excess of five crore rupees in aggregate from banks and financial institutions during any point of time of the year on the basis of security of current assets. Accordingly, the requirement to report on Clause 3(ii)(b) of the Order is not applicable to the Company.

(iii) (a) During the year the Company has provided loans to the company as follows:

Particulars	Loans (INR)
Aggregated amount granted during the year:	
Other:	
(a) Athaang Infrastructure Private Limited	1,87,00,00,000
Balance Outstanding as at balance sheet date:	
Other:	
(a) Athaang Infrastructure Private Limited	1,87,00,00,000

(b) During the year the investments made, guarantees provided, security given and the terms and conditions of the grant of all loans and advances in the nature of loans and guarantees to companies, firms, Limited Liability Partnerships or any other parties are not prejudicial to the Company's interest.

(c) In respect of a loan granted to company the schedule of repayment of principal and payment of interest has not been stipulated in the agreement. Hence, we are unable to make a specific comment on the regularity of repayment of principal and payment of interest in respect of such loan.

(d) There are no amounts of loans and advances in the nature of loans granted to companies, firms, limited liability partnerships or any other parties which are overdue for more than ninety days.

(e) There were no loans or advance in the nature of loan granted to companies which was fallen due during the year, that have been renewed or extended or fresh loans granted to settle the overdues of existing loans given to the same parties.

(f) As disclosed in Note 33(iii) to the financial statements during the year, the Company has granted loans, either repayable on demand. Of these following are the details of the aggregate amount of loans or advances in the nature of loans granted to related parties as defined in clause (76) of section 2 of the Companies Act, 2013

Particulars	Related Party
Aggregate amount of loans in nature of loans (Repayable on demand)	1,87,00,00,000
Percentage of loans in nature of loans to the total loans	100%

(iv) According to the information and explanations given to us and on the basis of our examination of records, The Company has given loans to a Company in which the Director is interested and which is in compliance with section 185 of the Companies Act. Further, according to the information and explanations given to us There are no loans, investments, guarantees, or security in respect of which provisions of sections 186 of the Companies Act, 2013 are applicable

(v) The Company has neither accepted any deposits from the public nor accepted any amounts which are deemed to be deposits within the meaning of sections 73 to 76 of the Companies Act and the rules made thereunder, to the extent applicable. Accordingly, the requirement to report on clause 3(v) of the Order is not applicable to the Company.

(vi) We have broadly reviewed the books of account maintained by the Company pursuant to the rules made by the Central Government for the maintenance of cost records under section 148(1) of the Companies Act, 2013, and are of the opinion that prima facie, the specified accounts and records have been made and maintained. We have not, however, made a detailed examination of the same.

(vii) (a) According to the information and explanations given to us, the Company have been generally regular in depositing with appropriate authorities undisputed statutory dues including goods and services tax, provident fund, employee's state insurance, duty of customs, income-tax and other statutory dues applicable to it. The provisions relating to sales-tax, duty of excise and value added tax are currently not applicable to Company. According to the information and explanations given to us and based on audit procedures

performed by us, no undisputed amounts payable in respect of these statutory dues were outstanding, at the year end, for a period of more than six months from the date they became payable.

(b) According to records of the Company, the dues of income-tax, sales-tax, duty of custom, duty of excise, value added tax, cess and other statutory dues on account of dispute, are as follow

`Name of the statute	Nature of the dues	Amount (Rs.in lakhs)	Amount paid under protest (Rs.in lakhs)	Period to which the amount relates	Forum where the dispute is pending
Income Tax Act, 1961	Income Tax	16.57	-	FY - 2011-12 AY - 2012-13	Commissioner of Income Tax Appeals (CIT A)
Income Tax Act, 1961	Income Tax	402.15	86.06	FY - 2012-13 AY - 2013-14	Commissioner of Income Tax Appeals (CIT A)
Income Tax Act, 1961	Income Tax	1,034.35	-	FY- 2013-14 AY - 2014-15	Commissioner of Income Tax Appeals (CIT A)

(viii) According to the information and explanations given to us, the Company has not surrendered or disclosed any transaction, previously unrecorded in the books of account, in the tax assessments under the Income Tax Act, 1961 as income during the year.

(ix) (a) According to the information and explanations given to us, the Company has not defaulted in repayment of loans or other borrowings or in the payment of interest thereon to any lender.

(b) The Company has not been declared willful defaulter by any bank or financial institution or government or any government authority.

(c) According to the information and explanations given to us, term loans were applied for the purpose for which the loans were obtained.

(d) The Company did not raise any funds on short term basis during the year hence, the requirement to report on clause 3(ix)(d) of the Order is not applicable to the Company.

(e) The Company does not have any subsidiary, associate or joint venture. Accordingly, the requirement to report on clause 3(ix)(e) of the Order is not applicable to the Company.

(f) The Company does not have any subsidiary, associate or joint venture. Accordingly, the requirement to report on Clause 3(ix)(f) of the Order is not applicable to the Company.

(x) (a) According to the information and explanations are given to us, the Company has not raised any money by way of initial public offer or further public offer and hence, the requirement to report on clause 3(x)(a) of the Order is not applicable to the Company.

(b) According to the information and explanations given to us, the Company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year and hence, the requirement to report on clause 3(x)(b) of the Order is not applicable to the Company.

(xi) (a) According to the information and explanations given to us, no fraud by the Company or on the Company has been noticed or reported during the year.

(b) During the year, no report under sub-section (12) of section 143 of the Companies Act, 2013 has been filed by the secretarial auditor or by us in Form ADT – 4 as prescribed under Rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government.

(c) As represented to us by the management, there are no whistleblower complaints received by the company during the year.

(xii) The Company is not a Nidhi Company as per the provisions of the Companies Act, 2013. Therefore, the requirement to report on clause 3(xii)(a), (b) and (c) of the Order is not applicable to the Company.

(xiii) According to the information and explanations given to us, transactions with the related parties are in compliance with sections 177 and 188 of the Companies Act, 2013 where applicable and the details have been disclosed in the notes to the financial statements, as required by the applicable accounting standards.

(xiv) (a) According to the information and explanations given to us. The Company has an internal audit system commensurate with the size and nature of its business.

(b) According to the information and explanations given to us, the internal audit reports of the Company issued till the date of the audit report, for the period under audit have been considered by us.

(xv) According to the information and explanations given to us, the Company has not entered into any non-cash transactions with its directors or persons connected with its directors and hence requirement to report on clause 3(xv) of the Order is not applicable to the Company.

(xvi) (a) The provisions of section 45-IA of the Reserve Bank of India Act, 1934 (2 of 1934) are not applicable to the Company. Accordingly, the requirement to report on clause 3(xvi)(a) of the Order is not applicable to the Company.

(b) The Company has not conducted any Non-Banking Financial activities or Housing Finance activities without obtaining a valid Certificate of Registration (CoR) from the Reserve Bank of India as per the Reserve Bank of India Act, 1934.

(c) The Company is not a Core Investment Company as defined in the regulations made by Reserve Bank of India. Accordingly, the requirement to report on clause 3(xvi)(c) of the Order is not applicable to the Company.

(d) There is no Core Investment Company as a part of the Group, hence, the requirement to report on clause 3(xvi)(d) of the Order is not applicable to the Company.

(xvii) According to information and explanation provided to us the Company has not incurred any cash losses in the current and immediately preceding financial year.

(xviii) There has been no resignation of the statutory auditors during the year and accordingly, requirement to report on Clause 3(xviii) of the Order is not applicable to the Company.

(xix) On the basis of the financial ratios disclosed in Note 32 to the financial statements, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our examination of the evidence supporting the assumptions, nothing has come to our attention, which causes us to believe that any material uncertainty exists as on the date of the audit report that Company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date. We, however, state that this is not an assurance as to the future viability of the Company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the Company as and when they fall due.

(xx) (a) In respect of other than ongoing projects, there are no unspent amounts that are required to be transferred to a fund specified in Schedule VII of the Companies Act (the Act), in compliance disclosed in note with second proviso to sub section 5 of section 135 of the Act. This matter has been 30.11 to the financial statements.

(b) All amounts that are unspent under section (5) of section 135 of Companies Act, pursuant to any ongoing project, has been transferred to special account in compliance of with provisions of sub section (6) of section 135 of the said Act. This matter has been disclosed in note 30.11 to the financial statements.

(xxi) The Company does not prepare consolidated financial statements, hence the requirement to report on clause 3(xxi) of the Order is not applicable to the Company.

For **Nangia & Co. LLP**
Chartered Accountants
FRN No. 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 24601788BKFMWP7737

Place: Mumbai
Date: 27 June 2024

"ANNEXURE 2" TO THE INDEPENDENT AUDITOR'S REPORT OF EVEN DATE ON THE IND AS FINANCIAL STATEMENTS OF ATHAANG DEVANAHALLI TOLLWAYS PRIVATE LIMITED

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

To
The Member of
Athaang Devanahalli Tollways Private Limited

We have audited the internal financial controls over the financial reporting of Athaang Devanahalli Tollways Private Limited ("the Company") as of March 31, 2024 in conjunction with our audit of the Ind AS Financial Statements of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India ("ICAI"). These responsibilities include the design, implementation, and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to the company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by the Institute of Chartered Accountants of India and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the ICAI. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the Financial Statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system over financial reporting.

Meaning of Internal Financial Controls Over Financial Reporting

A company's internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Ind AS Financial Statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of Ind AS Financial Statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the Ind AS Financial Statements.

Inherent Limitations of Internal Financial Controls Over Financial Reporting

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at March 31, 2024 based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the ICAI.

For **Nangia & Co. LLP**
Chartered Accountants
FRN No. 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 24601788BKFMWP7737

Place: Mumbai
Date: 27 June 2024

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164

BALANCE SHEET AS AT 31 MARCH 2024

CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	Note No.	As at 31 March 2024	As at 31 March 2023
ASSETS			
Non-Current Assets			
a) Property, plant and equipment	5	152.61	112.15
b) Intangible assets	6	40,039.94	45,719.92
c) Financial Assets			
(i) Investments	7	13.08	10,743.55
(ii) Other Financial Asset	8	18,733.55	106.07
d) Other non-current assets	9	4,108.09	1,665.16
		63,047.26	**58,346.84**
Current Assets			
Inventories			
a) Financial Assets			
(i) Trade receivables	10	219.22	219.22
(ii) Cash and cash equivalents	11(a)	550.60	244.51
(iii) Bank balances other than above	11(b)	15,235.50	10,950.00
(iv) Other Financial Asset	12	1,391.39	89.24
b) Other current assets	13	58.28	50.32
		17,454.99	**11,553.29**
TOTAL		**80,502.25**	**69,900.13**
EQUITY AND LIABILITIES			
Equity			
a) Equity share capital	14	429.57	429.57
b) Other Equity	15	23,670.83	6,288.73
		24,100.40	**6,718.30**
Non-Current Liabilities			
a) Financial Liabilities			
(i) Borrowings	16	44,354.83	52,583.60
(ii) Other Financial Liabilities	17	35.73	56.67
b) Provisions	18	2,468.54	1,813.99
		46,859.10	**54,454.27**
Current Liabilities			
a) Financial Liabilities			
(i) Borrowings	19	8,220.81	6,912.33
(ii) Trade payables			
- total outstanding dues of micro and small enterprises		183.66	
- total outstanding dues of creditor other than micro and small enterprises	20	212.59	139.19
(iii) Other Financial Liabilities	21	11.97	49.23
b) Other current liabilities	22	486.33	463.08
c) Provisions	23	427.39	1,163.77
		9,542.75	**8,727.61**
TOTAL		**80,502.25**	**69,900.13**

Material accounting policies & the accompanying notes form an integral part of the financial statements

Note No.
1-34

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaiprest Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date : 27-6-24

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Additional Director
DIN: 06560170

Karthikeyan Muthukumaravelu
Director
DIN: 08609724

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164

STATEMENT OF PROFIT AND LOSS FOR THE YEAR ENDED 31 MARCH 2024

CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	Notes	For the Year ended 31 March 2024	For the Year ended 31 March 2023
Revenue from Operations	24	30,105.39	23,712.43
Other Income	25	2,299.49	1,322.67
Total Income		**32,404.88**	**25,035.10**
Expenses			
Operating and Maintenance Expenses	26	2,868.59	3,819.08
Employee Benefit Expenses	27	223.55	233.43
Finance Costs	28	4,497.28	5,622.71
Depreciation and Amortization Expenses	5&6	5,741.07	5,755.12
Other Expenses	29	1,060.77	1,096.56
Total Expenses		**14,391.26**	**16,526.90**
Profit / (loss) before exceptional items and tax		18,013.62	8,508.20
Exceptional Items		-	-
Profit / (loss) before tax		18,013.62	8,508.20
Tax expense:			
(1) Current tax		3,181.91	1,486.77
(2) MAT credit		(2,549.10)	(1,345.39)
(3) Deferred tax			
Profit / (loss) for the Period /Year		**17,380.81**	**8,366.82**
Other Comprehensive Income (Net of Taxes)			
A (i) Items that will not be reclassified to profit or loss:			
Re-measurements of defined benefit plans		1.29	1.23
B (i) Items that will be reclassified to profit or loss			-
Total Comprehensive Income for the Period/Year		**1.29**	**1.23**
Profit (Loss) and other comprehensive for the Period/Year		**17,382.10**	**8,368.06**
Earnings per equity share of Rs. 10 Each			
(1) Basic	30.7	**404.61**	**194.77**
(2) Diluted		**404.61**	**194.77**

Material accounting policies & the accompanying notes form an integral part of the financial statements — **Note No. 1-34**

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date : 27/6/24

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Additional Director
DIN: 06560170

Karthikeyan Muthukumaraswamy
Director
DIN: 08609724

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164

Cash Flow for the Year ended 31 March 2024

CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	For the Year ended 31 March 2024	For the Year ended 31 March 2023
A.Cash flow from Operating Activities:		
Net profit for the year After tax	17,380.81	8,366.82
Income From Mutual Funds	(0.08)	(515.92)
Interest Income on Fixed Deposit	(663.30)	(209.67)
Depreciation& Amortisation	5,741.07	5,755.12
Finance Costs	4,445.43	5,565.90
Operating Profit before working capital changes	**26,903.93**	**18,962.27**
Changes in other accounts affecting operations:		
(Increase)/decrease in Other Non-Current assets	(2,442.93)	(1,420.42)
(Increase)/decrease in Trade Receivables	-	(86.00)
(Increase)/decrease in Other Current Financial assets	(1,302.15)	(22.92)
(Increase)/decrease in Other Current Assets	(7.97)	(10.74)
Increase/(decrease) in other financial Liabilities	(20.94)	13.11
Increase/(decrease) in Provisions	(80.54)	1,287.40
Increase / (Decrease) in trade payables	257.06	(10.66)
Increase / (Decrease) in other (current) Financial Liabilities	(37.26)	(175.23)
Increase / (Decrease) in other current Liabilities	23.25	(124.15)
Cash generated from /(used for) Operating Activities	**23,292.45**	**18,412.65**
Net cash generated/(used) from Operating Activities	**23,292.45**	**18,412.65**
B.Cash flow from Investing Activities:		
Purchase of Fixed Assets / Intangible Assets	(101.54)	(68.39)
Investment of Mutual Fund	(2,001.60)	(8,996.94)
Redemption of Mutual Fund	12,732.08	11,551.99
Invested in Fixed Deposit(net)	(4,212.98)	(7,435.05)
ICD to related party	(18,700.00)	-
Income From Mutual Funds	0.08	-
Interest Income on Fixed Deposit	663.30	234.62
Net Cash used in Investing Activities	**(11,620.67)**	**(4,713.77)**
C.Cash flow from Financing Activities:		
(Repayment) to long term borrowings	(6,920.29)	(6,915.84)
Issue/(Repayment) of Optional Convertible Debenture	-	(3,500.00)
Short Term Borrowings Paid	-	(17,172.33)
Interest Paid	(4,445.43)	(5,590.85)
Net Cash from Financing Activities	**(11,365.71)**	**(33,179.02)**
Increase/(Decrease) in cash and cash equivalents(A+B+C)	306.07	(19,480.11)
Add: Cash and cash equivalents at the beginning of the year	244.51	19,724.62
Cash and cash equivalents at the end of the Year	**550.60**	**244.51**

1.Cash Flow Statement has been prepared under the Indirect Method as set out in the Ind AS 7 "Cash Flow Statements"

2.Cash and Cash Equivalents represent cash and bank balances.

Particulars	As at 31 March 2024	As at 31 March 2023
Cash on hand	12.47	8.73
Balances with Banks in Current Accounts	538.14	235.75
Prepaid Card	0.00	0.03
TOTAL	**550.60**	**244.51**

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002591C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 401783

Place: Mumbai
Date : 27.6.24

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Additional Director
DIN: 06560170

Karthikeyan Muthukumaraswamy
Director
DIN: 08609724

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164
STATEMENT OF CHANGES IN EQUITY FOR THE PERIOD ENDING 31 MARCH 2024
CIN No. U45203TG2010PTC067113

(A) Equity Share Capital **(Amount in lakhs)**

Particulars	Amount
Balance at the beginning of April 1, 2022	429.57
Changes in equity share capital during the year	-
Balance at the end of Mar 31, 2023	**429.57**
Balance at the beginning of April 1, 2023	429.57
Changes in equity share capital during the Period	-
Balance at the end of 31 March 2024	**429.57**

(B) Other Equity

(Amount in lakhs)

Particulars	Securities Premium Reserve	Retained Earnings	Debenture Redemption Reserve	Total
Balance as at March 31, 2022	**12,428.43**	**(14,507.76)**	**-**	**(2,079.33)**
Profit/Loss for the year	-	8,368.06	-	8,368.06
Total Comprehensive Income for the year	-	-	-	-
Transfer (from)/to DRR		(1,202.81)	1,202.81	-
Balance as at March 31, 2023	**12,428.43**	**(7,342.50)**	**1,202.81**	**6,288.73**
Profit/Loss for the year		17,380.81		17,380.81
Total Comprehensive Income for the year		1.29		1.29
Transfer (from)/to DRR		(1,065.63)	1,065.63	-
Balance as at 31 March 2024	**12,428.43**	**8,973.98**	**2,268.43**	**23,670.83**

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date : 27.6.24

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Additional Director
DIN: 06560170

Karthikeyan Muthukumaraswamy
Director
DIN: 08609724

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE PERIOD ENDED 31 MARCH 2024

1. Background and Corporate Information

The Company had been granted the Concession by National Highway Authority of India (Under the Ministry of Road Transport & Highways of Government of India) for "Design, Engineering, Finance, Construction, Operation and Maintenance of operation and maintenance of 6 lane – 22.12 km stretch from km 534.720 (near Hebbal) to km 556.840 (near Bengaluru International Airport) of Hyderabad-Bengaluru section on NH-7 in the state of Karnataka, on Design, Build, Finance, Operate and Transfer ("DBFOT") basis. The construction of Project Road was completed and company got right to commence Commercial operation on May 01, 2014. During FY 2021, 100% ownership of the company was acquired by National Investment & Infrastructure Fund on 29th Sep 2020. Subsequently, name of company was changed from Essel Devanahalli Tollway Private Limited to Athaang Devanahalli Tollway Private Limited. With effect from 3rd October 2022, the Registered office of company has been shifted to NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164, India.

The Ind AS financial statements were authorised and approved for issue by Board of Directors on 27th June 2024.

2. Basis of preparation of Financial Statements

The Ind AS financial statements of the Company have been prepared in accordance with Indian Accounting Standards (Ind AS) as notified under the Companies (Indian Accounting Standards) Rules, 2015 (as amended) and presentation requirements of Division II of Schedule III to the Companies Act, 2013. The financial statements have been prepared under the historical cost convention, as modified by the application of fair value measurements required or allowed by relevant Accounting Standards. Accounting policies have been consistently applied to all periods presented, unless otherwise stated

The financial statements are presented in Indian Rupees (INR) and all values are converted to the nearest lakhs, except when otherwise indicated

a. Statement of compliance

These financial statements of the Company have been prepared in accordance with Indian Accounting Standards as per the Companies (Indian Accounting Standards) Rules, 2015 as amended and notified under Section 133 of the Companies Act, 2013 and the other relevant provisions of the Act.

b. Use of judgements and estimates

The preparation of the Ind AS financial statements in conformity with Ind AS requires management to make judgements, estimates and assumptions that affect the reported amounts of Income, expenses, assets and liabilities and the disclosure of contingent liabilities. However, Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

Estimates and underlying assumptions are reviewed at each reporting date. Any revision to accounting estimates and assumptions are recognized prospectively i.e. recognized in the period in which the estimate is revised, and future periods affected.

(i) Property Plant and Equipment/ Intangible Assets

Estimates are involved in determining the cost attributable to bringing the assets to the location and condition necessary for it to be capable of operating in the manner intended by the management. Property, Plant and Equipment/Intangible Assets are depreciated/ amortised over their estimated useful life, after taking into account estimated residual value. Management reviews the estimated useful life and residual values of the assets annually in order to determine the amount of depreciation/ amortisation to be recorded during any reporting period. The useful life and residual values are based on the Company's historical experience with similar assets and take into account anticipated technological and future risks. The depreciation/ amortisation for future periods is revised if there are significant changes from previous estimates.

(ii) Provisions

The timing of recognition and quantification of the liability (including litigations) requires the application of judgement to existing facts and circumstances, which can be subject to change. The carrying amounts of provisions and liabilities are reviewed regularly and revised to take account of changing facts and circumstances.

3. Standards Issued but not Effective

Ministry of Corporate Affairs (MCA) notifies new standards or amendment to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time. On March 31, 2023, MCA amended the Companies (Indian Accounting Standards) Rules, 2023, as below;

i. Ind AS 1 - Presentation of Financial Statements - This amendment requires the entities to disclose their material accounting policies rather than their significant accounting policies. The effective date for adoption of this amendment is annual periods beginning on or after April 1, 2023. The Company has evaluated the amendment and the impact of the amendment is insignificant in the financial statements.

ii. Ind AS 8 - Accounting Policies, Changes in Accounting Estimates and Errors - This amednement has introduced a definition of "accounting estimates" and included amendments to Ind AS 8 to help entities distinguish changes in accounting policies from changes in accounting estimates. The effective date for adoption of this amendment is annual periods beginning on or after April 1, 2023. The Company has evaluated the amendment and there is no impact on its financial statements.

iii. Ind AS 12 - Income Taxes - This amendment has narrowed the scope of the initial recognition exemption so that it does not apply to transactions that give rise to equal and offseting temporary differences. The effective date for adoption of this amendment is annual periods beginning on or after April 1, 2023. The Company has evaluated the amendment and there is no impact on its financial statements.

NANGIA & CO. LLP * CHARTERED ACCOUNTANTS *

Athaang Devanahalli Tollway Private Limited

4. Material Accounting Policies

a. Current /non-current classification

All assets and liabilities are presented in the balance sheet based on current or non-current classification as per the company's normal operating cycle criteria set out in Schedule III of the Companies Act, 2013. Based on the nature of products and the time between the acquisition of assets for processing and their realization into cash and cash equivalent, the Company has ascertained its operating cycle as twelve months for the purpose of current/non-current classification of assets and liabilities. An asset is treated as current when it is:

a) Expected to be realized or intended to be sold or consumed in normal operating cycle
b) Held primarily for the purpose of trading
c) Expected to be realized within twelve months after the reporting period
d) Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

All other assets are classified as non-current.

A liability is current when:
a) It is expected to be settled in normal operating cycle
b) It is held primarily for the purpose of trading
c) Due to be settled within twelve months after the reporting period
d) There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

b. Functional and presentation currency

Items included in the financial statements of the company are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). The functional statements are presented in Indian Rupees, which is the company's functional and presentation currency.

c. Cash and cash equivalents

Cash and cash equivalents in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the Statement of Cash Flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

d. Property, Plant and Equipment(PPE)

Property, Plant and Equipment is recognised when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can measured reliably PPE is stated at original cost net of tax/duty credits availed, if any, less accumulated depreciation. For qualifying assets, borrowing costs capitalised in accordance with the IND AS 23.

Administrative and other general overhead expenses that are specifically attributable to construction or acquisition of PPE or bringing the PPE to working condition are allocated and capitalised as a part of the cost of the PPE.

Property, Plant and Equipment not ready for the intended use on the date of the Balance Sheet are disclosed as "Capital work-in-progress".

Depreciation on assets have been provided on WDV basis as per useful lives specified in the Schedule II of the Companies Act, 2013. Depreciation on additions / deductions is calculated pro-rata from / to the month of additions / deductions.

Assets individually costing less than Rs.5,000/- are fully depreciated in the year of purchase.

The estimated useful lives are as follows :

Particulars	Useful life as prescribed by Schedule II of the Companies Act, 2013	Useful life estimated by Company
Toll Equipment	5 years	5 years
Computers	3 years	3 years
Office Equipment	5 years	5 years
Furniture & Fixtures	10 years	10 years
Motor Cycle	10 years	10 years

NANGIA & CO. LLP CHARTERED ACCOUNTANTS

Attaang Devanahalli Toll Way Private Limited

e. Intangible Assets

Right of Carriageway - Toll Projects

Intangible assets are recognised net of government grants when it is probable that future economic benefits that are attributable to the asset will flow to the enterprise and the cost of the asset can be measured reliably. Intangible assets are stated at original cost net of tax/duty credits availed, if any, less accumulated amortisation and cumulative impairment.

Toll collection rights obtained in consideration for rendering construction services, represent the right to collect toll revenue during the concession period in respect of Build-Operate-Transfer ("BOT") project undertaken by the Company. The intangible asset model is used to the extent that the Company receives a right to charge users of the public service.

The intangible assets is measured at the fair value of consideration transferred to acquire asset, which is the fair value of consideration received or receivable for the construction services delivered

Amortization of Right of Carriageway - Toll Projects

The assets would be amortized under straight line method over the life of the asset till the end of the concession period.

Amortization of Computer Software

The assets would be amortized under WDV basis for useful life of 5 yrs.

f. Impairment of Non-Financial Assets

Non-financial assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash inflows which are largely independent of the cash inflows from other assets or groups of assets (cash-generating units). Nonfinancial assets that suffered impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

g. Financial Instruments

The Company classifies its financial assets into the following measurement categories:
i. Financial assets to be measured at amortised cost
ii. Financial assets to be measured at fair value through other comprehensive income
iii. Financial assets to be measured at fair value through profit or loss account

The classification depends on the contractual terms of the financial assets' cash flows and the Company's business model for managing financial assets

Fair value measurements are categorised as below based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirely:

• Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that entity can access at measurement date
• Level 2 inputs are inputs, other than quoted prices included in Level 1, that are observable for the asset or liability, either directly or indirectly; and

• Level 3 inputs are unobservable inputs for the asset or liability.

i) Financial Assets

All recognised financial assets are measured in their entirety at either amortised cost or fair value, depending on the classification of the financial assets

Investments in debt instruments that meet the following conditions are subsequently measured at amortised cost (unless the same are designated as fair value through profit or loss (FVTPL):
• The asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows: and
• The contractual terms of instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.
A financial asset is primarily derecognised when:
i. the rights to receive cash flows from the asset have expired, or
ii. the company has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a pass-through arrangement; and where
a) the company has transferred substantially all the risks and rewards of the asset, or
b) the company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

Impairment of financial assets: The Company applies the expected credit loss model for recognising impairment loss on financial assets measured at amortised cost, debt instruments, trade receivables and other contractual rights to receive cash or other financial asset and financial guarantees not designated as at FVTPL. For the purpose of measuring expected credit loss allowance for businesses other than financial services for trade receivables, the Company has used a provision matrix which takes into account historical credit loss experience and adjusted for forward looking information as permitted under Ind AS 109.

ii) Financial Liabilities

Financial liabilities are classified at initial recognition, as financial liabilities as fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Loans and borrowings are subsequently measured at amortised costs using Effective Interest Rate method.
Financial liabilities at fair value through profit or loss (FVTPL) are subsequently measured at fair value.
Financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires.

h. Revenue Recognition

i) Revenue is measured at the fair value of the consideration received or receivable. Amounts disclosed as revenue are exclusive of duties and taxes.

ii) The Company recognizes revenue when the amount of revenue can be reliably measured, it is probable that the future economic benefits would flow to the entity and specific criteria have been met for each of the activities described below. The company bases its estimates on historical results, taking into consideration the type of customer, type of transaction and specific of the arrangement.

iii) Toll collections from the users of the infrastructure facility constructed by the Company under the Service Concession Arrangement is accounted for based on actual collection, net of revenue share payable under the Concession agreement wherever applicable.

iv) Interest Income is recognized on time proportion basis taking into account the amount outstanding and applicable interest rate.

v) Dividend Income is recognized when the right to receive is established.

vi) Profit/loss on sale of investments is recognised at the time of actual sale/redemption and for mutual funds at fair value through profit/loss.

vii) Insurance claims are accounted for on the basis of claims admitted / expected to be admitted and to the extent that the amount recoverable can be measured reliably and it is reasonable to expect ultimate collection.

viii) Other items of income are accounted as and when the right to receive arises.

i. Government Grants

Government grants are recognised where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognised as income on a systematic basis over the periods that the related costs, for which it is intended to compensate, are expensed. When the grant relates to an asset, it is recognised on a systematic basis over the expected useful life of the related asset.

j. Foreign currencies transactions and translation

Transactions in foreign currencies are recorded at the exchange rate prevailing on the date of transaction. Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency closing rates of exchange at the reporting date.

k. Employee Benefits

Employee benefits include provident fund, employee state insurance scheme, gratuity & compensated absences.

(i). Short term employee benefits

All employee benefits falling due wholly within twelve months of rendering the service are classified as short term employee benefits. The benefits like salaries, wages, short term compensated absences etc and the expected cost of bonus, ex-gratia are recognised in the period in which the employee renders the related service.

(ii).Post-employment benefits

(a) Defined contribution plans:

Defined Contribution Plans: The Company's obligation to employee's provident fund is a defined contribution plan. The contribution paid/payable is recognized in the period in which the employee renders the related service.

(b) Defined benefit plans:

The Company's obligation towards gratuity is a defined benefit plan.

The present value of the obligation under such Defined Benefit Plans is determined based on actuarial valuation using the Projected Unit Credit Method, which recognizes each period of service as giving rise to additional unit of employee benefit entitlement and measures each unit separately to build up the final obligation.

The obligation is measured at the present value of the estimated future cash flows. The discount rates used for determining the present value of the obligation under defined benefit plans, is based on the market yields on Government securities as at the Balance sheet date, having maturity periods approximating to the terms of related obligations.

The interest element in the actuarial valuation of defined benefit plans, which comprises the implicit interest cost and the impact of changes in discount rate, is classified under finance cost. The balance charge is recognised as employee benefit expenses in the Statement of Profit and Loss.

In case of funded plans, the fair value of the plan assets is reduced from the gross obligation under the defined benefit plans to recognise the obligation on a net basis.

Gains or losses on the curtailment or settlement of any defined benefit plan are recognised when the curtailment or settlement occurs. Past service cost is recognised as expense at the earlier of the plan amendment or curtailment and when the Company recognises related restructuring costs or termination benefits.

NANGIA & CO. LLP CHARTERED ACCOUNTANTS

Athaang Devanahalli Tollway Private Limited

l. Borrowing Cost

Borrowing costs include interest calculated using the effective interest rate method, amortisation of ancillary costs incurred and exchange differences arising from foreign currency borrowings to the extent they are regarded as an adjustment to the interest cost. Costs in connection with the borrowing of funds to the extent not directly related to the acquisition of qualifying assets are charged to the Statement of Profit and Loss over the tenure of the loan. Borrowing costs, allocated to and utilized for acquisition, construction or production of qualifying assets, pertaining to the period from commencement of activities relating to construction / development of the qualifying asset up to the date of capitalization of such asset are added to the cost of the assets. Capitalization of borrowing costs is suspended and charged to the Statement of Profit and Loss during extended periods when active development activity on the qualifying assets is interrupted.

m. Leases

Operating lease payments are recognized as an operating expense in the income statement on a straight line basis over the lease term

n. Earnings per share

Basic earnings per share is calculated by dividing the net profit or loss attributable to equity holder of the company (after deducting preference dividends and attributable taxes) by the weighted average number of equities shares outstanding during the period.

For the purpose of calculating diluted earnings per share, the net profit/(loss) for the period attributable to equity shareholders of the parent company and the weighted average number of shares outstanding during the period are adjusted for the effects of all dilutive potential equity shares.

o. Tax Expenses

The tax expenses for the period comprises of current tax and deferred income tax. Tax is recognised in Statement of Profit and Loss, except to the extent that it relates to items recognised in the Other Comprehensive Income. In which case, the tax is also recognised in Other Comprehensive Income.

i. Current Tax

Current tax assets and liabilities are measured at the amount expected to be recovered from or paid to the Income Tax authorities, based on tax rates and laws that are enacted at the Balance sheet date.

ii. Minimum Alternate Tax

Minimum Alternate Tax (MAT) paid in accordance with the tax laws, which gives future economic benefits in the form of adjustment to future income tax liability, is considered as an asset if there is convincing evidence that the company will pay normal income tax. Accordingly, the MAT is recognised as an asset in the balance sheet when it is highly probable that future economic benefit associated with it will flow to the Company.

iii. Deferred Tax

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities in the Financial Statements and the corresponding tax bases used in the computation of taxable profit.

Deferred tax assets are recognised to the extent it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax losses can be utilised. Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realised, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The carrying amount of Deferred tax liabilities and assets are reviewed at the end of each reporting period.

p. Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Company expects some or all of a provision to be reimbursed the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the Statement of Profit and Loss net of any reimbursement

q. Contingent Liabilities and Contingent Asset

Disclosure of contingent liability is made when there is a possible obligation arising from past events, the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Company or a present obligation that arises from past events where it is either not probable that an outflow of resources embodying economic benefits will be required to settle or a reliable estimate of amount cannot be made. A Contingent asset is not recognized in financial statements, however, the same are disclosed where an inflow of economic benefit is probable

r. Commitments

Commitments are future liabilities for contractual expenditure. Commitments are classified and disclosed as follows:

(i) Estimated amount of contracts remaining to be executed on capital account and not provided for

(ii) Uncalled liability on shares and other investments partly paid

(iii) Funding related commitment to subsidiary, associate and joint venture companies and

(iv) Other non-cancellable commitments, if any, to the extent they are considered material and relevant in the opinion of management.

Other commitments related to sales/procurements made in the normal course of business are not disclosed to avoid excessive details

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2024

Note 5 Property, Plant and Equipment

(Amount in Lakhs)

Particulars	Land	Toll Equipment	Computers	Office Equipment	Furniture & Fixtures	Motor Cycle	Vehicle	Total
Gross carrying value as of 31 March, 2022	**17.48**	**348.43**	**42.55**	**17.53**	**7.62**	**2.67**	**-**	**436.28**
Additions	-	67.89	-	-	0.40	-	-	68.30
Deletions	-	-	-	-	-	-		-
Gross carrying value as of 31 March, 2023	**17.48**	**416.32**	**42.55**	**17.53**	**8.02**	**2.67**	-	**504.58**
Additions		**61.00**	17.41	3.51	1.03		18.58	**101.54**
Deletions								-
Gross carrying value as of 31 March 2024	**17.48**	**477.32**	**59.96**	**21.04**	**9.05**	**2.67**	**18.58**	**606.12**
Accumulated depreciation as of 31 March, 2022	**-**	**242.62**	**36.89**	**13.89**	**6.10**	**2.28**	**-**	**301.78**
Depreciation	-	83.87	3.24	2.00	1.36	0.16	-	**90.65**
Accumulated depreciation as of 31 March, 2023	**-**	**326.49**	**40.13**	**15.89**	**7.47**	**2.44**	-	**392.43**
Depreciation	-	52.03	4.11	1.12	0.57	-	3.26	**61.08**
Accumulated depreciation as of 31 March 2024	**-**	**378.52**	**44.24**	**17.02**	**8.03**	**2.44**	**3.26**	**453.51**
								-
Carrying value as of 31 March 2024	**17.48**	**98.81**	**15.72**	**4.02**	**1.02**	**0.23**	**15.32**	**152.61**
Carrying value as of 31 March, 2023	**17.48**	**89.83**	**2.42**	**1.63**	**0.55**	**0.23**	-	**112.15**

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2024

Note 6. Intangible assets

(Amount in Lakhs)

Particulars	Right of Carriageway	Computer Software	Total
Gross carrying value as of 31 March, 2022	**91,281.39**	**1.26**	**91,282.65**
Additions	-	-	-
Deletions	-	-	-
Gross carrying value as of 31 March, 2023	91,281.39	1.26	**91,282.65**
Additions	-	-	-
Deletions	-	-	-
Gross carrying value as of 31 March 2024	**91,281.39**	**1.26**	**91,282.65**
Accumulated amortization as of 31 March, 2022	**39,897.67**	**0.59**	**39,898.26**
Amortization expense for April-22 to Mar-23	5,664.47	-	5,664.47
Accumulated amortization as of 31 March, 2023	**45,562.13**	**0.59**	**45,562.73**
Amortization expense for April-23 to March 24	5,679.99	-	**5,679.99**
Accumulated depreciation as of 31 March 2024	**51,242.12**	**0.59**	**51,242.71**
Carrying value as of 31 March 2024	**40,039.27**	**0.67**	**40,039.94**
Carrying value as of 31 March, 2023	**45,719.25**	**0.67**	**45,719.92**

(Amount in Lakhs)

Note No	Particulars	As at 31 March 2024	As at 31 March 2023
7	**Non Current Investments**		
	Investment in Mutual Funds (refer note below)	13.08	10,743.55
	Total	13.08	10,743.55
	Details of Mutual Fund		
	Units lien for Major Maintenance Reserve & Debt Service Reserve Account	-	45,41,87,321
8	**Other Non Current Financial Assets**		
	Bank deposits with more than 12 months maturity (Fixed Deposit includes interest accrued on fixed deposit) (Rs 33,54,723/- is lien marked in favour of Deputy Commissioner of Commercial for VAT Assessment - FY 15-16)	33.55	106.07
	Inter Company Deposit issued to Athaang Infrastructure Private Limited	18,700.00	-
	Total	18,733.55	106.07
9	**Other Non Current Assets**		
	Retention Money	72.19	72.19
	TDS Receivable (Net of provisions for Income tax)	42.96	149.13
	MAT Credit	3,894.49	1,345.39
	Taxes paid under Protest	86.06	86.06
	VAT Credit Receivable	12.38	12.38
	Total	4,108.09	1,665.16
10	**Trade Receivables**		
	Trade Receivables considered good - Unsecured		
	National Highway Authority of India	219.22	219.22
	Total	219.22	219.22

Trade receivables ageing schedule

As at March 31, 2024	Outstanding for following periods from due date of payment					
	Less than 6 months	6 months - 1 year	1-2 years	2-3 years	More than 3 years	Total
Considered Good - Secured	-	-	-	-	-	-
Considered Good - Unsecured	-		119.41	91.96	7.84	219.22
Gross carrying amount (A)	-	-	119.41	91.96	7.84	219.22
Less: Allowance for Expected Credit Losses (B)	-	-	-	-	-	-
Net carrying amount (A-B)	-	-	119.41	91.96	7.84	219.22

As at March 31, 2023	Outstanding for following periods from due date of payment					Total
	Less than 6 months	6 months - 1 year	1-2 years	2-3 years	More than 3 years	
Considered Good - Secured	-	-	-	-	-	-
Considered Good - Unsecured	110.36	9.05	91.96	4.69	3.14	219.22
Gross carrying amount (A)	110.36	9.05	91.96	4.69	3.14	219.22
Less: Allowance for Expected Credit Losses (B)						
Net carrying amount (A-B)	110.36	9.05	91.96	4.69	3.14	219.22

11(a)	**Cash and Cash Equivalents**		
	-Cash- on- Hand	12.47	8.73
	Balances with Banks		
	-In Current Account	538.14	235.75
	Prepaid Card		
	-HDFC	0.00	0.03
	Total	550.60	244.51
11(b)	**Bank balances other than above**		
	-Fixed deposits	15,235.50	10,950.00
	Includes fixed deposits made for the purpose of meeting the obligation of the company towards DSRA / MMRA for Rs. 52.08 Lakhs in FY 23-24.		
	Total	15,235.50	10,950.00
12	**Other Current Financial Asset**		
	Other Receivable	99.85	89.24
	Interest Receivable on ICD	1,291.54	-
	Total	1,391.39	89.24
13	**Other Current Assets**		
	Prepaid Expenses	35.31	33.43
	Deposits	0.05	-
	Advance to Vendor	22.93	16.88
	Total	58.28	50.31

17	**Other Non Current Financial Liabilities**		
	Retention Money	35.73	56.67
	Total	**35.73**	**56.67**
18	**Non Current Provisions**		
	Provision for Major Maintenance	2,449.51	1,800.00
	Provision for Gratuity	11.48	7.90
	Provision for compensated absences	7.55	6.09
	Total	**2,468.54**	**1,813.99**
19	**Short Term Borrowings**		
	Current Maturity of Long Term Borrowing (Refer Note 16)	8,220.81	6,912.33
		8,220.81	**6,912.33**
20	**Trade Payables**		
	Dues of Micro and Small Enterprises	183.66	-
	Dues of enterprises other than Micro and Small Enterprises	212.59	139.19
	Total	**396.25**	**139.19**

Trade Payables ageing schedule

As at March 31, 2024	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	165.43		18.23	0.01	183.66
Others	136.32	0.10	0.11	76.06	212.59
	301.75	0.10	18.33	76.07	396.25

As at March 31, 2023	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	-	-	-	-	-
Others	22.20	1.51	59.34	56.15	139.19
	22.20	1.51	59.34	56.15	139.19

*Disclousre for Micro and Small Enterprise

The amount due to Micor & Small Enterprise as defined in the "Micro, Small and Medium Enterprises Development Act, 2006" has been determined to the extent such parties have been identified on the basis of information available with the company.

The Disclosure relating to Micro, Small and Medium Enterprises as at March 31, 2024 are as under

(In Lakhs)

Particulars	As at March 31, 2024	As at March 31, 2023
a) Principal amount remaining unpaid	183.66	-
b) Interest due on above and the unpaid interest	3.79	-
c) Interest Paid	-	-
d) Payment made beyond the appointed day during the year	-	-
e) Interest due and payable for the period of delay	-	-
f) Interest accured and remaining unpaid	3.79	-
g) Amount of further interest remainng due and payable in succeeding year	3.79	-

21	**Other Current Financial Liabilities**		
	Payable to related party (Refer Note no 30.8)	11.97	49.23
	Total	**11.97**	**49.23**
22	**Other Current Liabilities**		
	Advance Received from NHAI	431.32	431.32
	Statutory Liabilities	53.58	31.41
	Salaries payable	1.43	0.35
	Total	**486.33**	**463.08**
23	**Provisions**		
	Provision for Expenses	427.09	1,163.48
	Provision for Gratuity	0.03	0.02
	Provision for compensated absences	0.27	0.27
	Total	**427.39**	**1,163.77**

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2024

Note 14 Share capital

(Amount in Lakhs)

Particulars	As at 31 March 2024	As at 31 March 2023
(a) Authorised		
50,00,000 Equity shares of Rs.10/- each	500.00	500.00
	500.00	**500.00**
(b) Issued, Subscribed & Fully Paid Up		
42,95,666 Equity shares of Rs.10/- each	429.57	429.57
Total	429.57	429.57

(i) Reconciliation of the number of shares and amount outstanding at the beginning and at the end of the reporting period:

Particulars	As at 31 March 2024	As at 31 March 2023
Equity shares with voting rights at the beginning of the year	42,95,666	42,95,666
Add: Shares issued during the year	-	-
Less: Shares Cancelled on Buy back of Equity Shares	-	-
Equity shares with voting rights at the end of the year	**42,95,666**	**42,95,666**

(ii) Terms/rights attached to shares:

The Company has only one class of equity shares having a par value of Rs.10/- per share. Each holder of equity share is entitled to one vote per share.
In the event of liquidation of the Company, the holders of equity shares will be entitled to receive remaining assets of the Company, after distribution of all preferential amounts. The distribution will be in proportion to the no. of equity shares held by the shareholder.

(iii) Details of shares held by the holding company, the ultimate holding company, their subsidiaries and associates:

Particulars	As at 31 March 2024	As at 31 March 2023
Equity shares with voting rights held by:		
National Investment & Infrastructure Fund	42,95,666	42,95,666
Equity shares with voting rights at the end of the year	**42,95,666**	**42,95,666**

(iv) Details of equity shares held by the shareholder and promoters holding more than 5% shares of total equity shares:

Class of shares / Name of shareholder	As at 31 March 2024		As at 31 March 2023	
	Number of shares held	% holding in that class of shares	Number of shares held	% holding in that class of shares
Equity shares with voting rights				
National Investment & Infrastructure Fund	42,95,665	99.99%	42,95,665	99.99%
Total	42,95,665		42,95,665	

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2024

Note 15 Other Equity

(Amount in Lakhs)

Particulars	As at 31 March 2024	As at 31 March 2023
a) Securities Premium Account	12,428.43	12,428.43
b) General Reserve	-	-
c) Other comprehensive income	-	-
d) Retained earnings	8,973.96	(7,342.51)
e) Debenture Redemption Reserve	2,268.43	1,202.81
Total	**23,670.83**	**6,288.73**
a) Securities Premium Account		
Opening balance	**12,428.43**	**12,428.43**
Additions during the Period	-	-
Adjustments during the Period	-	-
Closing balance	**12,428.43**	**12,428.43**
d) Retained earnings		
Opening balance	**(7,342.51)**	**(14,507.76)**
Net profit for the period/ year	17,382.10	8,368.06
Less: Transfer to Debenture Redemption Reserve	(1,065.63)	(1,202.81)
Closing balance	**8,973.96**	**(7,342.51)**
e) Debenture Redemption Reserve		
Opening balance	**1,202.81**	-
Add: Transferred from Statement of Profit and Loss	1,065.63	1,202.81
Closing balance	**2,268.43**	**1,202.81**

Note 16 Long-term borrowings

(Amount in Lakhs)

Particulars	As at 31 March 2024	As at 31st March 2023
(a) Term loans		
From banks -Secured	35,387.85	42,060.17
From others - Secured	-	-
(a) Term loans Total	**35,387.85**	**42,060.17**
(b) Non Convertible Debenture (NCD)	9,054.73	10,656.15
(c) Optional Convertible Debenture (OCD) from NIIF	-	-
(d) Less : Unamortized Upfront fee	(87.75)	(132.71)
Total	**44,354.83**	**52,583.60**

Note 16.1 Long-term borrowings

Particulars	Non Current Portion		Current Portion	
	As at 31 March 2024	As at 31st March 2023	As at 31 March 2024	As at 31st March 2023
Term loans from banks:				
Federal Bank Ltd	6,590.56	7,832.72	1,240.86	1,041.76
Axis Bank	28,797.29	34,227.45	5,424.34	4,550.50
Total - Term loans from banks	**35,387.85**	**42,060.17**	**6,665.20**	**5,592.26**
Non Convertible Debenture (NCD)				
India Infradebt Limited (NCD)	9,054.73	10,656.15	1,600.58	1,371.93
Non Convertible Debenture (NCD)	**9,054.73**	**10,656.15**	**1,600.58**	**1,371.93**
Less : Unamortized Upfront fee	(87.75)	(132.71)	(44.96)	(51.85)
Total - Long Term Borrowings	**44,354.83**	**52,583.60**	**8,220.81**	**6,912.33**
Terms: Rupee Term Loan (Under Consortium)	52,575.64	59,495.93	6,920.29	

Name of The Financial Institutions:	India Infra Debt Limited
Type of Loan & Amount Sanctioned:	NCD's Rs.150.00 Crores
Loan Availed as on 31.03.2019:	Rs.150.00 Crores
Face Value	Rs.10,000/-
Rate of Interest:	10% p.a upto 31 December 2021 and 8.25 % p.a w.e.f 01 January 2022
Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 31.03.2016
Security:	A first charge on Company's all immovable assets other than the project assets and first charge by way of hypothecation on all movable assets both present and future, a first charge on all intangible assets, bank accounts, a right over insurance proceeds. Pledge 51% of equity shares of Athaang Devanahalli Tollway Pvt Ltd held by National Infrastructure Investment Fund (NIIF)

Name of The Financial Institutions:	Axis Bank Limited
Type of Loan & Amount Sanctioned:	RTL Rs.337.00 Crores & RTL Rs.197.83 Crores
Loan Availed as on 31.03.2022:	Rs.332.35 Crores & Rs.192.55 Crores
Rate of Interest:	7.6% p.a
Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 30.09.2021 The Loan has been downsold partially to the extent of Rs. 92.25 Crores to Federal Bank Limited
Security:	A first charge on Company's all immovable assets other than the project assets and excluding plot no 6, Bhoomapan Karamank Palghar, Thane admeasuring 226 sq mt hypothecation on all movable prosperities and assets both present and future including movable plant and machinery, machinery spares, tools and accessories, furniture and vehicles charge on company's operating cash flows, book debts and all the receivables and revenues from the project, all current, commissions, and any other revenues of whatsoever nature and wherever arising present and future charge on Intangible asset including but not limited to goodwill, undertaking intellectual property rights and uncalled capital of the company, present and future charge on the Retention Account, DSRA and other reserves and any other bank account of the company whenever maintained. Pledge 51% of equity shares of Athaang Devanhalli Tollway Private Limited held by National Investment Infrastructure Fund

Name of The Financial Institutions:	The Federal Bank Limited
Type of Loan & Amount Sanctioned:	RTL Rs.100.00 Crores
Loan Availed as on 15.09.2022:	Loan is a down sell from Axis for previous loan taken; further disbursed amount is Rs.92.25 crores
Rate of Interest:	7.6% p.a
Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 30.09.2021
Security:	A first charge on Company's all immovable assets other than the project assets and excluding plot no 6, Bhoomapan Karamank Palghar, Thane admeasuring 226 sq mt. hypothecation on all movable prosperities and assets both present and future including movable plant and machinery, machinery spares, tools and accessories, furniture and vehicles charge on company's operating cash flows, book debts and all the receivables and revenues from the project, all current, commissions, and any other revenues of whatsoever nature and wherever arising present and future charge on Intangible asset including but not limited to goodwill, undertaking intellectual property rights and uncalled capital of the company, present and future charge on the Retention Account, DSRA and other reserves and any other bank account of the company whenever maintained. Pledge 51% of equity shares of Athaang Devanhalli Tollway Private Limited held by National Investment Infrastructure Fund

(Amount in Lakhs)

Note No	Particulars	For the Year ended 31 March 2024	For the Year ended 31 March 2023
24	**Revenue from Operations**		
	Toll Revenue	30,750.24	24,393.50
	Net off Revenue Sharing With NHAI	(644.85)	(681.1)
	Total	**30,105.39**	**23,712.43**
25	**Other Income**		
	Income From Mutual Funds	0.08	515.92
	Interest Income on Fixed Deposit	663.30	209.67
	Interest on ICD	1,435.05	-
	Other Income	69.40	25.81
	COS Revenue	-	571.27
	Gain on Redemption of MF	87.86	-
	Vat Refund	43.80	-
	Total	**2,299.49**	**1,322.67**
26	**Operating and Maintenance Expenses**		
	Reimbursement Independent Consultancy fee to NHAI	90.73	89.38
	Insurance Expenses	105.99	119.59
	Periodic Major Maintenance	649.51	1,152.95
	Toll Operation & Maintenance Expenses	2,018.44	1,997.59
	COS Expenses	3.91	459.57
	Total	**2,868.59**	**3,819.08**
27	**Employee Benefit Expenses**		
	Salary and Wages	194.04	179.80
	Contribution to provident fund, gratuity and others	14.46	14.13
	Staff Welfare Expenses	15.05	39.50
	Total	**223.55**	**233.43**
28	**Finance Costs**		
	Interest Expenses	4,445.43	5,565.90
	Amortized Upfront Fee Expenses	51.85	56.81
	Total	**4,497.28**	**5,622.71**
29	**Administration and Other Expenses**		
	Advertisement	-	0.40
	Audit Fee (Refer note 30.10)	11.80	8.25
	Arbitration Fees	170.26	65.58
	Bank Charges	3.41	14.36
	Rates & Taxes	0.49	5.55
	Legal & Professional Fees	68.17	91.09
	Other Expenses	53.75	40.44
	Management Fees	725.71	575.89
	Settlement cost	-	295.00
	Interest on MSME Vendors	3.79	-
	Interest in TDS	0.24	-
	CSR Expenses	23.17	-
	Total	**1,060.77**	**1,096.56**

30. Notes forming part of the Accounts

30.1 Details of Expenditure in Foreign Currency:

The Company has not incurred any expenditure in foreign currency during the current year and previous year.

30.2 Disclosure pursuant to Ind AS 37

"Provisions, Contingent Liabilities and Contingent Assets":

Provisions:

As per the Concession Agreement with NHAI the Periodic Maintenance is expected to be incurred periodically. On the Grounds of Prudence, based on estimates, the company has decided to Provide for Major Maintenance Expense in the Books of Accounts annually.

During the current year the company has incurred Major Maintenance expenses of Rs. NIL- and net provision for MMR created of Rs. 6,49,51,372/- for year ended 31st March, 2024.

During the previous year the company has incurred Major Maintenance expenses of 19,40,397/- and net provision for MMR created of Rs. 11,52,95,413/- for year ended 31st March, 2023.

Contingent Liabilities:

Where it is not probable that an outflow of economic benefits will be required, or the amount can not be estimated reliably, the obligation is not recognized in the statements of financial position and is disclosed as a contingent liability.

(Amount in Lakhs)

Particulars	As at 31 March 2024	As at 31 March 2023
Claims against the company not acknowledged as debt		
- on Income Tax	1,367.01	1,367.01
- on liquidated damages imposed by NHAI*	4,441.00	4,441.00
- on descope of Punch list items**	8,162.91	-

March-24

*During the current reporting period the company has not provided an amount of Rs. 4,441 lakhs (PY 4,441 lakhs) recommended by the Independent Engineer towards liquidated damages imposed with respect to Operations & maintenance (O&M) requirements & its rectification of deficiencies within the stipulated time. However, the Company made representation with the Independent Engineer vide letter dated May, 8th 2023 for reviewing its decision to levy liquidated damages and withdraw the claim for damages. Further to that NHAI letter dated June 16, 2023, reference No. NHAI /PIU BNG/KNT- 2/Escrow/2023-24/661, the NHAI has asked the Axis Bank to remit damages amounting to Rs 4,441 lakhs. The company moved to the Delhi High Court ("the Hon'ble High Court") challenging the NHAI letter dated June 16, 2023. The Hon'ble High Court disposed of the petition of the Company by appointing an Arbitrator for adjudication of disputes between the parties in its order dated July 05,2023. As of March 31, 2024 the ongoing arbitration proceedings have not resulted in any orders or interim orders against the company. As per the legal opinion and on the grounds of merits, the likelihood of damages (penalty) may not be payable entirely or could be substantially low so the same has been disclosed as Contingent Liabilities.

** During the current reporting period company has not provided amount of Rs 8311.62 Lakhs on account of descoping of punch list as recommended by Indendent Enginneer.As per Settlement Agreement entered with NHAI (Authority), Company is committed to undertake certain capex works (Punch list A & B works) as and when the land is made available by the Authority. In case, NHAI confirms non availability of land, Company is obligated to pass on estimated capex on such items. In its letter dated 10th October 2023 IE recommended to NHAI to issue a negative COS order for a sum of Rs 8311.62 lakhs (punch list A and B amount 2694.45 lakhs ,interest component Rs 5365.50 lakhs and maintainance 251.66 lakhs) towards the above items of work. However, subsequently NHAI has made available land to take-up construction of service road from km 551+ 950 to km 552+ 970 estimated capex for the same is Rs 148.70 lakhs. In absence of firm and final communication on land availability for the balance works and mutually agreed quantity and rates for the work to be executed, there is no surety of crystallisation of associated payments to NHAI. However, as a measure of prudence, the above is treated as contingent liability.

March-23

*The Company has not provided an amount of Rs. 4,441 lakhs (PY 1,923 lakhs) recommended by Independent Engineer towards liquidated damages imposed by NHAI for Non- Performance of conditions as set out in the clause no. 17.8 of the concession agreement with respect to Operations & maintenance (O&M) requirements & its rectification of deficiencies within the stipulated time. However, the Company made representation with the NHAI vide letter dated 25 July 2022 for revocation of levy of liquidated damages after completion of O&M work and rectification of deficiencies.

During the previous reporting period the application filed by M/s Cauvery Asphalt & Construction Company Pvt. Ltd has been witdrawn under the Rules of the Mumbai Centre for International Arbitration ("MCIA"), where both the parties filed joint application for withdrawal of all claims and counterclaims and termination of the arbitral proceedings under Section 32(2)(b) of the Arbitration and Conciliation Act, 1996.

Accordingly, in terms of the Joint Application filed by the parties, the present proceedings stand terminated under Section 32(2)(b) and no claims and counter claims between the parties.

30.3 Disclosure pursuant to Ind AS 19 "Employee benefits":

Defined Benefit Plan: Gratuity:

Employee benefit plans

Defined contribution plans

The Company's superannuation scheme and State governed provident fund linked with employee pension scheme are defined contribution plans. The contribution paid/ payable under the scheme is recognised during the period in which the employee renders the related service.

Defined Benefit plans

The Company has an unfunded defined benefit gratuity plan. The gratuity plan is governed by the Payment of Gratuity Act, 1972. Under the act, employee who has completed five years of service is entitled to specific benefit. The level of benefits provided depends on the member's length of service and salary at retirement age. Every employee who has completed five years or more of service gets a gratuity on departure at 15 days salary (last drawn salary) for each completed year of service as per the provision of the Payment of Gratuity Act, 1972 with total ceiling on gratuity of Rs.2,000,000.

The following table sets out the funded status of the defined benefit schemes and the amount recognised in the financial statements:

			(Amount in Lakhs)
1	**Table showing changes in present value of Obligation as on 31/03/2024**	**For the Year ended 31 March 2024**	**For the Year ended 31 March 2023**
	Present value of obligations at beginning of the year	7.92	5.30
	Interest Cost	0.60	0.38
	Current Service Cost	4.28	3.47
	Benefits paid		
	Past Service Cost		
	Actuarial (gain) / loss on obligation	(1.29)	(1.23)
	Present value of the obligation as at end of the year	11.50	7.92
2	**Table showing changes in the fair value of plan assets as on 31/03/2024**		
	Fair value of plan assets at beginning of year	-	-
	Expected return on plan assets	-	-
	Contributions	-	-
	Benefits Paid	-	-
	Actuarial (gain) / loss on Plan Assets	-	-
	Fair value of plan assets at the end of year	-	-
3	**Table showing fair value of Plan assets**		
	Fair value of plan assets at beginning of year	-	-
	Actual return on plan assets	-	-
	Contributions	-	-
	Benefits paid	-	-
	Fair value of plan assets at the end of year	-	-
	Funded status	-	-
	Excess of Actual over estimated return on plan assets	-	-
	(Actual rate of return = Estimated rate of return as ARD falls on 31st March)		
4	**Actuarial Gain/Loss recognised as on 31/03/2024**	**For the Year ended 31 March 2024**	**For the Year ended 31 March 2023**
	Actuarial (gain) / loss for the current period on obligations	-	-
	Actuarial (gain) / loss for the current period - plan assets	-	-
	Total Actuarial (gain) / loss for the current period	(1.29)	(1.23)
	Total Actuarial (gain) / loss recognized in the year	(1.29)	(1.23)
			(Amount in Lakhs)
5	**The amounts to be recognized in the balance sheet and statements of profit and loss**		
	Present value of obligations as at the end of year	11.50	7.92
	Fair value of plan assets as at the end of the year	-	-
	Unfunded Status	11.50	7.92
	Net asset / (liability) recognized in balance sheet	11.50	7.92
6	**Expenses Recognised in statement of Profit and loss**		
	Current service cost	4.28	3.47
	Past Service Cost	-	-
	Interest Cost	0.60	0.38
	Expected return on plan assets		
	Opening Present Value Obligation	7.92	5.30
	Net Actuarial (gain) / loss recognized in the year	(1.29)	(1.23)
	Expenses Recognised in statement of Profit and loss	4.87	3.85
	Actuarial assumptions		
	Discount rate	**7.15%**	**7.50%**
	Expected return on plan assets		
	Salary escalation	**10% p.a.**	**10% p.a.**
	Mortality Rate	**100% of IALM 2012-14**	**100% of IALM 2012-14**
	Normal retirement age	**60 yrs**	**60 yrs**
	Withdrawal Rate	**5%**	**5%**

A quantitative analysis for significant assumption is as shown below:
Indian gratuity plan:

1	Particulars	31-Mar-24	31-Mar-23
	Assumptions -Discount rate		
	Sensitivity Level (a hypothetical increase / (decrease) by)	**1.00%**	**1.00%**
	Impact on defined benefit obligation -increase of sensitivity level	-11.80%	-12.40%
	Impact on defined benefit obligation -decrease of sensitivity level	14.00%	14.90%
	Assumptions -Future salary rates		
	Sensitivity Level (a hypothetical increase / (decrease) by)	**1.00%**	**1.00%**
	Impact on defined benefit obligation-increase of sensitivity level	13.50%	13.60%
	Impact on defined benefit obligation-decrease of sensitivity level	-11.60%	-12.30%
	Assumptions -Attrition rate		
	Sensitivity Level (a hypothetical increase / (decrease) by)	**0.50%**	**0.50%**
	Impact on defined benefit obligation-increase of sensitivity level	-8.40%	-9.80%
	Impact on defined benefit obligation-decrease of sensitivity level	10.80%	12.30%

Expected payment for future years **(Amount in Lakhs)**

2	Particulars	31-Mar-24	31-Mar-23
	Within the next 12 months (next annual reporting period)	0.03	0.02
	Between 2 and 5 years	2.05	1.23
	Between 6 and 10 years	7.70	2.56
	Beyond 10 years	24.39	22.64
	Total expected payments	**34.16**	**26.45**

30.4 Disclosure pursuant to Ind AS 36 "Impairment of Assets"
Based on review of the future discounted cash flows of the project facility, the recoverable amount is higher than the carrying amount and hence no provision for impairment is considered.

30.5 Major Components of Deferred Tax Liabilities and Deferred Tax Assets

The company is eligible for deduction under Section 80IA of the Income Tax Act, 1961 and the concession period of the Company's project falls within the tax holiday period as defined in Section 80IA. Since deferred tax on temporary difference between Accounting Income and Taxable Income that arise during the year is reversing during such tax holiday period and hence no Deferred Tax Assets/Liabilities is being created in the accounts.

30.6 Disclosure of segment information pursuant to Ind AS 108 "Operating Segments"

The Company is engaged in the business of construction, operation and maintenance of road projects on a Build Operate Transfer basis in a single business segment. Hence reporting of operating segments does not arise. The Company does not have operations outside India Hence, disclosure of geographical segment information does not arise.

30.7 Earning Per Share

The following reflects the income and share data used in the basic and diluted EPS computations:

Particulars	For the Year ended 31 March 2024	For the Year ended 31 March 2023
Profit attributable to equity holders of the parent for basic earnings	17,380.81	8,366.82
Weighted average number of equity shares for basic EPS	42,95,666	42,95,666
Weighted average number of equity shares adjusted for the effect of dilution	42,95,666	42,95,666
Face value per share	10	10
Basic earning per share	404.61	194.77
Diluted earning per share	404.61	194.77

30.8 Disclosure of related parties / related party transactions pursuant to Ind AS 24 "Related Party Disclosures"

a) List of related parties

Holding Entity: : National Investments & Infrastructure Fund

Companies under common control of the Holding Entity:
: Athaang Infrastructure Private Limited
: Athaang Dichpally Tollway Private Limited
: Athaang Jammu Udhampur Highway Limited (w.e.f July 28, 2022)
: Quazigund Expressway Private Limited (w.e.f July 28, 2022)
: Kashi Tollway Private Limited (w.e.f. March 11, 2023)

b) Key Management Personnel

Particulars	Designation	Transactions during the Year Y/N
Karthikeyan M	Director	No
Saurabh Jain	Director	No
Deepak Ramachandran (upto 26 February 2024)	Director	No
Gopalakrishnan Krishnamurthy w.e.f 24 February 2024	Director	No

c) Related party transactions:

(Amount in Lakhs)

Nature of transaction	Particulars	As at 31 March 2024	As at 31 March 2023
Management Fees	Athaang Infrastructure Private Limited	725.71	575.89
Reimbursement of Expenditure	Athaang Infrastructure Private Limited	19.78	-
Reimbursement of Expenditure	Athaang Jammu Udhampur Highway Limited	-	2.57
Reimbursement of Expenditure	Kashi Tollway Private Limited	3.43	-
Reimbursement of Expenditure	Quazigund Expressway Private Limited	-	1.42
Interest expense on Optional Convertible Debenture	National Investments & Infrastructure Fund	-	651.44
Issue of ICD	Athaang Infrastructure Private Limited	18,700.00	-
Interest income on ICD	Athaang Infrastructure Private Limited	1,435.05	-
Redemption of Optional Convertible Debenture	National Investments & Infrastructure Fund	-	3,500.00

c) Amount Payable/(Receivable) related parties (net):

(Amount in Lakhs)

Particulars	As at 31 March 2024	As at 31 March 2023
Athaang Infrastructure Private Limited	11.97	49.23
Athaang Dichpally Tollway Private Limited	(0.00)	(0.00)

d) Terms and conditions of transactions with related parties

The sales to and purchases from related parties are made on terms equivalent to those that prevail in arm's length transactions. Outstanding balances at the year-end are unsecured and interest free for the year ended 31 March 2024. This assessment is undertaken each financial year through examining the financial position of the related party and the market in which the related party operates.

There is no provision for bad and doubtful debts to related parties with regard to outstanding expenses and there is no expense recognized in respect of bad and doubtful debts due from related parties.

30.9 Disclosure pursuant to Ind AS 116 "Leases"

The Company has not acquired any assets either under Finance lease or under Operating lease. Hence disclosures pertaining to Ind AS 116 - "Leases" are not applicable.

30.10 Details of Auditors Remuneration:

(Amount in Lakhs)

Particulars	For the Year ended 31 March 2024	For the Year ended 31 March 2023
As Auditor		
- Audit Fees	11.80	8.25
TOTAL	**11.80**	**8.25**

30.11 Corporate Social Responsibility (CSR) :

During the Current year, the Company was required to spend an amount towards corporate social responsibility activities in accordance with Section 135 of the Companies Act, 2013

Gross Amount to be spent on CSR

Particulars	As at 31 March 2024	As at 31 March 2023
Average Net Profit of the Company for Last 3 preceding financial years	1,158.74	-
Amount to be spent as CSR during the year	23.17	-
Amount carried forward from previous years	-	-
Amount spent during the year	.	-
Amount yet to be spent during the year	23.17	-

30.12 Disclosure Under Appendix D to Ind AS 115

Description of the arrangement	Significant terms of the arrangement	
Design, Engineering, Finance, Construction, Operation and Maintenance of Access Controlled Highway Project of Hyderabad -Bangalore from Km 534.720 to Km 556.840of NH-7,in the state of Karnataka on "Design, Build, Operate and Transfer (DBOT)" Toll basis.	Period of the Concession	A period of 20 years from Appointed Date- 25 April 2011
	Remuneration	Toll Collection
	Conditions of Pricing	As per Bid document
	Infrastructure return at the end of the concession period	Being BOT project , the project assets have to be transferred at the end of concession period
	Changes in the arrangement occurring during the period	Any changes in the arrangement like change in the Shareholding etc need approval from the NHAI.
	Classification of Service Arrangement	The service arrangement has been classified as a Service Concession Arrangement for a PPP project as per Appendix D to Ind AS 115.
	Renewal and termination points	End Date of Concession Period- 24 April 2031
	Other Rights and Obligations	Major Maintainance to be done over Concession Period

30.13 Fair Values

Fair value measurement include both the significant financial instruments stated at amortised cost and at fair value in the statement of financial position The carrying values of current financial instruments approximate their fair values due to the short-term maturity of these instruments and the disclosures of fair value are not made when the carrying amount of current financial instruments is a reasonable approximation of the fair value.

30.14 Financial Instruments

The carrying value and fair value of financial instruments by categories as of March 31, 2024 are as follows :

(Amount in Lakhs)

Particulars	At amortised costs	At fair value through profit and loss	At fair value through OCI	Total carrying value	Total fair value
Assets					
Investment		13.08		13.08	13.08
Trade Receivable	219.22			219.22	
Cash and cash equivalents	550.60			550.60	
Other financial assets	20,124.94			20,124.94	
Total	**20,894.76**	**13.08**	**0.00**	**20,907.84**	**20,920.92**
Liabilities					
Borrowings	52,575.64			52,575.64	
Trade payables	396.25			396.25	
Other financial liabilities	47.71			47.71	
Total	**53,019.59**	**0.00**	**0.00**	**53,019.59**	**53,019.59**

The carrying value and fair value of financial instruments by categories as of March 31, 2023 are as follows :

(Amount in Lakhs)

Particulars	At amortised costs	At fair value through profit and loss	At fair value through OCI	Total carrying value	Total fair value
Assets					
Investment		10,743.55		10,743.55	10,743.55
Trade Receivable	219.22			219.22	
Cash and cash equivalents	244.51	-	-	244.51	
Other financial assets	195.31	-	-	195.31	
Total	659.04	10,743.55	0.00	11,402.60	22,146.15
Liabilities					
Borrowings	59,495.93	-	-	59,495.93	
Trade payables	139.19	-	-	139.19	
Other financial liabilities	105.90	-	-	105.90	
Total	59,741.02	-	-	59,741.02	59,741.02

30.15 Financials risk management objectives & policies

The risk management policies of the Company are established to identify and analyse the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company's activities.

The Management has overall responsibility for the establishment and oversight of the Company's risk management framework.

In performing its operating, investing and financing activities, the Company is exposed to the Credit risk, Liquidity risk and Market risk.

30.16 'Credit risk on financial assets

Credit risk is the risk of financial loss to the company if a customer or counter-party fails to meet its contractual obligations.

The Company is exposed to credit risk from its Financing activities, primarily Inter Company receivables from Related Parties, and fixed deposits with banks. The company generally does not have trade receivables as collection of toll income coincide as and when the traffic passes through toll - plazas except for Trade Receivables primarily from government authority i.e. NHAI.

'Other financial assets

The Company maintains exposure to cash equivalents. The company has set counter-parties limits based on multiple factors including financial positions, credit ratings, etc.

The company's maximum exposure to credit risk as at 31 March 2024 & 31 March 2023 is the carrying value of each class of financial assets.

30.17 Market Risk

The Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: Currency risk, Interest risk and price risk.

i) Foreign Currency Risk

Foreign currency risk is the risk that fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rate

The company is not exposed to foreign currency risk as it has no borrowing in foreign currency.

ii) Interest rate risk

Interest rate risk is the risk that fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates

The interest risk arises to the company mainly from long term borrowings with variable rates. The company measures risk through sensitivity analysis

The company's exposure to interest rate risk due to variable interest rate borrowings is a below:

Particulars	As at 31st March 2024	As at 31st March 2023
	Amount in Lakhs	Amount in Lakhs
Senior Debt from Banks - Variable rate borrowings	42,053.05	59,680.50

Sensitivity analysis based on average senior Debt

Particulars	Impact on profit /loss after tax	
	For the Year ended 31 March 2024	For the Year ended 31 March 2023
	Amount in Lakhs	Amount in Lakhs
Increase or decrease in interest rate by 25 base points	86.76	149.20

Note: Profit will increase in case of decrease in interest rate and vice versa

iii) Price risk

Price risk is the risk that the fair value or future cash flows of a financials instrument will fluctuate because or changes in market prices (other than those arising from interest rate risk or currency risk). The company is not exposed to Price risk in current year (PY. INR 10743.55 Lakh)

iv) Liquidity risk

Liquidity risk is the risk that the Company may not be able to meet its present and future cash and collateral obligations without incurring unacceptable losses. The Company's objective is to, at all times maintain optimum levels of liquidity to meet its cash and collateral requirements. The Company closely monitors its liquidity position and deploys a robust cash management system. It maintains adequate sources of financing including debt from banks at an optimised cost.

The Company maximum exposure to credit risk for the components of the balance sheet at 31st March, 2024 & 31st March 2023 is the carrying amounts. The liquidity risk is managed on the basis of expected maturity dates of the financial liabilities. The average credit period taken to settle trade payables is about 30 to 90 days. The other payables are with short-term durations. The carrying amounts are assumed to be a reasonable approximation of fair value. The following table analysis financial liabilities by remaining contractual maturities:

Particulars	On demand	Less than 3 months	3 to12 months	2 to 5 years	>5 years	Total
	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs
Year ended 31st March 2024						
Borrowings		2,066.45	33,331.93	17,177.26	-	52,575.64
Trade and other payables			396.25			396.25
Other financial liabilities			11.97	35.73		47.71
Total	-	2,066.45	33,740.16	17,212.99	-	53,019.59

Particulars	On demand	Less than 3 months	3 to12 months	2 to 5 years	>5 years	Total
	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs
Year ended 31st March 2023						
Borrowings	-	1,741.05	5,223.14	41,298.89	11,232.86	59,495.94
Trade and other payables	-		139.19	-	-	139.19
Other financial liabilities	-	-	49.23	56.67	-	105.90
Total	-	1,741.04	5,411.56	41,355.56	11,232.86	59,741.03

30.18 Capital commitment

Contracted but not provided in the financial statements

Construction of service road from 551+950 to 552+970 near Jakhura flying school as per Indendent Enginneer (IE) letter dated 24th May, 2024.

Infrastructure development cost on land provided by NHAI Rs 148.70 lakhs.

31. Capital Management

For the purpose of the Company's capital management, capital includes issued equity capital, share premium and all other equity reserves attributable to the equity holders of the Company. The primary objective of the Company's capital management is to maximise the shareholder value.

The Company manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Company may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. The Company monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Company's policy is to keep optimum gearing ratio. The Company includes within net debt, interest bearing loans and borrowings, trade and other payables, less cash and cash equivalents, excluding discontinued Operations.

Particulars	As at 31 March 2024	As at 31 March 2023
Borrowings	52,575.64	59,495.94
Trade payables	396.25	139.19
Other financial liabilities	47.71	105.90
Less: Cash & Cash Equivalents	550.60	244.51
Net debt	**52,468.99**	**59,496.51**
Total equity	24,100.40	6,718.30
Total member's capital	**24,100.40**	**6,718.30**
Capital and net debt	76,569.39	66,214.81
Gearing ratio (%)	**68.52%**	**89.85%**

32. Ratios

Sr. No.	Ratio	Numerator	Denominator	As at March 31, 2024	As at March 31, 2023	% change	Reason for variance/ non applicability
a	Current ratio (in times)	Current Assets	Current Liabilities	1.83	1.32	38.18%	Company has repaid Term loan taken from bank during the FY 2023-24
b	Debt-Equity Ratio (in times)	Total Debt	Shareholder's Equity	2.18	8.86	75.37%	Company has repaid Term loan from bank and NCD from India Infra Debt during the FY 2023-24
c	Debt Service Coverage Ratio (in times)	Earnings available for debt service	Debt Service	2.42	1.99	21.66%	Toll Revenue Increase during the current year and higher repayments in FY 23-24
d	Return on Equity Ratio (in %)	Net Profits after taxes	Average Shareholder's Equity	112.79%	330.15%	-65.84%	Net profit for current year as compared to profit in previous year
e	Net Capital Turnover Ratio (in times)	Net Sales	Average Working Capital	5.61	(14.49)	138.70%	Toll Revenue Increase during the year and Net profit for current year as compared to profit in previous year.
f	Net Profit Ratio (in %)	Net Profit	Net Sales	57.74%	35.29%	-63.61%	Toll Revenue Increase during the year and Net profit for current year as compared to profit in previous year
g	Return on Capital Employed (in %)	Earning before interest and taxes	Capital Employed*	36.02%	29.82%	20.80%	Toll Revenue Increase during the year

* Tangible Net Worth + Total Debt + Deferred Tax Liability

33. Additional disclosures pursuant to amendments made in Companies Act, 2013.

i) The Company has no immovable property whose title deeds are not held in the name of the Company and it also has no such immovable property jointly held with others.

ii) The Company has not revalued its property, plant and equipment.

iii) During the year, the Company has granted INR 18700 Lakh loans or advances in the nature of loans which are repayable on demand to related parties (as defined under Companies Act, 2013)

iv) No proceedings have been initiated or pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (45 of 1988) and the rules made thereunder, for the financial year 2023-24.

v) The Company is not declared as willful defaulter by any bank or financial Institution or other lender.

vi) The Company has not entered into any transactions with companies which are struck off under section 248 of the Companies Act, 2013 or section 560 of Companies Act, 1956 during the financial year ended on 31 March 2024.

vii) During the year Company has not advanced or loaned or invested funds (either borrowed funds or share premium or any other sources or kind of funds) to any other person(s) or entity(ies) , including foreign entities (Intermediaries) with the understanding (whether recorded in writing or otherwise) that the Intermediary shall :

(a) directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company (Ultimate Beneficiaries) or

(b) provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

viii) During the year Company has not received any fund from any person(s) or entity(ies) , including foreign entities (Funding Party) with the understanding (whether recorded in writing or otherwise) that the company shall

(a) directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party (Ultimate Beneficiaries) or

(b) provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

ix) The Company has no such transaction which are not recorded in the books of accounts during the year and also there are not such unrecorded income and related assets related to earlier years which have been recorded in the books of account during the year.

x) The Company has not traded or invested in Crypto currency or Virtual Currency during the financial year.

xi) The Company does not have any charges or satisfaction which are yet to be registered with ROC beyond the statutory period.

34. Previous year figures have been regrouped/ rearranged wherever necessary.

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No. 601788

Place: Mumbai
Date : 27.6.24

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Gopalakrishnan Krishnamurthy
Additional Director
DIN: 06560170

Karthikeyan Muthukumaraswamy
Director
DIN: 08609724

INDEPENDENT AUDITOR'S REPORT

To the Members of ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
(Formerly Known as Essel Devanahalli Tollway Private Limited)

Report on the Audit of Ind AS Financial Statements

Opinion

We have audited the Ind AS Financial Statements of Athaang Devanahalli Tollway Private Limited ("the Company"), which comprise the Balance Sheet as at 31 March 2023, and the Statement of Profit and Loss, including the Statement of Other Comprehensive Income, the Statement of Cash Flows and the Statement of Changes in Equity for the year then ended, and notes to the Financial Statements, including a summary of significant accounting policies and other explanatory information for the year ended on that date.

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid Ind AS Financial Statements give the information required by the Companies Act, 2013, as amended ("the Act") in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India, of the state of affairs of the Company as at 31 March 2023, and its profit including Other Comprehensive Income, its Cash Flows and the Changes in Equity for the year ended on that date.

Basis for Opinion

We conducted our audit of the Ind AS Financial Statements in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in Auditor's Responsibilities for the Audit of the Ind AS Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the financial statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Ind AS Financial Statements.

Other Information

The Company's Board of Directors is responsible for the other information. The other information comprises the Board's Report ("other information"), but does not include the Ind AS Financial Statements and our auditor's report thereon.

Our opinion on the Ind AS Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Ind AS Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Ind AS Financial Statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Management's Responsibility for the Ind AS Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these Ind AS Financial Statements that give a true and fair view of the financial position, financial performance including Other Comprehensive Income, Cash Flows and Changes in Equity of the Company in accordance with the accounting principles generally accepted in India, including the accounting Standards (Ind AS) specified under section 133 of the Act read with the Companies (Indian Accounting Standards) Rules 2015, as amended. This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate implementation and maintenance of accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the Ind AS Financial Statement that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the Ind AS Financial Statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those Board of Directors are also responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Ind AS Financial Statements

Our objectives are to obtain reasonable assurance about whether the Ind AS Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Ind AS Financial Statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Ind AS Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances. Under section 143(3)(i) of the Companies Act, 2013, we are also responsible for expressing our opinion on whether the company has adequate internal financial controls system in place and the operating effectiveness of such controls.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Ind AS Financial Statements or, if such disclosures are inadequate, to modify

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our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the Ind AS Financial Statements, including the disclosures and whether the Ind AS Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order"), issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act, 2013, we give in the "Annexure 1" a statement on the matters specified in paragraphs 3 and 4 of the Order, to the extent applicable.

2. As required by Section 143(3) of the Act, we report that:

   (a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit;

   (b) In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books;

   (c) The Balance Sheet, the Statement of Profit and Loss including the Statement of Other Comprehensive Income, and the Statement of Cash Flow and Statement of Changes in Equity dealt with by this Report are in agreement with the books of account;

   (d) In our opinion, the aforesaid Ind AS Financial Statements comply with the Accounting Standards specified under Section 133 of the Act, read with Companies (Indian Accounting Standards) Rules,2015, as amended;

   (e) On the basis of the written representations received from the directors as on 31 March 2023 taken on record by the Board of Directors, none of the directors is disqualified as on 31 March 2023 from being appointed as a director in terms of Section 164(2) of the Act;

   (f) With respect to the adequacy of the internal financial controls over financial reporting of the Company with reference to these Ind AS Financial Statements and the operating effectiveness of such controls, refer to our separate Report in "Annexure 2";

   (g) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

      i. The Company has disclosed the impact of pending litigations on its financial position in its financial statements – Refer Note 31.2 to the financial statements;

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ii. The Company has made provision, as required under the applicable law or accounting standards for material foreseeable losses;

iii. There were no amounts which were required to be transferred, to the Investor Education and Protection Fund by the Company.

iv. (a) The Management has represented that, to the best of it's knowledge and belief, as disclosed in the note 34 (vii) to the financial statements, during the year no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the Company to or in any other person or entity, including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(b) The Management has represented, that, to the best of it's knowledge and belief, as disclosed in the note 34 (viii) to the financial statements, during the year no funds have been received by the Company from any person or entity, including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the Company shall, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(c) Based on the audit procedures performed that have been considered reasonable and appropriate in the circumstances, nothing has come to our notice that has caused us to believe that the representations under sub-clause (i) and (ii) of Rule 11(e) contain any material misstatement.

(d) As proviso to rule 3(1) of the Companies (Accounts) Rules, 2014 is applicable for the company only w.e.f. April 1, 2023, reporting under this clause is not applicable.

v. The Company has not declared or paid any equity dividend during the year.

For **Nangia & Co. LLP**
Chartered Accountants
FRN No. 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 23601788BGVLKR6928

Place: Mumbai
Date: 14 June 2023

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Annexure 1 referred to in paragraph 1 under the heading 'Report on other legal and regulatory requirements' of our report of even date.

Re: Athaang Devanahalli Tollways Private Limited ("the Company")

(i) (a) (A) The Company has maintained proper records showing full particulars, including quantitative details and the situation of Property, Plant and Equipment.

(a) (B) The Company has maintained proper records showing full particulars of intangible assets.

(b) All Property, Plant and Equipment were physically verified by the management in the year in accordance with a planned programme of verifying them every year which, in our opinion, is reasonable having regard to the size of the Company and the nature of its assets. Pursuant to this programme all property, plant and equipment were physically verified during the year and no material discrepancies were noticed on such verification.

(c) According to information and explanations given to us and on the basis of our examination of the records of the Company, the title deeds of all the immovable properties (other than properties where the company is the lessee and the lease agreements are duly executed in favour of the lessee) are held in the name of the Company.

(d) The Company has not revalued its Property, Plant and Equipment (or intangible assets) during the year ended 31 March 2023.

(e) According to information and explanations given to us, there are no proceedings initiated or are pending against the Company for holding any benami property under the Prohibition of Benami Property Transactions Act, 1988 and rules made thereunder.

(ii) (a) The Company's business does not require maintenance of inventories and, accordingly, the requirement to report on clause 3(ii)(a) of the Order is not applicable to the Company.

(b) The Company has not been sanctioned any working capital limits in excess of five crore rupees in aggregate from banks and financial institutions during any point of time of the year on the basis of security of current assets. Accordingly, the requirement to report on Clause (ii)(b) of the Order is not applicable to the Company.

(iii) (a) During the year the Company has not provided loans, advances in the nature of loans, stood guarantee or provided security to companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(a) of the Order is not applicable to the Company.

(b) During the year the Company has not made investments, provided guarantees, provided security and granted loans and advances in the nature of loans to companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(b) of the Order is not applicable to the Company.

(c) The Company has not granted loans and advances in the nature of loans to companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(c) of the Order is not applicable to the Company.

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(d) The Company has not granted loans or advances in the nature of loans to companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(d) of the Order is not applicable to the Company.

(e) There were no loans or advance in the nature of loan granted to companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(e) of the Order is not applicable to the Company

(f) The Company has not granted any loans or advances in the nature of loans, either repayable on demand or without specifying any terms or period of repayment to companies, firms, Limited Liability Partnerships or any other parties. Accordingly, the requirement to report on clause 3(iii)(f) of the Order is not applicable to the Company.

(iv) According to the information and explanations given to us and on the basis of our examination of records of the Company, there are no loans, investments, guarantee or securities given in respect of which provisions of Sections 185 and 186 of the Companies Act, 2013 are applicable. Accordingly, the provision of Clause (iv) of the Order is not applicable to the Company.

(v) The Company has neither accepted any deposits from the public nor accepted any amounts which are deemed to be deposits within the meaning of sections 73 to 76 of the Companies Act and the rules made thereunder, to the extent applicable. Accordingly, the requirement to report on clause 3(v) of the Order is not applicable to the Company.

(vi) We have broadly reviewed the books of account maintained by the Company pursuant to the rules made by the Central Government for the maintenance of cost records under section 148(1) of the Companies Act, 2013, and are of the opinion that prima facie, the specified accounts and records have been made and maintained. We have not, however, made a detailed examination of the same.

(vii) (a) According to the information and explanations given to us, the Company have generally been regular in depositing with appropriate authorities undisputed statutory dues including goods and services tax, provident fund, employee's state insurance, duty of customs, income-tax and other statutory dues applicable to it. The provisions relating to sales-tax, duty of excise and value added tax are currently not applicable to Company. According to the information and explanations given to us and based on audit procedures performed by us, no undisputed amounts payable in respect of these statutory dues were outstanding, at the year end, for a period of more than six months from the date they became payable.

(b) According to the information and explanations given to us, there are no dues of goods and services tax, provident fund, employees' state insurance, sales-tax, service tax, customs duty, excise duty, value added tax, cess, goods and service tax and other statutory dues which have not been deposited on account of any dispute.

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Details of dues of Income Tax which have not been deposited as on 31 March 2023 on account of disputes are given below:

Name of the statute	Nature of the dues	Amount (Rs.in lakhs)	Period to which the amount relates	Forum where the dispute is pending	Remarks, if any
Income Tax Act, 1961	Income Tax	16.57	FY - 2011-12 AY - 2012- 13	Income Tax Appellate Tribunal (ITAT)	Tax pertains to amount of toll collection received during pre-construction period.
Income Tax Act, 1961	Income Tax	402.15	FY - 2012-13 AY - 2013- 14	Income Tax Appellate Tribunal (ITAT)	
Income Tax Act, 1961	Income Tax	1,034.35	FY- 2013-14 AY - 2014- 15	Income Tax Appellate Tribunal (ITAT)	

(viii) According to the information and explanations given to us, the Company has not surrendered or disclosed any transaction, previously unrecorded in the books of account, in the tax assessments under the Income Tax Act, 1961 as income during the year.

(ix) (a) According to the information and explanations given to us, the Company has not defaulted in repayment of loans or other borrowings or in the payment of interest thereon to any lender.

(b) The Company has not been declared willful defaulter by any bank or financial institution or government or any government authority.

(c) According to the information and explanations given to us, term loans were applied for the purpose for which the loans were obtained.

(d) The Company did not raise any funds on short term basis during the year hence, the requirement to report on clause (ix)(d) of the Order is not applicable to the Company.

(e) The Company does not have any subsidiary, associate or joint venture. Accordingly, the requirement to report on clause 3(ix)(e) of the Order is not applicable to the Company.

(f) The Company does not have any subsidiary, associate or joint venture. Accordingly, the requirement to report on Clause 3(ix)(f) of the Order is not applicable to the Company.

(x) (a) According to the information and explanations are given to us, the Company has not raised any money by way of initial public offer or further public offer and hence, the requirement to report on clause 3(x)(a) of the Order is not applicable to the Company.

(b) According to the information and explanations given to us, the Company has not made any preferential allotment or private placement of shares or convertible debentures (fully, partially or optionally convertible) during the year and hence, the requirement to report on clause 3(x)(a) of the Order is not applicable to the Company.

(xi) (a) According to the information and explanations given to us, no material fraud by the Company or on the Company has been noticed or reported during the year.

(b) During the year, no report under sub-section (12) of section 143 of the Companies Act, 2013 has been filed by secretarial auditor or by us in Form ADT – 4 as prescribed under Rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government.

(c) As represented to us by the management, there are no whistleblower complaints received by the company during the year.

(xii) The Company is not a Nidhi Company as per the provisions of the Companies Act, 2013. Therefore, the requirement to report on clause 3(xii)(a), (b) and (c) of the Order is not applicable to the Company.

(xiii) According to the information and explanations given to us, transactions with the related parties are in compliance with sections 177 and 188 of the Companies Act, 2013 where applicable and the details have been disclosed in the notes to the financial statements, as required by the applicable accounting standards.

(xiv) (a) According to the information and explanations are given to us. The Company has an internal audit system commensurate with the size and nature of its business.

(b) According to the information and explanations given to us, the internal audit reports of the Company issued till the date of the audit report, for the period under audit have been considered by us.

(xv) According to the information and explanations given to us, the Company has not entered into any non-cash transactions with its directors or persons connected with its directors and hence requirement to report on clause 3(xv) of the Order is not applicable to the Company.

(xvi) (a) The provisions of section 45-IA of the Reserve Bank of India Act, 1934 (2 of 1934) are not applicable to the Company. Accordingly, the requirement to report on clause (xvi)(a) of the Order is not applicable to the Company.

(b) The Company has not conducted any Non-Banking Financial activities or Housing Finance activities without obtaining a valid Certificate of Registration (CoR) from the Reserve Bank of India as per the Reserve Bank of India Act, 1934.

(c) The Company is not a Core Investment Company as defined in the regulations made by Reserve Bank of India. Accordingly, the requirement to report on clause 3(xvi)(c) of the Order is not applicable to the Company.

(d) There is no Core Investment Company as a part of the Group, hence, the requirement to report on clause 3(xv)(d) of the Order is not applicable to the Company.

(xvii) The Company has not incurred any cash losses in the current and immediately preceding financial year.

(xviii) There has been no resignation of the statutory auditors during the year and accordingly, requirement to report on Clause 3(xviii) of the Order is not applicable to the Company.

(xix) On the basis of the financial ratios disclosed in note 33 to the financial statements, ageing and expected dates of realization of financial assets and payment of financial liabilities, other information accompanying the financial statements, our knowledge of the Board of Directors and management plans and based on our

examination of the evidence supporting the assumptions, nothing has come to our attention, which causes us to believe that any material uncertainty exists as on the date of the audit report that Company is not capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date. We, however, state that this is not an assurance as to the future viability of the Company. We further state that our reporting is based on the facts up to the date of the audit report and we neither give any guarantee nor any assurance that all liabilities falling due within a period of one year from the balance sheet date, will get discharged by the Company as and when they fall due.

(xx) (a) In respect of other than ongoing projects, there are no unspent amounts that are required to be transferred to a fund specified in Schedule VII of the Companies Act (the Act), in compliance with second proviso to sub section 5 of section 135 of the Act. This matter has been disclosed in Note 31.11 to the financial statements.

(b) There are no unspent amounts in respect of ongoing projects, that are required to be transferred to a special account in compliance of provision of sub section (6) of section 135 of Companies Act. This matter has been disclosed in Note 31.11 to the financial statements.

(xxi) The Company does not prepare consolidated financial statements, hence the requirement to report on clause 3(xxi) of the Order is not applicable to the Company.

For **Nangia & Co. LLP**
Chartered Accountants
FRN No. 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 23601788BGVLKR6928

Place: Mumbai
Date: 14 June 2023

Nangia & Co. LLP Mumbai Chartered Accountants

"ANNEXURE 2" TO THE INDEPENDENT AUDITOR'S REPORT OF EVEN DATE ON THE FINANCIAL STATEMENTS OF ATHAANG DEVANAHALLI TOLLWAYS PRIVATE LIMITED

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

To
The Member of
Athaang Devanahalli Tollways Private Limited

We have audited the internal financial controls over financial reporting of Athaang Devanahalli Tollways Private Limited ("the Company") as of 31 March 2023 in conjunction with our audit of the Financial Statements of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India ("ICAI"). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by Institute of Chartered Accountants of India and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the ICAI. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the Financial Statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system over financial reporting.

Meaning of Internal Financial Controls Over Financial Reporting

A company's internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Financial Statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of Financial Statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the Financial Statements.

Inherent Limitations of Internal Financial Controls Over Financial Reporting

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at 31 March 2023 based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the ICAI.

For **Nangia & Co. LLP**
Chartered Accountants
FRN No. 002391C/N500069

Jaspreet Singh Bedi
Partner
Membership No.: 601788
UDIN: 23601788BGVLKR6928

Place: Mumbai
Date: 14 June 2023

Nangia & Co. LLP
Mumbai
Chartered Accountants

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164

BALANCE SHEET AS AT 31 MARCH 2023

CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	Note No.	As at 31 March 2023	As at 31 March 2022
ASSETS			
Non-Current Assets			
a) Property, plant and equipment	5	112.15	134.50
b) Intangible assets	6	45,719.92	51,384.39
c) Financial Assets			
(i) Investments	7	10,743.55	12,782.69
(ii) Other Financial Asset	8	106.07	3,621.02
d) Other non-current assets	9	1,665.16	244.73
		58,346.84	**68,167.33**
Current Assets			
a) Financial Assets			
(i) Trade receivables	10	219.22	133.21
(ii) Cash and cash equivalents	11(a)	244.51	19,724.62
(iii) Bank balances other than above	11(b)	10,950.00	-
(iv) Other Financial Asset	12	89.24	66.32
b) Other current assets	13	50.32	39.56
		11,553.29	**19,963.71**
TOTAL		**69,900.13**	**88,131.04**
EQUITY AND LIABILITIES			
Equity			
a) Equity share capital	14	429.57	429.57
b) Other Equity	15	6,288.73	(2,079.33)
		6,718.30	**(1,649.76)**
Non-Current Liabilities			
a) Financial Liabilities			
(i) Borrowings	16	52,583.60	62,999.45
(ii) Other Financial Liabilities	17	56.67	43.56
b) Provisions	18	1,813.99	675.60
		54,454.27	**63,718.61**
Current Liabilities			
a) Financial Liabilities			
(i) Borrowings	19	6,912.33	24,084.66
(ii) Trade payables			
- total outstanding dues of micro and small enterprises			
- total outstanding dues of creditor other than micro and small enterprises	20	139.19	149.85
(iii) Other Financial Liabilities	21	49.23	224.46
b) Other current liabilities	22	463.08	587.23
c) Provisions	23	1,163.77	1,015.99
		8,727.61	**26,062.19**
TOTAL		**69,900.13**	**88,131.04**

Significant accounting policies & the accompanying notes form an integral part of the financial statements

Note No. 1-37

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jaiveer Singh Bedi
Partner
Membership No. 601788

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Karthikeyan M
Director
DIN: 08609724

Deepak Ramachandran
Director
DIN NO: 08531364

Place: Mumbai
Date : 14.06.2023

Nangia & Co. LLP Mumbai Chartered Accountants

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
STATEMENT OF PROFIT AND LOSS FOR THE YEAR ENDED 31 MARCH 2023
CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	Notes	For the Year ended 31 March, 2023	For the Year ended 31 March, 2022
Revenue from Operations	24	23,712.43	13,391.79
Other Income	25	1,322.67	675.96
Total Income		**25,035.10**	**14,067.75**
Expenses			
Operating and Maintenance Expenses	26	3,819.08	2,875.07
Employee Benefit Expenses	27	233.43	180.73
Finance Costs	28	5,622.71	6,313.07
Depreciation and Amortization Expenses	5&6	5,755.12	5,730.05
Other Expenses	29	1,096.56	788.87
Total Expenses		**16,526.90**	**15,887.79**
Profit / (loss) before exceptional items and tax		8,508.20	(1,820.04)
Exceptional Items	30	-	(1.81)
Profit / (loss) before tax		8,508.20	(1,821.85)
Tax expense:			
(1) Current tax		1,486.77	-
(2) MAT credit		(1,345.39)	
(3) Deferred tax			
Profit / (loss) for the Year		**8,366.82**	**(1,821.85)**
Other Comprehensive Income (Net of Taxes)			
A (i) Items that will not be reclassified to profit or loss:			
Re-measurements of defined benefit plans		1.23	2.07
B (i) Items that will be reclassified to profit or loss		-	-
Total Comprehensive Income for the Year		**1.23**	**2.07**
Profit (Loss) and other comprehensive for the Year		**8,368.06**	**(1,819.78)**
Earnings per equity share of Rs. 10 Each			
(1) Basic	31.7	**194.80**	**(42.36)**
(2) Diluted		**194.80**	**(42.36)**

Significant accounting policies & the accompanying notes form an integral part of the financial statements — **Note No. 1-37**

For Nangia & Co. LLP
Chartered Accountants
Firm Regn.No.110266W

Jaspreet Singh Bedi
Partner
Membership No. 601788

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Karthikeyan VI
Director
DIN: 08609724

Deepak Ramachandran
Director
DIN NO: 08531364

Place: Mumbai
Date : 14.06.2023

Nangia & Co. LLP Mumbai Chartered Accountants

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
STATEMENT OF CHANGES IN EQUITY FOR YEAR ENDED 31 MARCH, 2023
CIN No. U45203TG2010PTC067113

(A) Equity Share Capital (Amount in lakhs)

Particulars	Amount
Balance at the beginning of April 1, 2021	429.57
Changes in equity share capital during the year	-
Balance at the end of Mar 31, 2022	**429.57**
Balance at the beginning of April 1, 2022	429.57
Changes in equity share capital during the year	-
Balance at the end of Mar 31, 2023	**429.57**

(B) Other Equity

(Amount in lakhs)

Particulars	Securities Premium Reserve	Retained Earnings	Debenture Redemption Reserve	Total
Balance as at March 31, 2021	12,428.43	(12,687.98)	-	(259.55)
Profit/Loss for the year	-	(1,821.85)	-	(1,821.85)
Total Comprehensive Income for the year	-	2.07	-	2.07
Balance as at March 31, 2022	12,428.43	(14,507.76)	-	(2,079.33)
Profit/Loss for the year	-	8,368.06	-	8,368.06
Total Comprehensive Income for the year	-	-	-	-
Transfer (from)/to DRR		(1,202.81)	1,202.81	-
Balance as at March 31, 2023	12,428.43	(7,342.50)	1,202.81	6,288.73

As per our report attached

For Nangia & Co. LLP
Chartered Accountants
Firm Regn.No.110266W

[redacted]
Partner
Membership No. 601788

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Karthikeyan M
Director
DIN 08609724

Deepak Ramachandran
Director
DIN NO: 08531364

Place Mumbai
Date 14.06.2023

Nangia & Co. LLP Mumbai Chartered Accountants

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
Cash Flow for the year ended 31st March 2023
CIN No. U45203TG2010PTC067113

(Amount in Lakhs)

Particulars	For the Year ended 31 March, 2023	For the Year ended 31 March, 2022
A.Cash flow from Operating Activities:		
Net profit for the year After tax	8,366.82	(1,821.85)
Income From Mutual Funds	(515.92)	(513.06)
Interest Income on Fixed Deposit	(209.67)	(67.73)
Depreciation& Amortisation	5,755.12	5,730.05
Finance Costs	5,565.90	6,313.07
Operating Profit before working capital changes	**18,962.27**	**9,640.48**
Changes in other accounts affecting operations:		
(Increase)/decrease in Other Financial assets	-	(17.81)
(Increase)/decrease in Other Non-Current assets	(1,420.42)	84.24
(Increase)/decrease in Trade Receivables	(86.00)	45.84
(Increase)/decrease in Other Current Financial assets	(22.92)	-
(Increase)/decrease in Other Current Assets	(10.74)	61.65
Increase/(decrease) in other financial Liabilities	13.11	0.94
Increase/(decrease) in Provisions	1,287.40	(58.96)
Increase / (Decrease) in trade payables	(10.66)	(601.38)
Increase / (Decrease) in other (current) Financial Liabilities	(175.23)	-
Increase / (Decrease) in other current Liabilities	(124.15)	(23.69)
Cash generated from /(used for) Operating Activities	**18,412.65**	**9,131.31**
Less: taxes (paid)/ received	-	(9.13)
Net cash generated/(used) from Operating Activities	**18,412.65**	**9,122.18**
B.Cash flow from Investing Activities:		
Purchase of Fixed Assets / Intangible Assets	(68.39)	(116.39)
Investment in Mutual Fund	(8,996.94)	-
Redemption of Mutual Fund	11,551.99	700.00
Invested in Fixed Deposit(net)	(7,435.05)	(3,318.34)
Interest received	234.62	10.60
Net Cash used in Investing Activities	**(4,713.77)**	**(2,724.13)**
C.Cash flow from Financing Activities:		
(Repayment) to long term borrowings	(6,915.84)	15,642.80
Issue/(Repayment) of Optional Convertible Debenture	(3,500.00)	3,500.00
Short Term Borrowings Paid	(17,172.33)	
Interest Paid	(5,590.85)	(6,323.00)
Net Cash from Financing Activities	**(33,179.02)**	**12,819.80**
Increase/(Decrease) in cash and cash equivalents(A+B+C)	(19,480.11)	**19,217.85**
Add: Cash and cash equivalents at the beginning of the year	19,724.62	506.77
Cash and cash equivalents at the end of the Year	**244.51**	**19,724.62**

1.Cash Flow Statement has been prepared under the Indirect Method as set out in the Ind AS 7 "Cash Flow Statements"

2.Cash and Cash Equivalents represent cash and bank balances.

Particulars	As at 31 March 2023	As at 31 March 2022
Cash on hand	8.73	16.14
Balances with Banks in Current Accounts	235.75	19,708.48
Prepaid Card	0.03	-
TOTAL	244.51	19,724.62

As per our report attached

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jagpreet Singh Bedi
Partner
Membership No. 601788

For and on behalf of the Board of Directors
Athaang Devanahalli Tollway Private Limited

Karthikeyan M
Director
DIN: 08609724

Deepak Ramachandran
Director
DIN NO. 08531364

Place: Mumbai
Date : 14.06.2023

Nangia & Co. LLP Mumbai Chartered Accountants

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH, 2023

1. Background and Corporate Information

The Company had been granted the Concession by National Highway Authority of India (Under the Ministry of Road Transport & Highways of Government of India) for "Design, Engineering, Finance, Construction, Operation and Maintenance of operation and maintenance of 6 lane – 22.12 km stretch from km 534.720 (near Hebbal) to km 556.840 (near Bengaluru International Airport) of Hyderabad-Bengaluru section on NH-7 in the state of Karnataka, on Design, Build, Finance, Operate and Transfer ("DBFOT") basis. The construction of Project Road was completed and company got right to commence Commercial operation on May 01, 2014. During FY 2021, 100% ownership of the company was acquired by National Investment & Infrastructure Fund on 29th Sep 2020. Subsequently, name of company was changed from Essel Devanahalli Tollway Private Limited to Athaang Devanahalli Tollway Private Limited. With effect from 3rd October 2022, the Registered office of company has been shifted to NH44@KM 349.950 Opposite Sai Baba Temple, Indalwai Village Nizamabad, Telangana- 503164, India.

The Ind AS financial statements were authorised and approved for issue by Board of Directors on 14th June 2023.

2. Basis of preparation of Financial Statements

The Ind AS financial statements of the Company have been prepared in accordance with Indian Accounting Standards (Ind AS) as notified under the Companies (Indian Accounting Standards) Rules, 2015 (as amended) and presentation requirements of Division II of Schedule III to the Companies Act, 2013. The financial statements have been prepared under the historical cost convention, as modified by the application of fair value measurements required or allowed by relevant Accounting Standards Accounting policies have been consistently applied to all periods presented, unless otherwise stated.

The financial statements are presented in Indian Rupees (INR) and all values are converted to the nearest lakhs, except when otherwise indicated.

a. Statement of compliance

These financial statements of the Company have been prepared in accordance with Indian Accounting Standards as per the Companies (Indian Accounting Standards) Rules, 2015 as amended and notified under Section 133 of the Companies Act, 2013 and the other relevant provisions of the Act.

b. Use of judgements and estimates

The preparation of the Ind AS financial statements in conformity with Ind AS requires management to make judgements, estimates and assumptions that affect the reported amounts of Income, expenses, assets and liabilities and the disclosure of contingent liabilities. However, Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

Estimates and underlying assumptions are reviewed at each reporting date. Any revision to accounting estimates and assumptions are recognized prospectively i.e. recognized in the period in which the estimate is revised, and future periods affected.

(i) Property Plant and Equipment/ Intangible Assets

Estimates are involved in determining the cost attributable to bringing the assets to the location and condition necessary for it to be capable of operating in the manner intended by the management. Property, Plant and Equipment/Intangible Assets are depreciated/ amortised over their estimated useful life, after taking into account estimated residual value. Management reviews the estimated useful life and residual values of the assets annually in order to determine the amount of depreciation/ amortisation to be recorded during any reporting period. The useful life and residual values are based on the Company's historical experience with similar assets and take into account anticipated technological and future risks. The depreciation/ amortisation for future periods is revised if there are significant changes from previous estimates

(ii) Provisions

The timing of recognition and quantification of the liability (including litigations) requires the application of judgement to existing facts and circumstances, which can be subject to change. The carrying amounts of provisions and liabilities are reviewed regularly and revised to take account of changing facts and circumstances.

3. Standards Issued but not Effective

Ministry of Corporate Affairs (MCA) notifies new standards or amendment to the existing standards under Companies (Indian Accounting Standards) Rules as issued from time to time. On March 31, 2023, MCA amended the Companies (Indian Accounting Standards) Rules, 2023, as below:

i. Ind AS 1 - Presentation of Financial Statements - This amendment requires the entities to disclose their material accounting policies rather than their significant accounting policies. The effective date for adoption of this amendment is annual periods beginning on or after April 1, 2023. The Company has evaluated the amendment and the impact of the amendment is insignificant in the financial statements.

ii. Ind AS 8 - Accounting Policies, Changes in Accounting Estimates and Errors - This amednement has introduced a definition of "accounting estimates" and included amendments to Ind AS 8 to help entities distinguish changes in accounting policies from changes in accounting estimates. The effective date for adoption of this amendment is annual periods beginning on or after April 1, 2023. The Company has evaluated the amendment and there is no impact on its financial statements.

iii. Ind AS 12 - Income Taxes - This amendment has narrowed the scope of the initial recognition exemption so that it does not apply to transactions that give rise to equal and offseting temporary differences. The effective date for adoption of this amendment is annual periods beginning on or after April 1, 2023. The Company has evaluated the amendment and there is no impact on its financial statements.

4. Significant Accounting Policies

a. Current /non-current classification

All assets and liabilities are presented in the balance sheet based on current or non-current classification as per the company's normal operating cycle criteria set out in Schedule III of the Companies Act, 2013. Based on the nature of products and the time between the acquisition of assets for processing and their realization into cash and cash equivalent, the Company has ascertained its operating cycle as twelve months for the purpose of current/non-current classification of assets and liabilities. An asset is treated as current when it is:

a) Expected to be realized or intended to be sold or consumed in normal operating cycle
b) Held primarily for the purpose of trading
c) Expected to be realized within twelve months after the reporting period
d) Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

All other assets are classified as non-current.

A liability is current when:
a) It is expected to be settled in normal operating cycle
b) It is held primarily for the purpose of trading
c) Due to be settled within twelve months after the reporting period

d) There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

b. Functional and presentation currency

Items included in the financial statements of the company are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). The functional statements are presented in Indian Rupees, which is the company's functional and presentation currency.

c. Cash and cash equivalents

Cash and cash equivalents in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the Statement of Cash Flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Company's cash management.

d. Property, Plant and Equipment(PPE)

Property, Plant and Equipment is recognised when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can measured reliably. PPE is stated at original cost net of tax/duty credits availed, if any, less accumulated depreciation. For qualifying assets, borrowing costs capitalised in accordance with the IND AS 23.

Administrative and other general overhead expenses that are specifically attributable to construction or acquisition of PPE or bringing the PPE to working condition are allocated and capitalised as a part of the cost of the PPE.

Property, Plant and Equipment not ready for the intended use on the date of the Balance Sheet are disclosed as "Capital work-in-progress".

Depreciation on assets have been provided on WDV basis as per useful lives specified in the Schedule II of the Companies Act, 2013. Depreciation on additions / deductions is calculated pro-rata from / to the month of additions / deductions.

Assets individually costing less than Rs.5,000/- are fully depreciated in the year of purchase.

The estimated useful lives are as follows :

Particulars	**Useful life as prescribed by Schedule II of the Companies Act, 2013**	**Useful life estimated by Company**
Toll Equipment	5 years	5 years
Computers	3 years	3 years
Office Equipment	5 years	5 years
Furniture & Fixtures	10 years	10 years
Motor Cycle	10 years	10 years

e. Intangible Assets

Right of Carriageway - Toll Projects

Intangible assets are recognised net of government grants when it is probable that future economic benefits that are attributable to the asset will flow to the enterprise and the cost of the asset can be measured reliably. Intangible assets are stated at original cost net of tax/duty credits availed, if any, less accumulated amortisation and cumulative impairment.

Toll collection rights obtained in consideration for rendering construction services, represent the right to collect toll revenue during the concession period in respect of Build-Operate-Transfer ("BOT") project undertaken by the Company. The intangible asset model is used to the extent that the Company receives a right to charge users of the public service.

The intangible assets is measured at the fair value of consideration transferred to acquire asset, which is the fair value of consideration received or receivable for the construction services delivered

Amortization of Right of Carriageway - Toll Projects

The assets would be amortized under straight line method over the life of the asset till the end of the concession period.

Amortization of Computer Software

The assets would be amortized under WDV basis for useful life of 5 yrs.

f. Impairment of Non-Financial Assets

Non-financial assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash inflows which are largely independent of the cash inflows from other assets or groups of assets (cash-generating units). Nonfinancial assets that suffered impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

g. Financial Instruments

The Company classifies its financial assets into the following measurement categories:

i. Financial assets to be measured at amortised cost
ii. Financial assets to be measured at fair value through other comprehensive income
iii. Financial assets to be measured at fair value through profit or loss account

The classification depends on the contractual terms of the financial assets' cash flows and the Company's business model for managing financial assets

Fair value measurements are categorised as below based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirely:

• Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that entity can access at measurement date

• Level 2 inputs are inputs, other than quoted prices included in Level 1, that are observable for the asset or liability, either directly or indirectly; and

• Level 3 inputs are unobservable inputs for the asset or liability.

i) Financial Assets

All recognised financial assets are measured in their entirety at either amortised cost or fair value, depending on the classification of the financial assets

Investments in debt instruments that meet the following conditions are subsequently measured at amortised cost (unless the same are designated as fair value through profit or loss (FVTPL):

• The asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows; and

• The contractual terms of instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A financial asset is primarily derecognised when:
i. the rights to receive cash flows from the asset have expired, or
ii. the company has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a pass-through arrangement; and where
a) the company has transferred substantially all the risks and rewards of the asset, or
b) the company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

Impairment of financial assets: The Company applies the expected credit loss model for recognising impairment loss on financial assets measured at amortised cost, debt instruments, trade receivables and other contractual rights to receive cash or other financial asset and financial guarantees not designated as at FVTPL. For the purpose of measuring expected credit loss allowance for businesses other than financial services for trade receivables, the Company has used a provision matrix which takes into account historical credit loss experience and adjusted for forward looking information as permitted under Ind AS 109.

ii) Financial Liabilities

Financial liabilities are classified at initial recognition, as financial liabilities as fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Loans and borrowings are subsequently measured at amortised costs using Effective Interest Rate method.
Financial liabilities at fair value through profit or loss (FVTPL) are subsequently measured at fair value.
Financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires.

h. Revenue Recognition

i) Revenue is measured at the fair value of the consideration received or receivable, Amounts disclosed as revenue are exclusive of duties and taxes.

ii) The Company recognizes revenue when the amount of revenue can be reliably measured, it is probable that the future economic benefits would flow to the entity and specific criteria have been met for each of the activities described below. The company bases its estimates on historical results, taking into consideration the type of customer, type of transaction and specific of the arrangement.

iii) Toll collections from the users of the infrastructure facility constructed by the Company under the Service Concession Arrangement is accounted for based on actual collection, net of revenue share payable under the Concession agreement wherever applicable.

iv) Interest Income is recognized on time proportion basis taking into account the amount outstanding and applicable interest rate.

v) Dividend Income is recognized when the right to receive is established.
vi) Profit/loss on sale of investments is recognised at the time of actual sale/redemption and for mutual funds at fair value through profit/loss.
vii) Insurance claims are accounted for on the basis of claims admitted / expected to be admitted and to the extent that the amount recoverable can be measured reliably and it is reasonable to expect ultimate collection.
viii) Other items of income are accounted as and when the right to receive arises.

i. Government Grants

Government grants are recognised where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognised as income on a systematic basis over the periods that the related costs, for which it is intended to compensate, are expensed. When the grant relates to an asset, it is recognised on a systematic basis over the expected useful life of the related asset.

j. Foreign currencies transactions and translation

Transactions in foreign currencies are recorded at the exchange rate prevailing on the date of transaction. Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency closing rates of exchange at the reporting date.

k. Employee Benefits

Employee benefits include provident fund, employee state insurance scheme, gratuity & compensated absences.

(i). Short term employee benefits

All employee benefits falling due wholly within twelve months of rendering the service are classified as short term employee benefits. The benefits like salaries, wages, short term compensated absences etc and the expected cost of bonus, ex-gratia are recognised in the period in which the employee renders the related service.

(ii).Post-employment benefits

(a) Defined contribution plans:

Defined Contribution Plans: The Company's obligation to employee's provident fund is a defined contribution plan. The contribution paid/payable is recognized in the period in which the employee renders the related service.

(b) Defined benefit plans:
The Company's obligation towards gratuity is a defined benefit plan.

The present value of the obligation under such Defined Benefit Plans is determined based on actuarial valuation using the Projected Unit Credit Method, which recognizes each period of service as giving rise to additional unit of employee benefit entitlement and measures each unit separately to build up the final obligation.

The obligation is measured at the present value of the estimated future cash flows. The discount rates used for determining the present value of the obligation under defined benefit plans, is based on the market yields on Government securities as at the Balance sheet date, having maturity periods approximating to the terms of related obligations.

The interest element in the actuarial valuation of defined benefit plans, which comprises the implicit interest cost and the impact of changes in discount rate, is classified under finance cost. The balance charge is recognised as employee benefit expenses in the Statement of Profit and Loss.

In case of funded plans, the fair value of the plan assets is reduced from the gross obligation under the defined benefit plans to recognise the obligation on a net basis.

Gains or losses on the curtailment or settlement of any defined benefit plan are recognised when the curtailment or settlement occurs. Past service cost is recognised as expense at the earlier of the plan amendment or curtailment and when the Company recognises related restructuring costs or termination benefits.

l. Borrowing Cost

Borrowing costs include interest calculated using the effective interest rate method, amortisation of ancillary costs incurred and exchange differences arising from foreign currency borrowings to the extent they are regarded as an adjustment to the interest cost. Costs in connection with the borrowing of funds to the extent not directly related to the acquisition of qualifying assets are charged to the Statement of Profit and Loss over the tenure of the loan. Borrowing costs, allocated to and utilized for acquisition, construction or production of qualifying assets, pertaining to the period from commencement of activities relating to construction / development of the qualifying asset up to the date of capitalization of such asset are added to the cost of the assets. Capitalization of borrowing costs is suspended and charged to the Statement of Profit and Loss during extended periods when active development activity on the qualifying assets is interrupted.

m. Leases

Operating lease payments are recognized as an operating expense in the income statement on a straight line basis over the lease term

n. Earnings per share

Basic earnings per share is calculated by dividing the net profit or loss attributable to equity holder of the company (after deducting preference dividends and attributable taxes) by the weighted average number of equities shares outstanding during the period.

For the purpose of calculating diluted earnings per share, the net profit/(loss) for the period attributable to equity shareholders of the parent company and the weighted average number of shares outstanding during the period are adjusted for the effects of all dilutive potential equity shares.

o. Tax Expenses

The tax expenses for the period comprises of current tax and deferred income tax. Tax is recognised in Statement of Profit and Loss, except to the extent that it relates to items recognised in the Other Comprehensive Income. In which case, the tax is also recognised in Other Comprehensive Income.

i. Current Tax

Current tax assets and liabilities are measured at the amount expected to be recovered from or paid to the Income Tax authorities, based on tax rates and laws that are enacted at the Balance sheet date.

ii. Deferred Tax

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities in the Financial Statements and the corresponding tax bases used in the computation of taxable profit.

Deferred tax assets are recognised to the extent it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax losses can be utilised. Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realised, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The carrying amount of Deferred tax liabilities and assets are reviewed at the end of each reporting period.

p. Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Company expects some or all of a provision to be reimbursed the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the Statement of Profit and Loss net of any reimbursement

q. Contingent Liabilities and Contingent Asset

Disclosure of contingent liability is made when there is a possible obligation arising from past events, the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Company or a present obligation that arises from past events where it is either not probable that an outflow of resources embodying economic benefits will be required to settle or a reliable estimate of amount cannot be made. A Contingent asset is not recognized in financial statements, however, the same are disclosed where an inflow of economic benefit is probable

r. Commitments

Commitments are future liabilities for contractual expenditure. Commitments are classified and disclosed as follows:
(i) Estimated amount of contracts remaining to be executed on capital account and not provided for
(ii) Uncalled liability on shares and other investments partly paid
(iii) Funding related commitment to subsidiary, associate and joint venture companies and

(iv) Other non-cancellable commitments, if any, to the extent they are considered material and relevant in the opinion of management.

Other commitments related to sales/procurements made in the normal course of business are not disclosed to avoid excessive details.

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH, 2023

Note 5 Property, Plant and Equipment

(Amount in Lakhs)

Particulars	Land	Toll Equipment	Computers	Office Equipment	Furniture & Fixtures	Motor Cycle	Total
Gross carrying value as of 31 March, 2021	**17.48**	**233.84**	**42.55**	**15.73**	**7.62**	**2.67**	**319.89**
Additions	-	114.59	-	1.80	-	-	116.39
Deletions	-		-	-	-	-	-
Gross carrying value as of 31 March, 2022	**17.48**	**348.43**	**42.55**	**17.53**	**7.62**	**2.67**	**436.28**
Additions	-	67.89	-	-	0.40	-	68.30
Deletions	-	-	-	-	-	-	-
Gross carrying value as of 31 March, 2023	**17.48**	**416.32**	**42.55**	**17.53**	**8.02**	**2.67**	**504.58**
Accumulated depreciation as of 31 March, 2021	-	**199.62**	**28.05**	**11.46**	**5.57**	**2.22**	**246.93**
Depreciation	-	43.00	8.84	2.43	0.53	0.06	**54.86**
Accumulated depreciation as of 31 March, 2022	-	**242.62**	**36.89**	**13.89**	**6.10**	**2.28**	**301.78**
Depreciation	-	83.87	3.24	2.00	1.36	0.16	**90.65**
Accumulated depreciation as of 31 March, 2023	-	**326.49**	**40.13**	**15.89**	7.47	**2.44**	**392.43**
Carrying value as of 31 March, 2023	**17.48**	**89.83**	**2.42**	**1.63**	**0.55**	**0.23**	**112.15**
Carrying value as of 31 March, 2022	**17.48**	**105.80**	**5.66**	**3.64**	**1.52**	**0.40**	**134.50**

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH, 2023

Note 6. Intangible assets

(Amount in Lakhs)

Particulars	Right of Carriageway	Computer Software	Total
Gross carrying value as of 31 March, 2021	**91,281.39**	**1.26**	**91,282.65**
Additions	-	-	-
Deletions	-	-	-
Gross carrying value as of 31 March, 2022	**91,281.39**	**1.26**	**91,282.65**
Additions	-	-	-
Deletions	-	-	-
Gross carrying value as of 31 March, 2023	91,281.39	1.26	**91,282.65**
Accumulated amortization as of 31 March, 2021	**34,222.48**	**0.59**	**34,223.08**
Amortization expense for April-21 to Mar-22	5,675.19	-	5,675.19
Accumulated amortization as of 31 March, 2022	**39,897.67**	**0.59**	**39,898.27**
Amortization expense for April-22 to Mar-23	5,664.47	-	5,664.47
Accumulated amortization as of 31 March, 2023	**45,562.13**	**0.59**	**45,562.74**
Carrying value as of 31 March, 2023	**45,719.25**	**0.67**	**45,719.92**
Carrying value as of 31 March, 2022	**51,383.72**	**0.67**	**51,384.39**

(Amount in Lakhs)

Note No	Particulars	As at 31 March 2023	As at 31 March 2022
7	**Non Current Investments**		
	Investment in Mutual Funds (refer note below)	10,743.55	12,782.69
	Total	**10,743.55**	**12,782.69**
	Details of Mutual Fund		
	Units lien for Major Maintenance Reserve & Debt Service Reserve Account	45,41,87,321	5,43,15,002
8	**Other Non Current Financial Assets**		
	Bank deposits with more than 12 months maturity (Fixed Deposit includes interest accrued on fixed deposit) (Rs 28,89,314/- is lien marked in favour of Deputy Commissioner of Commercial for VAT Assessment - FY 15-16)	106.07	3,621.02
	Total	**106.07**	**3,621.02**
9	**Other Non Current Assets**		
	Retention Money	72.19	72.19
	TDS Receivable (Net of provisions for Income tax)	149.13	74.10
	MAT Credit	1,345.39	-
	Taxes paid under Protest	86.06	86.06
	VAT Credit Receivable	12.38	12.38
	Total	**1,665.16**	**244.73**
10	**Trade Receivables**		
	Trade Receivables considered good - Unsecured		
	National Highway Authority of India	219.22	133.21
	Total	**219.22**	**133.21**

Trade receivables ageing schedule

As at March 31, 2023	Outstanding for following periods from due date of payment					Total
	Less than 6 months	6 months - 1 year	1-2 years	2-3 years	More than 3 years	
Considered Good - Secured	-	-	-	-	-	-
Considered Good - Unsecured	110.36	9.05	91.96	4.69	3.14	219.21
Gross carrying amount (A)	110.36	9.05	91.96	4.69	3.14	219.21
Less: Allowance for Expected Credit Losses (B)	-	-	-	-	-	-
Net carrying amount (A-B)	110.36	9.05	91.96	4.69	3.14	219.21

As at March 31, 2022	Outstanding for following periods from due date of payment					Total
	Less than 6 months	6 months - 1 year	1-2 years	2-3 years	More than 3 years	
Considered Good - Secured	-	-	-	-	-	-
Considered Good - Unsecured	83.56	8.40	4.69	-	36.56	133.21
Gross carrying amount (A)	83.56	8.40	4.69	-	36.56	133.21
Less: Allowance for Expected Credit Losses (B)						
Net carrying amount (A-B)	83.56	8.40	4.69	-	36.56	133.21

11(a)	**Cash and Cash Equivalents**		
	-Cash- on- Hand	8.73	16.14
	Balances with Banks		
	-In Current Account	235.75	19,708.48
	Prepaid Card		
	-HDFC	0.03	
	Total	**244.51**	**19,724.62**
11(b)	**Bank balances other than above**		
	-Fixed deposits	10,950.00	-
	Total	**10,950.00**	**-**
12	**Other Current Financial Asset**		
	Other Receivable	89.24	65.29
	Receivable from Related Parties (Refer note 31.8)	-	1.03
	Total	**89.24**	**66.32**
13	**Other Current Assets**		
	Prepaid Expenses	33.43	35.15
	Advance to Employees	-	0.36
	Advance to Vendor	16.88	4.05
	Total	**50.32**	**39.56**

Nangia & Co. LLP Mumbai Chartered Accountants

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH, 2023

Note 14 Share capital

(Amount in Lakhs)

Particulars	As at 31 March 2023	As at 31 March 2022
(a) Authorised		
50,00,000 Equity shares of Rs.10/- each	500.00	500.00
	500.00	**500.00**
(b) Issued, Subscribed & Fully Paid Up		
42,95,666 Equity shares of Rs.10/- each	429.57	429.57
Total	**429.57**	**429.57**

(i) Reconciliation of the number of shares and amount outstanding at the beginning and at the end of the reporting period:

Particulars	As at 31 March 2023	As at 31 March 2022
Equity shares with voting rights at the beginning of the year	42,95,666	42,95,666
Add Shares issued during the year	-	-
Less: Shares Cancelled on Buy back of Equity Shares	-	-
Equity shares with voting rights at the end of the year	**42,95,666**	**42,95,666**

(ii) Terms/rights attached to shares:

The Company has only one class of equity shares having a par value of Rs.10/- per share Each holder of equity share is entitled to one vote per share
In the event of liquidation of the Company, the holders of equity shares will be entitled to receive remaining assets of the Company, after distribution of all preferential amounts The distribution will be in proportion to the no of equity shares held by the shareholder.

(iii) Details of shares held by the holding entity:

Particulars	As at 31 March 2023	As at 31 March 2022
Equity shares with voting rights held by:		
National Investment & Infrastructure Fund	42,95,666	42,95,666
Equity shares with voting rights at the end of the year	**42,95,666**	**42,95,666**

(iv) Details of equity shares held by the shareholder and promoters holding more than 5% shares of total equity shares:

Class of shares / Name of shareholder	As at 31 March 2023		As at 31 March 2022	
	Number of shares held	% holding in that class of shares	Number of shares held	% holding in that class of shares
Equity shares with voting rights				
National Investment & Infrastructure Fund	42,95,665	99.99%	42,95,665	99.99%
Ms.Ekta Aggarwal (Nominee of National Investment & Infrastructure Fund)	1	0.01%	1	0.01%
Total	**42,95,666**		**42,95,666**	

Mumbai

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED
NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH, 2023

Note 15 Other Equity

(Amount in Lakhs)

Particulars	As at 31 March 2023	As at 31 March 2022
a) Securities Premium Account	12,428.43	12,428.43
b) General Reserve	-	-
c) Other comprehensive income	-	-
d) Retained earnings	(7,342.51)	(14,507.76)
e) Debenture Redemption Reserve	1,202.81	-
Total	**6,288.73**	**(2,079.33)**
a) Securities Premium Account		
Opening balance	**12,428.43**	12,428.43
Additions during the year	-	-
Adjustments during the year	-	-
Closing balance	**12,428.43**	**12,428.43**
d) Retained earnings		
Opening balance	**(14,507.76)**	(12,687.98)
Net profit for the year	8,368.06	(1,819.78)
Less: Transfer to Debenture Redemption Reserve	(1,202.81)	-
Closing balance	**(7,342.51)**	**(14,507.76)**
e) Debenture Redemption Reserve		
Opening balance	-	-
Add: Transferred from Statement of Profit and Loss	1,202.81	-
Closing balance	**1,202.81**	-

Note 16 Long-term borrowings

(Amount in Lakhs)

Particulars	As at 31st March, 2023	As at 31st March, 2022
(a) Term loans		
From banks -Secured	42,060.17	47,655.83
From others - Secured	-	-
(a) Term loans Total	42,060.17	47,655.83
(b) Non Convertible Debenture (NCD)	10,656.15	12,028.18
(c) Optional Convertible Debenture (OCD) from NIIF	-	3,500.00
(d) Less : Unamortized Upfront fee	(132.71)	(184.56)
Total	**52,583.60**	**62,999.45**

Note 16.1 Long-term borrowings

(Amount in Lakhs)

Particulars	Non Current Portion		Current Portion	
	As at 31st March, 2023	As at 31st March, 2022	As at 31st March, 2023	As at 31st March, 2022
Term loans from banks:				
Federal Bank Ltd	7,832.72	-	1,041.76	
Axis Bank	34,227.45	47,655.83	4,550.50	3,761.37
Total - Term loans from banks	**42,060.17**	**47,655.83**	**5,592.26**	**3,761.37**
Non Convertible Debenture (NCD)				
L&T Infra Debt Fund Ltd (NCD)	-	-	-	19,274.94
India Infradebt Limited (NCD)	10,656.15	12,028.18	1,371.93	1,105.16
Non Convertible Debenture (NCD)	**10,656.15**	**12,028.18**	**1,371.93**	**20,380.10**
Optional Convertible Debenture (OCD) from NIIF	-	3,500.00		-
Less : Unamortized Upfront fee	(132.71)	(184.56)	(51.85)	(56.81)
Total - Long Term Borrowings	**52,583.60**	**62,999.45**	**6,912.33**	**24,084.66**

Terms: Rupee Term Loan (Under Consortium)

(a)	Name of The Financial Institutions:	L&T Infra Debt Fund Ltd
	Type of Loan & Amount Sanctioned:	NCD's Rs.220.00 Crores
	Loan Availed as on 31.03.2019:	Rs.220.00 Crores
	Face Value	Rs.1,00,000/-
	Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 31.12.2015 The Term Loan has been refinanced through Axis Bank.
	Security:	A first charge on Company's all immovable assets other than the project assets and first charge by way of hypothecation on all movable assets both present and future, a first charge on all intangible assets, bank accounts, a right over insurance proceeds. Pledge 51% of equity shares of Athaang Devanahalli Tollway Pvt Ltd held by National Infrastructure Investment Fund (NIIF)
(b)	Name of The Financial Institutions:	India Infra Debt Limited
	Type of Loan & Amount Sanctioned.	NCD's Rs.150.00 Crores
	Loan Availed as on 31.03.2019:	Rs.150.00 Crores
	Face Value	Rs.10,000/-
	Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 31.03.2016
	Security:	A first charge on Company's all immovable assets other than the project assets and first charge by way of hypothecation on all movable assets both present and future, a first charge on all intangible assets, bank accounts, a right over insurance proceeds. Pledge 51% of equity shares of Athaang Devanahalli Tollway Pvt Ltd held by National Infrastructure Investment Fund (NIIF)
(c)	Name of The Financial Institutions:	Axis Bank Limited
	Type of Loan & Amount Sanctioned:	RTL Rs.337.00 Crores & RTL Rs.197.83 Crores
	Loan Availed as on 31.03.2022:	Rs.332.35 Crores & Rs.192.55 Crores
	Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 30.09.2021 The Loan has been downsold partially to the extent of Rs. 92.25 Crores to Federal Bank Limited
	Security:	A first charge on Company's all immovable assets other than the project assets and excluding plot no 6, Bhoomapan Karamank Palghar, Thane admeasuring 226 sq mt hypothecation on all movable prosperities and assets both present and future including movable plant and machinery, machinery spares, tools and accessories, furniture and vehicles charge on company's operating cash flows, book debts and all the receivables and revenues from the project, all current, commissions, and any other revenues of whatsoever nature and wherever arising present and future charge on Intangible asset including but not limited to goodwill, undertaking intellectual property rights and uncalled capital of the company, present and future charge on the Retention Account, DSRA and other reserves and any other bank account of the company whenever maintained. Pledge 51% of equity shares of Athaang Devanhalli Tollway Private Limited held by National Investment Infrastructure Fund

(d)	Optional Convertible Debenture issued:	National Investment & Infrastructure Fund
	Face Value	Rs.1,00,000/-
	Repayment Terms:	OCDs be redeemed at par (together with accrued and unpaid coupon), if the holder does not exercise the conversion option. Redemption shall be made only to the extent of Restricted Payments and approved by secured lenders/Debenture Holders/ Debenture Trustee, if required under the Financing Document.
	Security:	Unsecured

Note: During the year, company has redeemed fully optional convertible debenture.

(e)	Name of The Financial Institutions	The Federal Bank Limited
	Type of Loan & Amount Sanctioned:	RTL Rs 100.00 Crores
	Loan Availed as on 15.09.2022:	Loan is a down sell from Axis for previous loan taken; further disbursed amount is Rs.92.25 crores
	Repayment Terms:	The Term Loan Shall be repaid in structured quarterly instalments w.e.f. 30.09.2021
	Security:	A first charge on Company's all immovable assets other than the project assets and excluding plot no 6, Bhoomapan Karamank Palghar, Thane admeasuring 226 sq mt hypothecation on all movable prosperities and assets both present and future including movable plant and machinery, machinery spares, tools and accessories, furniture and vehicles charge on company's operating cash flows, book debts and all the receivables and revenues from the project, all current, commissions, and any other revenues of whatsoever nature and wherever arising present and future charge on Intangible asset including but not limited to goodwill, undertaking intellectual property rights and uncalled capital of the company, present and future charge on the Retention Account, DSRA and other reserves and any other bank account of the company whenever maintained. Pledge 51% of equity shares of Athaang Devanhalli Tollway Private Limited held by National Investment Infrastructure Fund

17	**Other Non Current Financial Liabilities**		
	Retention Money	56.67	43.56
	Total	56.67	43.56
18	**Non Current Provisions**		
	Provision for Major Maintenance	1,800.00	666.45
	Provision for Gratuity	7.90	5.39
	Provision for compensated absences	6.09	3.86
	Total	1,813.99	675.60
19	**Short Term Borrowings**		
	Current Maturity of Long Term Borrowing (Refer Note 16)	6,912.33	24,084.66
		6,912.33	24,084.66
20	**Trade Payables**		
	Dues of Micro and Small Enterprises	-	-
	Dues of enterprises other than Micro and Small Enterprises	139.19	149.85
	Total	139.19	149.85

The Company has no amounts Outstanding/Payable to Micro, small and Medium Enterprises as at 31st March, 2023 and no amounts were overdue during the year for which disclosure requirement under Micro, small and Medium Enterprises Development Act, 2006 are applicable.

Trade Payables ageing schedule

As at March 31, 2023	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	-	-	-	-	-
Others	22.20	1.51	59.34	56.15	139.19
	22.20	1.51	59.34	56.15	139.19

As at March 31, 2022	Outstanding for following periods from due date of payment				Total
	Less than 1 year	1-2 years	2-3 years	More than 3 years	
MSME	-	-	-	-	-
Others	25.71	14.17	68.22	41.75	149.85
	25.71	14.17	68.22	41.75	149.85

21	**Other Current Financial Liabilities**		
	Payable to related party (Refer Note no 31.8)	49.23	224.46
	Total	49.23	224.46
22	**Other Current Liabilities**		
	Advance Received from NHAI	431.32	520.18
	Statutory Liabilities	31.41	58.40
	Salaries payable	0.35	-
	Other Liabilities	-	8.65
	Total	463.08	587.23
23	**Provisions**		
	Provision for Expenses	1,163.48	1,015.73
	Provision for Gratuity	0.02	0.01
	Provision for compensated absences	0.27	0.25
	Total	1,163.77	1,015.99

ATHAANG DEVANAHALLI TOLLWAY PRIVATE LIMITED

NOTES TO FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH, 2023

(Amount in Lakhs)

Note No	Particulars	For the Year ended 31 March, 2023	For the Year ended 31 March, 2022
24	**Revenue from Operations**		
	Toll Revenue	24,393.50	13,983.98
	Less .Revenue Sharing With NHAI	(681.1)	(592.19)
	Total	**23,712.43**	**13,391.79**
25	**Other Income**		
	Income From Mutual Funds	515.92	513.06
	Interest Income on Fixed Deposit	209.67	67.73
	Other Income	25.81	25.17
	COS Revenue	571.27	70.00
	Total	**1,322.67**	**675.96**
26	**Operating and Maintenance Expenses**		
	Reimbursement Independent Consultancy fee to NHAI	89.38	113.37
	Insurance Expenses	119.59	137.53
	Periodic Major Maintenance	1,152.95	624.48
	Toll Operation & Maintenance Expenses	1,997.59	1,943.26
	COS Expenses	459.57	56.43
	Total	**3,819.08**	**2,875.07**
27	**Employee Benefit Expenses**		
	Salary and Wages	179.80	158.56
	Contribution to provident fund, gratuity and others	14.13	13.18
	Staff Welfare Expenses	39.50	8.99
	Total	**233.43**	**180.73**

(Amount in Lakhs)

Note No	Particulars	For the Year ended 31 March, 2023	For the Year ended 31 March, 2022
28	**Finance Costs**		
	Interest Expenses	5,565.90	6,038.99
	Amortized Upfront Fee Expenses	56.81	103.20
	Other Borrowing Cost	-	170.88
	Total	5,622.71	6,313.07
29	**Administration and Other Expenses**		
	Advertisement	0.40	0.87
	Audit Fee (Refer note 31.10)	8.25	8.85
	Arbitration Fees	65.58	226.62
	Bank Charges	14.36	13.00
	Rates & Taxes	5.55	121.33
	Legal & Professional Fees	91.09	78.30
	Other Expenses	40.44	11.71
	Management Fees	575.89	280.25
	Settlement cost	295.00	-
	Reversal of Unbilled Revenue (Prior Period)	-	47.94
	Total	1,096.56	788.87
30	**Exceptional Items**		
	Expenses		
	Advance to others parties written off**	-	1.81
	Total	-	1.81

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31. Notes forming part of the Accounts

31.1 Details of Expenditure in Foreign Currency:
The Company has not incurred any expenditure in foreign currency during the current year and previous year.

31.2 Disclosure pursuant to Ind AS 37
"Provisions, Contingent Liabilities and Contingent Assets":
Provisions:
As per the Concession Agreement with NHAI the Periodic Maintenance is expected to be incurred periodically On the Grounds of Prudence, based on estimates, the company has decided to Provide for Major Maintenance Expense in the Books of Accounts annually.

During the current year the company has incurred Major Maintenance expenses of Rs. 19,40,397/- and net provision for MMR created of Rs. 11,52,95,413/- for year ended 31st March, 2023.

During the previous year the company has incurred Major Maintenance expenses of Rs. 13,95,20,766/- and net provision for MMR created of Rs. 6,24,48,232/- for year ended 31st March, 2022.

Contingent Liabilities:
Where it is not probable that an outflow of economic benefits will be required, or the amount can not be estimated reliably, the obligation is not recognized in the statements of financial position and is disclosed as a contingent liability.

(Amount in Lakhs)

Particulars	As at 31 March 2023	As at 31 March 2022
Claims against the company not acknowledged as debt		
- on Income Tax	1,367.01	1,367.01
- on liquidated damages imposed by NHAI*	4,441.00	1,923.00

March-23 During the current year the company has not provided an amount of Rs. 4,441 lakhs (PY 1,923 lakhs) recommended by the Independent Engineer towards liquidated damages imposed with respect to Operations & maintenance (O&M) requirements & its rectification of deficiencies within the stipulated time. However, the Company made representation with the Independent Engineer vide letter dated May, 8th 2023 for reviewing its decision to levy liquidated damages and withdraw the claim for damages The management is confident that such a penalty will not be levied by NHAI with reference to clause 17.8.2 of the concession agreement dated 30 April 2010.

March-22 The Company has not provided an amount of Rs 1,923 lakhs (PY 11,801.70 lakhs) recommended by Independent Engineer towards liquidated damages imposed by NHAI for Non- Performance of conditions as set out in the clause no. 17.8 of the concession agreement with respect to Operations & maintenance (O&M) requirements & its rectification of deficiencies within the stipulated time. However, the Company made representation with the NHAI vide letter dated 25 July 2022 for revocation of levy of liquidated damages after completion of O&M work and rectification of deficiencies.

Arbitration Matter
March-23 During the year the application filed by M/s Cauvery Asphalt & Construction Company Pvt. Ltd has been withdrawn under the Rules of the Mumbai Centre for International Arbitration ("MCIA"), where both the parties filed joint application for withdrawal of all claims and counterclaims and termination of the arbitral proceedings under Section 32(2)(b) of the Arbitration and Conciliation Act, 1996.
Accordingly, in terms of the Joint Application filed by the parties, the present proceedings stand terminated under Section 32(2)(b) and no claims and counter claims between the parties

March-22 The Company had appointed M/s Cauvery Asphalt & Construction Company Pvt. Ltd ("Cauvery") for major maintenance work at Devanahalli. The company has terminated the contract on 26 October 2020 and recovered the advance paid by invoking the advance Bank Guarantee. Subsequently Cauvery filed an application to Mumbai International Arbitration Centre Public Charitable Trust (MCIA) under Rule 3.1 of MCIA Arbitration Rules 2017 on 7th Nov 2020 and submitted claim for loss occurred on account of termination and invocation. The company defended the claim and levied liquidated damages on Cauvery. The matter is still under arbitration and the amount is not determinable. Before this, the emergency arbitration triggered by Cauvery was disposed off in favour of the Company.

31.3 Disclosure pursuant to Ind AS 19 "Employee benefits":

Defined Benefit Plan: Gratuity:

Employee benefit plans

Defined contribution plans

The Company has an unfunded defined benefit gratuity plan. The gratuity plan is governed by the Payment of Gratuity Act, 1972. Under the act, employee who has completed five years of service is entitled to specific benefit. The level of benefits provided depends on the member's length of service and salary at retirement age. Every employee who has completed five years or more of service gets a gratuity on departure at 15 days salary (last drawn salary) for each completed year of service as per the provision of the Payment of Gratuity Act, 1972 with total ceiling on gratuity of Rs 2,000,000.

The following table sets out the funded status of the defined benefit schemes and the amount recognised in the financial statements:

(Amount in Lakhs)

1	**Table showing changes in present value of Obligation as on 31/03/2023**	**For the Year ended 31 March, 2023**	**For the Year ended 31 March, 2022**
	Present value of obligations at beginning of the year	5.30	3.03
	Interest Cost	0.38	0.20
	Current Service Cost	3.47	4.15
	Benefits paid		
	Past Service Cost		
	Actuarial (gain) / loss on obligation	(1.23)	(2.07)
	Present value of the obligation as at end of the year	7.92	5.30
2	**Table showing changes in the fair value of plan assets as on 31/03/2023**		
	Fair value of plan assets at beginning of year	-	-
	Expected return on plan assets	-	-
	Contributions	-	-
	Benefits Paid	-	-
	Actuarial (gain) / loss on Plan Assets	-	-
	Fair value of plan assets at the end of year	-	-
3	**Table showing fair value of Plan assets**		
	Fair value of plan assets at beginning of year	-	-
	Actual return on plan assets	-	-
	Contributions	-	-
	Benefits paid	-	-
	Fair value of plan assets at the end of year	-	-
	Funded status	-	-
	Excess of Actual over estimated return on plan assets	-	-
	(Actual rate of return = Estimated rate of return as ARD falls on 31st March)		
4	**Actuarial Gain/Loss recognised as on 31/03/2023**	**For the Year ended 31 March, 2023**	**For the Year ended 31 March, 2022**
	Actuarial (gain) / loss for the current period on obligations	-	-
	Actuarial (gain) / loss for the current period - plan assets	-	-
	Total Actuarial (gain) / loss for the current period	(1.23)	(2.07)
	Total Actuarial (gain) / loss recognized in the year	(1.23)	(2.07)

(Amount in Lakhs)

5	**The amounts to be recognized in the balance sheet and statements of profit and loss**		
	Present value of obligations as at the end of year	7.92	5.30
	Fair value of plan assets as at the end of the year	-	-
	Unfunded Status	7.92	5.30
	Net asset / (liability) recognized in balance sheet	7.92	5.30
6	**Expenses Recognised in statement of Profit and loss**		
	Current service cost	3.47	4.15
	Past Service Cost	-	-
	Interest Cost	0.38	0.20
	Expected return on plan assets		
	Opening Present Value Obligation	5.30	3.03
	Net Actuarial (gain) / loss recognized in the year	(1.23)	(2.07)
	Expenses Recognised in statement of Profit and loss	3.85	4.35
	Actuarial assumptions		
	Discount rate	7.50%	7.20%
	Expected return on plan assets		
	Salary escalation	10% p.a.	10% p.a.
	Mortality Rate	100% p.a.	100% p.a.
	Normal retirement age	60 yrs	60 yrs
	Withdrawal Rate	5%	5%

A quantitative analysis for significant assumption is as shown below:

Indian gratuity plan:

	Particulars	31-Mar-23	31-Mar-22
	Assumptions -Discount rate		
	Sensitivity Level (a hypothetical increase / (decrease) by)	1.00%	1.00%
	Impact on defined benefit obligation -increase of sensitivity level	-12.40%	-13.60%
	Impact on defined benefit obligation -decrease of sensitivity level	14.90%	16.50%
	Assumptions -Future salary rates		
	Sensitivity Level (a hypothetical increase / (decrease) by)	1.00%	1.00%
	Impact on defined benefit obligation-increase of sensitivity level	13.60%	15.90%
	Impact on defined benefit obligation-decrease of sensitivity level	-12.30%	-13.40%
	Assumptions -Attrition rate		
	Sensitivity Level (a hypothetical increase / (decrease) by)	0.50%	0.50%
	Impact on defined benefit obligation-increase of sensitivity level	-9.80%	-12.80%
	Impact on defined benefit obligation-decrease of sensitivity level	12.30%	16.40%

Expected payment for future years (Amount in Lakhs)

Particulars	31-Mar-23	31-Mar-22
Within the next 12 months (next annual reporting period)	0.02	0.01
Between 2 and 5 years	1.23	0.58
Between 6 and 10 years	2.56	1.65
Beyond 10 years	22.64	16.54
Total expected payments	**26.45**	**18.77**

31.4 Disclosure pursuant to Ind AS 36 "Impairment of Assets"

Based on review of the future discounted cash flows of the project facility, the recoverable amount is higher than the carrying amount and hence no provision for impairment is considered

31.5 Major Components of Deferred Tax Liabilities and Deferred Tax Assets

The company is eligible for deduction under Section 80IA of the Income Tax Act, 1961 and the concession period of the Company's project falls within the tax holiday period as defined in Section 80IA. Since deferred tax on temporary difference between Accounting Income and Taxable Income that arise during the year is reversing during such tax holiday period and hence no Deferred Tax Assets/Liabilities is being created in the accounts.

31.6 Disclosure of segment information pursuant to Ind AS 108 "Operating Segments"

The Company is engaged in the business of construction, operation and maintenance of road projects on a Build Operate Transfer basis in a single business segment. Hence reporting of operating segments does not arise. The Company does not have operations outside India. Hence, disclosure of geographical segment information does not arise.

31.7 Earning Per Share

The following reflects the income and share data used in the basic and diluted EPS computations:

Particulars	For the Year ended 31 March, 2023	For the Year ended 31 March, 2022
Profit attributable to equity holders of the parent for basic earnings	8,368.06	(1,819.78)
Weighted average number of equity shares for basic EPS	42,95,666	42,95,666
Weighted average number of equity shares adjusted for the effect of dilution	42,95,666	42,95,666
Face value per share	10	10
Basic earning per share	194.80	(42.36)
Diluted earning per share	194.80	(42.36)

31.8 Disclosure of related parties / related party transactions pursuant to Ind AS 24 "Related Party Disclosures"

a) List of related parties

Holding Entity:	National Investments & Infrastructure Fund
Companies under common control of the Holding Entity:	Athaang Infrastructure Private Limited
	Athaang Dichpally Tollway Private Limited
	Athaang Jammu Udhampur Highway Limited (w.e.f July 28, 2022)
	Quazigund Expressway Private Limited (w.e.f July 28, 2022)

b) Key Management Personnel

Particulars	Designation	Transactions during the Year Y/N
Karthikeyan M	Director	No
Pawan Kumar A (upto 30 June 2022)	Director	No
Saurabh Jain	Director	No
Deepak Ramachandran w.e f 07 September 2022	Director	No

c) Related party transactions:

(Amount in Lakhs)

Nature of transaction	Particulars	As at 31 March 2023	As at 31 March 2022
Management Fees	Athaang Infrastructure Private Limited	575.89	280.25
Reimbursement of Expenditure	Athaang Jammu Udhampur Highway Limited	2.57	-
Reimbursement of Expenditure	Quazigund Expressway Private Limited	1.42	-
Interest expense on Optional Convertible Debenture	National Investments & Infrastructure Fund	651.44	-
Issue of Optional Convertible Debenture	National Investments & Infrastructure Fund	-	3,500.00
Redemption of Optional Convertible Debenture	National Investments & Infrastructure Fund	3,500.00	-

c) Amount Payable/(Receivable) related parties (net):

(Amount in Lakhs)

Particulars	As at 31 March 2023	As at 31 March 2022
Athaang Infrastructure Private Limited	49.23	224.46
Athaang Dichpally Tollway Private Limited	(0.00)	(1.03)

d) Terms and conditions of transactions with related parties

The sales to and purchases from related parties are made on terms equivalent to those that prevail in arm's length transactions. Outstanding balances at the year-end are unsecured and interest free for the year ended 31 March 2023. This assessment is undertaken each financial year through examining the financial position of the related party and the market in which the related party operates.

There is no provision for bad and doubtful debts to related parties with regard to outstanding expenses and there is no expense recognized in respect of bad and doubtful debts due from related parties.

31.9 Disclosure pursuant to Ind AS 17 "Leases"

The Company has not acquired any assets either under Finance lease or under Operating lease. Hence disclosures pertaining to Ind AS 17 - "Leases" are not applicable.

31.10 Details of Auditors Remuneration:

(Amount in Lakhs)

Particulars	For the Year ended 31 March, 2023	For the Year ended 31 March, 2022
As Auditor		
- Audit Fees	8.25	8.85
TOTAL	8.25	8.85

31.11 Corporate Social Responsibility (CSR) :

During the year, the Company was not required to spend any amount towards corporate social responsibility activities in accordance with Section 135 of the Companies Act, 2013, on account of unavailability of profits earned by the Company for the past three years.

31.12 Disclosure Under Appendix D to Ind AS 115

Description of the arrangement	Significant terms of the arrangement	
Design, Engineering, Finance, Construction, Operation and Maintenance of Access Controlled Highway Project of Hyderabad -Bangalore from Km 534.720 to Km 556.840of NH-7,in the state of Karnataka on "Design, Build, Operate and Transfer (DBOT)" Toll basis.	Period of the Concession	A period of 20 years from Appointed Date
	Remuneration	Toll Collection
	Conditions of Pricing	As per Bid document
	Infrastructure return at the end of the concession period	Being BOT project , the project assets have to be transferred at the end of concession period
	Changes in the arrangement occurring during the period	Any changes in the arrangement like change in the Shareholding etc need approval from the NHAI.
	Classification of Service Arrangement	The service arrangement has been classified as a Service Concession Arrangement for a PPP project as per Appendix C to Ind AS 115

31.13 Fair Values

Fair value measurement include both the significant financial instruments stated at amortised cost and at fair value in the statement of financial position. The carrying values of current financial instruments approximate their fair values due to the short-term maturity of these instruments and the disclosures of fair value are not made when the carrying amount of current financial instruments is a reasonable approximation of the fair value.

31.14 Financial Instruments

The carrying value and fair value of financial instruments by categories as of March 31, 2023 are as follows :

(Amount in Lakhs)

Particulars	At amortised costs	At fair value through profit and loss	at fair value through OCI	Total carrying value	Total fair value
Assets					
Investment		10,743.55		10,743.55	10,743.55
Trade Receivable	219.22			219.22	
Cash and cash equivalents	244.51			244.51	
Other financial assets	195.31			195.31	
Total	659.04	10,743.55	0.00	11,402.60	22,146.15
Liabilities					
Borrowings	59,495.94			59,495.94	
Trade payables	139.19			139.19	
Other financial liabilities	105.90			105.90	
Total	59,741.03	0.00	0.00	59,741.03	59,741.03

The carrying value and fair value of financial instruments by categories as of March 31, 2022 are as follows :

(Amount in Lakhs)

Particulars	At amortised costs	At fair value through profit and loss	at fair value through OCI	Total carrying value	Total fair value
Assets					
Investment		12,782.69		12,782.69	12,782.69
Trade Receivable	133.21			133.21	
Cash and cash equivalents	19,724.62	-	-	19,724.62	
Other financial assets	3,687.34	-	-	3,687.34	
Total	23,545.17	12,782.69	0.00	36,327.86	12,782.69
Liabilities					
Borrowings	87,084.11	-	-	87,084.11	
Trade payables	149.85	-	-	149.85	
Other financial liabilities	268.02	-	-	268.02	
Total	87,501.98	-	-	87,501.98	

31.15 Financials risk management objectives & policies

The risk management policies of the Company are established to identify and analyse the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company's activities.

The Management has overall responsibility for the establishment and oversight of the Company's risk management framework

In performing its operating, investing and financing activities, the Company is exposed to the Credit risk, Liquidity risk and Market risk.

31.16 'Credit risk on financial assets

Credit risk is the risk of financial loss to the company if a customer or counter-party fails to meet its contractual obligations.

'Other financial assets

The Company maintains exposure to cash equivalents. The company has set counter-parties limits based on multiple factors including financial positions, credit ratings, etc.

The company's maximum exposure to credit risk as at 31 March 2023 & 31 March 2022 is the carrying value of each class of financial assets.

31.17 Market Risk

The Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: Currency risk, Interest risk and Price risk.

i) Foreign Currency Risk

Foreign currency risk is the risk that fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rate

The company is not exposed to foreign currency risk as it has no borrowing in foreign currency.

ii) Interest rate risk

Interest rate risk is the risk that fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates

The interest risk arises to the company mainly from long term borrowings with variable rates. The company measures risk through sensitivity analysis

The company's exposure to interest rate risk due to variable interest rate borrowings is a below.

Particulars	As at 31st March 2023	As at 31st March 2022
	Amount in Lakhs	Amount in Lakhs
Senior Debt from Banks - Variable rate borrowings	59,680.50	83,825.48

Sensitivity analysis based on average senior Debt

Particulars	Impact on profit /loss after tax	
	For the Year ended 31 March, 2023	For the Year ended 31 March, 2022
	Amount in Lakhs	Amount in Lakhs
Increase or decrease in interest rate by 25 base points	149.20	209.56

Note: Profit will increase in case of decrease in interest rate and vice versa

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iii) Price risk

Price risk is the risk that the fair value or future cash flows of a financials instrument will fluctuate because or changes in market prices (other than those arising from interest rate risk or currency risk) The company is not exposed to Price risk

iv) Liquidity risk

Liquidity risk is the risk that the Company may not be able to meet its present and future cash and collateral obligations without incurring unacceptable losses. The Company's objective is to, at all times maintain optimum levels of liquidity to meet its cash and collateral requirements The Company closely monitors its liquidity position and deploys a robust cash management system. It maintains adequate sources of financing including debt from banks at an optimised cost.

The Company maximum exposure to credit risk for the components of the balance sheet at 31st March, 2023 & 31st March 2022 is the carrying amounts. The liquidity risk is managed on the basis of expected maturity dates of the financial liabilities The average credit period taken to settle trade payables is about 30 to 90 days. The other payables are with short-term durations. The carrying amounts are assumed to be a reasonable approximation of fair value. The following table analysis financial liabilities by remaining contractual maturities:

Particulars	On demand	Less than 3 months	3 to12 months	2 to 5 years	>5 years	Total
	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs
Year ended 31st March 2023						
Borrowings		1,741.05	5,223.14	41,298.89	11,232.86	59,495.94
Trade and other payables			139.19			139.19
Other financial liabilities			49.23	56.67		105.90
Total	-	**1,741.05**	**5,411.56**	**41,355.57**	**11,232.86**	**59,741.03**

Particulars	On demand	Less than 3 months	3 to12 months	2 to 5 years	>5 years	Total
	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs	INR lacs
Year ended 31st March 2022						
Borrowings	-	20,491.58	3,649.90	25,124.49	37,818.14	87,084.11
Trade and other payables	-	149.85	-	-	-	149.85
Other financial liabilities	-	268.02	-	-	-	268.02
Total	-	**20,909.44**	**3,649.90**	**25,124.49**	**37,818.14**	**87,501.98**

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32. Capital Management

For the purpose of the Company's capital management, capital includes issued equity capital, share premium and all other equity reserves attributable to the equity holders of the Company. The primary objective of the Company's capital management is to maximise the shareholder value.

The Company manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Company may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. The Company monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Company's policy is to keep optimum gearing ratio The Company includes within net debt, interest bearing loans and borrowings, trade and other payables, less cash and cash equivalents, excluding discontinued Operations.

Particulars	As at 31 March 2023	As at 31 March 2022
Borrowings	59,495.94	87,084.11
Trade payables	139.19	149.85
Other financial liabilities	105.90	268.02
Less Cash & Cash Equivalents	244.51	19,724.62
Net debt	**59,496.51**	**67,777.36**
Total equity	6,718.30	(1,649.76)
Total member's capital	**6,718.30**	**(1,649.76)**
Capital and net debt	**66,214.81**	**66,127.60**
Gearing ratio (%)	**89.85%**	**102.49%**

33. Ratios

Sr. No.	Ratio	Numerator	Denominator	As at March 31, 2023	As at March 31, 2022	% change	Reason for variance/ non applicability
a	Current ratio	Current Assets	Current Liabilities	1.32	0.77	72.81%	Company has fully repaid NCD taken from L&T Infra Debt Fund Ltd during the FY 2022-23
b	Debt-Equity Ratio	Total Debt	Shareholder's Equity	8.86	(52.79)	116.78%	Company has fully repaid OCD taken from NIIF and NCD from L&T Infra Debt Fund Ltd during the FY 2022-23
c	Debt Service Coverage Ratio	Earnings available for debt service	Debt Service	1.99	1.38	44.18%	Toll Revenue Increase during the current year and higher repayments in FY 22-23
d	Return on Equity Ratio	Net Profits after taxes	Average Shareholder's Equity	1.25	1.10	12.77%	Net profit for current year as compared to loss in previous year
e	Net Capital Turnover Ratio	Net Sales	Average Working Capital	8.39	(2.20)	482.15%	Toll Revenue Increase during the year and Net profit for current year as compared to loss in previous year and Company has fully repaid NCD taken from L&T Infra Debt Fund Ltd during the FY 2022-23
f	Net Profit Ratio	Net Profit	Net Sales	0.35	(0.14)	359.70%	Toll Revenue Increase during the year and Net profit for current year as compared to loss in previous year
g	Return on Capital Employed	Earning before interest and taxes	Capital Employed*	0.30	0.12	149.24%	Toll Revenue Increase during the year

* Tangible Net Worth + Total Debt + Deferred Tax Liability

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34. Additional disclosures pursuant to amendments made in Companies Act, 2013.

i) The Company has no immovable property whose title deeds are not held in the name of the Company and it also has no such immovable property jointly held with others.

ii) The Company has not revalued its property, plant and equipment.

iii) During the year, the Company has not granted any loans or advances in the nature of loans which are either repayable on demand or without specifying any terms or period of repayment to promoters, directors, KMPs and the related parties (as defined under Companies Act, 2013,) either severally or jointly with any other person.

iv) No proceedings have been initiated or pending against the Company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (45 of 1988) and the rules made thereunder, for the financial year 2022-23.

v) The Company is not declared as wilful defaulter by any bank or financial Institution or other lender.

vi) The Company has not entered into any transactions with companies which are struck off under section 248 of the Companies Act, 2013 or section 560 of Companies Act, 1956 during the financial year ended on 31 March 2023.

vii) During the year Company has not advanced or loaned or invested funds (either borrowed funds or share premium or any other sources or kind of funds) to any other person(s) or entity(ies) , including foreign entities (Intermediaries) with the understanding (whether recorded in writing or otherwise) that the Intermediary shall :

(a) directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Company (Ultimate Beneficiaries) or

(b) provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

viii) During the year Company has not received any fund from any person(s) or entity(ies) , including foreign entities (Funding Party) with the understanding (whether recorded in writing or otherwise) that the company shall

(a) directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party (Ultimate Beneficiaries) or

(b) provide any guarantee, security or the like to or on behalf of the Ultimate Beneficiaries.

ix) The Company has no such transaction which are not recorded in the books of accounts during the year and also there are not such unrecorded income and related assets related to earlier years which have been recorded in the books of account during the year.

x) The Company has not traded or invested in Crypto currency or Virtual Currency during the financial year.

xi) The Company does not have any charges or satisfaction which are yet to be registered with ROC beyond the statutory period.

35. Estimated accounts of contracts remaining to be executed on capital account net of advances is Rs 37,00,185/-.

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36. Previous year figures have been regrouped/ rearranged wherever necessary

For Nangia & Co. LLP
Chartered Accountants
ICAI Firm registration number : 002391C/N500069

Jagpreet Singh Bedi
Partner
Membership No. 401788

For and on behalf of the Board of Director
Athaang Devanahalli Tollway Private Limited

Karthikeyan M
Director
DIN: 08609724

Deepak Ramachandran
Director
DIN NO: 08151364

Place: Mumbai
Date: 14.06.2023

Nangia & Co. LLP
Mumbai
Chartered Accountants